DataCycle Reporting

Excel report generation and distribution

Reference Guide

Version 8.1.14

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Reference Guide

DataCycle Reporting Software

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INDEX

Introduction

Report generation and distribution software

DataCycle Reporting is a software tool specialized in the implementation of corporate reporting systems. DataCycle Reporting automates the generation and distribution of Excel reports via email or an intranet, populated with data from different corporate systems (AS/400, Oracle, SQL Server, Lotus Notes, Excel, etc…).

This Reference Guide addresses all current features available to each user profile; and it is organized into the following sections:

Architecture	Solution Overview, how it works, and its configuration
Installation	Installation process
DataCycle Reporting Server	Server functionality
User Management and Security	User management and security options
Report Distribution via eMail	eMail configuration and steps for sending reports to interested parties
Advanced Administration	Consolidation of stored information and advanced options
Project Management and Database Connectivity	Connection to information sources and classification of data structures during setup
Query design	SQL query design
Cubes design	OLAP cubes design - both as a file and as a server of analytical services
Scheduling and Process Design	Design, execution and scheduling of report generation processes

You can also find the following appendices:

Terminology	Description of product related concepts
FAQs and Troubleshooting	Solutions to common problems that may occur while working with DataCycle
Working with SAP	Help on reports for SAP users

Architecture

You always need to know what you want, what you need, and above all, where you are

Al companies are different and have their own qualities and features that differentiate them as well as their needs. An understanding of these needs should be considered when installing DataCycle.

There is no single way to deploy Datacycle, nor a general rule that will work in all situations. In order to optimize the tool performance, achieve the user satisfaction and a seemless integration, a preliminary study should be

Datacycle offers several configuration options from which to choose, depending on your needs and your environment. The key elements are:

Components

- **Data Manager**
- **Mail Manager**
- **DataCycle Reporting Repository**
- **DataCycle Reporting Server**
- **DataCycle Reporting Administrator**
- **Report Consumers**

Possible Configurations

- **Evaluation configuration of DataCycle Reporting**
- **Simple Client/Server Configuration**
- **Configuration with Multiple Servers and Clients**
- **Configuration with Multiple DataCycle Reporting servers**
- **Support for Windows Terminal Server**

Components

Data Manager

This subsystem manages corporate data stored in one or several databases of the same or different types. The Data Manager will execute the queries requested by the DataCycle Reporting Server.

In a single scenario, we may find a single DBMS such a Oracle Database, on the other hand, in another more complex one, we might have several different types of databases systems (AS/400, SQL Server, MS Access, …) from different companies that are phisycally separated from each other, and each one with its own particular protocols.

Mail Manager

Subsystem in charge of manage corporate email, either internal or external. With the assistance of the Mail Manager, DataCycle Reporting can be configured to send emails periodically.

DataCycle Reporting Repository

Database where DataCycle Reporting centralizes and stores report project information, such as configuration data, project profiles, queries, reports, scheduling, etc.

This Database can be created in MS Access or SQL Server format and is the link between the Administration Client and the DataCycle Reporting Server. The first one by storing the reporting processes and desired results planned by the Administrator, and the second by executing the plans found therein.

DataCycle Reporting Server

DataCycle Reporting Server is the program that generates reports, by executing processes either in direct response to user requests or automatically through a schedule which triggers its execution. The DataCycle Reporting server communicates with the Data Manager to obtain relevant data for the reports, and optionally with the Mail Manager to send the reports to users.

The DataCycle Reporting Server must have access to, or be installed on a computer with the following:

- **Access to the Data Manager, Mail Manager and the DataCycle Reporting Repository.**
- **Excel, for generation of reports that contain macros.**
- **ODBC drivers for connectivity to the databases in which report data resides, and the corresponding DSN configuration. Such drivers are not required for connections to MS Access.**

DataCycle Reporting Administrator

Program which administers and setup DataCycle Reporting. This program is also used to design queries and processes and execute them.

The DataCycle Reporting Administrator must have access to or be installed on a computer with the following:

- Access to the Data Manager, the Mail Manager and the DataCycle Reporting Repository.
- Office productivity tools or browser where reports will be viewed: Excel, Access or HTML browser such as Firefox or Explorer.
- Email client if you wish to send the reports via email.
- ODBC drivers for connectivity to the databases in which report data resides, and the corresponding DSN configuration. Such drivers are not required for connections to MS Access.

Report Consumers

Report consumers will receive reports in Excel, Access, PDF o HTML format designed by the administrator or designer using DataCycle Reporting Administrator and executed by the DataCycle Reporting Server.

As a result, their computers DO NOT REQUIRE any non-standard software components, and therefore need only those elements commonly found on business computers, including:

- An HTML browser such as Firefox, or Explorer for viewing web based reports.
- A PDF viewer such as Adobe Reader for viewing reports in PDF format.
- MS Excel, or Access for Excel or Access based reports
- A Mail client for users who wish to receive reports via email.

Note: Even though they are conceptually independent, all of these components can be installed on the same computer system environment. This determination will be based, of course, on system architecture, load and performance requirements and limitations.

The DataCycle Reporting Administrator and Server have been designed to run on MS Windows systems.

Install scenarios

This document covers almost all the configuration scenarios found in practive such prodct evaluation or high performance installations.

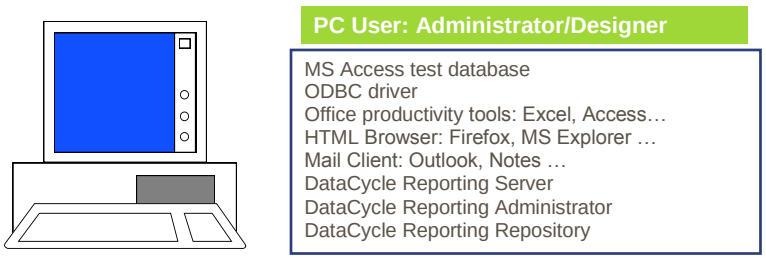
Note: The configurations described, below, are theoretical in nature for training purposes. However, the DataCycle Reporting Installer always installs the Server, DataCycle Reporting Administrator, a Repository and a test database.

Although the Mail and Data Manager can be installed in one or several servers, as explained above, we have represented these components graphically within a single computer for the sak of simplicity.

Stand alone configuration for evaluation purposes

This is the case for individuals who need to evaluate the product or for training purposes. in a simple environment, within their own computer.

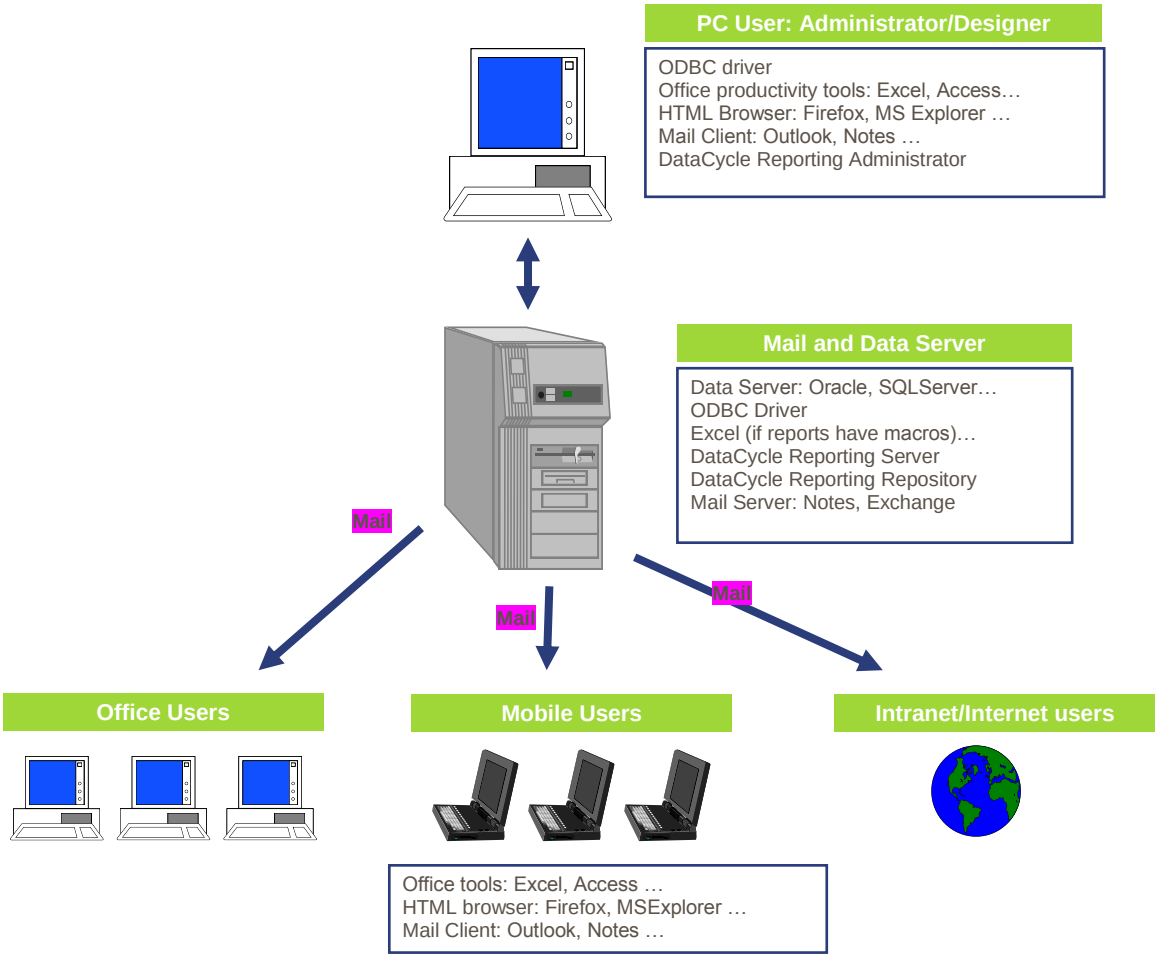
In this scenario, all the elements you need are installed on the same computer.



Single Client – Server Configuration

This is the case of a common company with one single server providing data and mail services and where the DataCycle Reporting administration and the queries and processes design will be handled by the IT staff.

In this case, DataCycle Reporting Server is installed on the same data and mail server. This will be possible only if the server has a Windows 2000 or 2003 operating system.

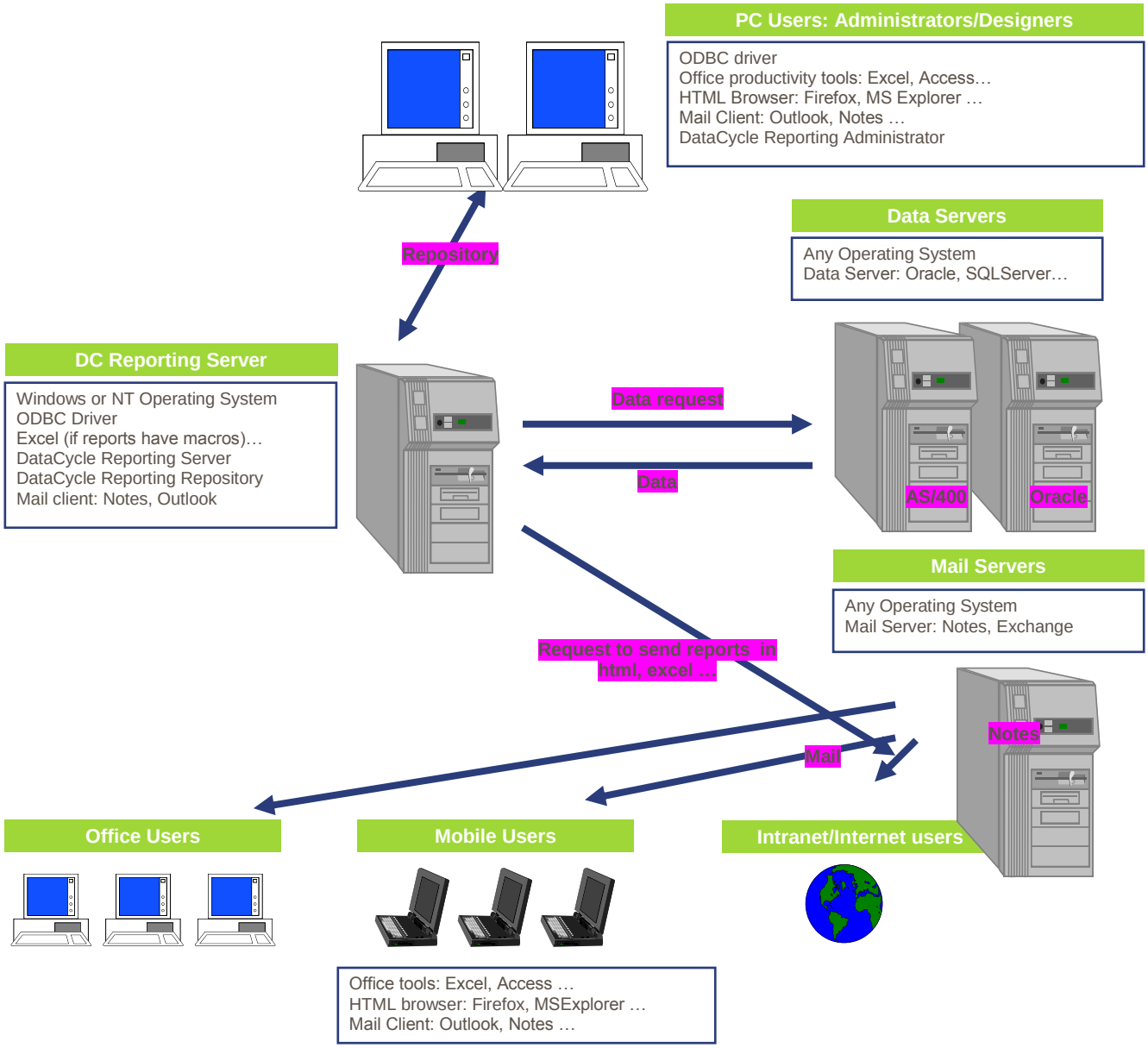


Note: As indicated, the administrative user will access the DataCycle Reporting Server through the installed Administrator client to facilitate the design of queries and processes.

Configuration with Multiple Servers and Clients

Similar to the previous case, but somewhat more complex, here we have an enterprise architecture with multiple databases and systems. In this case, the servers may be physically separated. Furthermore, we will have several DataCycle administrators designing queries and processes.

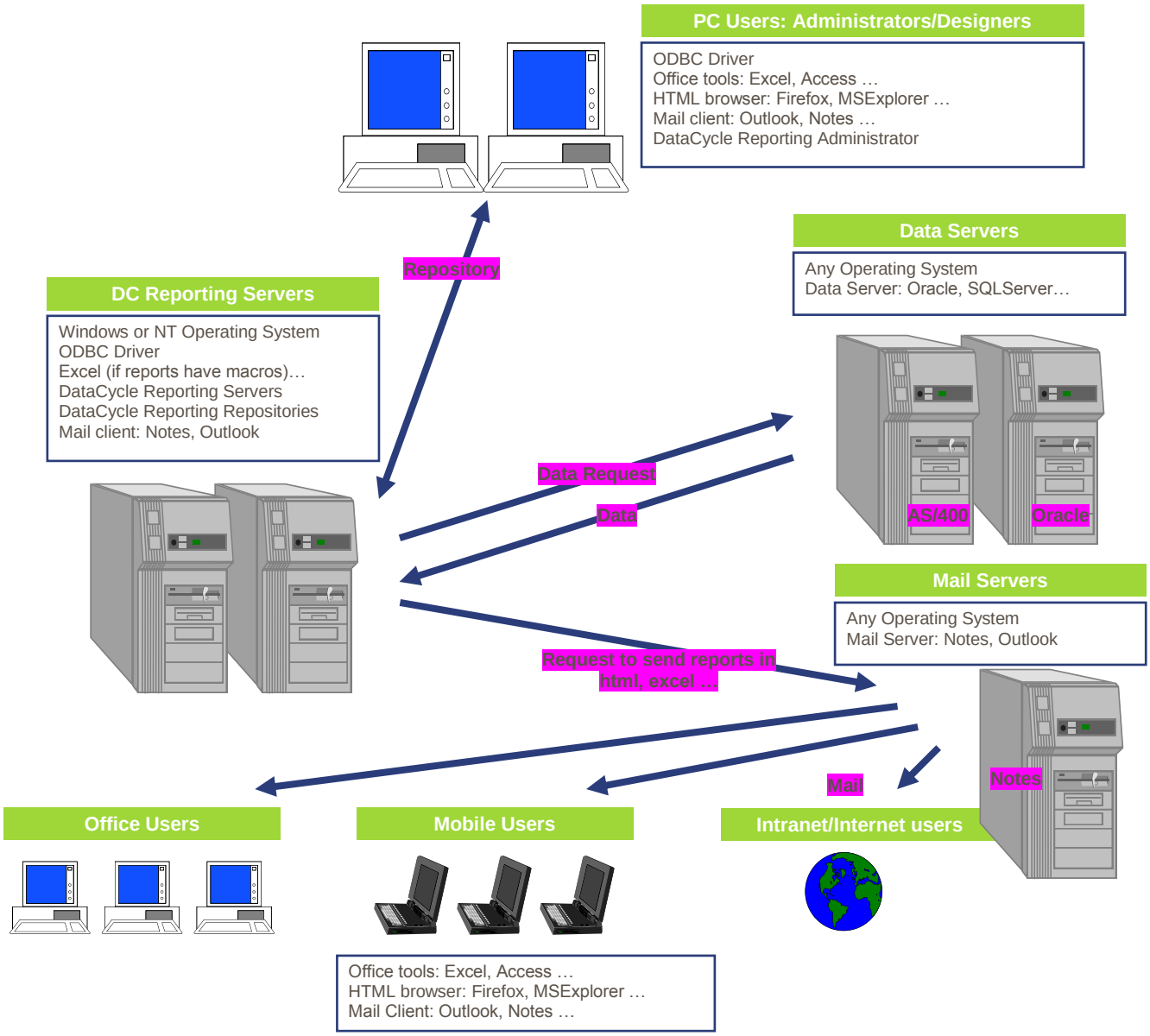
Despite system disparity, DataCycle Reporting provides users with a complete, consolidated and seemless integrated view of sytem data.



Notice: In a stable production environment, report execution is carried out by the DataCycle Reporting servers, but nothing prevents the designer from having his own test repository and directly accessing the database in the Data Servers.

Configuration with Multiple DataCycle Reporting Servers

In order to scale-up the solution, or to improve response, simplicity, and performance of the system, several DataCycle Reporting Servers may be installed on separate computers. If necessary, you may even have several repositories, each one providing data from different sources, for different reports, which can be executed by different servers.



Support for Windows Terminal Server

DataCycle Reporting can connect to an application server through Windows Terminal Server. Users accessing DataCycle through WTS should have privileges that allow them to access the directory and registry where user configuration information is stored (HKEY_CURRENT_USER of the Windows registration database), and to the directory where DataCycle is installed.

Installation

Let's start at the beginning

There are two main components of DataCycle Reporting – a Client application and a Server application:

- **DC-Reporting: The administration client, it is used to desing and implement queries and reporting processes, and it is located in the administrators' computer**
- **DC-Server: In a dedicated computer will be in charge of running the scheduled processes and maintenance tasks.**

As outlined above, for testing purposes it is a common practice to perform a single Installation of DataCycle Reporting Server and Administrator on the same computer.
In such a case, the following should also be done:

- **Installation of a browser, analytical and mail client tools - Excel, Access, Firefox, Explorer, Outlook, Notes, etc - in each one of the computers: the DataCycle Reporting Server and Administrator and the report recipient users.**
- **Installation of the ODBC Drivers corresponding to the databases to be accessed.**
- **Creation and configuration of the DSN corresponding to the databases to be accessed.**

In the vast majority of cases, these products will already be installed and configured.

Notice: In case of a version update, we recommend that you read New Version Update**.**

This chapter is organized as follows:

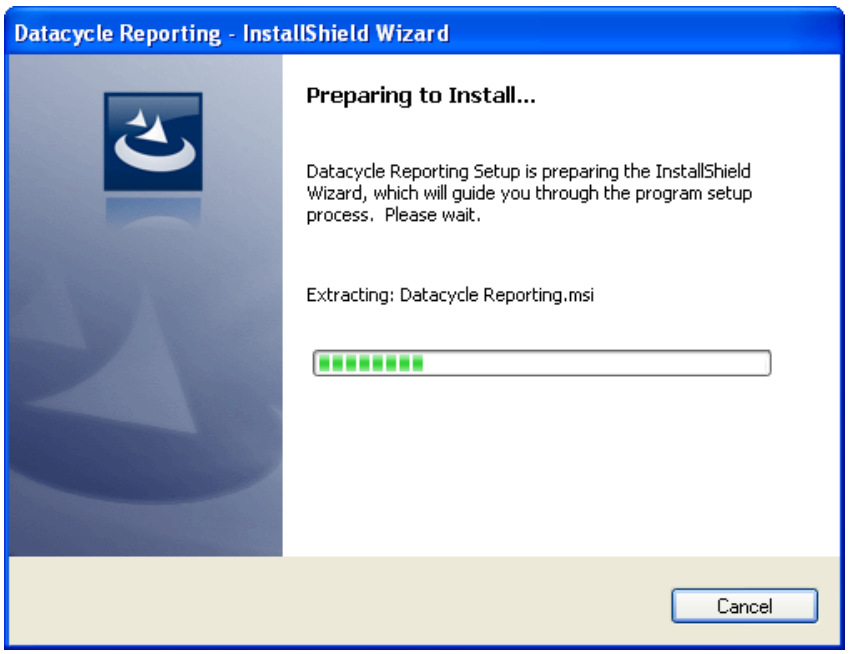
Hardware and Software Requirements

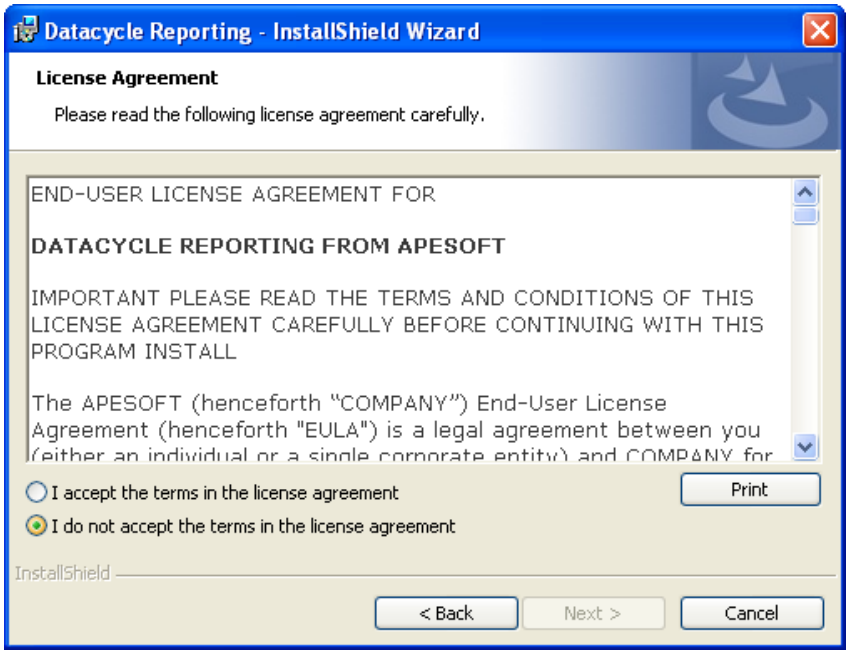
Technical specification of DataCycle Reporting Server and Administrator:

Description	Hardware Requirements	Software Requirements
DataCycle Reporting Administrator	256 MB RAM (512 MB recommended) 150 MB HD	Windows 2000 or higher Browser and analytical tools: Excel and Access 97, 2000, XP, 2003 or 2007, 2010, Firefox, Explorer, Adobe Reader… ODBC connectivity with computer system: AS/400 ⇨ Client Access Oracle ⇨ SQL*Net Optionally, any MAPI compatible mail client, such as Outlook or Lotus Notes, that you may already have installed
DataCycle Reporting Server	1 Gb RAM 300 MB HD	Windows 2000 or higher (Server recommended) Excel and Access 97, 2000, XP, 2003, 2007 or 2010 ODBC connectivity with computer system: AS/400 ⇨ Client Access Oracle ⇨ SQL*Net Optionally, any MAPI compatible mail client, such as Outlook 97, Outlook 2000 or Lotus Notes 4.5, 4.6, 5.0 ... that you may already have installed
Computers Receiving Reports		There are NO special requirements, nor is any particular software installation required for use of reports generated by DataCycle Reporting. It only need to meet the requirements for commonly used browser and analytical and reception tools such as MS Excel and Access 97, 2000, XP, 2003 or 2007, Firefox, Explorer, Outlook, Lotus Notes …

DataCycle Reporting Installation

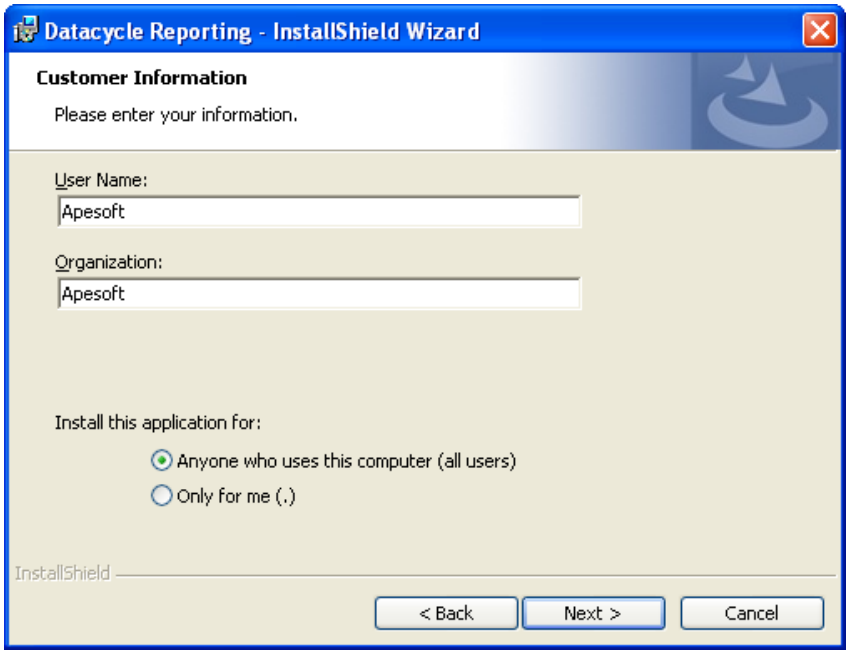
DataCycle Reporting has a quite simple installation process. Just run the dc_setup.exe file found on the Installation CD and follow the step-by-step guide.





Registration Information

Register the installation by filling in user and company names. In the case of an update, the installer simply prepopulates the form, confirming the existing registered user.

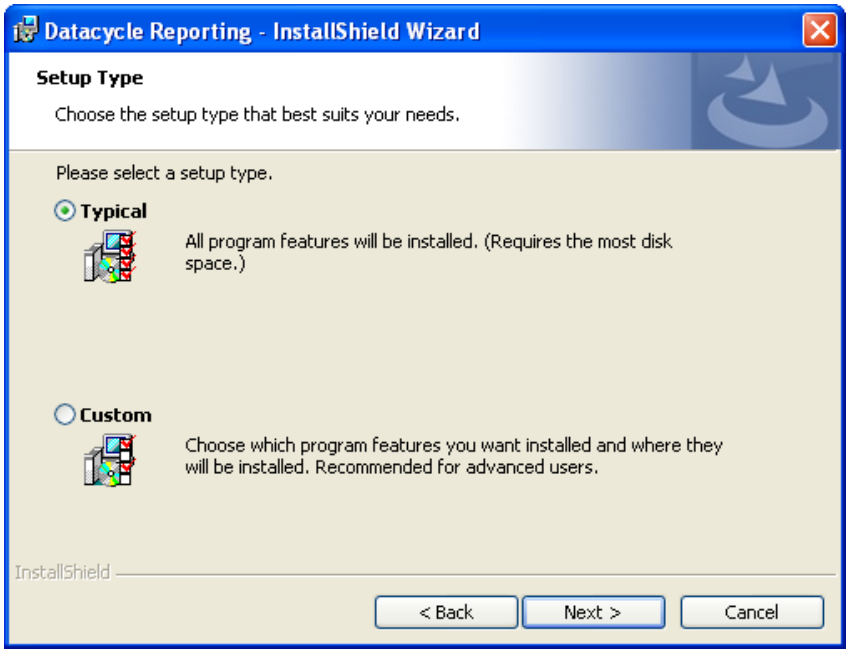


Select the destination directory

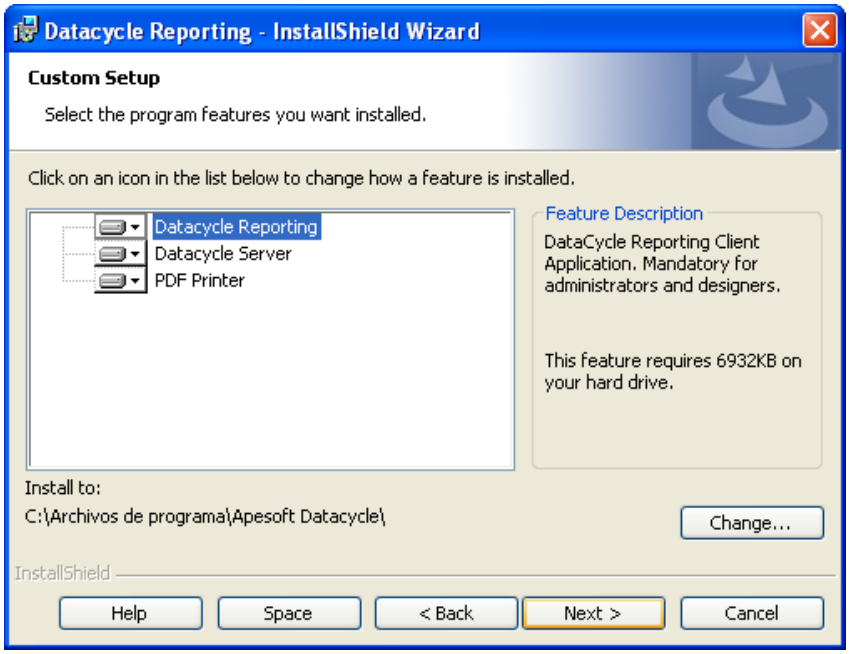
The default folder is c:\Program Files\Apesoft DataCycle. We recommend that you do not change this directory. If you must, then you will have to remember to enter the same directory in the next step.

Select Components

Indicate whether you want to run a custom installation (all programs will be installed) or a custom one, where you can choose which program features will be installed.

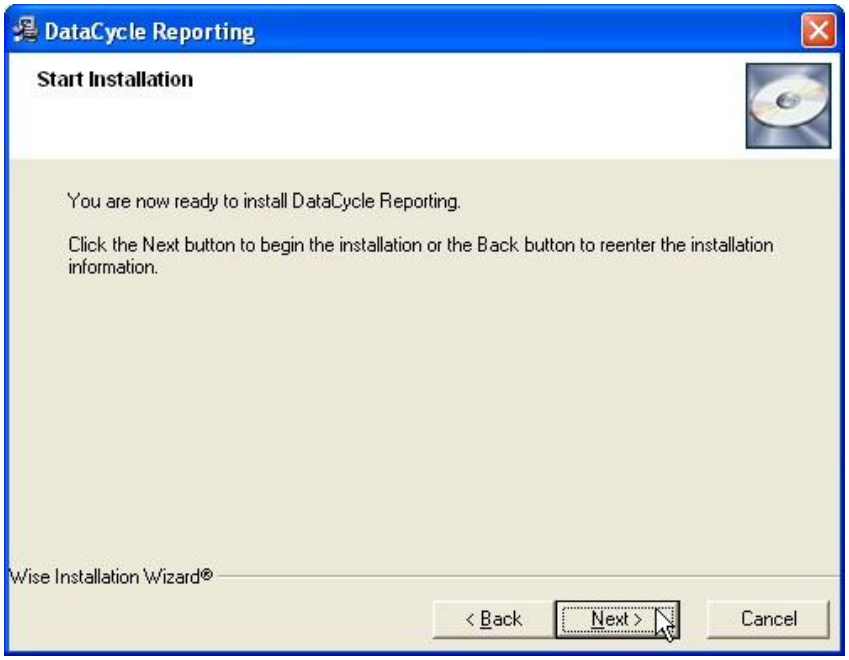


Indicate whether you want to install the Client application, the Server application, or both. If this is a first time Installation, you will most likely indicate installing both. In the case of an update, select the appropriate one depending on what you already have installed on your PC.

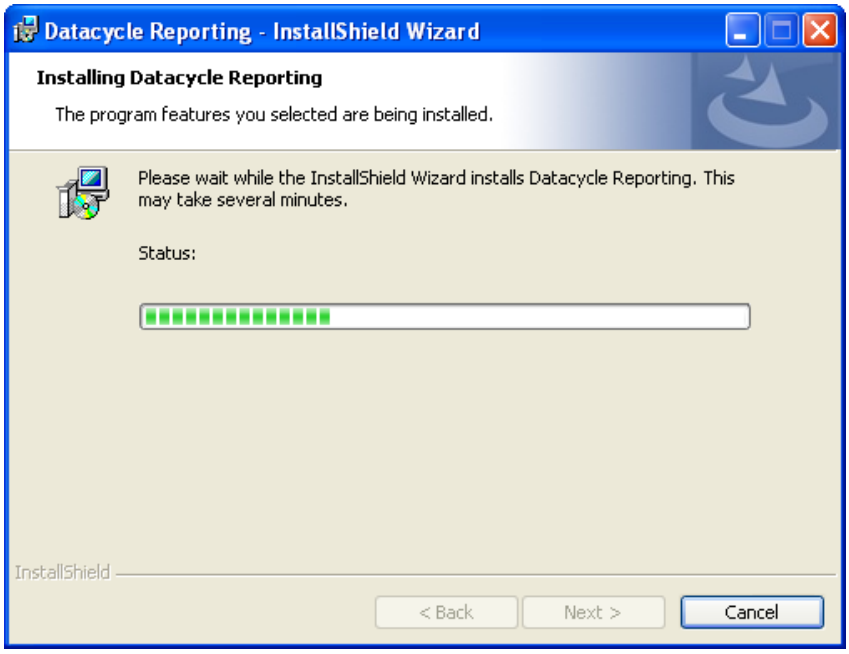


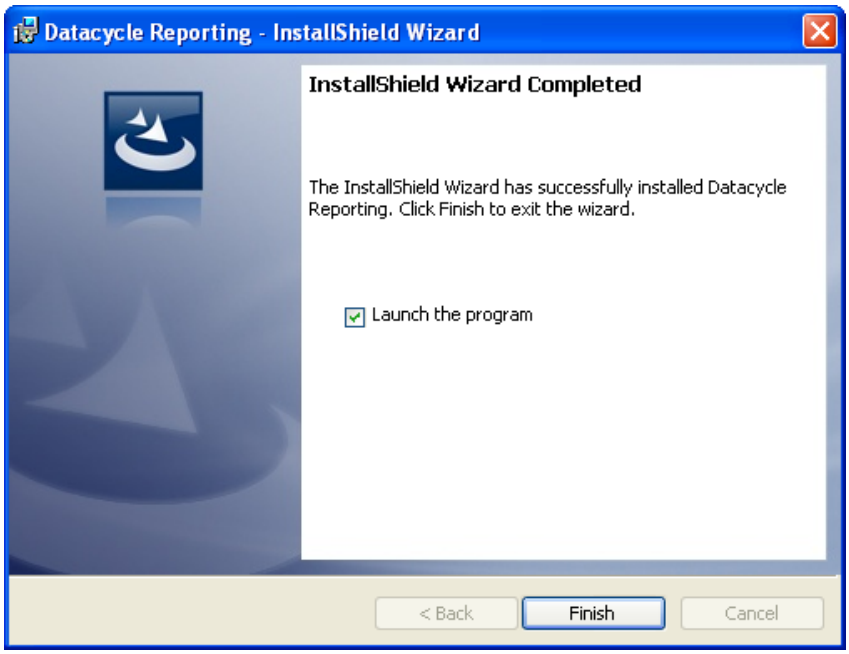
Ready for Installation!

Click the "**Next**" button to proceed with the Installation.



The installation process will now proceed to install and register the components.

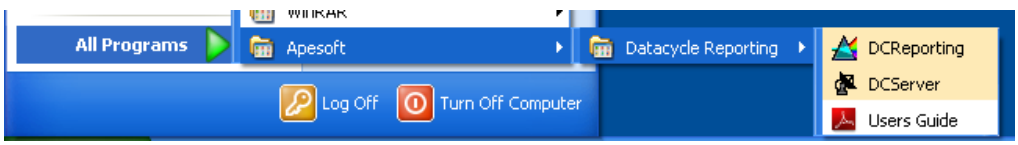




Occasionally, you may be prompted to restart your computer or server for installation of a given component to complete.

Note: If you have any problems during the installation process, you can refer to the install.log file in the DataCycle Reporting installation directory, where a trace of operations is run during the installation process.

The Installation will leave the entry **DataCycle** in the **Programs** menu of your system.



You will also find two icons on your desktop:

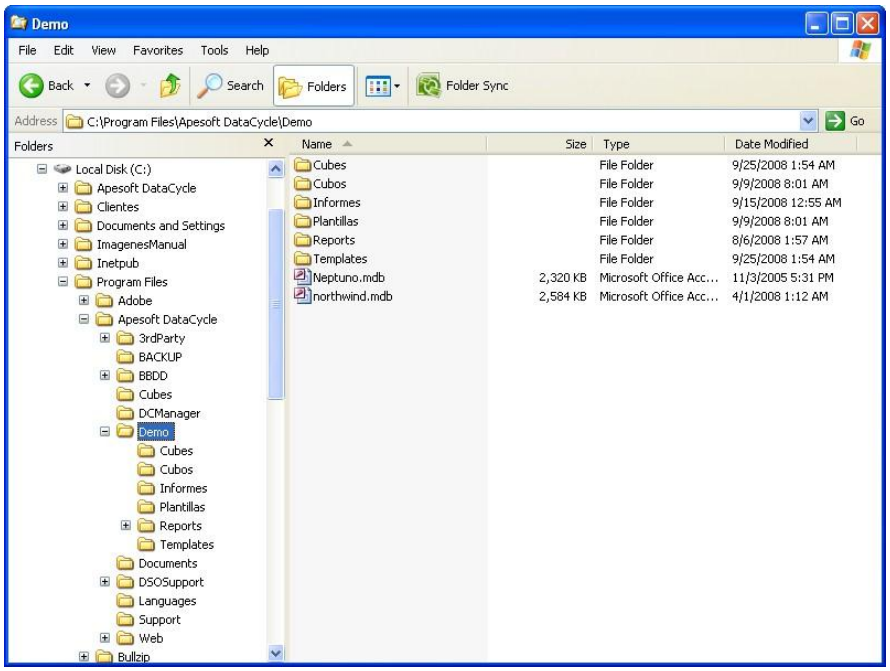
The DataCycle Reporting Administrator with which the queries and reports will be designed.

The DataCycle Reporting Server in charge of processing the reports in a scheduled manner.

In the case of a version update, you must accept insteller request to update the repositories in order to work with the new version.

Structure of the directories and files installed

Once the installation is completed, you will find the following standard structure of directories, which will vary if the default options in the installation process have been modified.



You should now be able to see that a DC-Reporting folder has been created in Program files directory which contains the program itself as well as the following directories:

- **Backup**. Will contains the backup copy of previous versions made during setup.
- **BBDD**. Access an SQL Server version of a sample database.
- **DC Manager**. Script to create a new repository in a new SQL Server database, and a tool to move data from an old Access repository to a new SQL Server one.
- **Demo**. Contains sample of reports, templates and database (simulated ERP)
- **Documents**: DataCycle Reporting guides (User, Reference and Installation)

The main files are:

- **DCServer.exe**. DataCycle Reporting Server
- **DCReporting.exe**. DataCycle Reporting Administrator
- **Install.log**. Contains the installation process trace

New version update

Very Important:

If you already have an earlier version of DataCycle Reporting installed in your company, and you are preparing to update the software you will have to consider the following steps:

- Before installing anything, you should perform a backup of all repositories you have worked with. By default these ar named reposit.mdb and dcdemo.mdb (Access), but them might have been renamed during installation process.

- If you have made changes in the Excel file templates that DataCycle Reporting installs, you should also make a backup copy of these templates since they will be replaced.

- You must do this both, on the client with the Administrator application, and on the server computers.

The installation process on the client and on the server is the same.

Once the update to the new software version is complete, you must update its repositories to the new version, and to do this you will have to change the repository that appears by default.

Let's take a look at the necessary steps:

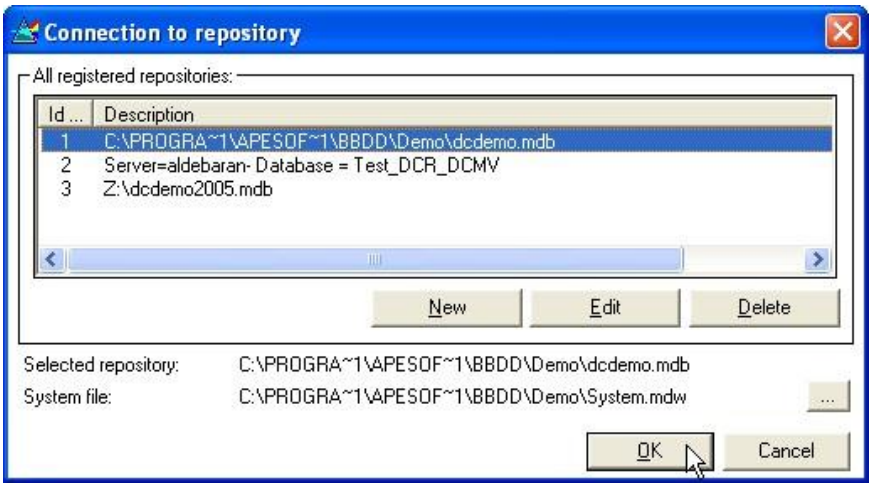
You may enter the DataCycle Reporting Administrator by double clicking on the following icon:

Important: DEMO version

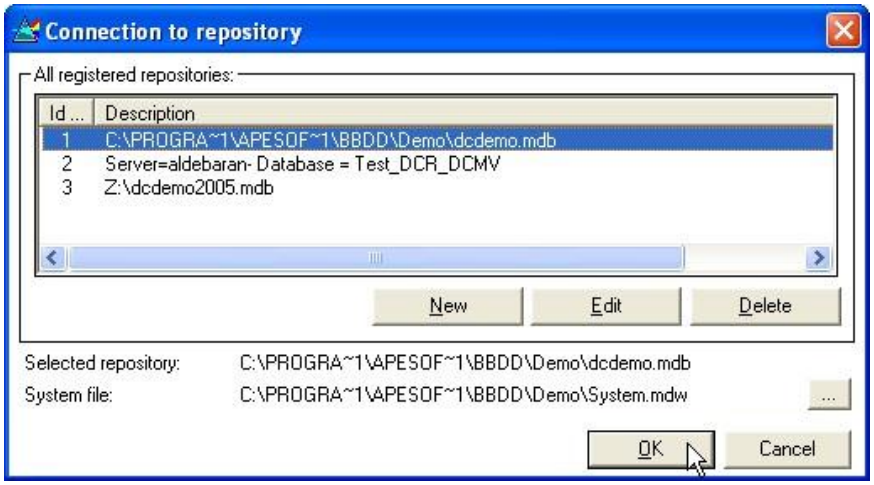
If you are using the DEMO version, a program warning screen will appear, indicating the number of days or executions remaining to evaluate the product. Press **OK** to start the program. Read "Licenses Management" chapter for more information, in the User Guide document.

The DataCycle login window will appear:

Click on  and the repository connection window will appear.



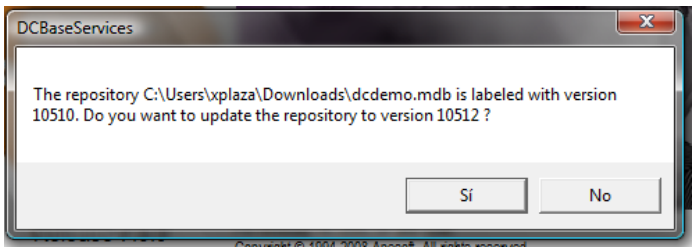
Select the repository that you want to work with. For Example:



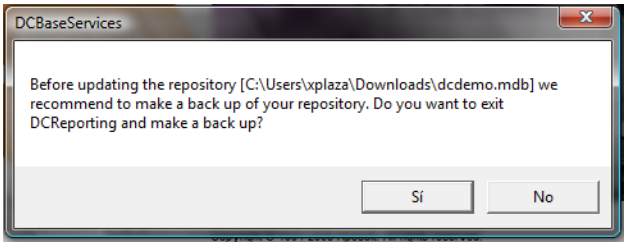
Note: Make sure that there are no applications (client or server) connected to the repository that you want to update.

Click [OK] to return to the login window.

Click [OK] to go to the next message (the versions will be different)



Click [Yes] to go to the next message



Note: If you are not sure that you have made a backup copy of the repository files click [Yes]

If you are completely sure that you have already made a backup copy of the repository, click [No] **to initiate the conversion process.**

A new window indicating your progress will appear.

Depending on the repository version and size, this process can go on for some time (normally less than 5min, but in some HW configurations, up to 10 minutes).

If everything is going well, the DataCycle Reporting window will appear.

SQL Server based repository

You can configure DataCycle Reporting so that the repository database, instead of being an Access.mdb file, resides on a SQL Server database.

There are some clear advantages to this:

- Better performance in a multi-user, client-server environment.
- More robust (Access databases are susceptible to corruption).
- Automated compacting.
- Online backup.

If you do not have a SQL Server and you do not wish to purchase a user license, you may choose to implement the repository in Microsoft Database Express (MSDE) which is a cost free alternative and also compatible with SQL Server.

Repository installation in SQL Server

Currently, the installation of the repository in a SQL Server, though manual, is a simple process. We have also developed a small wizard to move data from an old repository based on Access to a new repository based on SQL Server.

If you wish to perform a migration of your old repository to a SQL Server, please contact the support department and we will provide you with the steps to follow.

How to open DataCycle Reporting

The installation will leave two icons on your desktop:

This is the DataCycle Reporting Administrator with which you will design the queries and reports.

This is the DataCycle Reporting Server, and is in charge of processing the reports in an organized manner.

Let's open the DataCycle Reporting Administrator by double-clicking on the following icon

Important: DEMO Version

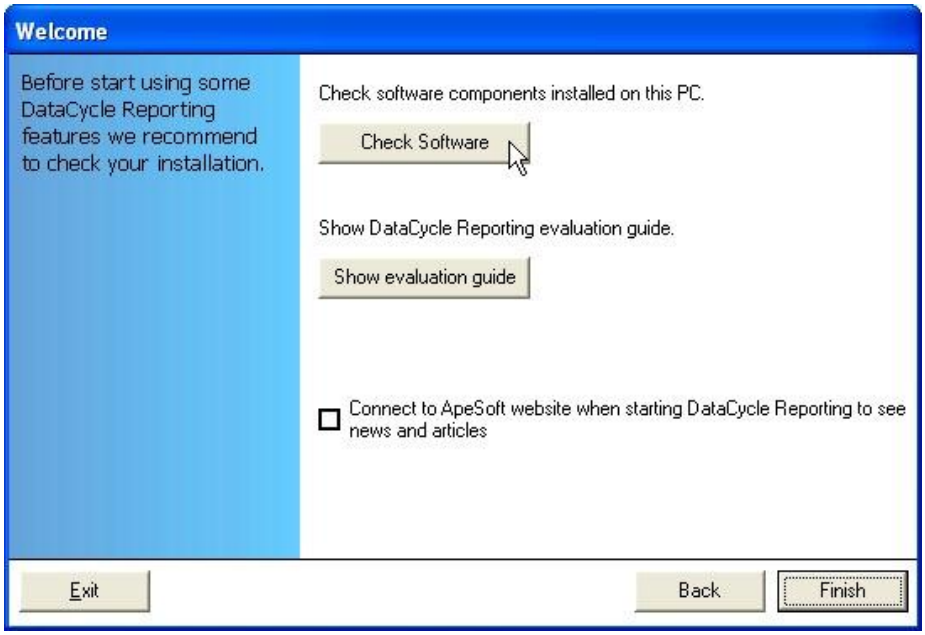
If you are using the DEMO version, at this point an automatic warning message indicating how much longer you have to evaluate the product will appear on your screen. Click the **Continue** button to execute the program

DataCycle will now display a login window requesting a username and password.

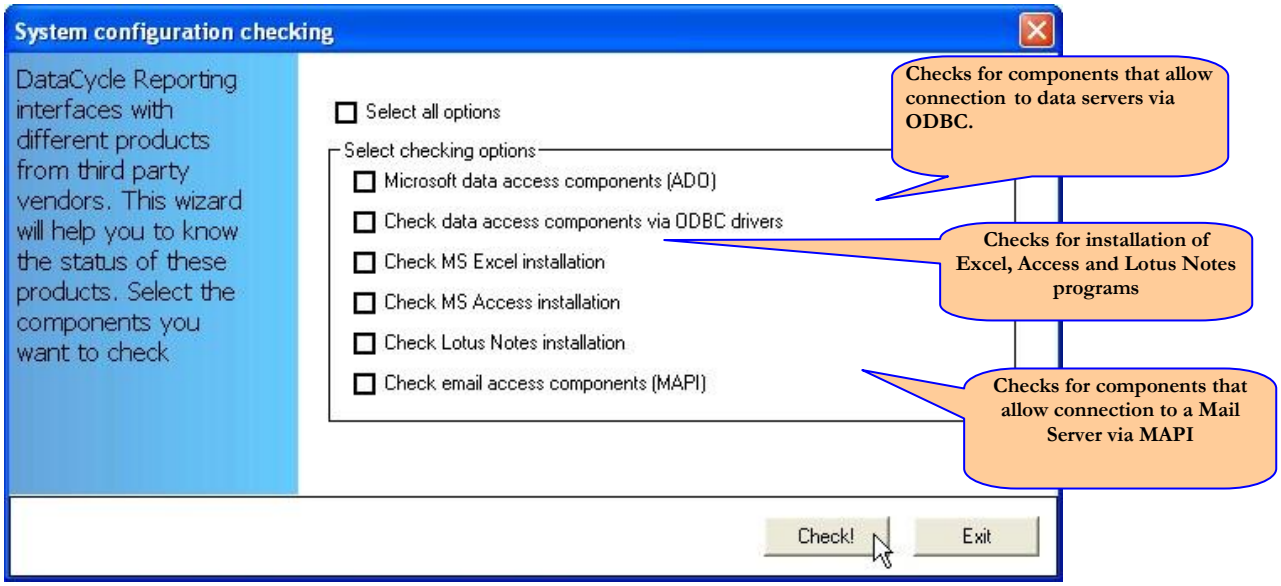
By default, the username **DCREPORTING** is provided by the system as well as the password (which initially will be the same as the username). Click Ok

The first time you open DataCycle Reporting, a welcome screen will appear informing you that the installation program will then check that all software components required for the evaluation are available on your system:

Click the Next button:



and Check Software:



Select the components to be checked and click 

A message with the results will appear on your screen.

DataCycle Reporting Server

Usually, no one knows the name of the person who does the dirty work in the company

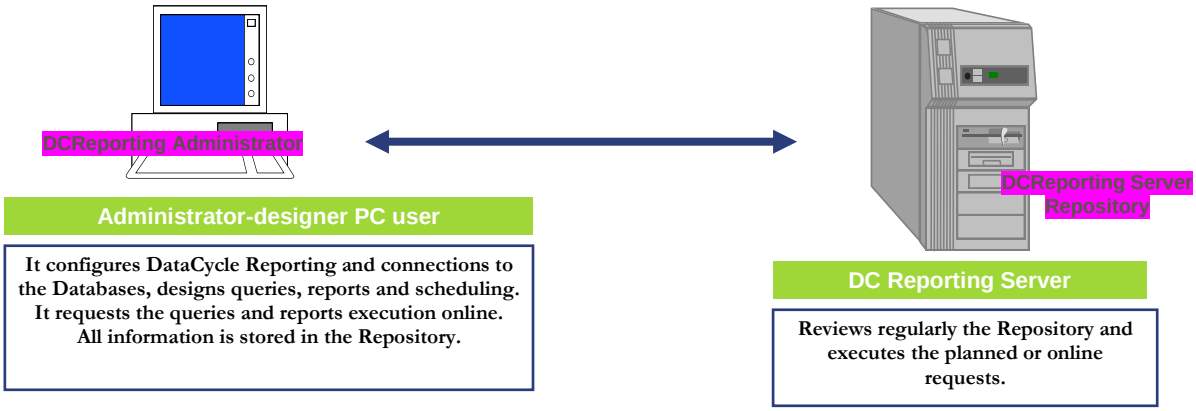
The DataCycle Reporting client application provides a graphical interface to the Server, which generates (processes) and serves reports. Thus, this administrative client facilitates the designer's interaction with the server. In a production environment, once beyond the period of training and testing, the client application and execution server must be installed on separate computers, as indicated in the Architecture chapter.

This chapter is organized as follows:

DataCycle Reporting Server functionality

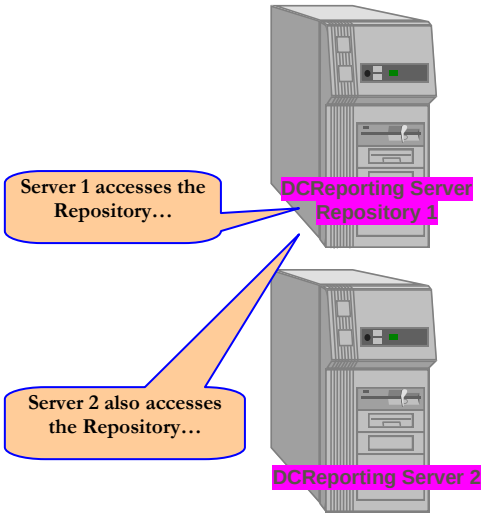
The DataCycle Reporting Server works in background mode executing queries and processing report requests.

All DataCycle Reporting application data is stored in the repository which represents the nexus of communication between the client and the server application.



The Server continously reviews the scheduling of existing tasks and executes them when the time comes. This schedule is stored in a file named Repository. The DataCycle Reporting Server should know in which repository the working tasks are found.
In a heavy workload environment there may be several DataCycle Reporting servers working at the same time and consulting the same Repository from two or more different machines.

Every single DataCycle Reporting server started must be identified in the repository. This combination allows optimizing the execution of concurrent processes for each DataCycle Reporting Server (DCServer.exe) because of the independent process execution queue management.



Repository

3:05	HR Report generation	Server 1
3:15	Warehouse Report generation	Server 1
3:15	Executive Report generation	Server 2
8:00	Branch A Sales Report generation	Server 1
8:00	Branch B Sales Report generation	Server 2

Note: The Repository can be installed in any computer that can be accessed by the de DataCycle Reporting Servers.

Note:

It is not possible to start more than one DCServer.exe to the same Repository in just one PC, but it is possible to start several DCServer.exe against different Repositories.

Installation of the DataCycle Reporting Server

The individual responsible of the DataCycle Reporting performance should choose the configuration for the installation. Refer to the Architecture chapter.

The DataCycle Reporting installation process will leave two icons in your desktop:

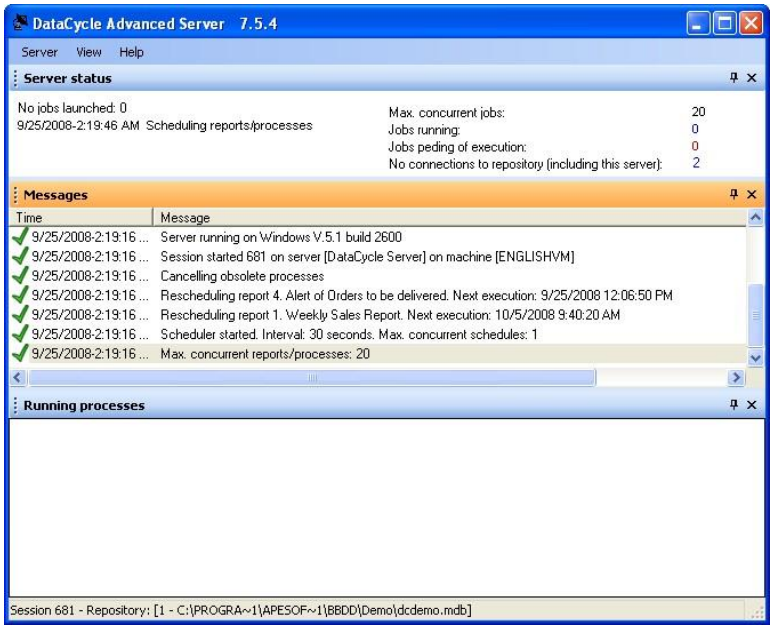
This is the DataCycle Reporting Administrator where the queries and reports will be designed.

This is the DataCycle Reporting Server responsible of processing the reports in an organized manner.

How to start the DataCycle Reporting Server

To start DataCycle Reporting Server, just double click on the following icon:

The server console will appeas showing the operations done each time:



In a real environment, this program will have to be included in the "Start" folder to ensure the automatic functioning when activating the server.

Note: The DataCycle Reporting Server will also show the number of users connected in a given moment with an update every 5 seconds.

Server Operations

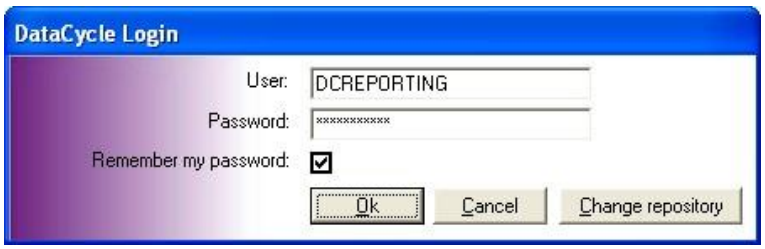
The DataCycle Reporting Server in a transparent manner for the user and the interaction with the user is minimal. Actually, the only operation possible is related to the working Repository.

Connection to the Repository

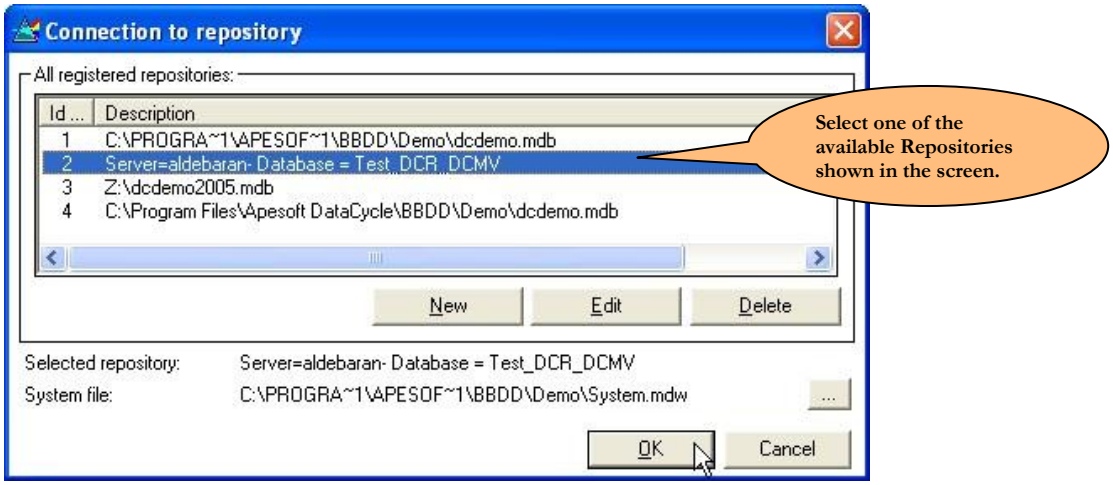
The DataCycle Reporting Server has to know in which repository the working requests are found. By default, it will take the last repository that the DataCycle Reporting has worked with.

Change to a different Repository

First you will close the activated DC Server. In order for the DC Server to connect to a different Repository the DataCycle Reporting client application has to be activated. Click the Change repository button in the log in screen:



A list of the activated Repositories will be shown in the screen.



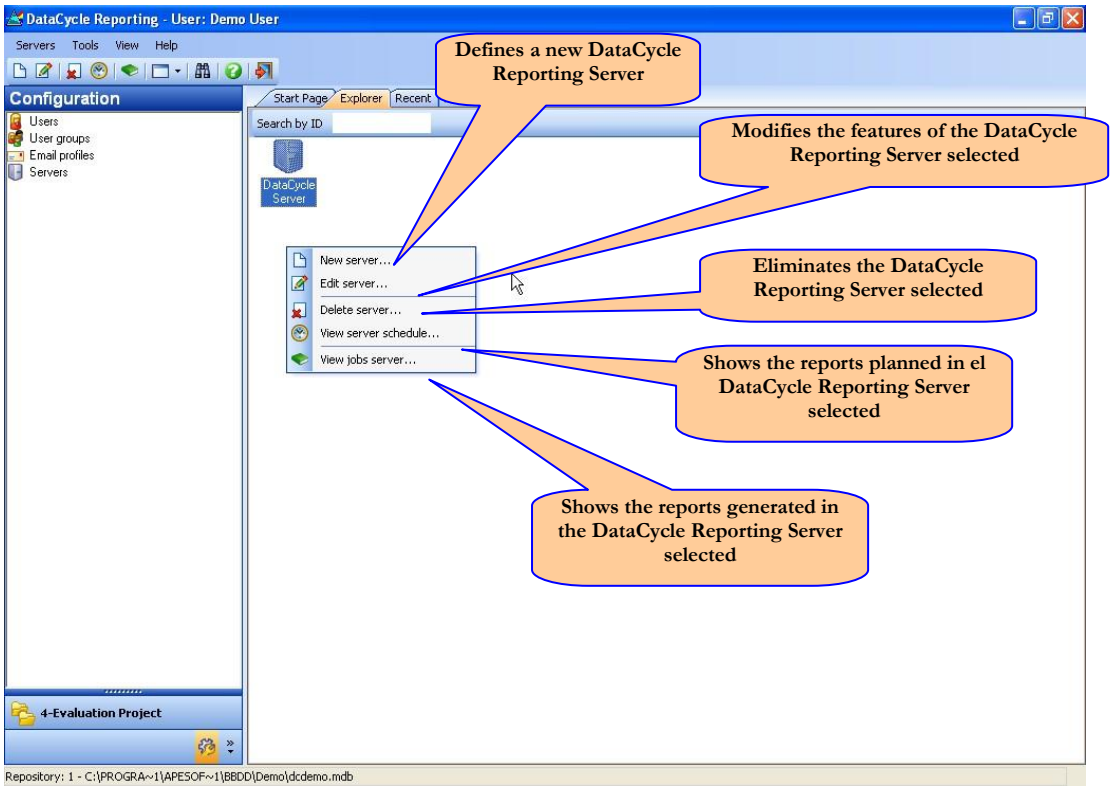
Select a different Repository, click OK and then click "Exit".

When reactivating the DC Server, it will show the new Repository selected.

Note: The DataCycle Reporting Server cannot create or eliminate a connection to a Repository. What it does is connecting to an existing one.

How to know which Servers are available?

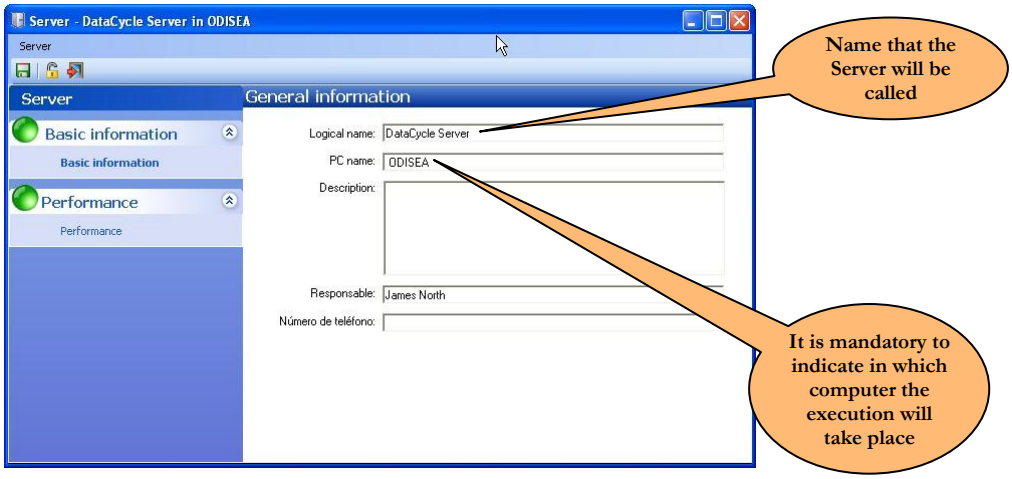
The query and report designer will decide in which Server they will be generating the reports and queries. Which DataCycle Reporting Servers are available has to be indicated ahead of time from the following menu:



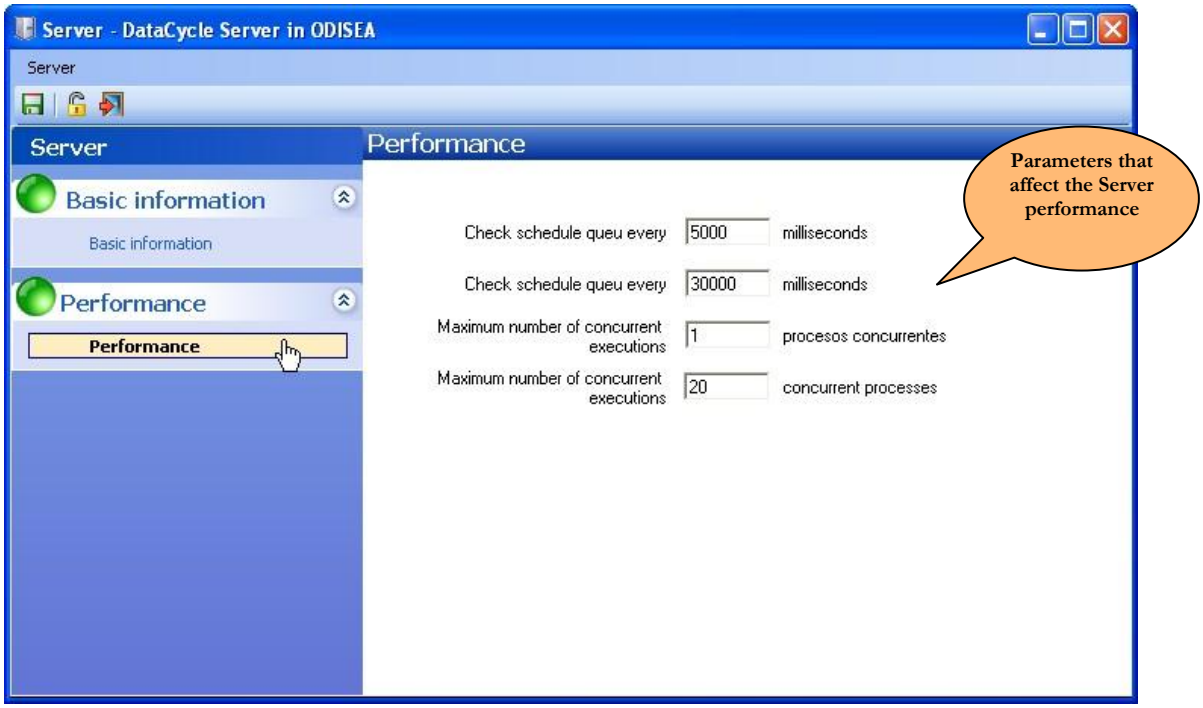
The configuration of the available Servers has to be done by an administrator that knows the architecture, performance needs and machine balance.

New DataCycle Reporting Server Registration

This is used to activate the registration of the DataCycle Reporting Server. This step is just to let the DataCycle Reporting know which server is available for the installation to be performed according to the Installation chapter. The screen is the following:

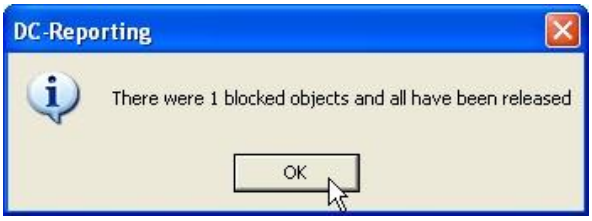


In the tab labeled "General" you will find the Server information date such as the logic name, computer name, description... It is **mandatory** to enter the name of the Computer.
In order to execute a certain number of recurrent processes, you will need to take into consideration the total maximum number of recurrent executions indicated in the tab called performance.



The  button allows unblocking a DC Server session that may have been blocked. This may occur when closing DCServer.exe application unexpectedly (power shortage, etc.)

If there is no blockage when pressing this button, a message will indicate so in your screen:



Editing the Configuration of the DataCycle Reporting Server

This allows changing the configuration of one of the activated Servers.

The screen and attributes are the same as in the Registration chapter.

Deleting a DataCycle Reporting Server

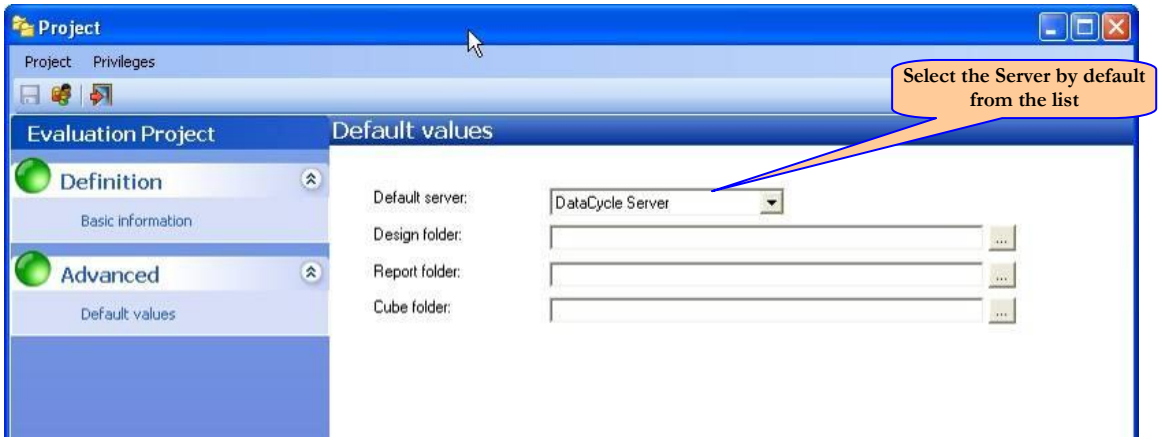
This will eliminate the registrations of the selected DataCycle Reporting Server.

Note: This will not be effective when the Server is used from a Project, so verification needs to be done before then.

How to determine which Server will be used?

Once the existing DataCycle Reporting Servers are configured, the designer or individual executing the processes has to indicate in which Servers the processes will be executed. The following possibilities are available:

- **To indicate to the DataCycle Reporting Server where the project queries and processes will be executed by default:**

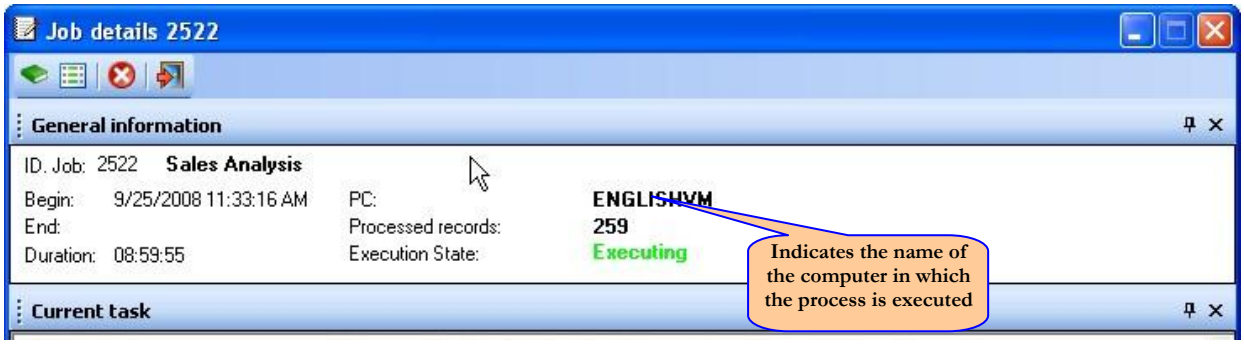


- **To indicate the Server in which process will be executed. The names of the activated servers will appear.**

Note:

If you do not wish to specify the server where the process will be executed, you can select the option **<Any>** and the first server that receives the order will be the one executing the process.

When executing the process, DataCycle Reporting will display the following screen indicating the server that is being used:



Execution mode

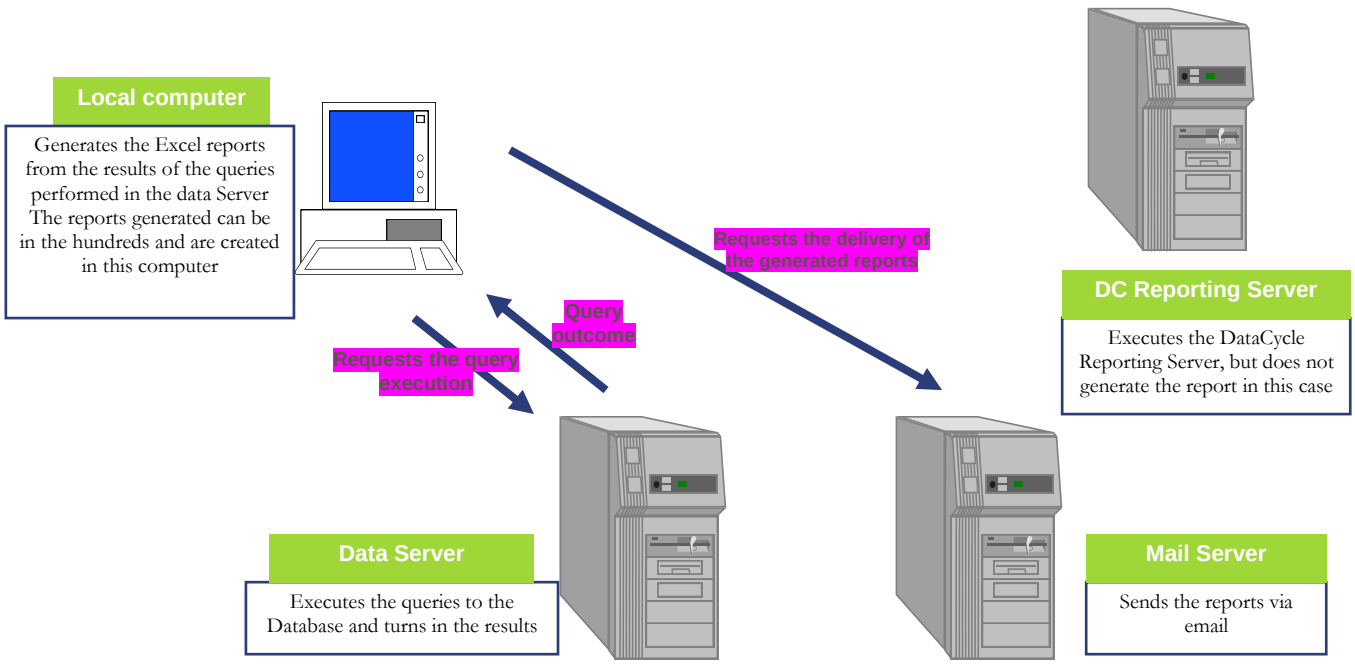
In order to identify which operations are performed in the local computer and which are in the server, it is necessary to know the inner workings of DataCycle Reporting. This way you can choose what method of execution is more convenient in each case.

Refer to the following subjects:

- Local mode
- Server mode
- Where to execute the process?
- Test mode

Local mode

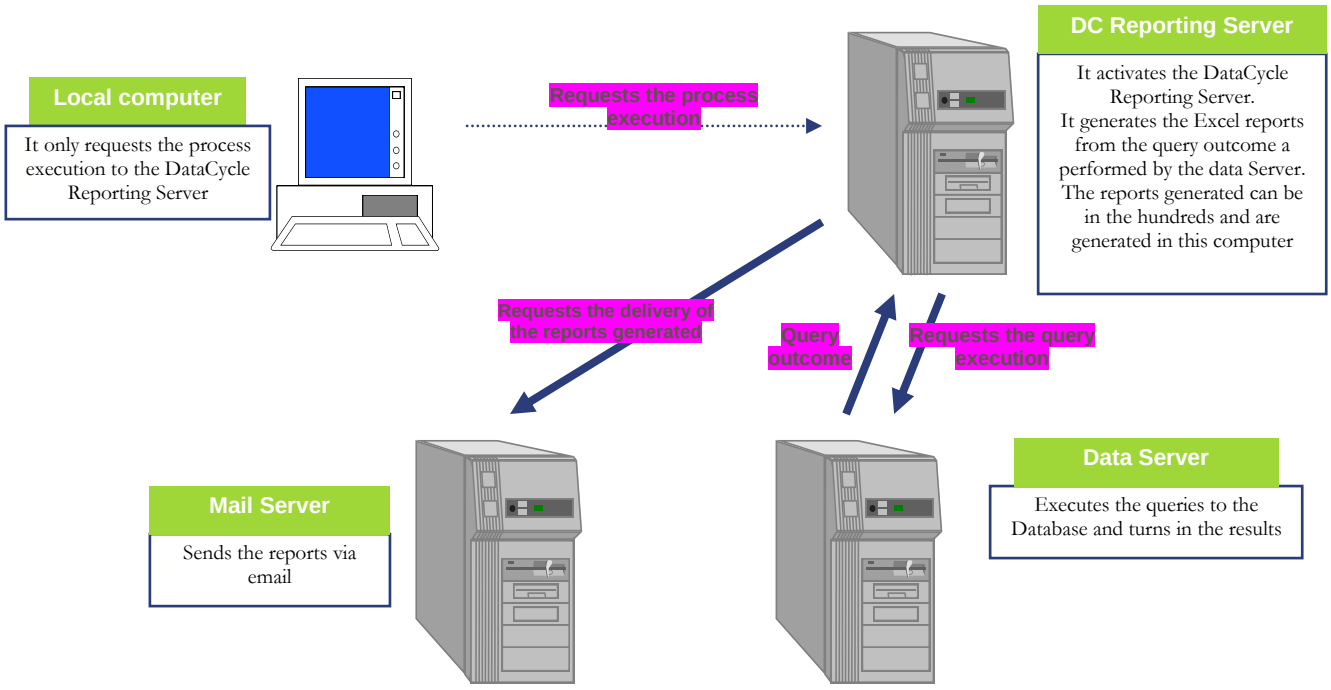
In this case, in which computer the DataCycle Reporting Server is working is not relevant. Communication with the Data Server and Mail is resolved locally and the creation of reports takes place in the computer itself.



Note: DataCycle Reporting has to constantly check with the Repository. This can happen in a different Computer, usually in the one where the DataCycle Reporting Server is installed, so it does not imply more workload.

Server mode

In this case the DataCycle Reporting Server is the one that communicates with the Data and Mail Servers and the one creating the reports.



Where to execute the process?

The execution of the DataCycle Reporting process, meaning the creation of the Excel reports with the results from the SQL query, can be done in a local computer or in a server. It may not be relevant when the reports are small and for one person, but it can be important when the Excel report is more complex or many reports are required.

During the test and design process, it is advised to execute the process in the local computer: it is faster and you will not depend on the network.

Once the process is validated and already in a production environment, the users will be able to execute the process in the local computer or in the chosen Server. The decision will depend on:

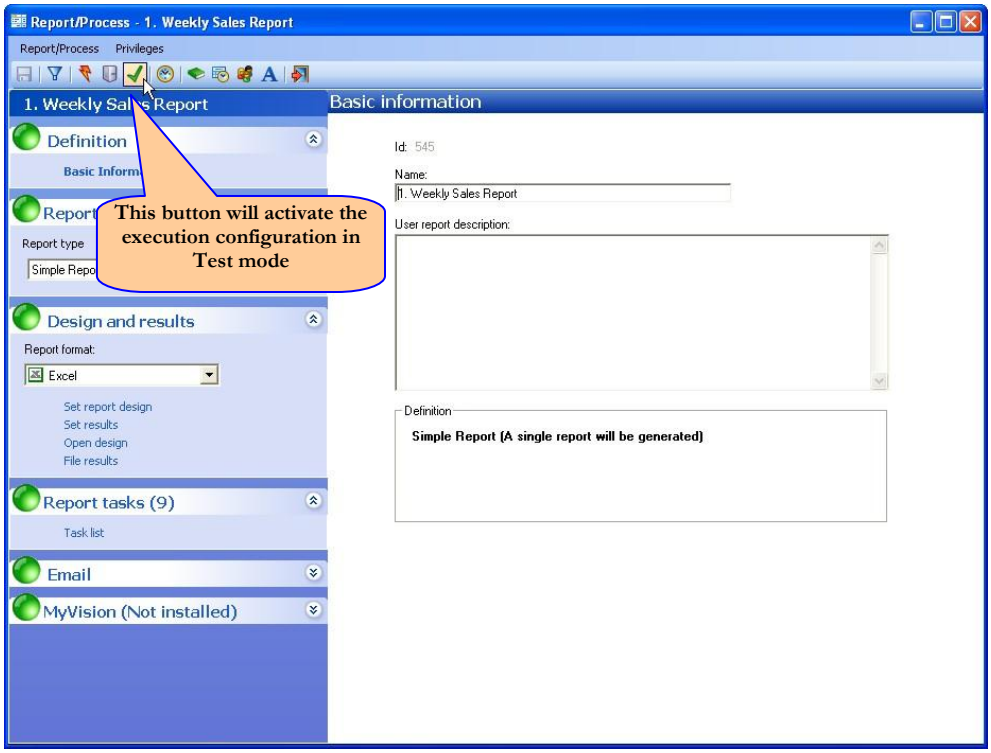
The power of your computer	If your computer has little power, it is advised to execute the process in the Server
The power of the computer where DataCycle Reporting Server is found	If the computer working with the DataCycle Reporting Server is overloaded, it is advised not to overpress it.
Process type	If you are in a testing period, it is advised to use the local execution an if the process is already in production, then it is advised to execute in the server.

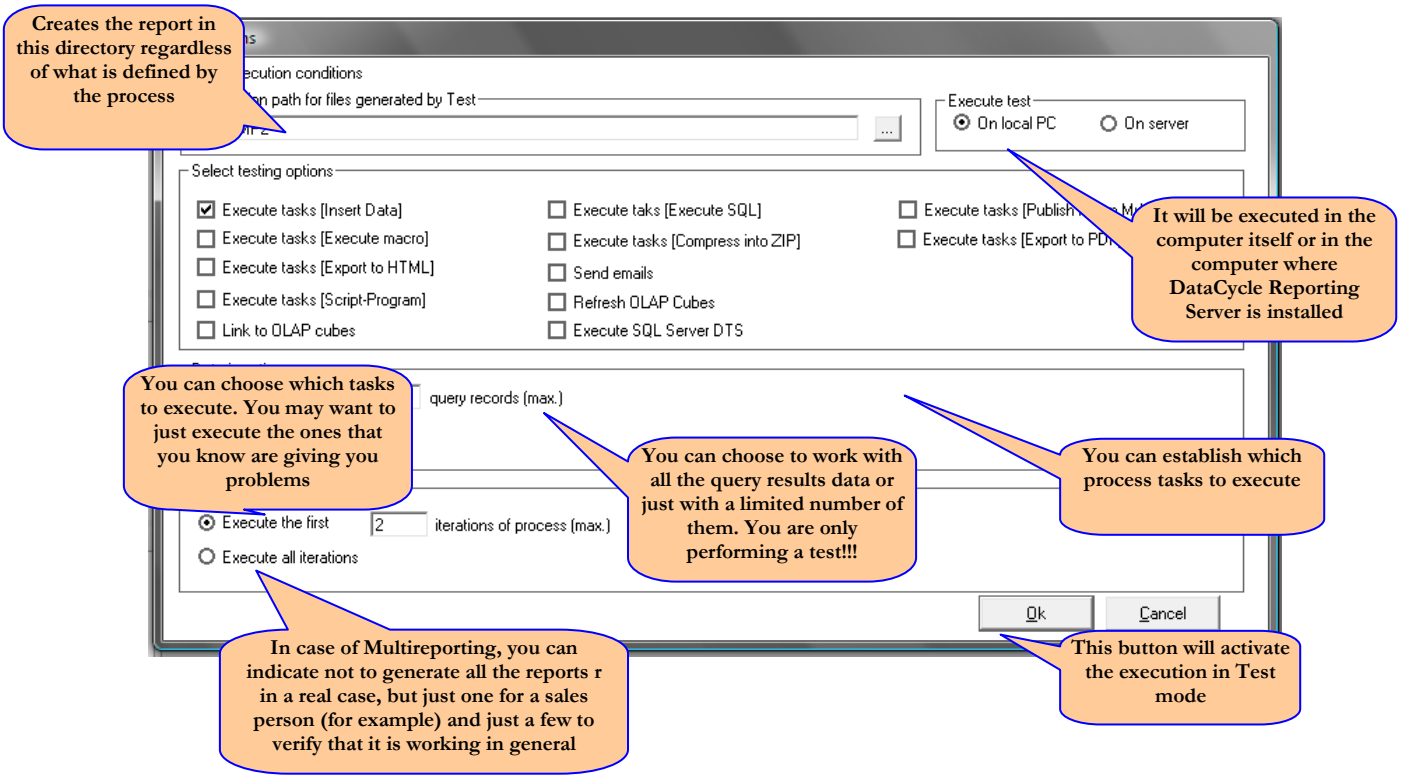
All these indications are only valid when running a process manually. In cases of scheduled queries and processes execution, you will not be able to choose. In the first case, you will always execute from the local computer and in the second, always in the Server selected when configuring the schedule.

Test mode

During testing and design periods you can execute the process in a test mode.

In this mode, you can modify the way in which the process will be executed by canceling the predetermined values to make the execution more practical when testing.





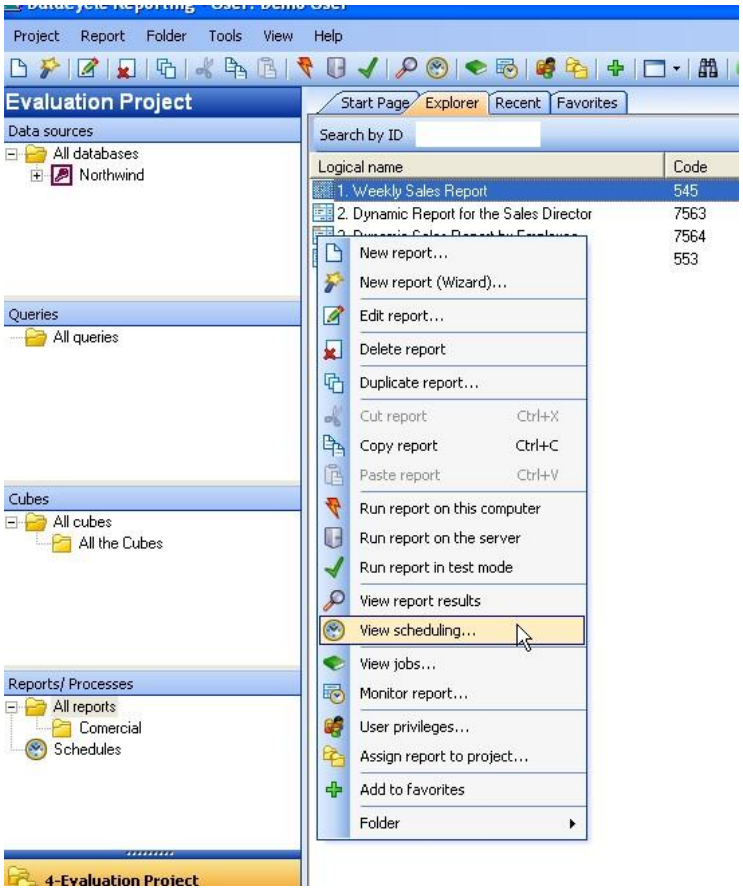
What is the Server doing?

Several programs provide the information of the status of the DataCycle Server and which operations are being run will be run:

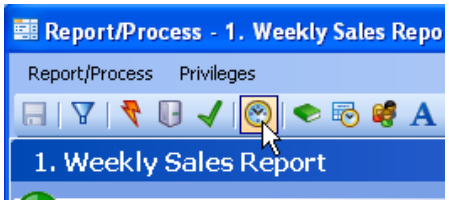
- View scheduling
- See jobs
- Monitor all servers
- See historical messages in the server

View scheduling

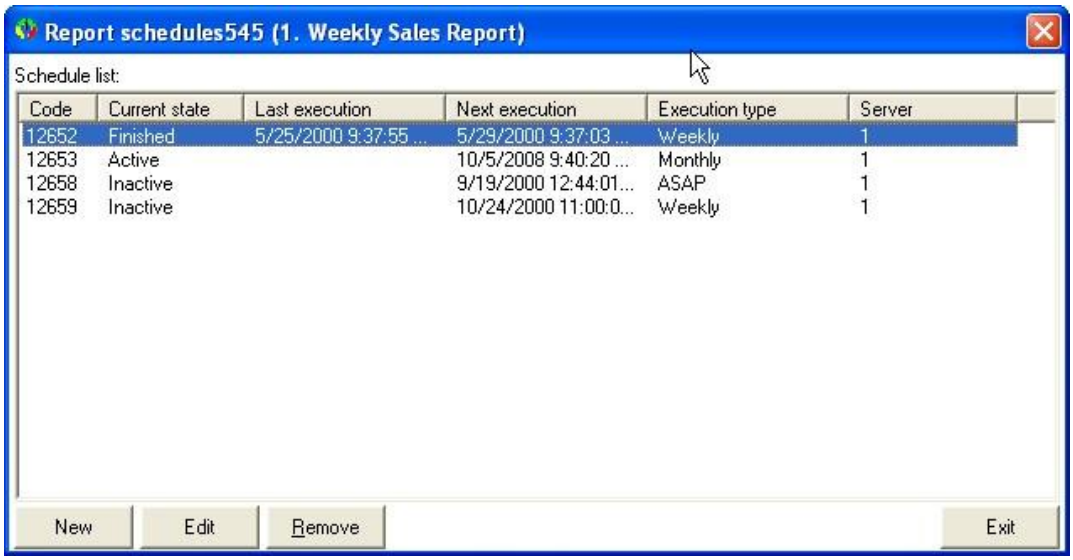
You can see the existing scheduled processes by accessing to the process menu.



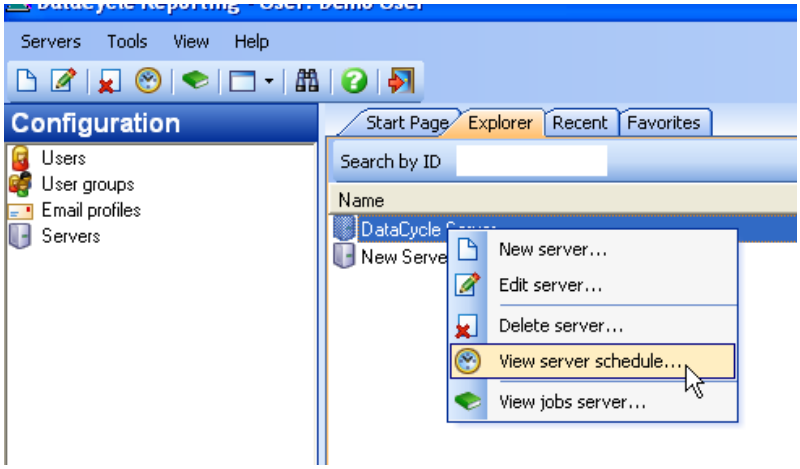
Or from the process definition window itself:



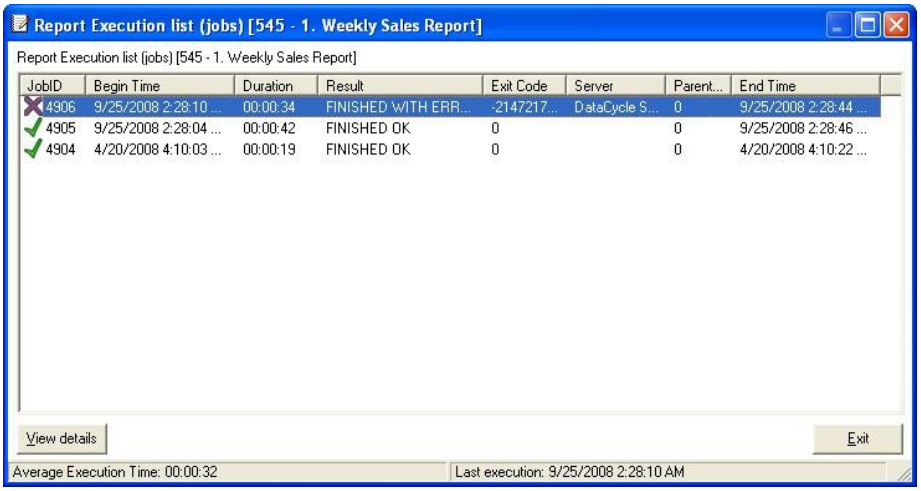
You will see the planned executions:



If you just want to see the scheduled processes that are planned in on server, you can execute it from the server profile's context menu:

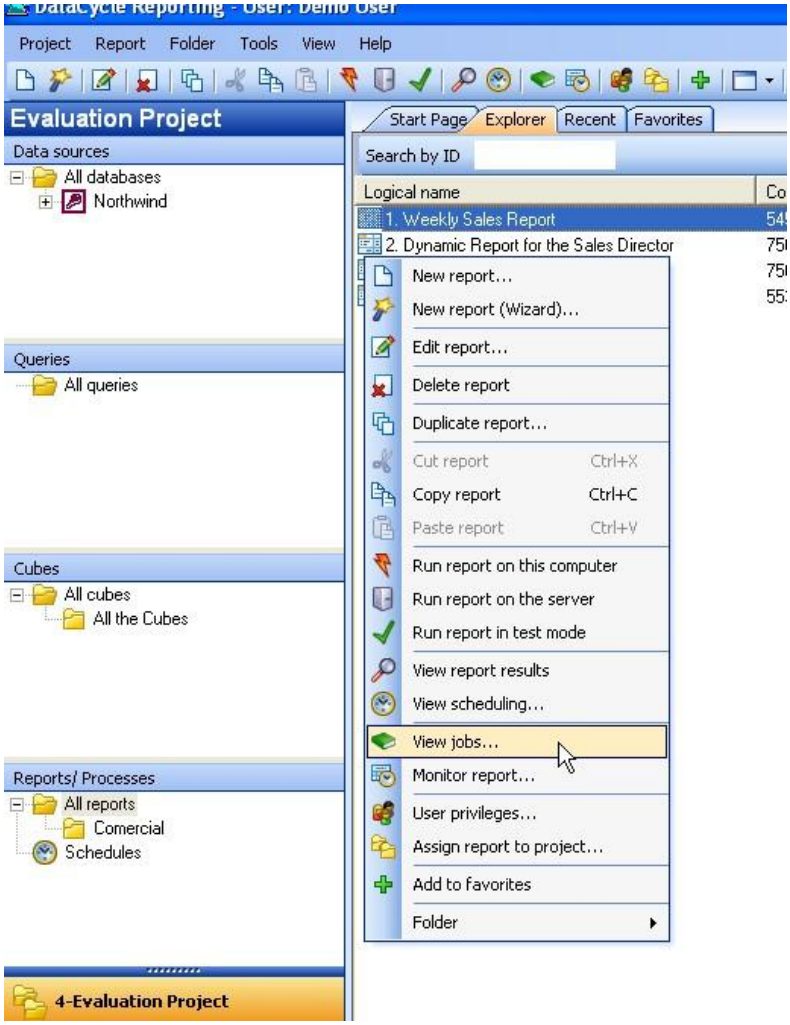


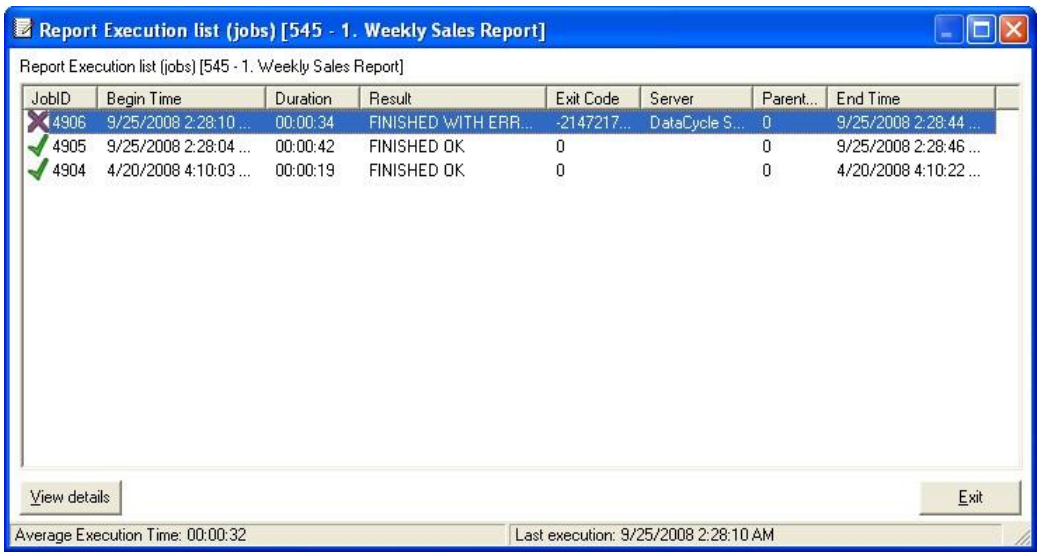
You will see all the processes that are planned to be executed in the selected server:



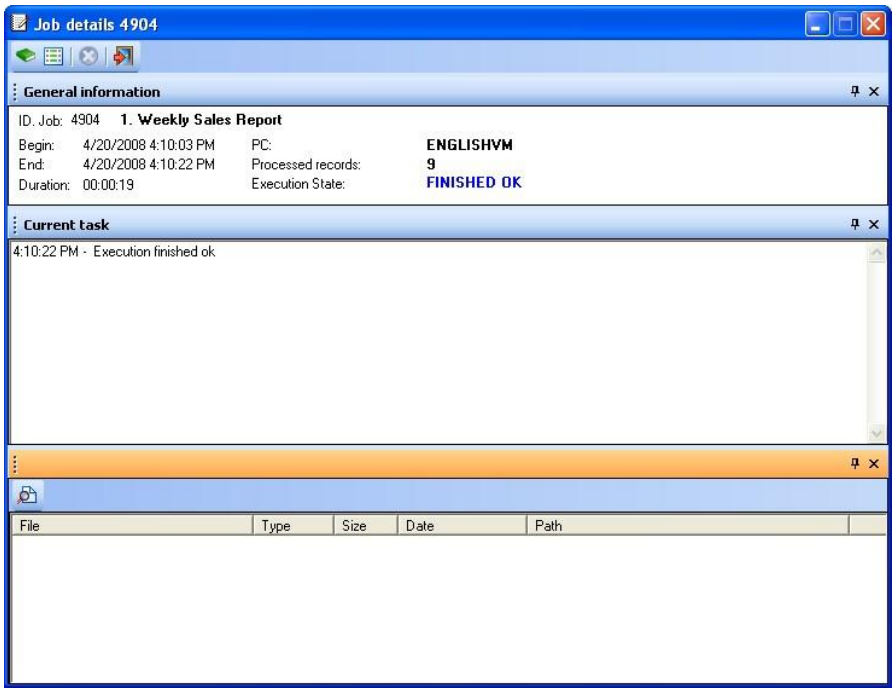
See jobs

You can inquire how the process execution went. DataCycle records all the tasks, instructions and detail of each execution. Once a process is selected, you can access the list of process executions through the contextual menu.





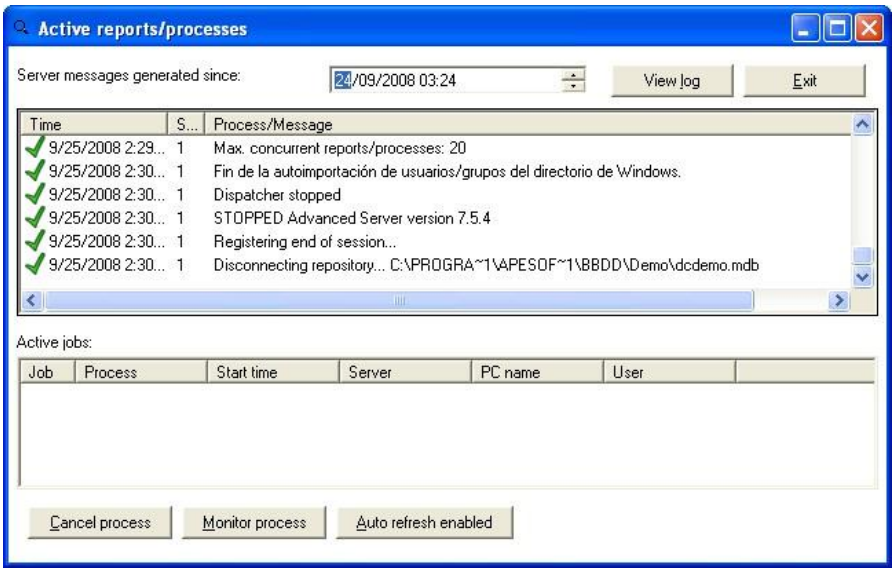
Double click on the process execution you want to inquire about. The same screen as shown during the process execution will appear.



Note: In order to improve performance and save more space, it is advised to delete the old jobs information as a good maintenance practice. Refer to Maintenance of the General Configuration

Monitor all Servers

You can check all the processes that are actually being executed in the servers from the option *Monitor all Servers* in the *Process* menu from the tools' bar, or from the option *Monitor all Servers* in the context menu of the server profile.

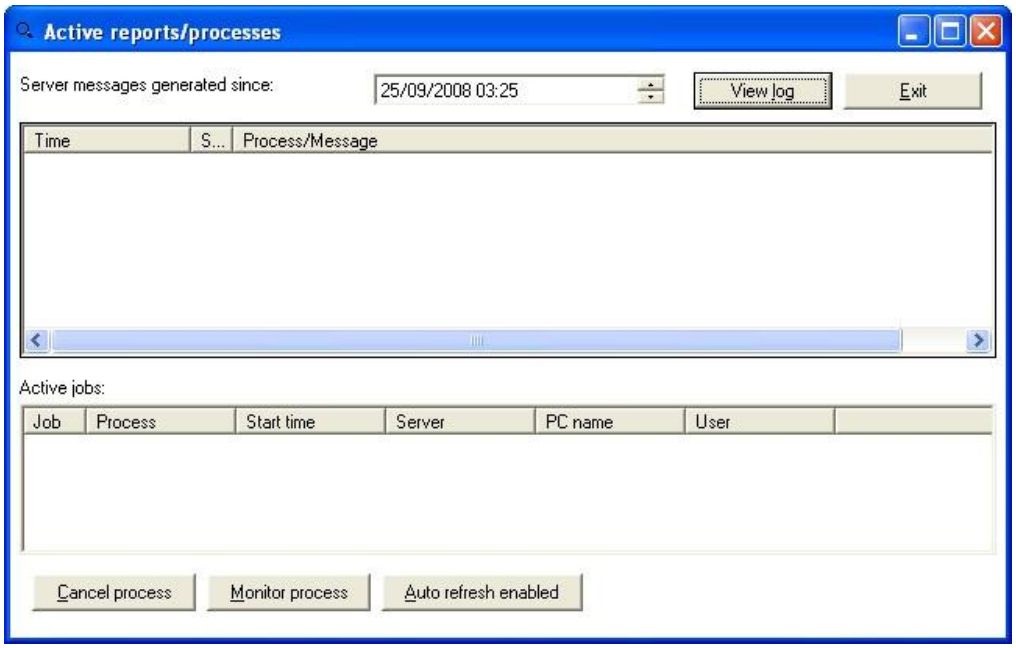


Note: You can also monitor a process with the option *Monitor* located in the *Processes menu.*

See historical messages in the server

First click on the option "monitor all servers" located in the application main menu.

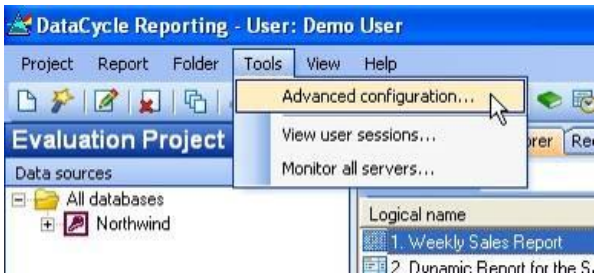
There is a button called "see log" in the "Monitor all servers' Window, that allows you to see the historical messages of the DC Server from a specific date. Just change the date and select a previous one from the current one and click View log.



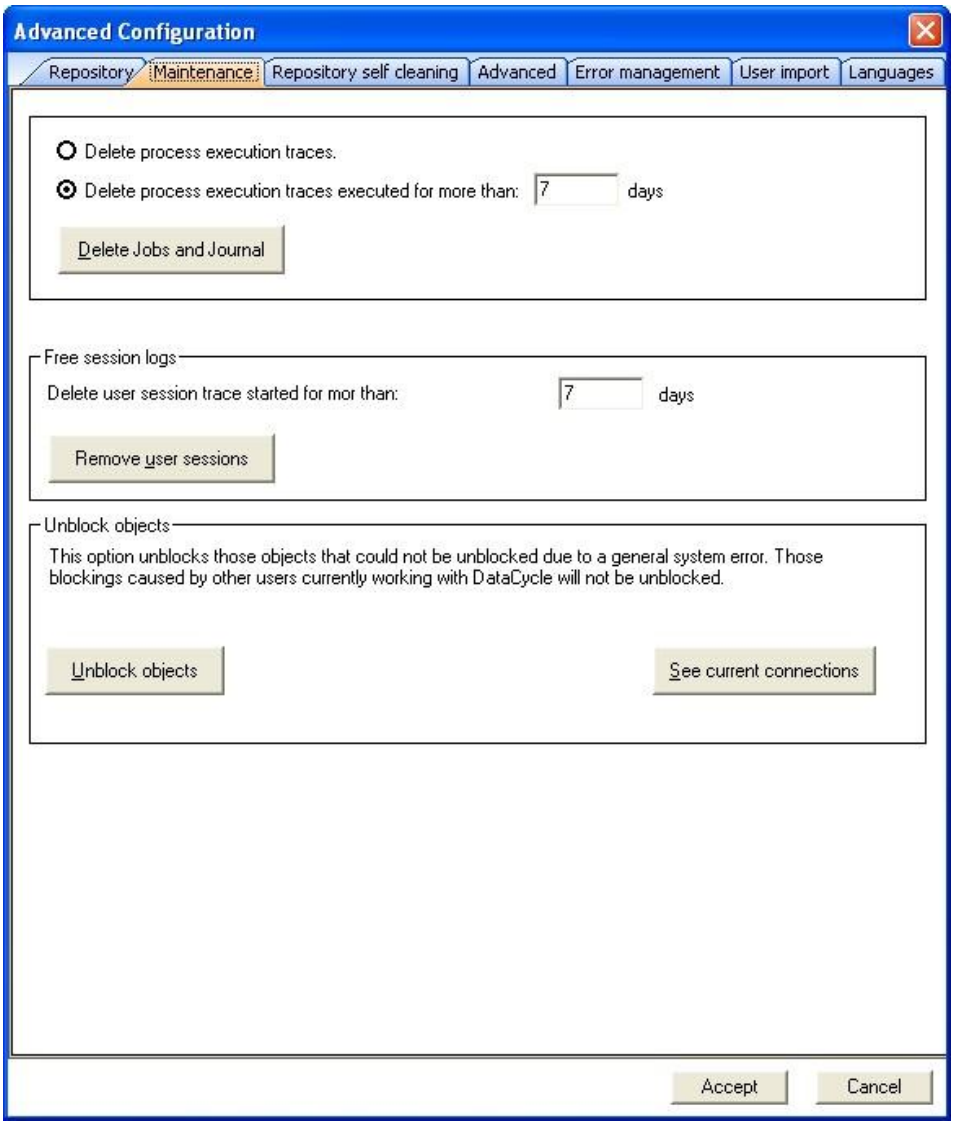
Access Repository Auto maintenance

Two of the most sensitive manual tasks consist on eliminating the traces of process execution and compacting the repository database. There is a feature that allows this task to be done automatically by the DataCycle Reporting Server itself.

The repository compacting parameters configuration is defined at the Repository level, due to the option to be able to define several DC Servers and it can be accessed by clicking the option "advanced configuration" from the menu "tools".



The parameters can be found in the "Repository auto maintenance" tab.



If the option "Enable **Repository** automatic compactation" is activated, the compacting process will be done daily at the indicated time. Apart from eliminating the older trace from the latest days, this option will also generate a backup copy of the Repository in the directory that we specify.

Note: Some backup programs cannot save databases that are being in use. In this case, it is recommended to make a backup copy of the file generated during the automatic maintenance process of the Repository.

Important:

It is recommended to program this process at a time when no users are connected to the DataCycle Repository. Before initiating this maintenance process, the DataCycle server will verify that there are no users connected to the Repository.

Security; user management

Except for the Administrator, everyone is innocent until the contrary is demonstrated.

One of the major worries in any corporation is confidentiality and access security to the corporate data. In most cases, this data is considered as one of the most valuable assets in the company with restrictive access and controlled exploitation.

DataCycle Reporting includes several features to ensure the right access for each user.

Initially, DataCycle Reporting is installed with a user called DCREPORTING which belongs to the users group called USERS. This user does not have restrictions to access data nor to access the DataCycle Reporting functionalities.

When an individual enters the program for the first time, this user appears by default with a password already set and saved so that the individual can enter without any problems during the testing period.

Note: If you wish to have an effective and real security control, it is recommended to modify the user's password of once the program starts production.

Refer to the following subjects:

- **User roles**
- **Users**
- **Privilege Management Methods**
- **User groups**

From the standpoint of running DataCycle Reporting, we can identify the following types of users or roles:

- **DataCycle Reporting Administrator**

  Individual with strong computer skills for administrative tasks.

  They will choose the best configuration for the installation of the DataCycle Reporting application.

  They also know the databases, users, profiles, and needs,

	as well as the security protocols to follow.
• **Query designer**	Users with knowledge of SQL, database management, and data the recipient needs to use for reports. Usually correspond with the DataCycle Reporting Administrator.
• **Report and process designer**	The author of the process. Designs and formats the reports.
• **Process execution (Agent)**	The person who call the process and receiver of the generated report.
• **Report receiver**	The user who needs the information contained in the report whatever its format (Excel spreadsheet, Access database or HTML/PDF documents) No knowledge of the tools is required.

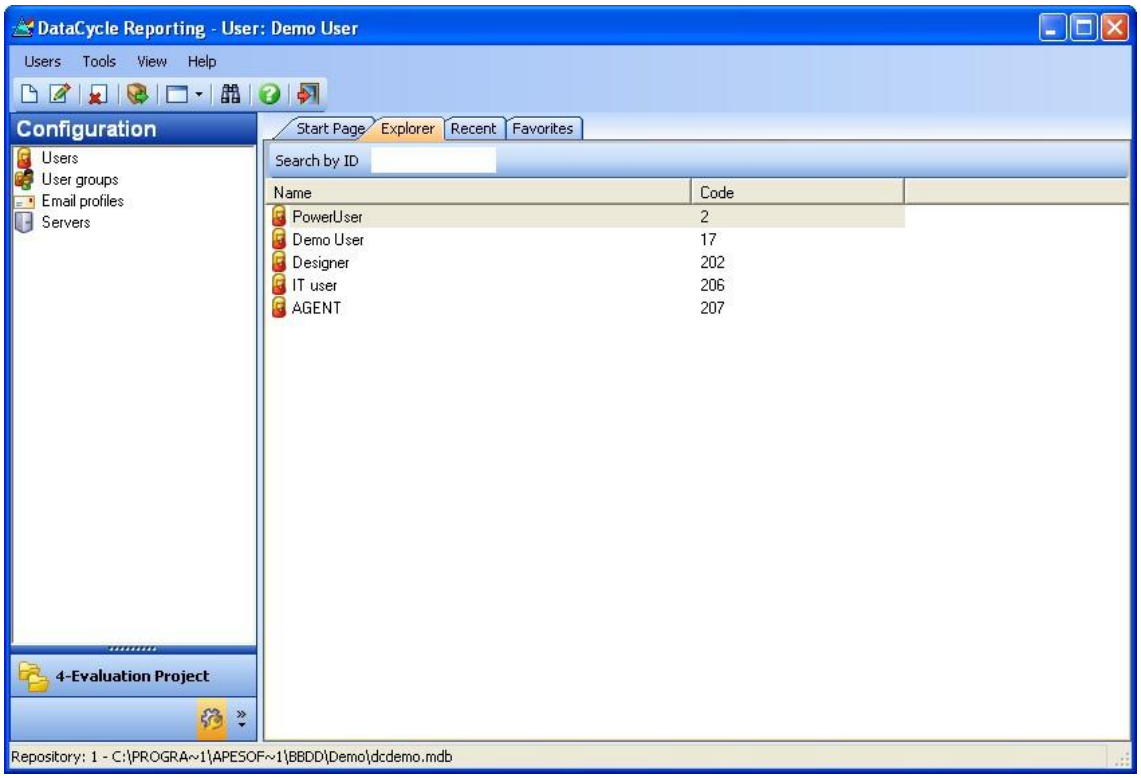
The DataCycle Reporting Administrator will have to create the profiles and users needed for the correct performance: Administrator, Designer, and Agent.

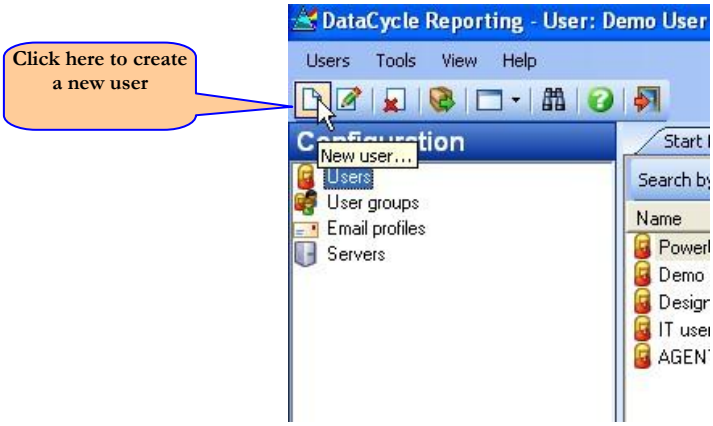
The license type for DataCycle Reporting distribution corresponds to each of these user types.

Users

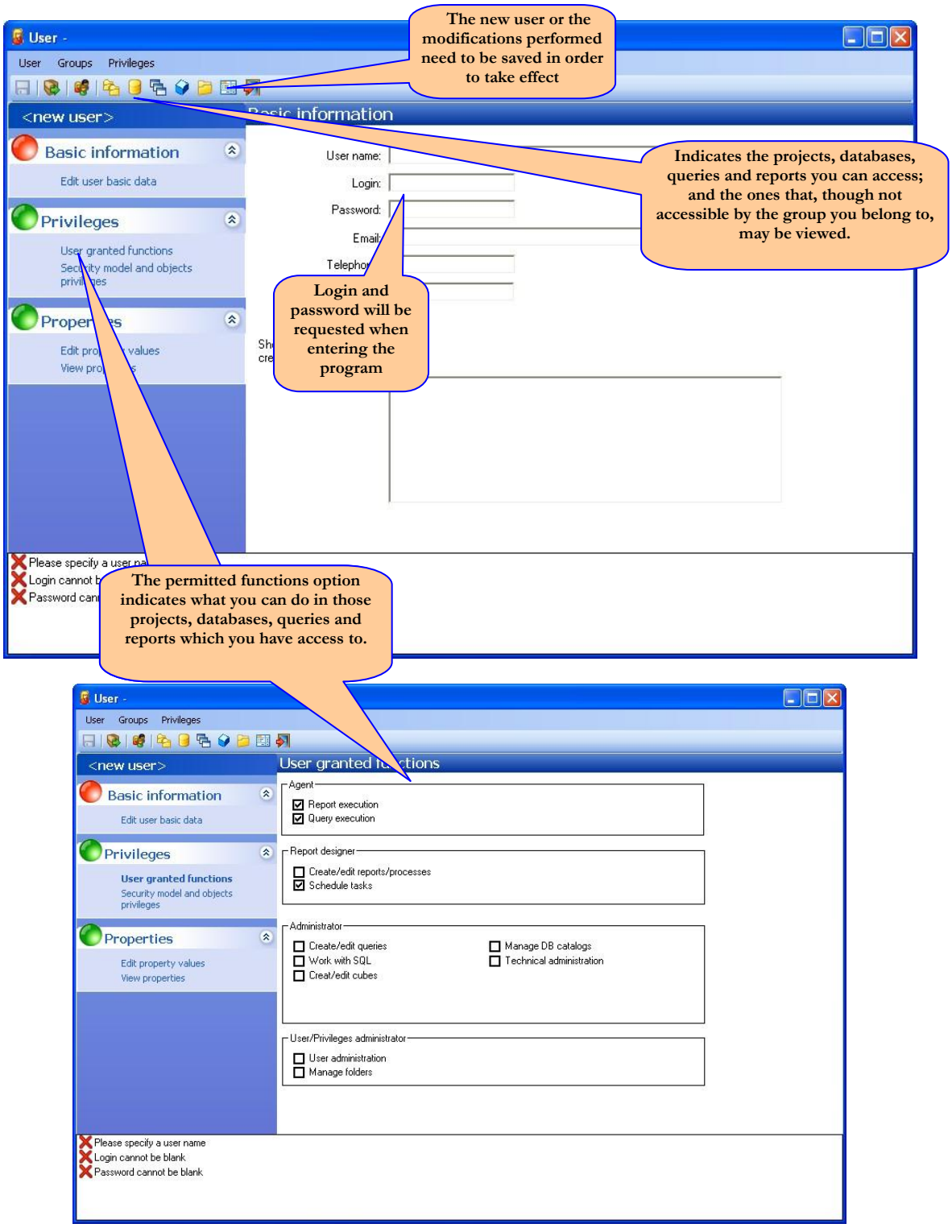
When entering the program, you have to select the user to be able to determine which projects, queries, reports, data and privileges that user has, according to the group that belongs to and the kind of access that has been predefined for that user or group.

The management of users and user groups is made from the configuration menu.

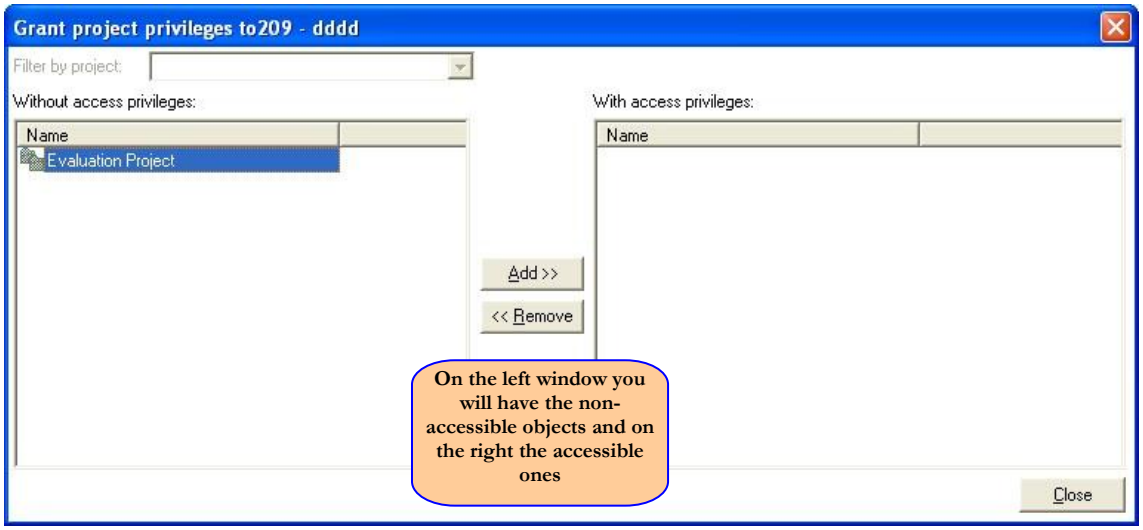




The window to define the user is the following:



In order to specify the access rights you would like the user to have, choose from the icons in the tools bar and indicate to which projects, databases, queries, and/or to reports the user will have access to:



Note: Visible objects can be defined at user or user group level. The visibility of the user is defined by the union of the group types of objects.

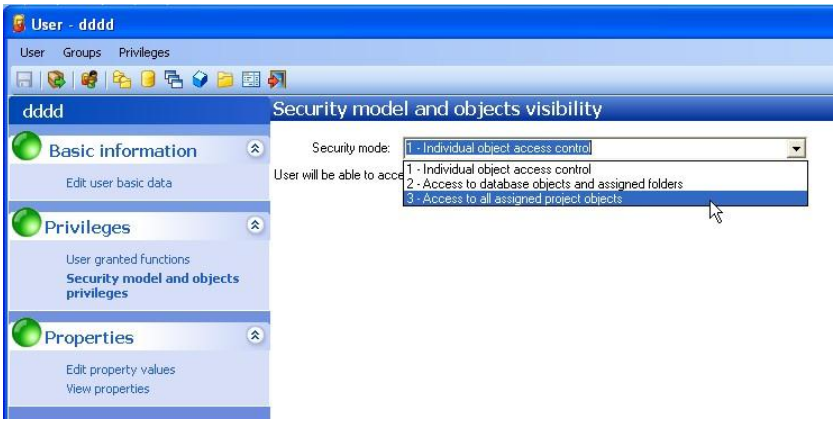
Once changes are made, you must click save for them to take effect. When updating the exploration tree (F5 button), you will be able to visualize projects, databases, queries and reports and it will depend on the new configuration to determine the their new functionalities.

Security model management

You can assign a different privilege model to each user from the following 3 available:

1- Individual access control for each object.
2- Access to the objects of the databases and files assigned.
3- Access to all objects of the projects assigned.

The security model is assigned from the permission tab in the user profile.



The decision to assign one particular model to each user will depend on the responsibility, competence, confidentiality, number of users, and complexity of the reporting environment.

Let's take a look at each method:

1. Individual access control for each object

The user configured for this method will only see the objects for which he/she has been assigned (individually or to the group the user belongs to) specific privileges.

This method is suitable for users that require access to very few processes or very specific queries.

2. Access to the objects of databases and files assigned

This method simplifies the assignment of privileges and it also saves having to assign privileges for each report and/or query. Instead, it is only necessary to allocate privileges on databases and folders. Users set up under this procedure may have access to all processes assigned to the folders that have privileges for and all queries belonging to an accessible database and that at the same time are assigned to a folder for which the user has explicit permission.

In other words, a process will be visible to the user if this process belongs to a folder assigned to the user or to a group of users. A query will be visible to the user if such query belongs to a database assigned to the user (or groups), while assigned to a folder that the user (or groups) has explicit privileges.

This method is recommended for users who only operate in some areas of the company (finance, trade, charges, etc).

3. Access to all objects of the projects assigned

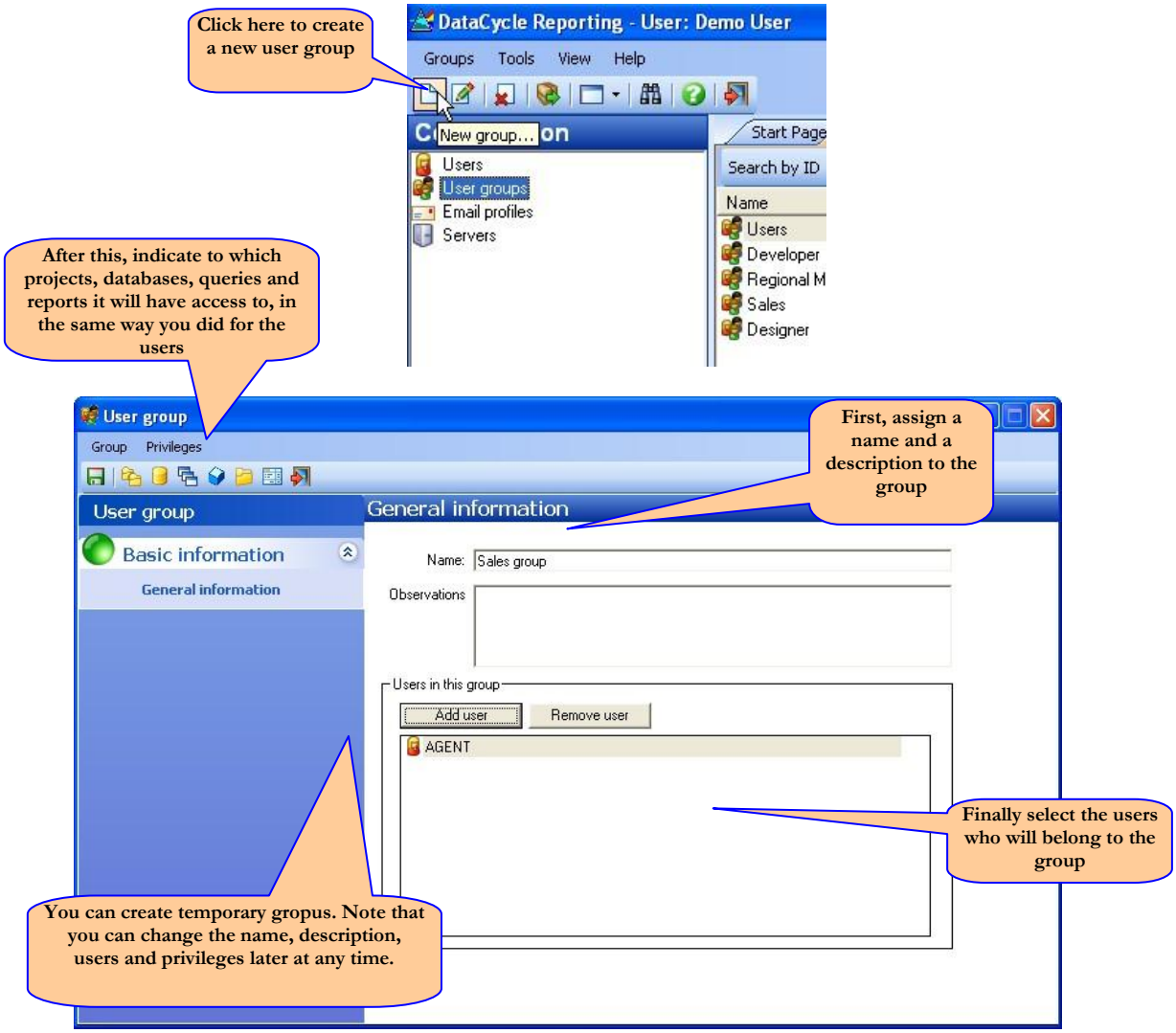
When you set this mode, the user has access to all the objects (databases, queries and reports) of the projects assigned directly to him or any of the user groups the user belongs to.

It is the simplest form to manage privileges, ideal for project managers, administrators, etc...

Note: that this method requires assigning privileges only on the project.

User Groups

If the needs of a group of users follow the same pattern, it may be interesting to create a user group with specific access and afterwards indicate which users belong to the group and therefore have the restrictions outlined for the group.



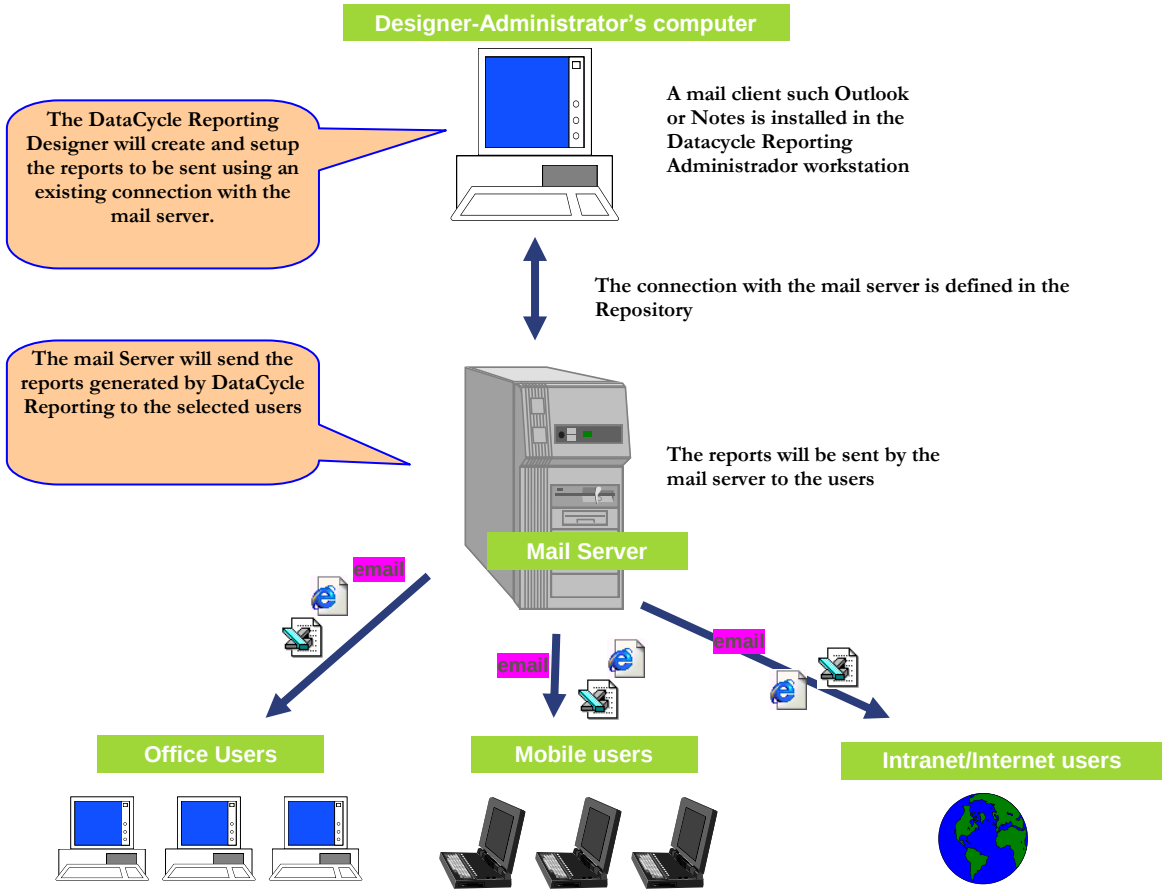
Note: In a group of users, only the objects that the group has access to are indicated, but not the type: design, execution… Those can be defined thru the users menu.

Report Distribution via Email

If no one knows what you have done, it means you have done nothing

One of the characteristics and major advantages of DataCycle Reporting is its ability to distribute generated reports to multiple individuals (mass distribution).

Usually, this distribution will be via e-mail to each user with a customized report. You can also make a Lotus Notes document database that can be checked any time later.



Refer to the following subjects:

- **Configuration**

  Creating an email profile

  Modifying an email profile

  Eliminating an email profile

- **Sending Email**

  Classifying Messages

- **Final results**

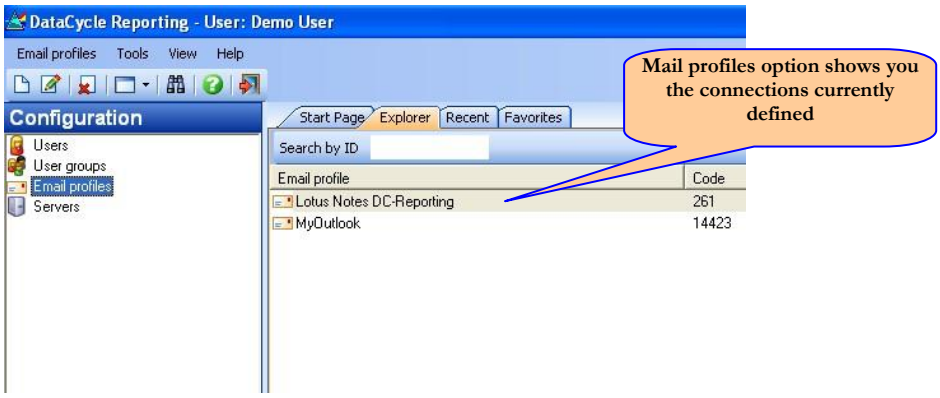
  Traditional email

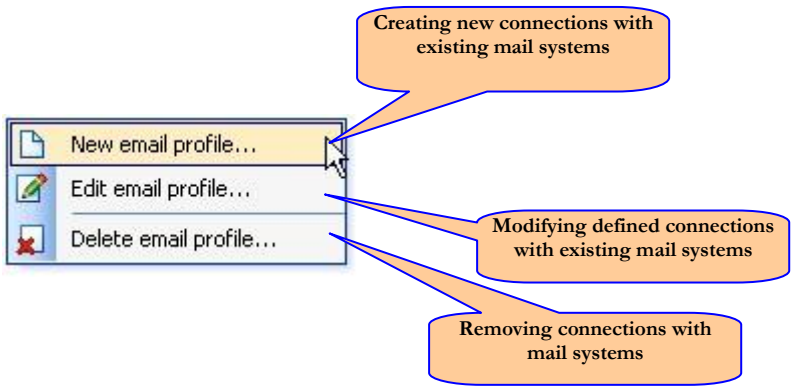
  Lotus Notes Data

Configuration

Your computer will have one or more mail systems, such as Lotus Notes, Exchange, Outlook ... Their configuration is outside the scope of this guide.

DataCycle Reporting needs to know the mail systems that can be used to send reports to the users, so you need to create a connection between them using the Mail profiles option in the Configuration menu.



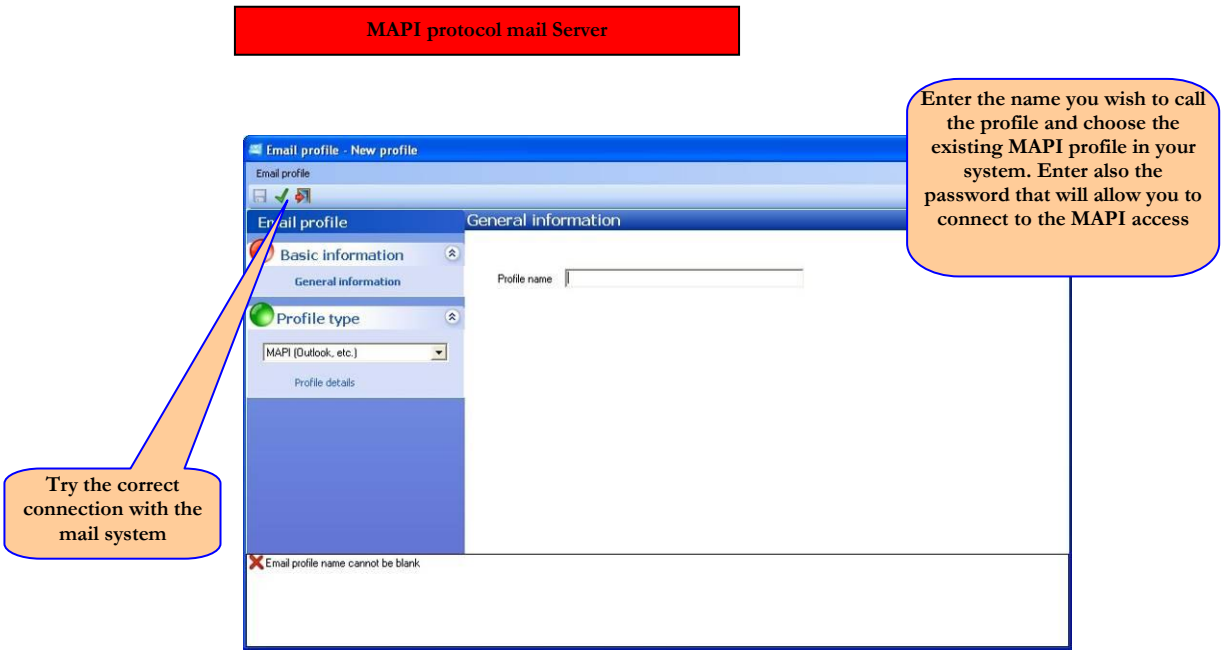


Creating a mail profile

To configure new connections between DataCycle Reporting and the existing mail system, execute the operation to create a mail profile. The information requested will vary depending on the mail type configured: MAPI mail, SMTP Protocol, Lotus Notes and advanced options for Lotus Notes.

Connecting with Mapi mail

Select the Mapi profile configured in your Computer.

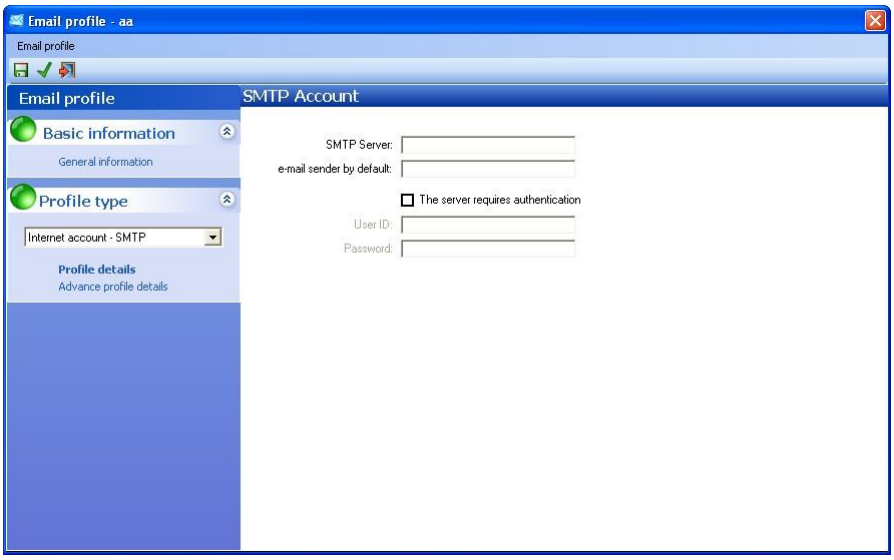


SMTP Protocol

The mail delivery through SMTP protocol presents several advantages that make it advisable:

1. No need to have any client email installed in the PCs where DataCycle is executed
2. Sending mail in HTML format
3. Establishing mail sender in a dynamic form

The email profile has to be configured in order to use this feature.

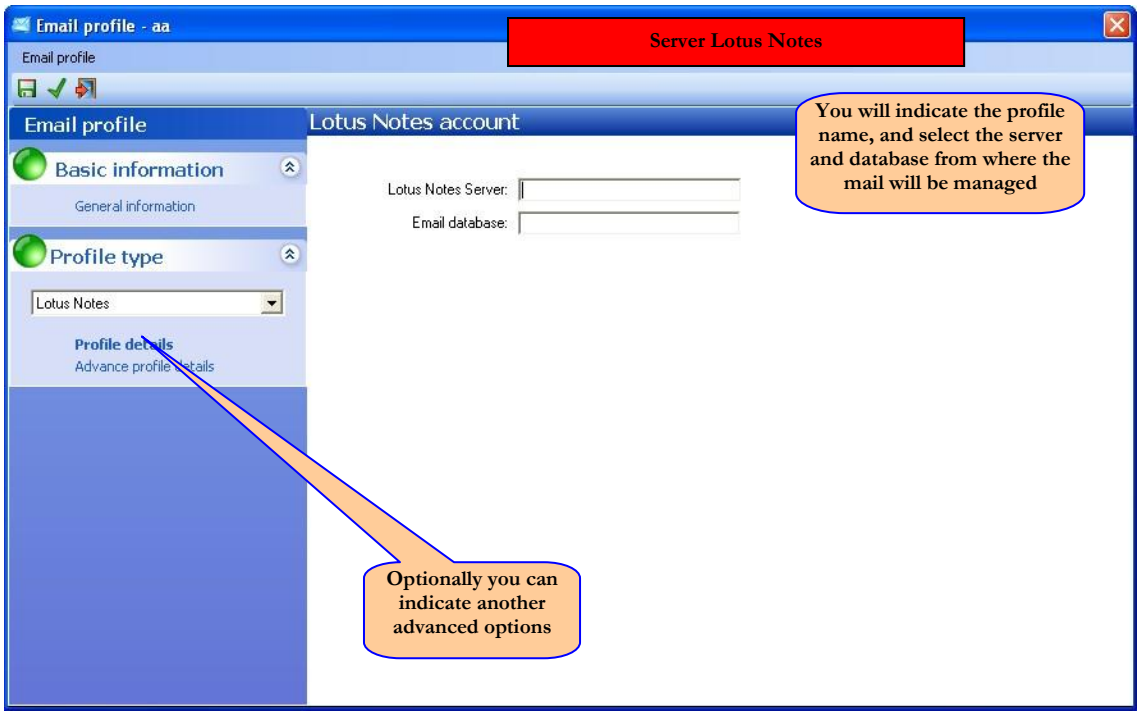


To enable authentication or not will depend on the SMTP server to be used.

Once the mail profile is created, that profile can be used both from the mailing tab of any report generating process and from any task [mailing] on the tab of [Data and Tasks].

Lotus Notes Connection

DataCycle Reporting incorporates a special integration with Lotus Notes. The installation of Lotus Notes is required in those PCs where DataCycle Reporting is installed, either on the client side or server.



There are two basic parameters to be configured in the Lotus Notes mail profile configuration:

- **Lotus Notes Server**: Name of the Notes server to connect. If this field is left in blank, it will connect to the Notes client in a local mode.

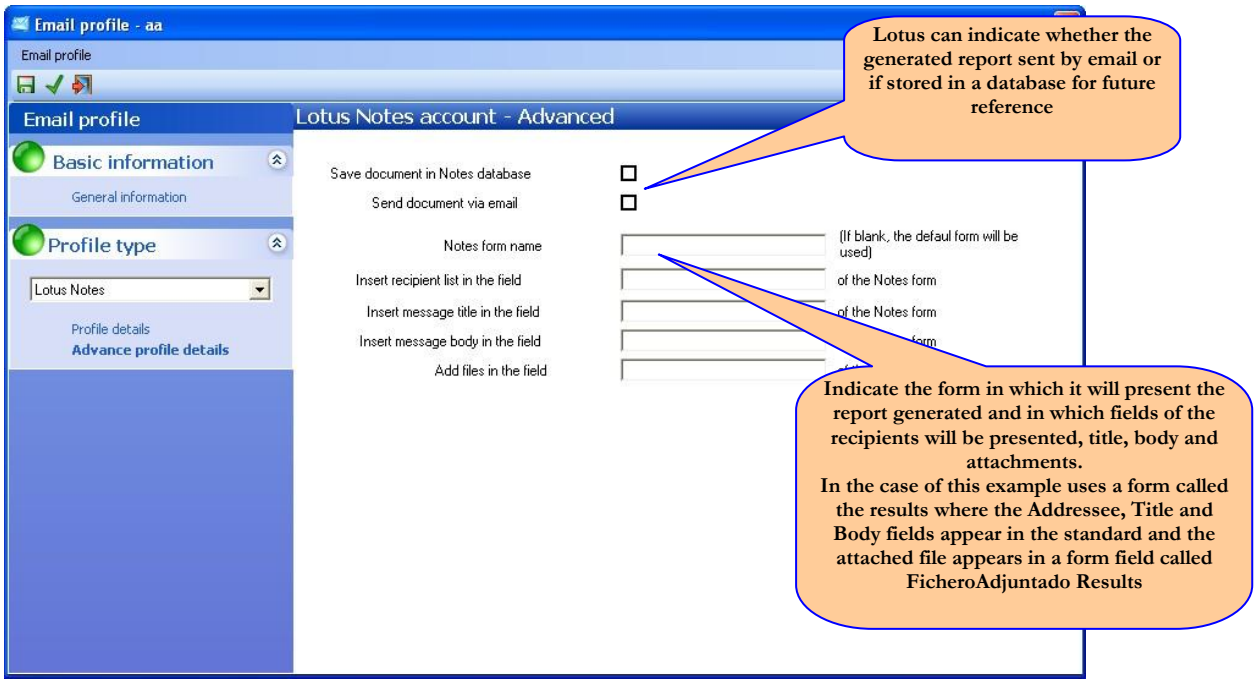
- **Mail Database**: The name of the Lotus Notes database will have to be specified. The directory related to the Notes server will have to be specified. For example: mail\jmartinez.nsf

Note: Any database created with Lotus Notes can be specified as database. It does not have to be a mail database. It can be a documentary database to be shared by multiple users.

Lotus Notes Advanced Options

A series of optional parameters that allow varying the behavior of the reports distribution can be set up for each mail Notes profile. Specifically, with this parameterization the following objectives can be achieved:

- Generate Notes documents assigning a specific Notes form.
- Generate and record a document for each report.
- Assign the message title and body to any field in the form.
- Attach the reports in the desired field.
- Control the access rights to documents for each Notes user.



Note: The profile name will enable the DataCycle to indicate to the process which mail system will be used to send the report.

Modifying a mail profile

It allows you to change the connection configuration to your mail system. Select the profile to be modified and the same screen and options indicated in the "creating a mail profile" section will appear.

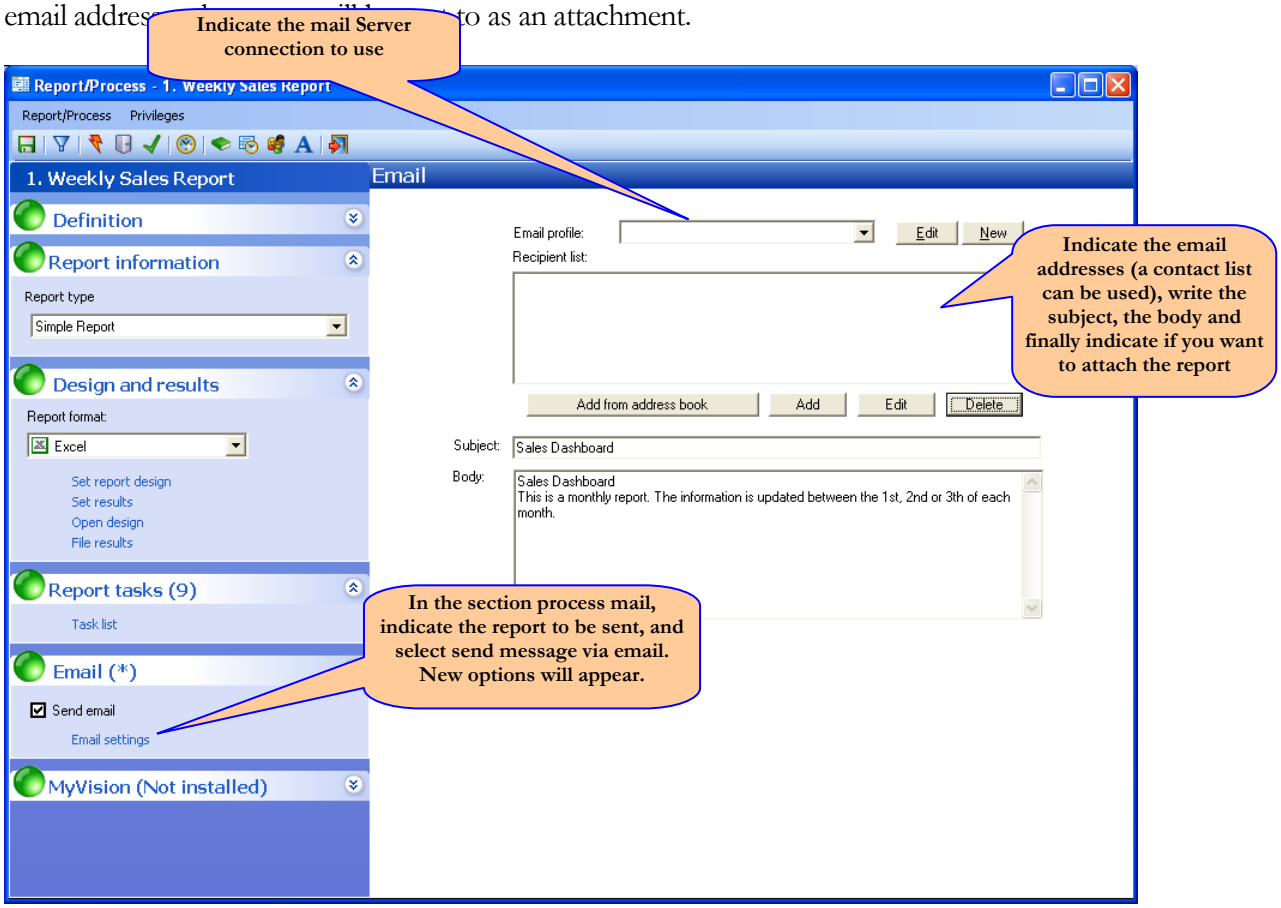
Eliminating a mail profile

The connections with the mail system can be eliminated by selecting the profile to eliminate and running the option.

Sending Mail

Once the connections with the existing mail applications are configured, the reports generated by the DataCycle Reporting can be sent via email. The system is as follows:

While designing a process, in addition to indicating the queries to run, fields to display, execution of macros and output format (Excel, Access, HTML, ZIP ...), you can also indicate to what email addres to as an attachment.



Note: While it may seem contradictory, sending the report generated by DataCycle Reporting may not be necessary. The sending mail process can be set up in a way that the subject and the body already shows relevant information that makes it unnecessary to send the report.

Note 2: Messages can also be sent through the send mail task in a process.

Message Parameterization

In order to obtain the most out of sending mail from the DataCycle Reporting, parameters to the message subject and body can be added. This section shows how to use them, but not how to define the parameters. This is how it is done:

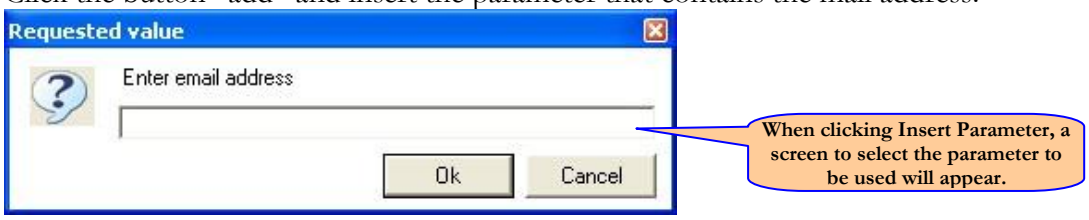
In multiple customized reports

A typical situation consists on generating customized reports for different users in the company (e.g. Sales representatives).

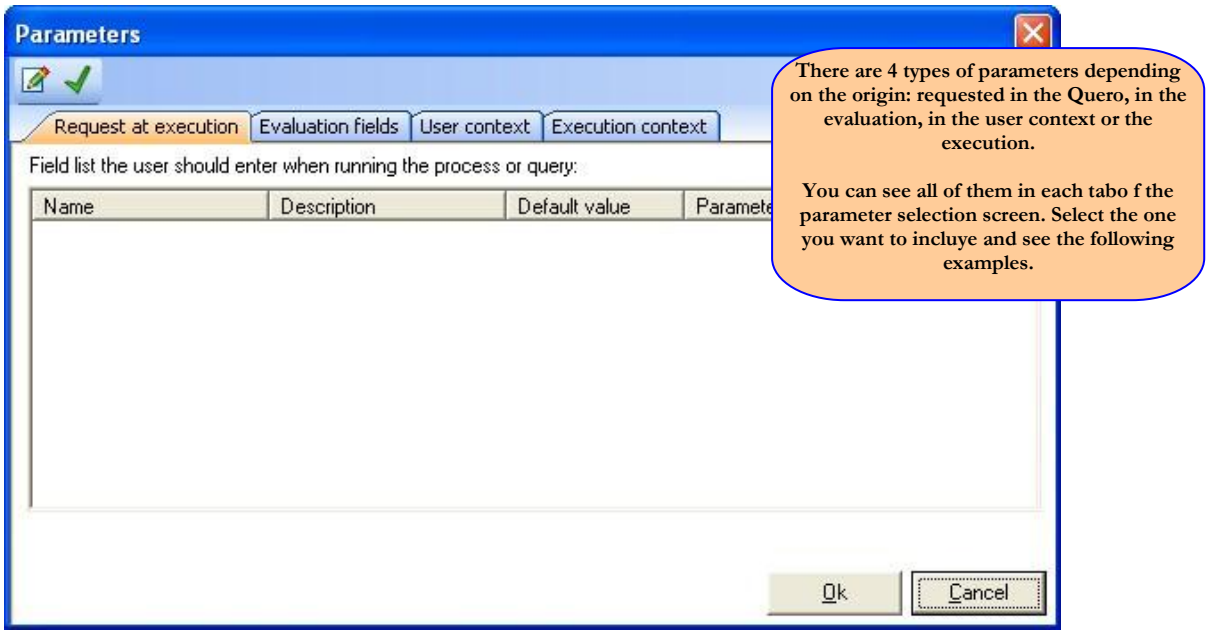
In such cases, we may want to personalize the content of the subject and body of the message with parameters that take particular values for each recipient. These values will be recovered through query specified in the "report type" tab when multiple or conditional.

Note: to ensure that each personalized report is sent to the corresponding target, we must recover the email address of each person using a query from a corporate users and use it to iterate and cut up the information. The parameter for that field will be inserted in the "address" of sending mail.

Click the button "add" and insert the parameter that contains the mail address.



From the space where the addressee is indicated, click the button on the right and choose the option "Insert Parameter".



Examples of Parameter Configuration

Email Recipient	@PAR(Email)
Email Subject	Sales Report for @PAR(full name)
Email body	**Dear/ Sir. @PAR(name)** You current Sales are @PAR(TotalSalesRep) dollars.

Final Result

The final result consists on receiving a traditional email or a form saved in a Lotus database.

Traditional Mail

As a result, an email with the process configured content will appear:

Lotus Notes

Taking advantage of the functionality offered by Lotus Notes, you can opt not to send an email to the recipient, but instead store the report generated in a Lotus Notes database to be accessed by users whenever they want.

This possibility is accessible if, when defining the profile of Lotus mail, in the advanced options, saving in Database has been selected:

Advanced administration

Advanced Options

There is a menu with options that can help to improve the performance of DataCycle Reporting and generally resolve some exceptional situations.

The advanced menu has three options. One related to Maintenance of the general Configuration explained below, and two that are used during installation only by Apesoft staff.

Maintenance of the general Configuration

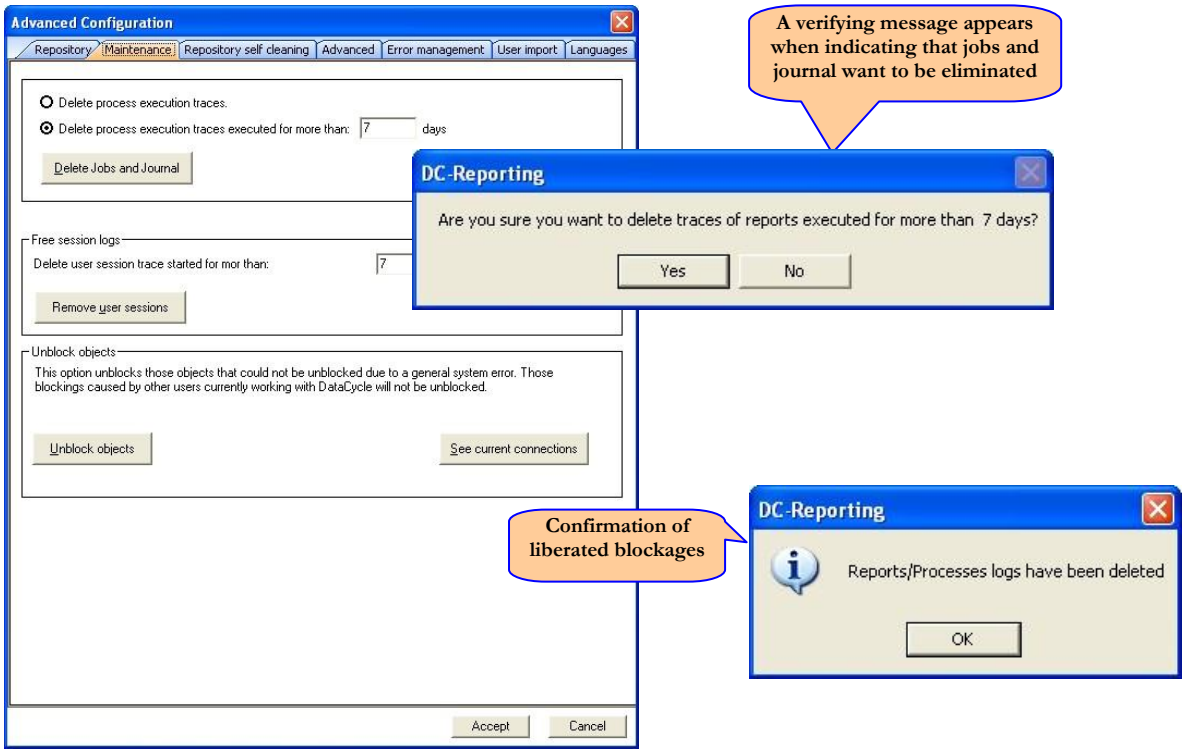
The maintenance screen offers two major functionalities:

- **Eliminating jobs and Journals**

  This refers to the generated information during the process design and execution which it is saved in the Repository taking a lot of space and impacting the performance.

- **Unlock objects**

  This solves the blockage problems produced by general system errors.



Note: In order for the elimination of jobs and journal process to be effective, the Repository needs to be compacted through MS Access tools.

Project Management and Database Connection

There is no scheduling without a process. There is no process without a query. And without connection to a Database, there is nothing.

Any query, process, report or schedule running on DataCycle Reporting needs to have a project assigned.

A project is a folder in which all development objects such as connection profiles to databases, its table catalogue, table relations, SQL queries, processes and scheduling will be saved.

The creation and management of a project is very simple, and it is usually a one time step when starting to work with the program. Although it is usual to work with a single project, for confidentiality or departmentalization, you can create different ones.

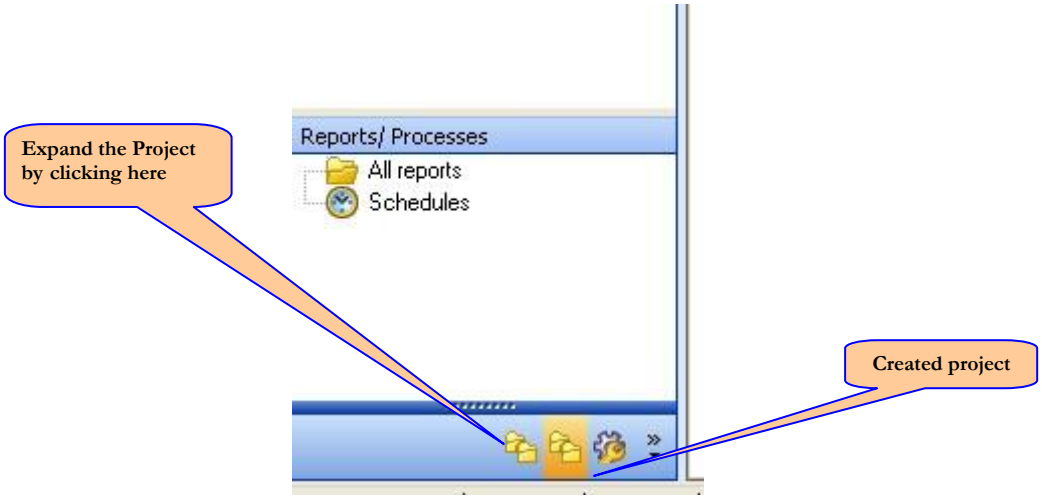
Once the projects have been created, the connection with the Database must be configured and the catalogue of the tables you will work with must be retrieved. It is also useful to create the existing relationships between tables to be able to use them in each SQL query created later.

Refer to the following subjects:

- **Project Management**
- **Database Connection**
- **Entity Management**
- **Entity Relations**

Project Management

Before conducting any operation on a project, select the project in the exploration tree or go to the branch Projects in case that it has not been created yet:

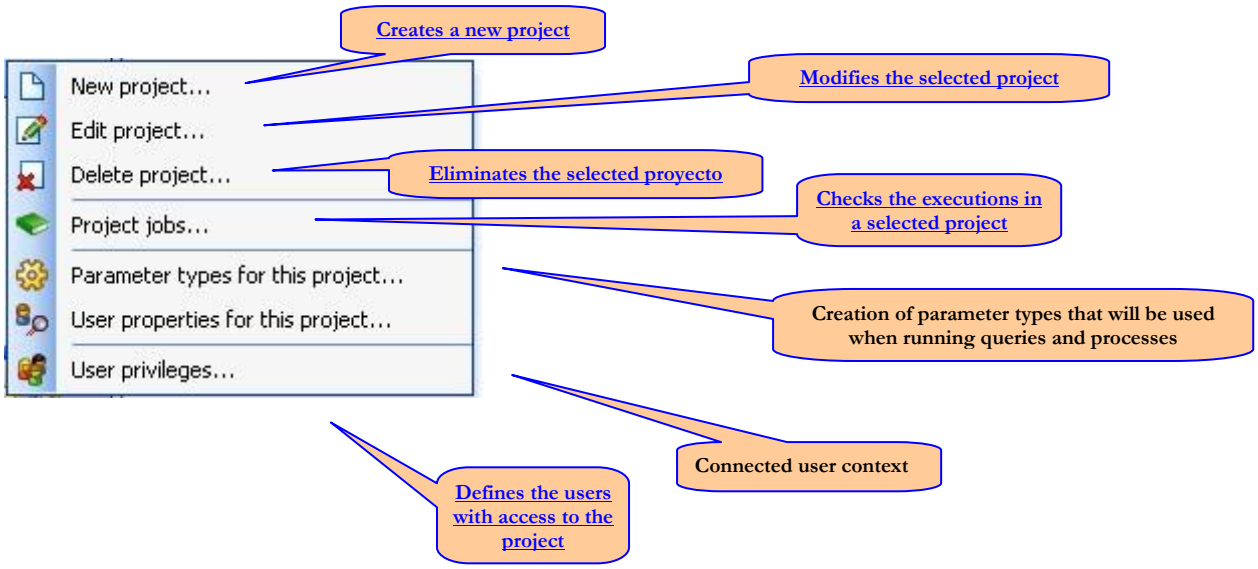


The context menu [Projects] will be activated when right clicking on your mouse on the  icon and the following menu will appear:

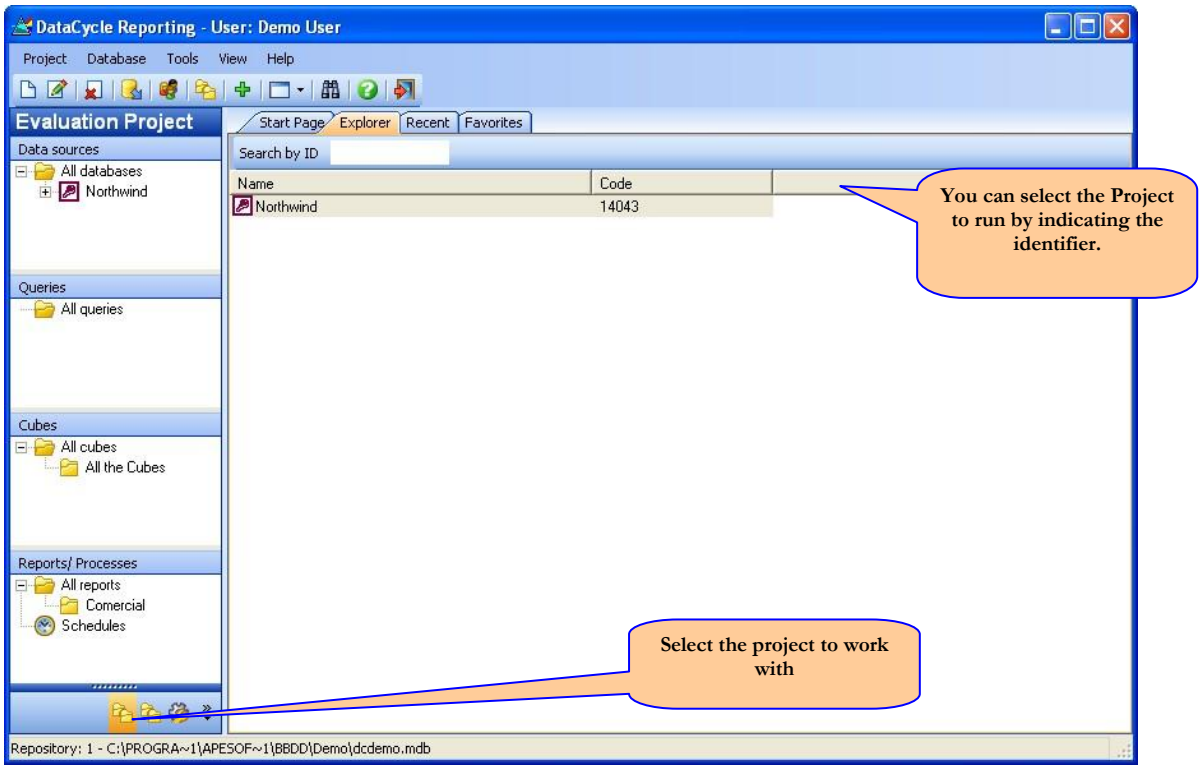
Note: In case of not having created a Project yet, the only operations you will be able to select from are Creating a Project (New) and Server Monitoring.

Note: The option to define the parameter type is explained in the section Parameters' List connected to the queries from the Parameters and Filter chapter.

In case of wanting to work in an existing Project, select first the Project, activate the context menu and all the options to select from will appear.



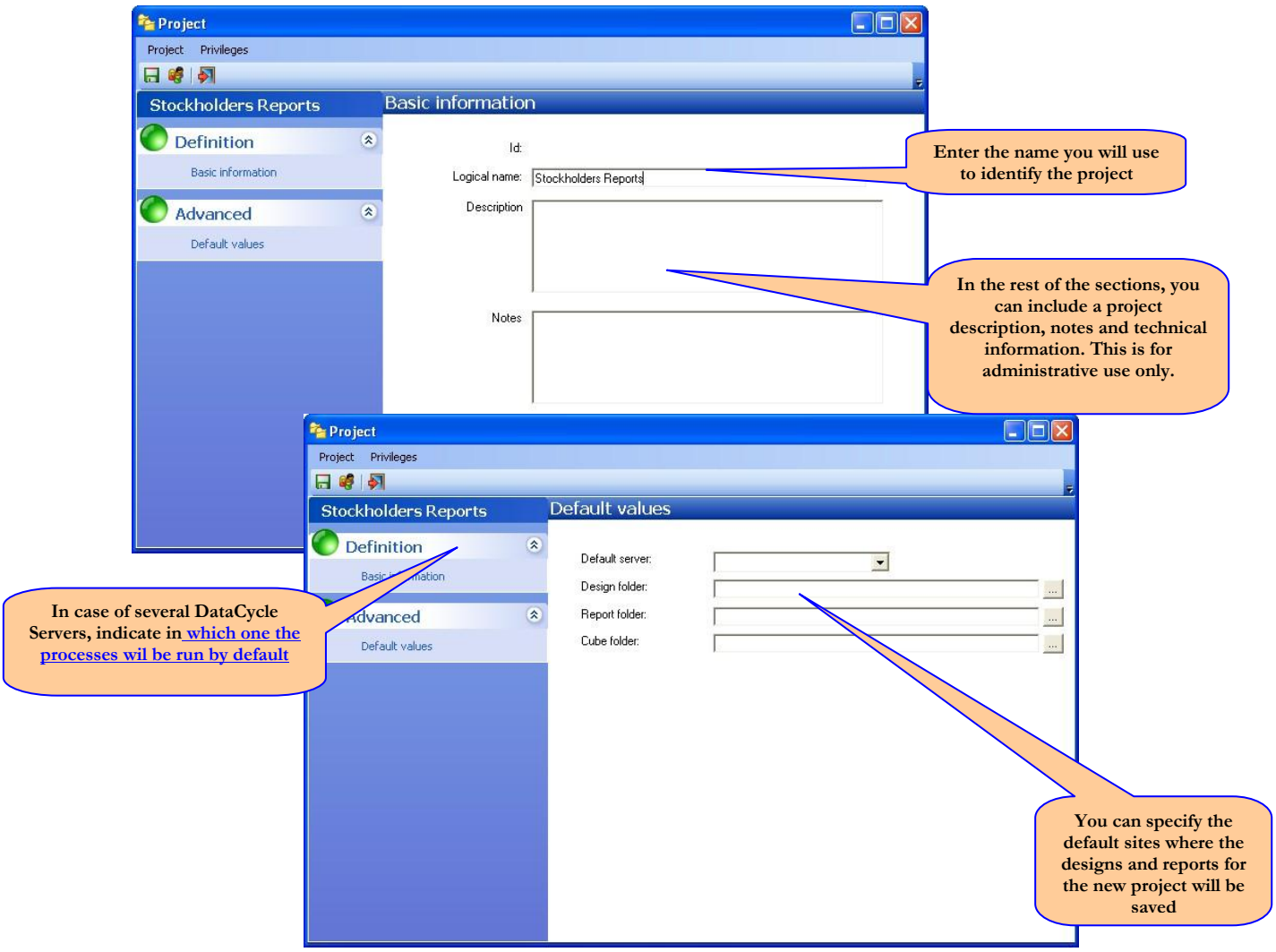
Each Project has one identifier. If you know the identifier you can select the Project from it:



Creating a Project

The steps to follow in order to create a project are as follows:

Once selected "New" from the menu, the project editing screen will appear.



Note: When creating or modifying a project, you must save the changes. 

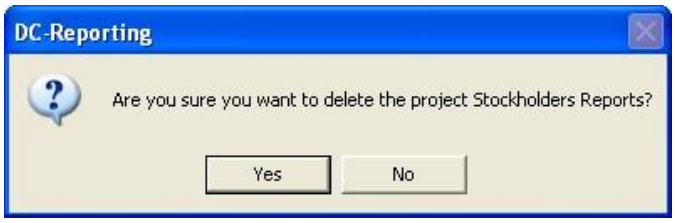
Note: The new project will be displayed with all of the items that compose it: Databases, Queries, Cubes, Processes and Schedules.

Modifying a Project

Select the Project to modify and click the "Edit" option from the menu. You will get the same screens as the ones described in the previous section "Creating a Project"

Eliminating a Project

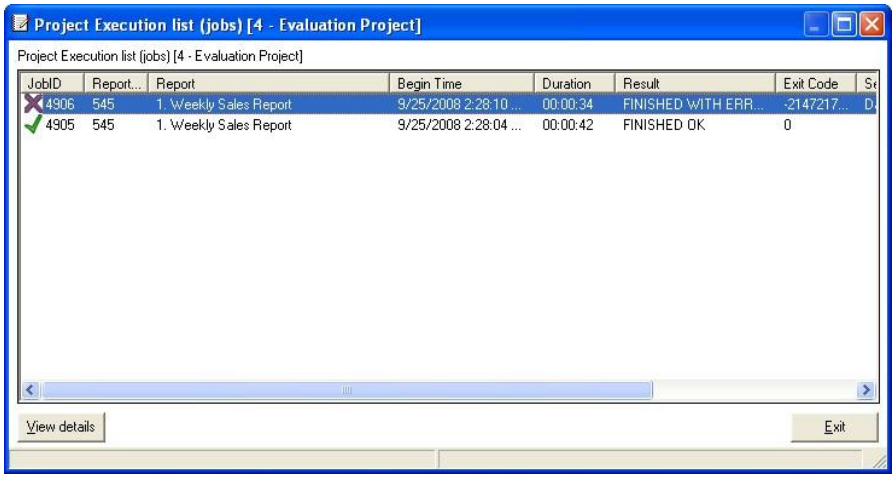
Select the Project to be eliminated and delete it. Confirmation will be requested.



See jobs

This option will enable you to check how the execution of the jobs in the selected project was implemented. DataCycle remembers all tasks, instructions, and details of each execution.

Double click on the execution of the process you wish to check. The same screen as the one shown during the Process Execution will appear.

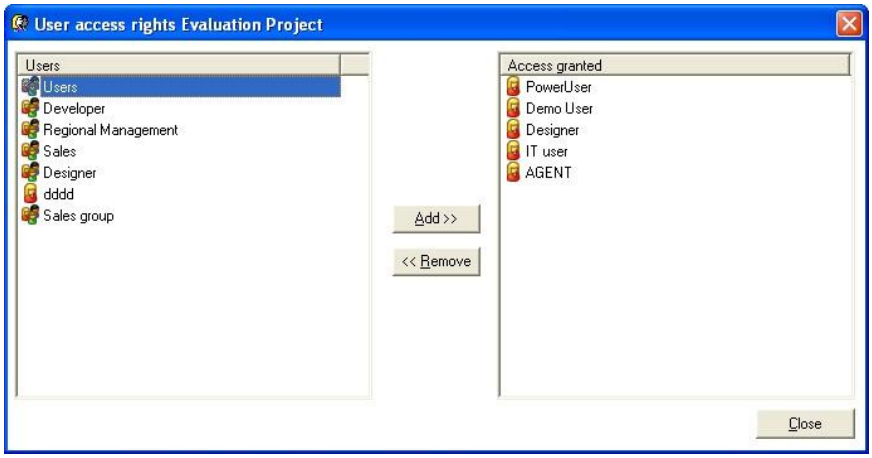


Note: For program maintenance, delete the old jobs information to improve performance and gain space. Refer to Maintenance of the General Configuration

Administering a Project

This option allows you to indicate which groups and users can access the selected project. It constitutes a basic security measure to unable unauthorized users to access certain projects.

For more information, refer to the Security chapter.



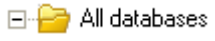
Connecting to a Database

Without a doubt, the database connection is one of the most delicate and important operations to perform with DataCycle. Only technical personnel with knowledge of the existing database, its contents and the user queries needs can proceed to the connection.

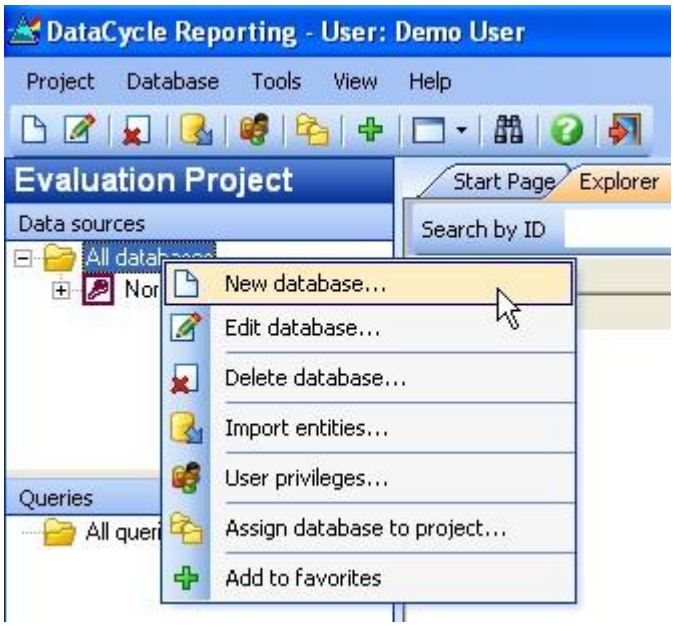
DataCycle Reporting generates reports with information from the corporate databases and other databases or information resources such as text files or Excel spreadsheets.

The definition of the database is a process that is performed just a few times, but it is essential in the beginning.

When defining the databases, the main objective is to import the structure of the tables that will be needed for the reports in such a way that DataCycle Reporting will be able to know the fields of those tables to facilitate creating the reports with its wizards.

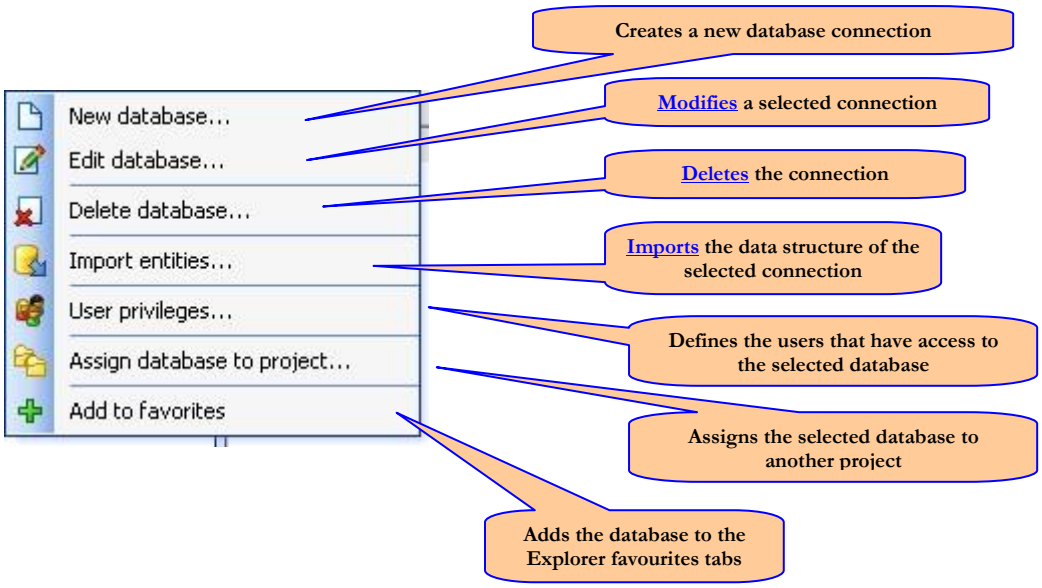
Activate the Database context menu by right clicking on your mouse on 'all databases', 

, and the following menu will appear:

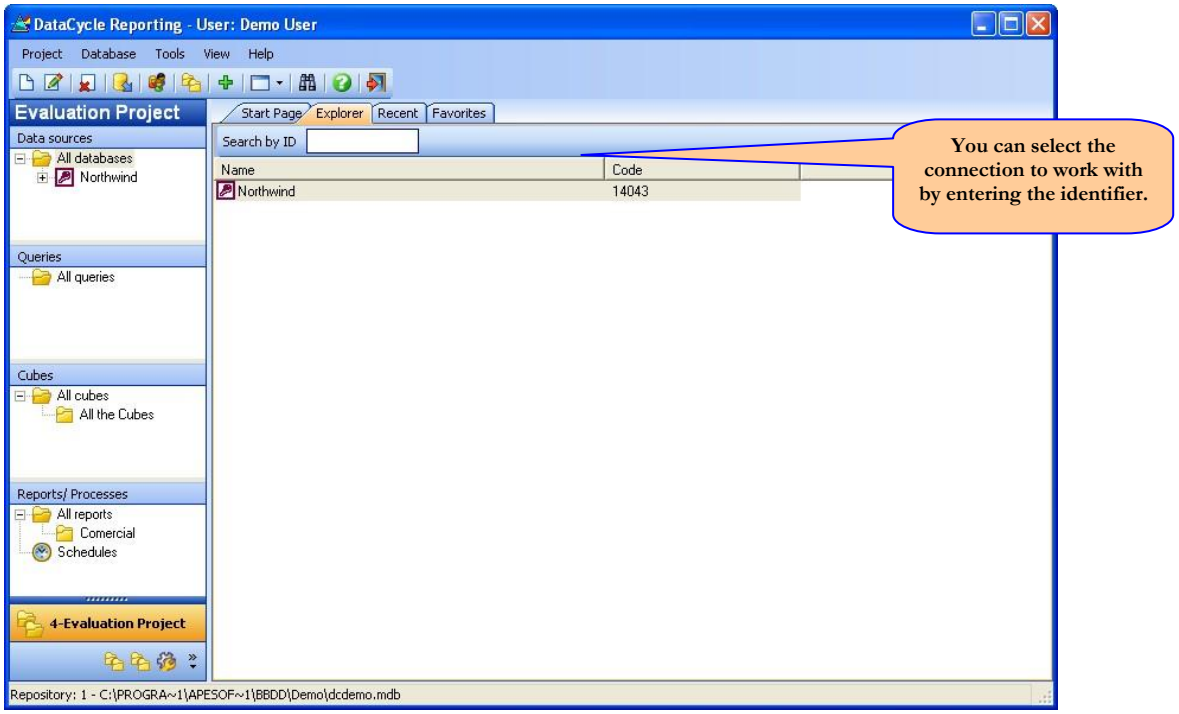


Note: In case of not having created a connection to the database yet, you will only be able to select the operations of Creating a Project (New) and Server Monitoring.

If you want to perform an operation on an existing database connection, first you must select the database and activate the contextual menu where all eligible options will appear.

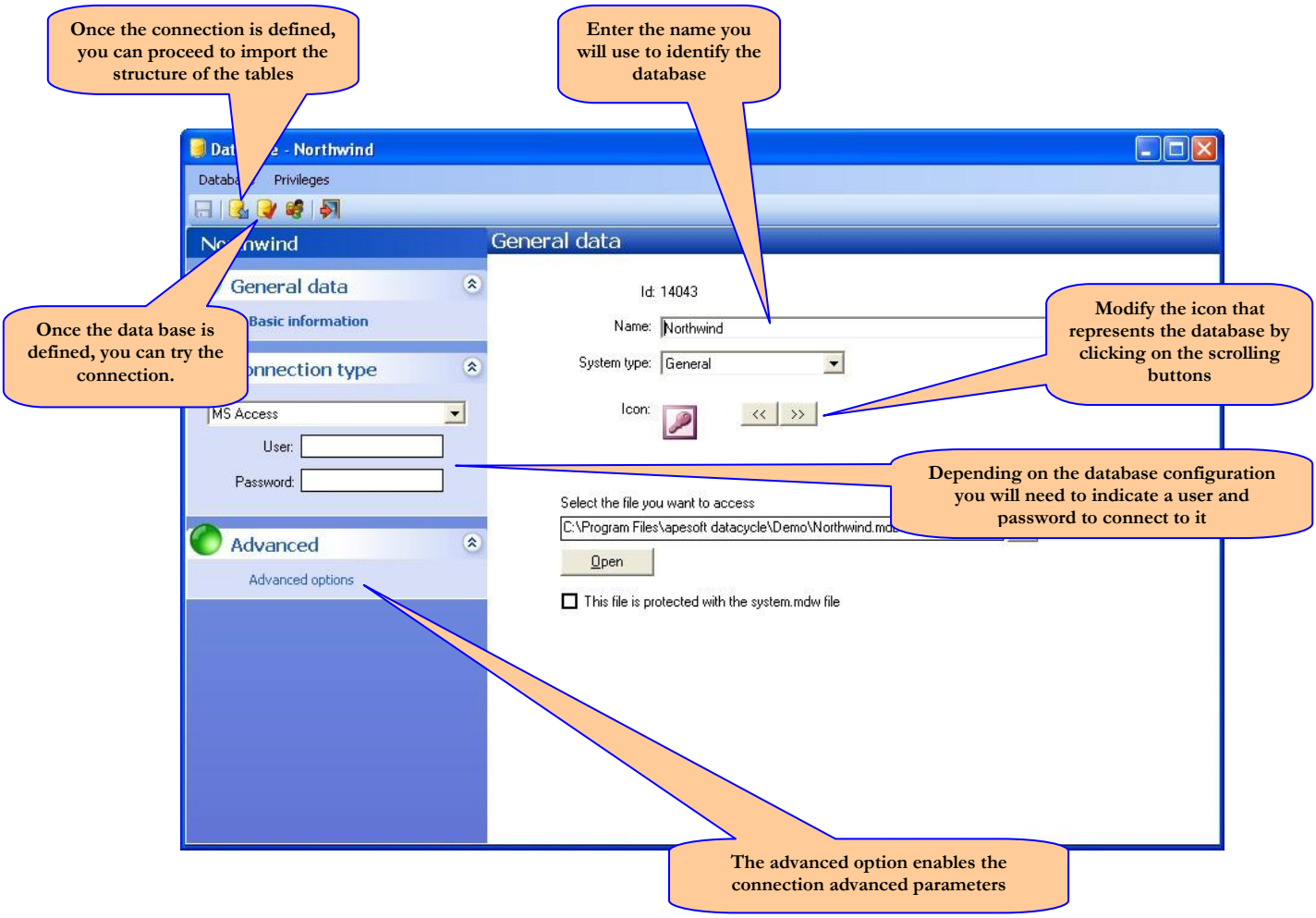


Each database connection has an identifier. If you know the identifier, you can then select the connection:



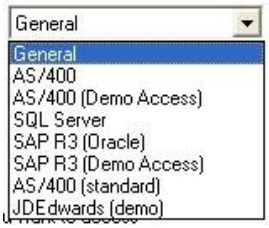
Creating a connection to a database

The window to create a connection to a database is the following:



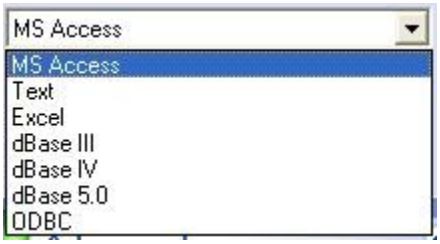
Database connection system type

Indicate the database manager type you will be connecting to. This will allow the DataCycle to retrieve the descriptive information of the tables and the data structure. The options are the following:



Connection type

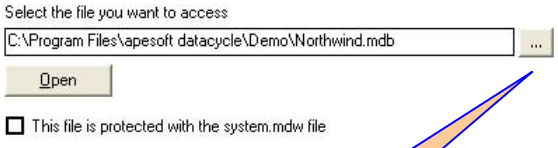
The connection type allows DataCycle to know the communication channel used with the data manager.



Depending on the one chosen, the database configuration options may vary.

All connections except ODBC

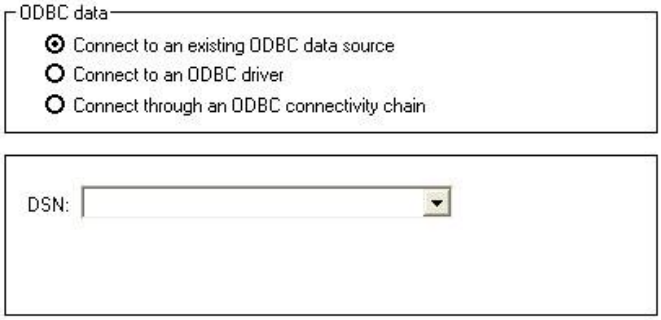
The database connection is direct, so you only have to indicate the file that contains the data



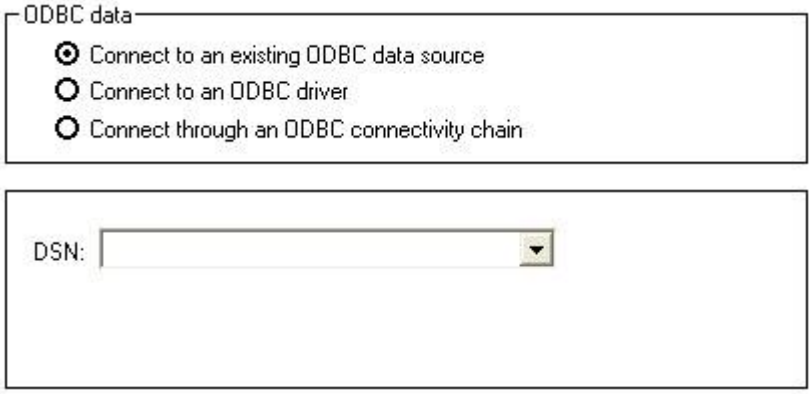
Select the database by clicking on this button

ODBC Connection

The database connection will vary depending on the category of the connection via ODBC

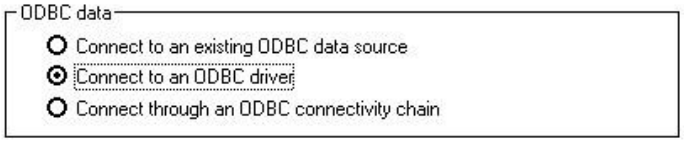


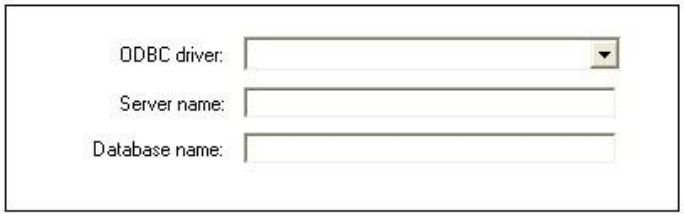
Several options will display depending on the connection category:



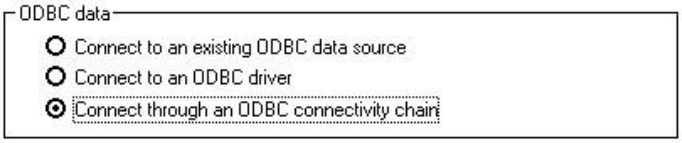
Connection via ODBC

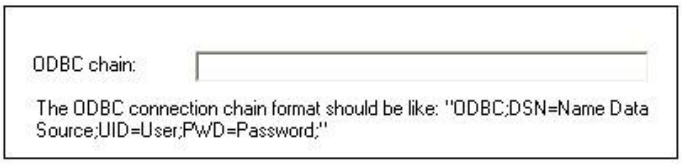
Indicate the DSN that must have been previously configurated in your computer





Connection via ODBC

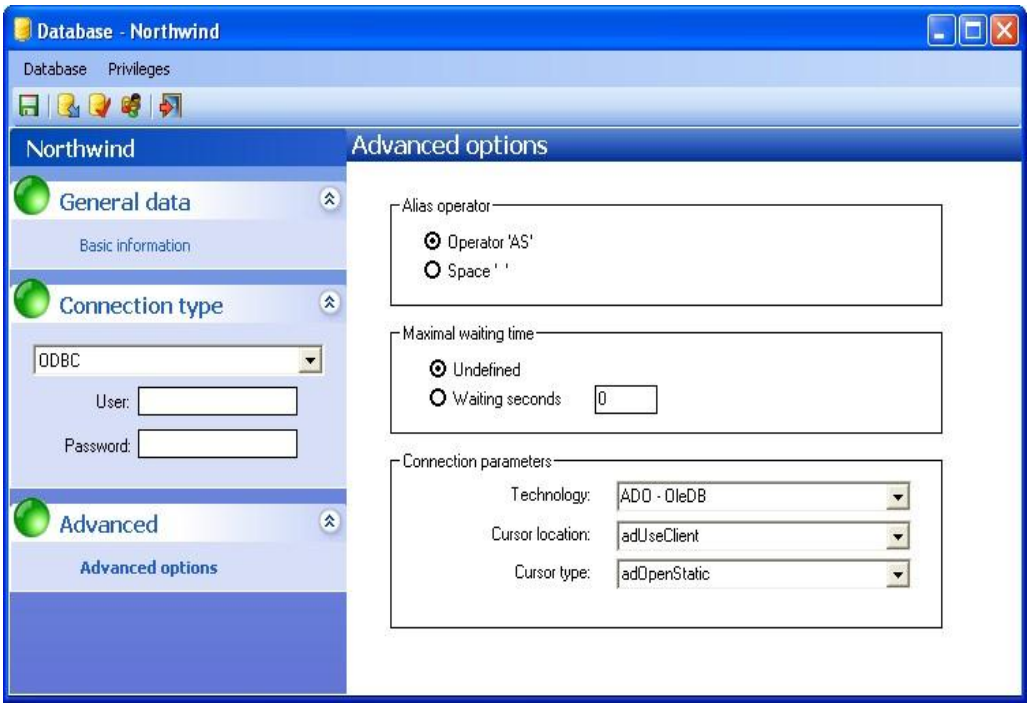




Connection through an ODBC chain

Advanced…

In this screen there are parameters which, in principle, do not need to be changed, but can be adjusted depending on the database manager system that your company uses (AS400, Oracle...).



- **Query maximum wait time**: These parameters allow you to set a maximum timeout to run a query. By default, this time will be indefinite, but in certain cases it can be useful to set a limited duration.

- **Database connection parameters**: It is important to have the parameters well configured, since a configuration that is not in accordance with the environment, directly affects the performance. These parameters can be generally defined in the database profile, or in an individual manner for each query.

  In case of an **ADO** technology, you can select:

  - **Cursor location**: This feature allows you to choose between two cursor libraries.
    - *adUseServer*: The cursor is located in the server (longer connection and less time for the return of the record set.
    - *adUseClient*.: The cursor is located in the client (less connection time and more time to return the record set).
    -
  - **Cursor type:** This feature specifies the cursor type used when opening the Query set of records**.**

    - *adOpenStatic*. Provides a set of static records that cannot be updated. This type of cursor is only used to search records or generate reports. You can make any type of movement in the records' set: forward, backwards...
    - *adOpenForwardOnly*: This type of cursor is the same as the adOpenStatic with the only difference that this one opens only on one direction, forward.
    - *adOpenDynamic*. Provides a set of records that can be updated. All changes (updates, new records, record elimination) performed by other users are visible. Allows all kinds of movement throughout the records' set.
    - *adOpenKeySet*. It is similar to the adOpenDynamic cursor with the only difference that it does not allow to access records that have been added and/or eliminated by another user. It allows also any type of movement throughout the records' set.

  In case of **Jet 3.5** or **Jet 4.0** technology:

  - **Cursor location**: Not configurable and inaccessible.

  - **Cursor type:**

    - *dbOpenDynaset*. It is used when the records correspond to more than one table. It allows adding, changing, and eliminating records. There are no restrictions for moving the records' set.
    - *dbOpenSnapshot*. It is a static copy of the original database data. It allows you to obtain records in multiple tables, but the data cannot be updated. There are no restrictions for moving the records' set.
    - *dbOpenForwardOnly*. This type of cursor is the same as the dbOpenSnapshot with the only restriction that this one only allows you to open the cursor on one direction, forward.

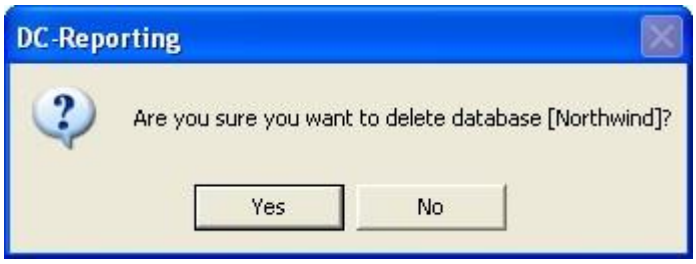
- **Operator type**: It allows you to assign a synonym to the different tables that belong to a query. In this way, you can assign names more clear and easy to identify to the tables. In the most databases, the alias is used [As], but for example Oracle uses the operator "(blank space)".

Modifying a Connection

Select the connection to modify and click the "Edit" option from the menu. You will get the same screens as the ones described in the previous section Connecting to a database.

Eliminating a connection

Select the connection to be eliminated and delete it. Confirmation will be requested.



NOTE: This message can be misunderstood. What you are eliminating if the existing connection to a database. The data itself will not be deleted.

Importing a catalog

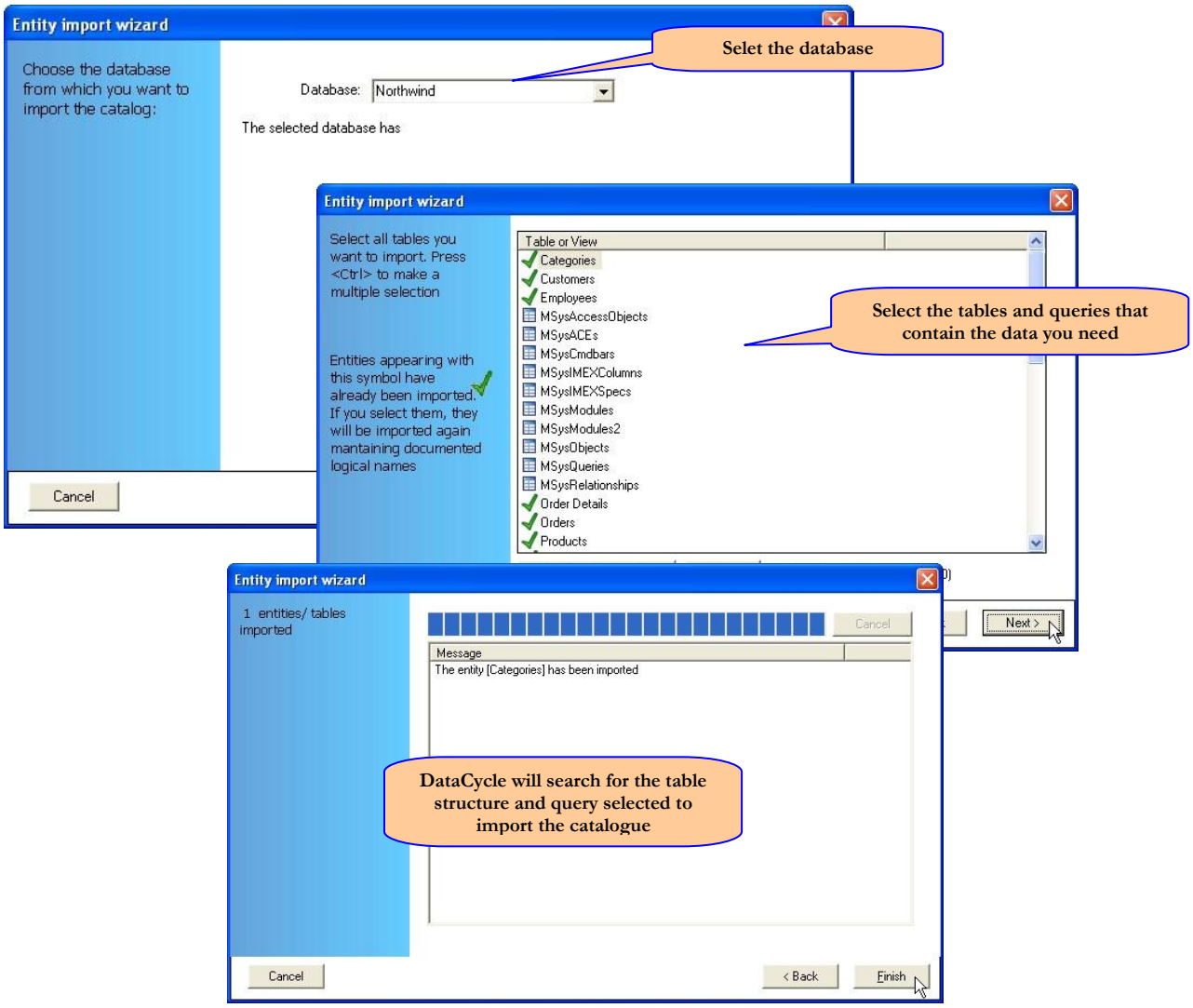
Once the database connection is established, you must enter the tables you will work with, the ones that contain the information to be included later in the reports.

Note: The traditional management programs work with hundreds, thousands, and occasionally with hundreds of thousands tables. In fact, only a few tens have actually relevant information for the reporting. Check your management program and find out where the relevant information is stored.

By catalog we understand the structure of the tables with their fields and format that subsequently will help us to work with the SQL query wizard.

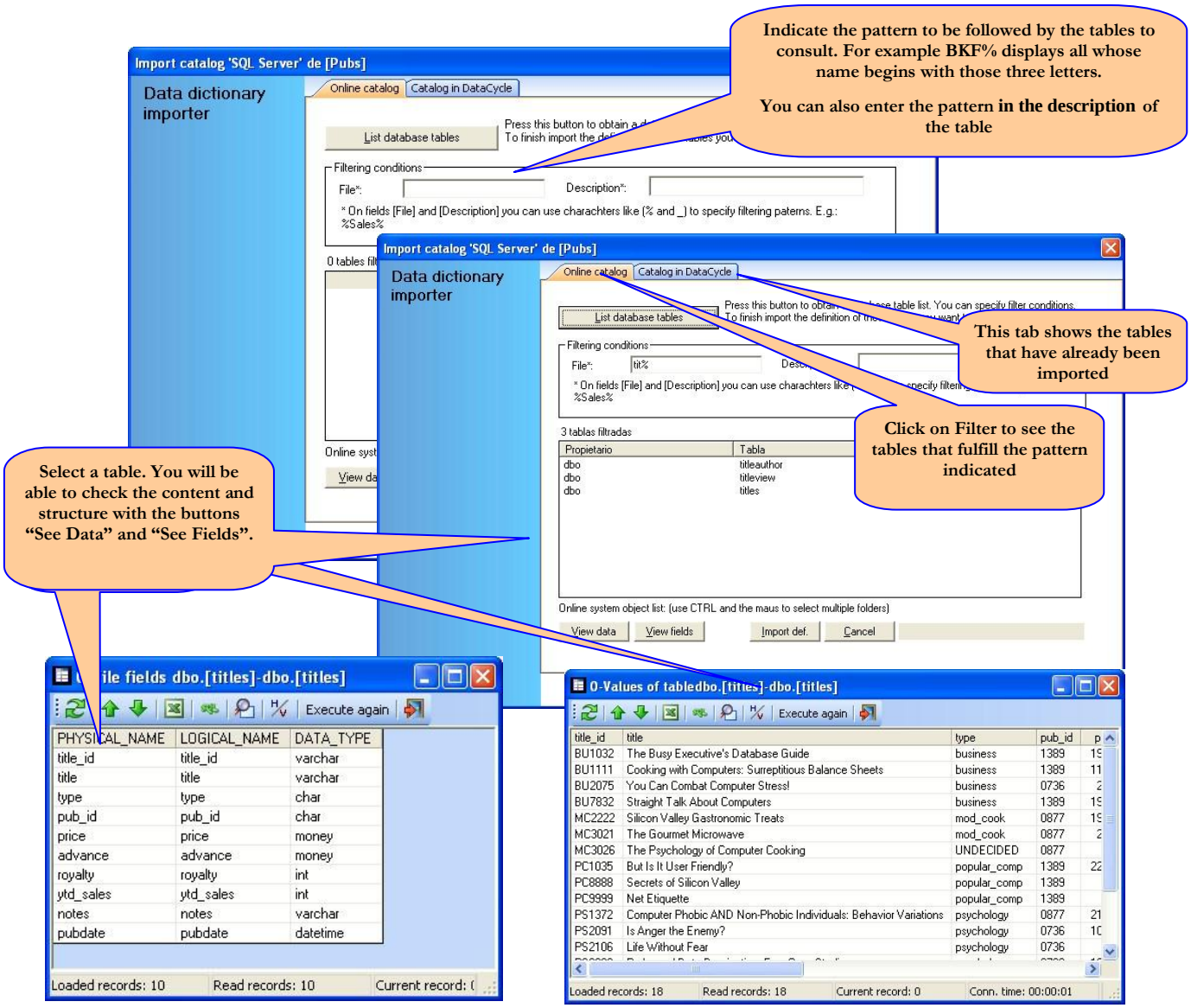
This wizard will allow you to select the tables you will work with through a wizard. The wizard layout and functionality will vary depending on the type of connection selected for the database.

The wizard will ask you to indicate the database, then select the tables you are interested in and finally import the data structure.



Depending on the connection type, you will be able to consult the data and structure before importing the database schema.

Corporations' databases used to have thousand of tables. In this case we can conduct a prior consultation by filtering tables to be diplayed and, among those, select the ones that will be imported.

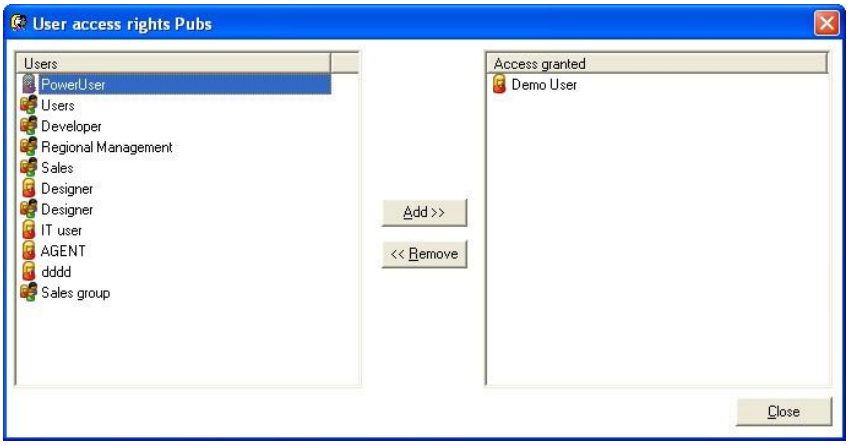


To import the selected table structure, click on the Import Def button.

Administrating a connection

This option allows you to indicate which groups and users can access the selected database. It constitutes a basic security measure to unable unauthorized users to access certain processes.

For more information, refer to the Security chapter.

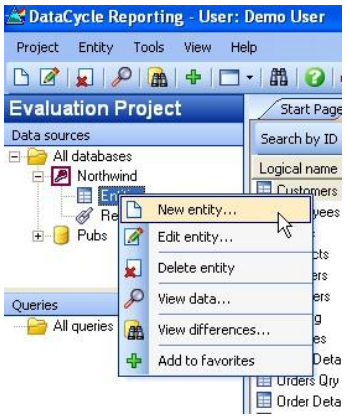


Entity Management

Once connected to the database, you will be able to import the tables and queries structure, manage them and make any modifications needed. Most of the operations available in this menu are also available from the database connection.

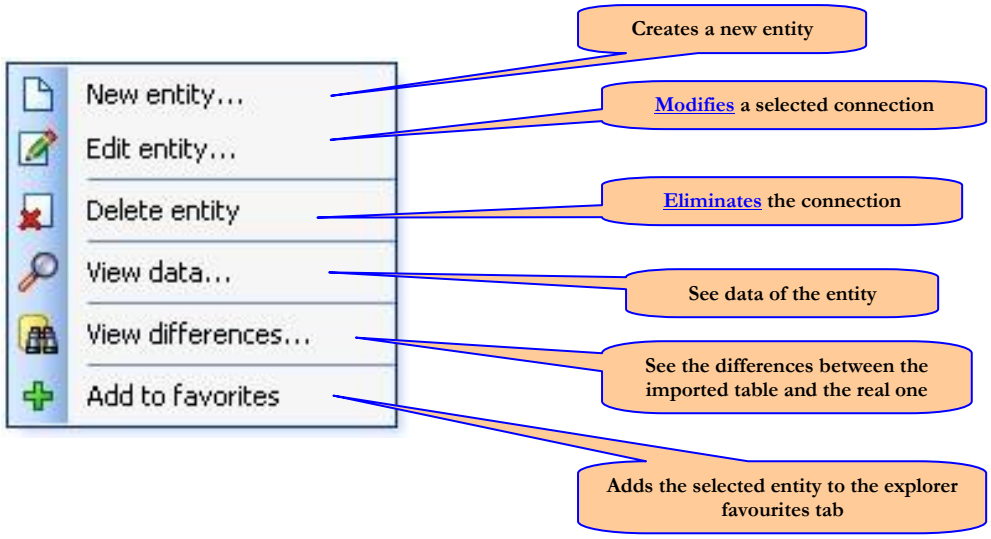
Select the connection to the database from the exploration tree and expand it:

The Entity context menu can be activated by right clicking Entities with your mouse on and the following menu will be displayed:

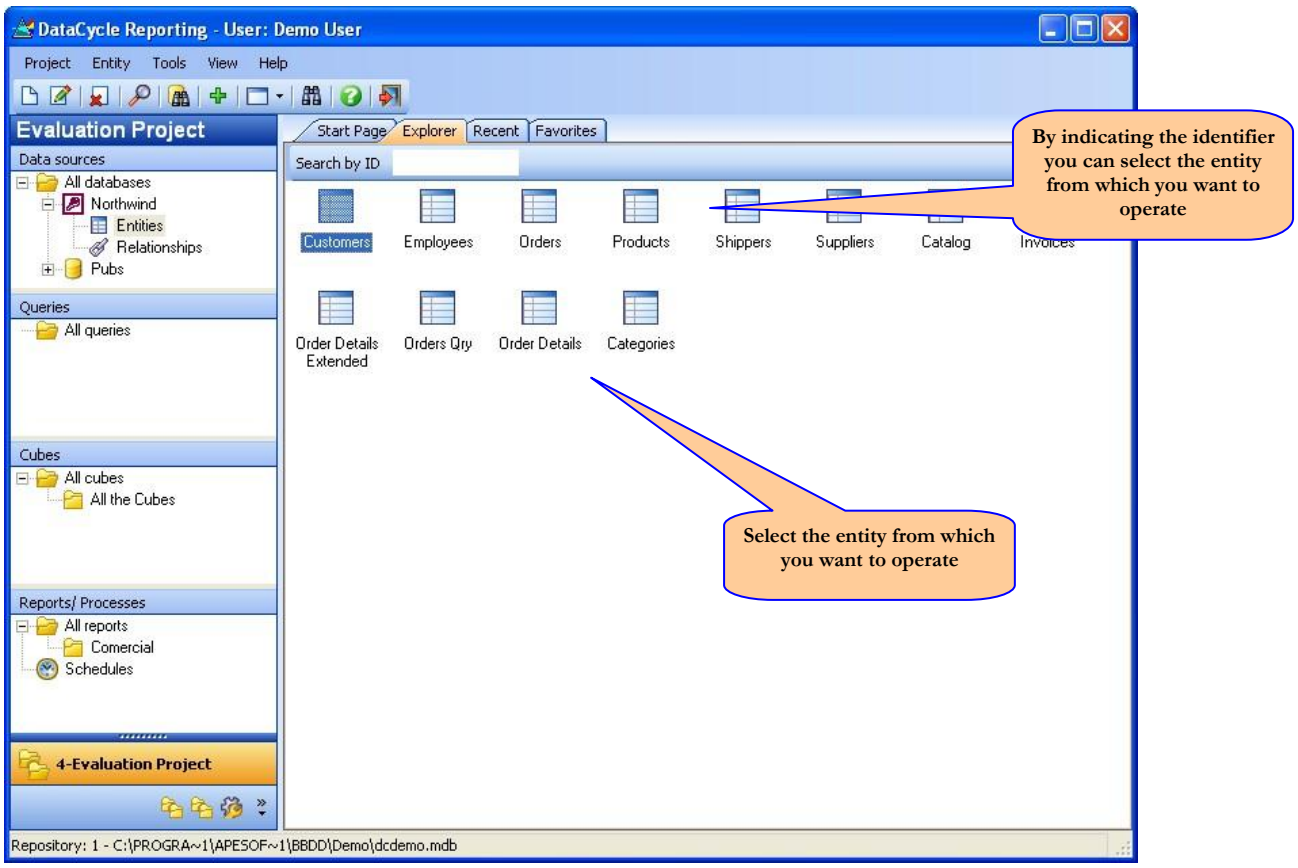


Note: In case of not having created any database connections yet, the only operations available will be Create a Connection (New), Catalogue Import and Server Monitoring.

If you want to perform an operation on an existing entity, you must first select it and activate the contextual menu where all options available will appear. You will notice that they are virtually the same as in "database connection" except for the administration of permits and the ability to view the entity data.



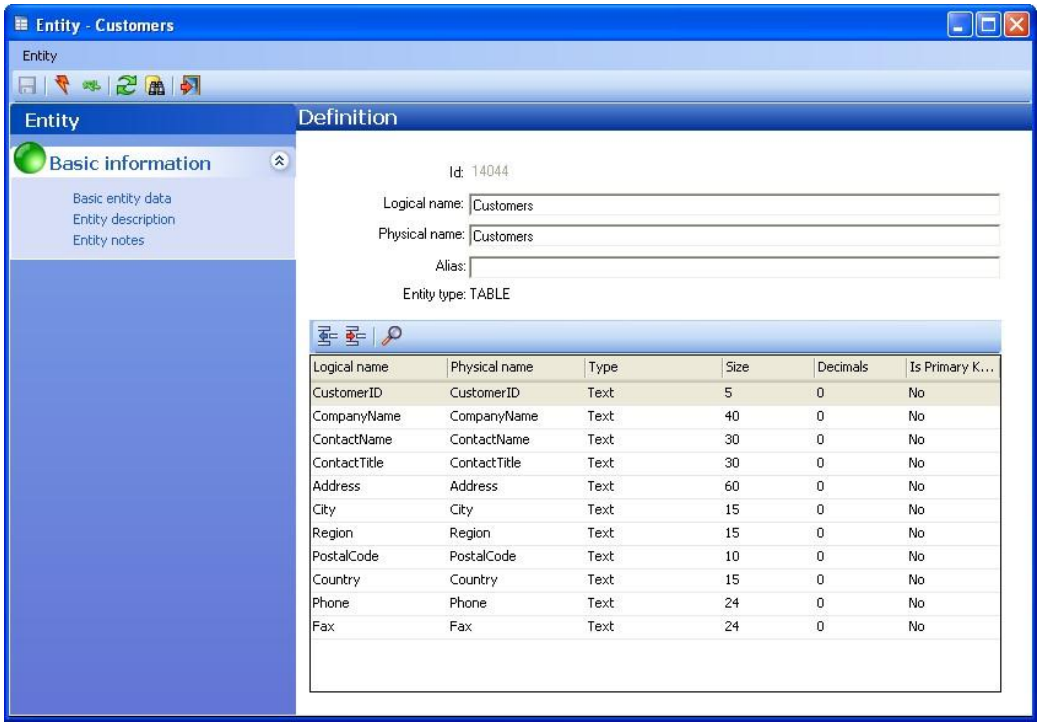
Each entity has an identifier. If you know the identifier, you can select the entity directly from it:



Creating an entity

DataCycle Reporting works in general with entities that come from importing the structure of an entity that is already in a database.

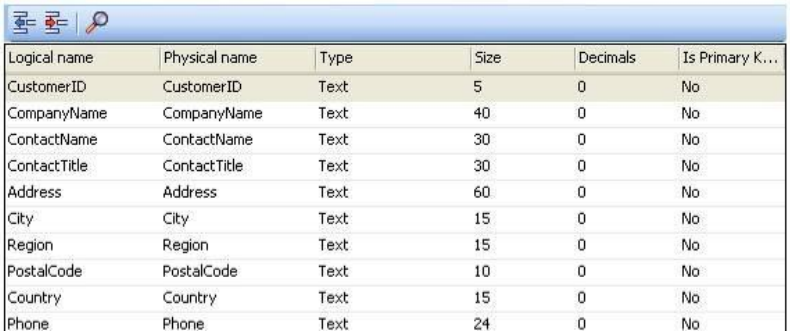
You can also create an entity by indicating initially the administrative entity information and its fields.



Logical name	Physical name	Type	Size	Decimals	Is Primary K...
CustomerID	CustomerID	Text	5	0	No
CompanyName	CompanyName	Text	40	0	No
ContactName	ContactName	Text	30	0	No
ContactTitle	ContactTitle	Text	30	0	No
Address	Address	Text	60	0	No
City	City	Text	15	0	No
Region	Region	Text	15	0	No
PostalCode	PostalCode	Text	10	0	No
Country	Country	Text	15	0	No
Phone	Phone	Text	24	0	No
Fax	Fax	Text	24	0	No

By clicking the button "New attribute"  , you can create an attribute calculated from existing ones that can be used from the SQL queries as if they were a field offered from the database itself.

In this case, the field "Import" comes from multiplying the fields Unit Price and Quantity and it can be used from any query.



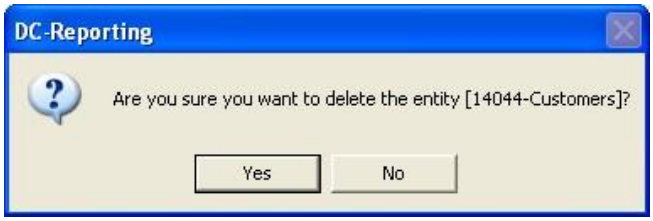
Logical name	Physical name	Type	Size	Decimals	Is Primary K...
CustomerID	CustomerID	Text	5	0	No
CompanyName	CompanyName	Text	40	0	No
ContactName	ContactName	Text	30	0	No
ContactTitle	ContactTitle	Text	30	0	No
Address	Address	Text	60	0	No
City	City	Text	15	0	No
Region	Region	Text	15	0	No
PostalCode	PostalCode	Text	10	0	No
Country	Country	Text	15	0	No
Phone	Phone	Text	24	0	No

Modifying an entity

Once the entity to be modified is selected, click the edit button from the menu and the window described in the Creating an entity will appear.

Eliminating an entity

Eliminates the entity selected. A confirmation will be requested.



Note: This message can be misunderstood. What is eliminated is the entity structure. The data will not be deleted or modified, nor will affect the existing SQL queries since importing the structure helps the design, but they could be performed without importing the entities and writing the SQL instruction without an wizard.

Import catalog

Check Import catalog in the Connecting with a Database chapter.

See data

You can see the entity data the same way that is described in the subject Import catalogue from the database connection chapter.

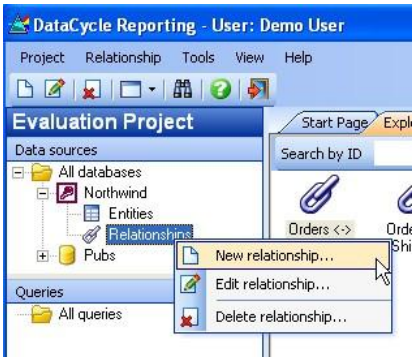
Relationships between entities

Once the connection with a Database is created and the structure of several tables imported, you can indicate the relationships between them. When designing an SQL query involving several related tables, it is necessary to indicate what fields have relationships, which is named the "JOIN". You should indicate them when designing the query, but you may indicate at this point which ones have relationships and thus seize them during the consultation.

Note: The relationships as well as the queries will be performed in an SQL language, which is a standard for database consultation. This chapter assumes its knowledge.

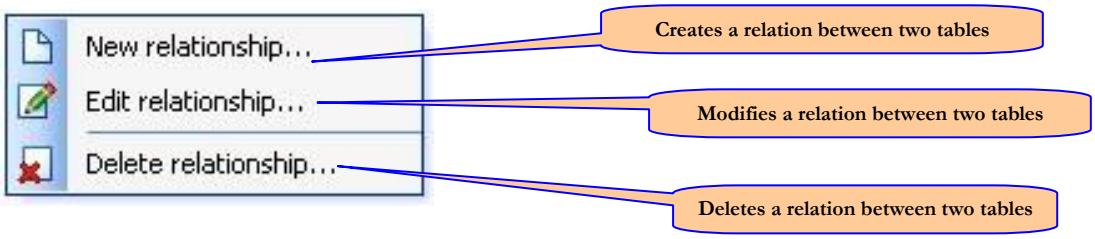
Select the connection to a database from the Explorer tree and expand it:

The relationship context menu is activated by right clicking on Relationships with your mouse and the following menu will appear:

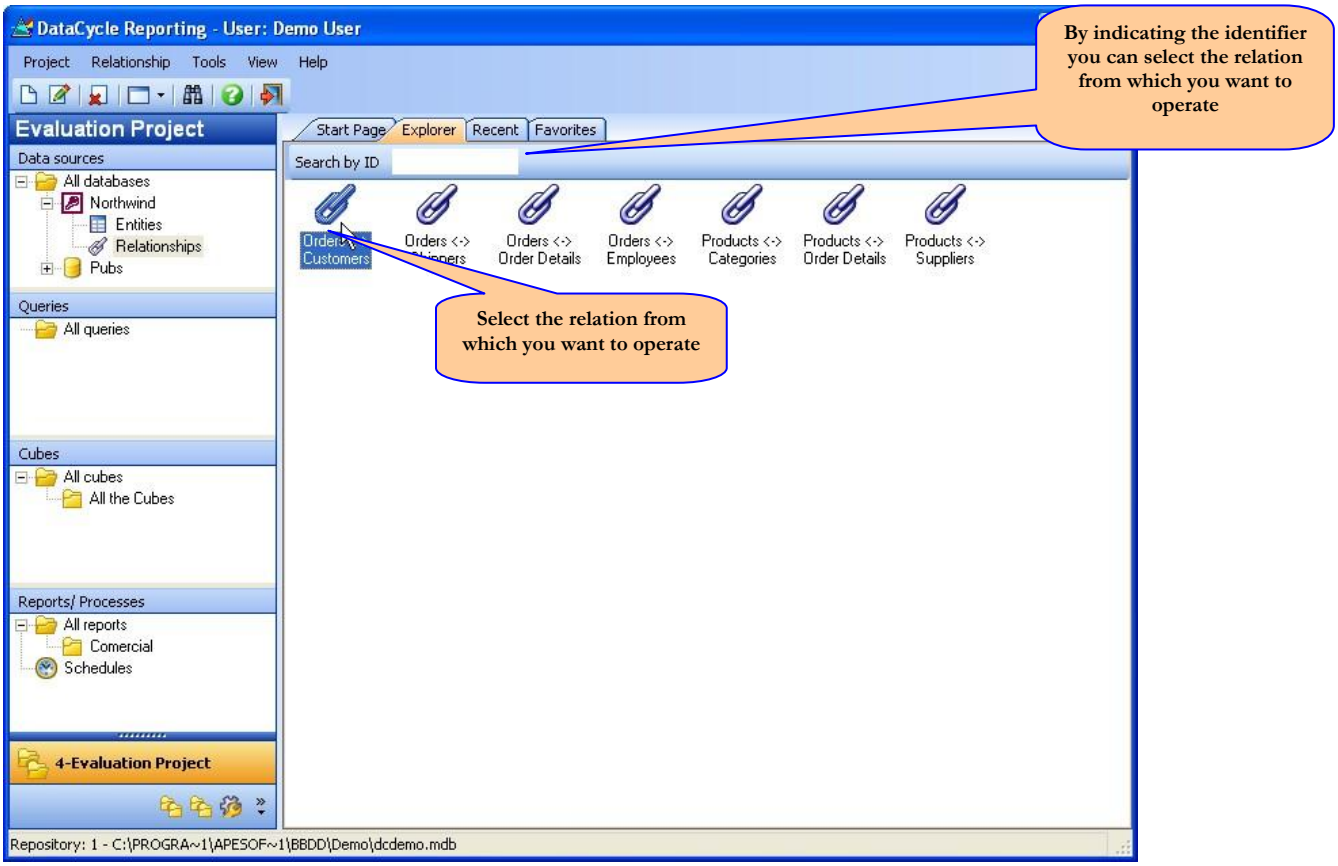


Note: In case of not having created any relationship between the entities, the only operations available will be Creating a Connection (New), Catalog Import and Server Monitoring

If you want to perform an operation on an existing entity relationship, you must first select it and activate the contextual menu where all options available will appear.

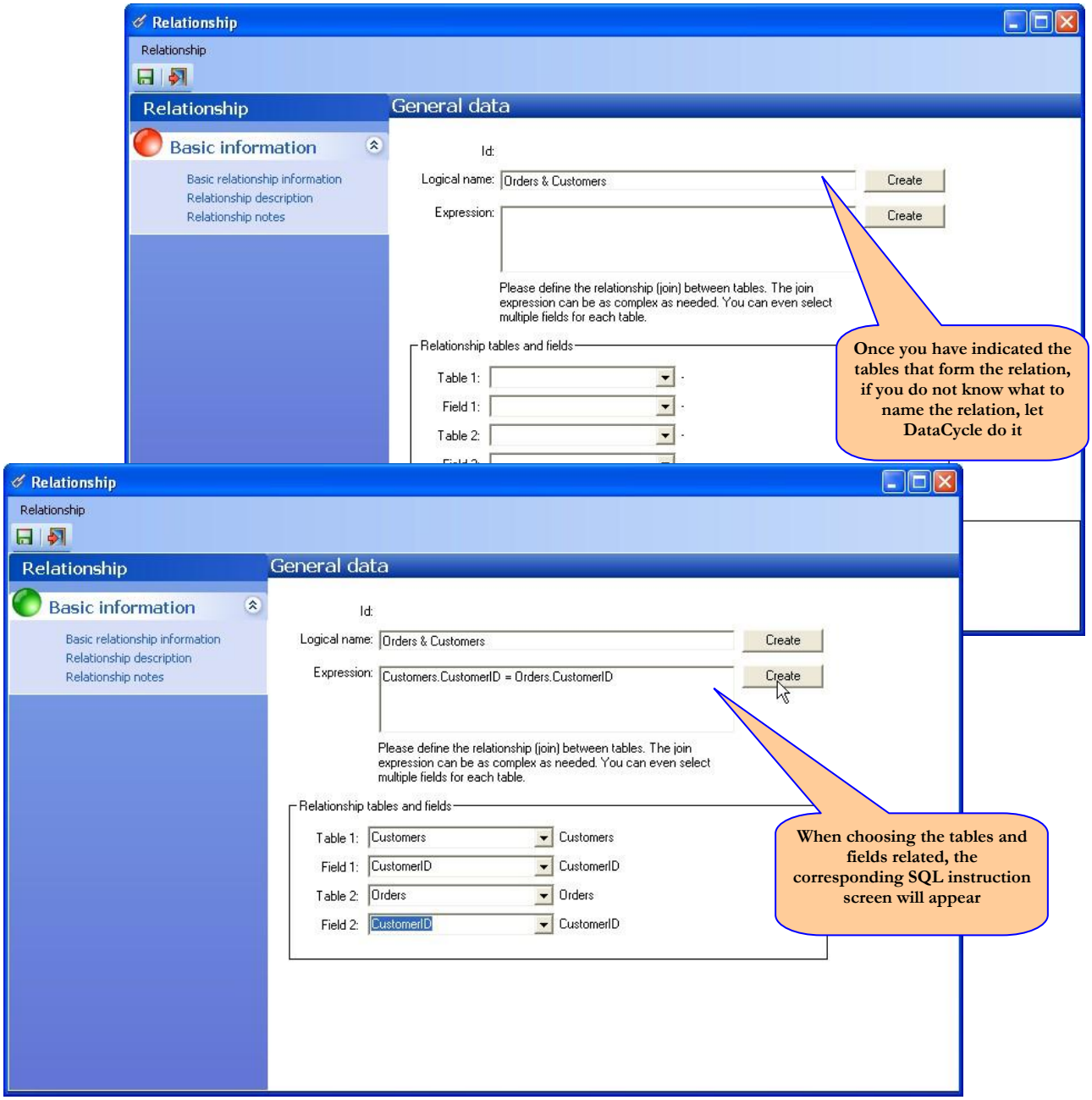


Each relation has an identifier. If you know it, you can select the relation from the identification field:



Creating a relationship

Give the relationship a name, and choose the tables and fields for the relation. Then click "generate expression" to create the instruction in SQL language that you will seize during the query design later.



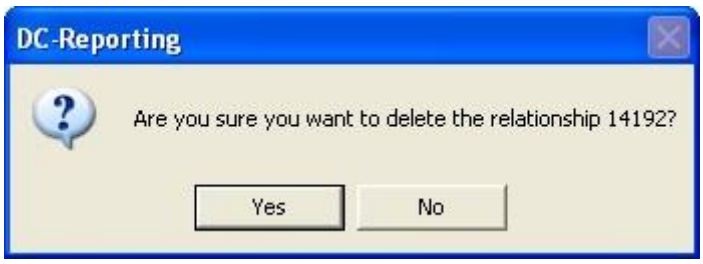
Note: The wizard enables you to relate two tables by a single field in each one of them. In more complex cases, the SQL instruction corresponding to the relationship should be written directly.

Modifying a relationship

Once the relationship to be modified is selected, click edit and the same screen described in the options Creating a relation will appear.

Deleting a relationship

It deletes a selected relation. A confirmation message will be requested.



Note: This message can be misunderstood. What is eliminated is the relation definition. The data will not be deleted or modified, nor will affect the existing SQL queries since creating the relations helps the design, but they could be performed without relations and by writing the SQL instruction without an wizard.

Query design

Report origin, a fundamental part in DataCycle Reporting

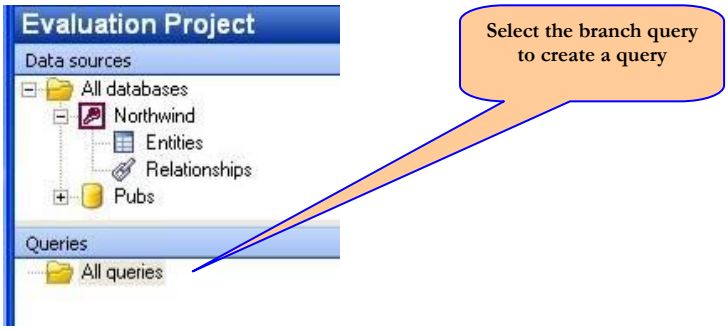
In DataCycle Reporting, the queries are reusable objects that can be used in different report generation processes. We could say that queries create a layer of abstraction that hides the complexity that exists in databases.

The information that will later feed the reports is obtained from the connected databases through the queries.

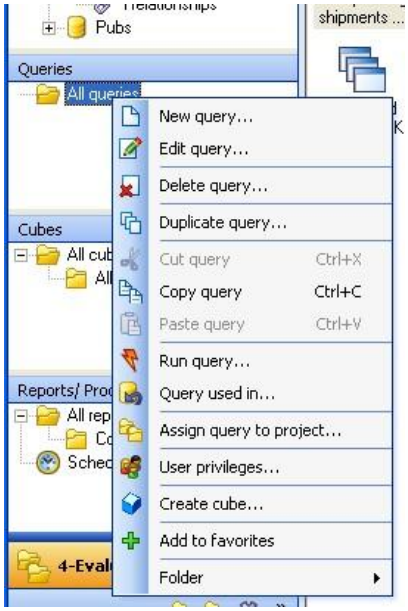
The queries are performed in SQL which is the most common language used for database queries.

Note: The SQL language is a standard for the query of any kind Database. This chapter assumes its knowledge.

Before performing any operation on a query, you have to select the Project from the exploration tree, expand it and select the "Query" branch.

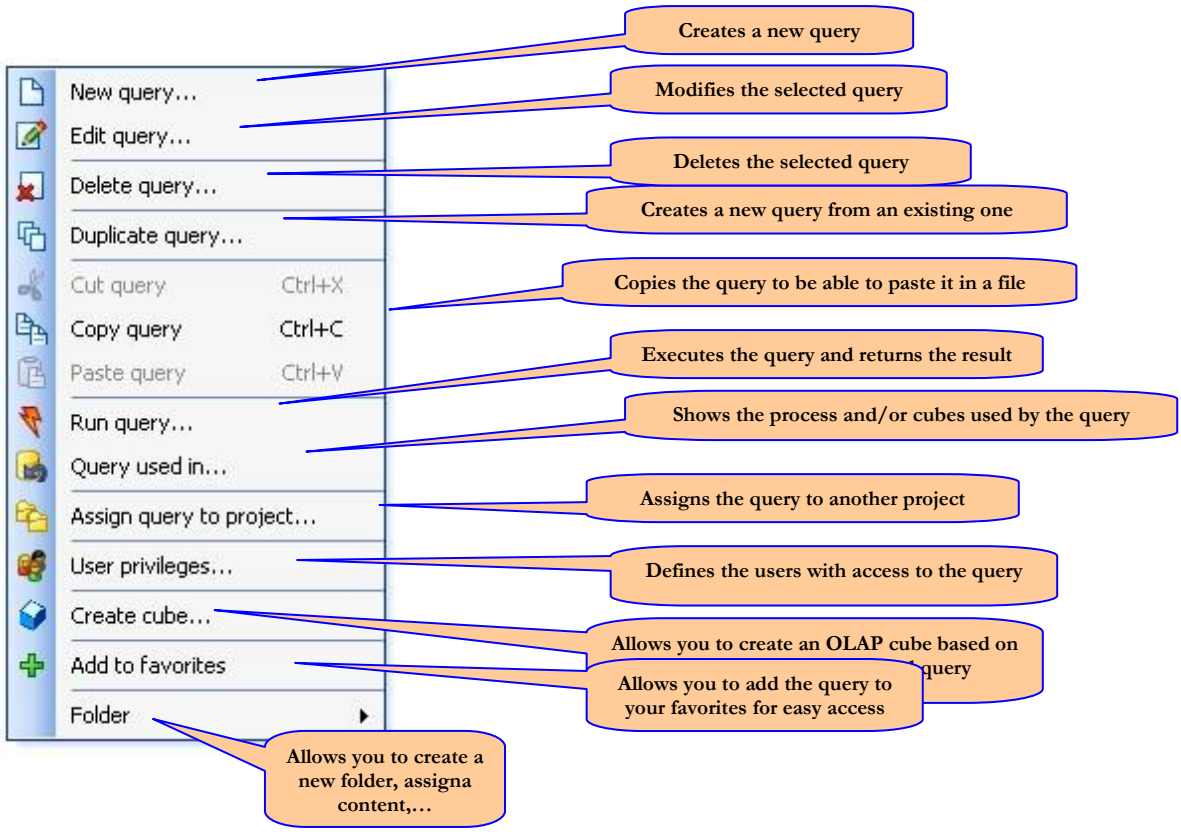


The query menu is activated by right clicking from your Mouse on the icon and the following menu will be displayed:

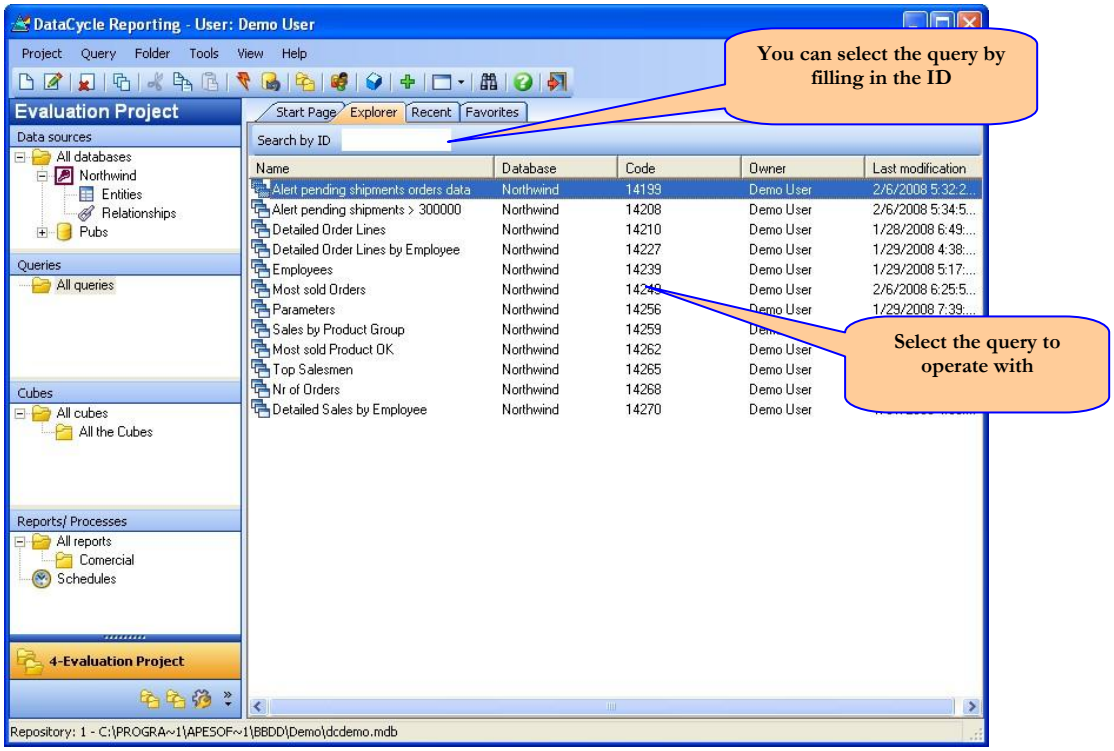


Note: In case of not having created any queries yet, the only operations available will be Create a Connection (New), and File management.

If you want to perform an operation on an existing query, you have to first select the query and activate the contextual menu where all the options available will appear.



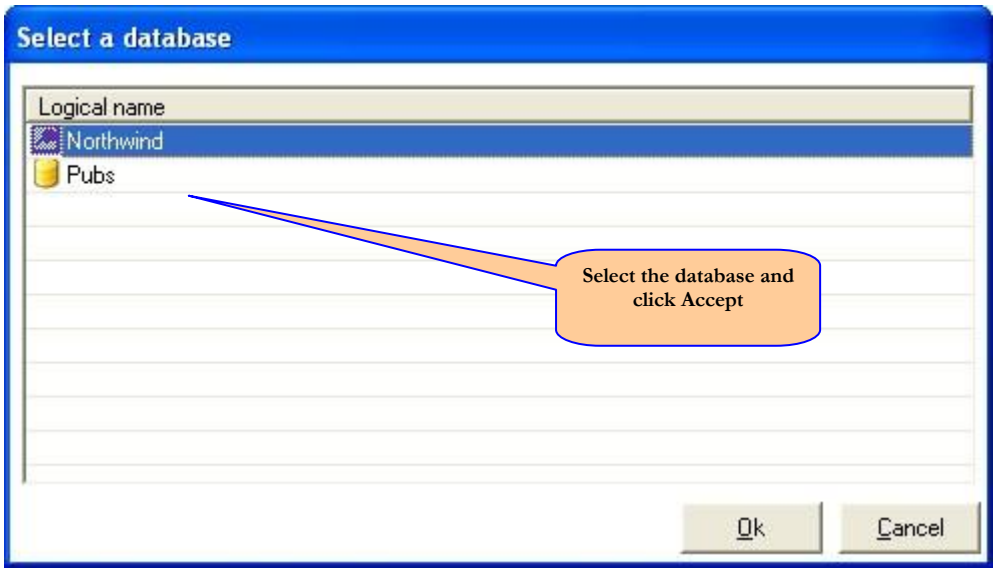
Each query has an identifier. If you know it, you can select the query from the identifier:

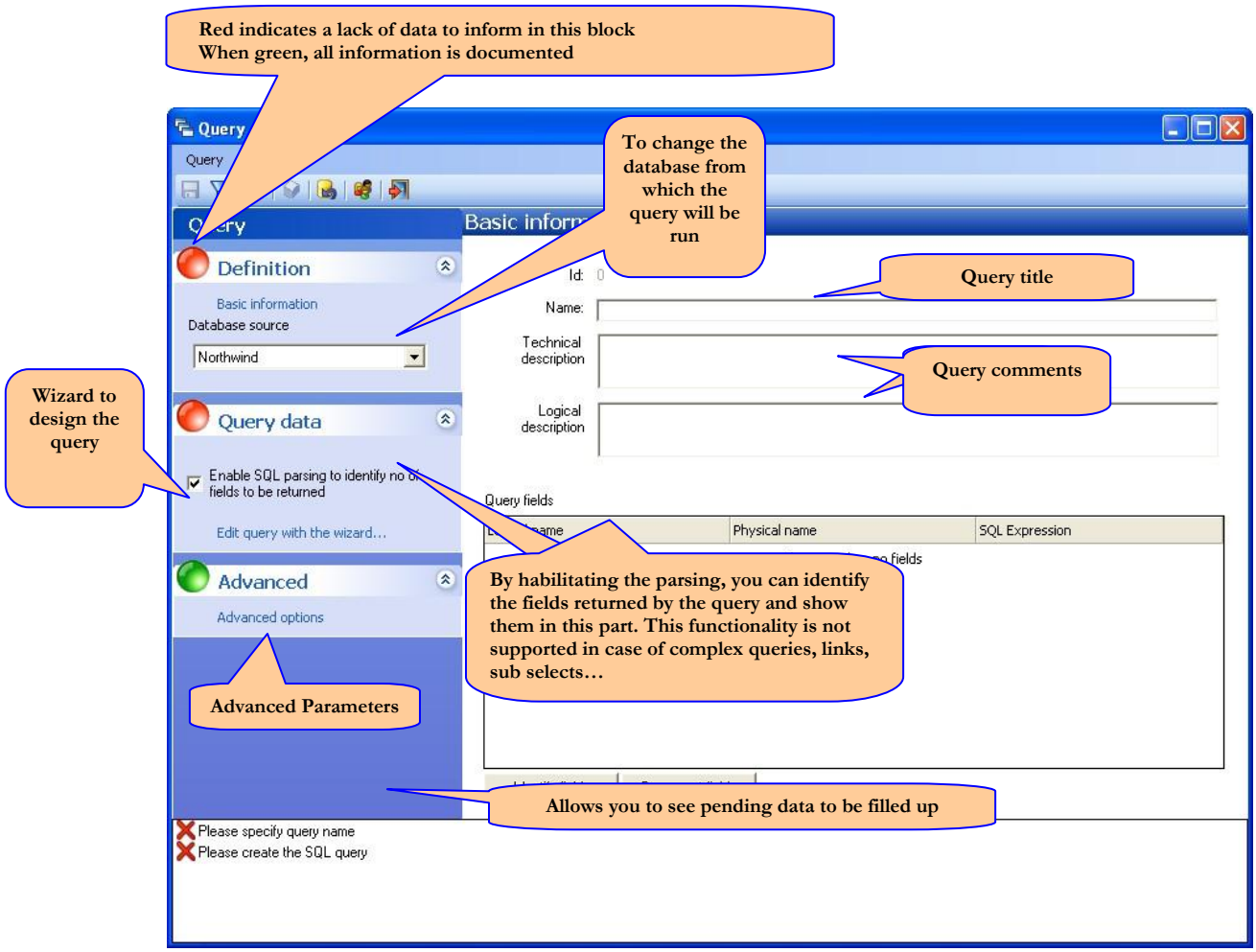


Creating a query

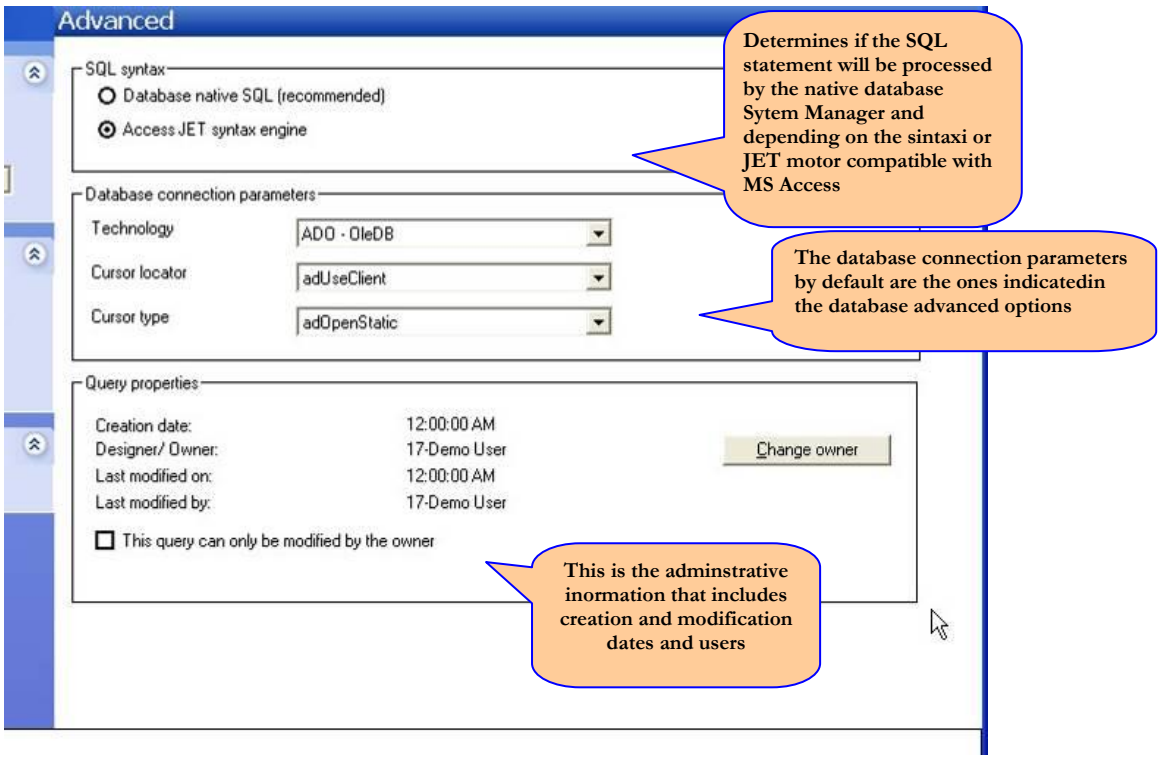
In order to create a query, follow the next steps:

Once the option "New Query" has been selected from the menu, a screen requesting the database that you will work with will appear.

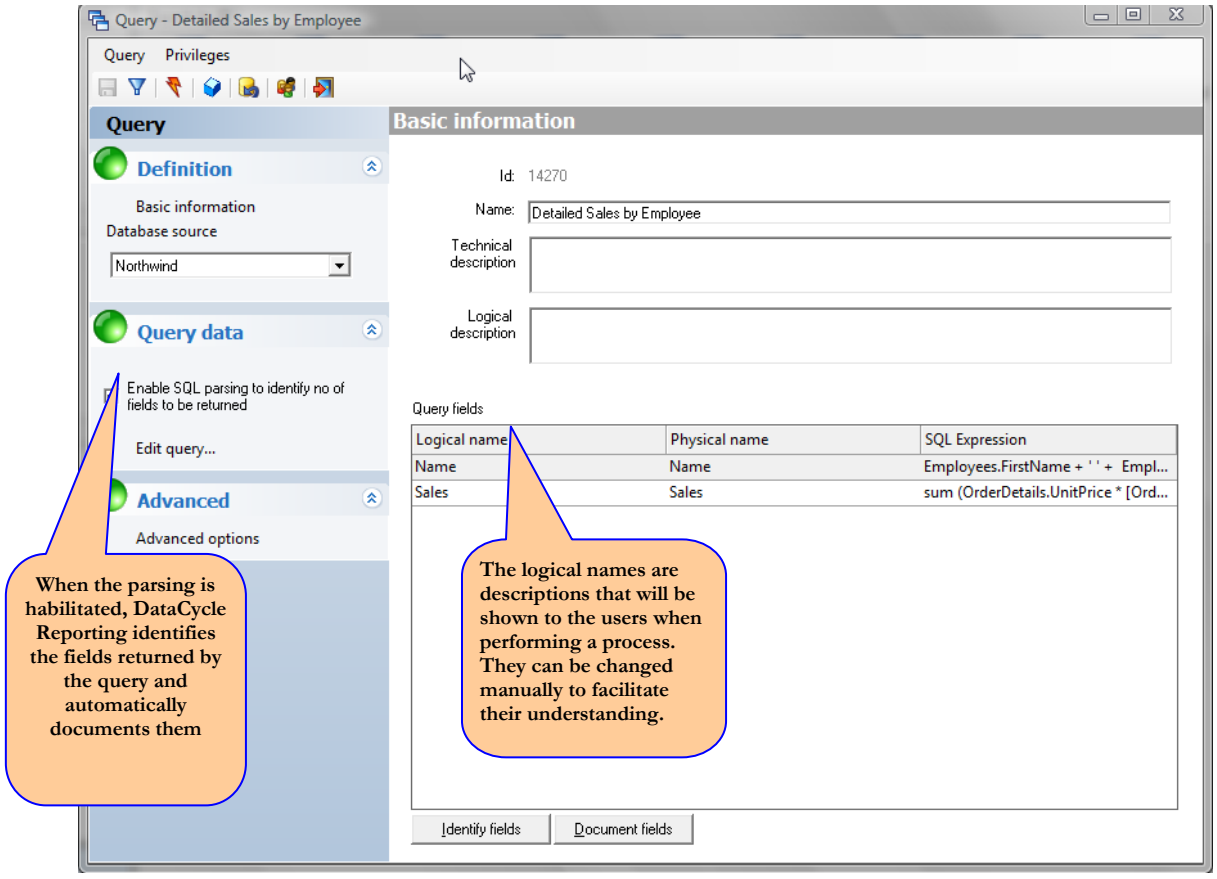




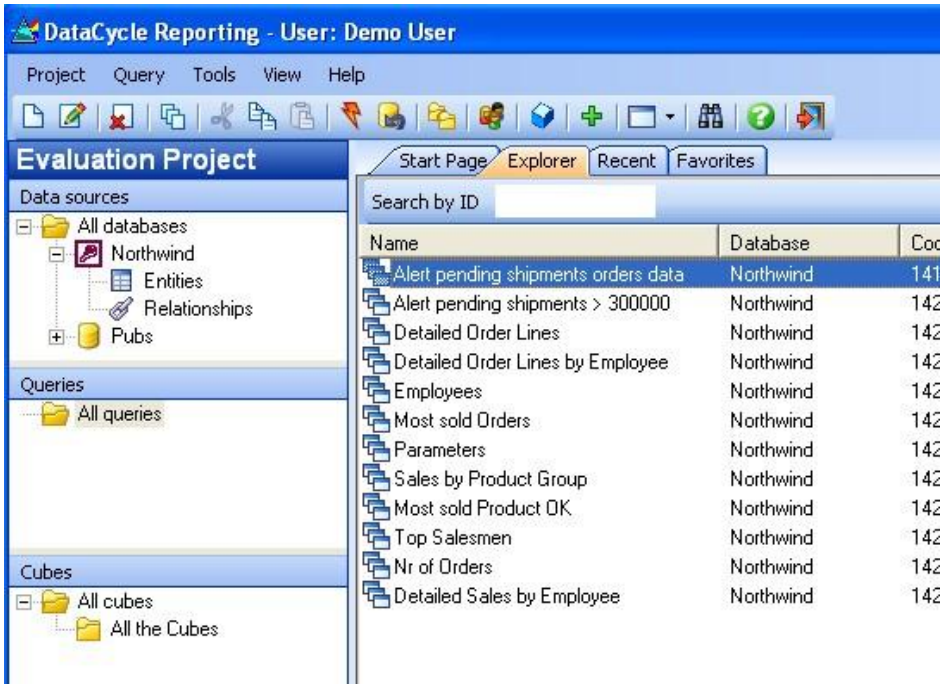
The side menu option "Advanced Options" allows you to access to the following:



Once the query is defined with the **wizard**, the fields selected are shown:

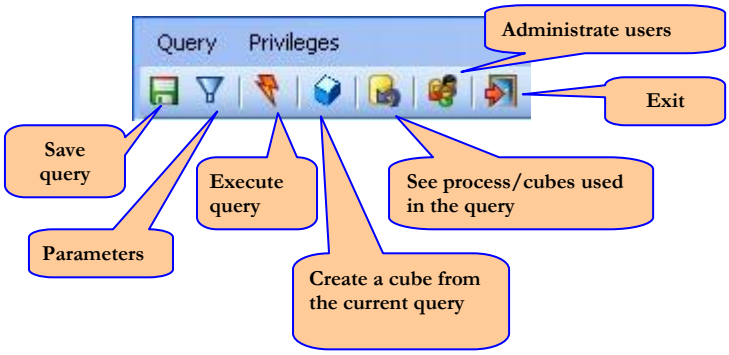


Once the design of the query is finished, you will save it by clicking  and exit by clicking  . The query will appear in the DataCycle Reporting explorer.



This query can be executed as many times as needed without having to enter to the query edit window by clinking on  from the main tools bar.

Once inside the query, the tools bar is the following:



SQL query wizard

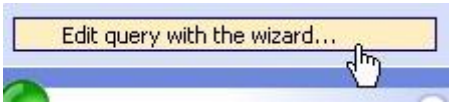
The DataCycle Reporting query consists on the execution of an SQL instruction that has previously been entered by the query designer.

The SQL language, as any other programming language, is very strict and does not accept errors. That is the reason why DataCycle Reporting includes a wizard that facilitates the design and testing of the SQL queries.

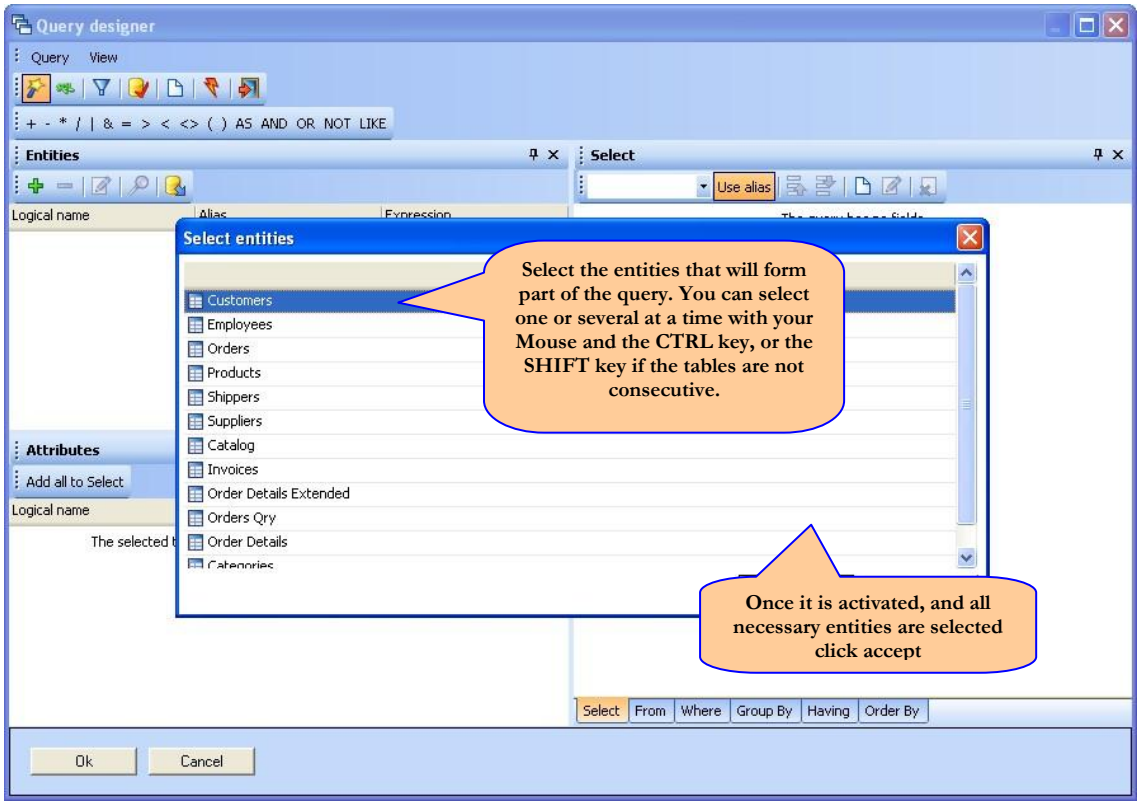
Note: Not all SQL instructions can be expressed by the wizard. There are certain limitations that are explained later on.

Entity or table entrance and selection

You can access the wizard from the main tab in the query definition window:

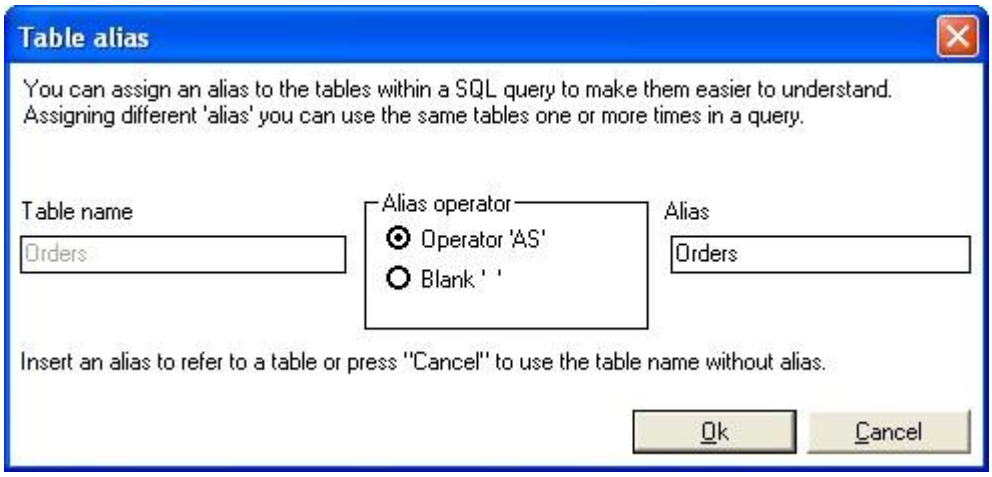


The first time that you access the wizard, you will be requested to indicate the entities or tables to be consulted:



Note: The entities available are the ones that have been imported from the database profile

For each entity selected, a screen requesting the type of operator to assign synonyms (alias) to the various entities that form part of the SQL query will appear. By default, the type of operator indicated in the profile database will appear, but it can be changed if desired.

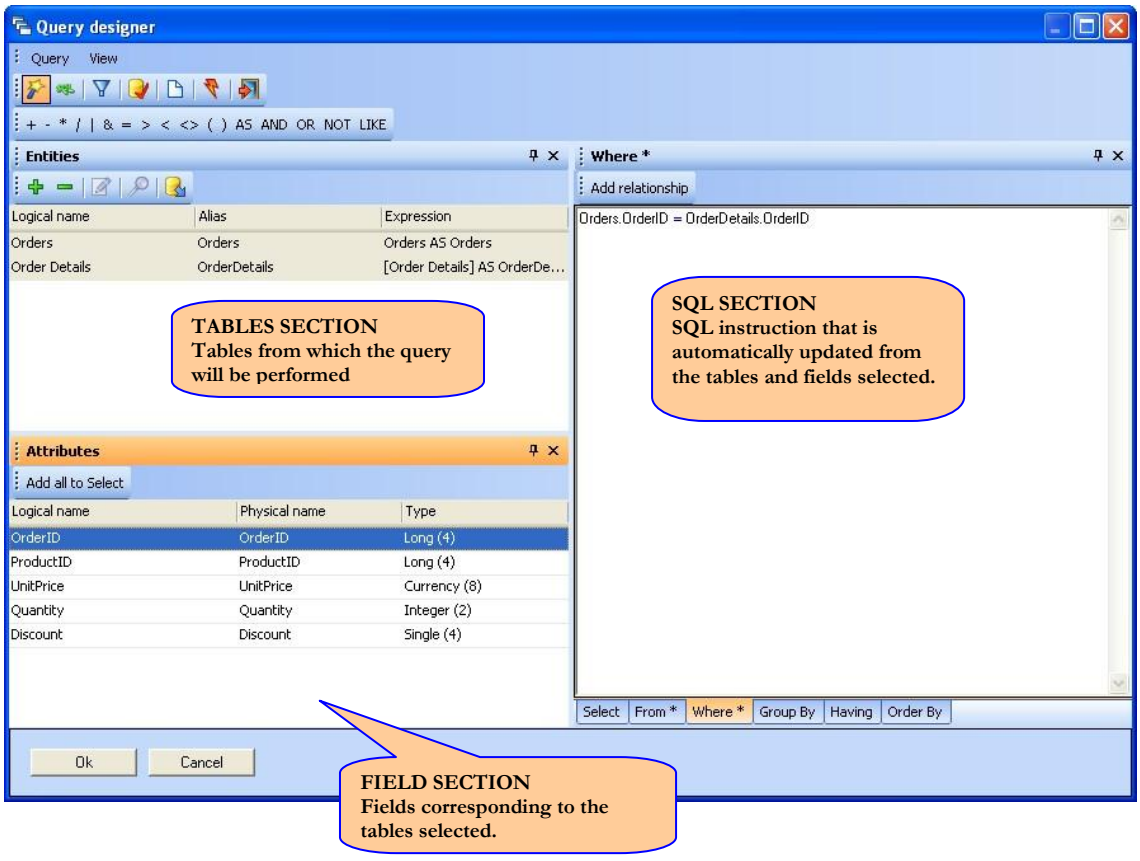


In case the relations between the selected tables have already been defined, a window that allows you to automatically include them will appear. You can also add them later from an option in the main screen of the query wizard.

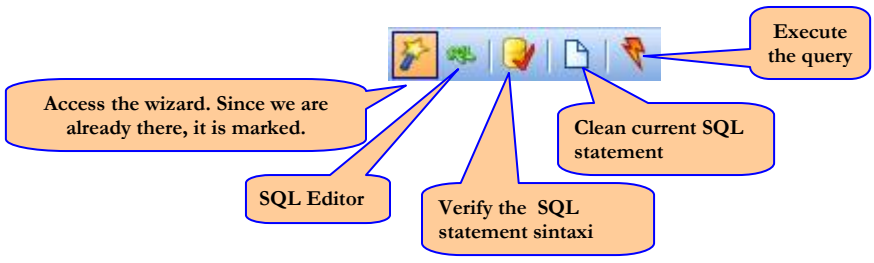
Finally the query wizard main screen will appear.

Wizard main screen

Once the wizard knows the tables that will form the query, either because they have been selected or because an existing query is being modified, you can access the wizard main screen which is divided into the following sections:

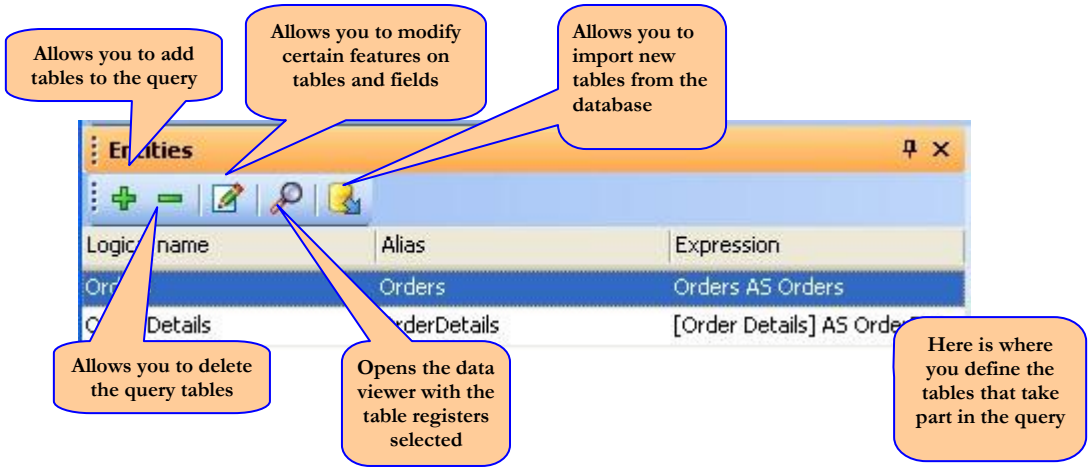


Inside the wizard, the main tools bar is:



Query tables section

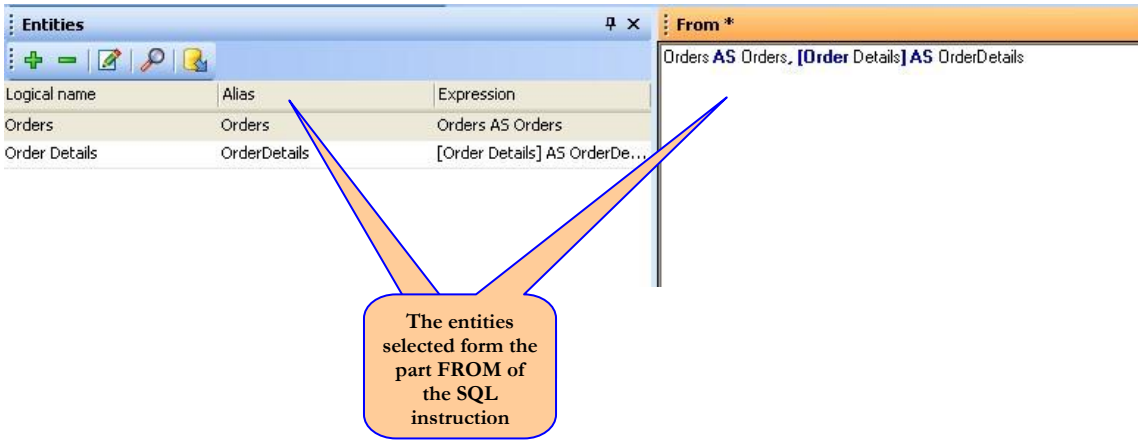
Apart from the initial main screen in which the entities that form a query are indicated, they can be modified from the wizard main screen.



Note: The wizard does not delete from the SQL instruction the fields that belong to a deleted table.

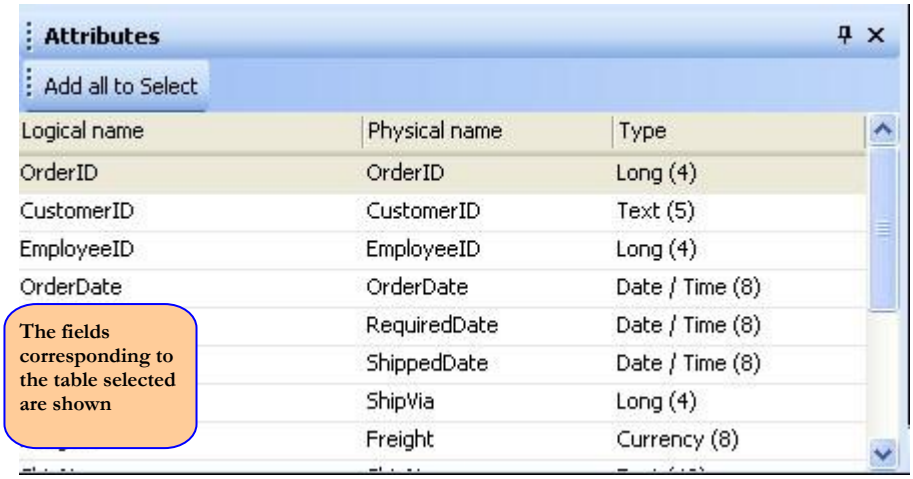
The wizard will automatically show in the field section the fields that belong to the table selected.

The tables selected form the part FROM in the SQL instruction.



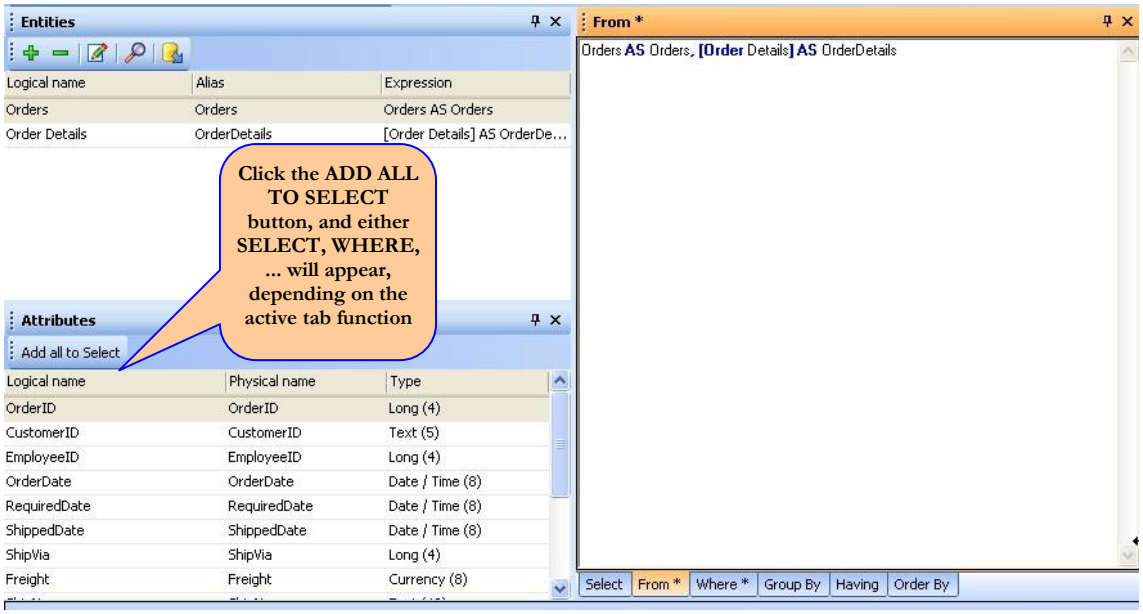
Query fields section

In this section the fields corresponding to the table selected in the previous section will appear. Indicate the fields that should appear in the table query.

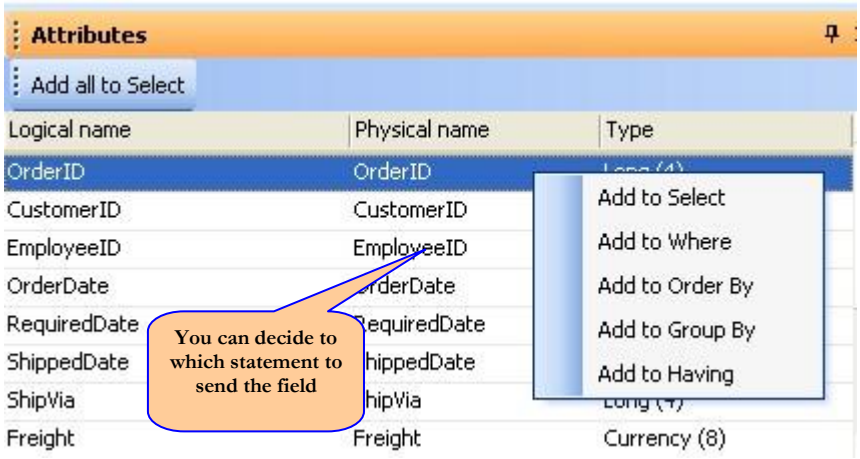


You have several options to select the fields desired and include them in the tab already selected: SELECT, FROM, WHERE, GROUP BY, HAVING or ORDER BY:

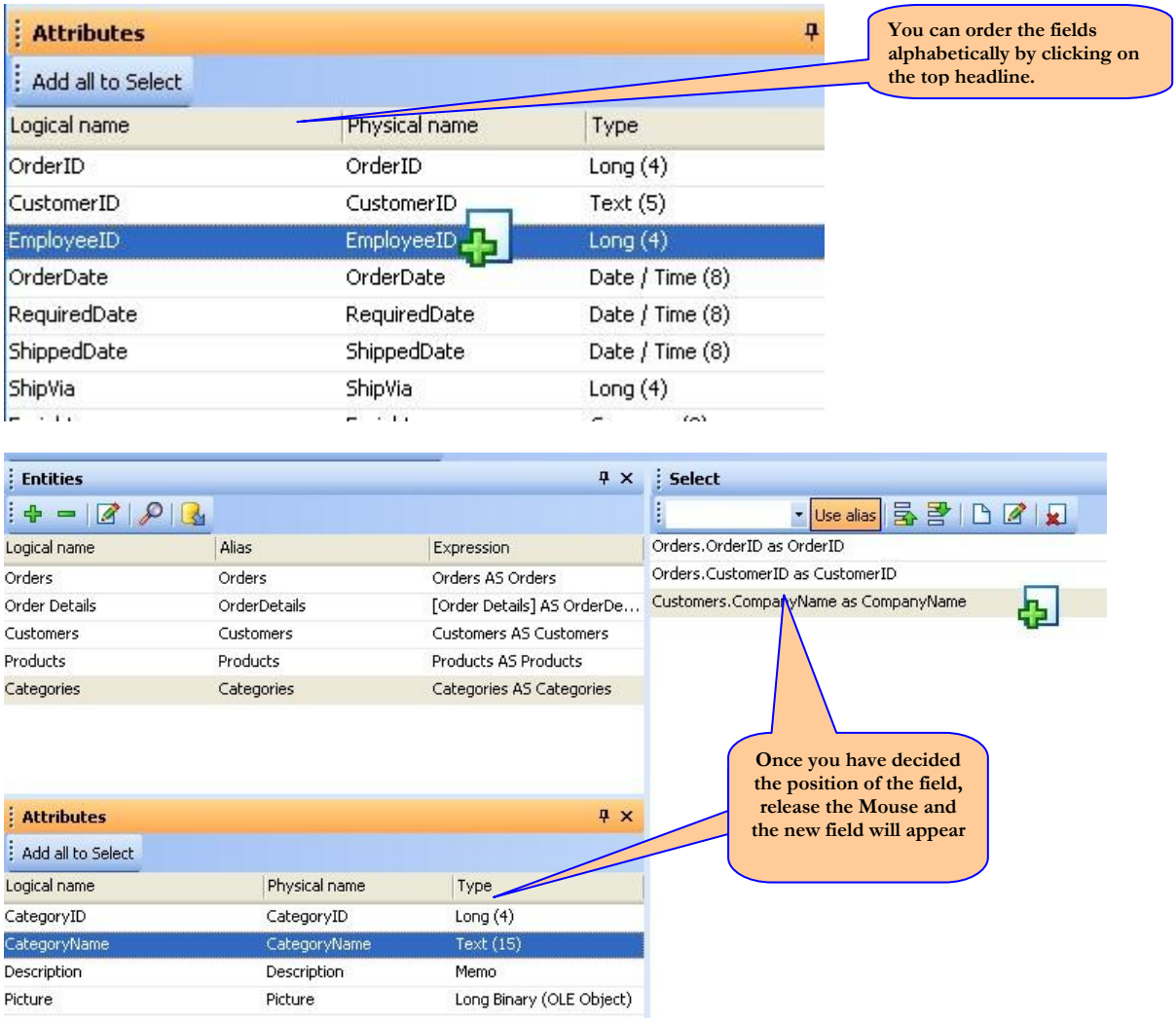
1. If you wish to add **all** the fields:



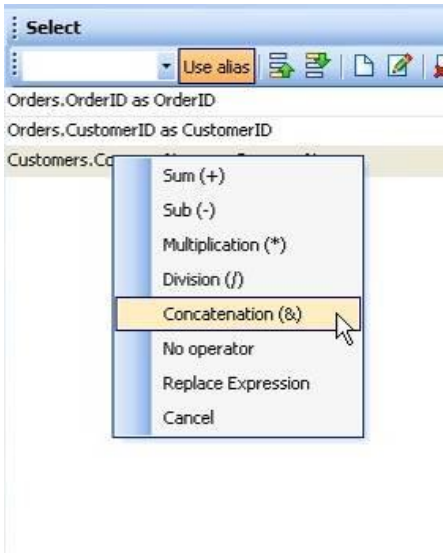
2. If you wish to add **field to field**, click on the field and click the secondary button on your mouse to see the following menu:



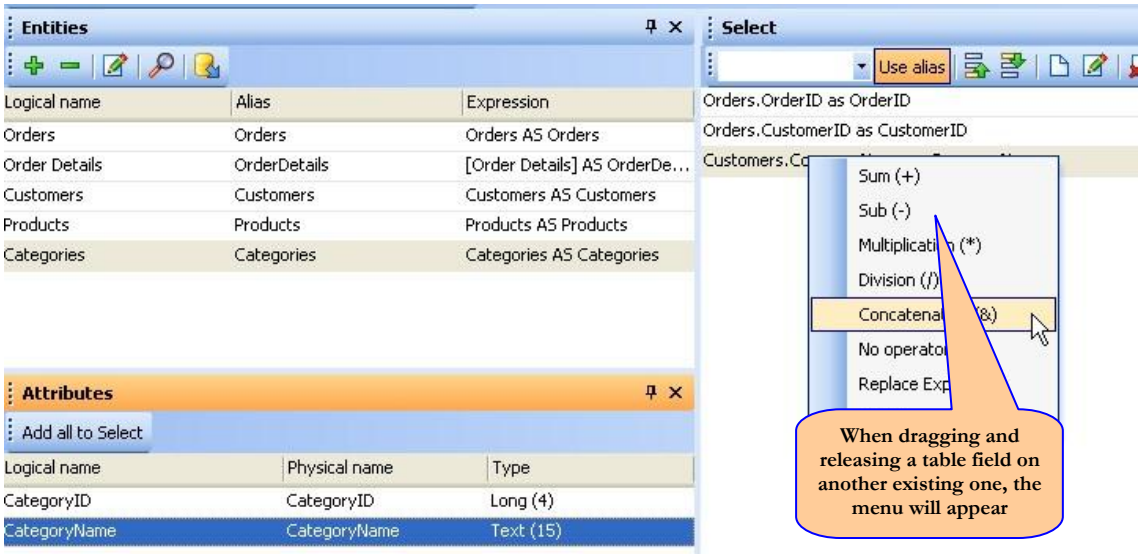
3. Another option to add **field to field**, is to click on the field and without releasing, drag it to the right part of the tabs SELECT. The mouse icon will change and  will appear.



Note that if you release the field over another one, the following menu will appear:



By selecting a operation in the menu, an expression would be created using both fields. For example, if the field **NameCategory** is dragged on the field **NameCompany** and the operation **Concatenation** is selected **(&),**



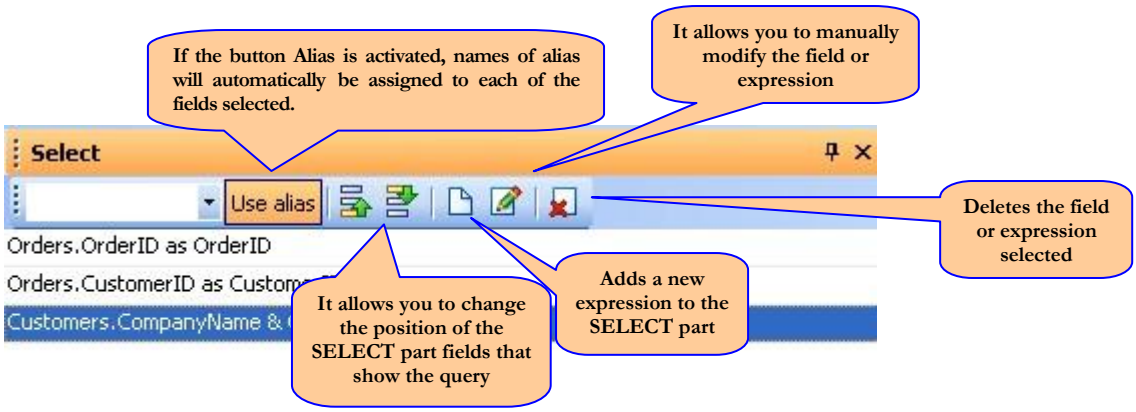
You will get the next expression field:

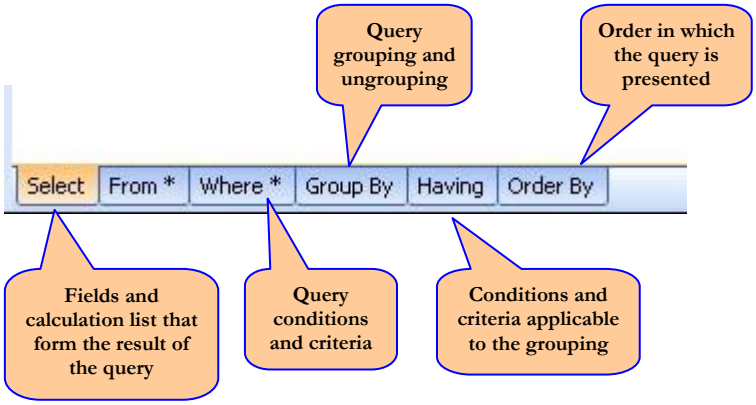
SQL Section

Note: If the button Alias is activated, names of alias will automatically be assigned to each of the fields selected.

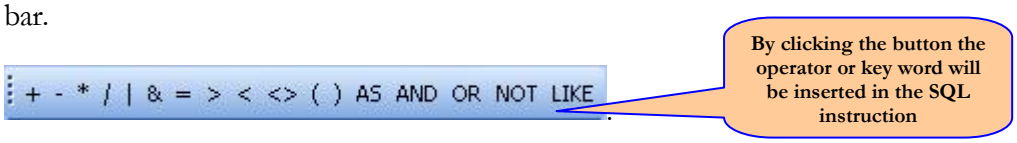
The SQL section shows how the SQL instruction is built from what is indicated in the section entities and in the section fields.

The SQL section shows the final instruction result with the traditional division of the SQL language itself.

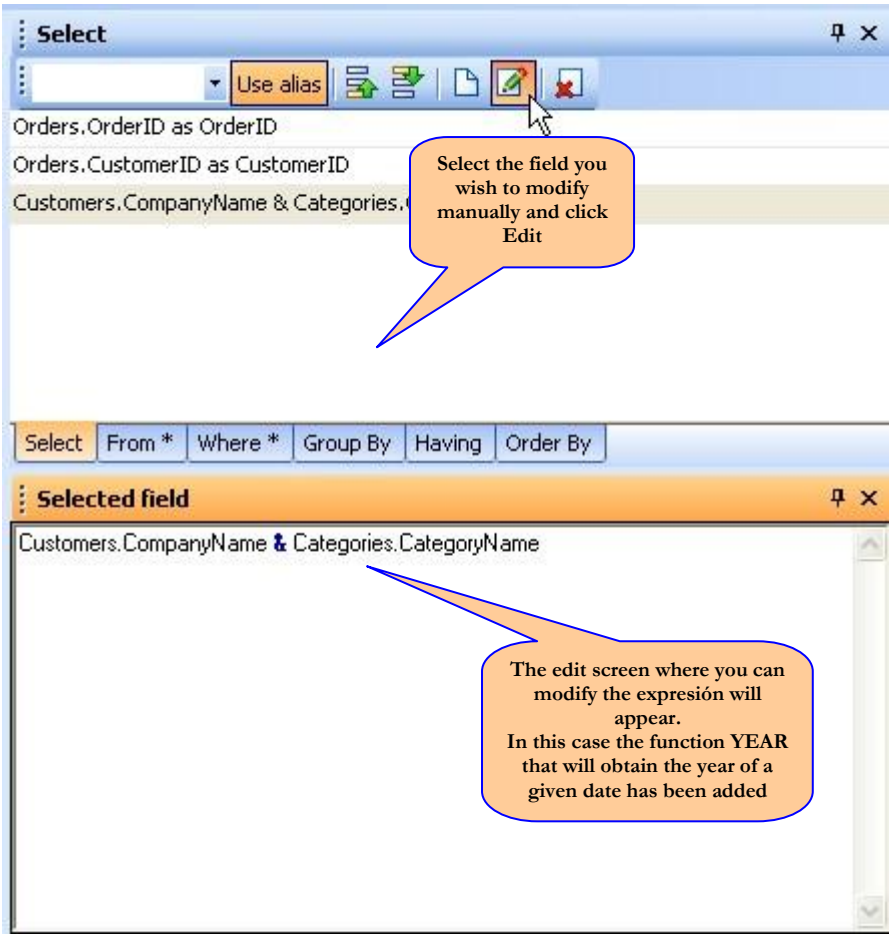




In this section you will be able to manually modify and introduce key words using the top tool bar.

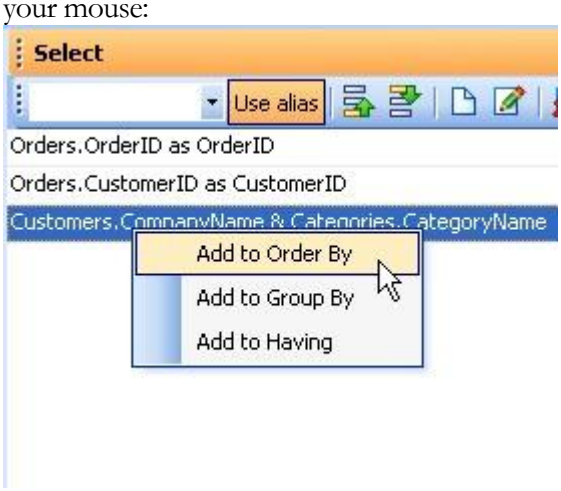


The SQL instructions support countless operators, symbols, reserved words or adding functions that can be introduced manually by double clicking on the field or the window that appears when clicking the edit button:



Note: The wizard does not validated syntax of the instruction modified manually.

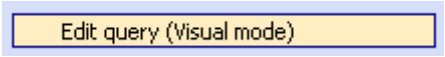
You can copy fields included in the SELECT clause to another part of the statement by selecting one of the menu options that appear when clicking on the field with the right button in your mouse:



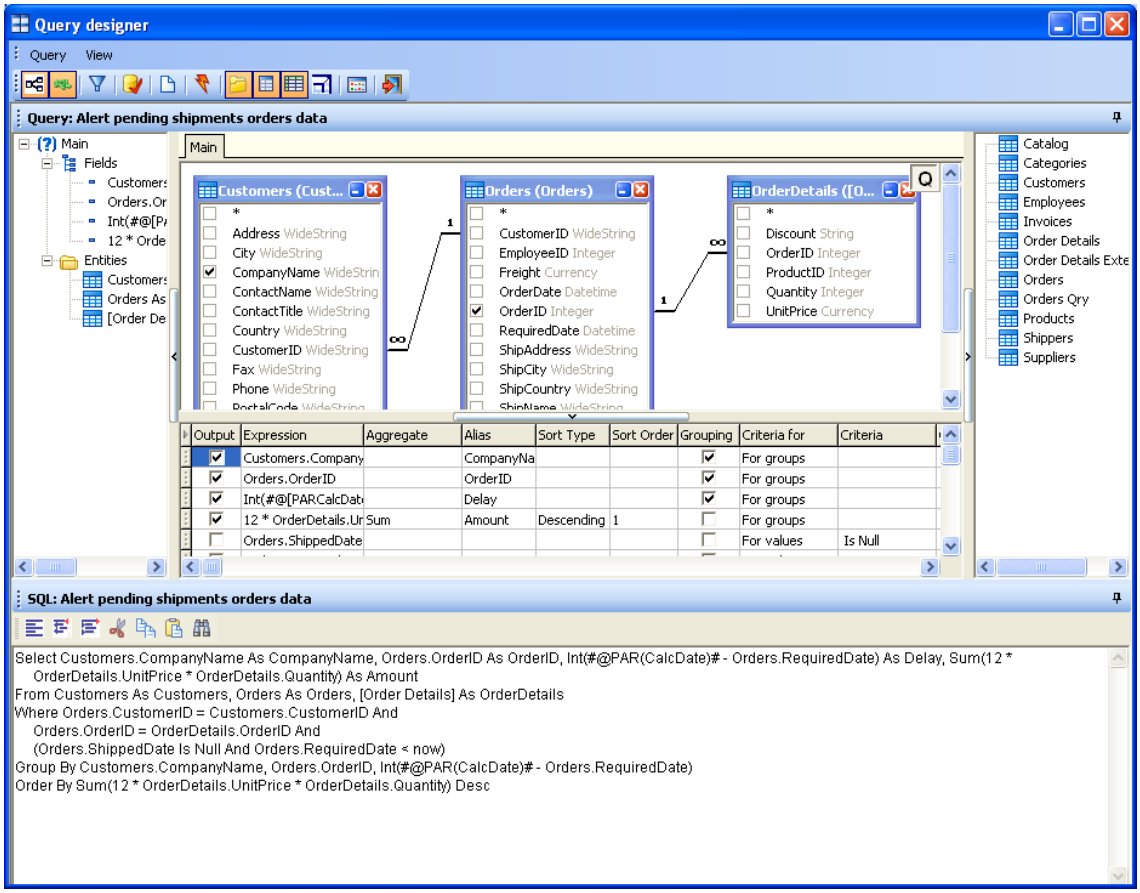
Once the query is designed, you can go back to the initial query window by clicking Accept to keep the changes or Cancel if you do not wish to keep the changes.

Visual Query Builder

From query screen you must select the visual mode:



DataCycle Reporting has a visual query editor because in addition to a section of free edition of SQL text, shows a section with four graphics boards that speed construction of the SQL statement considerably.



Panels can be hidden and resized and are as follows:

Query objects panel

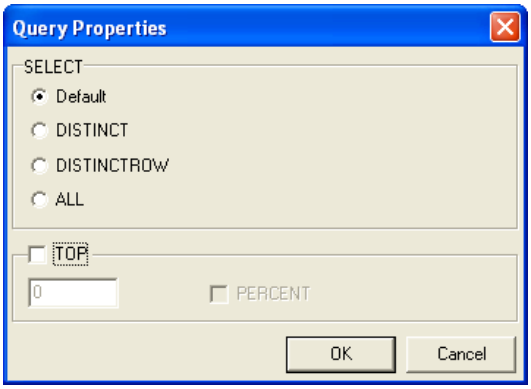
Shows in a tree fields and entities of each query or sub-query that are being edited. Is for information only.

Entity – relationship diagram panel

The panel itself is editable and actions on this impact in the final SQL. A click on the boxes indicates the field being selected or deselect for the current Select. Create a line between fields of different entities means that defines a relationship between two entities through the matching of these two fields.

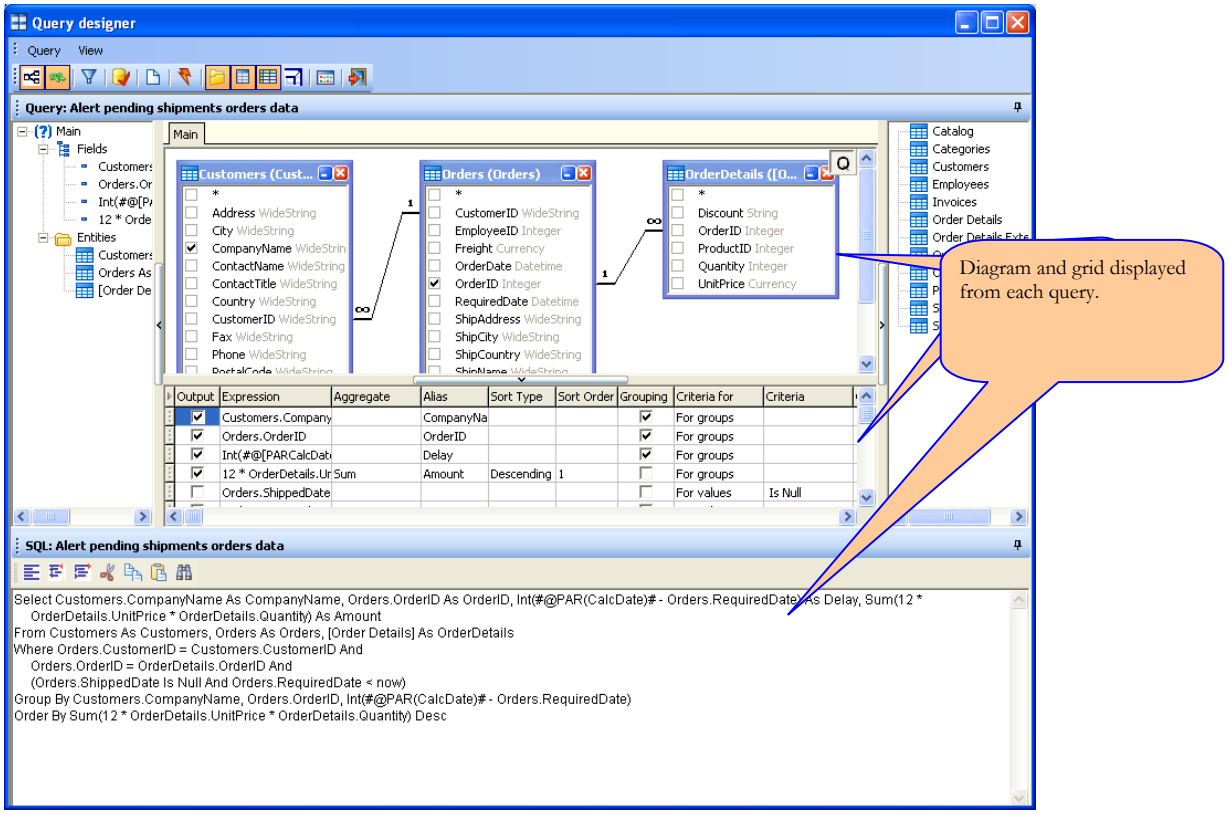
Por otro lado un **clic derecho** sobre el panel diagrama aporta estas posibilidades:

- Allows add an entity
- Allows add a sub-query
- Allows create a new query / copy one



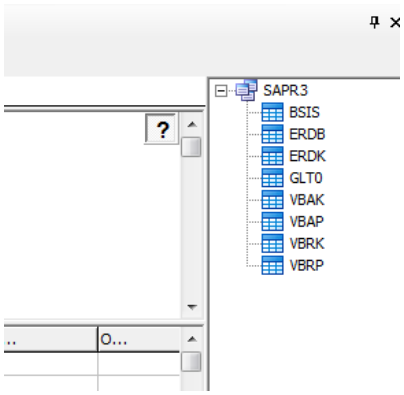
Properties… automates certain embodiments of a sentence of a database query as the record-clustering (ALL / DISTINCT), or limiting the number of rows to return (TOP). It is also accessed by right clicking on the button Querys' Q '.

It shows many tabs as subqueries containing the main query, and these are shown separately in the diagram and the grid



Database schema panel

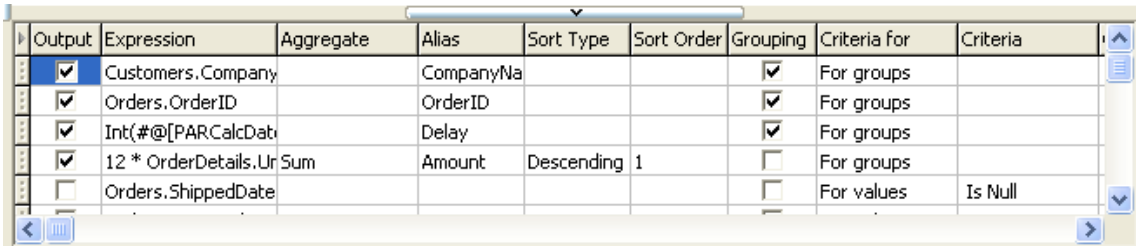
It displays all the tables and views in the database. If you set OnLine mode in Advanced options, all the tables in the database are displayed. If set Offline mode, only the imported tables and views are displayed.



The tree shows the hierarchy of tables in the database. Double-clicking on an object or drag it to the diagram panel causes the inclusion of the table / view in the Select.

Column grid panel

Each row represents one column on the select. Their role is modified by the following option:



Output	Expression	Aggregate	Alias	Sort Type	Sort Order	Grouping	Criteria for	Criteria
☑	Customers.Company		CompanyNa			☑	For groups	
☑	Orders.OrderID		OrderID			☑	For groups	
☑	Int(#@[PARCalcDat		Delay			☑	For groups	
☑	12 * OrderDetails.Ur	Sum	Amount	Descending	1	☐	For groups	
☐	Orders.ShippedDate					☐	For values	Is Null

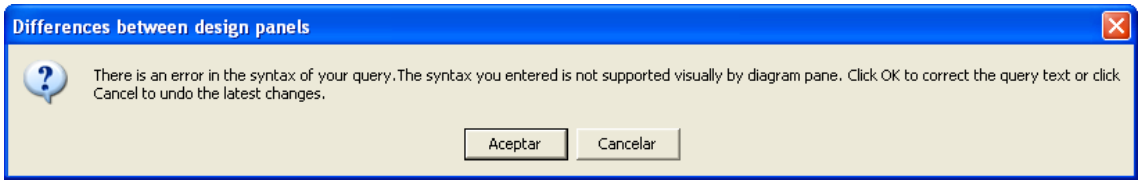
Output	Indicates if the field will be returned
Expression	It is the expression of field / fields existing in the database
Alias	Logical name of the expresión in the query.
Aggregate	Aggregation function
Sort Type	Ascending/Descending
Sort order	In deciding the priority if more than one column ordering.
Grouping	Group by columna
Criteria	For groups/For Values
Filters (Or…)	Filters to restrict the rows to return

Using the visual query editor

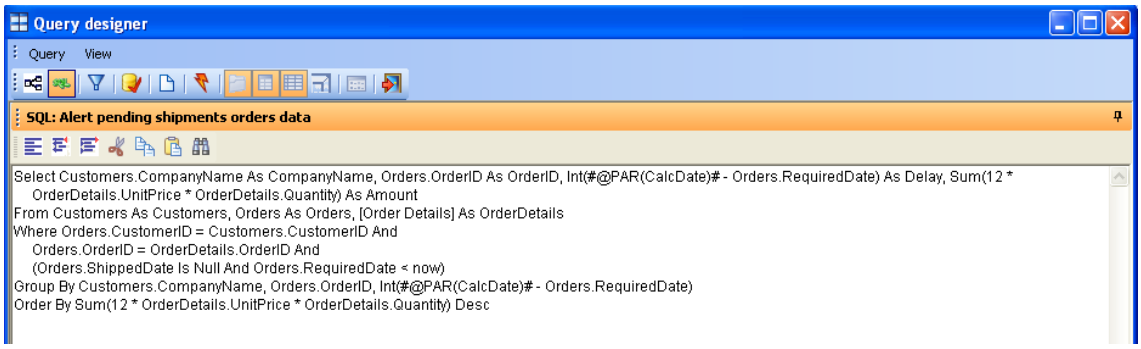
Free edition of SQL text:

You can edit the text freely even using copy and paste from other editors. Clicking outside the text panel or the diagram will be updated panels: Query object, grid columns, and entity-relationship diagram.

If the text contains a syntax error and the SQL statement is not representable in the diagram, the system queries the user if they want to undo the latest changes or continue editing the query manually.



If one accepts the visual panels are hidden and the screen is occupied with the SQL Text pane, when the text contains a correct statement can re-enable the visibility of the visual panels.



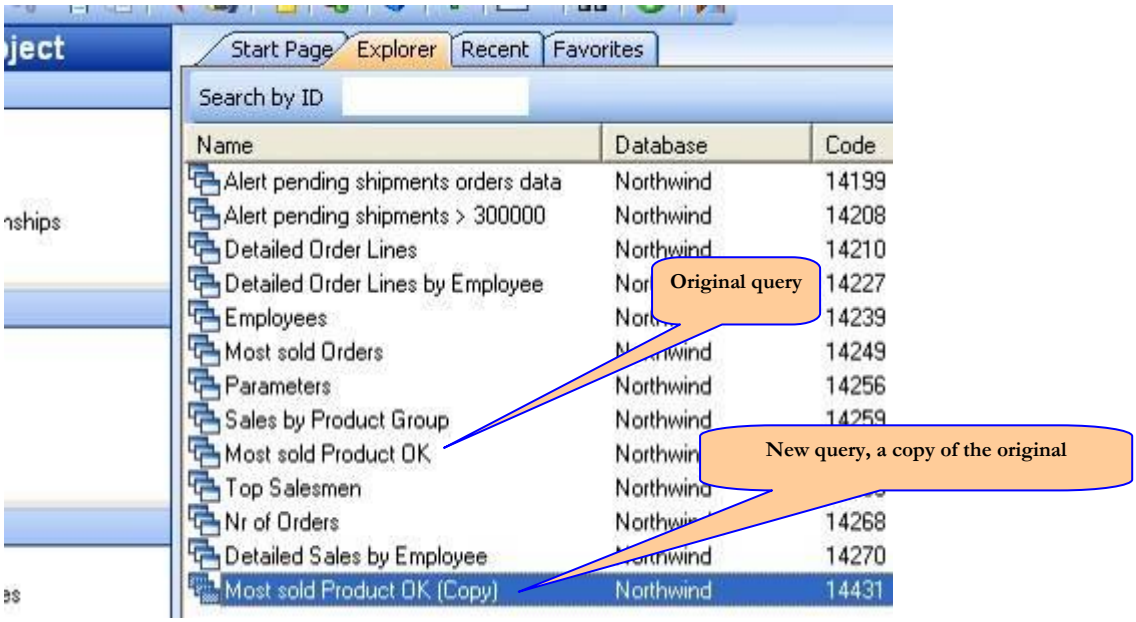
Note: If immediately after manually editing the SQL text, click a column box diagram entity objects or boxes "exit" of the grid, the change will apply for the action in the visual panels in place changes due to editing.

Modifying a query

Select the query you wish to modify and click Edit from the menu. The same screen as the one in creating a query will appear with the only difference that the database the query is based on is not requested since it is already defined.

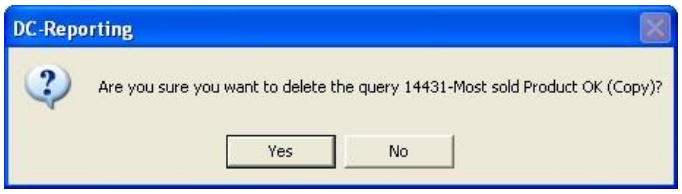
Duplicating a query

This operation allows you to create a new copy of the selected query. To differentiate them, the word "(Copy)" will be added at the end of the new query's name.

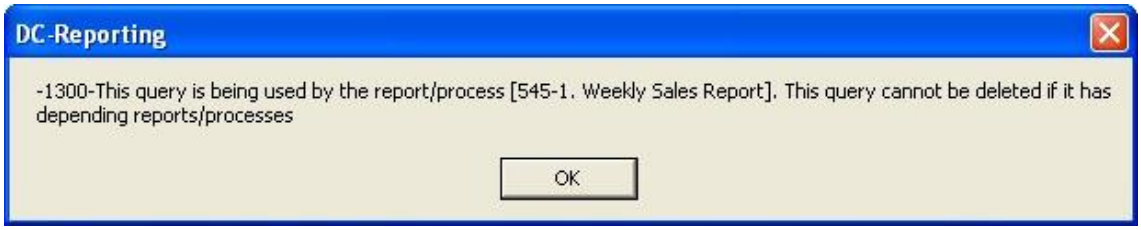


Deleting a query

This option deletes the query selected. A confirmation will be requested.



You will not be able to delete a query that is being referred from a process. In this case, when you try to remove it the program will warn you. So, if you really want to delete it, you need to remove the existing reference from all the processes that use it.



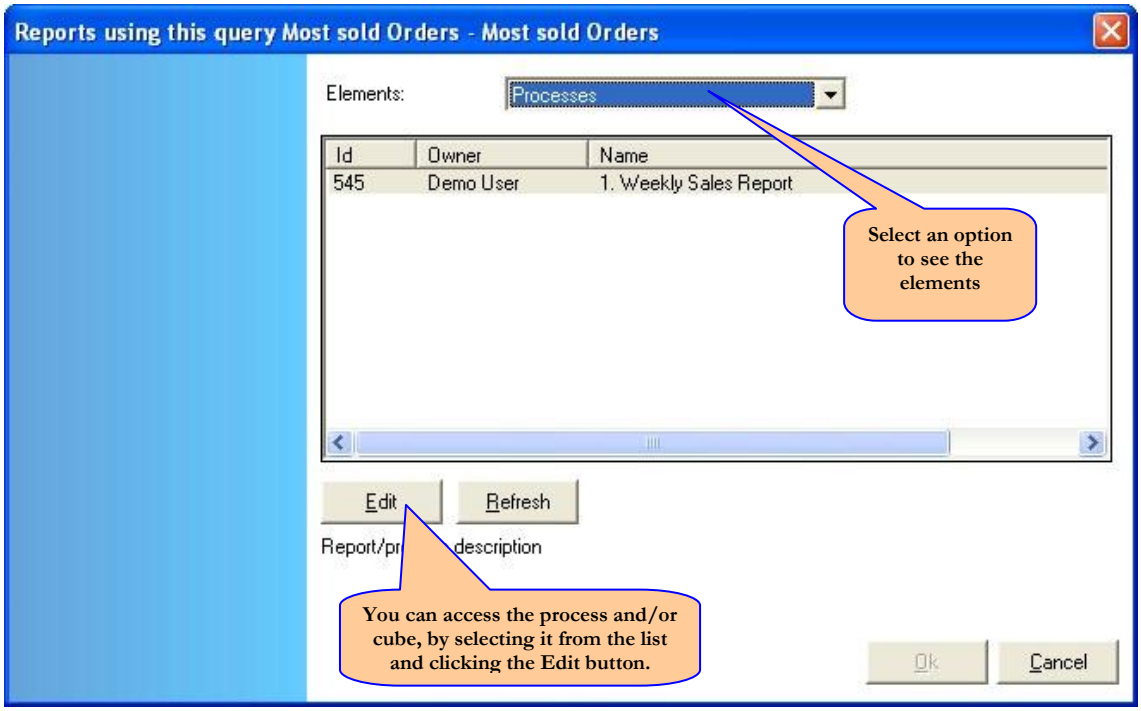
Note: Remember that the DataCycle Reporting query does not include physical data form the corporate database and therefore what is being deleted is only the access definition.

Executing a query

This option executes the query selected and opens the Data viewer with the results.

See the dependent process

This option allows you to verify what are the processes and/or OLAP cubes that are using the selected query to retrieve data.

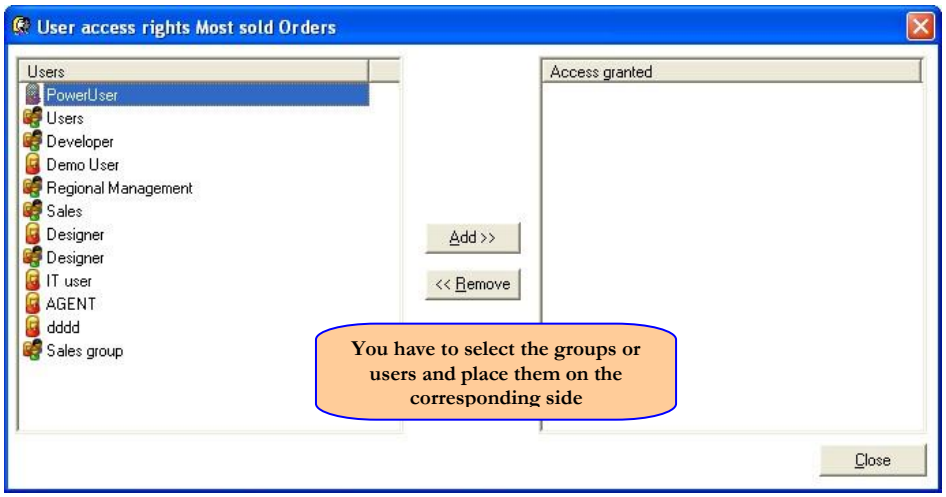


Query Administration

This option allows you to indicate which groups and users can access the query selected.

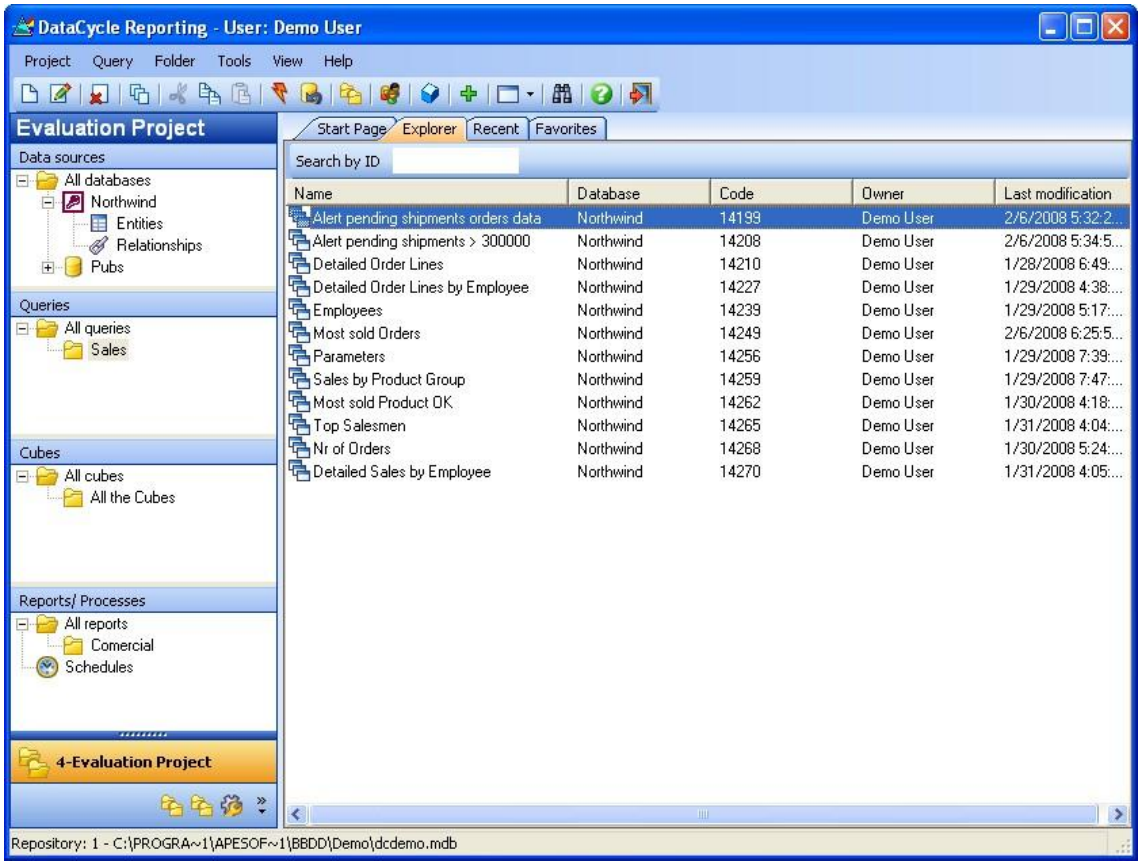
It is a basic security measure that prevents unauthorized users to access certain data that is considered confidential.

For more information, refer to the Security chapter.

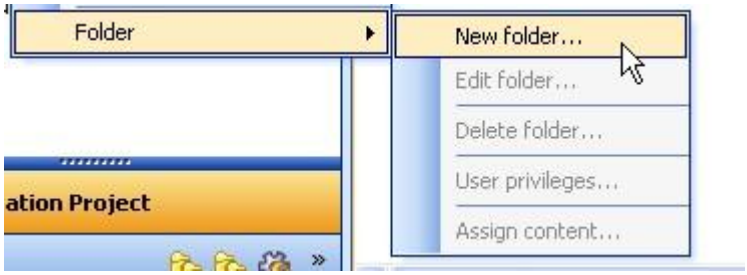


Folder Management

One of the most useful capabilities is the ability to classify the queries and processes in folders. You can define the hierarchy of processes and folders according to your interest.



Several operations will allow you to manage folders and its contents:



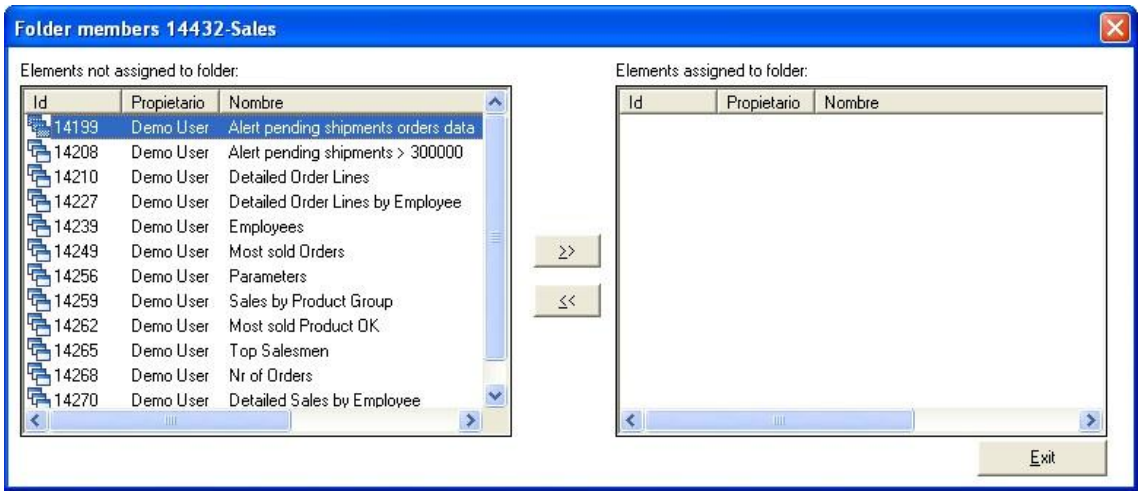
- Create a new folder
- Edit an existing folder
- Delete a folder
- Privileges on a folder
- Assign content to the folder

Create, edit and delete folders

These options will allow you to create a new folder, change its name and delete it. Remember that the query or process associated to a folder will not be deleted. Only the folder itself will be deleted.

Query and Process classification

A query and process can be associated to a folder by using the following window:



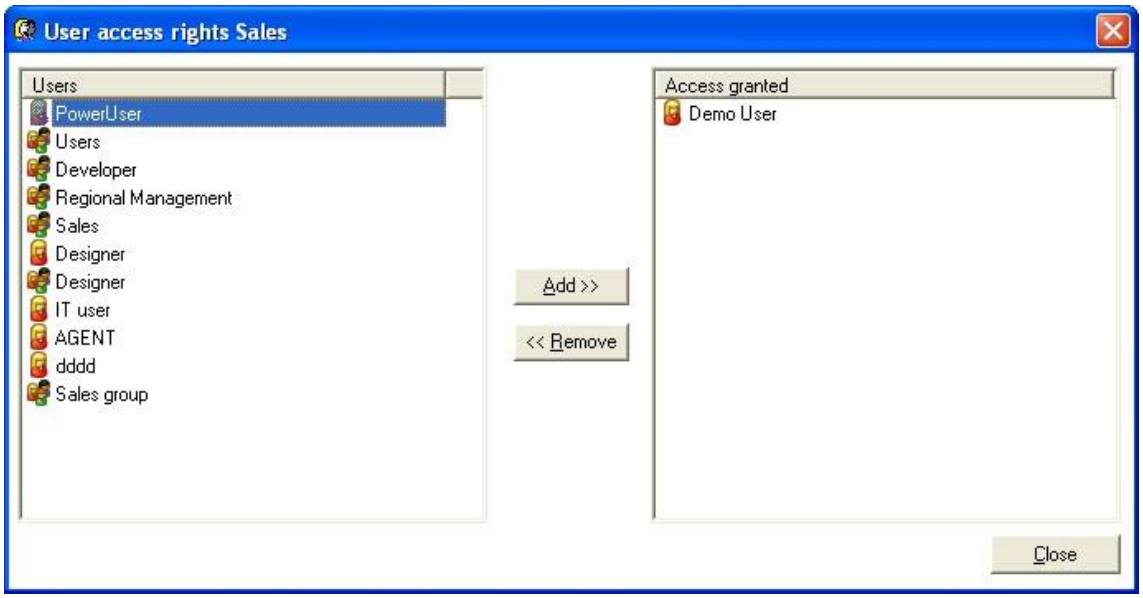
You can make multiple selections (using the Control or Shift keys) to allocate several queries all at once. Moreover, you can order the queries by code, owner or name.

Important:

A query can be allocated in multiple folders simultaneously.

Privileges on files

Indicate which users have the right to work with the queries or processes in a folder from the following screen:



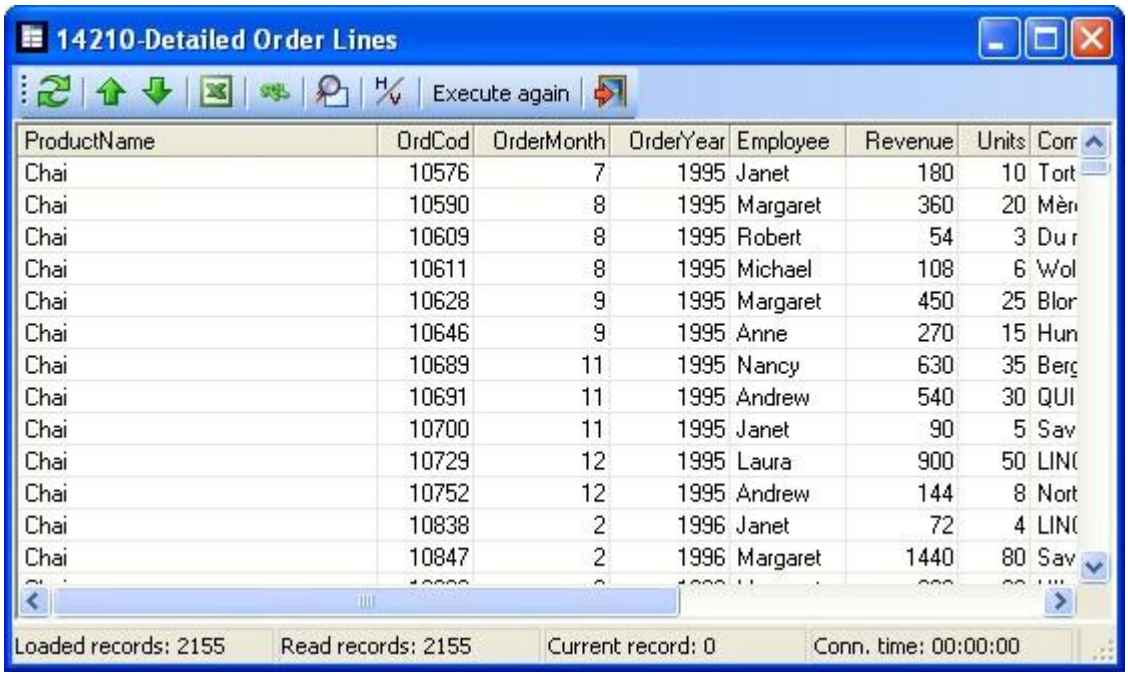
Important:

Once the privileges have been assigned, the users will see more or less folders, queries or reports depending on the security model assigned to their profile. See "Security model management" section earlier in this guide.

Data viewer

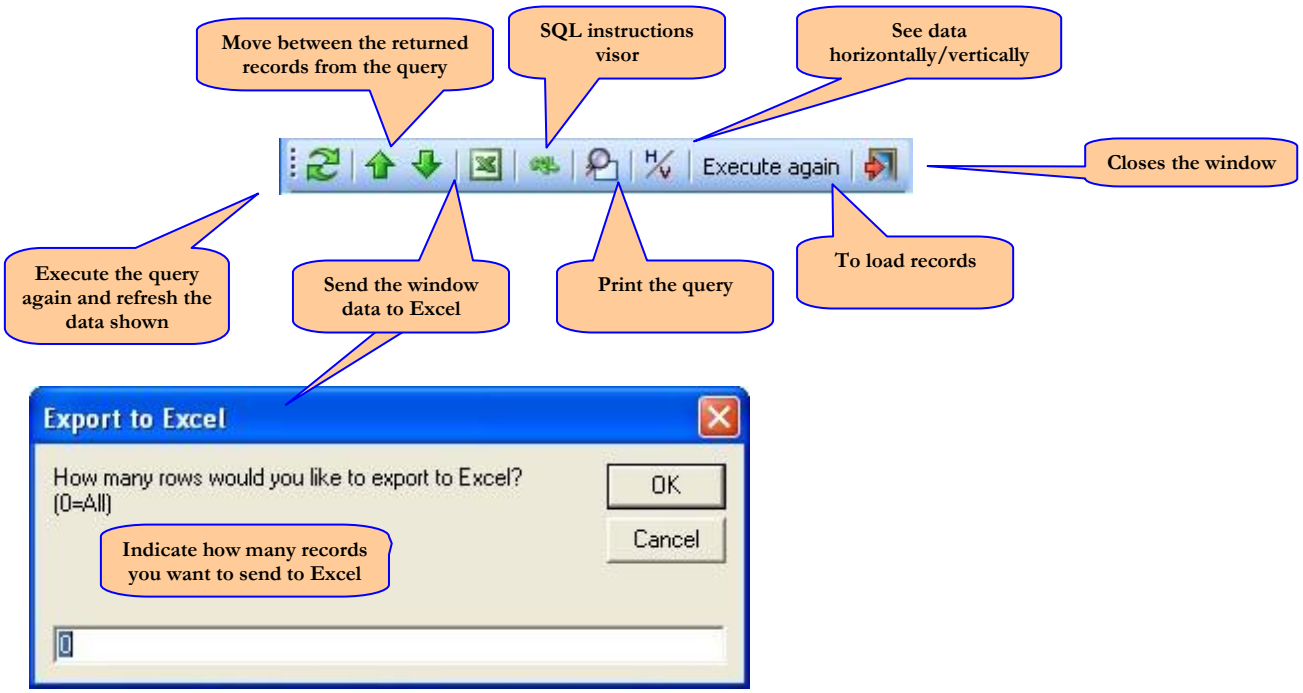
The data viewer window shows the retrieved data from the query execution as well as the SQL statement used to get it. The data viewer is intended to be used as an aid to the query designer, and it has also the following advantages:

Allows you to detect SQL errors, for example while defining a query with a poorly designed condition that does not return any data.
Also allows you to check the data container in the corporate database and verify errors in it, for example uninformed field or incoherent format, text in numeric fields or dates in different formats...

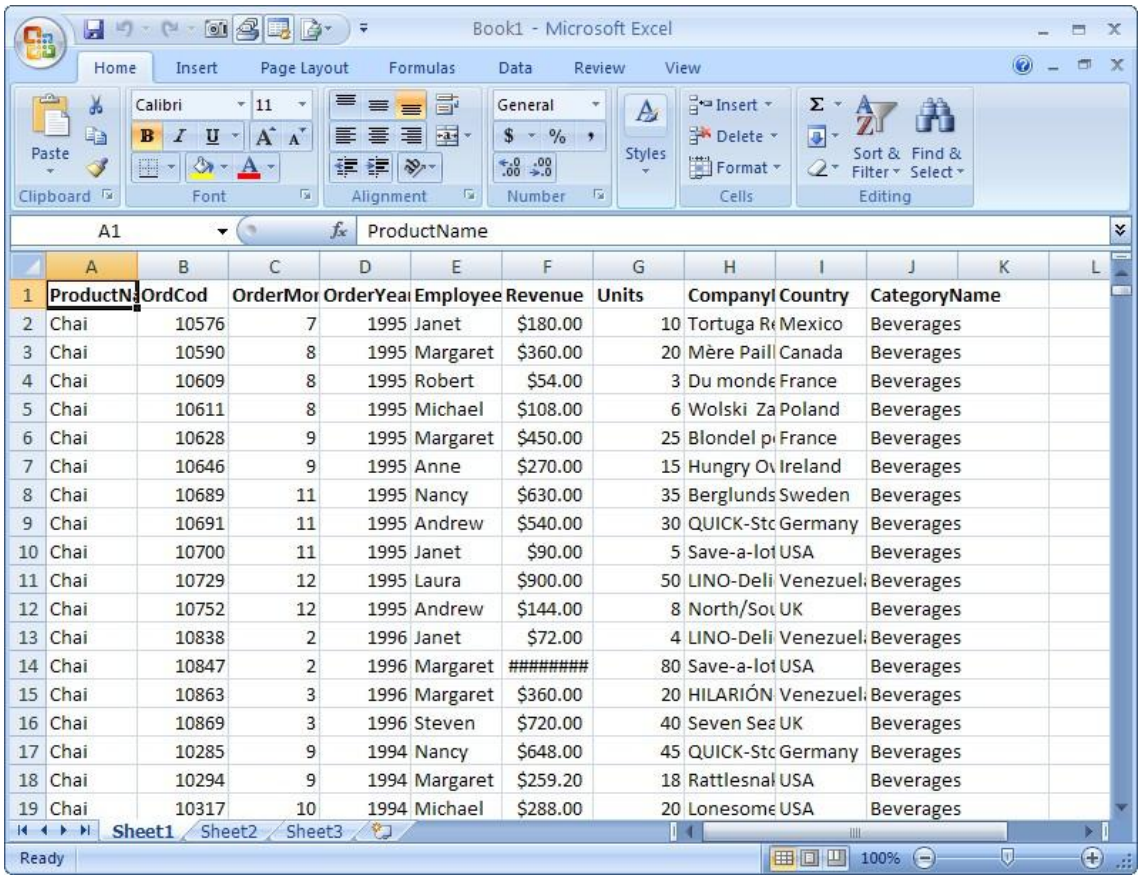


Note: When a query contains several registers and takes several minutes to load completely, it appears minimized and when the loading is finished it maximizes automatically. In this way, the user can perform other tasks while loading.

From this window, you can perform the following operations:



The final results of sending the data to Excel will be an Excel file with the data exported but without format.



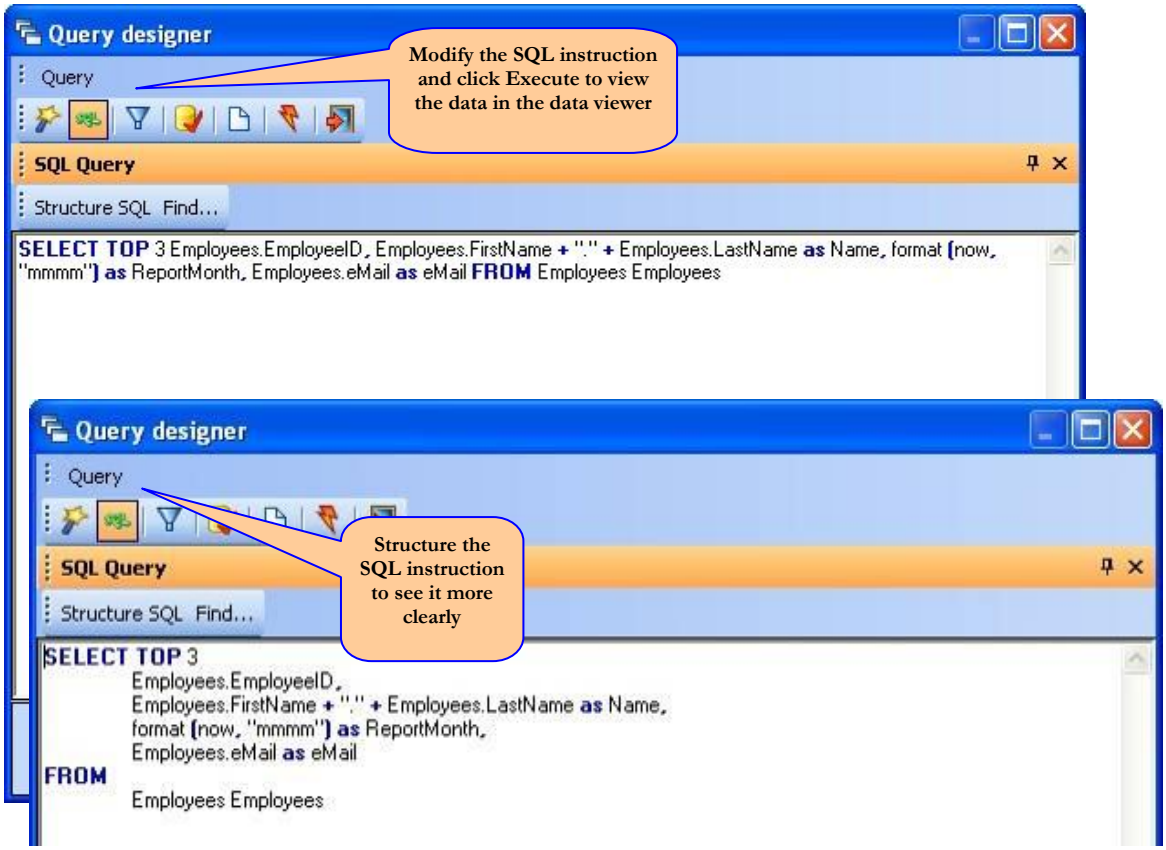
	A	B	C	D	E	F	G	H	I	J	K	L
1	ProductN	OrdCod	OrderMor	OrderYea	Employee	Revenue	Units	Company	Country	CategoryName		
2	Chai	10576	7	1995	Janet	$180.00	10	Tortuga R	Mexico	Beverages		
3	Chai	10590	8	1995	Margaret	$360.00	20	Mère Paill	Canada	Beverages		
4	Chai	10609	8	1995	Robert	$54.00	3	Du monde	France	Beverages		
5	Chai	10611	8	1995	Michael	$108.00	6	Wolski Za	Poland	Beverages		
6	Chai	10628	9	1995	Margaret	$450.00	25	Blondel p	France	Beverages		
7	Chai	10646	9	1995	Anne	$270.00	15	Hungry O	Ireland	Beverages		
8	Chai	10689	11	1995	Nancy	$630.00	35	Berglunds	Sweden	Beverages		
9	Chai	10691	11	1995	Andrew	$540.00	30	QUICK-Stc	Germany	Beverages		
10	Chai	10700	11	1995	Janet	$90.00	5	Save-a-lot	USA	Beverages		
11	Chai	10729	12	1995	Laura	$900.00	50	LINO-Deli	Venezuel	Beverages		
12	Chai	10752	12	1995	Andrew	$144.00	8	North/So	UK	Beverages		
13	Chai	10838	2	1996	Janet	$72.00	4	LINO-Deli	Venezuel	Beverages		
14	Chai	10847	2	1996	Margaret	########	80	Save-a-lot	USA	Beverages		
15	Chai	10863	3	1996	Margaret	$360.00	20	HILARIÓN	Venezuel	Beverages		
16	Chai	10869	3	1996	Steven	$720.00	40	Seven Sea	UK	Beverages		
17	Chai	10285	9	1994	Nancy	$648.00	45	QUICK-Stc	Germany	Beverages		
18	Chai	10294	9	1994	Margaret	$259.20	18	Rattlesnal	USA	Beverages		
19	Chai	10317	10	1994	Michael	$288.00	20	Lonesome	USA	Beverages		

Note: In case of an erroneous SQL instruction, a window with an error message returned from the data manager will appear.

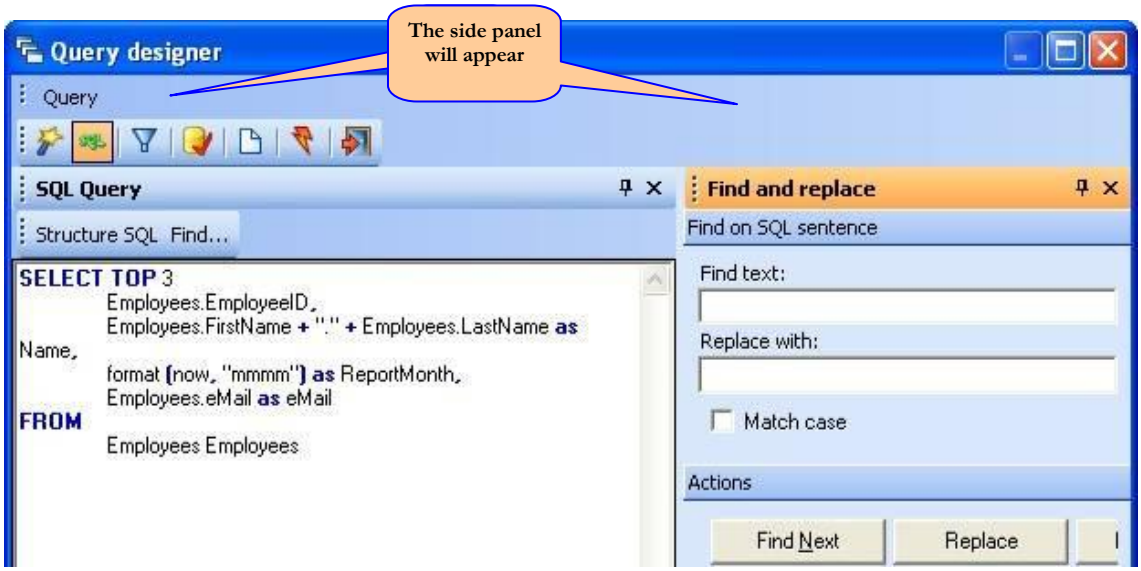
Note: The data viewer will be displayed always on top even when not active. This will help you to design the Excel or Access templates or allow you to compare the destination of the data with the data returned by the query.

SQL instructions viewer

You can access the SQL Viewer from the  button located in the tools menu. It allows you to view the SQL instruction being executed and offers you several tools to help you with the design:



You can search or replace a statement by clicking on the **Search** button:



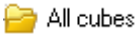
Cube design

With no record limit to relate the dynamic tables in Excel

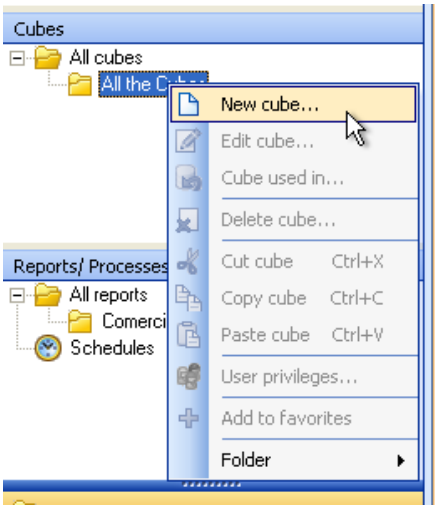
If the query returns more than 65000 records (one Excel spreadsheet limit), you can convert the query into an OLAP cube and, from a DCReporting process, link the dynamic table to the cube information.

The creation of OLAP cubes enables:

1. To generate .cub files that can be either public (located in a network directory and accessible to the users) or local (in the local PC) and can be sent via email as an annex to an Excel report attachment.
2. To create access to Analysis Services OLAP cubes: The information visibility can be filtered according to the Windows domain user.

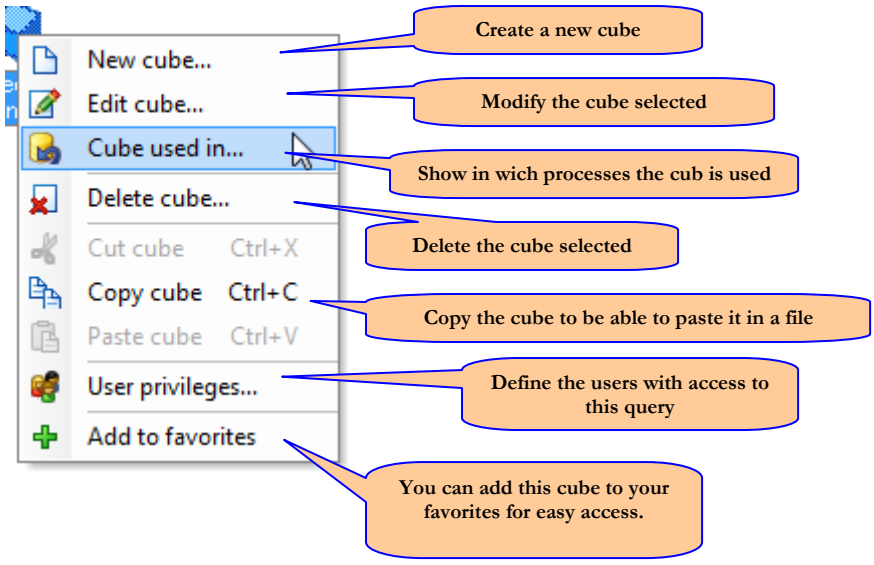
Locate the Cubes section and right click on your mouse on the 

button and the following menu will appear:



Note: In case that cubes have not previously been created, the only available options will be: New cube and Folder options.

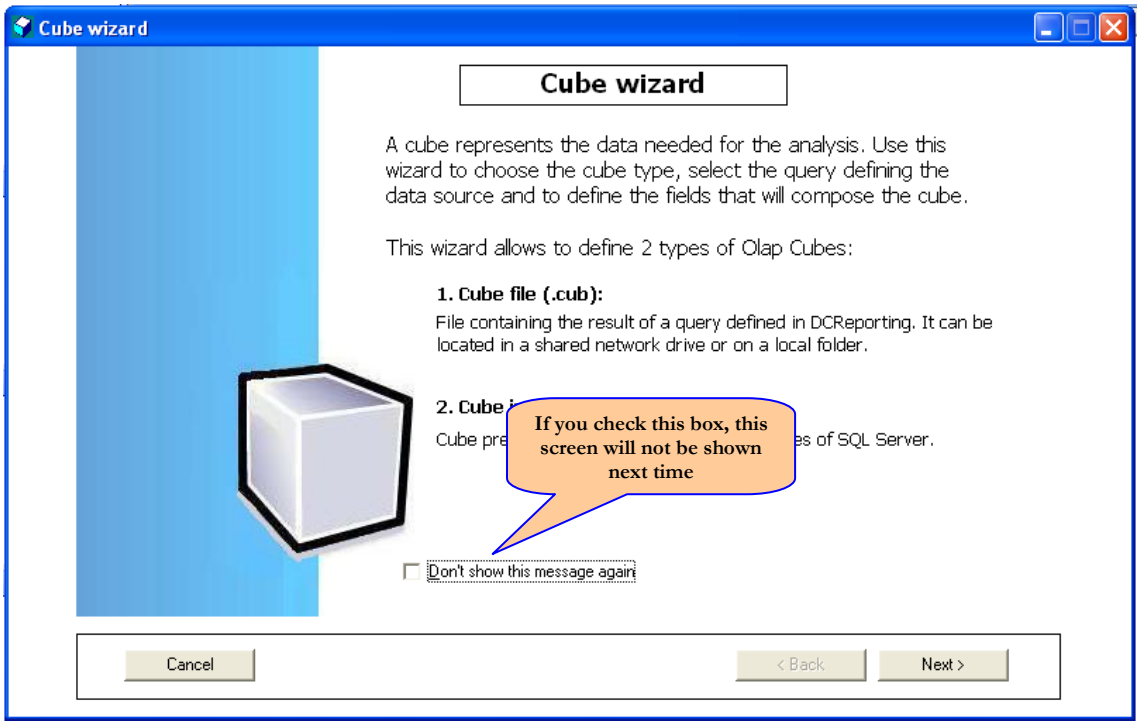
If you wish to perform an operation on an existing cube, you must select it first and activate the menu where the available options will be displayed:



Wizard to create a cube

Follow the next steps to create a cube:

Select the "new cube" option from the menu and the main welcome window will display:



Click 

.

This wizard will define the cube structure to be used in a dynamic table later.

Cube types:

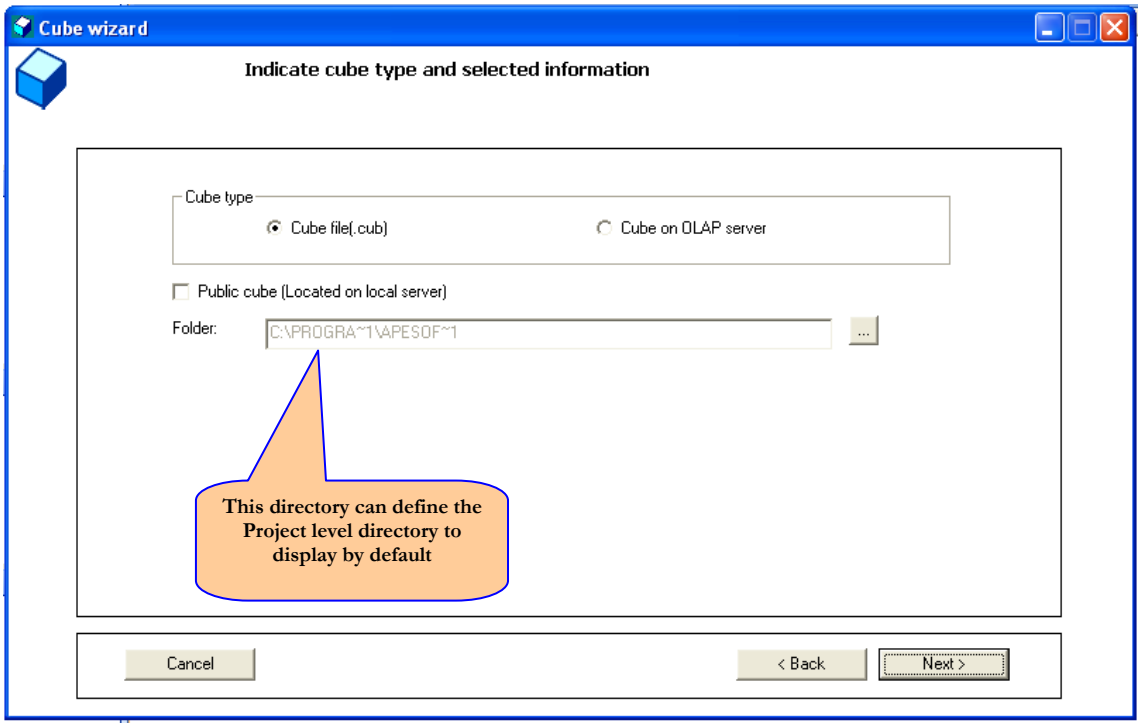
1. **A cube file**. The cube file without connection is a file created to store OLAP origin data and is used in report dynamic table or graphic. The cube files without connection allow you to work while not connected to the OLAP Server. Moreover, in DataCycle Reporting it can be defined as:

    a. **Public**: located in a shared network resource. This kind of file can be sent via email, and include in a zip file, but cannot be deleted once sent via email since it has to be available for other processes.

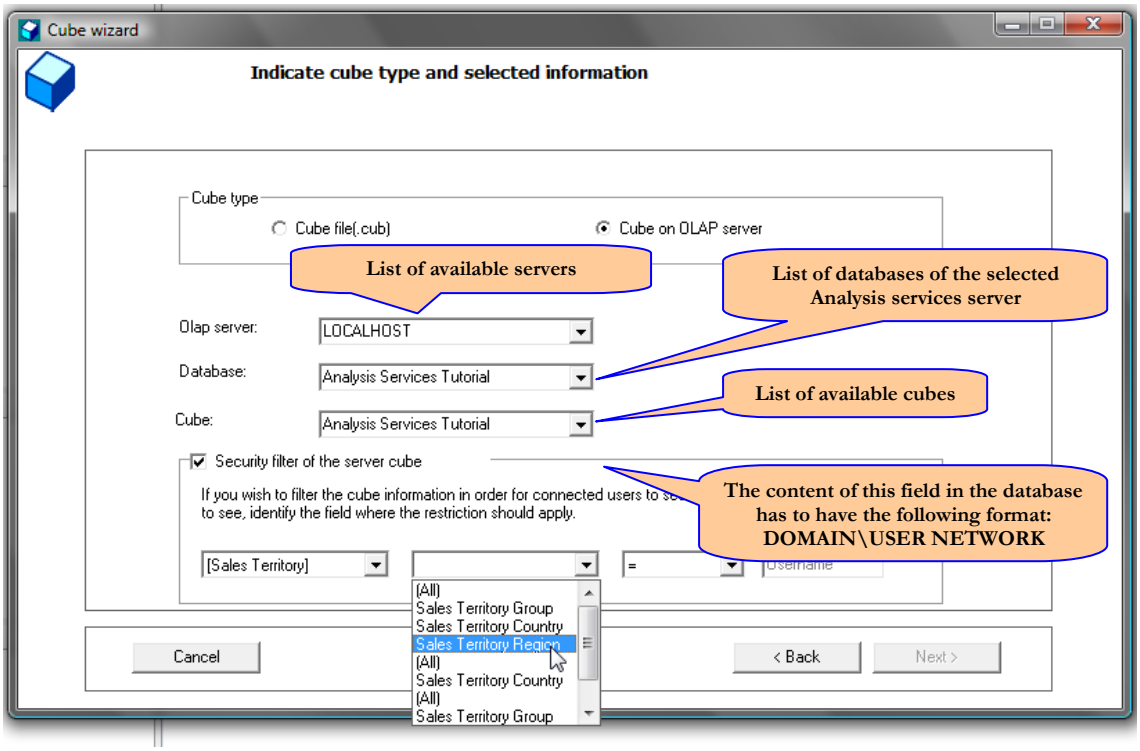
    b. **Local**: located in the local PC hard disc. This kind of file can be sent via email, attach as zip or eliminate upon sending.

2. **A cube in OLAP server**. If there is an analysis services server available in the network with OLAP cubes, you can directly retrieve the data. This kind of cube cannot be deleted, or sent via email or included it into a zip file, since it is not a file created by DataCycle Reporting. This kind of cube cannot be deleted, or sent via email or included it into a zip file, from DataCycle Reporting.

If a **cube file** is selected, you will have to indicate if it is public or not and the directory where it will be generated.



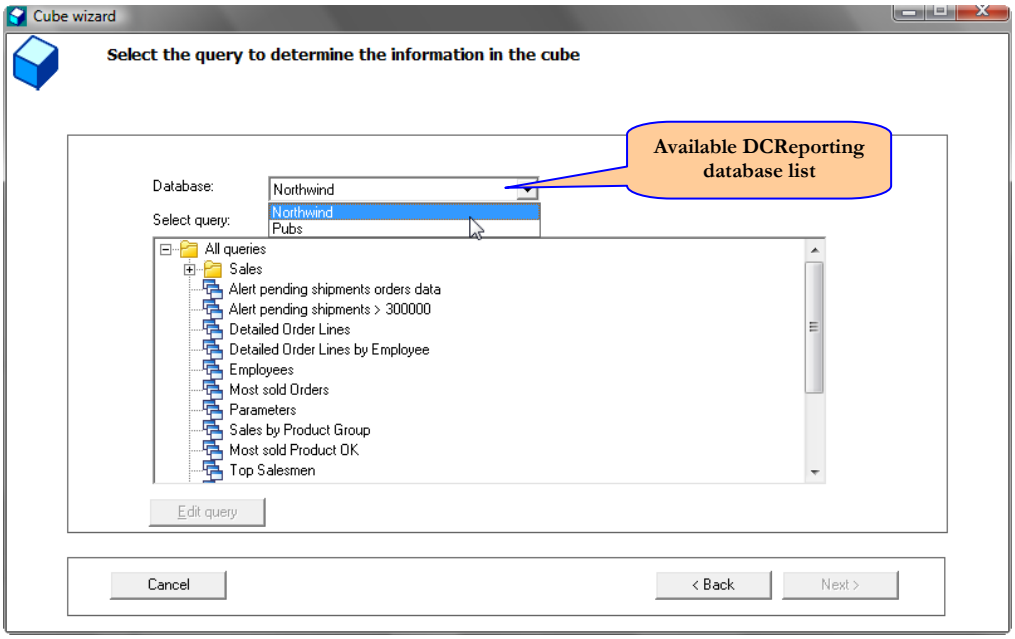
If a cube is selected in the **OLAP** Server, the following data will have to be indicated:



When all mandatory information is fulfilled, you can continue by clicking next 

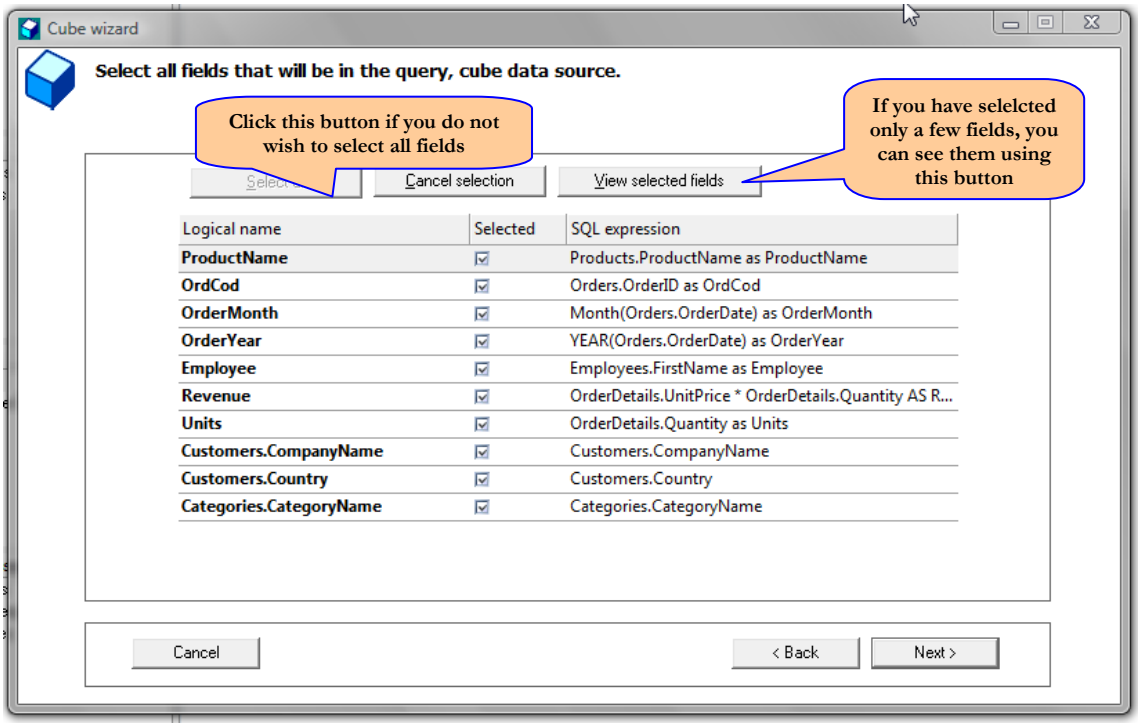
If you have chosen a type of cube in the Olap Server and goes to the wizard, the last window will be displayed in order to indicate the cube to generate.

If you choose the file cube type and continue, the following screen will appear:

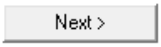


Select the database and query you are interested in and click next 

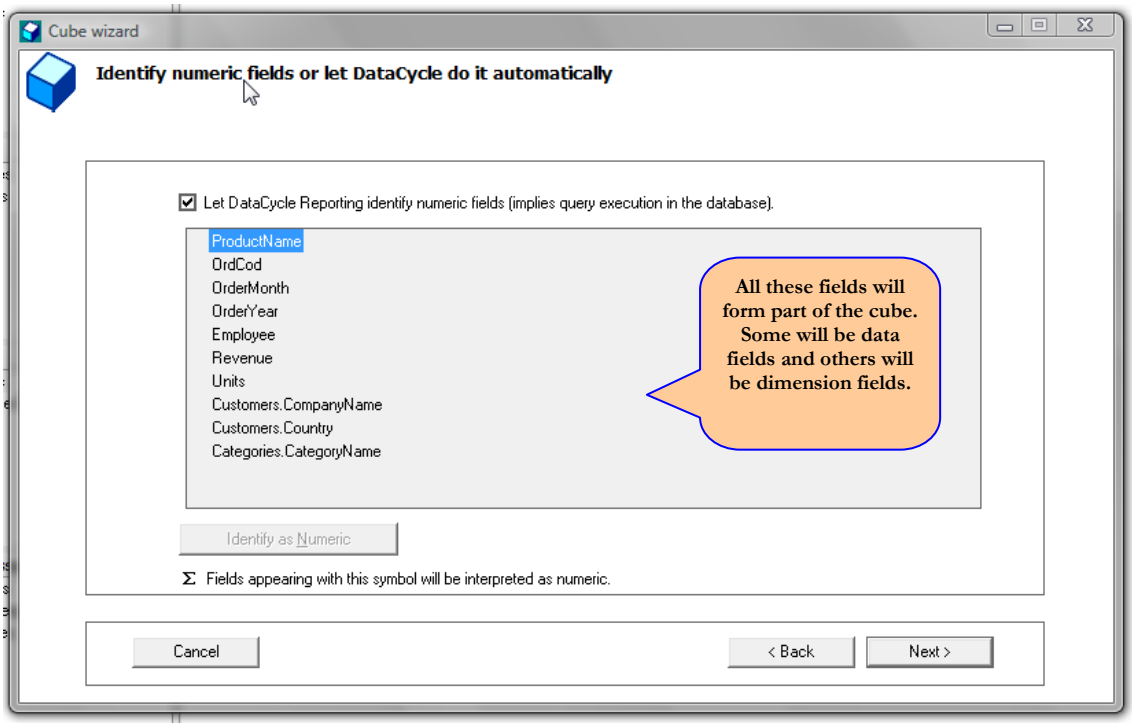
In the next screen, all the fields of the query selected to form part of the analysis will appear:



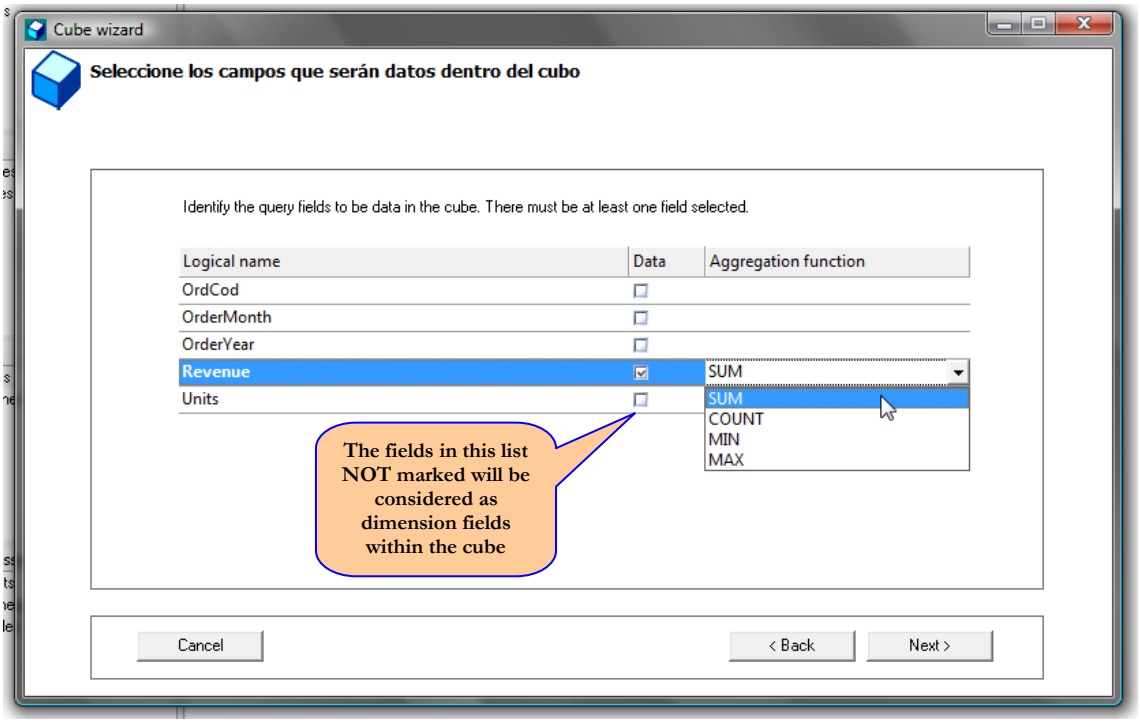
Note: The fields that are images, photos, etc cannot form part of a cube.

Click 'Next' 

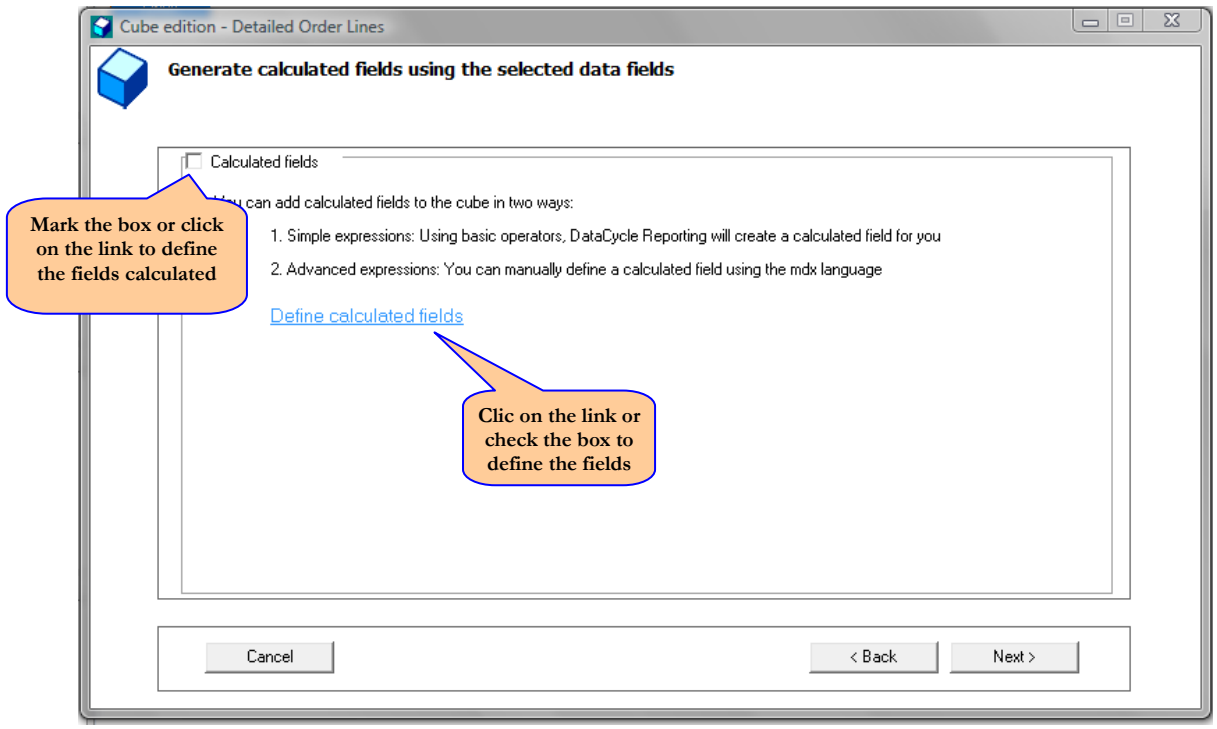
. By default the DataCycle Reporting is the one identifying the numeric fields and we will leave it this way for this case.



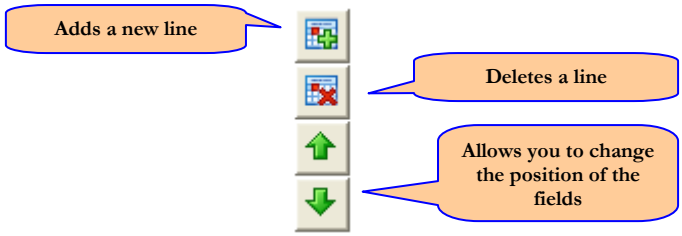
Click 'Next' Next >. The fields that will appear next are numeric. We will select those fields that we consider data within the cube and we will indicate the corresponding function.



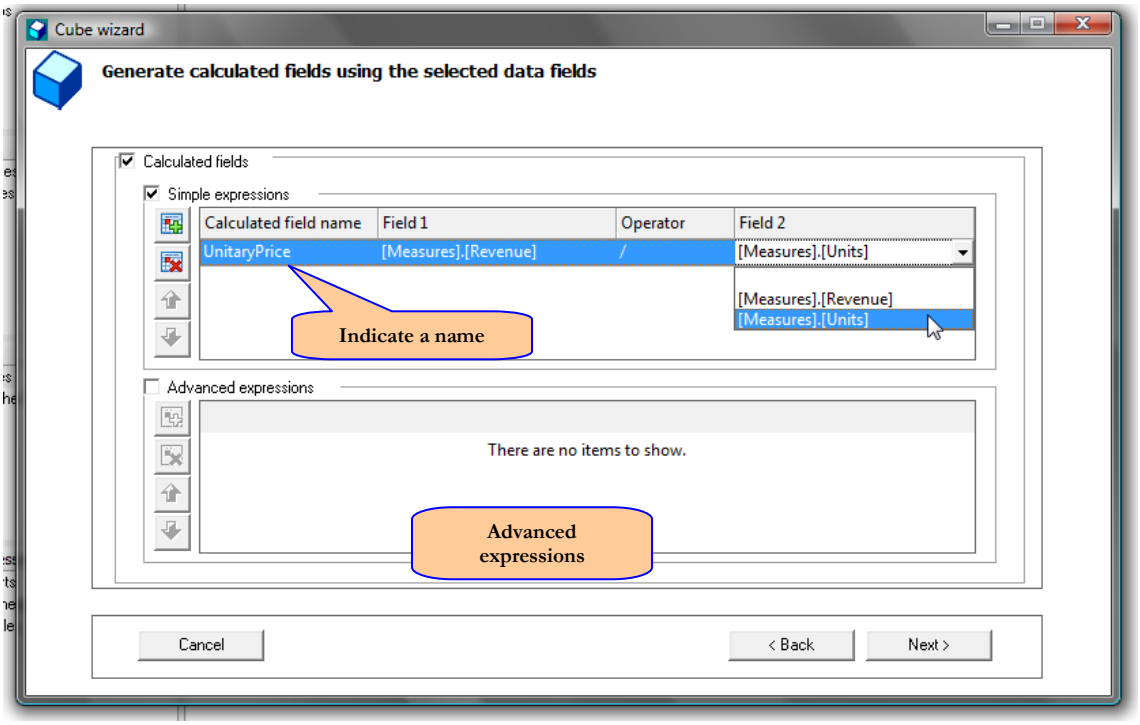
Click next Next >. In this screen the calculated fields are defined, and will allow you to perform operations between the fields that are numeric, simple or advanced.



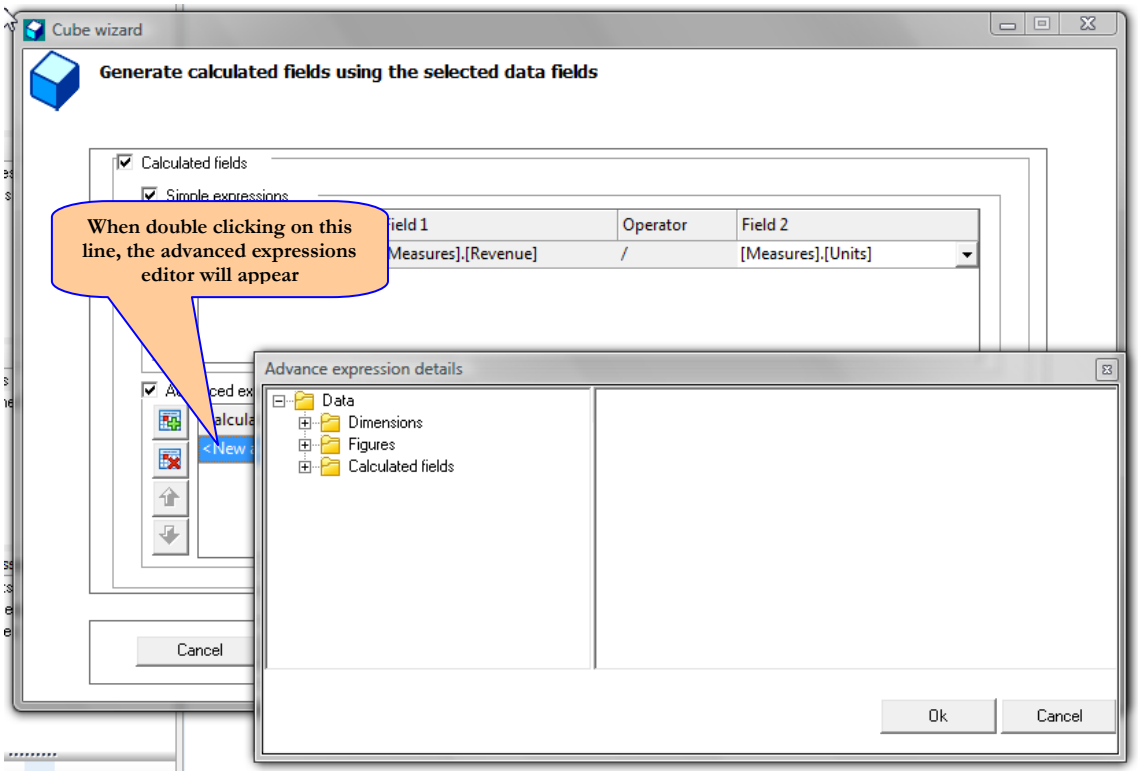
The side panel that appear both in the simple expressions and the advanced ones enable:



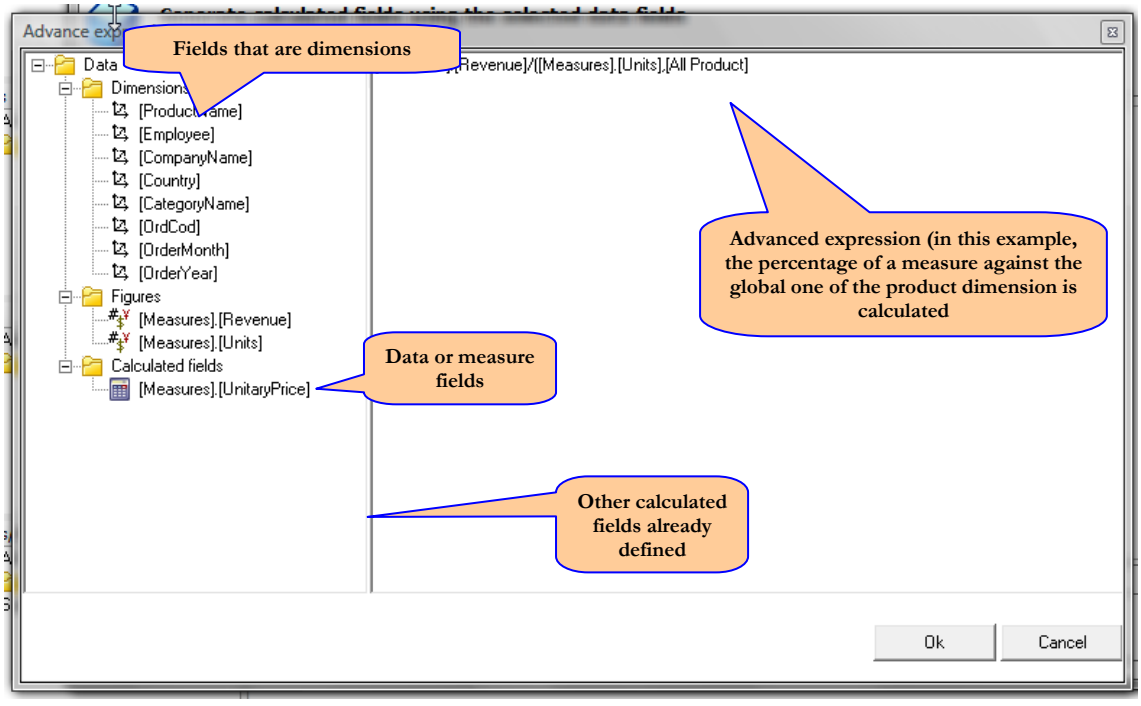
If you want to define simple expressions, select the fields and the calculation operation



To define the advanced expressions, check the box "**advanced expressions**":

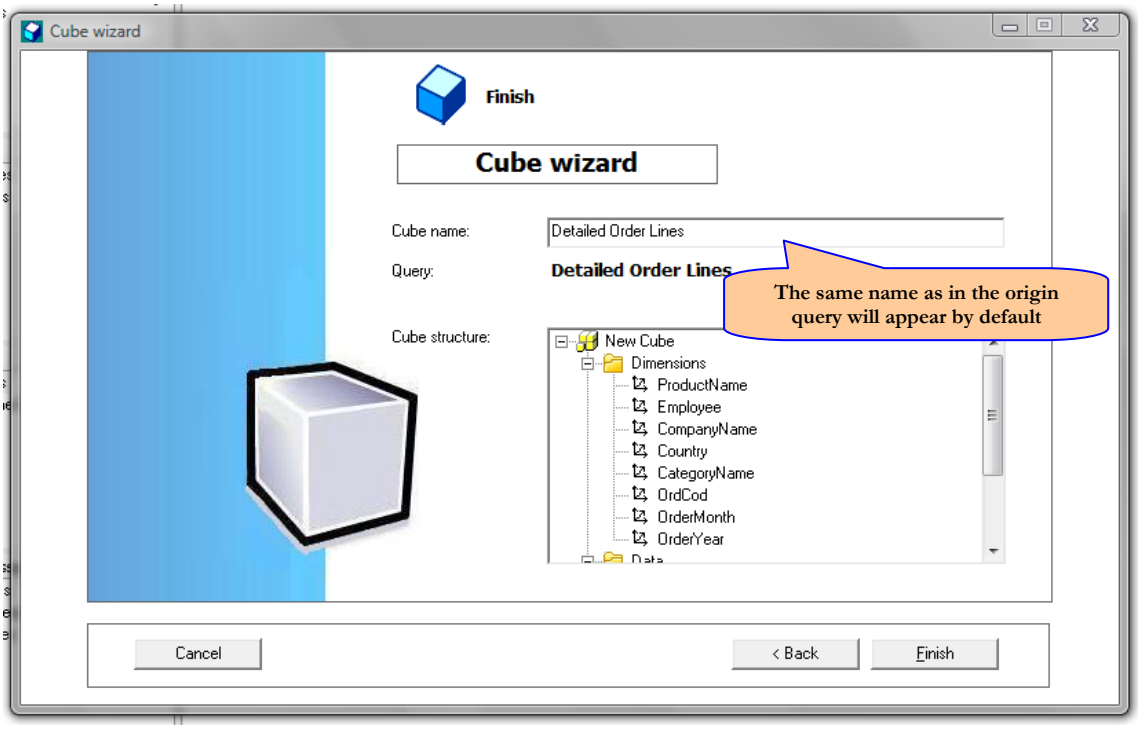


The advanced expression editor consists on the following parts:



Note: When double clicking on any field, it is immediately incorporated in the right panel.

Finally, the last screen shows a summary of the cube definition. With the cube name, the Basic query and the cube structure is defined. Click **finish**.



Once the cube is defined, it can be used in two process tasks: **Refresh and Link cube.**

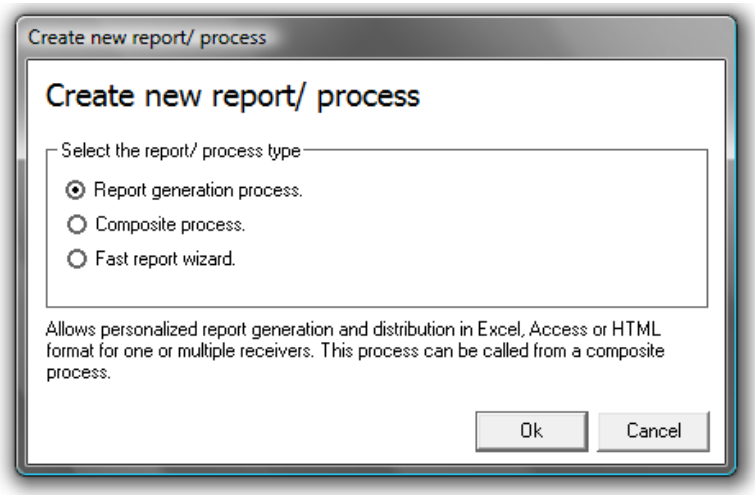
Process Design and Scheduling

Generate your own reports with the returned data from the query

Everything necessary to generate reports is defined in a Process. Therefore, the template that will serve as a basis for the queries, recipients, etc has to be indicated. These processes can be scheduled to generate reports as often as desired. Even though DataCycle Reporting usually works with reports in Excel, it can also generate HTML reports and even fill up tables in MSAccess in a database where the macros and reports are defined.
Refer to process type and report and see the operations to perform.

Process type and report

When creating a process, you need to indicate the kind of process and the kind of report it will generate.



Process Types

There are three types of processes:

- **Report generation process**

  This is the standard processes to create reports, addressed to a single person or to a group, where each individual receives a personalized report.

- **Composite process**

  Originally designed to run several report generation processes consecutively, it currently facilitates the execution of various tasks that in some cases are not related to reporting, but to administrative tasks of the program itself such as backup.

- **Fast report Wizard**

  It allows you to design the Excel report in just four simple steps guided by the application itself.

Report type

In the report generation Process, you can design three types of reports:

- Simple

This is a single report that can be sent to one or several individuals.

- Multiple report

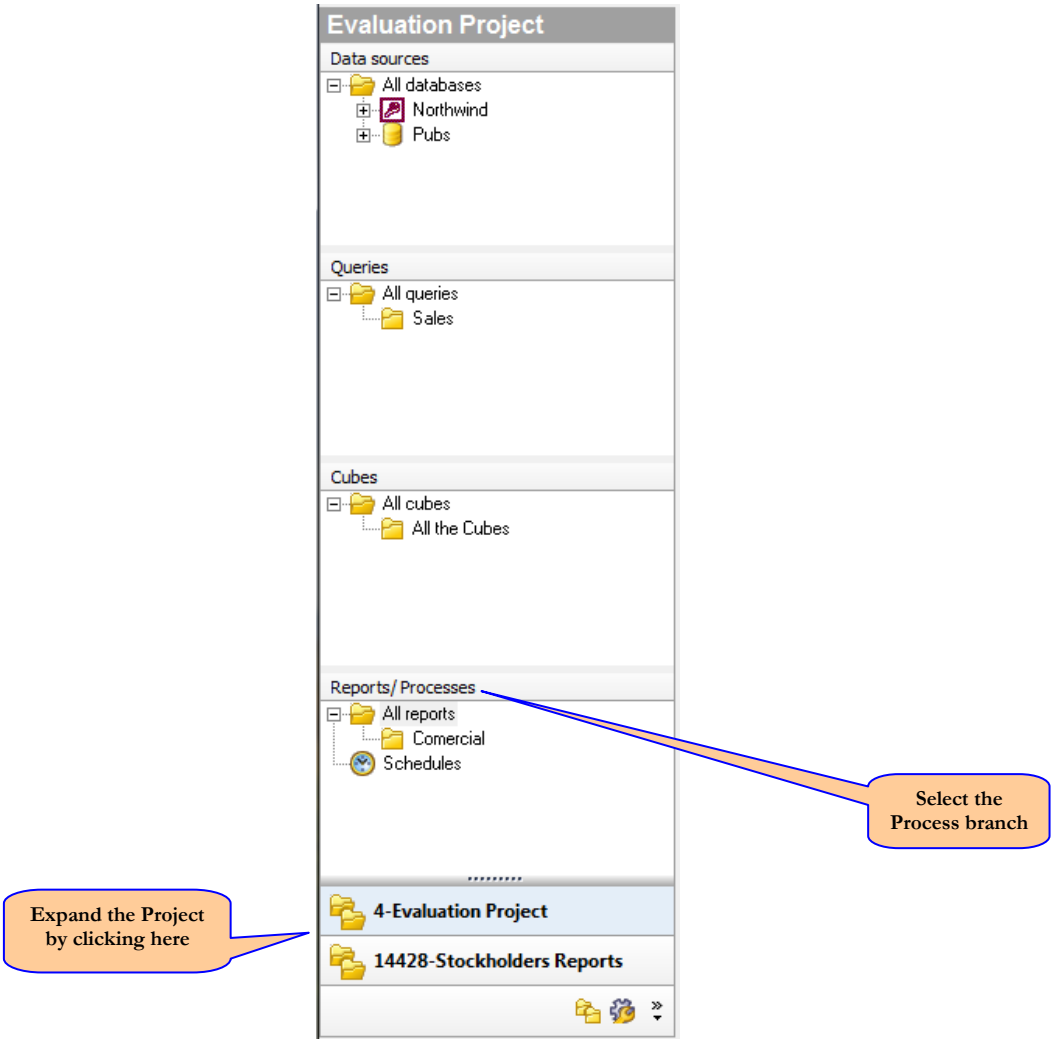
Reports that are sent to each interested individual, containing the personalized information. Those can be of two kinds: evaluation consultation and users' group.

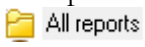
- Conditional

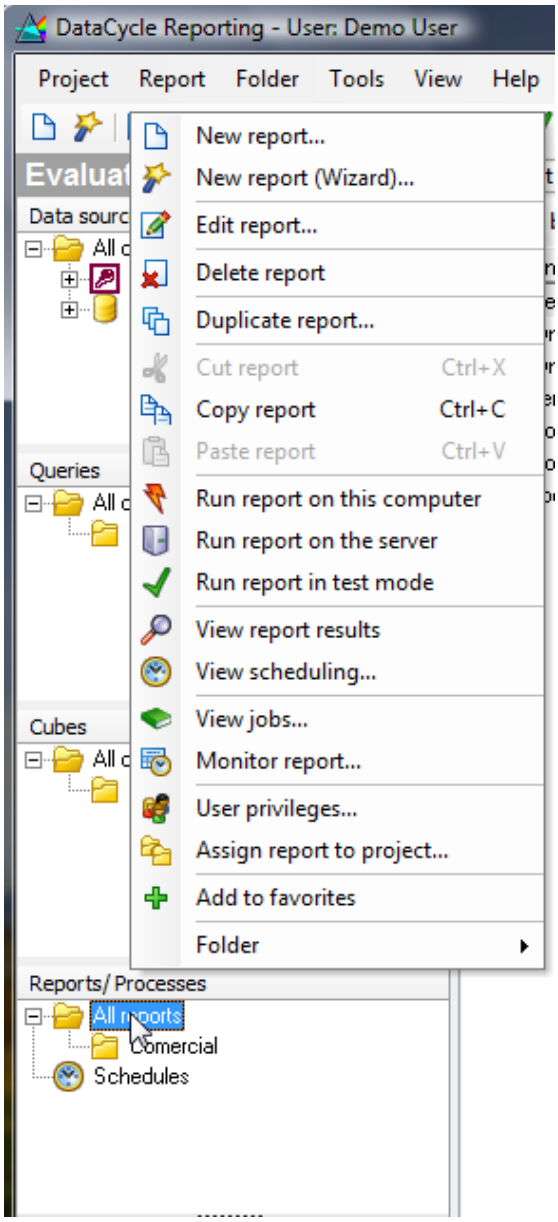
This is a simple report that is sent only when meeting a condition.

Operations on a process

Before performing any operation in a process, select the process from the explorer tree, expand it and select the process branches.

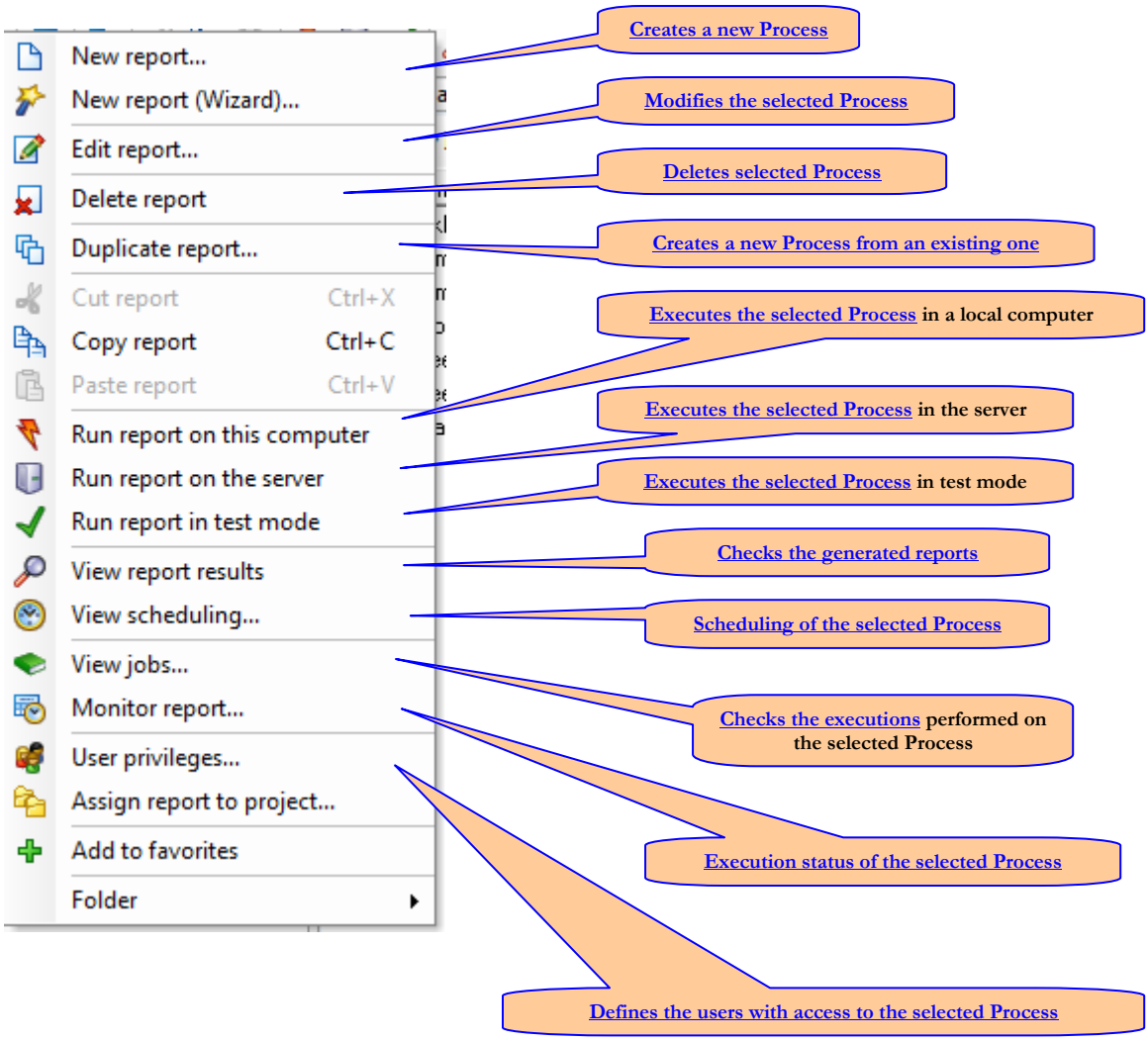


The process context menu is activated by right clicking on your mouse on "all reports"  and the following menu will appear:



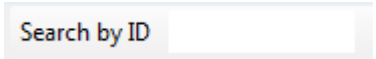
Note: Some options will not be available if a process has not been yet created.

If you would like to perform an operation on an existing process, select it first and then activate the context menu where all available options will display.



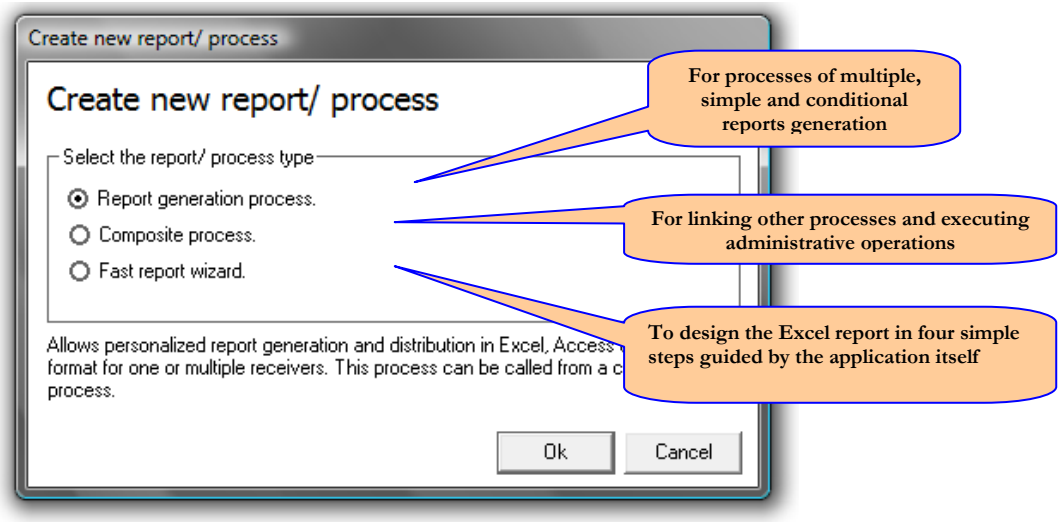
Note: The same options can be accessed also from the toolbar. You can see the function of an icon by placing the cursor on top of it:

Each process has an identifier. If you know the identifier you can look for the process from it.



Creating a Report generation Process

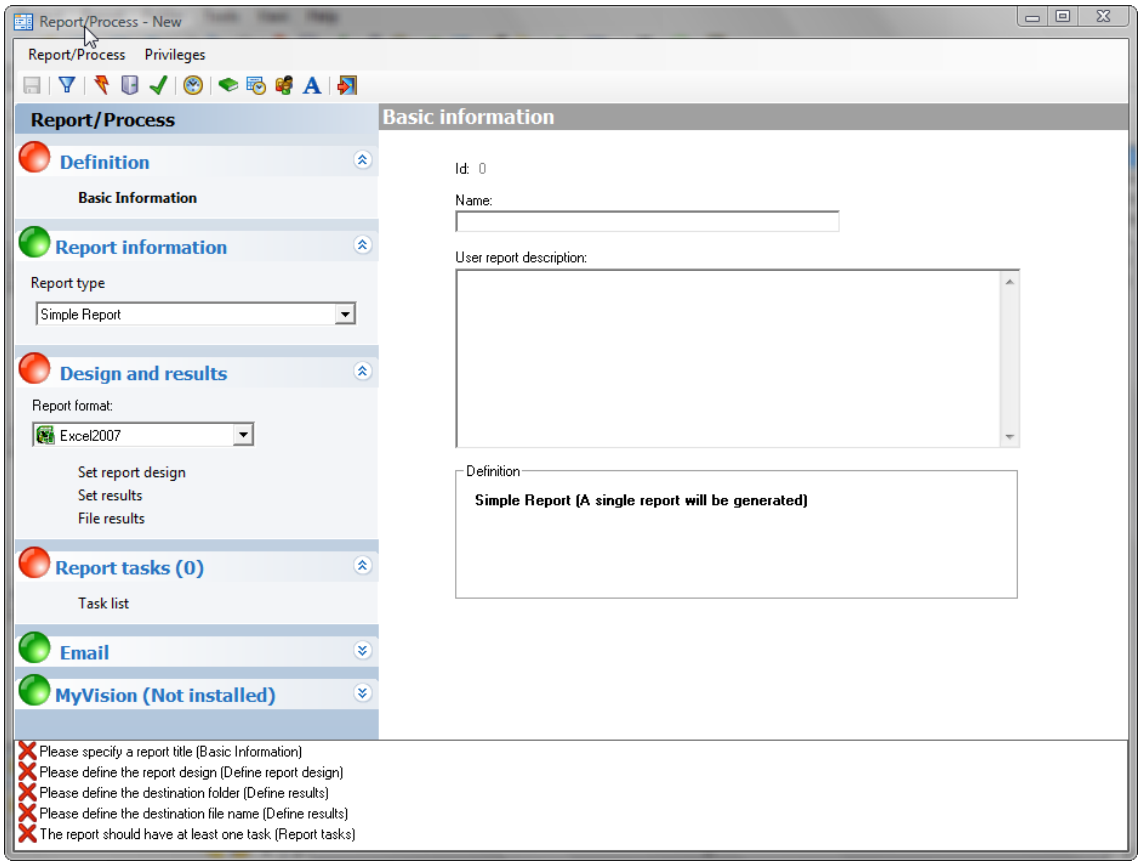
The steps for creating a report generation process are as follows:
Once the option "new" is selected from the menu, the process edit screen will appear requesting what type of process you wish to create:



Note: The section 'Process type and Report' describes the differences between each process type.

In this section we will discuss the report generation process. For other processes, see "Creating a composite process".

When clicking "ok", the definition process main screen will appear:



Process Screen

The process definition screen is divided in various sections:

- **Definition Section**

  The name of the process and a description for the user that executes the process is documented in this section.

- **Report Information**

  The type of report is specified according to the section 'Process type and Reports'. In multiple or conditional reports, the queries that determine how many reports need to be generated and in with which condition is specified in this section.

- **Design and results**

  The design that will serve as a base for the reports generated and their location is defined in this section.

- **Report Tasks**

  These are the tasks that determine the content of the report either because of its data content, macros run, OLAP cube link, system scripts, etc.

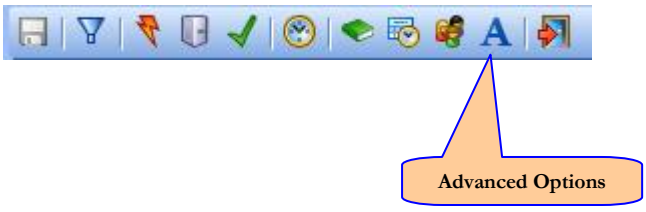
- **Mail**

  Report generated mail definition

- **MyVision**

  This allows you to configure items related to the MyVision Web solution that provides report generation and querying via web.

The process and documentation advanced options can be accessed through the tool bar.



Report information Section

In this tab from the creating a process screen, the type of report is specified according Report Type section.

In case you wish to create a multiple or conditional report, you have to select the query that determined how many reports to be generated or with which condition it will be performed.

Simple Report

If it is a simple report, nothing else needs to be specified and you can continue with the definition of the process in the rest of the tabs.

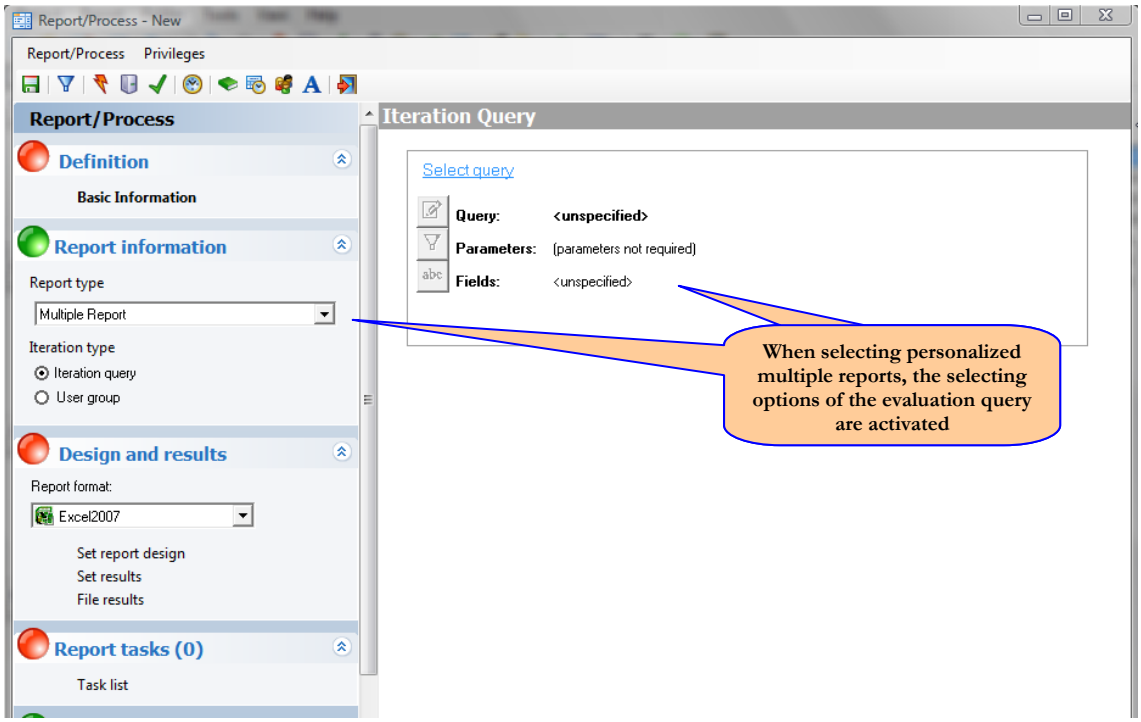
Multiple Report

When creating a personalized multiple report, you can choose the option to use an **SQL evaluation query** or a DataCycle Reporting **group of users.**

1) SQL evaluation query

In case of a personalized multiple report with an evaluation query, you must select the query that will determine how many times the process will iterate and with which values in each one of them.

For example, in a process of a sales report generation you can indicate to generate one report for each sales person by selecting a query that will return the same reports with an identifier, name, last name, and email address.



Select the evaluation query by clicking the button as explained in Insert Data Task.

Note: Remember that before generating reports, the process will execute an evaluation query to verify how much iteration is needed.

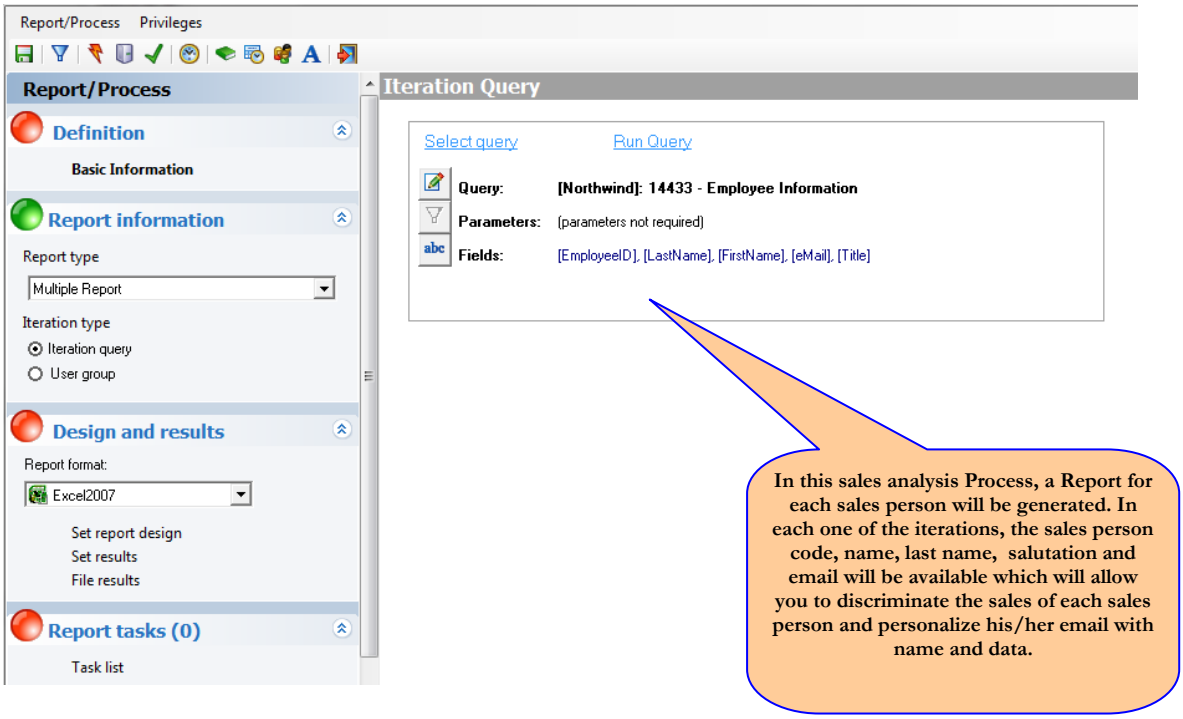
Important:

Verify that in the advanced options of the evaluation query the connection parameters are **NOT** defined as follows, since in some configurations this can provoke an error:

- Cursor location: **adUseServer**

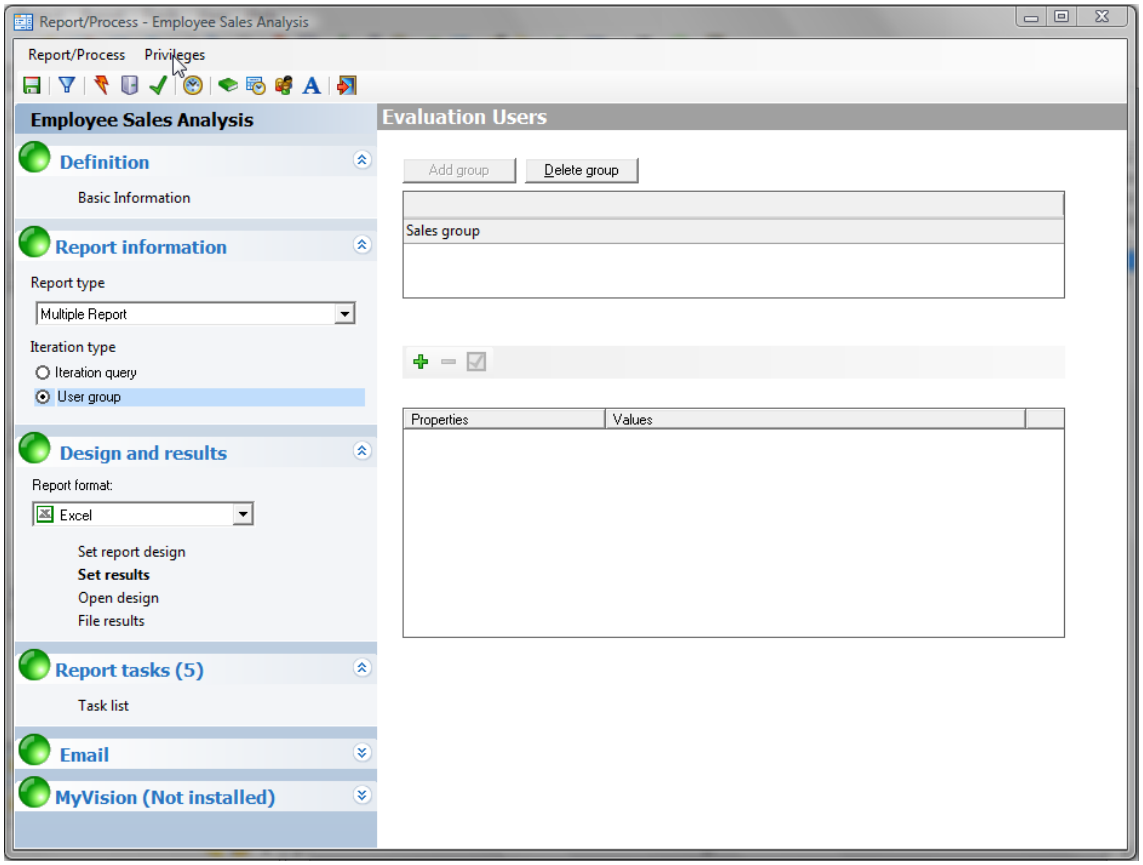
- Cursor type: **adOpenForwardOnly**

The result of selecting an evaluation query, its fields and its parameters should be similar to the following:

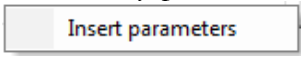


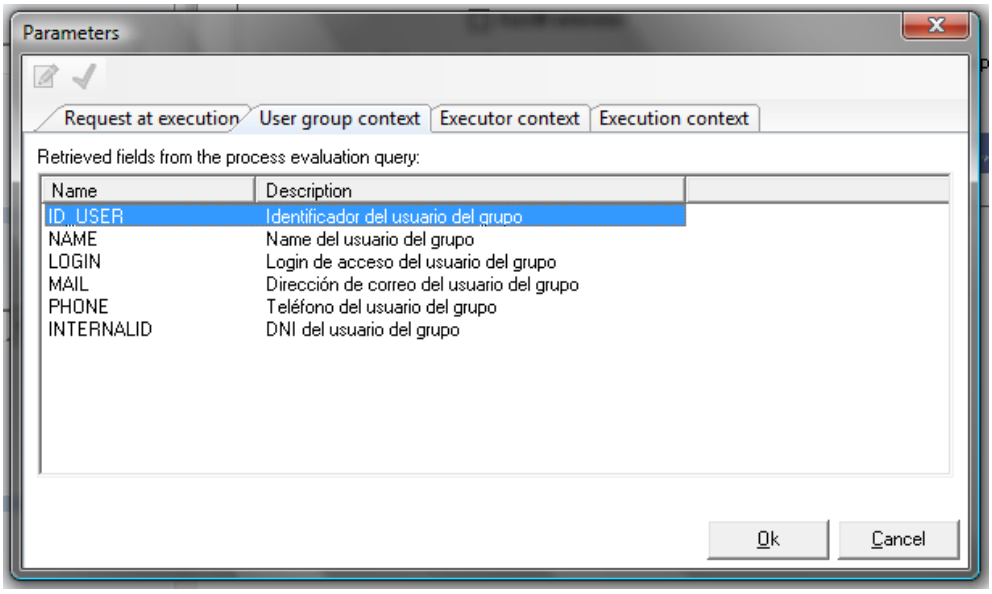
2) Users group

When choosing a group of users, the group needs to be specified. Only one group can be selected.



The behavior is very similar to the evaluation query but, in this case, as many iterations (reports) as users in the group are performed.

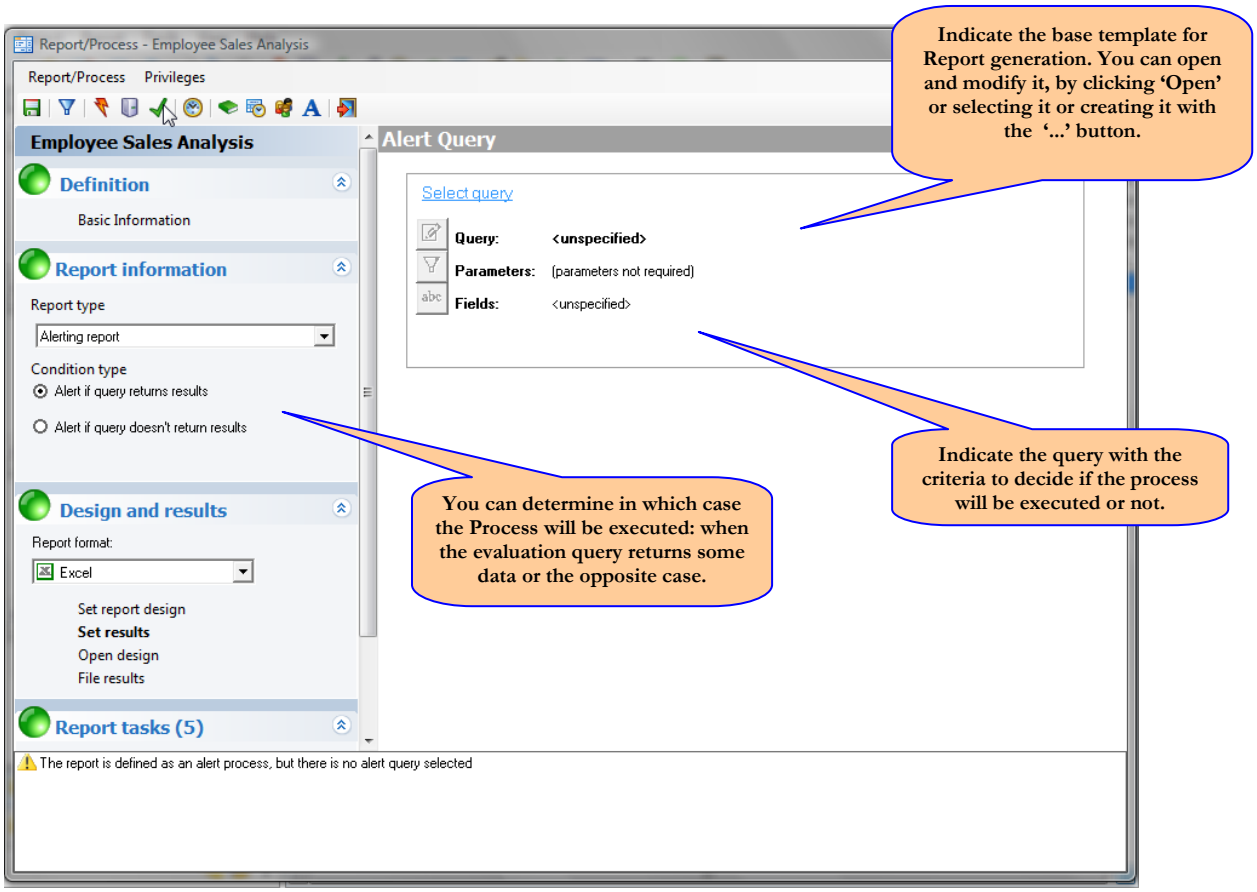
In this case, the fields available will be: Identifier, name, last name, processing and mail. Those can be used in any part of the process by right clicking on your mouse and clicking on the button 



Alerting Report

In case of an alerting report, the query that determines the criteria to generate the report must be selected.

An example could be an inventory report that is close to be out of stock. In this situation, the process would be implemented if a query shows a record of a product that is below stock.

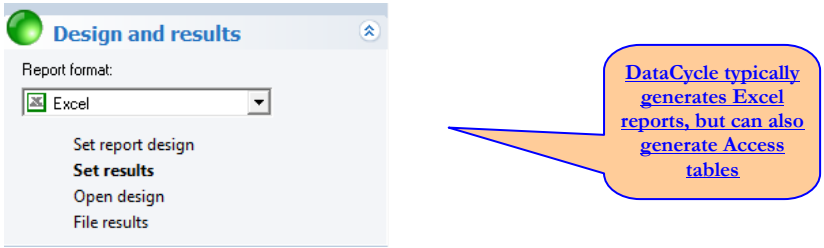


Select the evaluation query by clicking the button the same way as indicated in Report information section.

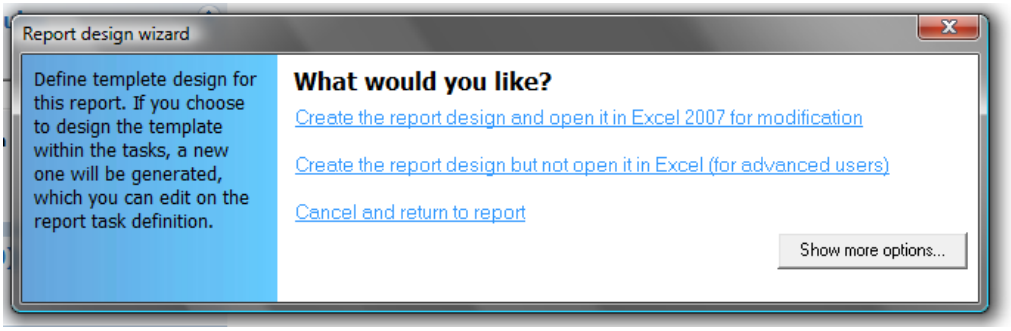
Note: Remember that before generating the reports, the process will execute the evaluation query to verify that meets or does not meet the criteria and therefore confirm that the process has to be performed.

Design and Results section

The design used to generate reports, location and name of the reports generated is indicated in this tab of the process creation screen.

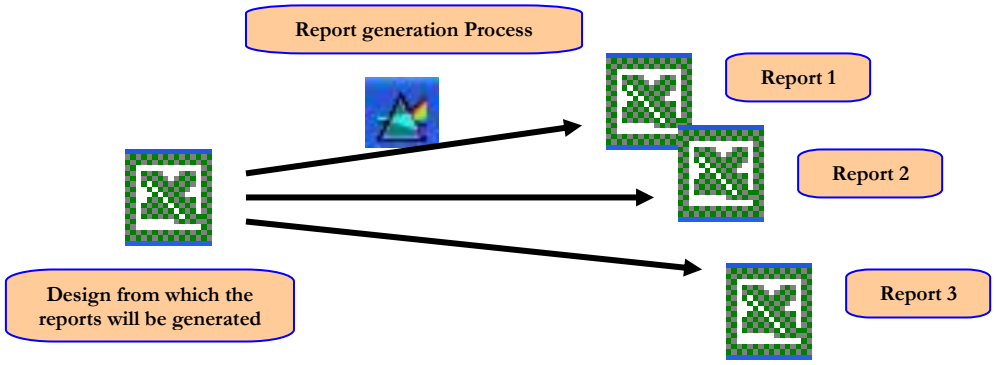


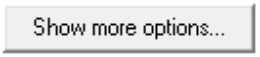
By clicking on ***Set Report Design***, the following wizard will appear:



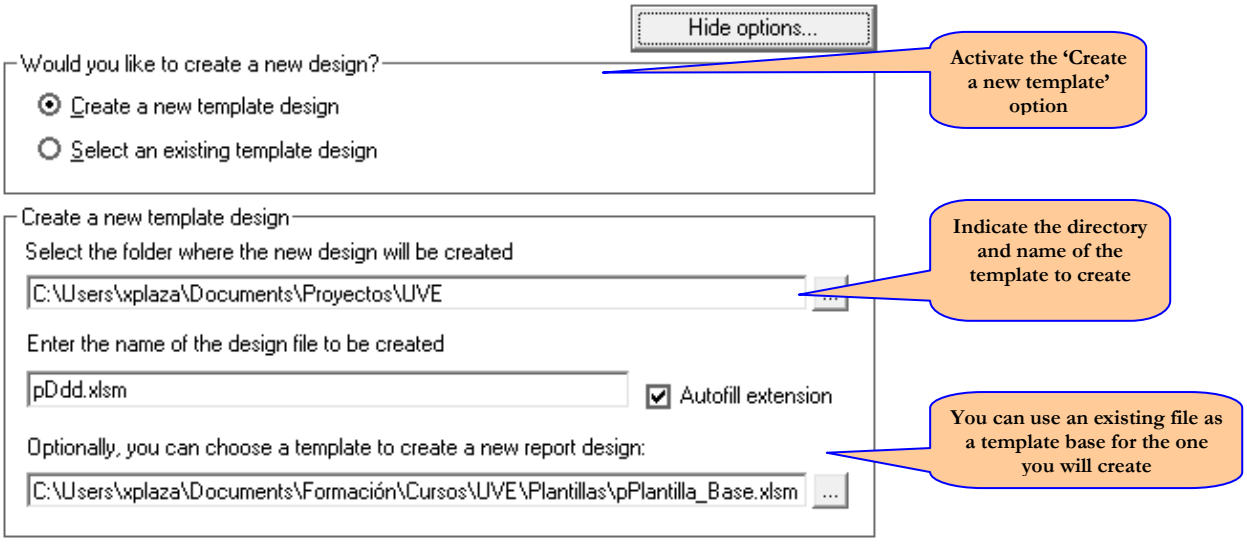
Selecting and creating a Design

All reports generated are based on an original Design. A copy of the design is made where the corresponding data is added and processed according to the process configuration.

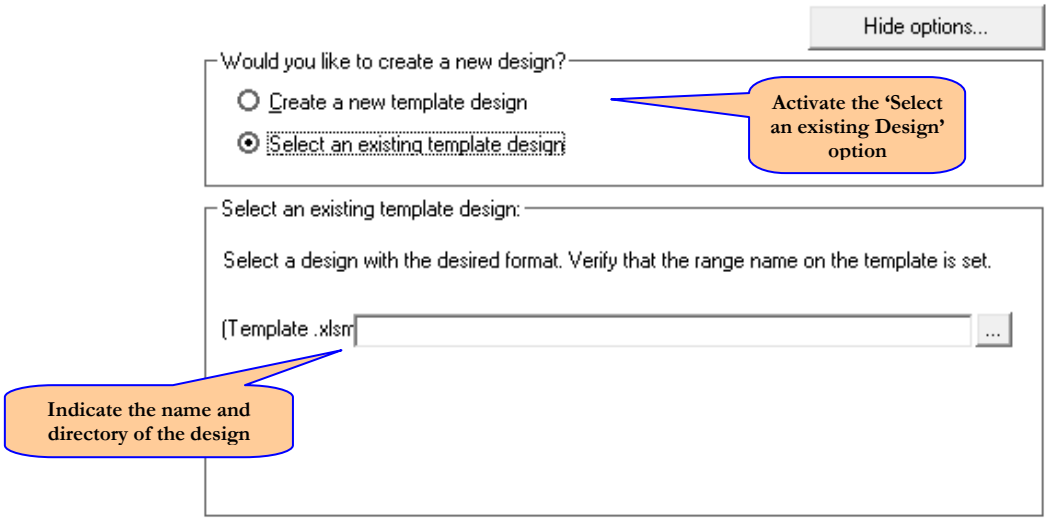


This design can create a new one specifying a directory and full name by clicking on 'Show more options' 

. A basic model can be chosen to be the base for the new one,



Or select a design already available:

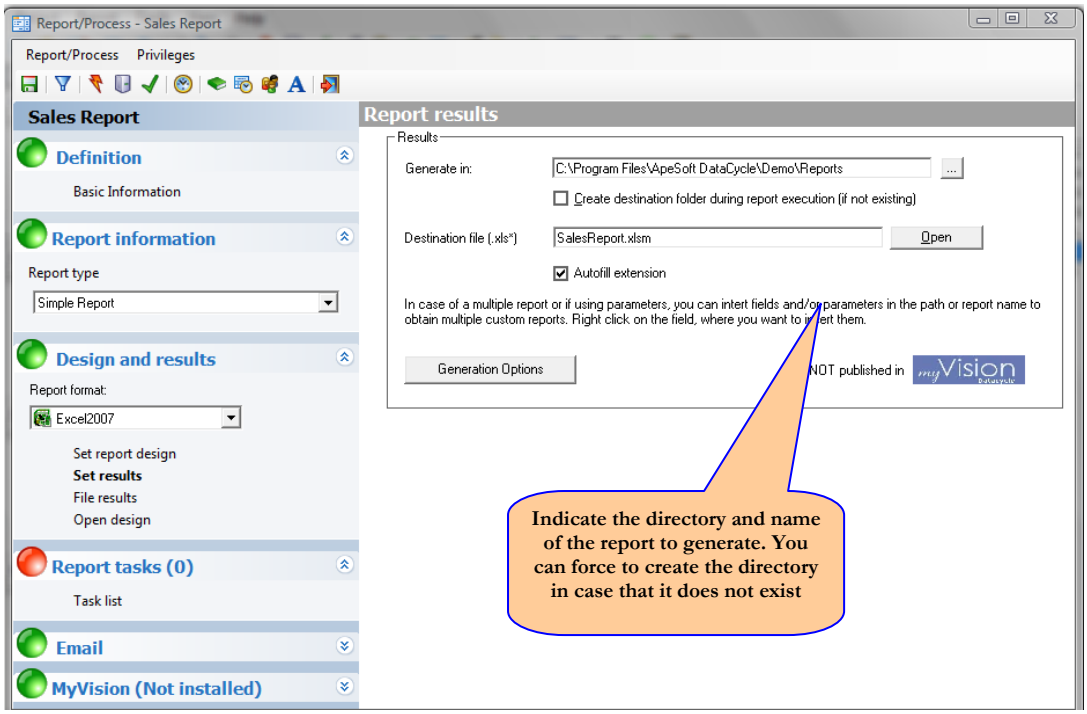


By clicking on ***'Create the report design and open it in XXXX for modifications'*** the application related to the type of design created, Excel or Access, will open. When the design is complete, close the application saving the Excel file and continue with the process definition.

Note: Even though the examples shown here are about template and Excel files, DataCycle Reporting allows you to work with Access files, as explained in 'Excel and Access Reports'.

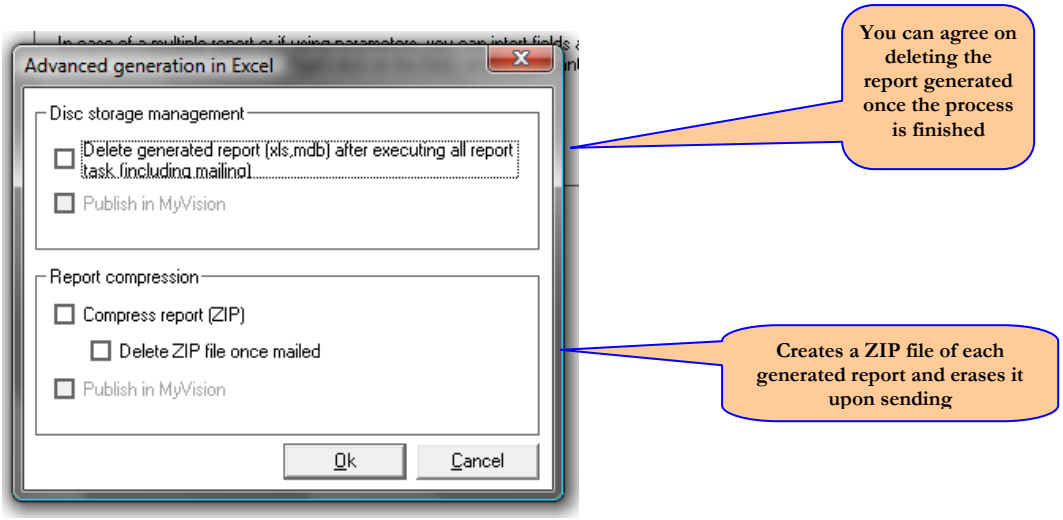
By choosing the option '***Create the report design but not open in in XXX (for advanced users)***', DataCycle Reporting will create (in the case of *Creating a new Design*) a new Excel Design but it will not open it, since you want to do that during the definition of the process tasks.

Now we click on ***Define Results***



In the case of multiple reports, you can use parameters to personalize the name of the files generated.

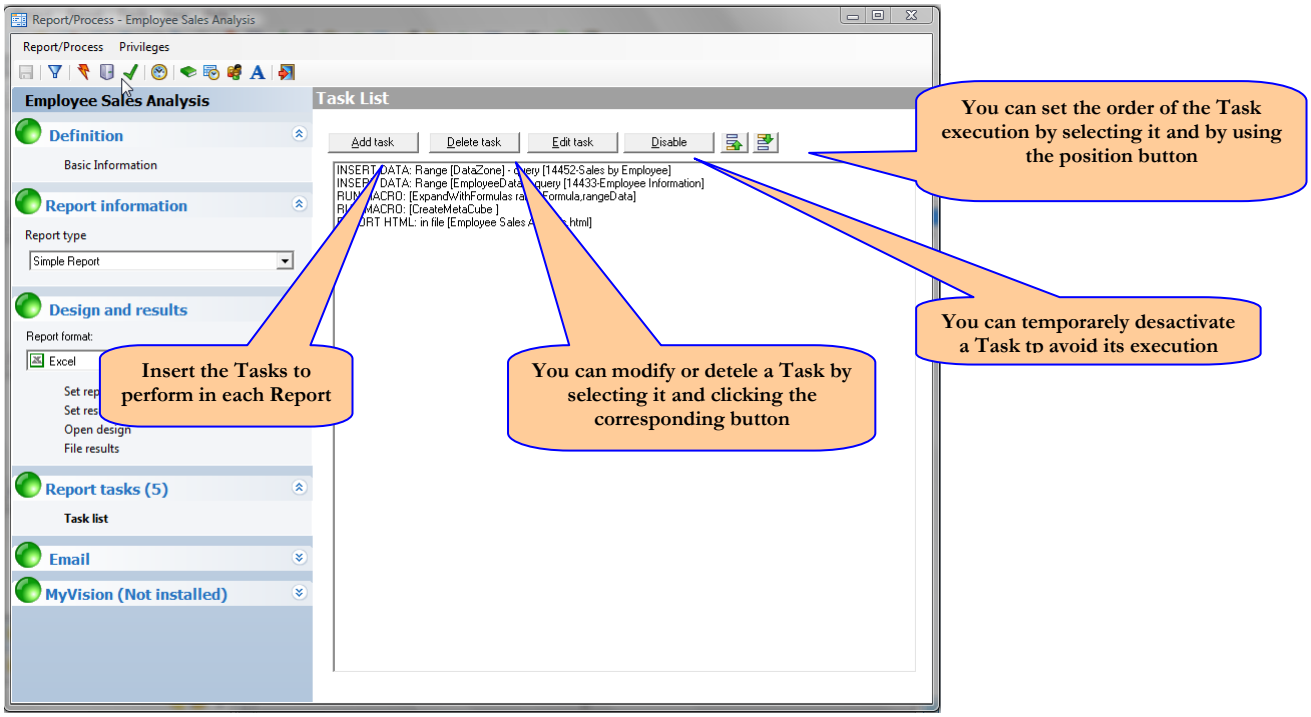
If we go to 



Note: The option 'delete reports' is not recommended unless there are administrative or system reasons that would require so, such as memory shortage.

Report Tasks section

This section defines the tasks to be performed in order to generate each report, indicating the report content, data, location and other operations to run such as the executions of macros.

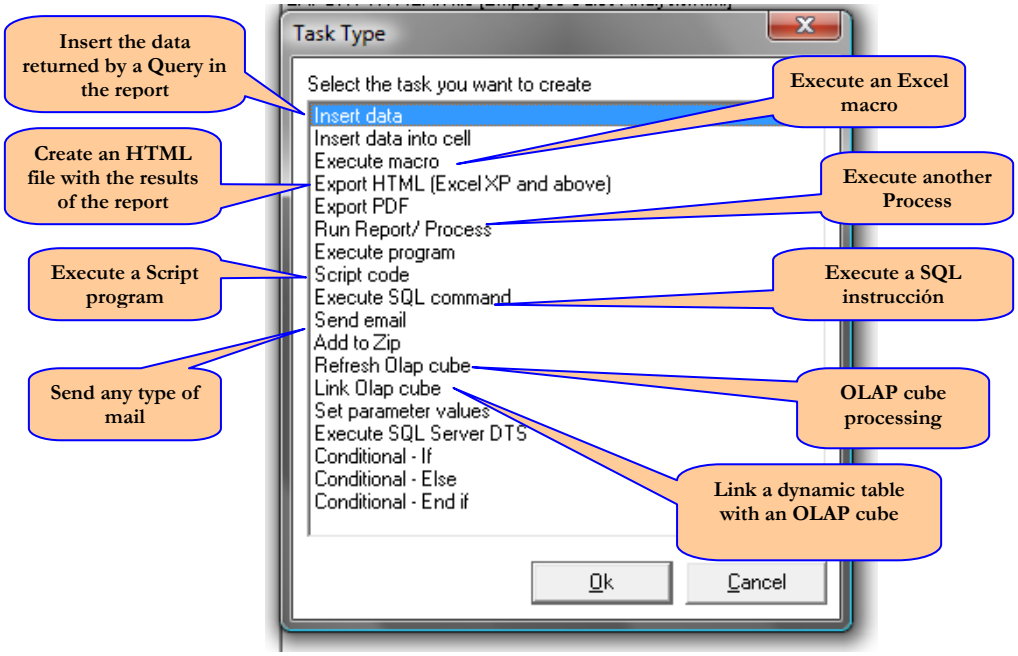


In most cases, the DataCycle process consists on the execution of Data entry and the execution of Excel macros.

The Move Data task example searches for data corresponding to the sales from a specific sales person and the Execute Macro task creates with that data a dynamic table that will allow to query and analyze the sales.

Available Tasks

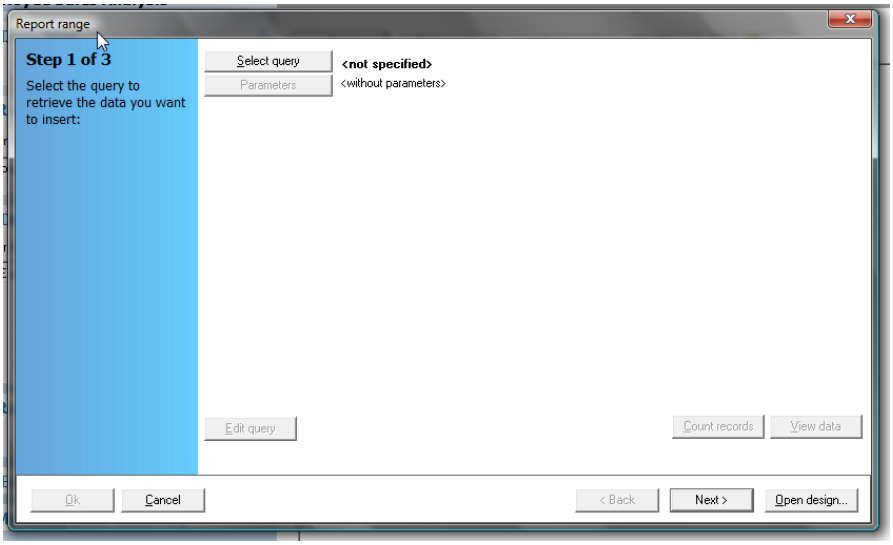
When inserting a task, the following screen will show a list of available Tasks:



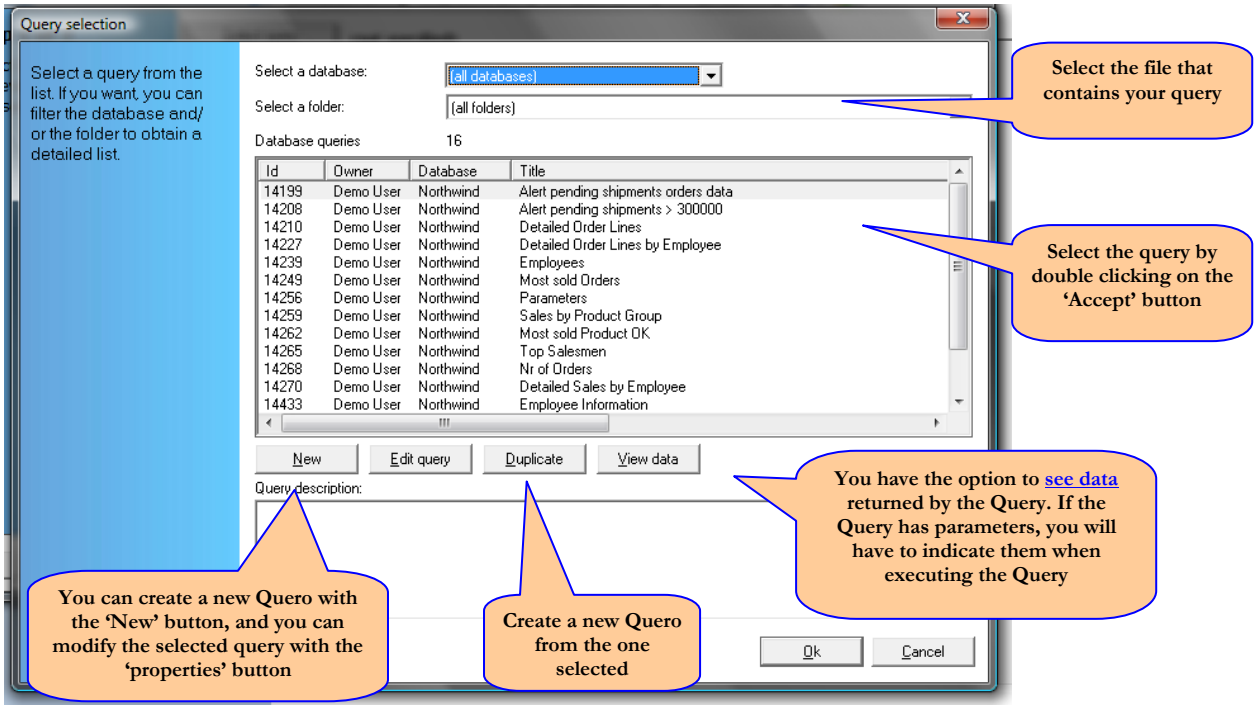
Insert Data

The main task you will perform in the DataCycle process is the **Insert Data**. As its name indicates, this task allows you to enter data from a **query** in a report.

A wizard will guide you through three Tasks' definition stages. In the first one, you will indicate which query contains data, which fields and the order to be selected.



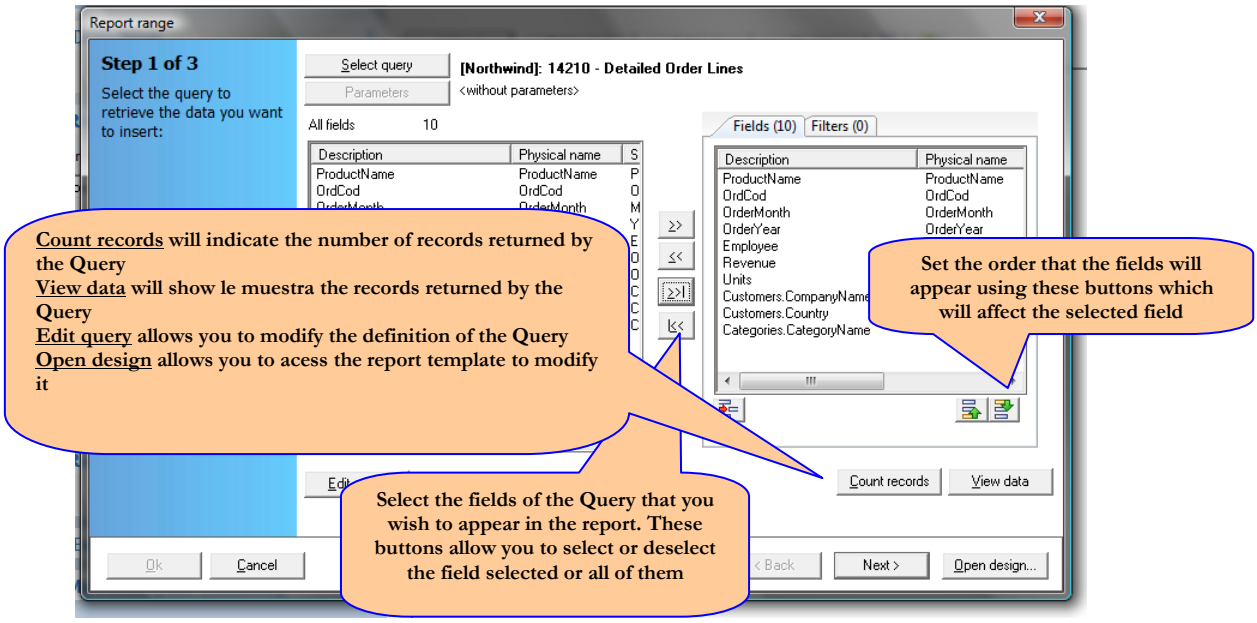
By clicking on Select query the wizard to select queries will appear:



Note 1: By duplicating a query, you will be able to test a new query without touching the original. Check Duplicate Queries section in the Query chapter and Duplicate Processes in the Process chapter.

Note 2: The assignation of query to files facilitates its localization and definition of access privileges.

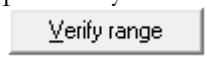
Select the Query and indicate which fields from the ones returned by the query you wish to appear in the report. Use the >> button to select the fields desired. The order of selection should coincide with the order of appearance of the fields in the Report. If a mistake in the order occurs, you can use the buttons to reorder the fields.



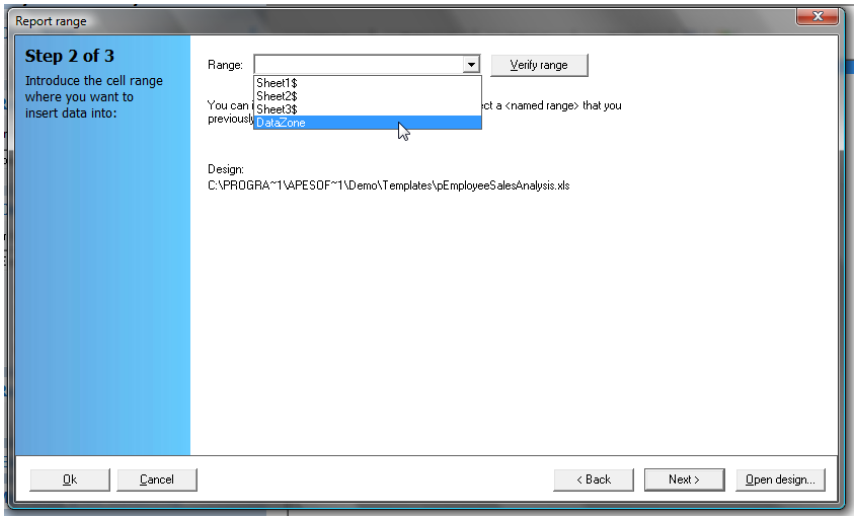
Note: The selection of fields in a Query from a Process is one of the main mechanisms for reusing the Queries and the way to distribute work and responsibilities.

You should also indicate the value of the parameters that will be used to execute the Query.

You can also create filters to discriminate the data returned by the Query. Refer to the Parameters and Filters chapter.

In the second screen of the wizard, you will indicate the location of the Excel or Access file where you wish to insert the previously selected data. In the case of an Excel file, the easiest way is to click on 'Verify range' 

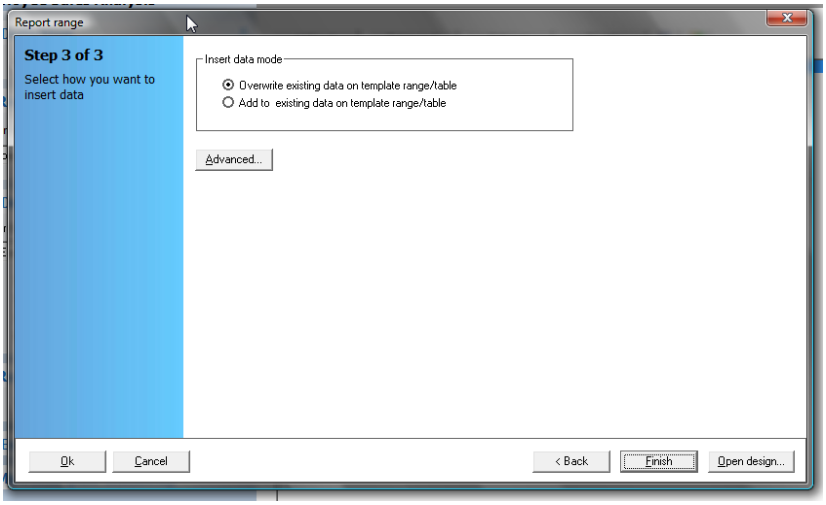
, and a list of ranges defined in the design will appear:



Note: Excel does not show ranges of one cell. That is why we recommend using ranges of two cells minimum leaving one without data.

Select the range and click the 

button. The last screen of the wizard will allow you to indicate if the data is inserted in the indicated range or if they are added at the end of the range attaching them to the existing ones:



Click the 'Finish' 

button to conclude the configuration of the data entry task.

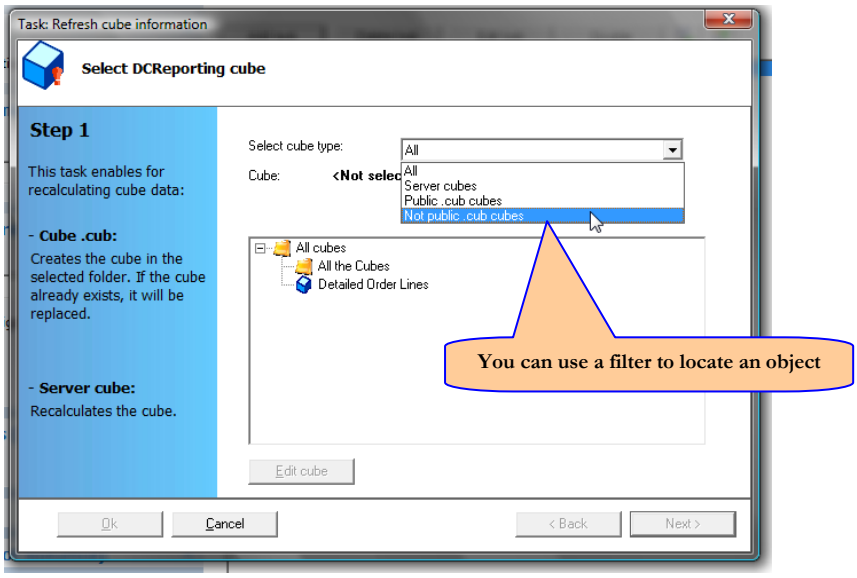
Refreshing a cube

This task is responsible for processing an Olap cube. The cube information is updated when executing the process that contains this task.

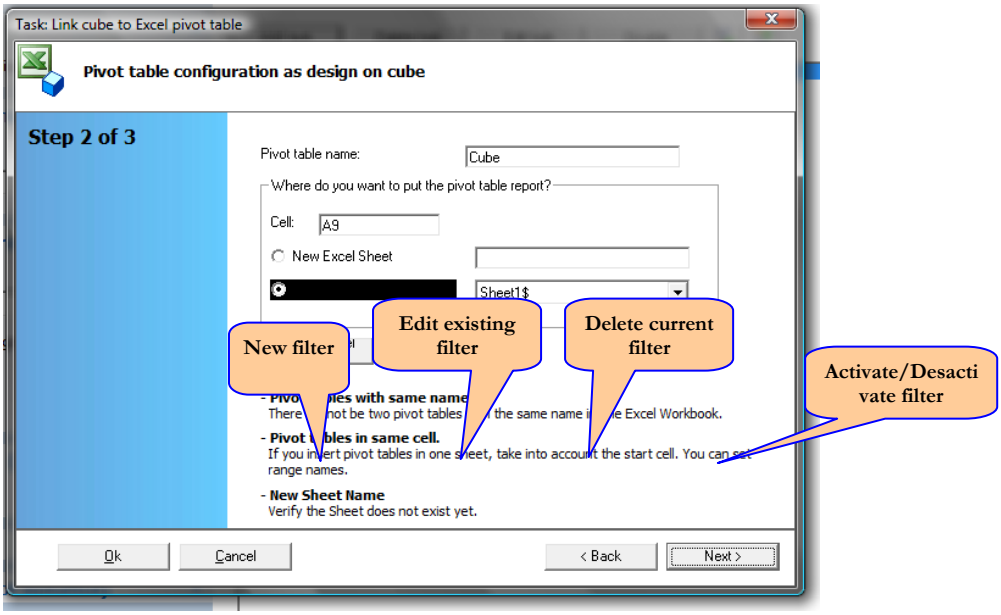
- If it is a cube file (.cub) and this task has never been executed, the cube does not exist physically and it is created in the destination directory specified. On the contrary, if it does exist, it will then be updated with the information resulting from the query execution.

- If it is a cube located in an Olap Server, it will pre-process the cube completely, updating it with the information of the tables.

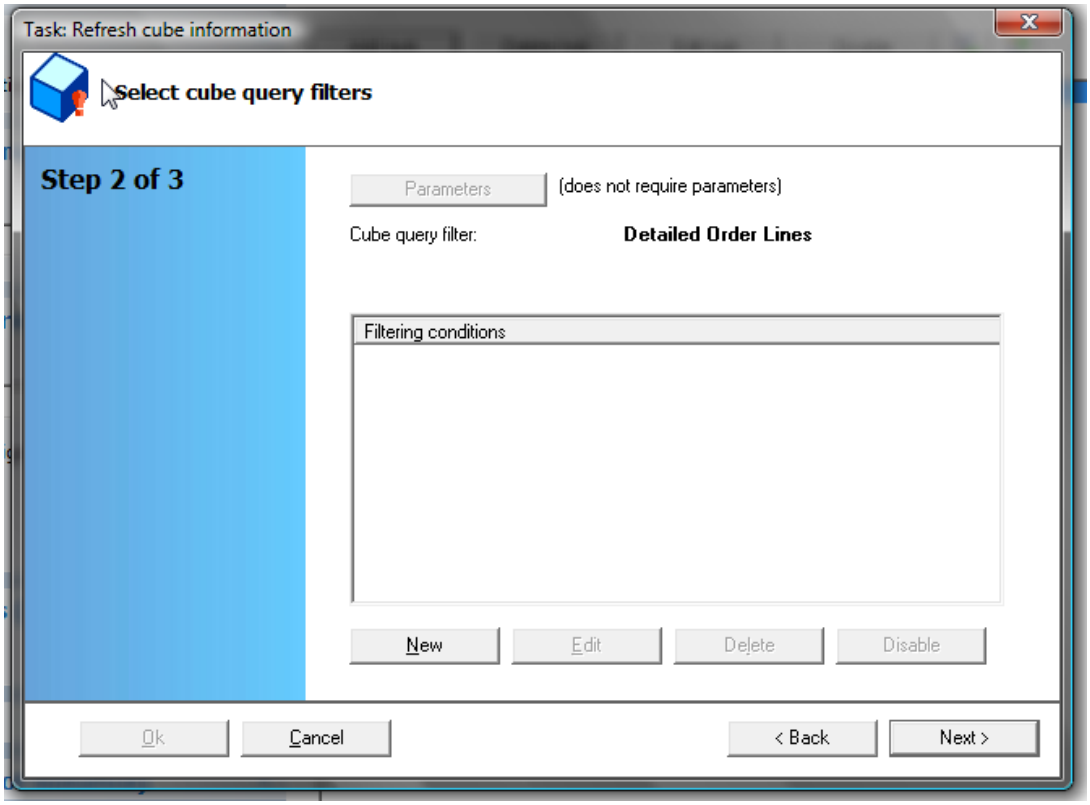
The first step to process a cube, is to select it:



If a server cube is selected, this will be the only wizard screen, so you can proceed and click 'Finish' Finish . If a file type cube is selected, click 'Next' Next > , and the following screen will be to define the query filters the cube will be based on.



The next screen contains a variety of information:



If a filter is added to the query, **the name of the cube to generate should be changed**. This is because if other users use the same cube, the cube that contains the complete query information has to be differentiated form the cube that contains the information filtered by criteria.

The default destination directory can be changed if desired.

When changing the name of the cube or the name of the destination directory, an **Identifier** will automatically be generated and its name can be changed. The purpose of this is that if this cube is used in tasks such as **Link an Olap Cube**, within the same process, it can be easily recognized from the original because it has different characteristics.

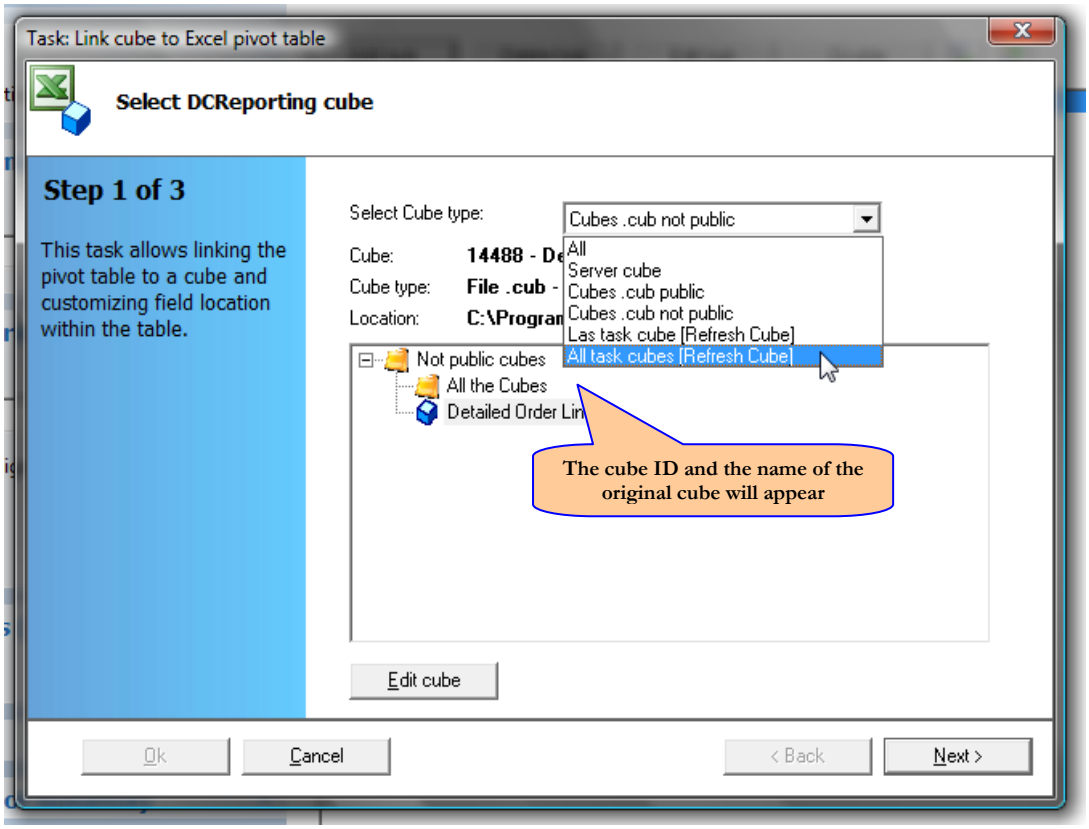
By clicking 'Finish'  the task will be defined correctly.

Link an Olap cube

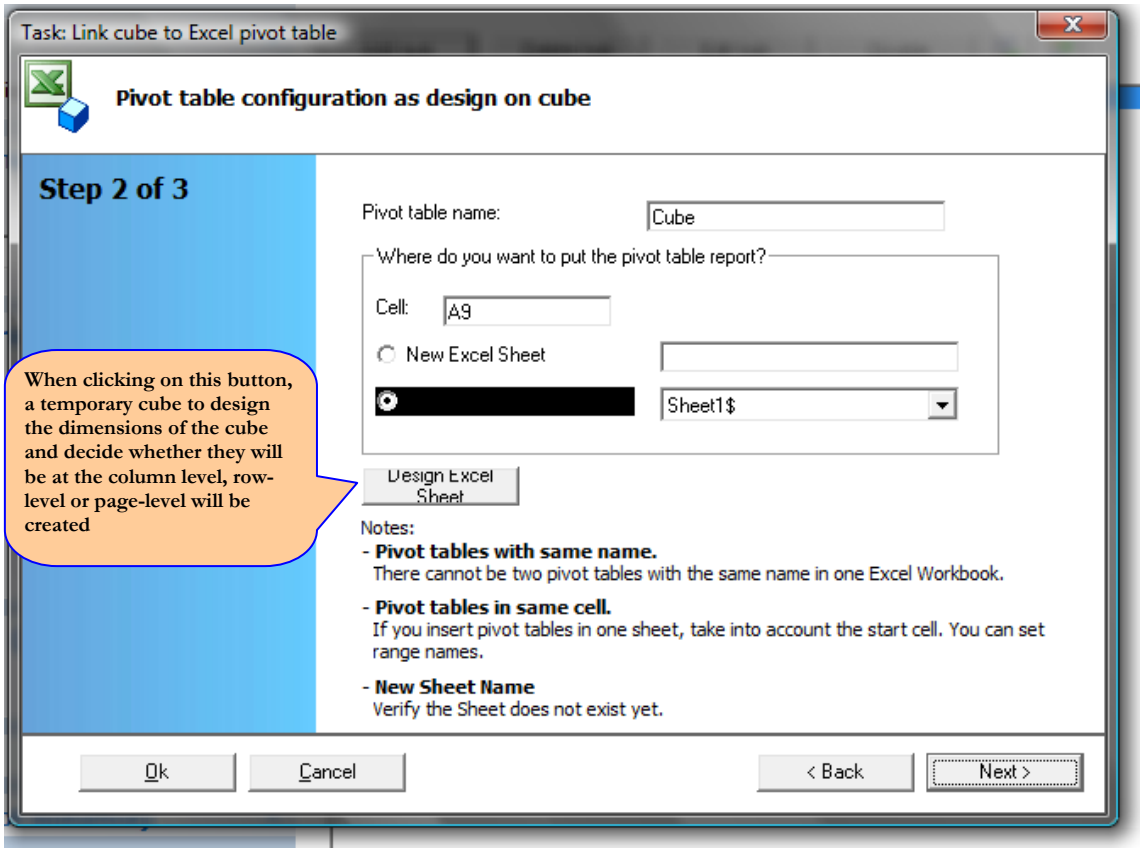
This task allows you to link an Olap cube defined in DCReporting to a report dynamic table.

Note: The template should not contain the dynamic table to be linked to the cube. It will be created from this task.

The first step of the wizard is to select the cube to be linked. The cube defined in the last task type **Refresh** cube will appear by default. If there are no tasks of this type, all cubes will appear. If you are interested in selecting a cube that has already been used in some of the previous task Refresh cube, filter the list by selecting the option **Cube of all tasks [Refresh Cube]**

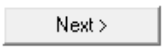


Click 'Next'  and the screen to configure the table will appear.

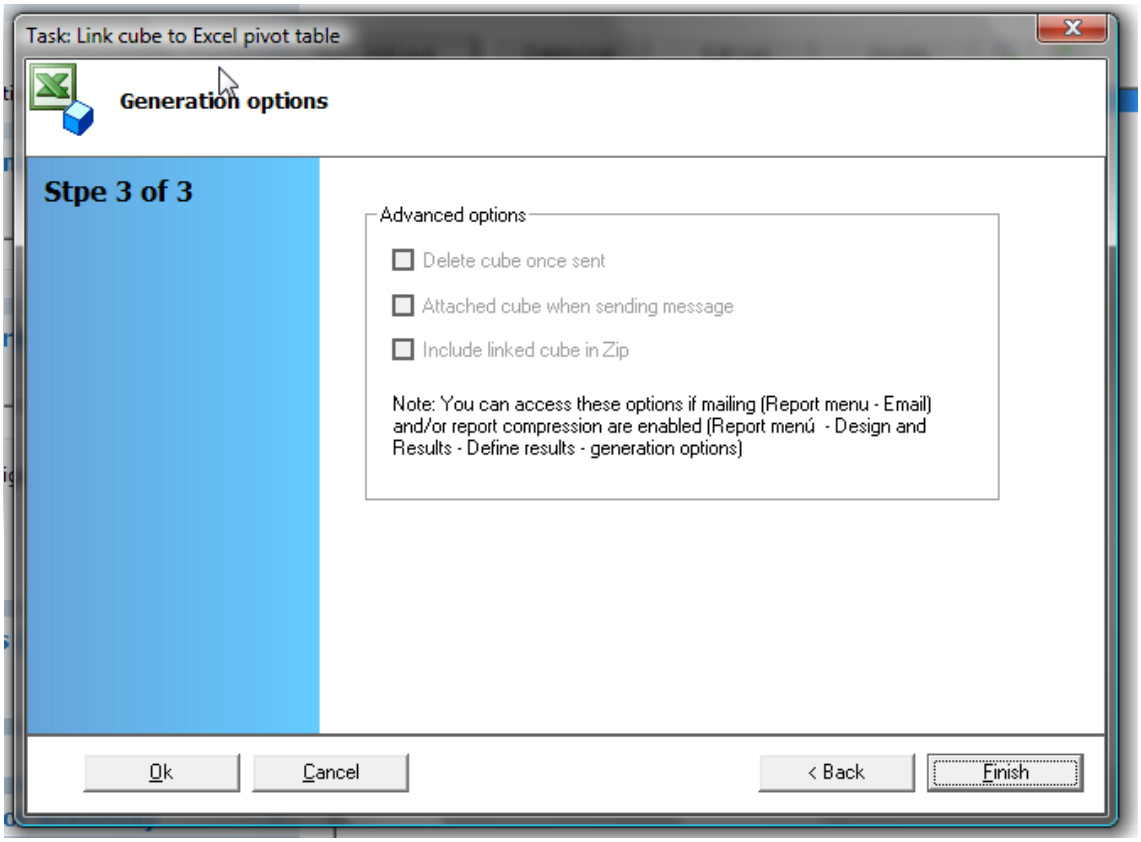


When clicking the **Excel Design** button, Microsoft Excel will open.

Once the dynamic table is designed, close and continue with the task wizard.

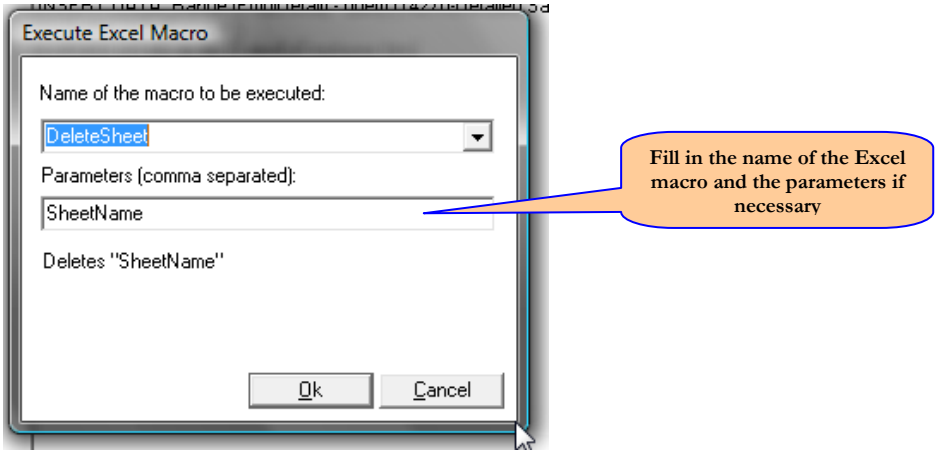
Click on 'Next'  if you have selected a cube file or click 'Finish'  if you have chosen a server cube.

The next screen will have the options active or not depending if the options to send mail and compress the file in zip are activated. It also takes into account if it is a file cube (public or not) or a server cube, since only if it is a non public cube (local), it can be deleted upon sending.



Execute macro

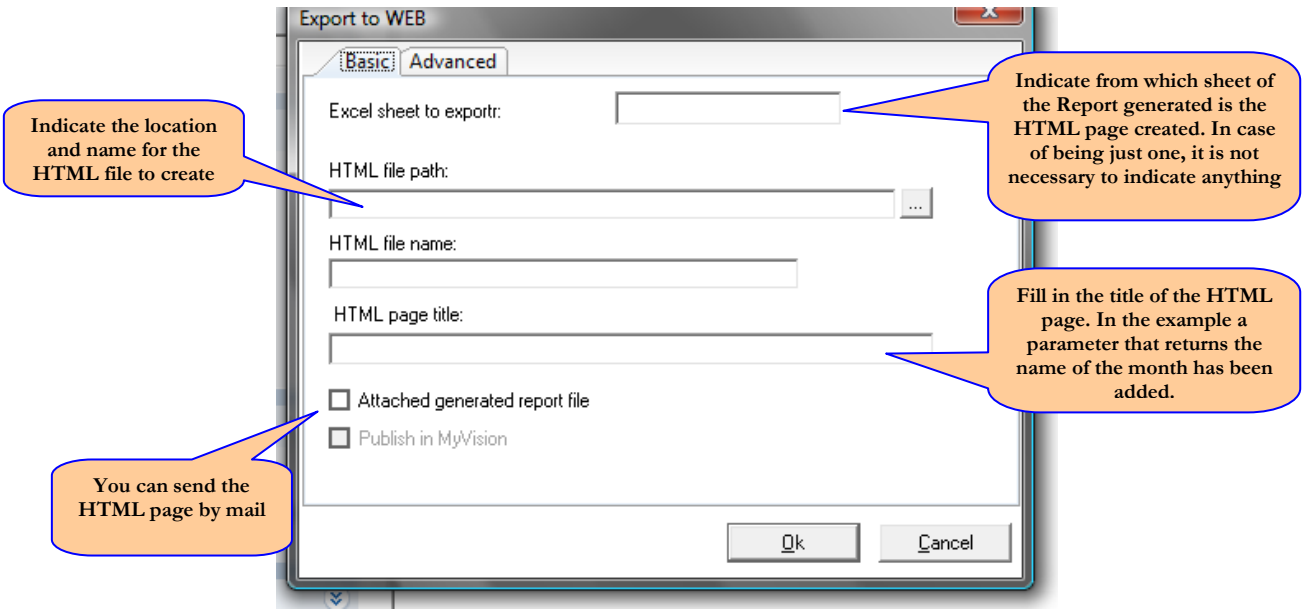
This is one of the main Tasks of the DataCycle process, which allows you to execute an Excel macro. This macro will have already been created in the Design file.



Export HTML

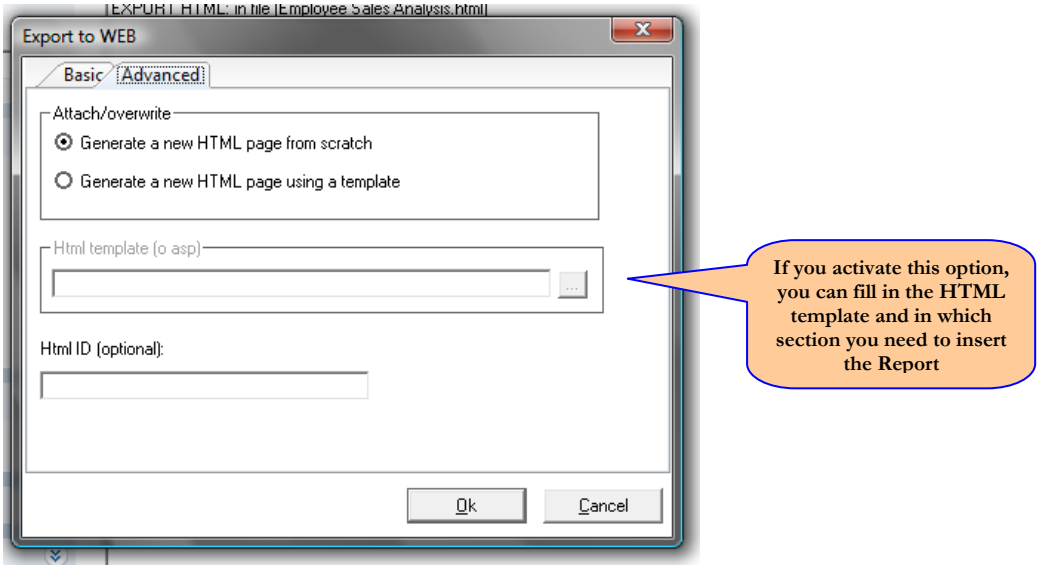
This Task allows you to create an HTML page from the report generated.

Although Excel is the usual format for generating reports, you can create HTML reports that can be published on your Web, intranet or view them with your browser. It can be a good solution for those static reports, which do not require the manipulation or analysis offered by the dynamic tables.



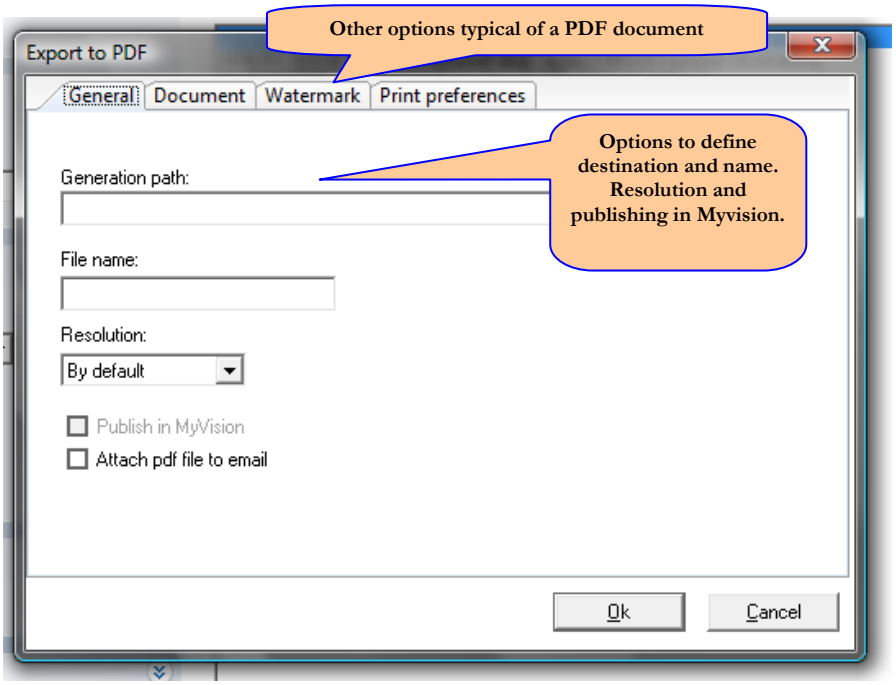
Note: If you generate a Report with several sheets, you can add a Task that exports HTML to each one of the sheets.

The advanced options allow you to use existing HTML pages as if they were templates and add the report in the section of the page you want.

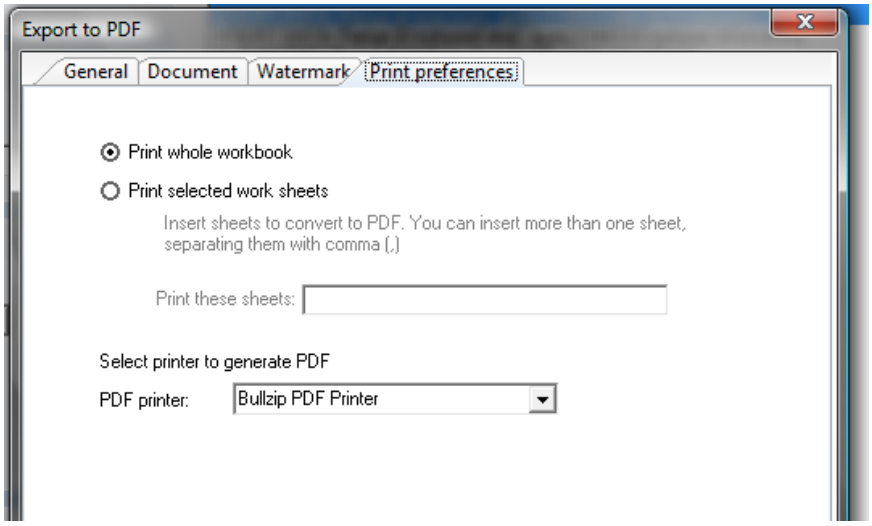


Export PDF

This Task allows you to create a PDF file of the generated Report. This format is very standard and that is why it can automatically convert the Excel file in the same PDF file to be sent by mail in a small, publish or simply for a better and easier visualization.



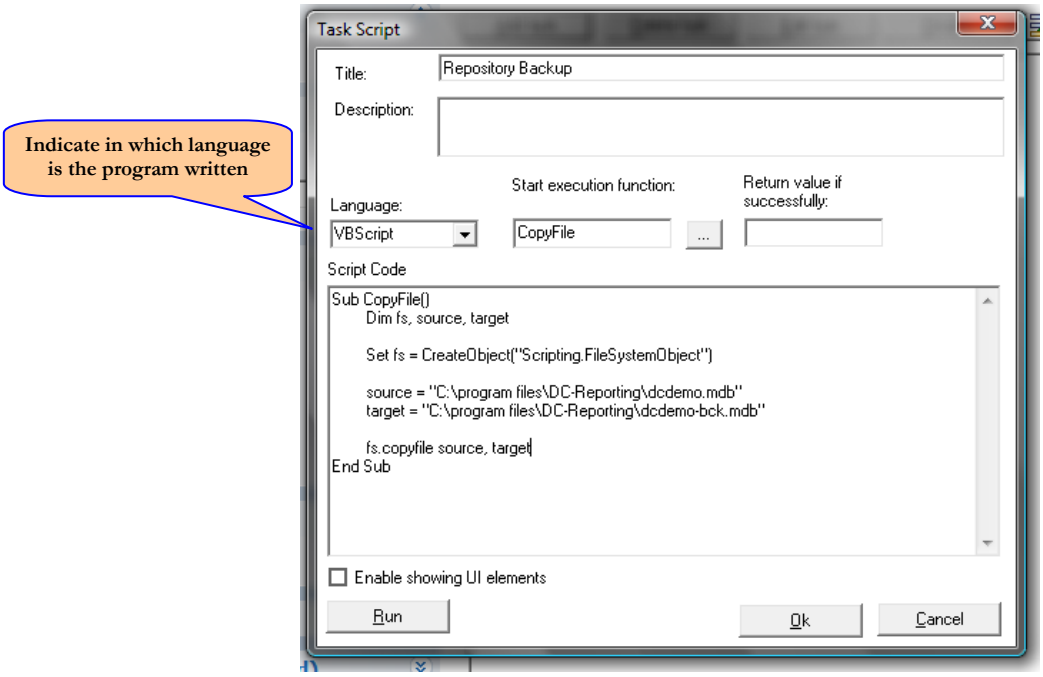
We can also decide to print one or several Excel sheets:



Script Code

This task allows you to execute Visual Basic and JavaScript language programs and can only be executed by technical personnel and in many cases for administrative purposes,.

With this Task you can literally perform any operation. **Be careful!!!**

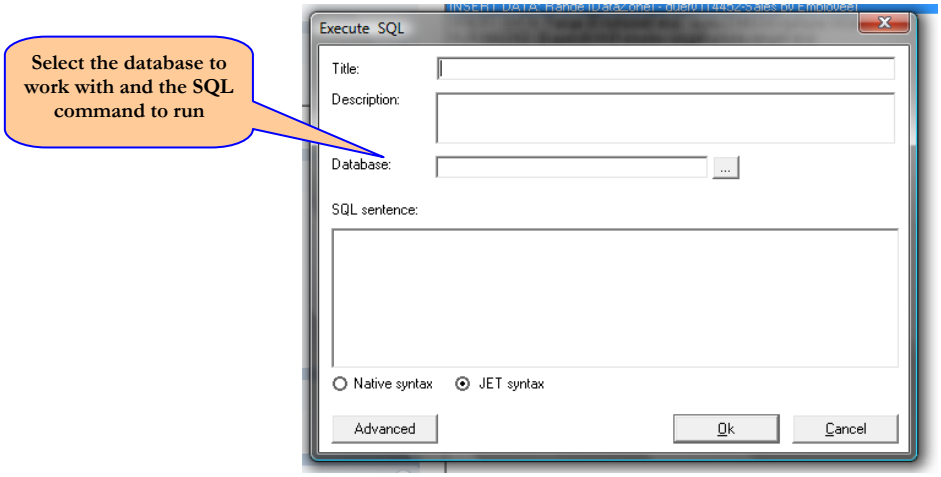


The Task of this example performs a backup security copy of the Repository.

Note: The task or script will be indefinitely executed.

Executing an SQL command

Similar to the Script Code Task, this task can only be very carefully performed by an administrative user. This task allows you to execute any SQL instruction on a database, including transactions (modifications, deletions, insertions ...).



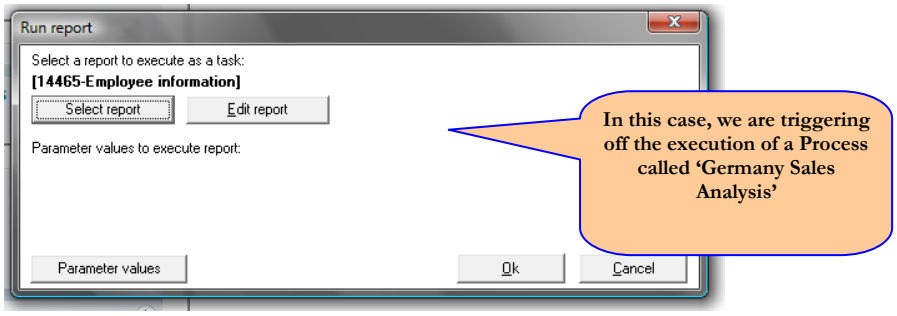
Note: Refer to the 'Syntax' to differentiate between native and Jet Syntax.

This task could modify certain tables of a database indicating that a particular document has been generated.

Execute process

This task allows you to execute several existing processes in a sequential manner, and may thus trigger off all Reporting processes in a single step.

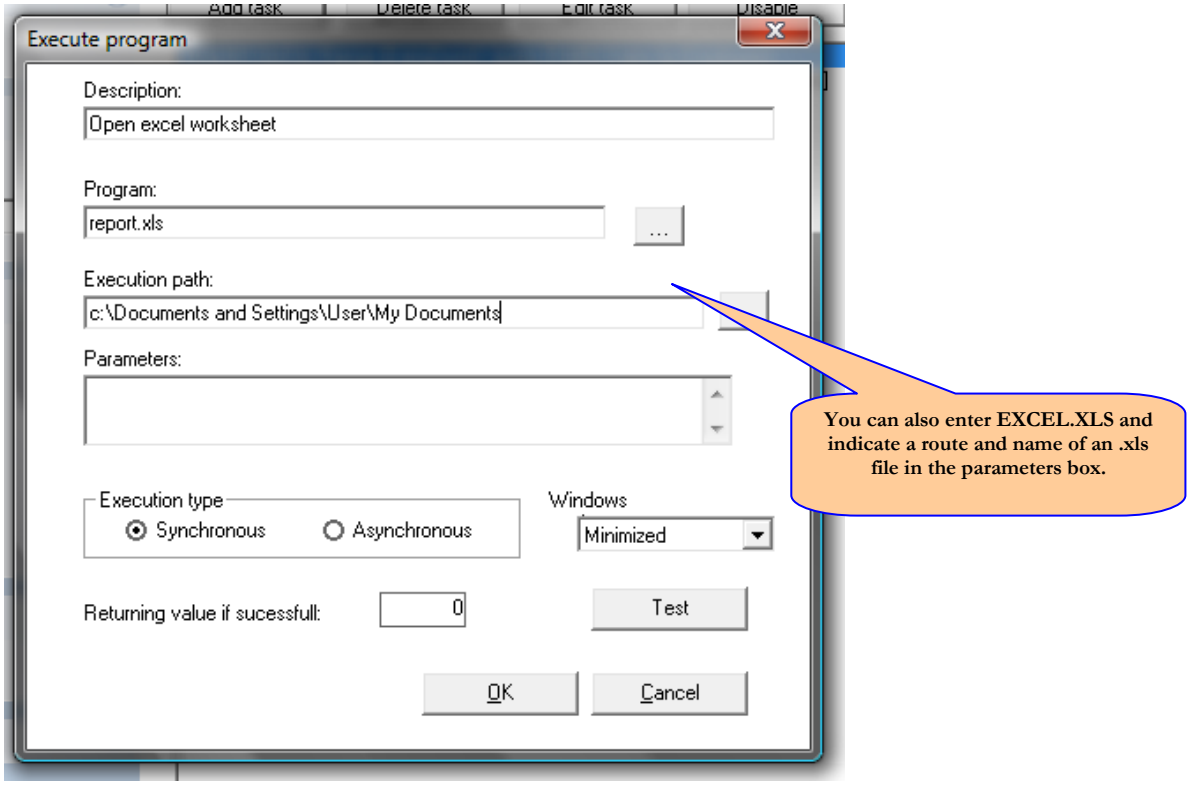
Indicate in each Task which process to run, **and be careful not to call the Process itself!!! You would be in an infinite loop.**



Execute program

This task lets you run a program with or without input parameters and also indicate to what system directory is related to. We may indicate a file to be executable on an application or indicate a file, that because of its own extension, it will be opened by the application that has been created with.

.



It is highly recommended to run a test to verify that the program will execute correctly.

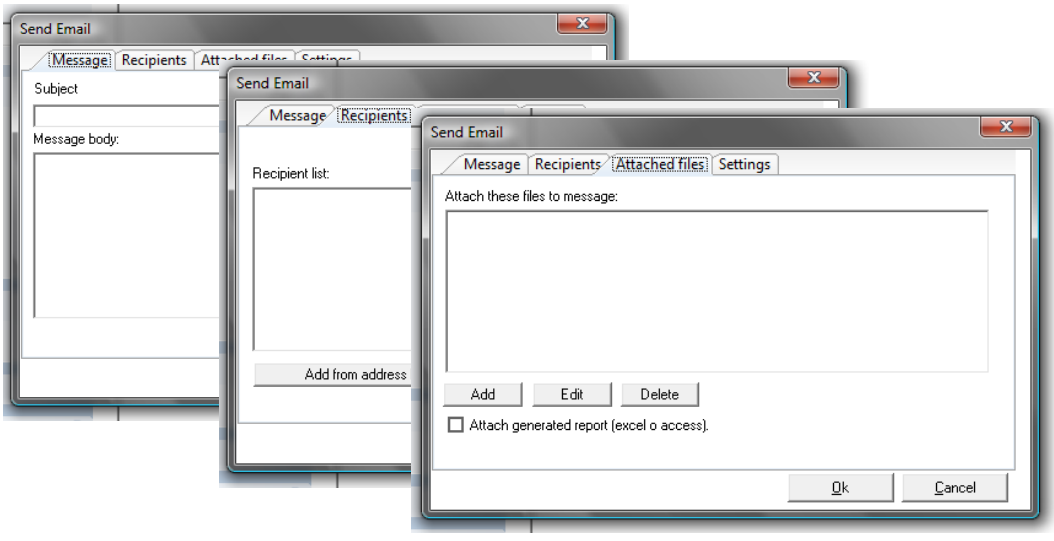
In a scheduled process containing tasks of this type, it is dangerous to indicate that the rate of execution is synchronous, because if not ending the program called correctly or requires intervention, it would block the rest of the DataCycle process.

Send a mail message

This Task lets you send any type of mail to the recipients desired with any number of attachments desired, the same way you would do it from your email program.

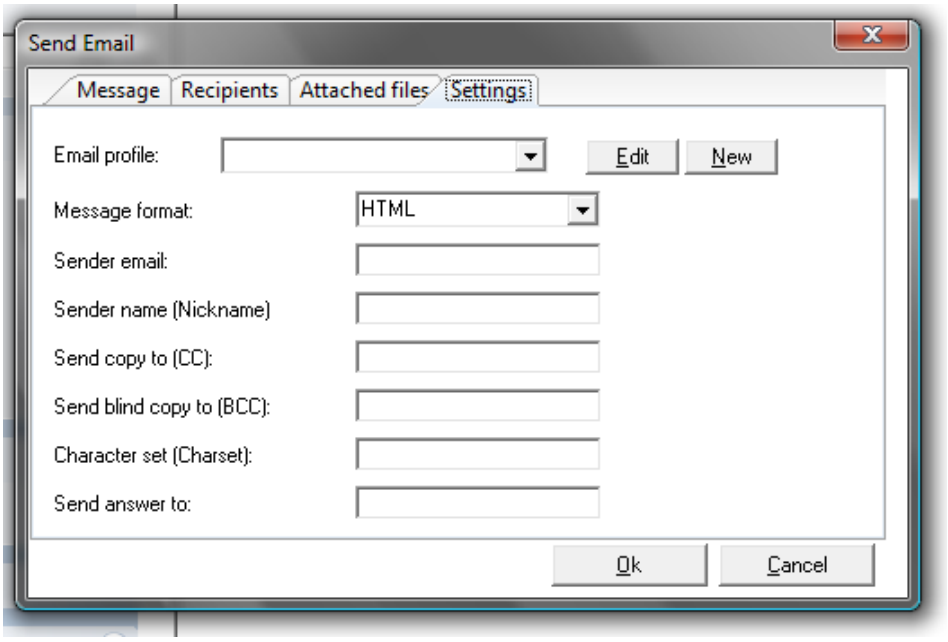
Do not confuse the task Send Mail with the Process Mail tab. The Mail tab is designed to send the report that has been generated. Instead this task allows you to send emails of a general nature, without limitation.

This Task is divided in three main tabs:



Through the advanced options you have access to advanced features that allow you to set the format of the message, the sender, sending HTML format messages or dynamically establish the sender.

Note that these options allow you to input a specific value, or alternatively a parameter to be processed.



For example, we can make the sender of the message established with the email of the user running the process, and we will use the parameter @ PAR (EXEC_USER_EMAIL). Another option involves asking the user for the recipient e-mail desired.

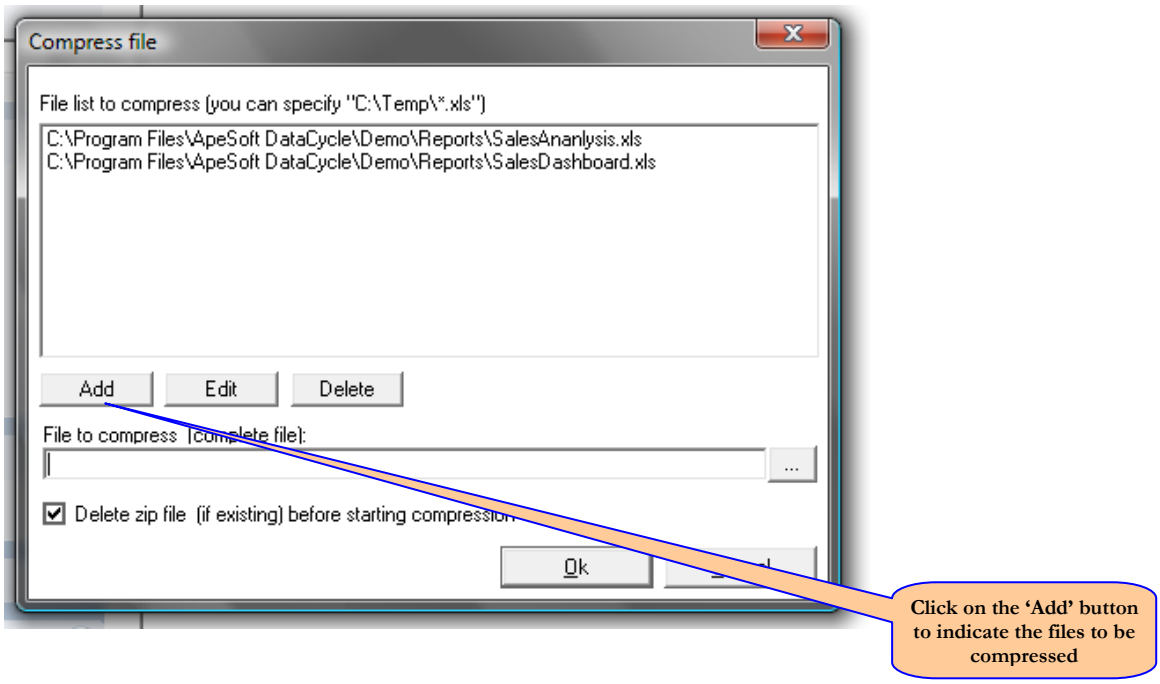
In case of sending mail in HTML format, the HTML code needs to be specified in the control [body of the message]. In the HMTL code, we can insert DataCycle processing parameters to personalize the message.

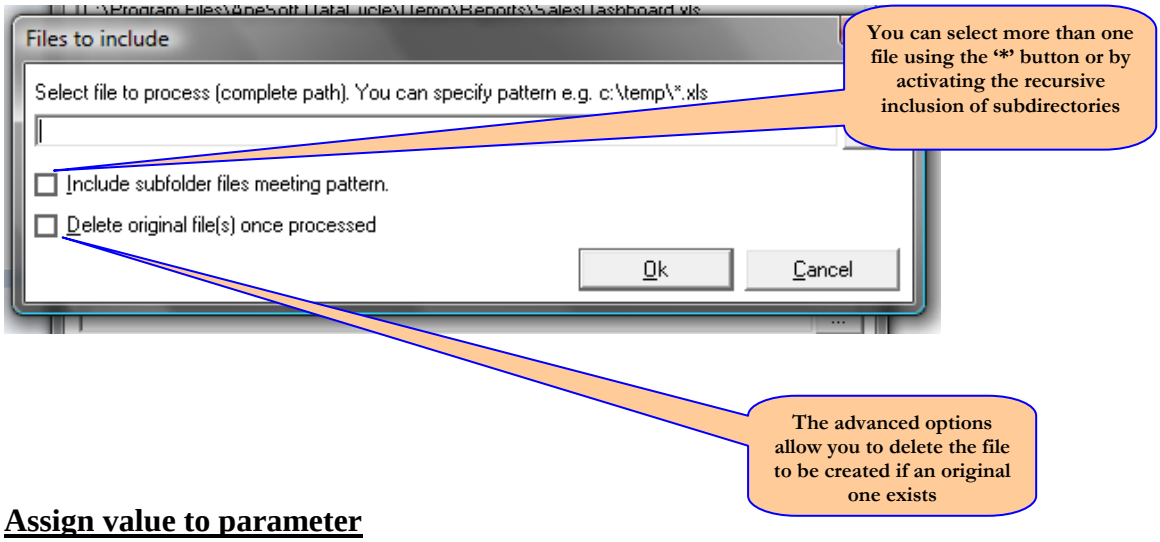
Note: Sending HTML format message is only available for SMTP mail profiles.

Add to Zip

This task allows you to compress files creating a ZIP file. Through this task you can periodically make security backup copies and in combination with the task Send Mail, you can send a ZIP file that contains a series of reports.

The screen will ask you for the files to be compressed and what the name of the resulting file will be:



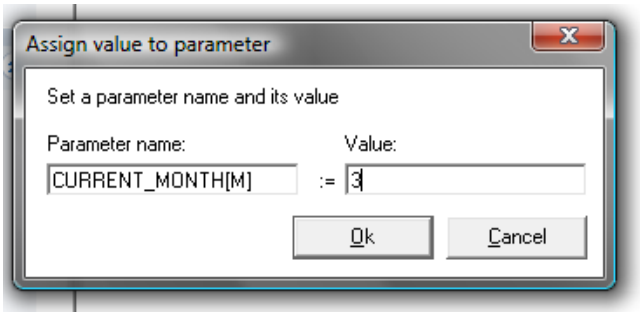


Assign value to parameter

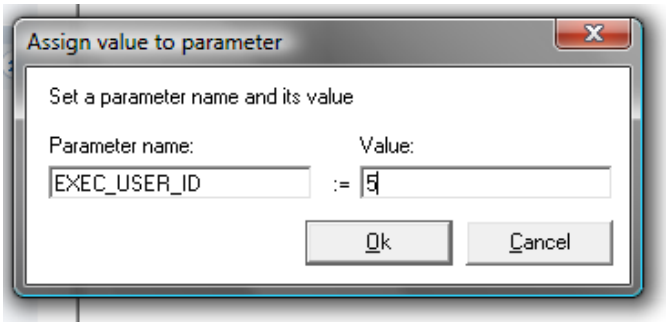
This allows you to vary the value of a parameter during the execution.

Following are two practical applications:

- You can temporarily vary a parameter returned by the system, such as a date, to simulate the execution of a report in a different period from the current one.



- You can vary the report executor code by one of a different user and retrieve the context information.

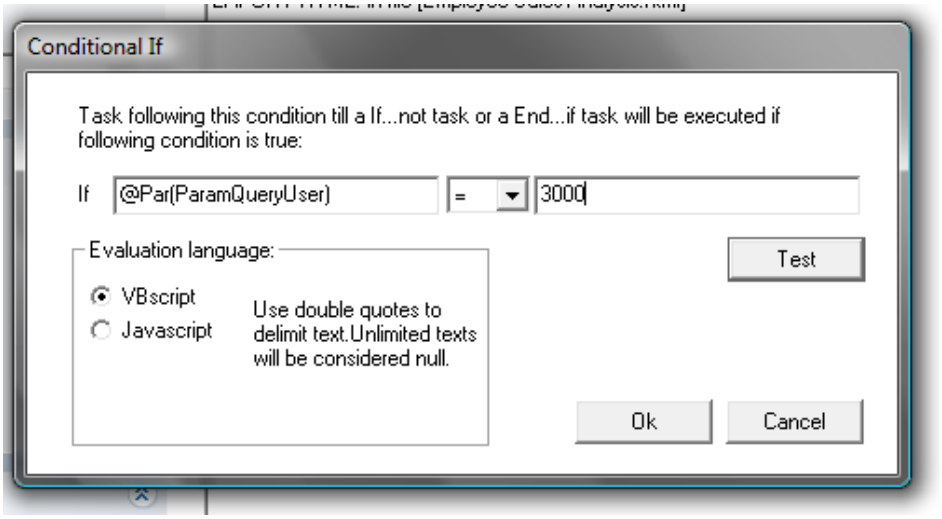


NOTE: Changing the executor user ID is a very delicate step that can only be configured by an advanced user. By establishing the executer user ID implies that everything related to the user profile will change according to the new ID.

Conditional Tasks

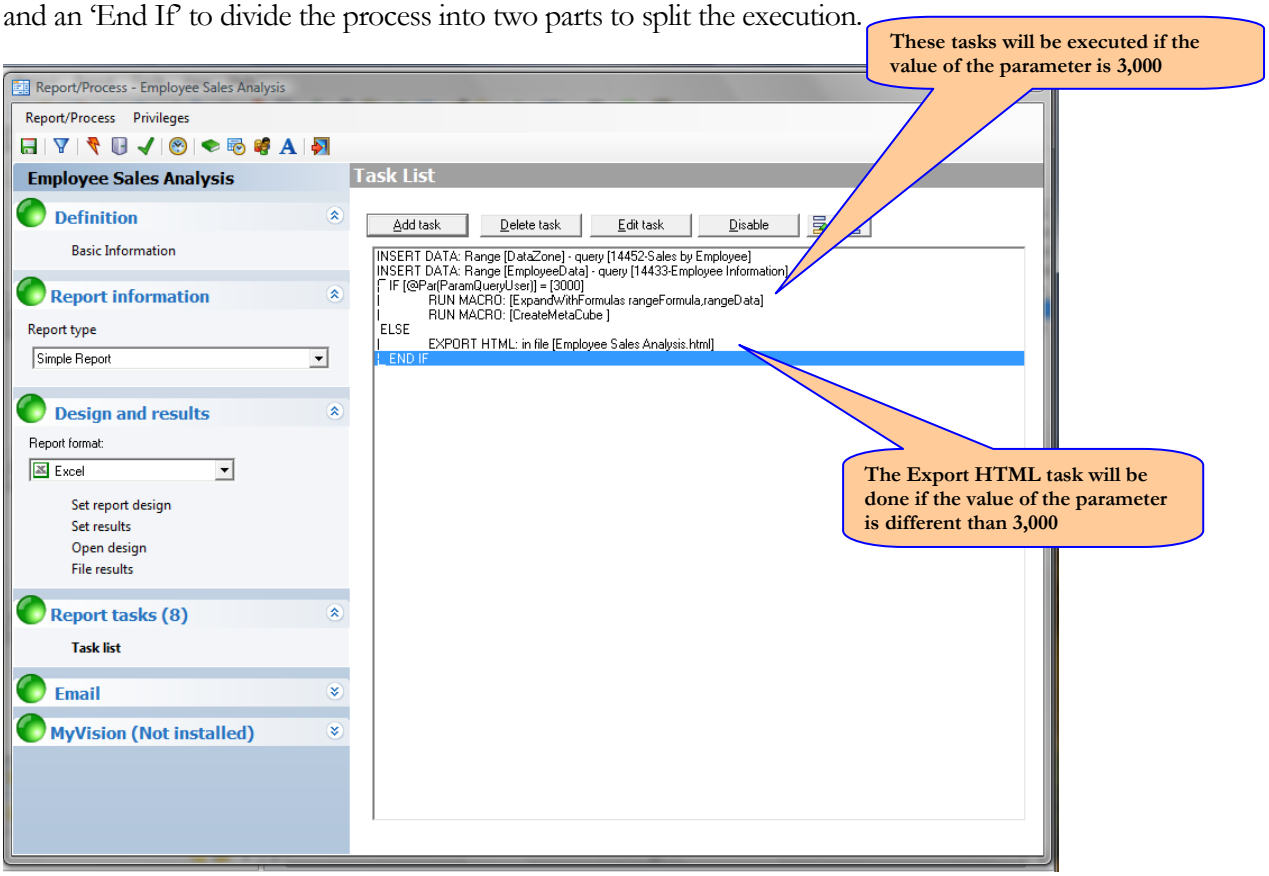
The tasks 'If', 'Else', 'End If' do not actually perform a specific action, but act as signs that are included in the process task flow. With these signs, you can build a process that executes one or several sets of tasks and other set/s that will remain unexecuted.

The conditions to evaluate are defined in the task 'IF':



In the expressions compared you can include parameters either created by the process or by the ones that include DCReporting, such as Dates, User …

Once a task 'If' is defined, it is common to insert other tasks related to data and then always close the block initiated with the task sign 'If'. It is optional to include an 'Else' between an 'If' and an 'End If' to divide the process into two parts to split the execution.

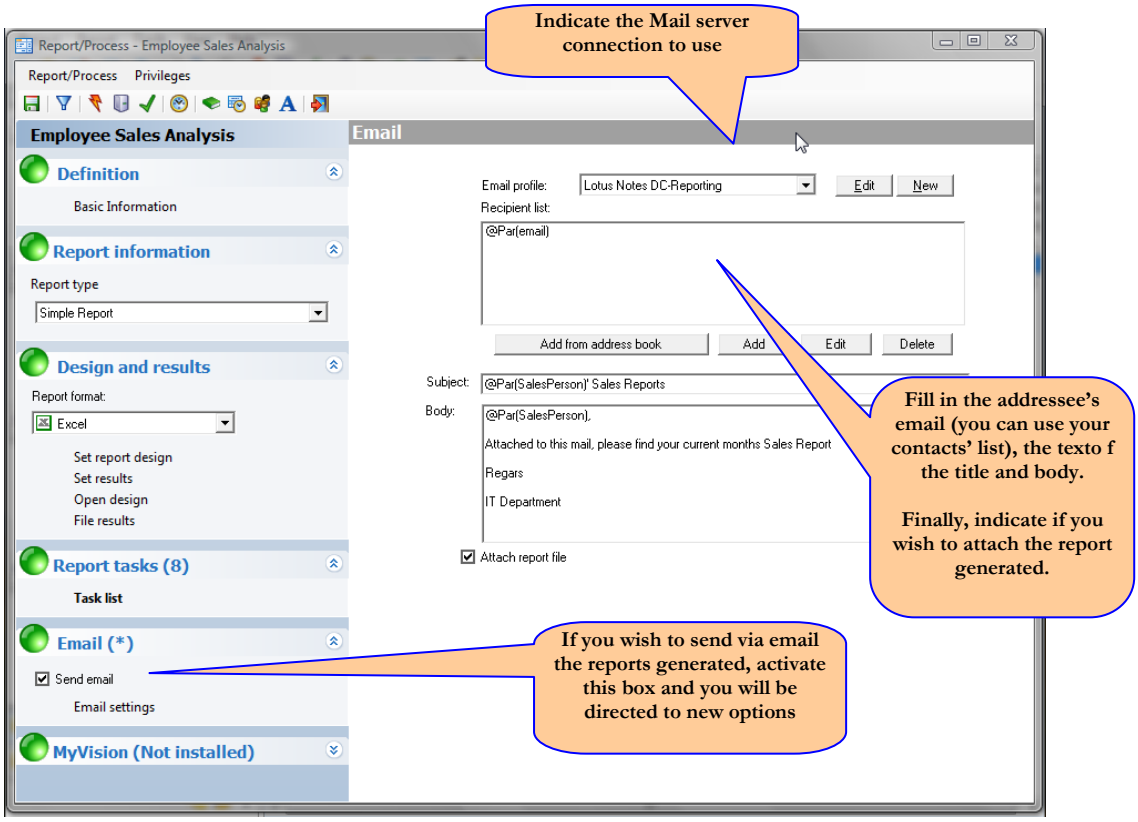


Note: The 'IF' blocks should contain at least one 'IF' task and one 'End If' and can be included inside other 'If' blocks and nest them, but they will all have to be well defined.

Mail section

This tab determines the sending of the reports generated indicating the recipient and the message to be received by the recipient.

The chapter Distribution of Reports via email will help you understand the mechanism of this functionality and how to configure the mail system.



Note: Refer to the Distribution of Reports via Email chapter for the mail profile definition and the use of parameters that personalize the mail.

Note: While it may seem contradictory, it may be interesting not to send the report that has generated DataCycle Reporting, and instead set the sending mail process so that you can see relevant information in the title and body that make it unnecessary to send the report.

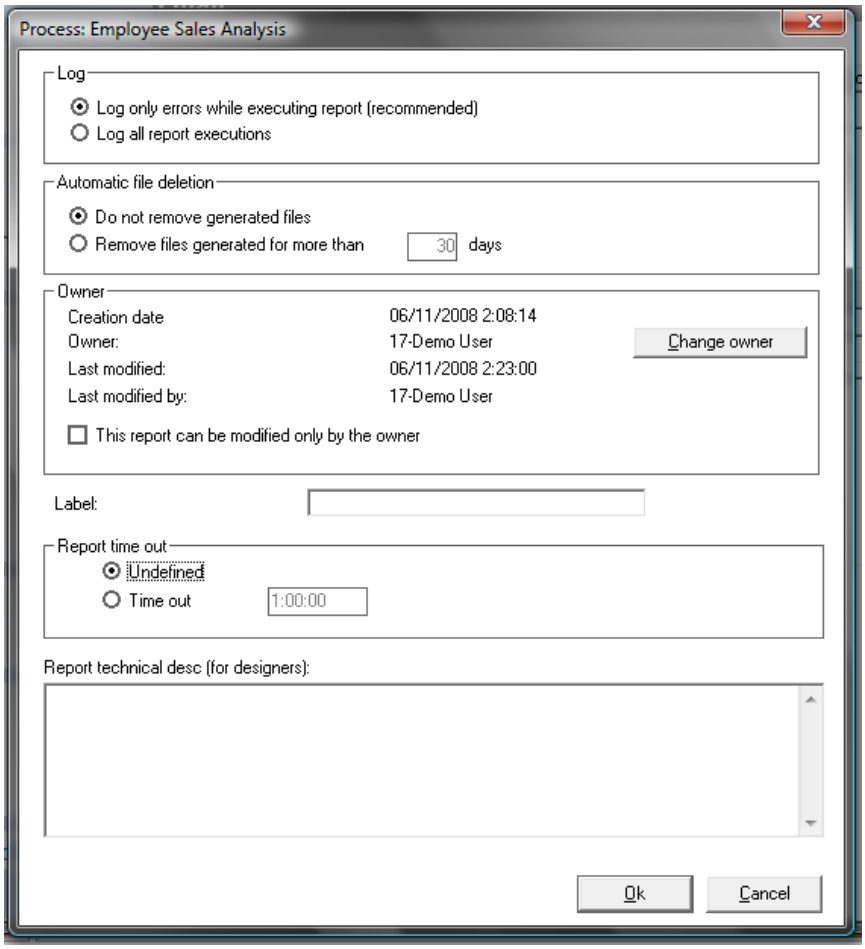
MyVision section

The MyVision section will be available in an installation where the MyVision web solution has been incorporated to DataCycle Reporting.

For more information about this functionality and how it is applied in an environment with MyVision, refer to the DataCycle MyVision user guide.

Advanced Options of Process and documentation

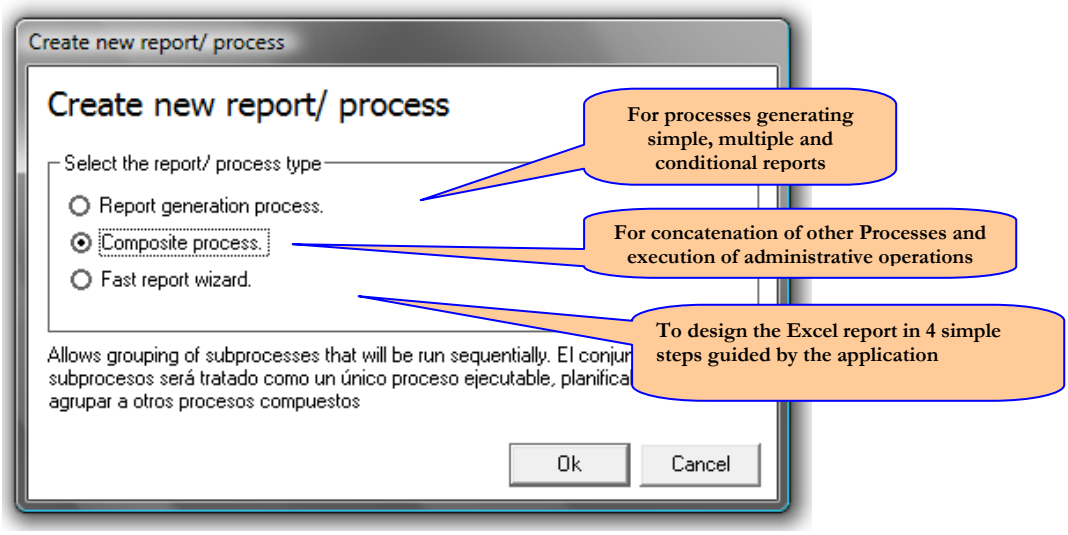
By clicking on the  button of the task bar, you can configure the behavior of the processes, duration, file conservation, trace and administrative information:



Create a Composite Process

The steps for creating a composite process are as follows:

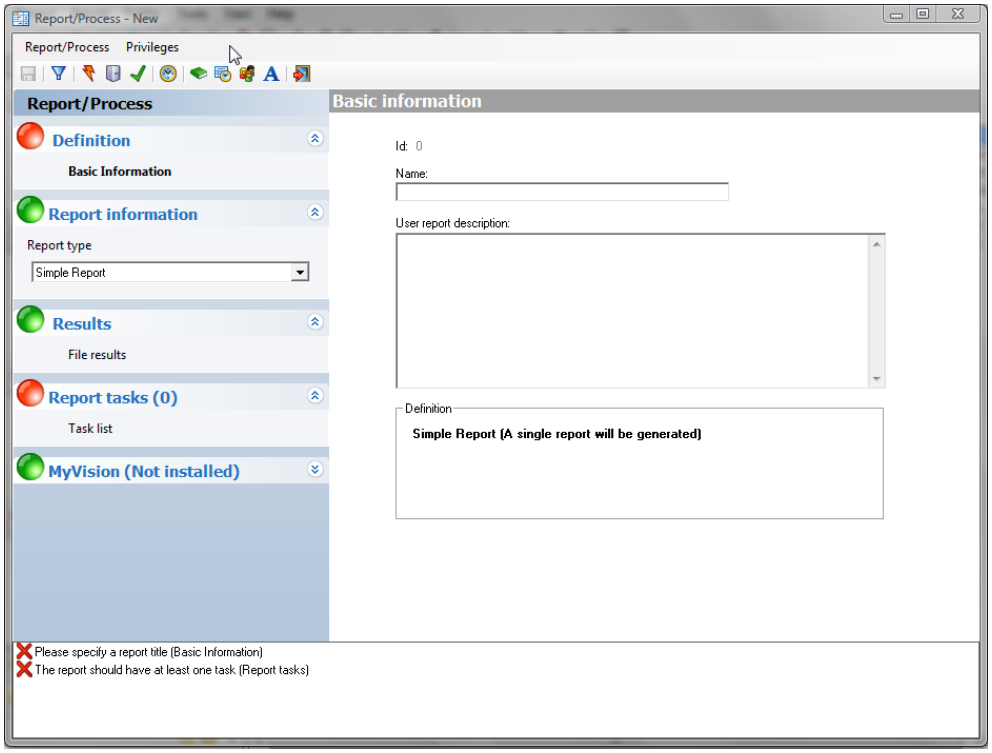
Once the option 'New' is selected in the menu, the Edit Process screen will appear and will request to indicate the type of Process to create:



Note: The 'Process types and Reports' section explains the difference between them

In the following section, we will review the composite processes. For information on other Processes, refer to 'Report generation process'.

Upon accepting, the Process definition main screen will appear:



Composite Process screen

The process definition screen is divided in three tabs:

- **Report Information**

  This indicates the type of report as explained in 'Process types and Reports'. In case of a multiple or conditional report, the query determining how many reports will be generated and with which conditions they will be performed is indicated in this tab.

- **Report Tasks**

  These are tasks that determine the content of the report, either by the data container as by its location and macro execution.

- **Results**

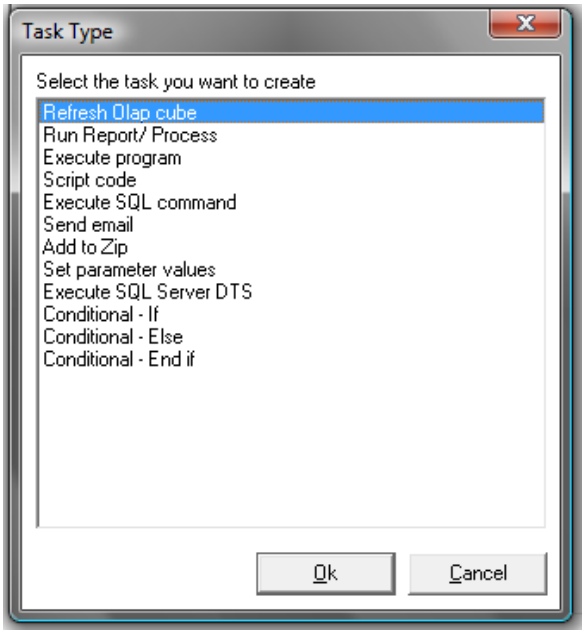
  This allows you to check on the generated reports from the last execution.

Process Data section

This has the same format and functionality than in the report generation process with the difference that this type of processes are not intended for reporting and therefore the evaluation query result should be used in the sending mail or administrative tasks and not as reporting criteria.

Process task section

This has the same format and functionality than in the report generation process section with the limitation of the available tasks which are the following:



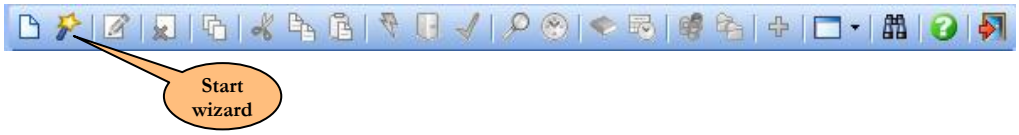
Results-Reports section

This has the same format and functionality than in the report generation process section.

Fast report wizard

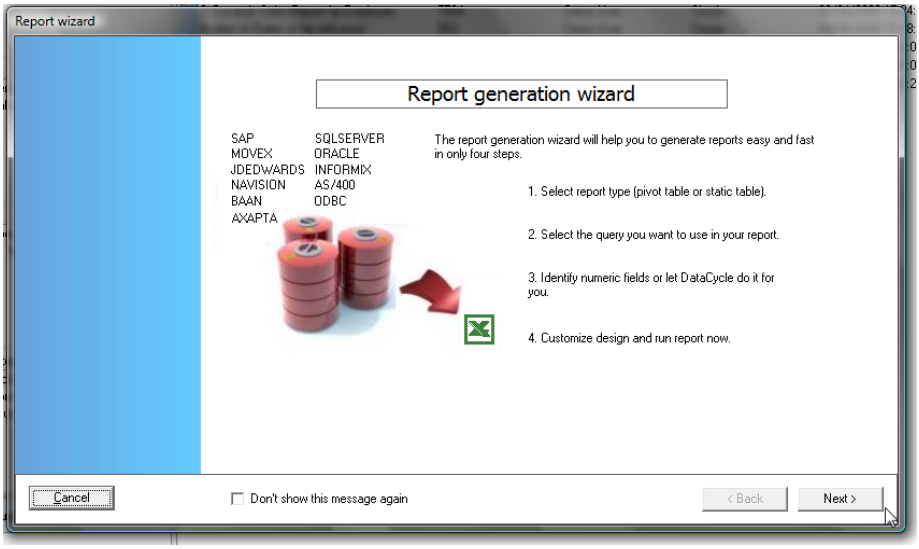
From this point, we will show the steps to follow to use the wizard.

The wizard can be run also through the wizard icon/button located on top tool bar (the Process should be selected).



Welcome screen

The first screen will be the welcome one which introduces the user into the rapid creation of process generation, and explains the process of report generation and the steps that are about to be performed.



The 4 necessary steps to finish the report are:

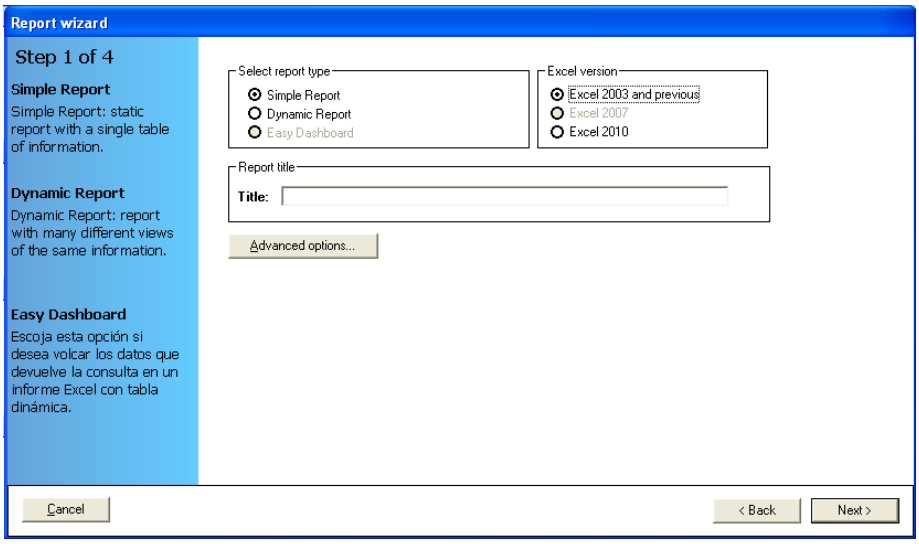
- **Step 1**. Choose the type of report: Simple, with dynamic table, or Easy Dashboard.
- **Step 2.** Choose the query and the fields that will constitute the data we want the report to be based on.
- **Step 3.** Specify which fields will be numeric, or let DataCycle Reporting to do it automatically. This step is important if defining a report with a dynamic table.
- **Step 4.** Define the report appearance (format and design) that will be used as a template and execute or browse the process.

The user can cancel the procedure at any time with the 'cancel' 

button available in each step, or advance to the next step in the wizard by clicking 'Next' 

.

Step 1. Choosing the type of report



In this screen, we specify the type of report design we want to create. We can select if we want to create a report that generates a simple, static report design,a dynamic design that includes a pivot table, or an Easy Dashboard*, to get simple dashboards in a few clicks.

(*) Feature only available with Excel 2010

. In our case, we wish to define a simple report as follows. See "DataCycle Reporting UserGuide" for description and examples working with dynamic and Easy Dashboard report types

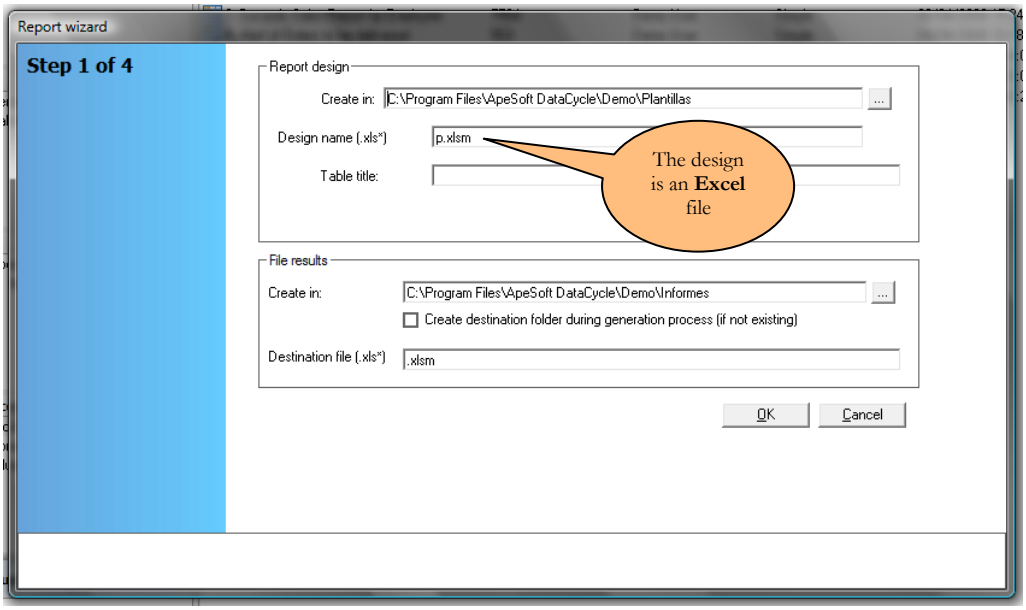
If your Excel installed version is 2007 or 2010, the "Excel version" frame allow to enable this version:

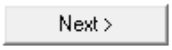
The name of the report has to be specified too. In this case, we will call it **Employee Report:**

DataCycle Reporting will automatically fill in the necessary fields to create the process such as: the design, result report, and certain generation options, which can be also personalized by clicking 'advanced options' 

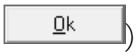
.

The design to apply to the report using the wizard is based on a standard model included in DataCycle Reporting. The following illustration is intended for information only, since in this example we will not enter the advanced options in the configuration.



Click on the 'Next' 

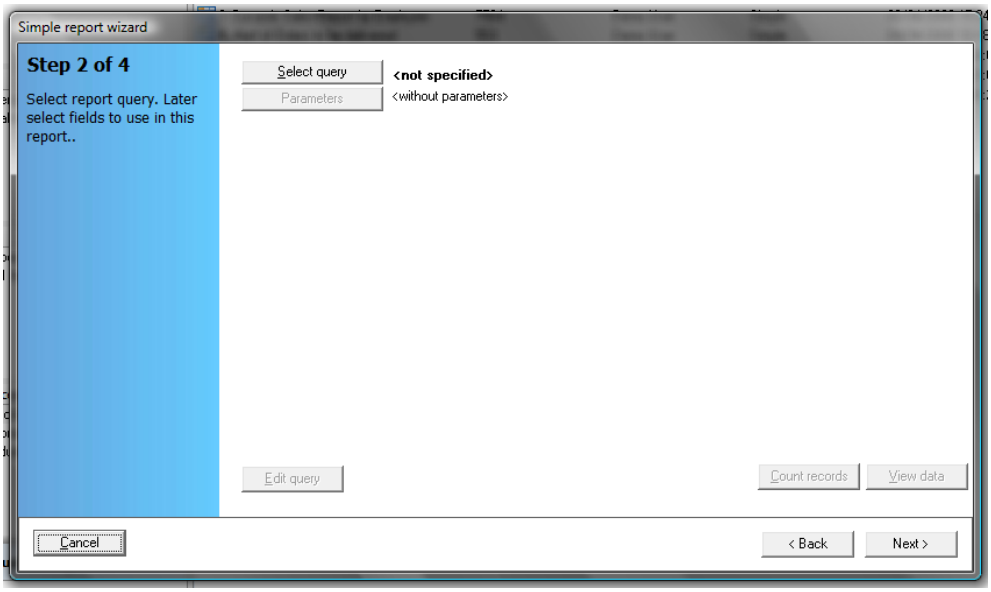
button (if you have entered into the advanced options, you should click 'cancel' 

before, or if you have changed any suggested record and wish to apply it, click 'Ok' 

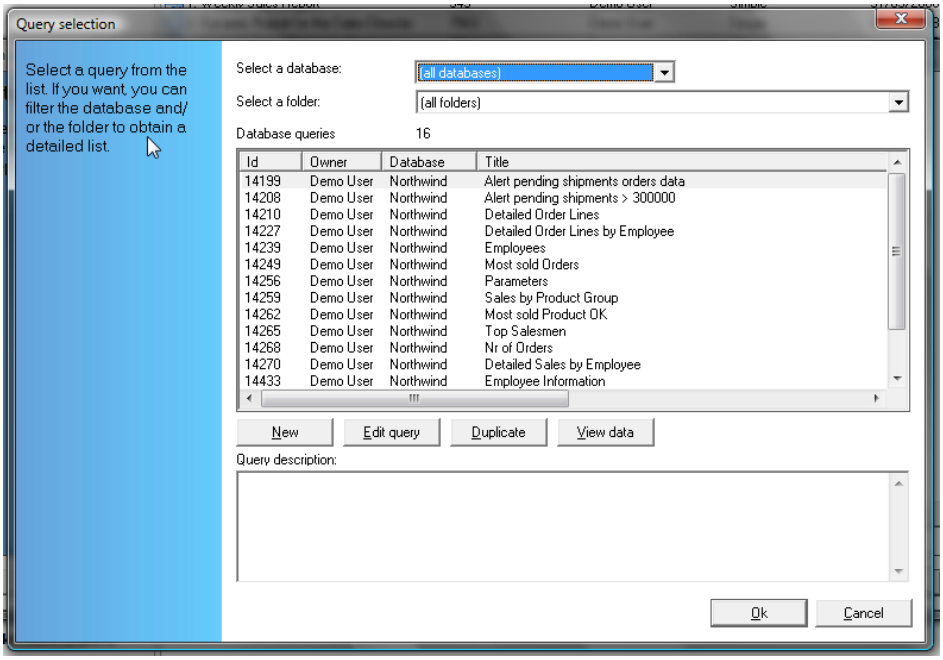
).

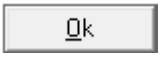
Step 2. Choosing the query

This step consists on selecting the query to use in the report.

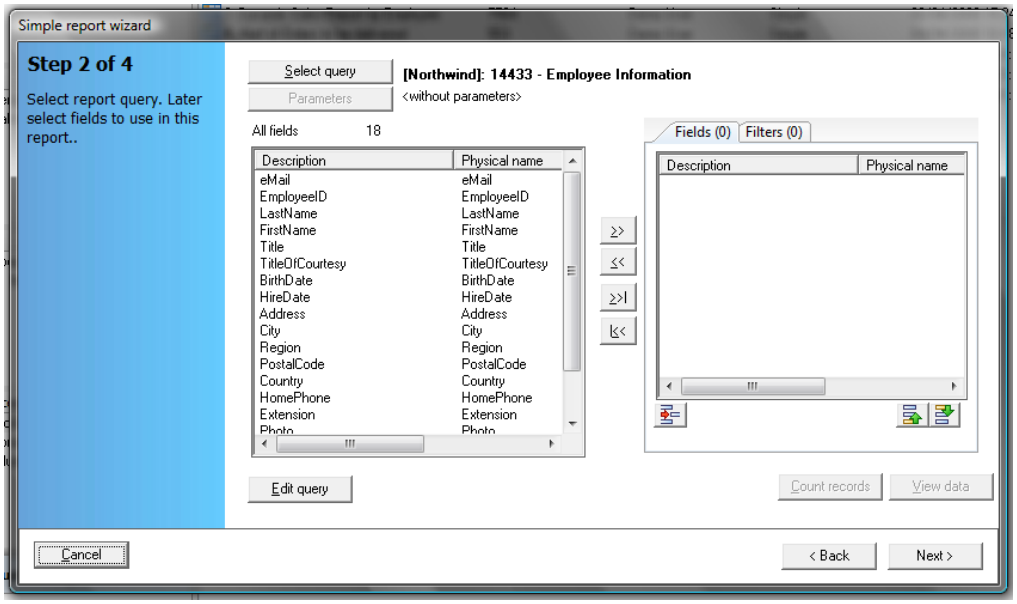


Click 'Select Query'  to choose the query to base the report on.



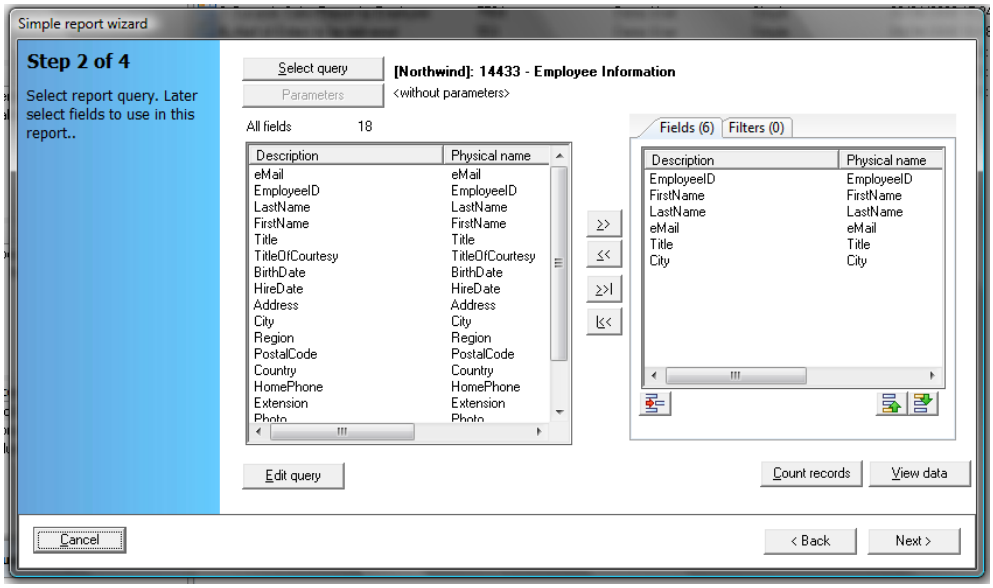
Choose the query created in the previous chapter and click 'Ok' 

All fields returned by the query will be shown on the left part of the form.



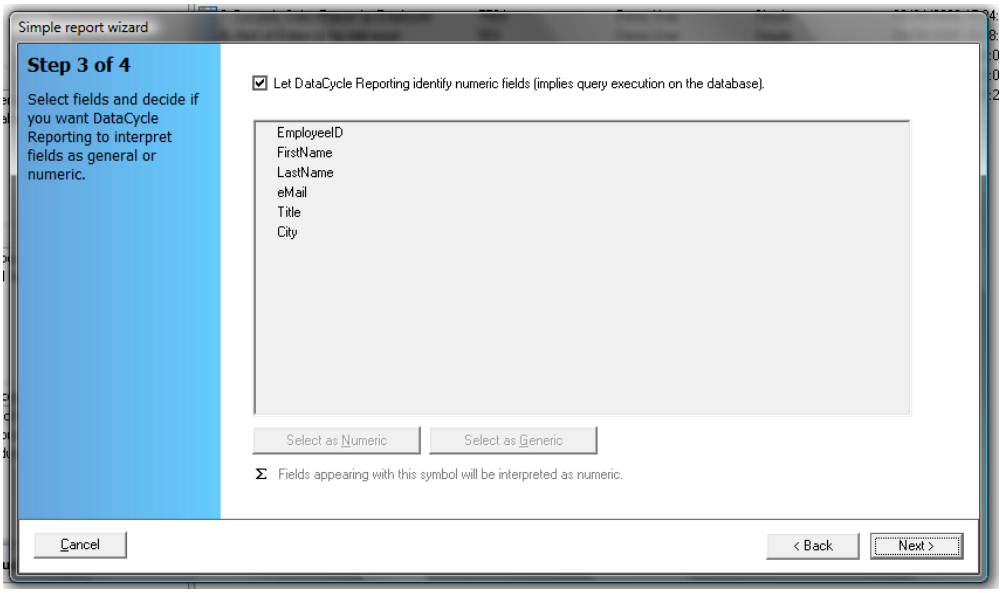
The subselection of fields is one of the main mechanisms to be able to reuse the same query in different reports. We will be able to use this query in different reports by choosing the fields desired for each report.

By double clicking on the fields we wish to select o by using the  button with a field selected, we will transfer the selected fields to the panel of the ones used in the report (located on the right). We can use the  and  buttons to rearrange the fields already selected. The final result, once some fields are selected, will be as follows:



Step 3. Configuration of numeric fields

Once the query and fields have been selected, we can let DataCycle try to determine automatically which selected fields are numeric, or we can establish them ourselves. Simply check the option 'Let DataCycle Reporting identify numeric fields'.

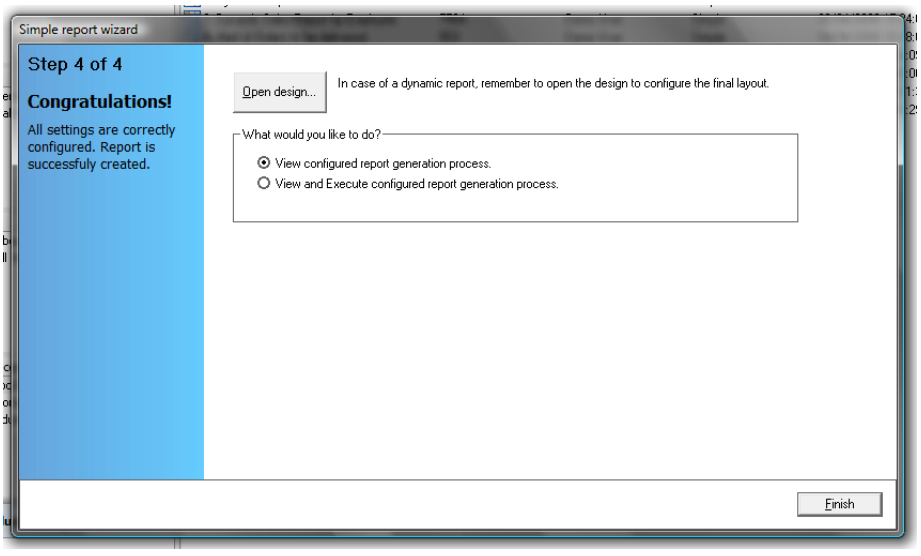


If you let DataCycle Reporting automatically identify the numeric fields, a query that obtains only the structure of data will be executed, which allows you to obtain the typology of them.

In our example, we will let DataCycle Reporting identify the numeric fields. Refer to the guide to know how to manually establish the numeric fields.

Click 'Next'  to proceed to the next step.

Step 4. End of the process creation



The design and process configured is created automatically. If you wish, you can now open and refine the design by clicking on 'Open Design' 

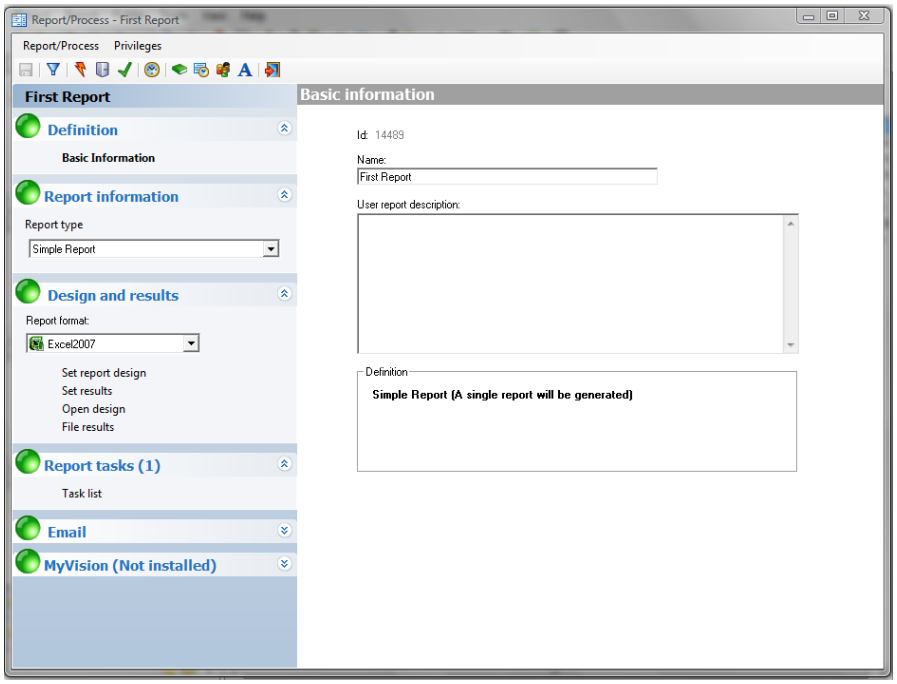
. **If you open the design, remember to close it before going back to the wizard.**

Finally, we have two options:

1) **View configured report generation process**

After clicking on the 'Finish' button 

, the wizard connects with the process configuration window. This is the window that will appear when creating a new process by the default option **View configured report generation process.**



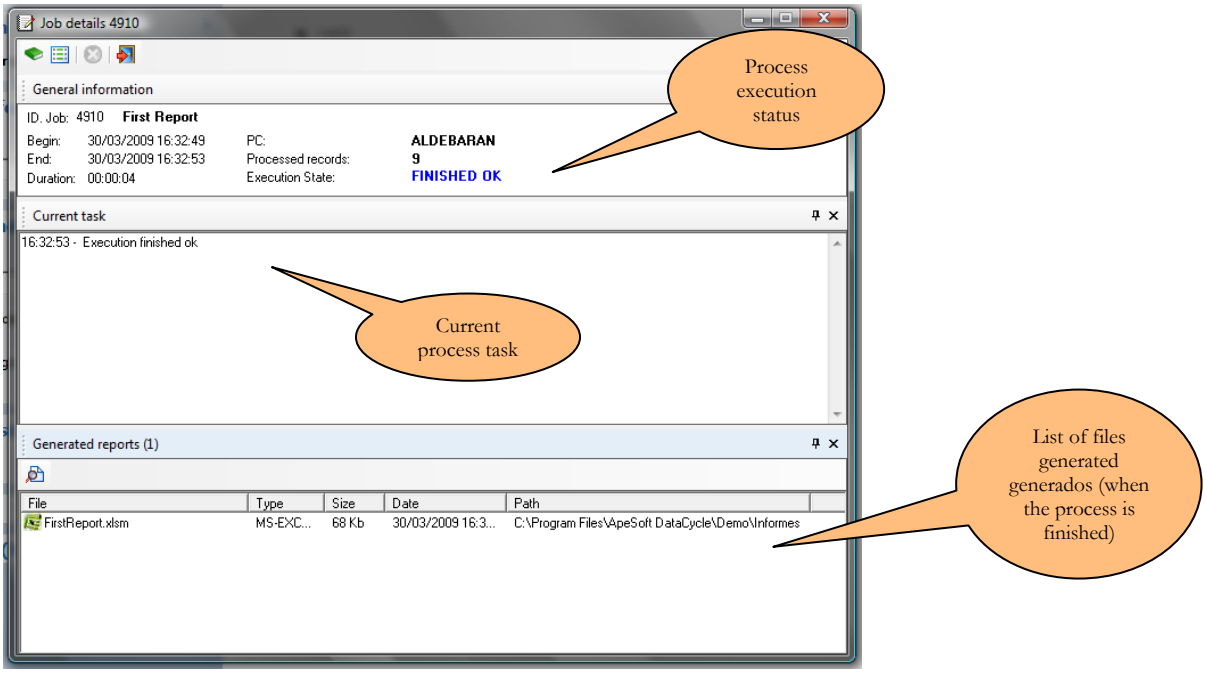
You can execute the report by clicking on this button  (execute) located on the main tool bar. See option 2 for a description of what happens when executing a process.

2) **View and execute configured report generation process**.

After clicking on the 'Finish' button 

the execution of the process is launched. A window that shows the progress of the report generation is shown.

The reports generated in the list below are also shown, and once the process is finished, you will be able to open them by double clicking on the file.



Open the report by double clicking on the name of the file generated in the list of reports generated. Microsoft Excel will open the report.

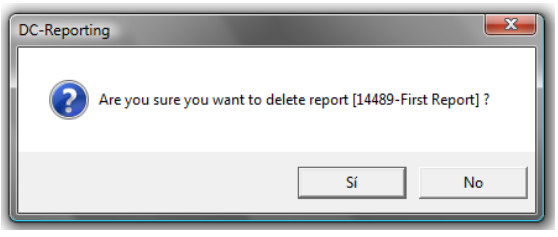
If you close the monitoring you will see that you have also connected with the process definition window.

Modify a Process

Once the process to modify is selected and the option 'Edit' from the menu is clicked, the same screens as the ones explained in the options of Report generation Process or Creating a composite Process will appear.

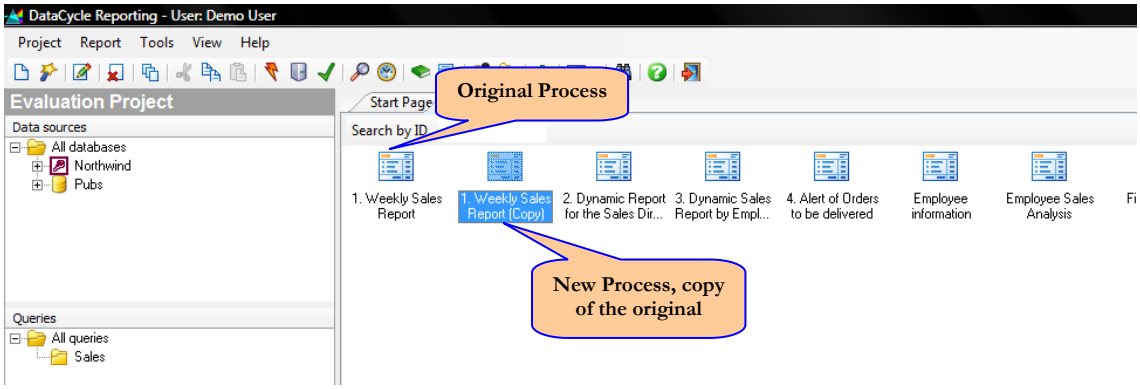
Delete a Process

Deletes the process selected. A confirmation will be requested to the user.

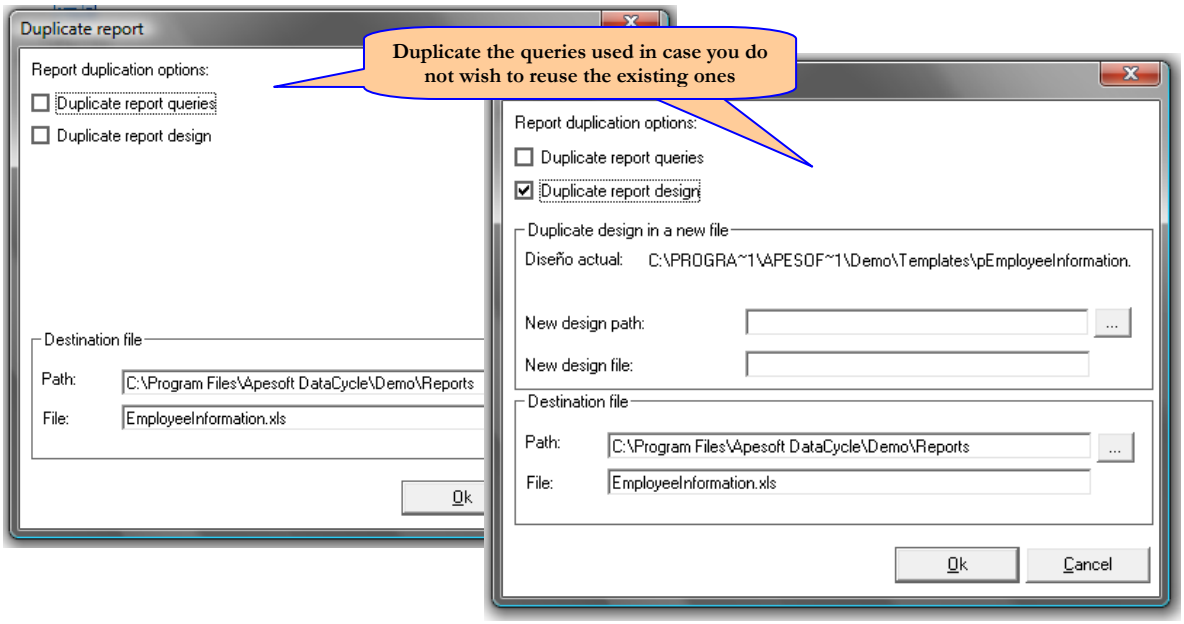


Duplicate a Process

This allows you to create a copy of the process, template and queries used. The only difference between this copy and the original process and queries, is that the word 'copy' is added at the end of the name given to the file.



When executing this option, you will be able to duplicate the process, template and query used. Indicate the name of the report that generates the duplicated process as well as the name of the new duplicated template:



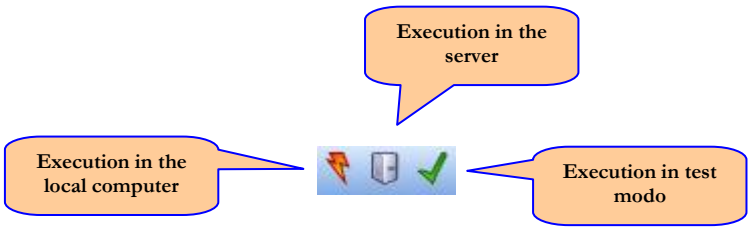
Note: A good Query design does not need to be duplicated. The use of filters and parameters will help you.

Note: If you do not know the names of the files and directories, remember that they can be modified later.

Execute a Process

The execution of a Process can be performed in three modes: local, server or test.

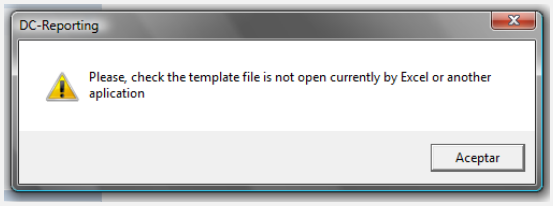
The first two ones determine the physical Computer where the process is executed. The test mode allows you to execute the Process in a way that facilitates its development.

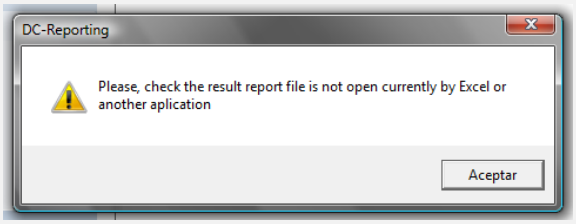


For more information, refer to Execution modes.

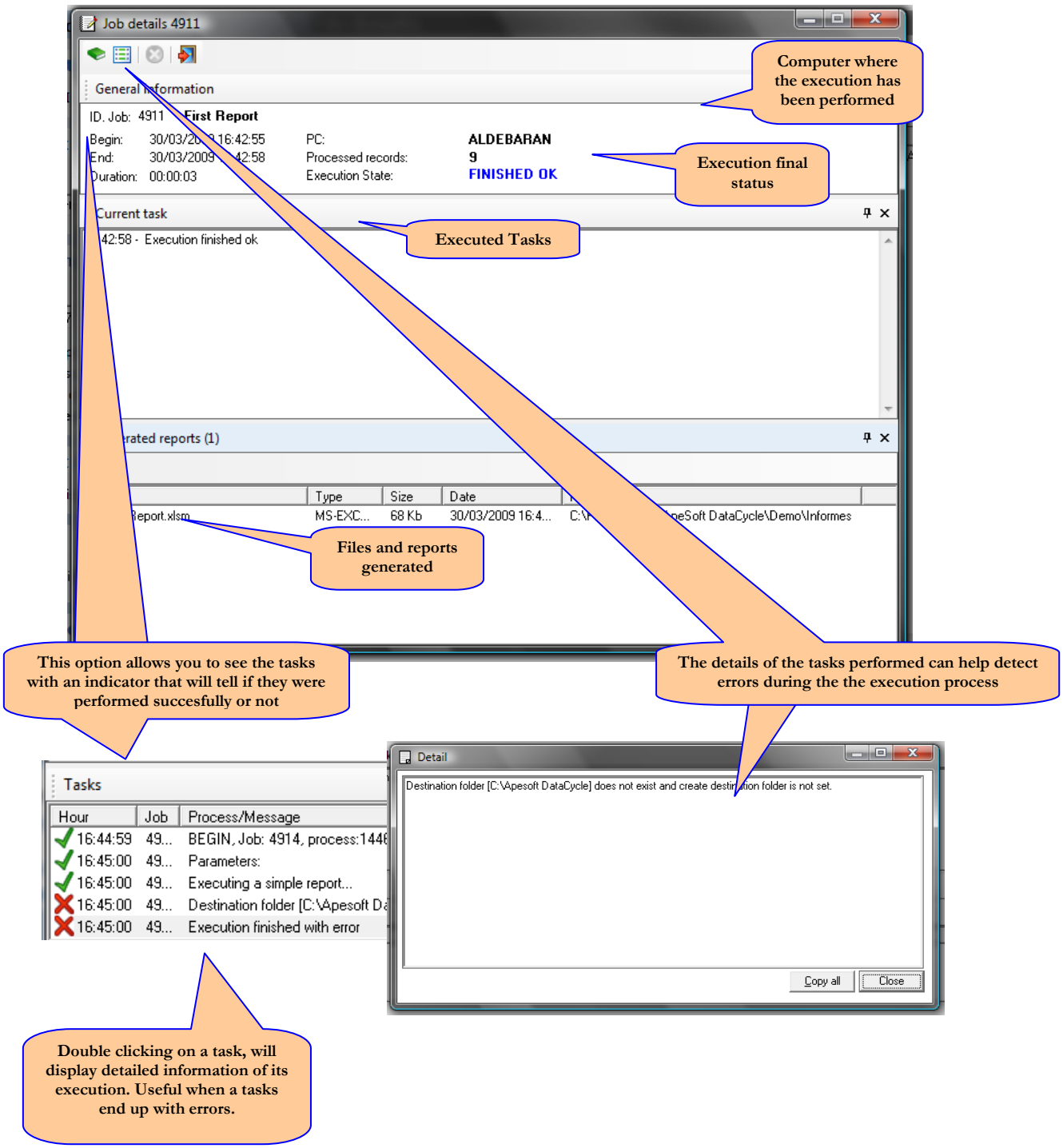
Before executing a report, close Microsoft Excel

If you have not closed the Excel sheet corresponding to the template or to the destination file when executing a process, a warning message will request you to do so. This will avoid collisions or blockings between the Microsoft Excel file and DataCycle Reporting.



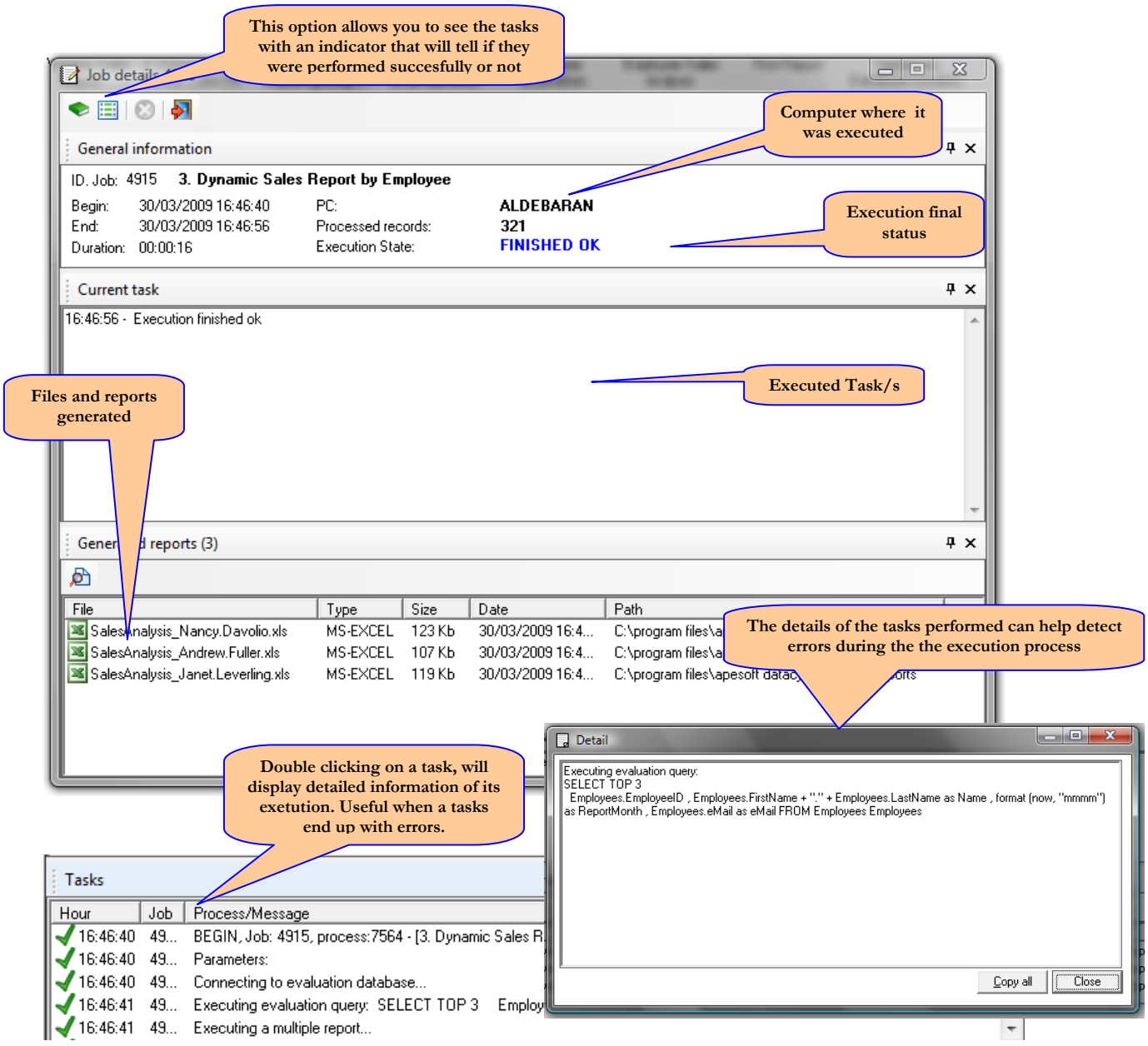


When executing a process, a screen with detailed information of the execution will appear:



Note: This window refreshes itself periodically. In case of performing a quick task, the status of implementation might not be immediately reflected.

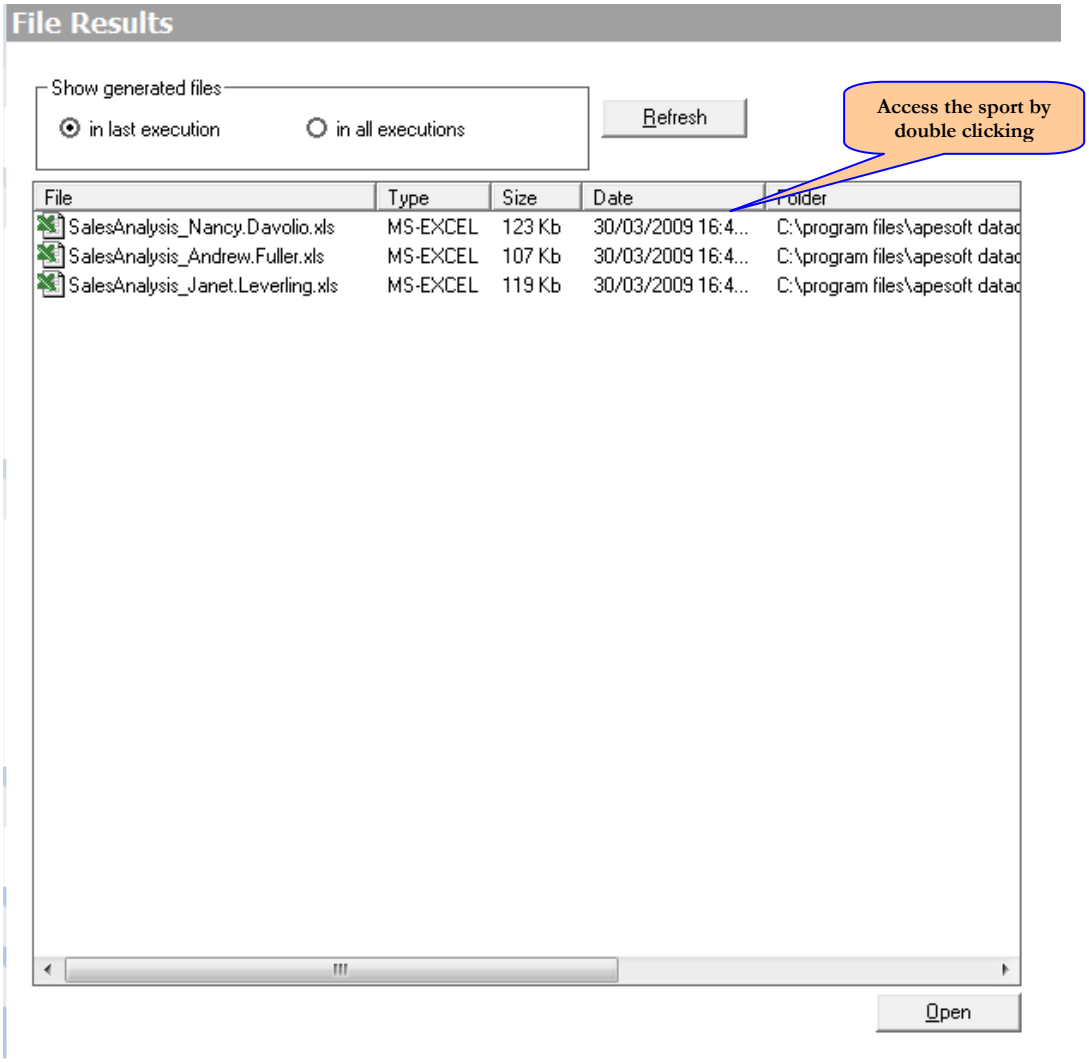
When executing a process, a window with detailed information on the execution will be displayed:



Note: This window refreshes itself periodically. In case of performing a quick task, the status of implementation might not be immediately reflected.

See the reports

This allows you to check on the reports generated by the process selected. You can consult reports generated in the last execution of any of the previous ones.

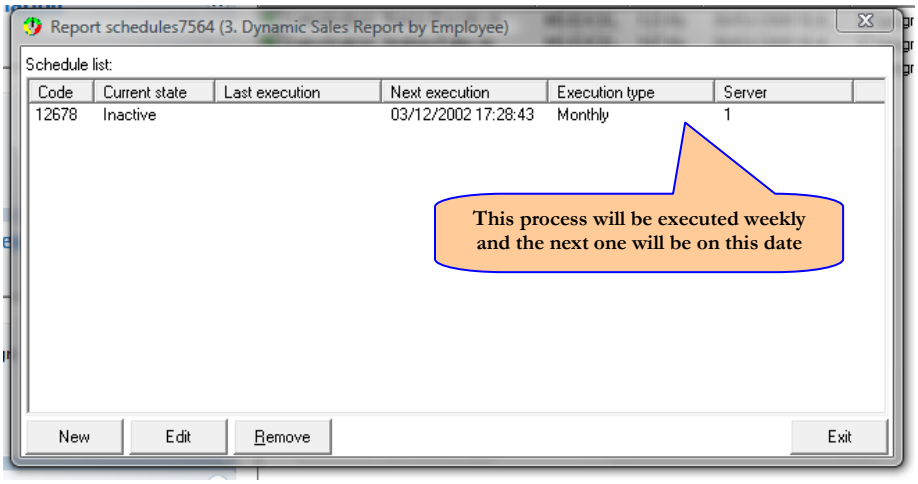


Note: In most cases, the execution of the process will generate reports with the same name as existing ones, therefore those will be deleted, so will only be able to check the reports of the last execution. This does not occur when the name of the report is formed with parameters such as date, time, or any other that makes them unique.

See schedules

Each process can be automatically executed periodically. You can view the existing schedules for that process through this program.

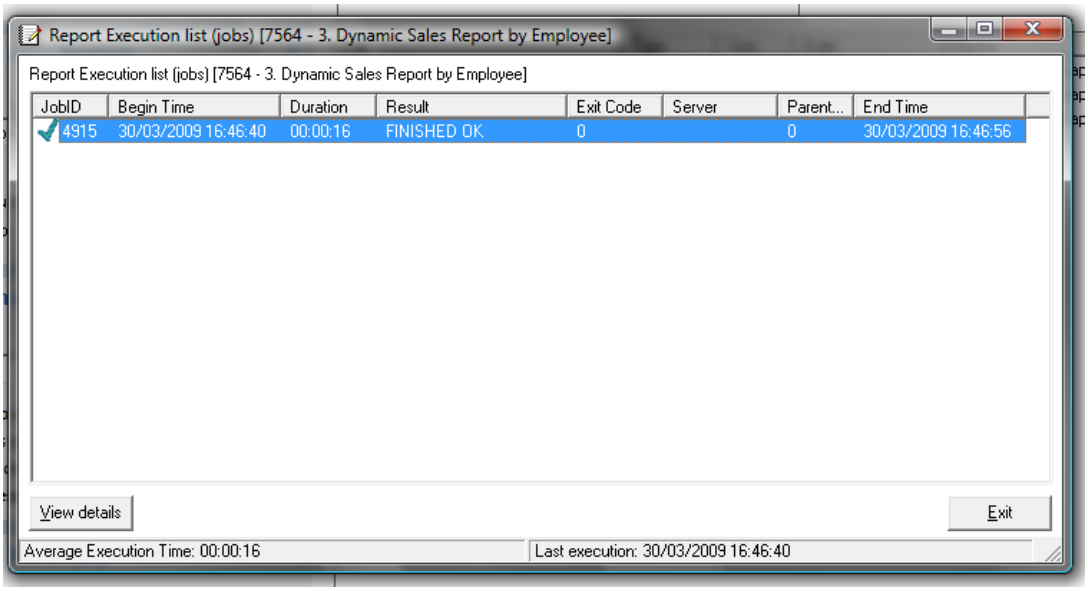
To see how to the schedules are done, refer to Process Scheduling.



See jobs

You can check how the execution of the jobs was performed. DataCycle remembers all the tasks, instructions and details of each execution.

Double click on the execution of the Process you want to check. The same screen as shown during the Execution of the Process will appear.



Note: Good program maintenance practices consist on deleting information of old jobs to improve performance and gain space. Refer to Maintenance of the General Configuration.

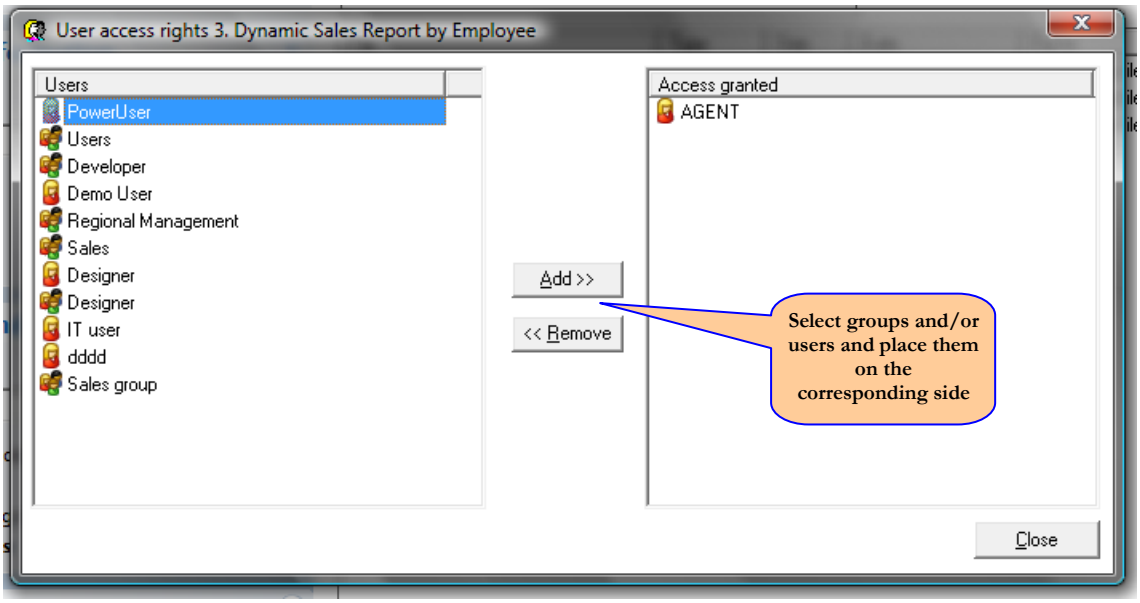
Monitoring a Process

Refer to Monitoring all Servers.

Administrate a Process

This option allows you to indicate which groups and users can access the process selected, as a basic security measure to unable unauthorized users to access certain processes

For more information, refer to Security.



Parameters and Filters

The use of parameters and filters is the system for DataCycle Reporting to reuse queries and make the work of the query and process designers more independent. By designing a generic SQL query, the number of queries to be designed is drastically reduced, giving more freedom to the process designer in its power to discriminate the information returned by using filters.

Use of Parameters

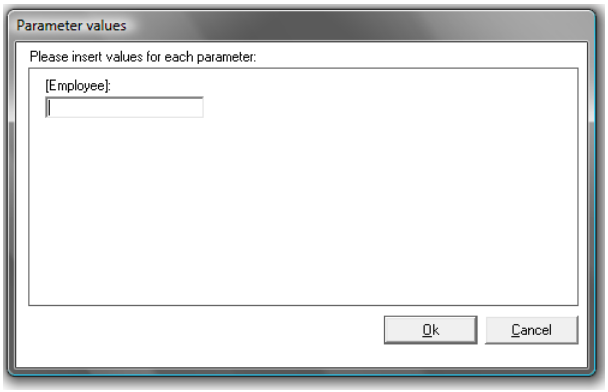
During the design of a query, parameters that are required at the time of execution can be used. This generalizes a query and allows it to be reused. For example: If you want to know the sales of employee 4, you can design the following SQL query:

Select salesamount where Employee = 4

But using parameters, you can generalize the query as follows:

Select salesamount from sales where Employee = @par(seller)

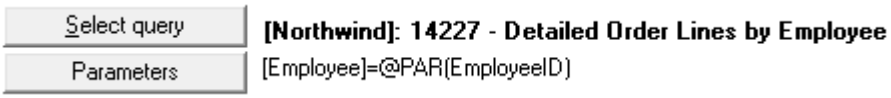
Thus, when executing the query you will be requested to indicate which seller you want to know the sales of:



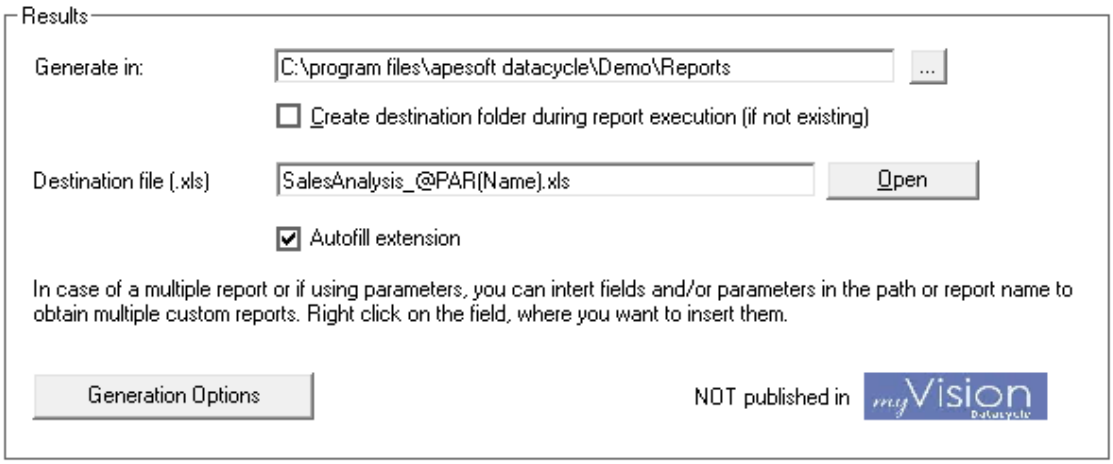
Note: In case of a text parameter, verify the correct placement of quotation marks. For example, in the SQL you should include the parameter in quotes:

Select salesamount where city = '@par(city)'

When designing a process and using a query with parameters, you need to indicate the values you will run the process with.



When filling in the name of the files, you can also use the parameters returned by the evaluation query or by the system and thus personalize their names. See the following examples:

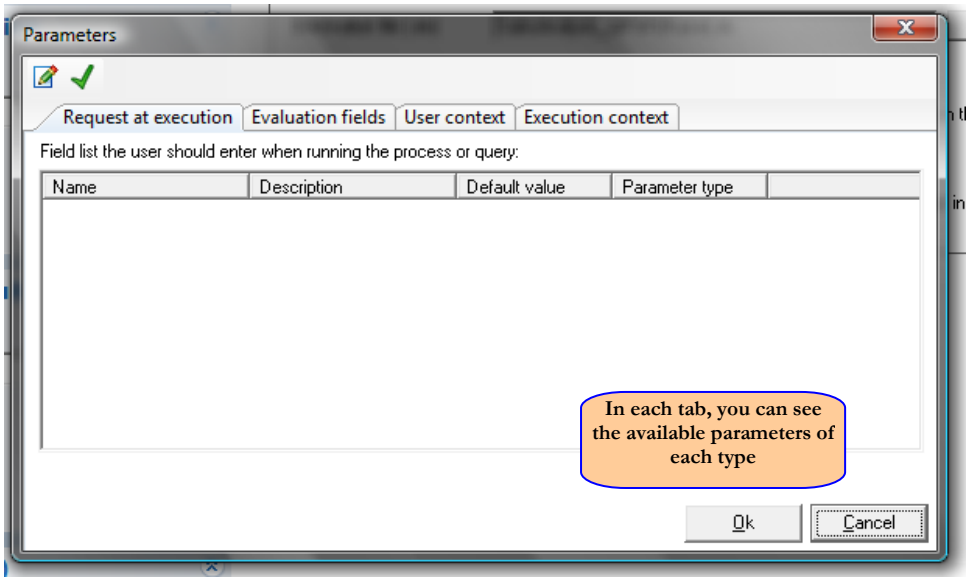


When sending mail, you can also use the parameters to personalize the mail. See the examples in Mail tab.

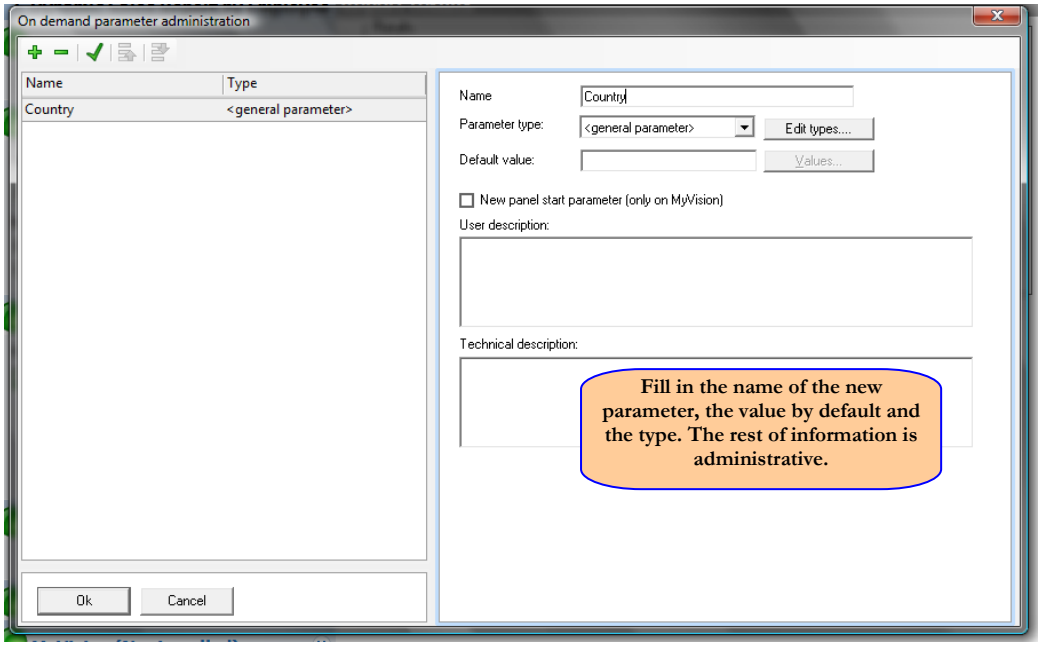
Types of Parameters

DataCycle Reporting allows the user to introduce parameters that can be used in the query filtering and in the configuration of several process fields of report generation.

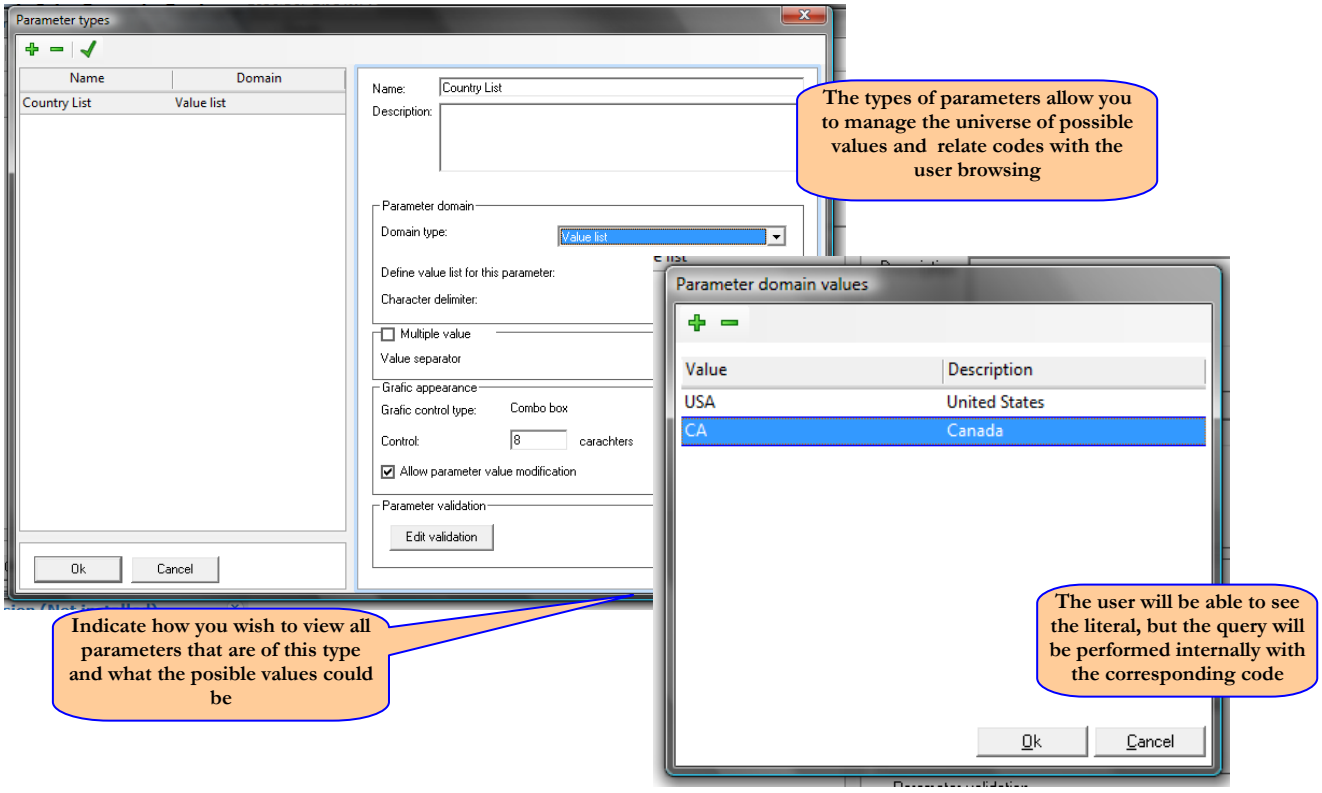
The values of parameters can be supplied automatically. For example, you can search for a date in the system to query the orders of that date. In other cases, the user will be the one to indicate the value of the parameter.



The user can create new parameters and design them by using the buttons Administrate and Test which allows you to manage and test them.

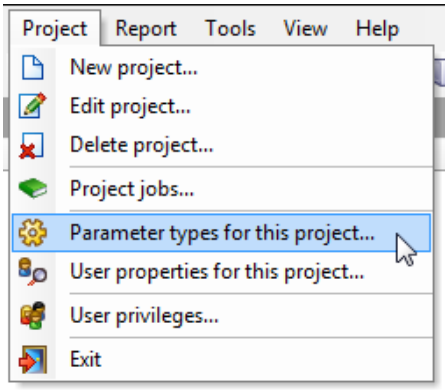


Create types of parameters that determine their format and values. For example: you could have a type of parameter (provinces) showing a drop-down list with a limited set of potential provinces.



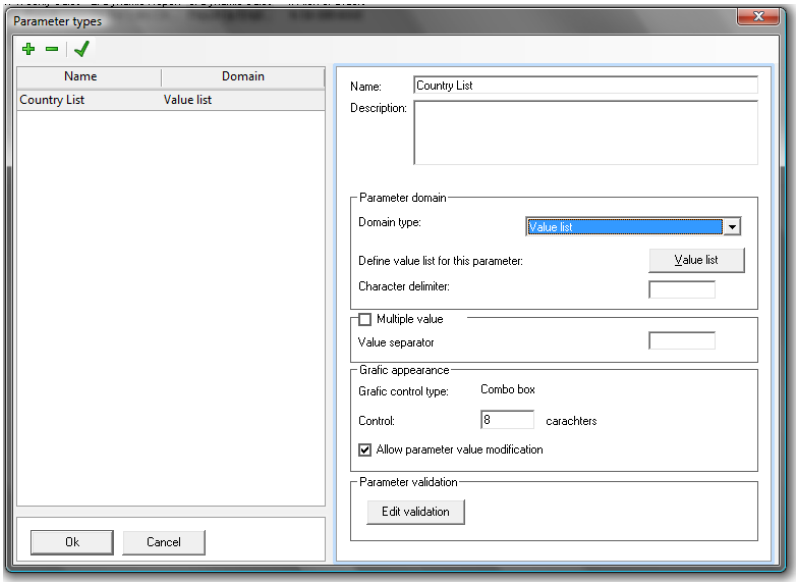
In the configuration of parameter type, you can determine whether the parameter is multi-value or not, that is if you can introduce values to the parameter simultaneously. This makes possible to filter through several values at a time, and be able to define both the separating character and the delimitation (for example, the character ‘, ’ to separate values and the character “ ’ ” in case of marking them out alphanumerically).

You must define initially a type parameter at the project level.



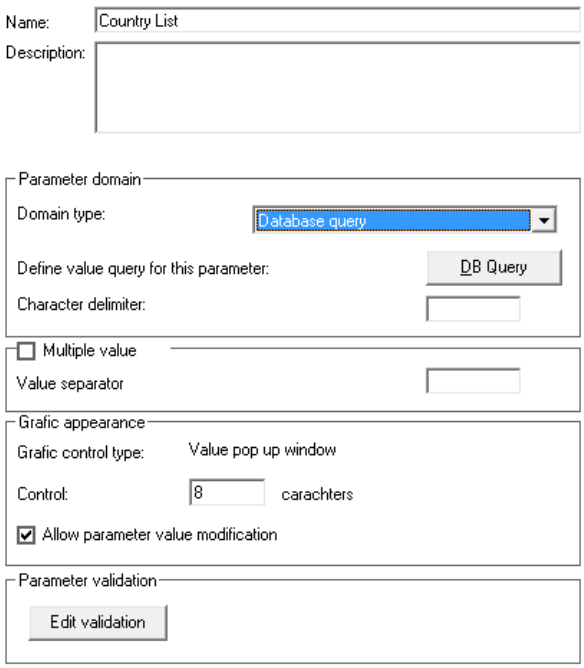
The types of parameters are always related to a specific project

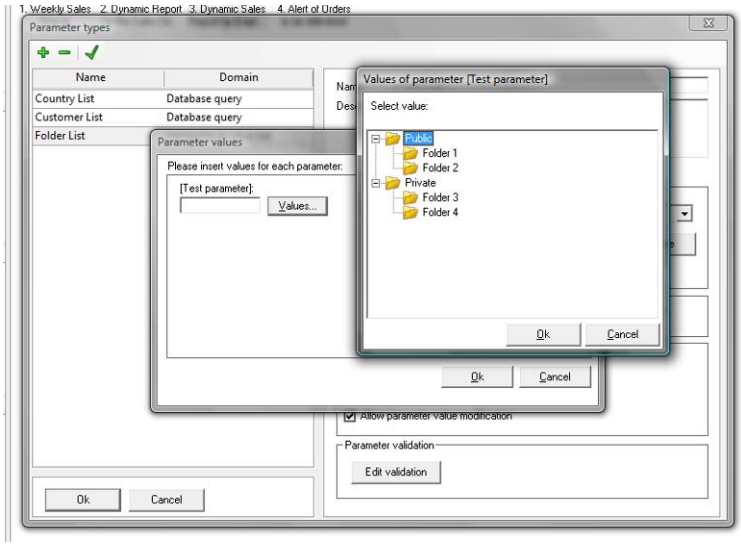
Create or edit a parameter by clicking on the ‘New’ button

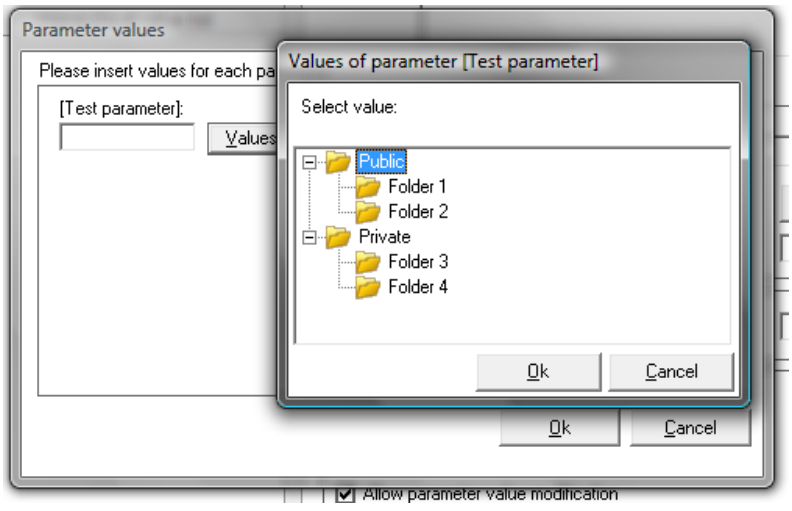


Select a query, list, or a hierarchic value list that returns the values that the parameter can take.

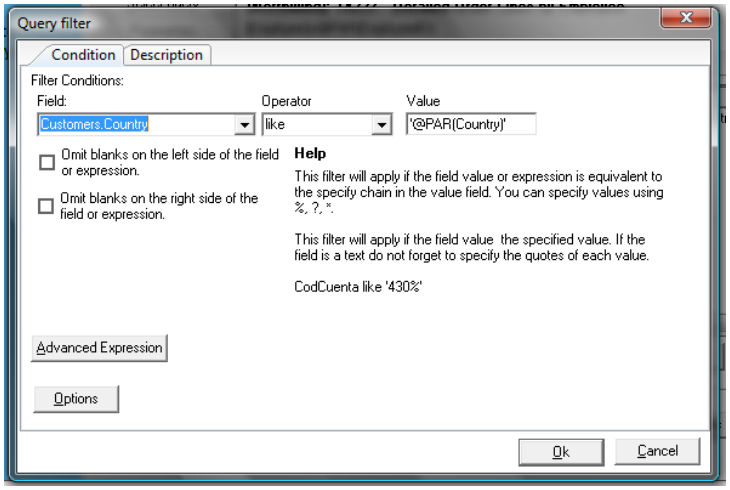
To define the parameter as multivalue, mark the 'Multivalue' option and indicate the separator character of the values selected (by default ','), and the character to add to the beginning and end of each value (for alphanumeric values).



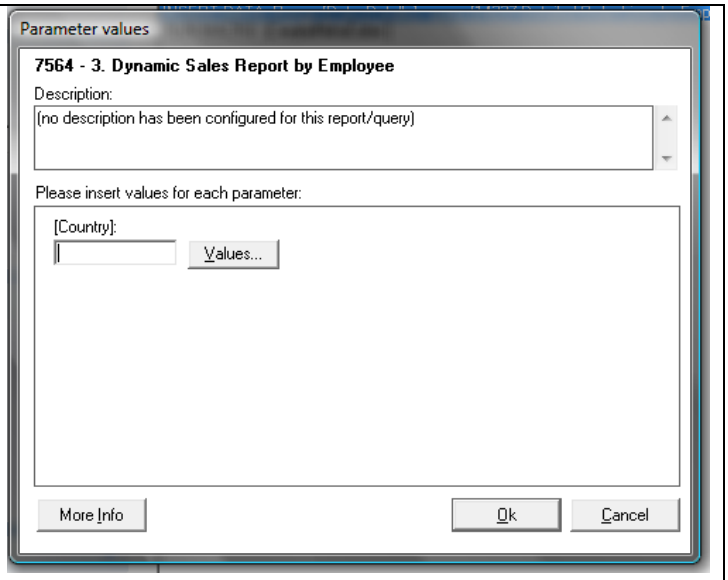
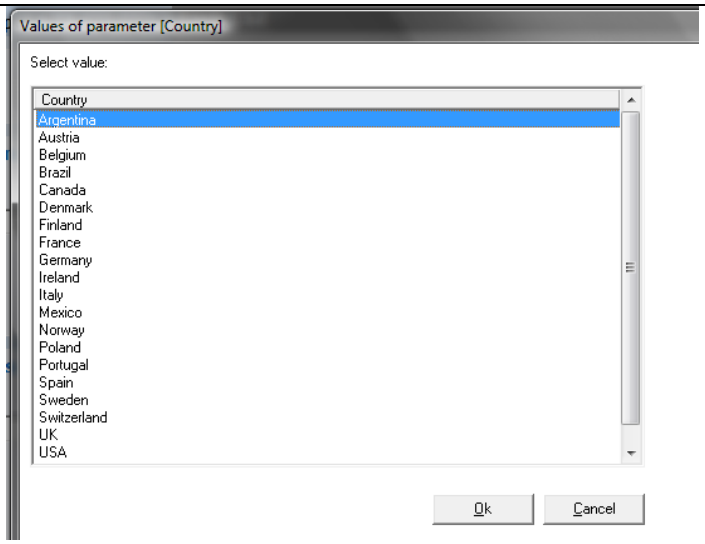


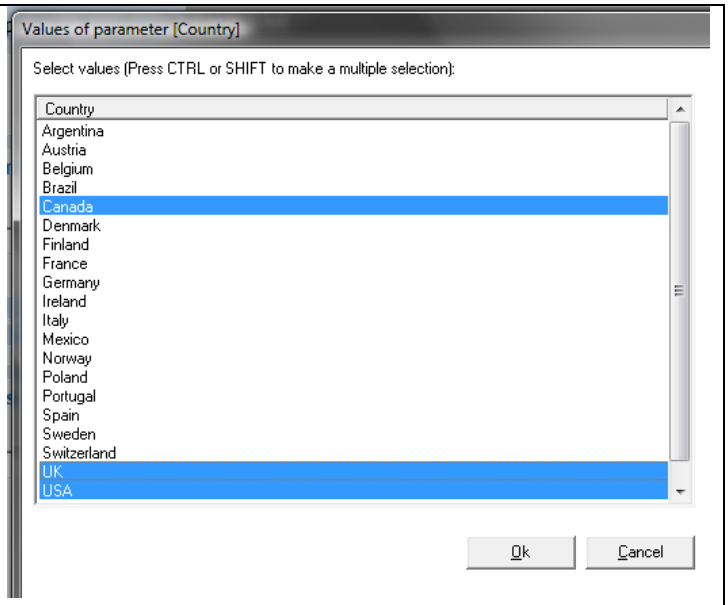


This type of parameter can be used later in a process query filter in which the operator is '**In**' or '**Not in**'.



Once the parameter has been added to a process, the effect would be the following:

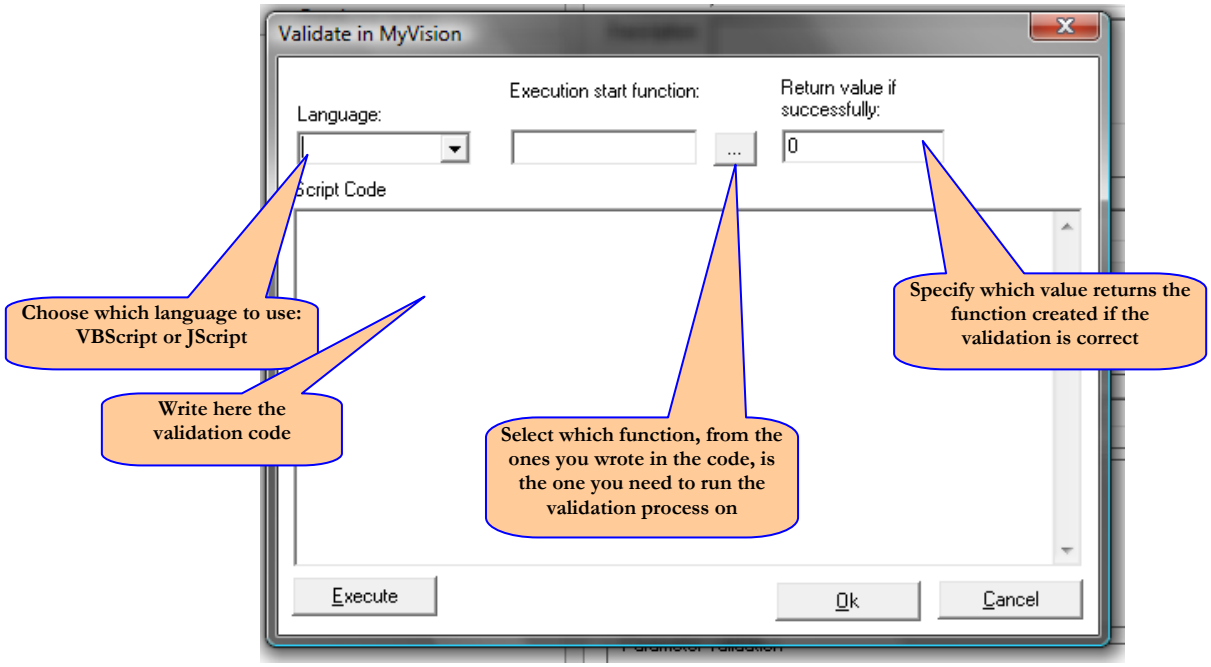
When executing a process, the parameters defined in it will be requested. In this example, the parameter originated from the database Neptune that obtained the product category list is applied.	
Click on the values button to obtain the parameter values available according to their definition (list or query).	

And select several values according to Windows standard (clicking with your Mouse and the CTRL or SHIFT)	

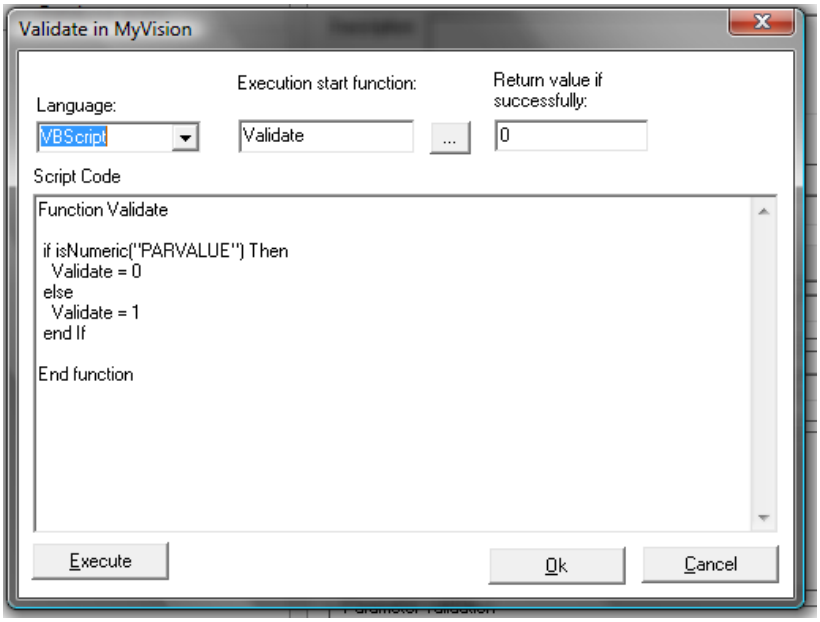
Parameter Validation

In order to validate the parameter values that the user will enter when executing a process or report, you can create a VBScript or JScript code by clicking on 'Edit Validation' button

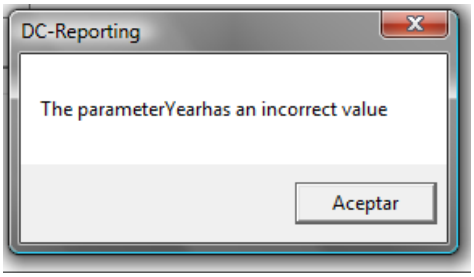
The following screen will appear:



For example, to ensure that the user writes a number in the parameter value, we will create the following function:



You can test the validation by clicking on the 'Test'  button form the parameter type creation dialogue. The validation will be executed upon clicking 'Accept'.



User Properties (user context parameter)

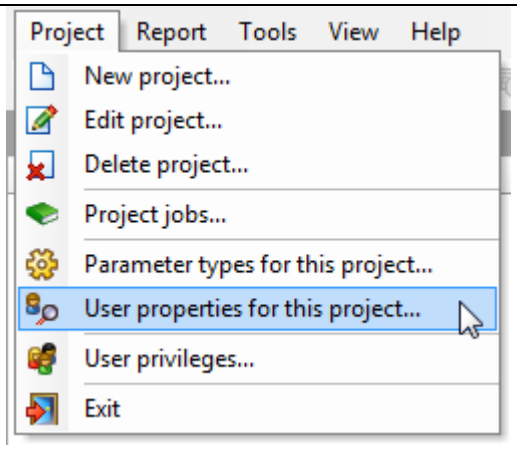
The definition of the user properties (context parameter) in a project allows you to flawlessly identify each user in a specific context.

DataCycle Reporting allows you to use parameters during the extraction of information. They are parameters whose values are established at the moment of executing the report, and can be entered by the user or obtained from the context of execution (parameters that come from the operation system itself, indicating date, month, day, etc).

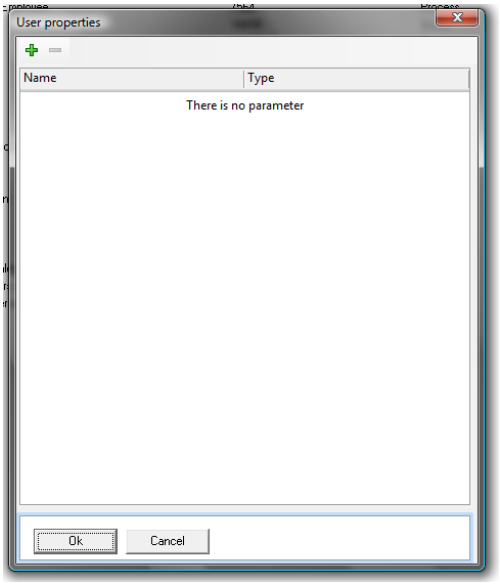
Through the user properties functionality (user context parameter), a series of parameters that allow to identify and qualify a user can be defined. These parameters can be used in the process to contextualize its execution. In other words, when running the process of generating reports, the user context parameters acquire the values that have been specified for the user from which the parameters will be drawn.

The procedure used is as follows:

Definition of the user context parameters in the project

Define the properties initially related to the users at the project level. These user properties are always associated with a specific project, so it may only be used in the entities belonging to this project.	

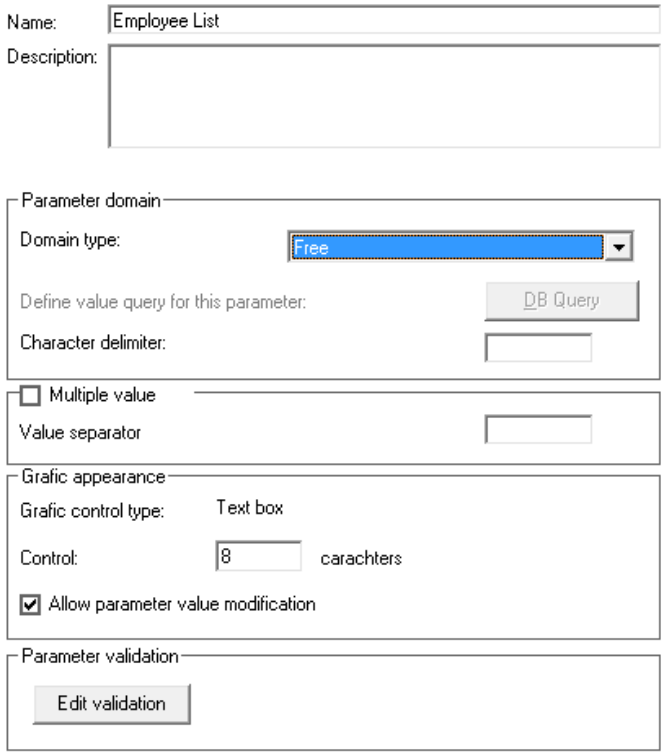
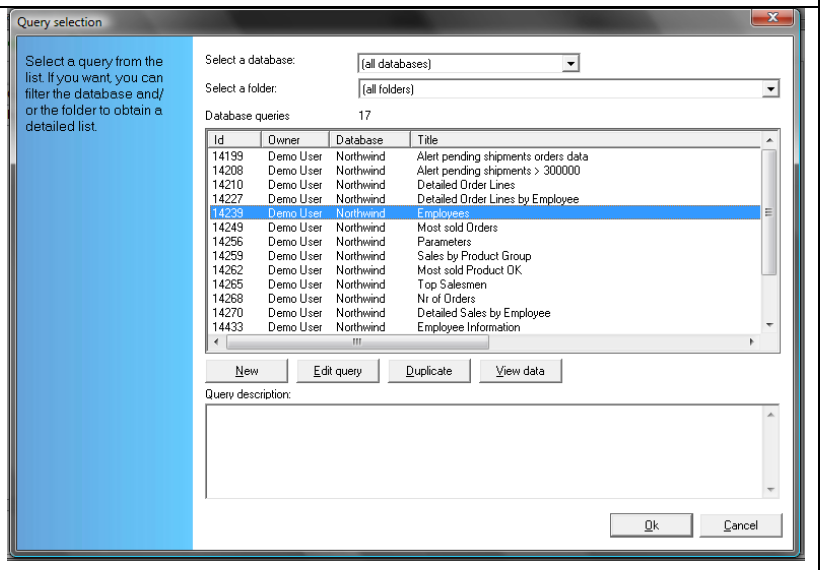
You will get the following screen:



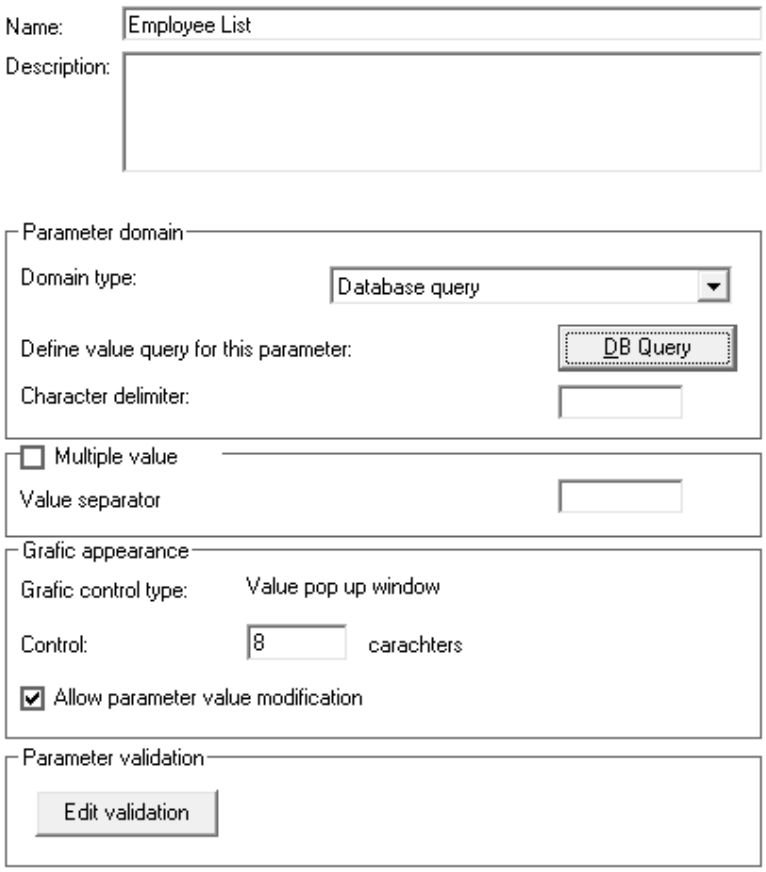
You can create new user properties by clicking on the  button.

In this example, we will create a user context parameter based on a type of parameter of a query type to the company database (in this example, we use a Neptune database) from where we get the user Ids in the system.

This way, when executing the report you will have content filtering criteria.

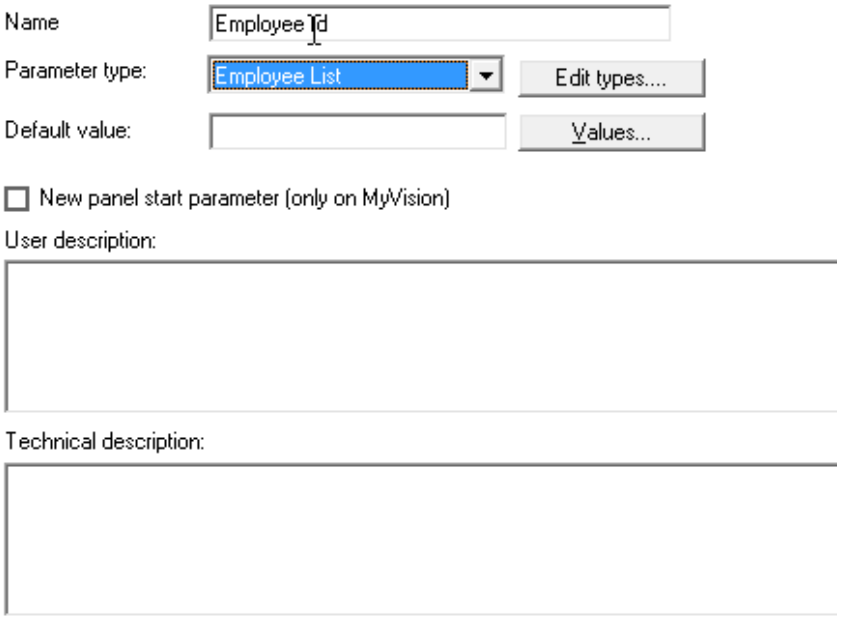
When clicking on the 'new' button, you will get the form to create a new parameter. We will define it as IdEmployee. To see al the parameters available and their descriptions, click on the 'See list' button.	
All the existing types of parameters in the project will be displayed. The type of parameter we are interested in is 'List Employees' which was already defined. Edit the type of parameter to see the definition.	

As we can see, this is a parameter whose values are obtained from a query and has the property of multivalue. In other words, if necessary, we can establish more than one value at any point when the parameter is applied.



Go back to the definition form of the user property.

Choose the parameter type 'list of employees' from the 'Parameter Type' dropdown list, and document the description fields.



At this point, the user property is already defined. From this moment, the administrator may establish the values for this property for all users with access privileges on the project that belongs to the user context parameter.

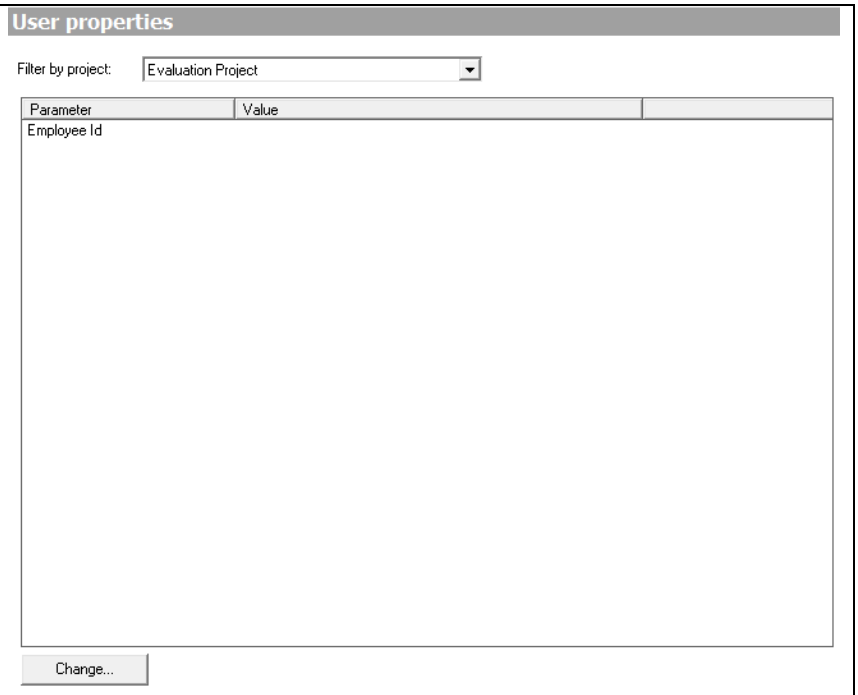
Properties Documentation (context parameters) in the user profile

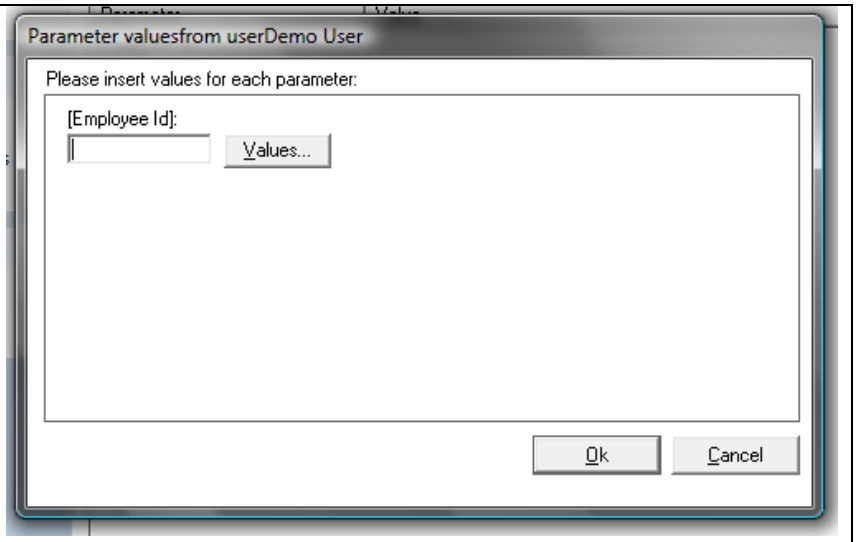
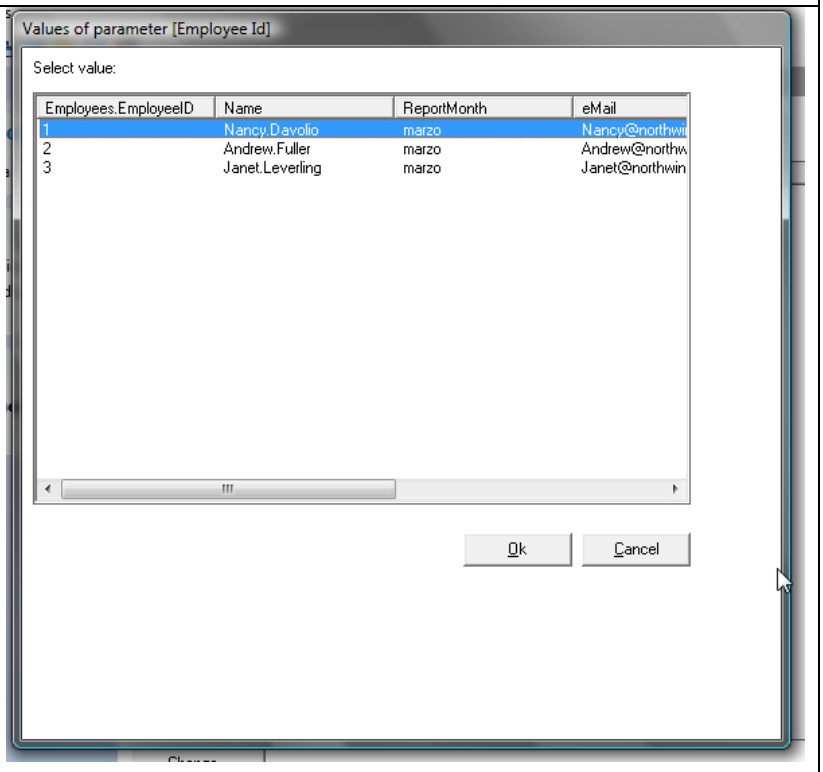
We need to assign values for the properties of each user in the DataCycle Reporting user profile. We have two types of values:

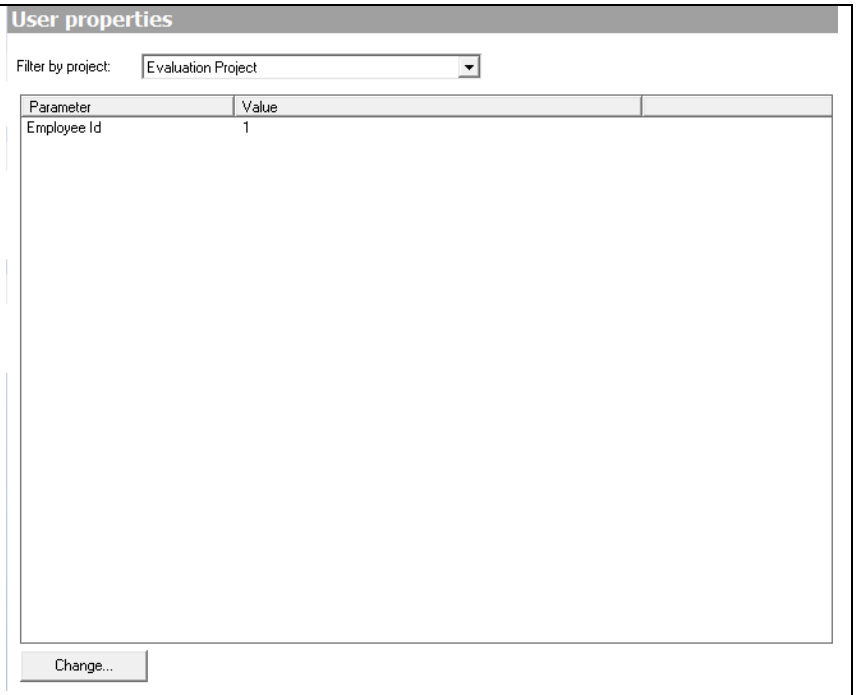
- User Properties: Value that the parameter will acquire when running a process.
- Browser Properties: Values of the properties of the reports resulting form the process execution (from which the user has access privileges applicable to MyVision environment).

In our example there will be three users: Nancy Davolio, Andrew Fuller, Janet Leverling and Boss. The first three will be sales people, and the fourth will be the sales manager. All four belong to the groups of sales users.

Then we have to define the parameter values of context we have defined for each user.

Edit the user profile to go to the 'properties' section. Filter to get the Project where we have previously defined the parameter. Select the property (parameter) that we are interested in and click 'change'. **NOTE**: The user must have adequate project privileges to access the user context parameters.	

Now we can indicate, to the parameter, the value we are interested in for that user.	
The list will show all the values available alter executing the query established in the parameter type.	

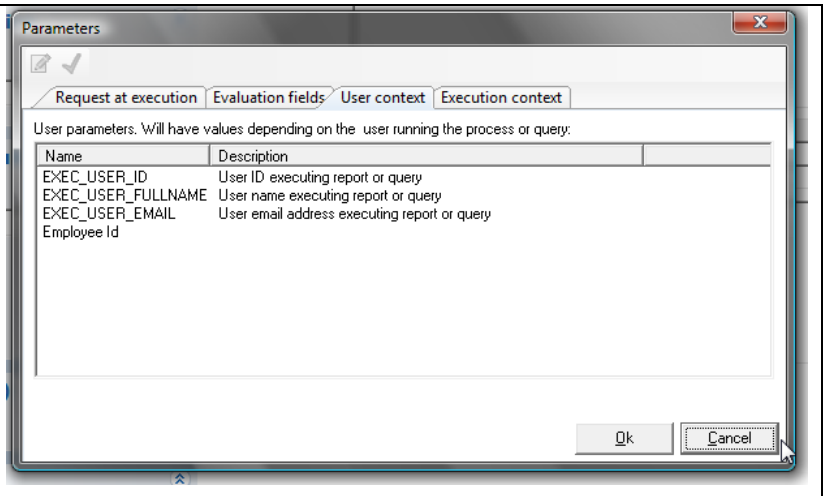
For the edited user (Nancy Davolio), we will choose the first value available and click 'Accept'.	

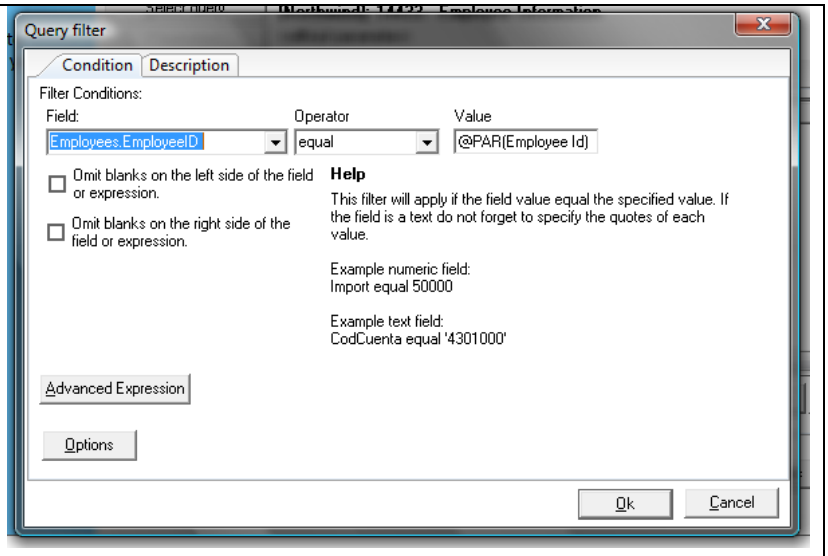
For the rest of the users, we will select the corresponding value, except for the user Boss. In this case, since the parameter is multivalue and we need the Boss profile to contain all the employee ids of its immediate lower hierarchy, we will establish the employee value of IdEmployee=1,2,3 to Boss. This way, Boss includes the three sales people.

Use of the user properties (context parameters) in the process

Now we can use, for example, the user context parameters within the queries used by a process.

All user context parameters defined in a project are available for all the processes that belong to that project.

If we click the 'Open Parameters' button in a process and go to the 'User Context' tab, we can see that the parameter that we have created is already available to be used in	

We can use the parameter as part of a query filter. When executing the process, the parameter will take the corresponding value depending on the user executing the process.	

In the previous example, by having the user Boss the values 1,2,3, the query would return all records containing IdEmployee values 1, 2 or 3. This implies that the report will contain data from the three employees.

List of parameters that can be used in queries or processes

Executer user context parameters

Parameter	Description
EXEC_USER_ID	ID of user that runs the query or process
EXEC_USER_FULLNAME	Full name of the user that runs the query or process
EXEC_USER_EMAIL	Email of the user that runs the query or process

Context parameters to execute the process

Parameter	Description
CURRENT_JOB_ID	Current work ID
CURRENT_PROCESS_ID	Current process ID
CURRENT_PROCESS_NAME	Name of the current process
CURRENT_PLAN_ID	Current scheduling ID (0 if the process has not been scheduled)
CURRENT_SERVER_ID	ID of the current Server where the process is being executed (0 if the process is run in local mode)
TARGET_FILE_FULLPATH	Location or complete path of the destination file to generate
TARGET_FILE_PATH	Final directory where the report will be generated
TARGET_FILE_NAME	Name of the final destination file to generate
CURRENT_REPOSITORY_PATH	Complete path of the current repository

Parameters depending on moment of the execution of the query or process

CURRENT_HOUR[NUMBER]	Current time in numeric format. E.g. 105504 represents 10:55:04
CURRENT_HOUR[HH:MM:SS]	Current time in HH:MM:SS format. E.g. 10:55:04
CURRENT_DATE[NUMBER]	Current date in numeric format. E.g. 20012801 represents the day 01/28/2001
CURRENT_DATE[JULIAN]	Current date in Julian format (JDE)
CURRENT_DATE[DD-MM-YYYY]	Current date in MM-DD- YYYY format. E.g.: 01-18-2001
CURRENT_DATE[D]	Current day of the month. E.g.: 4
CURRENT_DATE[DD]	Current day of the month (with zero on the left). E.g.: 04
YESTERDAY_DATE[NUMBER]	Yesterday's date in numeric format
YESTERDAY_DATE[JULIAN]	Yesterday's date in Julian format (JDE)
YESTERDAY_DATE[DD-MM-YYYY]	Yesterday's date in DD-MM-YYYY format.
CURRENT_DATE_WEEKDAY_NAME[ESP]	Name of the current day of the week (Sp)
CURRENT_DATE_WEEKDAY_NAME[ENG]	Name of the current day of the week (Eng)
CURRENT_DATE_WEEKDAY_NAME[CAT]	Name of the current day of the week (Cat)
CURRENT_MONTH[M]	Name of the current month (without a zero on the left). E.g.: 5 (May)
CURRENT_MONTH[MM]	Current month in MM format. E.g.: 05 (May)
CURRENT_MONTH_NAME[ESP]	Name of the current month (Sp). E.g.: May
CURRENT_MONTH_NAME[ENG]	Name of the current month (Eng). E.g.: May
CURRENT_MONTH_NAME[CAT]	Name of the current month (Cat). E.g.: Maig
CURRENT_MONTH_FIRST_DATE[NUMBER]	Date of the first day of the current month in numeric format
CURRENT_MONTH_FIRST_DATE[JULIAN]	Date of the first day of the current month in Julian format
CURRENT_MONTH_FIRST_DATE[MM-DD-YYYY]	Date of the first day of the current month in MM-DD-YYYY format
CURRENT_MONTH_LAST_DATE[NUMBER]	Date of the last day of the current month in numeric format
CURRENT_MONTH_LAST_DATE[JULIAN]	Date of the last day of the current month in Julian format
CURRENT_MONTH_LAST_DATE[MM-DD-YYYY]	Date of the last day of the current month in MM-DD-YYYY format
CURRENT_YEAR[YYYY]	Current year in YYYY format. E.g.: 2002
CURRENT_YEAR[YY]	Current year in YY format. E.g.: 02
PREVIOUS_YEAR[YYYY]	Previous year in YYYY format. E.g.: 2001
PREVIOUS_YEAR[YY]	Previous year in YY format. E.g.:: 01
PREVIOUS_MONTH_NUMBER[M]	Number of the previous month. E.g.: 12 month before Jan
PREVIOUS_MONTH_NUMBER[MM]	Number of the previous month in MM format. E.g.: 08
YEAR_OF_PREVIOUS_MONTH[YY]	Year of the previous month (in YY format). E.g.: 01 is the year of the previous month of Jan 2002
YEAR_OF_PREVIOUS_MONTH[YYYY]	Year of the previous month (in YYYY format). E.g.: 2001 is the year of the previous month of Jan 2002
PREVIOUS_MONTH_NAME[ESP]	Name of the previous month (Sp). E.g.: Enero
PREVIOUS_MONTH_NAME[ENG]	Name of the previous month (Eng). E.g.: January
PREVIOUS_MONTH_NAME[CAT]	Name of the previous month (Cat). E.g.: Gener
PREVIOUS_MONTH_FIRST_DATE[NUMBER]	Date of the first day of the previous month in numeric format
PREVIOUS_MONTH_FIRST_DATE[JULIAN]	Date of the first day of the previous month in Julian format
PREVIOUS_MONTH_FIRST_DATE[MM-DD-YYYY]	Date of the first day of the previous month in MM-DD-YYYY format
PREVIOUS_MONTH_LAST_DATE[NUMBER]	Date of the last day of the previous month in numeric format
PREVIOUS_MONTH_LAST_DATE[JULIAN]	Date of the last day of the previous month in Julian format
PREVIOUS_MONTH_LAST_DATE[MM-DD-YYYY]	Date of the last day of the previous month in MM-DD-YYYY format

Parameters list connected to queries

This feature lets that a process or query parameter requested to the user to take values from any query under any database.

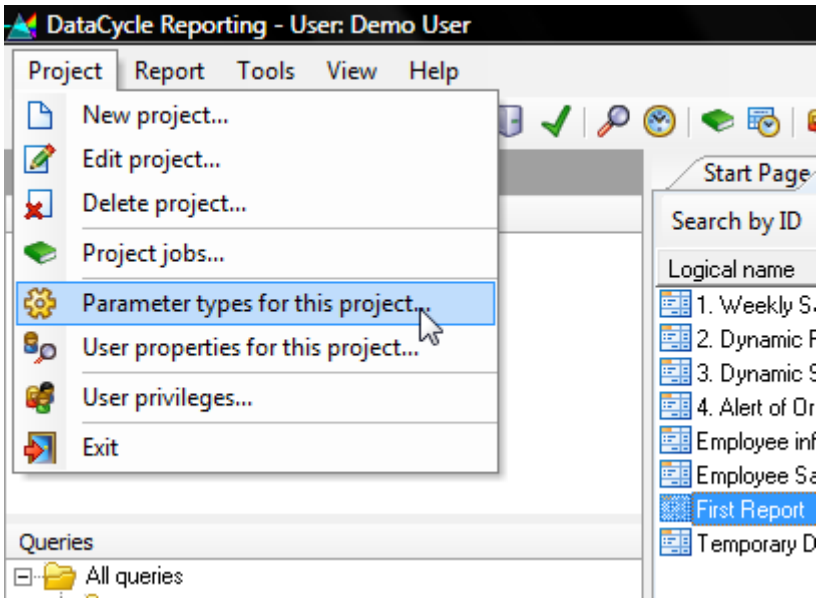
The list of values available may show multiple fields, including codes, descriptions, etc.

Examples of typical applications of this mechanism are:

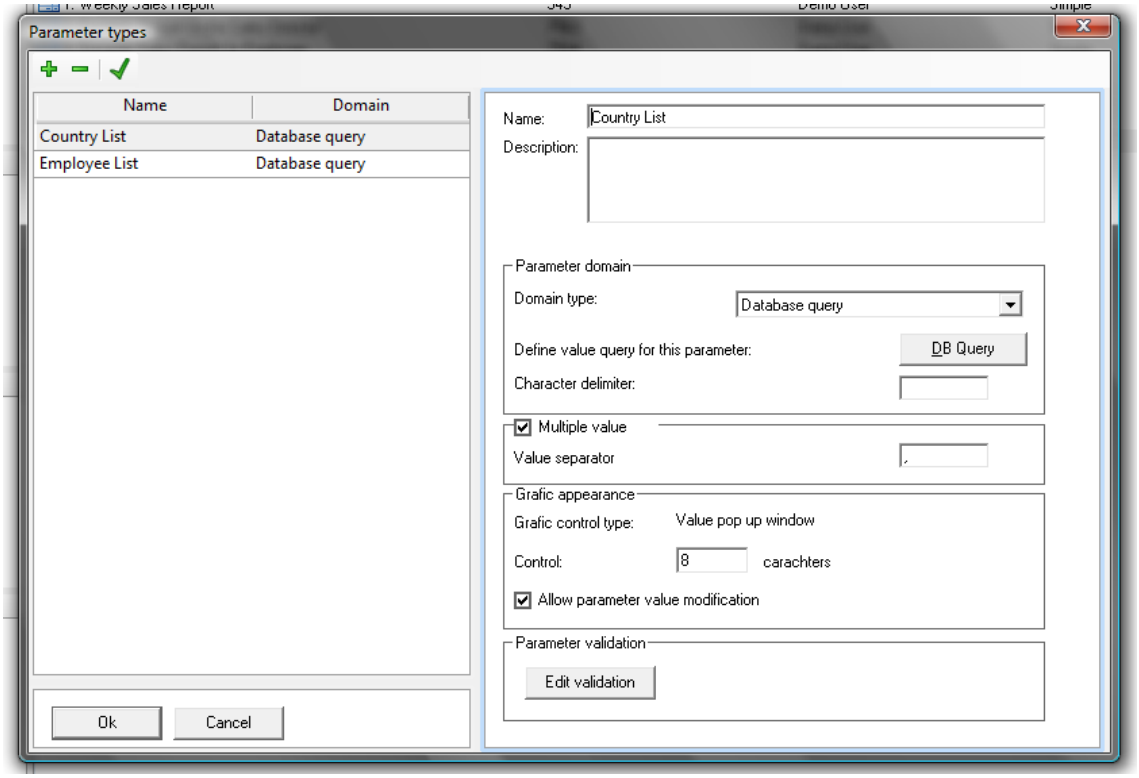
- Generate reports for a specific client, by selecting a client from the company's client list. An attractive report would be to obtain all the information related to one client in one Excel file: pending/delivered orders, pending/paid receivables, future/paid debt, claims/incidences, accomplished visits, etc.
- Generate reports for a client according to their situation. For example, selecting a client between the ones with delinquent accounts.
- Generate reports ford sales people/specific employees, by selecting a sales person from the employee master list.
- Generate reports by supplier.
- Generate detailed reports for a specific order, offering a list of all the orders within the last quarter.

With DataCycle you can define [types of parameters] that will be assigned (and reused) when defining the different parameters of each report or query.

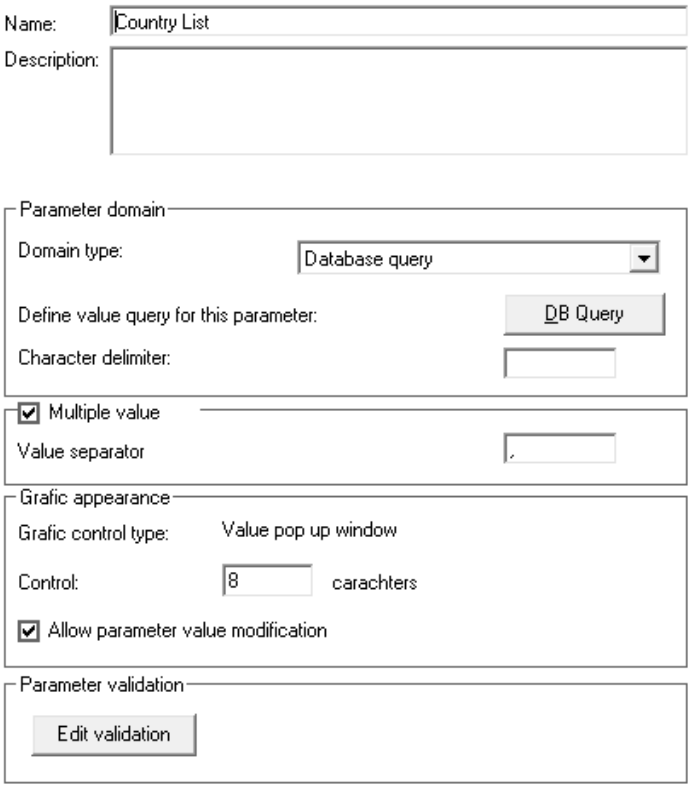
To see the type of parameter of each project, click on the 'types of parameter' option from the context menu of the project:



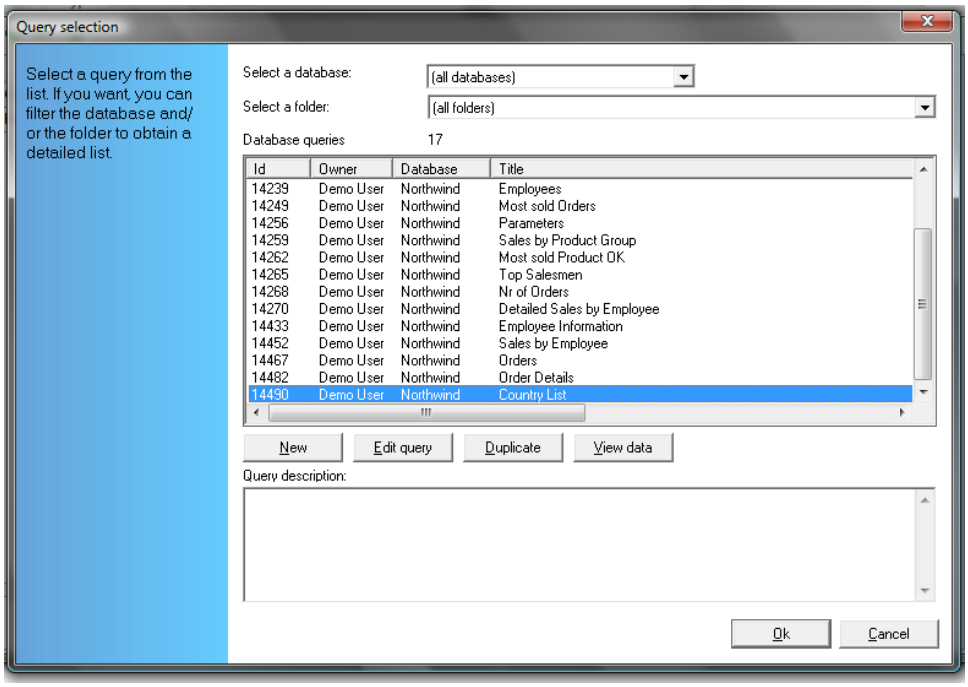
The list [Types of parameter] of the project selected will be displayed:



For example, the type of parameter [List of clients] is defined as follows:



By clicking the [BD query] button, you can specify a query reusing any query from the ones already defined in the project:

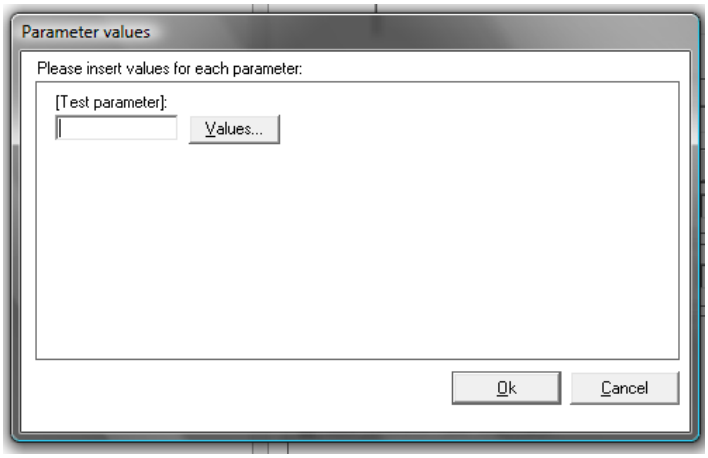


Important:

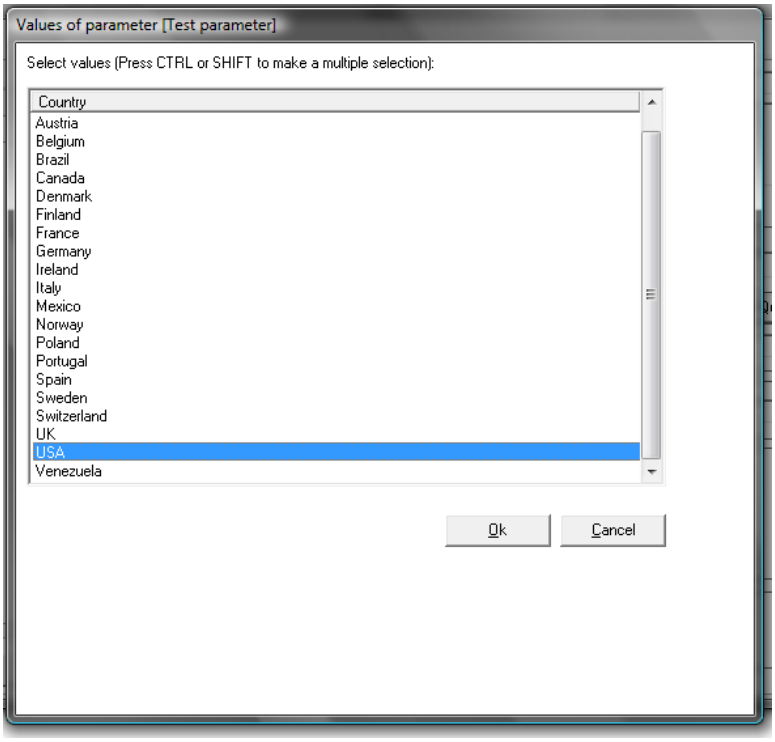
Although we can select an unlimited number of fields, you have to take into account that the return value to the parameter will always be the first field selected (normally a code).

Once the query that recovers the available values is specified, and before approving the new 'type of parameter' defined, it is recommended to run a test to check on the appearance and performance that the user of parameters based on this new type defined will experience.

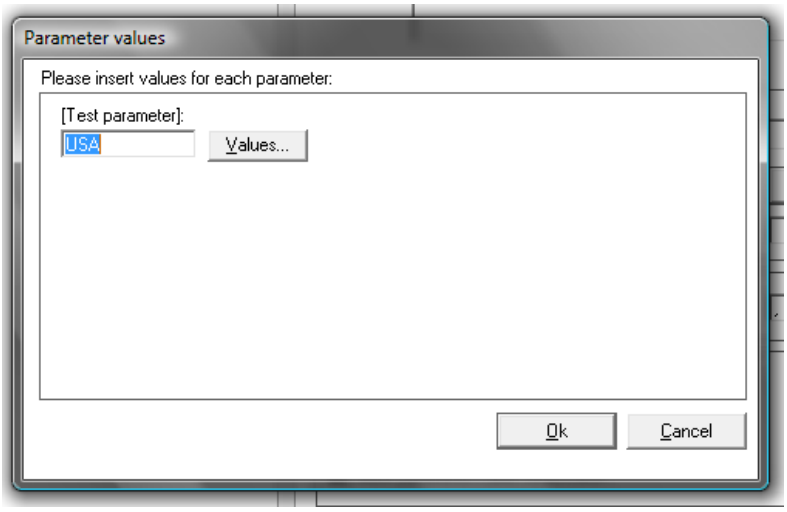
Click on the  button from the type of parameter definition window, and a different window with just one parameter to test will be displayed:



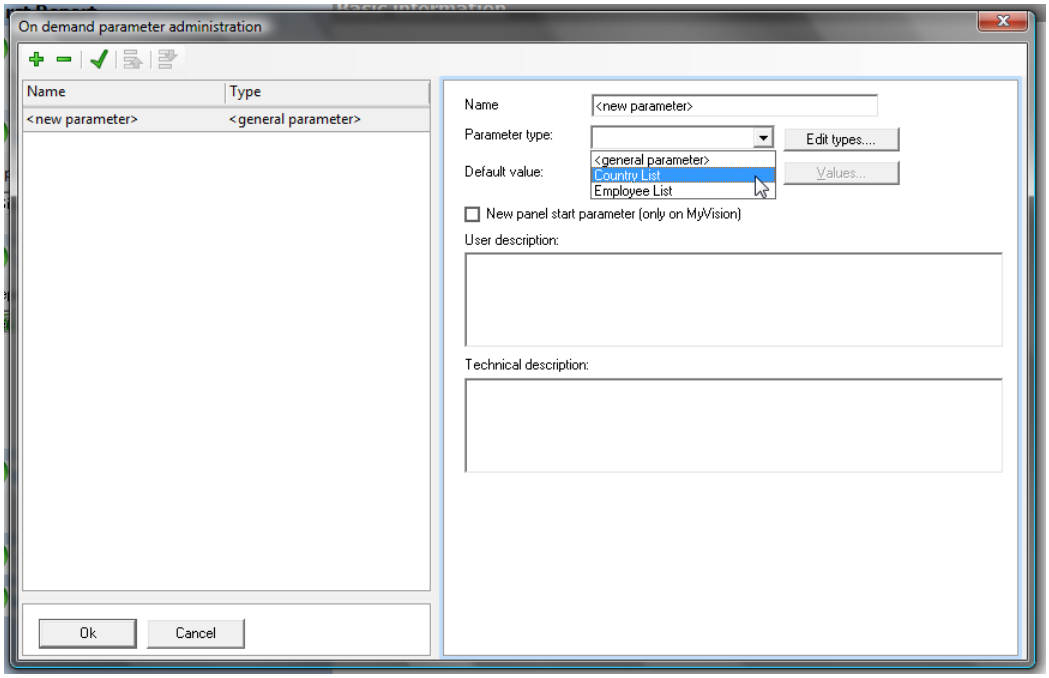
Click on the 'values'  button to get a list of available values (at this moment the defined query is executed):



Select any value by clicking 'Accept' or double clicking on the desired value.



Once the new 'type of parameter' is defined, it will be very easy to reuse it in order to provide the same behavior to all the parameters that require a client code:



Parameters based on other parameters

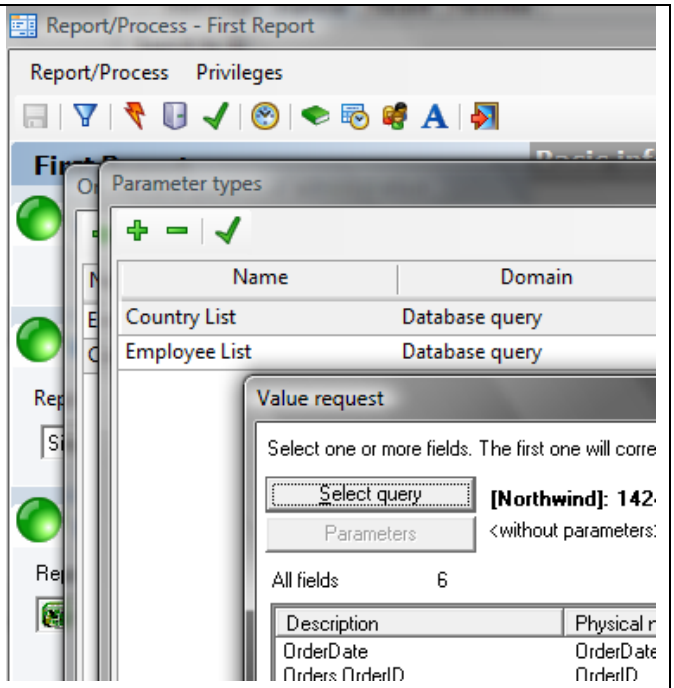
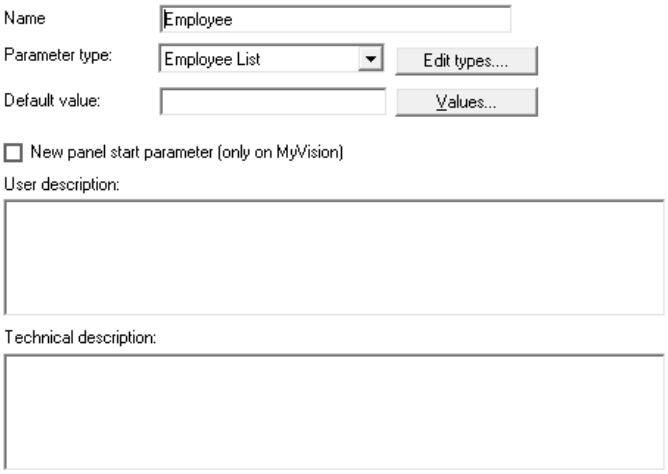
The functionality of parameters based on other parameters, allows the available parameter values to depend on the values selected by the user in a previous parameter.

See the following example:

You wish to run a report that shows the order of specific products from specific categories. First you will indicate the categories, and once selected, you will indicate the products. You will only be able to choose from the products that belong to one of the categories previously selected.

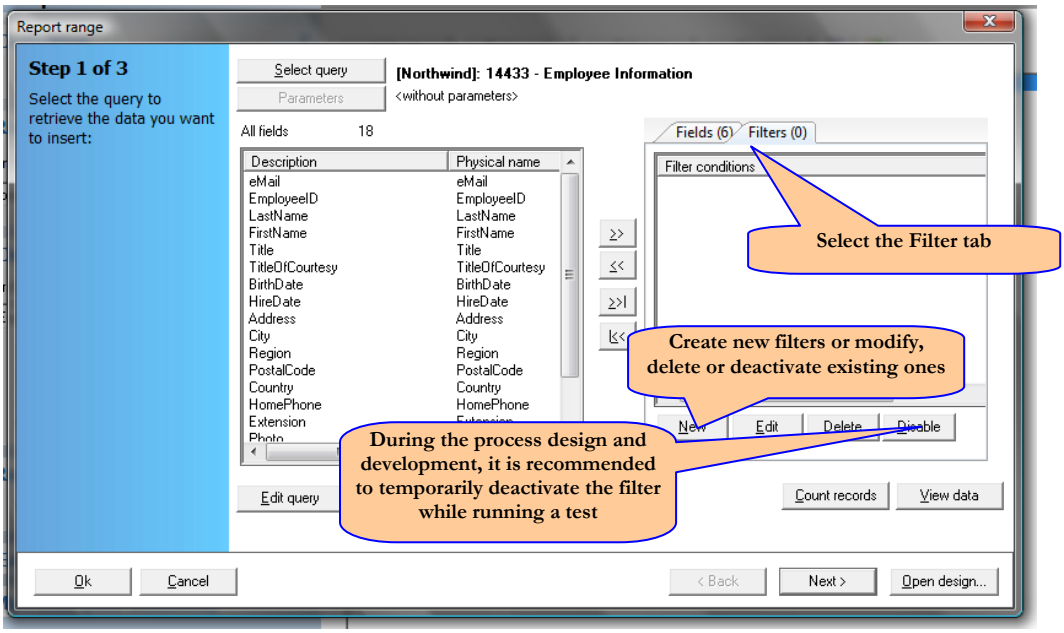
How is this done?

- Create the types parameters the same way as explained in the previous chapter.
- Define the parameters that you wish to ask in any process. Take into account that if the second parameter depends on the first one, you will have to perform the following configuration in the second one:

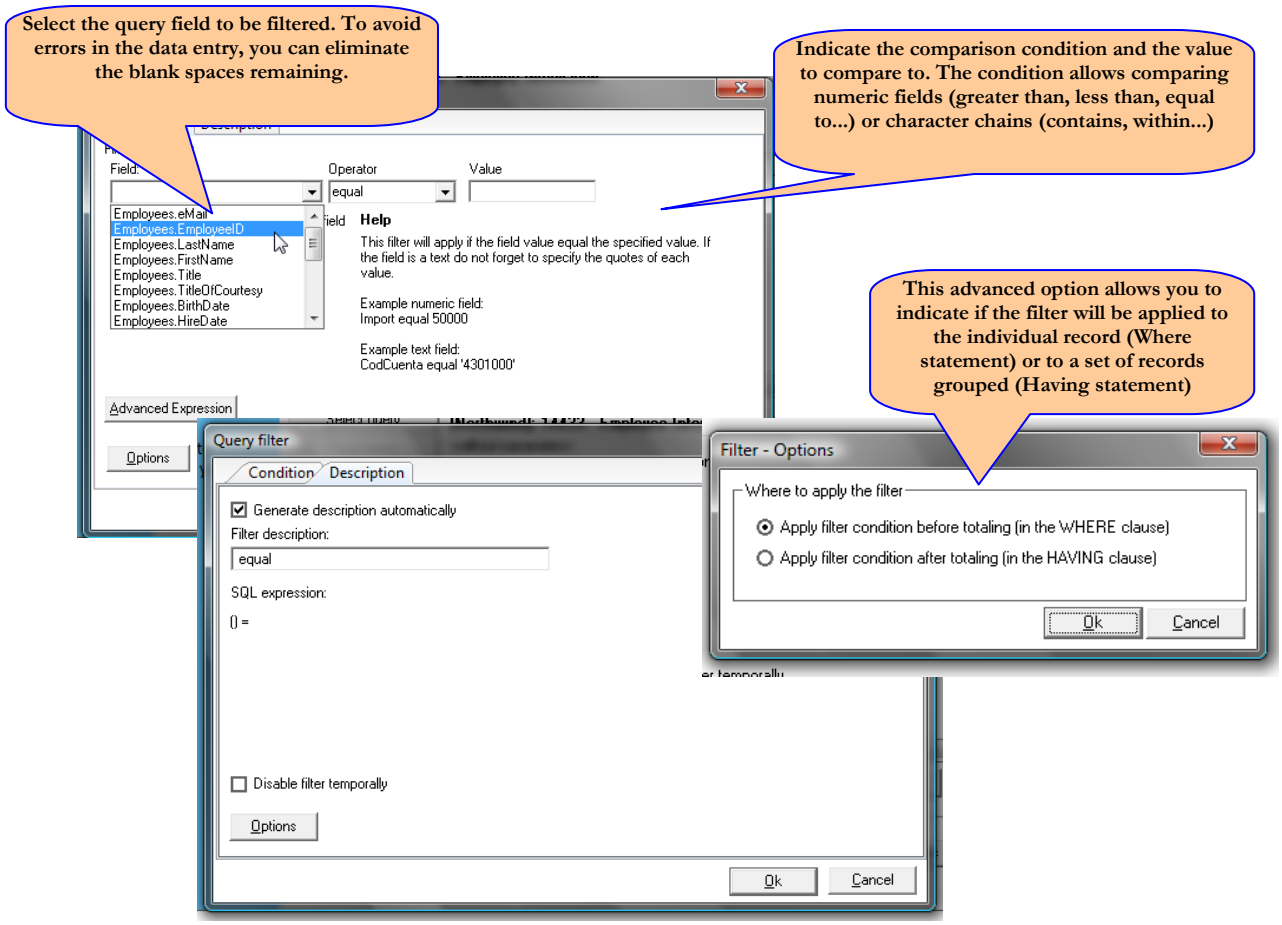
• The second parameter should be filters by the values selected in the first parameter. Therefore, in the second parameter query, we will add a filter that takes into account the values returned from the first parameter. This step is performed by editing the parameter query from the edition of the parameter itself.	
• If the values available (query) of a parameter depend on a previous parameter, you will have to establish that the parameter is processed in a new screen.	

Use of Filters

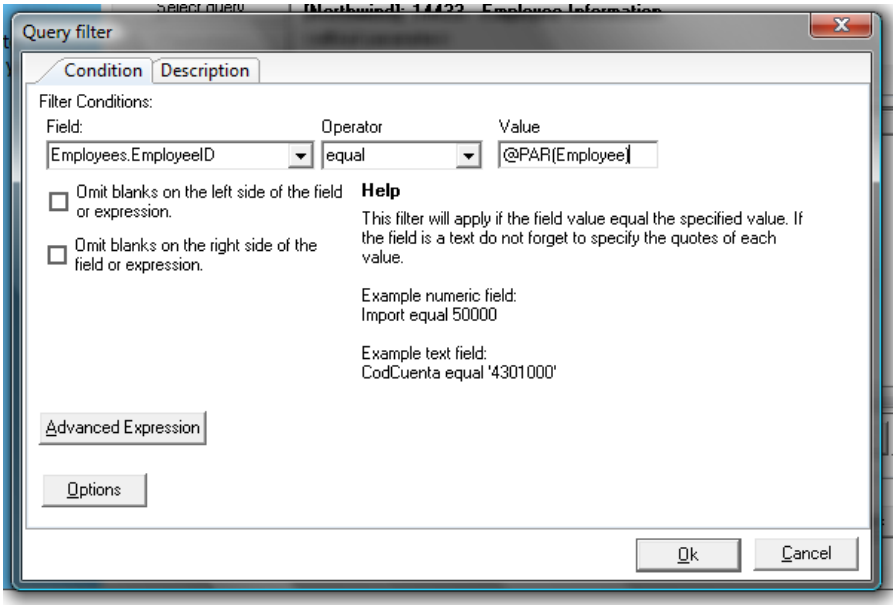
When working with queries from a process, you can add a filter for criteria selection. Refer the filter tab in the query selection screen Insert Data Task:



When creating a filter, indicate the condition that the record has to meet to be performed in the process. Indicate the value for query field too:



From the filter definition screen, you can access the definition of the filter in SQL language by clicking on the 'advanced expression' button. This screen allows the possibility of creating complex filters to personnel with advanced technical knowledge.



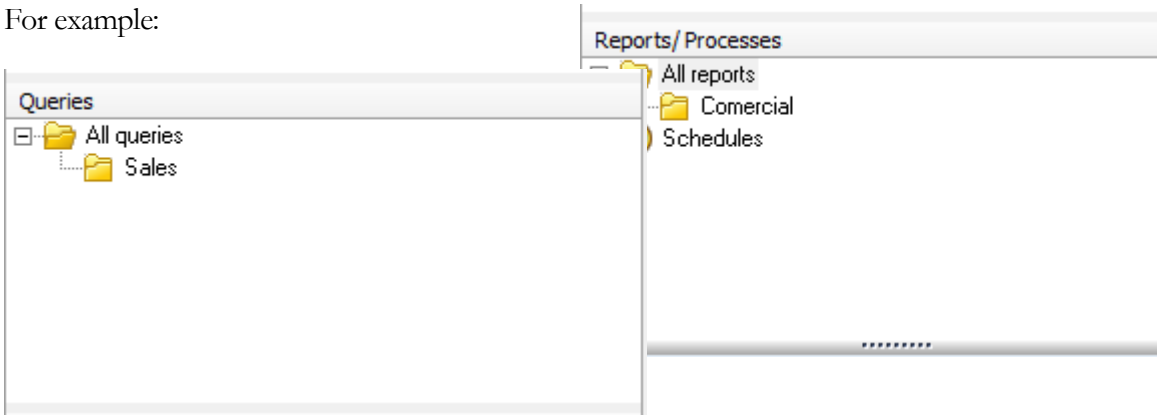
Note: You can use a system parameter as a value. For date fields, it facilitates the comparison with current dates.

Folder Management

Organization above all

One of the most attractive features is that of being able to classify the queries and processes in Folders. You can define the folders and process hierarchy as desired.

For example:



A series of operations allow you to manage the files and its members:

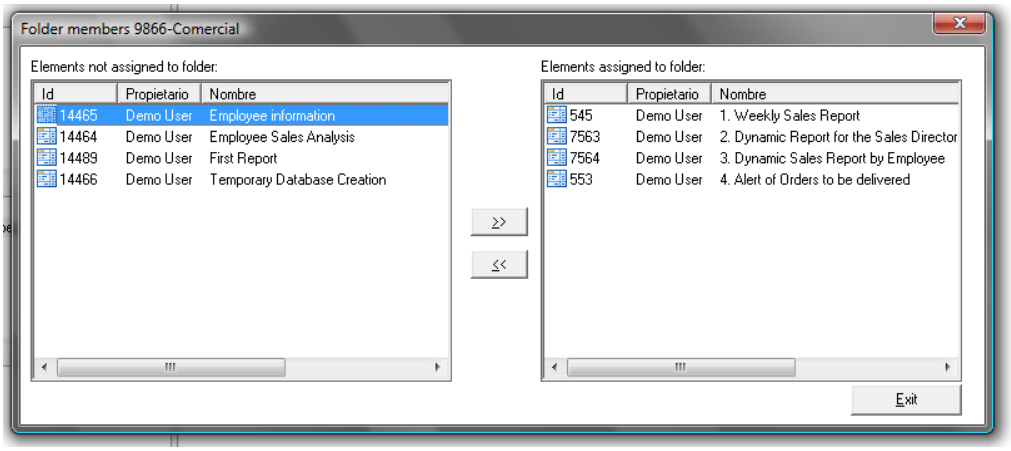
- Create a new folder
- Edit an existing folder
- Delete a Folder
- Assign members to a Folder
- Folder privileges

Creating, editing and deleting folders

These options will allow you to create new folder, change the folder name or delete them. Remember that the queries or processes associated to a folder are not deleted. Only the folder is deleted.

Classification of queries and processes

We can associate queries and processes to a folder through the following dialog panels:



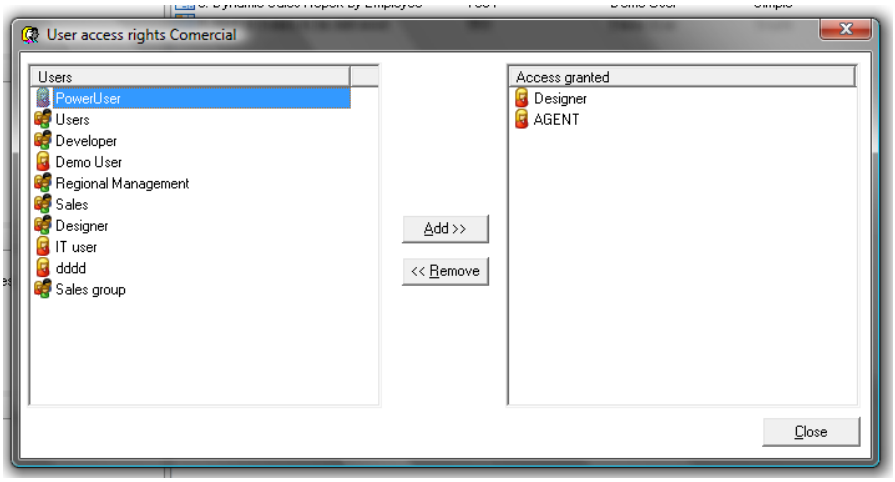
This window will be used to assign queries and processes too. To assign several queries or processes, you can make multiple selections by using the Control or Shift keys. You can also order them by code, owner or name.

Important:

A process or query can be assigned to multiple Folder simultaneously.

Folder privileges

In the following screen, indicate which users have rights to work on the folder queries or processes.

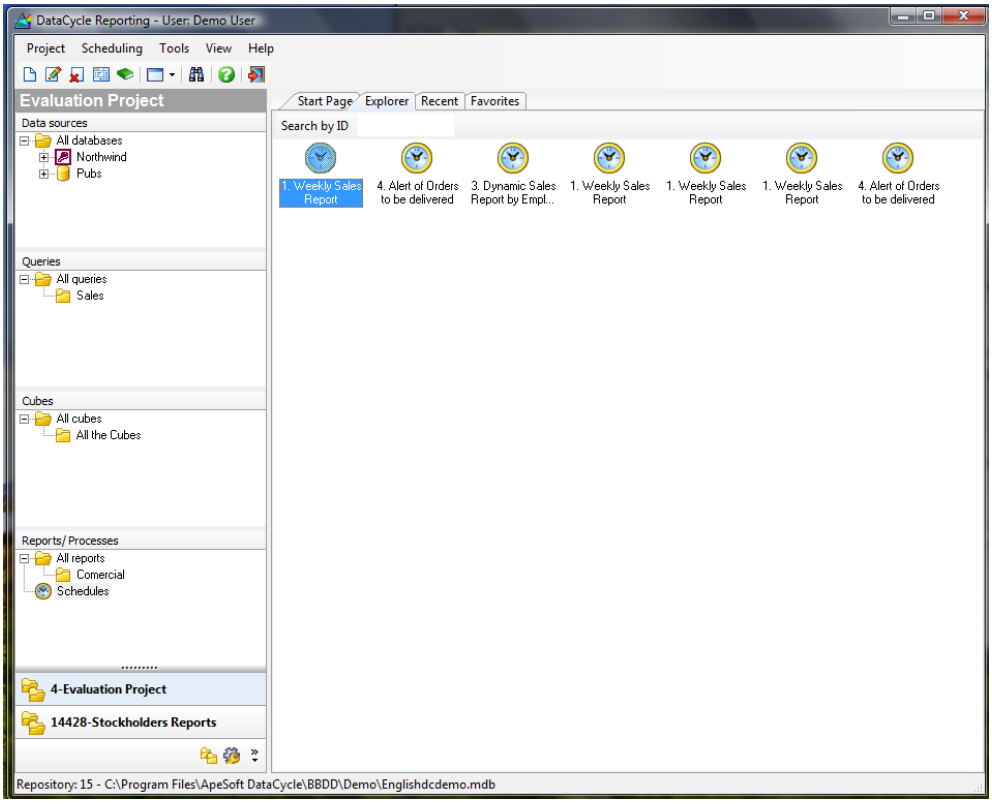


Important:

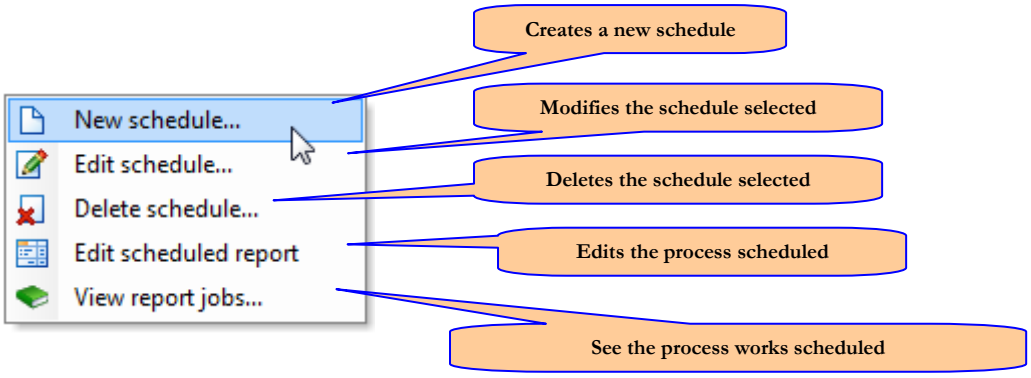
Once the folder privileges are assigned, the users will be able to see more or less folders, queries and reports depending on the management privilege mode assigned to their profile. See 'Privilege management mode'.

Process scheduling

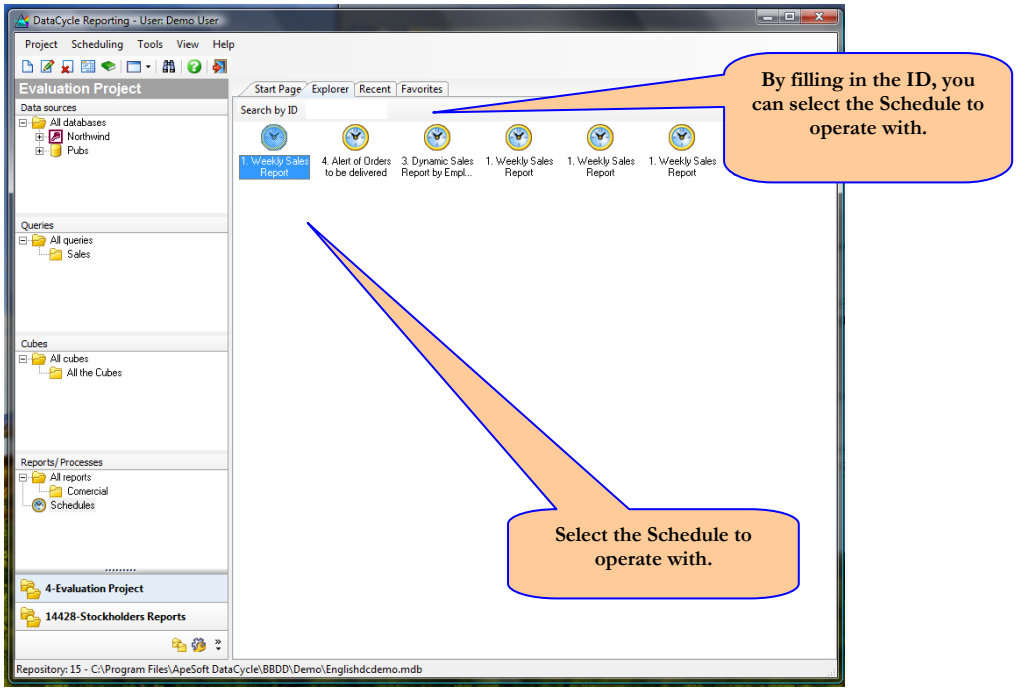
DataCycle Processes can be run periodically. A branch in the main menu allows you to see the existing schedules.



If you wish to perform an operation on an existing schedule, first select it and activate the context menu where all the available options will be displayed.



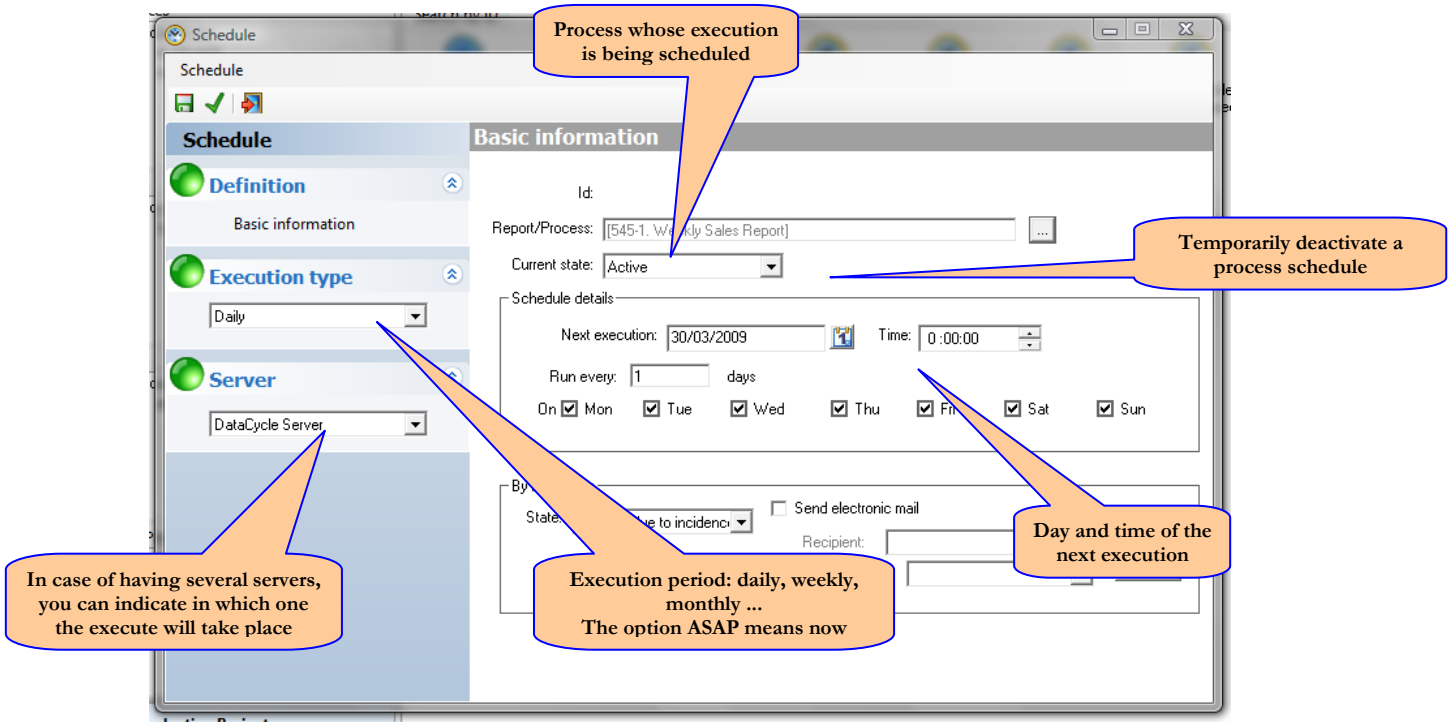
Each schedule has an ID. If you know the ID, you can select the schedule from it:



Creating a process schedule

To create a process schedule, follow the steps below:

Select the option 'New' from the menu to edit the schedules. Indicate the process to schedule, in which each server and time frame will be executed:



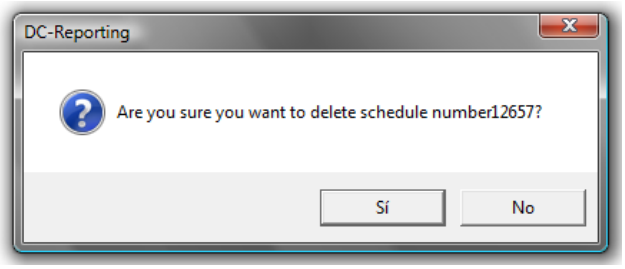
Note: The status can be Inactive, Finished, Executing and Inactive by effect. When a scheduled process fails, it remains in Inactive by effect.

Modifying a process schedule

Select the schedule to modify and click on the 'Edit' option from the menu. The same screens as the ones explained in Creating a process schedule will appear.

Deleting a process schedule

To delete a schedule selected. A confirmation will be requested.

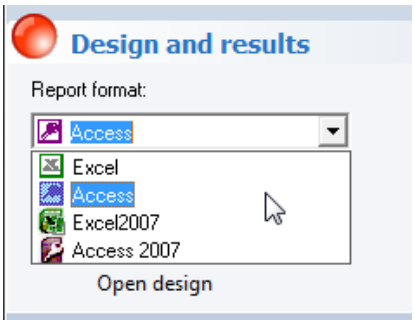


Reports in Excel, Access and HTML

Although DataCycle Reporting typically works with Excel reports, you can also fill in MS Access tables with the data returned from the query, and also generate HTML pages from the reports.

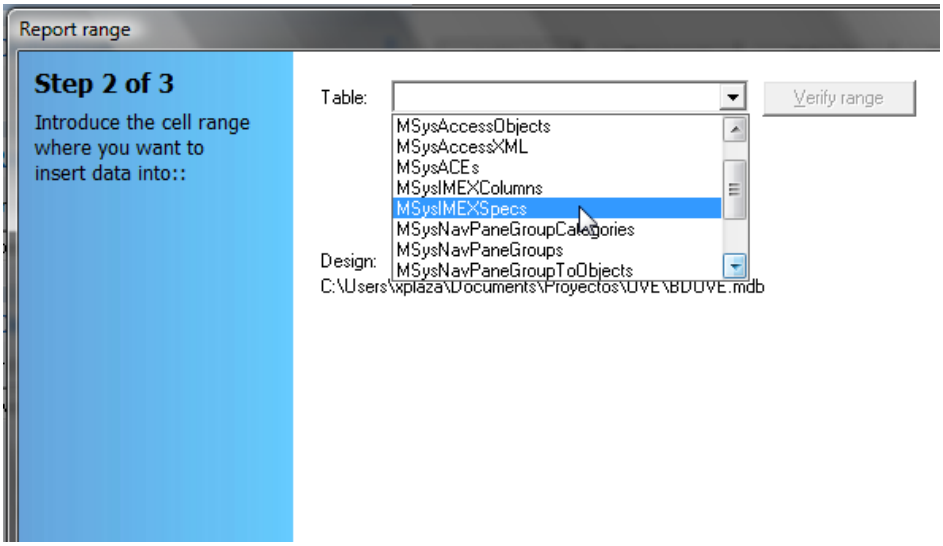
Working with Access

When designing a process, indicate which templates you will work with: Excel or Access:



As in Excel, each time a process is run, a copy of the template with the name indicated in the Process Files tab will be made.

When defining the Insert data task that the process will perform, you will select the MSAccess template table to store the data:



The final result will be an MSAccess database, with the name and location indicated in the 'Files' tab, which will be a copy of the template indicated in the same tab, with the data inserted in the tables as explained in Insert Data Task.

Working with HTML

You can create Web pages from the generated reports. Refer to Export HTML.

Support to run a report of replicas of the same database

Some companies have the same database structure replicated several times, and occasionally in different places and with different data too. For example, the same database replicated for each point of sale, for each production plant, etc.

You can do an inventory of each of the databases and duplicate the queries and processes to establish the small differences in the parameter of connection to each replica. Another more practical possibility is to configure one report or query to be executed on any database that has the same structure of tables and fields.

Procedure

To create a query that can be executed upon multiple databases, we will follow these steps:

- **Create a database profile for each replica. Each profile will contain the necessary information to connect to a specific replica.**
- **Create a new query selecting any of the replicas as the query database. Design the SQL query and verify its correct performance.**
- **Define a parameter called CURRENT_DATABASE_ID in the query. When you run the consultation, it will ask the user to introduce a code identifier for the database. Introduce a code that matches the profile database created in DataCycle. From the DataCycle tree, you can see the codes associated with each profile database.**

Once the multi-database query is created, we can be used it in processes that at the same time requests the database code to the user and pass it (via parameter) to the query. You can also set up a multiple process to undertake iteration for each database (you will have to prepare a small table in Excel or Access with the replica list) and give the query a different replica ID for each iteration.

Annex

Terminology

DataCycle

DataCycle is a tool specialized in the implementation of corporate reporting systems. Based on available data in different company systems (AS/400, Oracle, SQL Server, Lotus Notes, etc…), DataCycle Reporting automates the generation of Excel reporting and distribution via email or the INTRANET.

DataCycle Reporting Administrator

This is the client application that runs in win95, win98, winNT (server or workstation), XP, 2003. Its functionality is to design and administrate the whole reporting system. It is common to find several DataCycle Reporting Administrators developing reports simultaneously in a company.

DataCycle Reporting Server

Is an application server that runs mainly in winNT server (although it can also run in NT Workstation, win95, win98, 2000, XP y 2003). Its function is to process the scheduled reports automatically. It can work in several servers in parallel to provide more processing capacity.

Repository

Database where all the information related to the reporting system is stored: projects, tables, reports, schedules, running logs...

Personalized Broadcasting and Multireporting

The Broadcasting consists on sending the same information to a group of users.

The Personalized Multireporting differs from the Broadcasting in that each user receives information personalized according to their interest.

A typical MP example is sending automated sales' reports to each of the sales people of the company. Although the report format is the same, each one of them only receives information about the sales of the clients assigned.

Distribution processing between the client and the server

The processing of complex reports can be performed in the **server** (Macros "batch" Execution) or in the user **client** PC (when opening the report). This option allows the maximum use of the available resources and a better performance for the user.

Server

The server is a computer, generally very powerful, where several services are installed and will be accessed by the final user computer. The printing and internet services are typical examples.

The DataCycle Reporting service part will be installed in a server to execute the users' orders of report generation.

Databases

This is the company data resource. Normally fed by a management program or ERP such as SAP, JDE, Navision… The database manager will control the data coherence and integrity.

We will also consider those databases for private use, such as small spreadsheets for budgeting, small agendas that complement the corporate database with information that is not managed by the company's ERP.

DataCycle will connect with each one of the databases, making the real origin of the data transparent.

Excel

Excel is a Microsoft spreadsheet that has turned into the standard for analysis and management control.

DataCycle generates Excel files with data returned from the database query.

Macro

A Macro is a program written in Excel in Visual Basic language. It can be invoked when generating DataCycle reports. This tool allows you to literally get any effect and format in your reports.

Access

Access is a user friendly Microsoft Database for small data volume.

DataCycle can store the query results performed in Access databases.

Project

A project is a file where all the development objects, such as the database configuration, catalogue of tables, relation between tables, SQL queries, processes and schedules, are stored.

Projects can be divided into two report groups based on two different corporate computer systems, though typically a company will have just one project.

SQL

SQL is a standard command language used to interrogate and process data in a relational database.

DataCycle queries are designed with this language.

Connection to a Database

It is a definition of connectivity to a database of its actual business, which includes the structure of their table fields (entities) and relations between those tables (joins). Databases are an inventory of existing tables in a system.

Entities

An entity in DataCycle is the equivalent to an AS/400 file or an Oracle table. DataCycle only stores the field structure, not the data.

Relation

A relation is a union between two entities. For example, there is a relation between the header and the lines of an invoice that can be defined and used to make reports.

Query

A query is the primary mechanism for retrieving information from a database and consists of questions presented to the database in a SQL format. A query can have parameters and is also the base to build reports in a rich format.

Process

A process is the definition of everything necessary to generate a report: a template, query, recipients... In DataCycle processes are scheduled to generate reports in the desired frequency.

Warnings and conditional reports

The execution and distribution of a specific report can be conditioned to the fulfillment of any condition that may be reflected in a database.

For example: planning a report on credit status to customers to be executed only when the overall volume of bad debt exceeds a certain amount.

Scheduling

A schedule is a definition of when a process has to be executed (daily, monthly, weekly ...). The schedules are global, but since they can be associated with the scheduled process and the processes depend on the projects, the schedules can be viewed **by project**.

Parameter

Value requested to the user or initiated internally when executing a process or a query. A parameter also allows you to discriminate the information returned by the data manager.

The use of a parameter facilitates the design of queries that can be executed with different criteria on each occasion.

DataCycle lets you use as parameters both existing information in corporate databases, such as vendors, as information entered by the user at the time of running a query or information returned by the operating system such as the current date or the user executing the process.

Filters

This is an improvement to the concept of parameter. The process designer can use a generic query and add a selection criterion which represents the rule of business to take into account in the report that is generated. This way you can reuse the previously designed SQL queries without limit.

For example, in a generic query that returns all sales, you can add a filter to indicate that we are only interested in those sales whose volume exceeds certain number or those product sales of a certain category…

SQL Processing in native or JET mode

During the query design, using SQL language, you can work with two methods or modes: native or Jet. See the differences and advantages of each one of them:

Native Mode: The SQL statement is processed by the native SGBD according to the SQL syntax.

1- The performance is a little higher since the statements are processed in the database Server without previously running a syntax analysis.

2- You can use specific resources of the Server you are working with: SQL extensions, stored procedures, etc.

JET mode: the SQL statement is processed by the JET motor and according to MS Access compatible syntax.

1- We take advantage of all the Access SQL syntax resources and functions

2- We give independence to the database Server SQL statements

Practical advice:

It is recommended to use the JET motor if working with a database that is not well known or who's SQL syntax is very limited (Notes, text, etc.). The JET motor offers incorporated functions and resources even though they are not directly available in the databases consulted.

If we want to maximize the resources of the server, we can invoke stored procedures, and native functions. In such cases we must use the native mode. These resources are usually available in Oracle SGBDs, SQL Server, Informix, AS/400, etc…

We cannot mix a native and JET syntax in one SQL statement.

The SQL statements designed with MS Access application can be directly processed by the JET motor.

Errors and FAQs

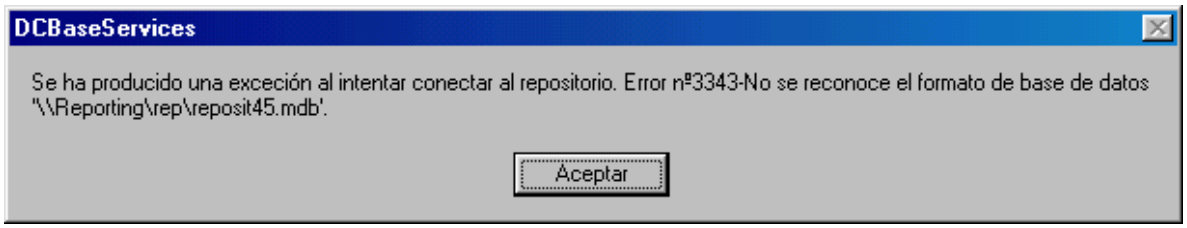
Some incidents or doubts may arise when using DataCycle Reporting. The following are the most common:

You cannot log in on a Repository

Possible causes in a case of a MS Access Repository:

- The Repository database is broken
- The Repository database has been moved or rename
- The system.mdw file has not been configured correctly
- The user name and password was defined for a different Repository

In case that the repository database is broken and the following message appears:



Try to repair the repository database. It is an Access 97database.

> **Important:**
>
> Before trying to repair the file, it is recommended to make a backup security copy of the broken one.

To repair it, we can use:

- **Access 97.**

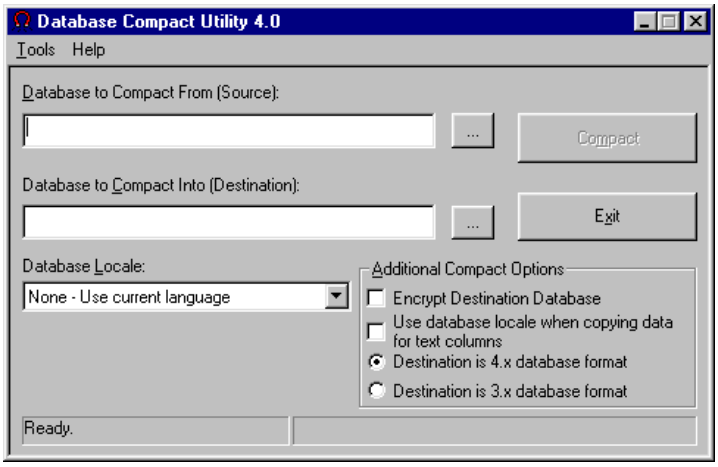
  The repair option is in the <tools> menu <database utilities ><repair database >

- **JetComp4.exe tools**

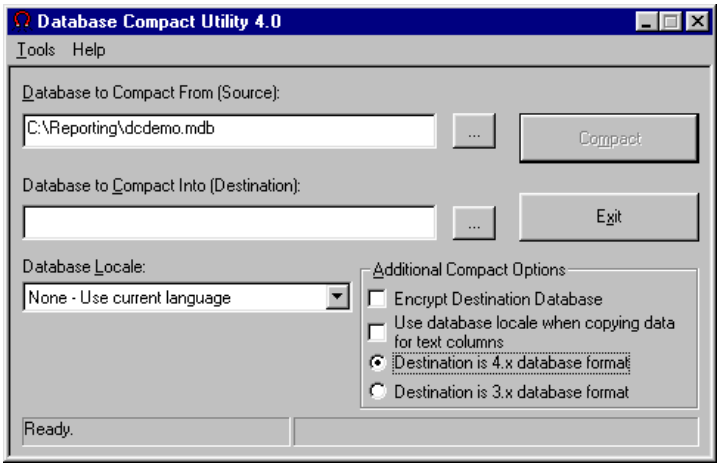
  This free tool Developer by Microsoft allows you to repair Access 97 and Access 2000 databases.

Steps to follow with JetComp4:

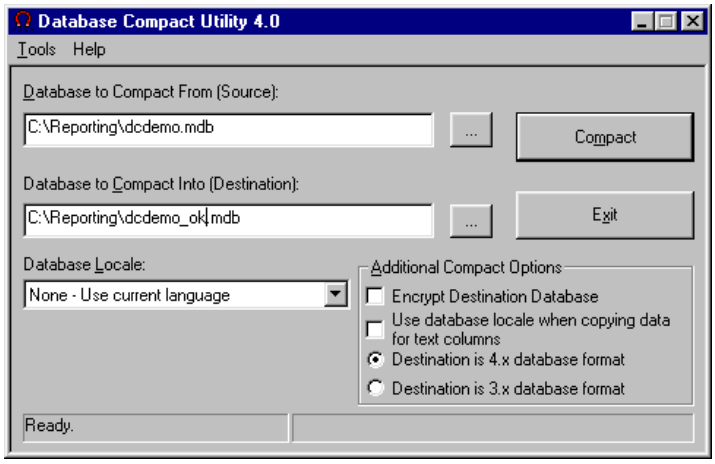
- **Execute JetComp4.exe feature**



- Select the database to repair : field "Database to Compact From (Source)"



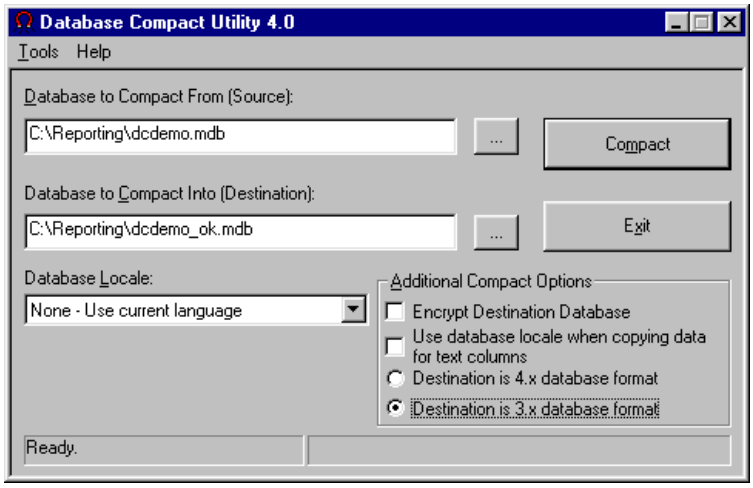
- Specify a file name to create the new repaired database: field "Database to Compact Into (Destination)"



- Select the "3.x" format of the destination database.

Important:

The 3.x format is for Access 97 databases, and 4.x is a format to generate a database of Access 2000 format or superior.



- Click on the "Compact" button to compress and repair the database.

You will have generated a new and repaired file, if you do not see any error message.

Important:

In case that the database cannot be repaired, you will have to retrieve the last backup security copy of the repository.

- Substitute the broken database for the new repaired one.
- Execute DataCycle Reporting and try to connect to the new repaired Repository.

Problems with AS/400 decimal number

DataCycle does not treat a packed real number well. See the following example:

We have a SELECT SUM (Amount) ... where 'Amount' is a numeric packed field that contains a real number (amounts in dollars).

The problem is that the data viewer returns a number in the form 9999.99, when usually returns a number in the form 9999,99. When transferring these values to Excel, the numbers appears multiplied by 1000.

This situation does not occur if the query does not have the SUM operations, and it does not happen either for queries on non packed fields.

If we change the decimal character configuration in the ODBC driver, the problem disappears but starts to happen in the rest of queries where it did not happen before.

In order to solve the problem without touching the ODBC DSN, we can force the type using a conversion function.

SELECT Float(SUM(Amount)) ....

As well as Flota, we can use DOUBLE, DECIMAL, etc.

Certain problems when transferring to Excel are solved by choosing the OLE mode instead of native.

The database connection cannot be established

When connecting to ODBC databases, you have to configure the specific parameters for each DSN.

To ensure that the problem is the ODBC DSN and not DataCycle Reporting, we recommend to test the ODBC connection with another program, for example MS Access.

If the connection can be established in one PC, but no in another one, it could be that in the one that does not work, the ODBD DSN has not been defined in the ODBC administrator. This configuration is particular in each PC.

The connection to an email profile cannot be established

If it is a MAPI profile, you need to ensure that the email profile has been configured in all PCs where the processes to send via email will be executed. At least, the email profile has to be configured in the Server in order to execute the processes in server mode or to schedule the processes to send email.

The data of a numeric field is inserted as text in the Excel file

This occurs when the corresponding template cell has not been forced the numeric type. In order to force a type of a cell to 'numeric', just insert a numeric value (for example, 0) in the first row of the template.

Failure while executing a macro "CreateMetaCube"

One of the common causes is the failure to indicate in the template that the data is in cells of numeric format. Then, the macro considers those values as text and does not make the calculations in the dynamic table correctly.

The screen with the resulting data of a query will not appear

Occasionally, once the query is defined, when executing it, the screen with the query results will not appear.

Assuming that sufficient time has been given to the Data Server to respond to the query, it may occur that the data is actually there but the window has been hidden by other windows or minimized.

Depending on the operation system, Windows 98, Windows 2000, Windows NT … this behavior can vary and while in some computers the window with the query results opens automatically in others you may have to select it.

Query results contain incoherent information

To be able to get the information desired can be in many cases an easy task, and in others turn into an objective only achieved by some 'creative artists'.

In most cases, receiving incoherent information can be due to a wrong definition of the existing relations between the different tables.

Cannot go to the last data returned by the query

Once DataCycle displays the resulting data of a query, you can move between them thanks to the scrolling bars, cursor arrows and the first and last record buttons.

In case the number of returned data by the query is very high, this operation can take a long time or even be an impossible execution. Imagine a query returning hundreds of millions of data.

In case of being blocked, this window will have to be closed manually from the operation system by the following procedure:

Hold down the Control and Alt keys simultaneously, and delete key to show the processes that are being executed at that moment. One of them is DataViewer, which is the process that shows the resulting data from the query, and will need to be cancelled by clicking on the appropriate key.

Working with SAP

How to know in which SAP tables is the important data found

This chapter is addressed to SAP users, and explains how the tables in which the company relevant data is determined.

SAP works with several table types: Transparent, Pool and Cluster. We will use only the transparent since the rest contain encrypted information that is very difficult to access.

Entering the program

Find the icon on your desktop called SAP logon. Click on it and click Logon.

A screen where we will indicate the user name and password will appear.

Select the menu you want to work with.

Which tables contain your data?

To know in which table the information is stored turns into a difficult and high risk activity.

Following are two systems that can help, but does not guarantee a success:

1. Within SAP, go to the screen that contains the data. Position the cursor on the field desired and click F1 and the Technical Data icon. A screen, typically indicating the table and field where the data can be found, will appear.

2. This system is more elaborated. It is about spying the SQL instructions executed by SAP:

   Go to the screen where the data searched is found. Open a new SAP session, run System/Utilities/Performance Trace and click Trace ON. From this moment, the access to the database performed by SAP is stored.

   Go to the SAP session you were originally working with and perform operations on the desired data.

   When finished, go to the second session and click Trace Off to stop the spying to the accesses performed in the database.

   Click Trace list to see the database access report.

   The format is very cryptic, so you will need to spend several hours to discover your data.

Working Tables

These are some of the SAP transparent tables.

Finance and Management Control (FI)

CSKA, CSKU	Cost types and naming
CSKS, CSKT	Cost center and naming
SKA1, SKAT	Accounts and naming
BKPF	Entry headings
BSAD, BSIS	Entry lines
BSAK, BSAS, BSID, BSIK, BSIM	Other access tables to accounting to accounting entries (debtors, creditors, complementary part, by material)
GLT0	Balances
SETNODE, SETLEAF, SETHEADERT	Class and cost center hierarchy and naming

Sales (SD)

VBRK, VBRP	Header and billing lines
KNA1	Clients
LFA1	Suppliers
VBAK, VBAP, VBEP	Header and order lines, payment terms

Material management (MM)

MKPF, MSEG	Header and material movement lines

Auxiliaries

T005, T005T, T005U	Countries and naming. Regions

Data structure

DD03L	Table fields and format
DD02L, DD02T	SAP tables and name
DD04T	Data elements text