Query Management Facility™ for Windows

Getting Started with QMF for Windows

Version 7 Release 2

SC27-0723-01

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Note!
Before using this information and the product it supports, be sure to read the general information under Appendix C, Notices.

Second Edition (March 2002)

This edition applies to Version 7, Release 2 of IBM QMF for Windows, a feature of the QMF Family with Version 7.1 of DB2 Server for OS/390, 5675-DB2, and for QMF Family with Version 7.2 of DB2 Server for VSE & VM, 5697-F42, and with Version 7.2 of DB2 UDB Universal Developer's Edition, 5648-D37, and with Version 7.2 of DB2 UDB Warehouse Manager, 5648-D35, and with Version 7.2 of DB2 Warehouse Manger iSeries™, 5724-B08, and for Version 7.2 of QMF Windows for iSeries, 5697-G24, and for Version 7.2 of QMF for Windows for DB2 Workstation Databases, 5697-G22, and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC27-0723-00.

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Summary of Changes

Query Results window

- Column wrapping
- Vertical alignment (bottom, middle, top)
- "Go-To" a specific place, such as a line number or break summary rows
- Search within highlighted data
- Display data in hex or binary format in Zoom Edit dialog
- User-defined currency symbol
- Simplified menus

EasyAsk

QMF for Windows supports EasyAsk, formerly English Wizard, which is a product interface for submitting queries as ordinarily written questions instead as SQL

Prompted queries

Prompted queries have been enhanced. Now, join conditions include inner-, outer-, left-, right-, and full joins. You can now sort by columns that were not selected and by expressions.

Report Center

Version 7.2 contains many updates to QMF for Windows Report Center, such as:

- Server filter

  Use the server filter to choose which servers are defined and which SDFs are displayed.
- Link reports

  You can link reports to locally-saved query (*.qry) files
- View reports

  You can view, but not edit, SQL and procedure text of reports
- Tree structure

  QMF objects and DB2 tables can display in a tree structure.
- Report comments

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Comments, up to 800 characters, can be defined for reports service or the Internet Explorer Task Scheduler

- Hide variables

  Using QMF for Windows, Version 7.2, you can hide pre-set variable values individually

- Date Wizard

  You can create a calculated date for a variable value with Date Wizard. Set to current date, first- or last day of month or previous months, first- or last weekday in month or first or last day based on financial quarters

- Report in temporary directory

  Reports can be created in the temporary directory of the machine running the report

- Charts can be preset and created in Microsoft Excel or Lotus 1-2-3.
- Pivot tables can be created in Microsoft Excel
- Group data can be created in Lotus 1-2-3
- You can group by one- or two columns in Microsoft Excel or Lotus 1-2-3.
- Report Center will stop on error folder property and also stop running reports under a folder when an error is encountered.

QMF Query for Java

With QMF Query for Java, you can create, save, and run SQL queries and prompted queries. Reports can be formatted from a default or saved form. You can format reports using the result grid formatting in the query. QMF Query for Java can govern and track queries and output graphs and charts.

Spatial data

IBM DB2 Spatial Extender stores, accesses, manages, and analyzes spatial data that you can query. This feature of QMF for Windows provides visual map renderings of spatial data. You can import or export spatial data. Several menus contain options for the spatial data feature, including the Results menu, List menu, and File menu. The dialog, Display Map, contains two panes: one is a tree view that presents the layers (query or table) used in the shape file; whereas, the other pane provides a visual map rendering of the spatial data.

Catalogs

Catalogs have been enhanced so that you can access a database server without creating the entire QMF catalog at that server. Multiple, and distinct QMF catalogs can be created at a single server. Extended catalog support has been introduced, to maintain the QMF catalog on a single DB2 server.

Administrators do not need to maintain a catalog for each DB2 server accessed. Catalog centralization includes queries designed for ODBC data sources, which query the ODBC data source unless redirected to another data source by the end-user at execution.

Query improvements

Improvements have been made to the query function, including to the PREPARE function, in which DB2 checks the query syntax and availability of required objects, while performing internal calculations without sending data to the client. Also, COMMENT/UNCOMMENT has been improved, in which you can comment out or include a line in a query that will not or will be used when the query runs.

API improvements

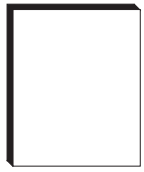
More than 25 APIs have been added, such as ResetGlobalVariable() and SetParameter().

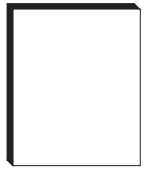
Other improvements

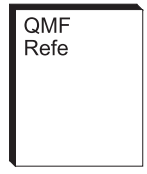
- IBM ObjectREXX @IF function, which tests for specified values within the REXX expression, then interprets the expression and returns the result
- Fast Save Data function within a QMF procedure
- BiDi (bi-directional) orientation option for displaying data in query results and reports
- Tooltip descriptions for global variables and object tracking reports

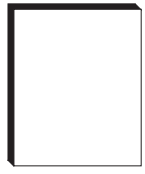
The QMF Library

You can order manuals either through an IBM representative or by calling 1-800-879-2755 in the United States or any of its territories.









Chapter 1. Introduction

This chapter provides an overview of QMF for Windows and explains some of the basic tasks for getting started with QMF for Windows.

Prerequisites

Operating system

- Microsoft® Windows® 95
- Microsoft Windows 98
- Microsoft Windows ME
- Microsoft Windows NT 4.0
- Microsoft Windows 2000
- Microsoft Windows XP

Note: QMF for Windows does not run on Windows 3.1 (or earlier), Windows for Workgroups, or Windows NT 3.51 (or earlier).

Add-in applications

- Microsoft Excel: 7.0 or later
- Lotus® 1-2-3®: 97 or later

Connectivity

TCP/IP

The Microsoft TCP protocol installed with the Windows operating system should work with any product that provides a WinSock interface.

SNA

IBM Personal Communications 4.1 or later should work with any product that provides a WinCPIC interface.

ODBC

Most ODBC 2.x or 3.x drivers are acceptable.

CLI

IBM DB2 Universal Database™ runtime client, Version 6.1 or later.

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QMF Query for Java™

Recommended servers

IBM WebSphere® Version 3.02 or 3.5 should work with any application server product that implements JSDK 2.x or Java Servlet 2.2 or later. Applicable platforms and versions are listed below.

- UNIX and Linux
- Windows NT or Windows 2000
- iSeries (4.4 or later)
- OS/390® (2.5 or later), z/OS™ with UNIX System Services installed or MVS

Note: IBM WebSphere Application Server is recommended (version 2.0, 3.02, and 3.5 are supported). However, QMF Query for Java is compatible with any application server that supports JDSK 2.0 and JDBC 1.0.

Database

IBM DB2 Version 5.x and above with a JDBC type 1.0 driver, with the applicable updates to enable JDBC.

Other functionality

IBM ObjectREXX

IBM ObjectREXX for Windows 1.0.2.3 or later.

Natural language query

- Linguistic Technology English Wizard 3.1
- EasyAsk 6.0

Audience

The audience for this manual is the end-user of the application. Typically, this is the person who knows:

- the data in DB2
- which tables are in DB2
- SQL prompted queries or SQL

This person may write applications, create queries, forms, and procedures in order to produce reports, export data, and use the Report Center.

Accessibility features

QMF for Windows allows for customization that will accommodate your vision or mobility needs. There are different categories of accessibility options available from within QMF for Windows and from the Windows operating system:

- **Keyboard accelerators:** these are shortcuts that enable you to perform activities directly through the keyboard rather than from a menu. These are also known as mnemonics.

  For example, pressing Ctl+S would be the same as selecting the Save option from a menu.

  Another example, files listed as 1, 2, 3 off a menu can be selected by simply typing the option number. For example, you would select Tables if you select option 2:

  ```
  1   Reports
  2   Tables
  3   Queries
  ```

- **Toolbar icons:** you can add icons to the toolbar to execute the most frequently-used options (such as save, run query, and others)
- **Tooltips:** tool tips (information about the option) display when you ″mouse-over″ (sweep the cursor) over an area of a tool tip-enabled window
- **Screen reader:** QMF objects can be read by screen readers

  Note: The query results (also known as the ″results grid″) cannot be read by a screen reader. Instead, export the file or save the file in HTML format.

- **High-contrast display:** you can change the display from the Control Panel so that icons and type are magnified to meet the needs of the visually impaired.
- **Microsoft Control Panel Accessibility Options:** these options are available from the control panel, and include options for:
  - Keyboard ″StickyKeys,″ ″FilterKeys,″ and ″ToggleKeys,″ plus the option to show extra keyboard help in programs
  - Display: contains an option for Windows to use colors and fonts designed for easy reading, plus an option for high-contrast (color scheme = white on black, black on white, or a custom scheme)
  - Mouse: the option to use MouseKeys, which controls the pointer with the numeric keypad on your PC (including the shortcut and pointer speed)
- **General:** turn on/off accessibility options; notifications; SerialKey devices, and administrative options

What is QMF for Windows?

IBM Query Management Facility for Windows (QMF for Windows) is a tightly integrated, powerful, and reliable query and reporting tool set for IBM's DB2 relational database management system. It provides an easy-to-use interface for enterprise reporting, including reports and procedures with REXX calculations.

QMF for Windows accesses data that are stored in any database in the IBM DB2 family of databases. It also handles data from heterogeneous and non-heterogeneous data sources. QMF for Windows integrates with spreadsheet solutions such as Microsoft Excel and Lotus 1-2-3 for an alternate method of packaging and presenting report data.

Java SQL from a browser and point-and-click, drag-and-drop functionality, (including aggregations, summaries, and formatting from within the query results) make QMF for Windows a robust query and reporting tool. The QMF for Windows Administrator component provides extensive, detailed management and control over your QMF environment to protect resources and monitor user actions.

Database servers

Queries, forms, procedures, and tables are run and saved at a database server.

DB2 family of databases

QMF for Windows can connect to a wide range of DB2 databases:

- DB2 UDB for OS/390, DB2 for OS/390 and z/OS, and DB2 for MVS
- DB2 Server for VSE & VM and SQL/DS
- DB2 Universal Database and DB2 Common Server
- DB2 Parallel Edition
- DataJoiner®

Your QMF for Windows license determines which DB2 family products you can install on and connect to with your copy of QMF for Windows.

User name and technical name

Different versions and types of DB2 refer to a database by an RDB name, location name, or other technical name.

With QMF for Windows your administrator can assign an easily remembered name to a database name, for example, Purchasing Database instead of DB2P_01_PURCH.

QMF for Windows refers to a database server or a DB2 database as a "server."

Setting the server name

Before you can query a database, QMF for Windows needs to know where the database is stored.

1. From the **File** menu, select **New SQL Query**. A new SQL query document opens.
2. From the **Query** menu, select **Set Server**. The Set Server dialog box opens.
3. From the list of available servers, select the one that you want to query and click **OK**. When you begin your next QMF for Windows session, QMF for Windows automatically reconnects to the same server.

Database security

You must provide a user ID and password before you can connect to a server.

Logging on

You must specify a valid user ID and password for the database server that you are trying to access. The database server user ID and password is not necessarily the same as your local or network user ID and password.

If you are running Windows, you have the option of remembering server passwords across QMF for Windows sessions. If you are currently logged on to Windows, the Set User Information dialog box displays an additional check box labeled **Remember this password?**. If you select this check box, then the password you enter for that server is stored in the Windows password list. Whenever you are logged on to Windows, QMF for Windows can automatically retrieve that password so that you are not prompted. If you are not logged on when you run QMF for Windows, or if you are logged on as a different user, QMF for Windows prompts you for a user ID and password.

Note: If you choose to save a password, anyone who can log on to your Windows account can access your database servers with your (server) user ID and password.

1. From the **Query** menu, select **Set User Information**.

   The Set User Information dialog box opens.
2. Enter your user ID and password.

   Note: The user ID and password are case sensitive. For example, if your user ID or password is uppercase, you must enter it in uppercase. Some types of database servers treat user IDs and passwords as case sensitive; others do not.
3. Check **Remember this password?** if you want to save your user ID and password.
4. Click **OK**. QMF for Windows stores this information in preparation for accessing the server.

Correcting passwords

If you entered an incorrect password, you can correct the error by reopening the Set User Information dialog box.

1. From the **Query** menu, click **Set User Information**.

   The Set User Information dialog box opens.
2. Type the password again and click **OK**.

   The password is corrected.

Changing passwords

You can change your password at the database server from QMF for Windows. This feature is currently supported only by DB2 for OS/390 Version 5 and later.

1. From the **Query** menu, select **Set User Information**.

   The Set User Information dialog box opens.
2. Click **Change**.

   The **New password** and **Confirm new password** fields display.
3. Type your new password in the **New password** and **Confirm new password** fields and click **OK**.

   Your database server password is changed.

Specifying accounting strings

The database server uses accounting strings to track system usage. Ask your database administrator to find out if your system uses accounting strings.

1. From the **Query** menu, select **Set User Information**.

   The Set User Information dialog box opens.
2. In the **Accounting string** field, type the accounting string you want to use and click **OK**.

   QMF for Windows stores the information in preparation for accessing the server.

QMF for Windows menus

Three drop-down menus are available at the QMF for Windows main dialog box:

- File
- View
- Help

File menu

New

Select this menu option to create a SQL query, prompted query, natural query, form, procedure, list, or job. Submenus display for several of the following menu options:

- **SQL query**

  A query that you create and modify using SQL (Structured Query Language) statements, which you enter in a query window. The database server defines the rules (grammar, syntax, and other rules) for valid SQL queries.

- **Prompted query**

  A graphical representation of the components that make up a query. If you are not familiar with SQL syntax, use the Prompted Query window to create and edit your queries.

- **Natural query**

  A query that is written using conversational English. The query is converted to SQL and run normally at the database.

  Note: You need EasyAsk installed on your machine to work with Natural queries. Otherwise, this option is disabled.

- **Form**

  A form contains the formatting instructions that QMF for Windows uses to generate a report from query results.

- **Procedure**

  A set of commands that enable you to run queries, print reports, import and export data, and perform other functions with a single command. Use the Procedure window to create and edit your procedures.

- **List**

  Creates a new list of objects, which is a query, form, procedure or table.

- **Job**

  Creates a new job, which is file used to schedule and run unattended procedures. A job file can store a user ID, encrypted password, and substitution variables.

Open

This option opens a document from an existing query, form, procedure or list file.

Open from server

This option opens a document from an existing query, form, or procedure, or list file from the database server, without opening a list document.

Draw query

Use the Draw Query dialog box create a new query document based on the query type and tables you specify. This menu command is the same as using the DRAW command in host QMF.

- **Server**

  The database server where the tables for the query are stored.

- **Query type**

  The type of query you want to create:

  – Select: creates an SQL SELECT statement for the specified tables. You can specify more than one table when you use the SELECT statement.

  – Update: Creates an SQL UPDATE statement for the specified table. You can specify only one table when you use the UPDATE statement.

  – Insert: Creates an SQL INSERT statement for the specified table. You can specify only one table when you use the INSERT statement.

- **Owner**

  The owner of a table (in the correct format for identifiers) for which you want to create a query.

- **Name**

  The name of a table (in the correct format for identifiers) for which you want to create a query.

- **Identifier**

  The correlation ID for a table in the query that you create. If you leave this field blank, a correlation ID is automatically generated for you.

- **Tables**

  Lists the tables to include in the query. If you are creating a SELECT statement, you can specify more than one table. If you are creating an UPDATE or INSERT statement, you can specify only one table.

Table Editor

This dialog box displays when you click **Table Editor** on the File menu or when you click **Edit** on the List menu. You use this dialog box to search for and edit rows in a table.

- **Server**

  The name of the database server that stores the table you want to search.

- **Table owner**

  The name of the user responsible for maintaining the table.

- **Table name**

  The name of the table you want to search.

- **Save mode**

  Indicates whether you want to save changes with each row or when you have completed all changes:

– **Immediate**

  The table will be updated at the database server immediately after each change.

– **End**

  The table will be updated at the database server after you finish entering all changes. Other users will not be able to make changes to the table while you make your changes.

Import data

Use this option to import data from an existing IXF file into a new query document.

Recent files

Use this option to open the files from your computer that have been recently accessed.

Follow these steps to access the most recently used files to use in a new query window:

1. Click **Recent Files** on the File menu.

   The Recent Files menu displays.

2. Select the file you want to use.

   The file data displays in a new window.

   Note: There is no toolbar button for the Recent Files menu.

Recent objects

Use this option to retrieve objects from a server that have been recently accessed during a QMF for Windows session. The format of the most recently accessed object is:

```
SERVER:OBJECT_TYPE:OWNER.NAME
```

Follow these steps to access the most recently used object to use in a new query window:

1. Click **Recent Objects** on the File menu.

   The Recent Objects menu displays.

2. Select the object you want to use.

   The object data displays in a new window.

   Note: There is no toolbar button for the Recent Objects menu.

Terminate connections

Ends the connection to the server.

Exit

Use this option to close QMF for Windows.

View menu

Connections

The Connection Information dialog box displays when you click **Connections** on the View menu. It shows a summary of the connections that QMF for Windows has to your database servers. You can leave this dialog box open while working in QMF for Windows.

- **Servers and connections**

  Displays the servers to which you are currently connected with QMF for Windows as well as the number of connections that QMF for Windows has to each.

- **Show details**

  Displays the Connection Details dialog box that contains detailed information on each of the connections to a server in the Servers and Connections list.

Global variables

This dialog box displays when you click **Global Variables** on the View menu. It shows all the global variables defined at this computer.

- **Name**

  Displays the name of the global variable.

- **Value**

  Displays the value currently held by the global variable.

Toolbars

This dialog box displays when you click **Toolbars** on the View menu. You use this dialog box to display and hide various toolbars.

- **Main toolbar**

  Select this check box to display the Main toolbar.

- **Query toolbar**

  Select this check box to display the Query toolbar. This toolbar is enabled when a query document is active.

- **Natural query toolbar**

  Select this check box to display the Natural Query toolbar (when a natural query document is active).

- **Procedure toolbar**

  Select this check box to display the Procedure toolbar (when a procedure document is active).

- **Form toolbar**

Select this check box to display the Form toolbar (when a form document is active).

- **List toolbar**

  Select this check box to display the List toolbar (when a list document is active).

- **Customize**

  Opens the Customize Toolbar dialog box.

Command bar

Check this option to display the Run command and at server command lines at the top of the QMF for Windows user interface. You use the command bar to run a procedure command directly from the QMF for Windows interface.

Status Bar

Check this option to display the status bar at the bottom of the QMF for Windows user interface. The status bar displays information and messages that help you use QMF for Windows and provides status information when you are running queries.

Options [General]

This dialog box displays when you click **Options** on the View menu and select the General tab.

- **Server definition file**

  The name of the server definition file that QMF for Windows uses. Your system administrator provides you with the name of this file. You must enter the name of a server definition file in order to use QMF for Windows

  `....- Browses for a name to use for the server definition file`

  Special values

- Display null values as

  The string QMF for Windows uses to display null values that are retrieved from the database server.

- Enter null values as

  The string to use when entering null values in query results and in the Edit Table dialog box.

- Enter default values as

  The string to use when entering default values in query results and in the Edit Table dialog box.

Options [CPI-C]

This dialog box displays when you click **Options** on the View menu and select the CPI-C tab.

- **CPI-C provider DLL**

The name of the DLL QMF for Windows uses to access CPI-C services. See Product Requirements for QMF for Windows for information about supported SNA software products

`.... - Browses for a CPI-C Provider DLL`

- **CPI-C warning timeout**

  If a communication request does not complete within this period of time, QMF for Windows asks whether to cancel the request and return an error.

- **CPI-C cancel timeout**

  If a communication request does not complete within this period of time, QMF for Windows automatically cancels the request and returns an error.

Options [TCP]

This dialog box displays when you click **Options** on the View menu and select the TCP tab.

- **TCP warning timeout**

  If a communication request does not complete within this period of time, QMF for Windows asks whether to cancel the request and return an error.

- **TCP cancel timeout**

  If a communication request does not complete within this period of time, QMF for Windows automatically cancels the request and returns an error.

Options [CLI]

This dialog box displays when you click **Options** on the View menu and select the CLI tab.

- **CLI warning timeout**

  If a communication request does not complete within this period of time, QMF for Windows asks whether to cancel the request and return an error.

- **CLI cancel timeout**

  If a communication request does not complete within this period of time, QMF for Windows automatically cancels the request and returns an error.

Options [ODBC]

This dialog box displays when you click **Options** on the View menu and select the ODBC tab.

- **ODBC warning timeout**

  If a communication request does not complete within this period of time, QMF for Windows asks whether to cancel the request and return an error.

- **ODBC cancel timeout**

  If a communication request does not complete within this period of time, QMF for Windows automatically cancels the request and returns an error.

Options [LOB]

This dialog box displays when you click **Options** on the View menu and select the LOB (Large Objects) tab.

- **Override LOB options**

  When checked, overrides your default LOB options with the options that you specify. Depending on your resource limits, you may not be able to override you LOB options.

- **Disable LOB columns**

  No data is returned to queries that query columns containing LOB data.

- **Disable LOB data retrieval**

  Users cannot retrieve LOB data

- **Retrieve LOB data on demand**

  Specific LOBs are returned when you request them individually

- **Retrieve LOB data automatically**

  All LOBs in the query results are returned automatically

- **Maximum LOB column size (KB)**

  Specifies the maximum size of a LOB column in kilobytes. A limit of zero indicates no maximum.

Options [Traces]

This dialog box displays when you click **Options** on the View menu and select the Traces tab.

Note: Apply tracing only if you are attempting to diagnose a problem, since tracing has an adverse effect on performance.

- **Trace file 1**

  The name of the first trace file you want to use. QMF for Windows writes data to this file, until the size of the file exceeds 512K bytes. Then QMF for Windows begins writing data to Trace file 2. When the size of this file exceeds 512K bytes, QMF for Windows switches back to Trace file 1. This method prevents QMF for Windows from completely consuming disk space with trace information while still allowing a reasonable running history of trace information

  .... - Browses for the name of the first trace file you want to use.

- **Trace file 2**

  The name of the second trace file that you want to use.... - Browses for the name of the second trace file you want to use.

- **DDM**

  When checked, applies tracing to DDM operations.

- **TCP**

  When checked, applies tracing to TCP operations.

- **CPI-C**

  When checked, applies tracing to CPI-C operations.
- **CLI**

  When checked, applies tracing to CLI operations.
- **Embedded SQL**

  When checked, applies tracing to embedded SQL operations.
- **SQLAM**

  When checked, applies tracing to SQLAM operations.
- **REXX**

  When checked, applies tracing to IBM ObjectREXX operations.
- **Internet Mail**

  When checked, applies tracing to Internet Mail operations.

Options [BiDi]

This dialog box displays when you click **Options** on the View menu and select the BiDi tab. The settings at the BiDi (bi-directional) dialog box control the direction of the data in query results and report in a BiDi enabled operating system.

- **Left-to-Right**

  Under any operating system, data will display using a left-to-right orientation.
- **Right-to-Left**

  Any operating system data will display using a right-to-left orientation.
- **Based on operating system**

  QMF for Windows will orient the grid and reports according to the operating system. If the operating system is bidi-enabled, data will display using a right-to-left orientation; otherwise, data will display using a left-to-right orientation.

Note: The orientation flag is stored in registry entry QFW_KEY\Advanced Options\BIDIOptions. The following values are correct: 0 = OS dependent; 1 = always left-to-right; 2 = always right-to-left.

Governing

The QMF for Windows governor is always running in the background, monitoring the usage of database and system resources. The governor also limits the type and size of queries you can run.

Viewing resource limits

From the View menu, select **Resource Limits**. The Resource Limits dialog box opens. All information in the Resource Limits dialog box is read only. Your system administrator sets these limits.

The types of limits and controls that can be in effect are:

- Timeouts
- Limits
- SQL Verbs
- Options
- Save Data
- Binding
- Object Tracking
- LOB Options
- Report Center

Setting your own row limit

You can specify the maximum number of rows to retrieve for this query. When this limit is reached, QMF for Windows cancels the query. The maximum authorized row limit specified in your resource limits group takes precedence over this parameter.

Enter **0** to specify no limit in this field.

Rows that QMF for Windows has already retrieved in excess of this limit are retained and available for viewing.

1. From the Query menu, click **Set Row Limit**.

   The Set Row Limit dialog box opens.
2. Enter the maximum number of rows that you want the query to return and click **OK**.

   The row limit is applied the next time you run the query.

Customizing the toolbar

You can customize the toolbar to display only the buttons that you want to see.

Adding buttons to the toolbar

You have the option of adding buttons to the existing QMF for Windows toolbar. These buttons represent functions that not all users may need, but that are available for inclusion in the toolbar.

1. Double-click the gray area surrounding the toolbar. The Customize Toolbar dialog box opens.

2. From the **Available buttons** column, select the button that you want to add and click **Add**.

   The button is added to the toolbar.
3. When you finish adding buttons, click **Close**.

   The dialog box closes and the new buttons are added to the toolbar.

Moving buttons on the toolbar

You have the option of rearranging the buttons on the QMF for Windows toolbar.

1. Double-click on the gray area surrounding the toolbar.

   The Customize Toolbar dialog box opens.
2. From the **Available buttons** column, select the button that you want to move.
3. Use the **Move Up** and **Move Down** buttons to move the button within the toolbar.
4. When you finish moving buttons, click **Close**.

   The dialog box closes and the buttons appear in their new locations.

Removing buttons from the toolbar

You have the option of removing buttons from the QMF for Windows toolbar.

1. Double-click on the gray area surrounding the toolbar.

   The Customize Toolbar dialog box opens.
2. From the Available buttons column, select the button that you want to remove and click **Remove**.

   The button is removed from the toolbar.
3. When you finish removing buttons, click **Close**.

   The dialog box closes and the buttons are removed from the toolbar.

Chapter 2. Working with SQL Queries

Structured Query Language (SQL) is the most basic interface between a user and a database. Queries are written in SQL and processed by the database. Users can write QMF for Windows queries in SQL, or create queries using the "point and click" method.

SQL queries

Structured Query Language queries require knowledge of the commands and syntax of SQL. Users unfamiliar with SQL should try creating prompted queries, as discussed in the ″Building Prompted Queries″ chapter.

Query menu

Run
Run the active query.

Prepare
This option invokes `PREPARE SQL` command. DB2 will check query syntax, existence of every object that is associated with the query, but internal calculations will be performed and no data will be sent to client.

This option is very convenient to validate queries.If you have prompted query with big calculations or returns huge amount of data and you are unsure that the syntax is correct the best way to check syntax is to use the `PREPARE` command.

Cancel
Cancel the active query currently running at the database server.

Uppercase
Force the letters you type in a query or procedure window to be all uppercase.

Reformat SQL text
Reformat the SQL text of a query. It neatens the appearance of the text, capitalizes SQL keywords, and shortens queries to less than 79 characters per line, a requirement for saving a query at a database server.

Comment
Use this option to comment out a line in a query, typically a line that describes what a section of the SQL will do. The text that is commented will not be included when the query is run.

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This option places two dashes (--) at the beginning of a line in the query, such as:

```
SELECT * FROM Q.STAFF
--USE THIS ONLY FOR MONTH-END REPORTS
```

Uncomment
Removes the commented line or lines. Once a line is uncommented, it will be read when the SQL query is run.

This option removes the comment flag, two dashes (--), from the beginning of a line in the query, such as:

```
SELECT * FROM Q.STAFF
USE THIS ONLY FOR MONTH-END REPORTS
```

Set server
Select the database server where you want the active query to run.

Set user information
Set your database server user ID, password, and accounting string for the active query.

Set row limit
Determine the maximum number of rows to retrieve from the database server for the active query.

Set font
Change the display font attributes of your selection.

EasyAsk Open Dictionary
Open an EasyAsk dictionary (*.dct) for this server.

Note: This option is available only if EasyAsk is installed on the computer.

EasyAsk Query Builder
Open the EasyAsk query builder.

Note: This option is available only if EasyAsk is installed on the computer.

EasyAsk View Interpretation
Open the EasyAsk View Interpretation window.

Note: This option is available only if EasyAsk is installed on the computer.

EasyAsk Dictionary Editor
Open the EasyAsk Dictionary Editor.

Note: This option is available only if EasyAsk is installed on the computer.

EasyAsk Dictionary Map
Open the EasyAsk Dictionary Map.

Note: This option is available only if EasyAsk is installed on the computer.

EasyAsk Set Date
Open the EasyAsk Set Date dialog box.

Note: This option is available only if EasyAsk is installed on the computer.

EasyAsk Dictionary Construction Kit
Display the EasyAsk dictionary construction kit.

Note: This option is available only if EasyAsk is installed on the computer.

EasyAsk Dictionary Properties
Display the properties of the current EasyAsk dictionary.

Note: This option is available only if EasyAsk is installed on the computer.

Bind Package
Create a package at the database server that contains the active SQL statement as a static query.

Revert to dynamic SQL
Edit and run a query as dynamic SQL after binding the package for it.

Convert to SQL
Convert the active prompted query into a new SQL query.

Note: This command is available only if the active query is a prompted query.

Confirm stored procedure parameters
Confirm the data types, modes, and values of parameters for stored procedures run with a `CALL` statement.

Creating SQL queries

Click the **New SQL Query** button on the toolbar.

A new query document opens.

Running SQL queries at a database server

1. Open a new query document and type in a query, open an existing query file, or open a query from the database.
2. Click the **Run Query** button on the toolbar.

   The query runs and the results are displayed.

Switching between the results view and the SQL view

You can look at the results of a query or the SQL statement itself.

From the SQL view of a query that has been run, click **View Results** on the toolbar.

The query results are displayed.

-or-

From the Results view of a query, click **View SQL**.

The SQL statement displays.

Working with fonts

You can change the font used to display queries. The choice of fonts varies according to what has been installed on your computer. For more information on adding fonts, refer to your operating system's help facility.

Note: If you save the query after selecting a new query display font, the query displays with the new font.

Selecting the query display font

1. From the SQL view, click **Set Font** from the Query menu. The Font dialog box opens.
2. Select the font for the text of the query and click **OK**.

   The query reappears in the new font.

   Note: Click **Set As Default** to use the selected font as the default font for all new queries.

Multiple queries

You can open or run more than one query at the same time. You can use these features to generate multiple reports, or to cut and paste SQL text from one query to another.

Displaying multiple queries

1. Open at least two query documents.
2. From the Window menu, select one of the following commands:

Table 1. Query display commands

Command	Result
Cascade	Displays queries in a staggered series.

Table 1. Query display commands (continued)

Command	Result
Tile Horizontal	Displays query windows stacked vertically.
Tile Vertical	Displays query windows stacked side by side.

The query windows are arranged according to the option you select.

Drawing queries

Use the Draw Query command to create new SQL query documents. You specify one or more table names and the type of SQL statement that you want, and QMF for Windows creates an SQL statement that references the names and data types of the columns in the table.

Creating SQL queries

1. From the File menu, click **Draw Query**.

   The Draw Query dialog box opens.
2. Select the type of query that you want to create:

Table 2. Select query type

Query Type	Result
Select	Retrieve rows from one or more tables.
Update	Change the information in a table.
Insert	Add new rows to a table.

3. Enter the owner and name of the table to be queried.

   Note: You can use patterns to select table names from a list of matching tables.

   - Use the percent character (%) to match a string of any length containing any characters. For example, to list all tables with a name beginning with the letter A, enter A%.
   - Use the underscore character (_) to match a single character. For example, to list all tables with an owner that has the letter A in the second position, enter _A%.
4. After you enter a pattern, click **Add from List** and select a table from the resulting list.
5. Enter a unique identifier for the table.
6. Click **Add**.

   The table is added to the query.
7. Click **OK** after adding the table or tables to query.

An SQL query for the selected tables is created and displayed.

Substitution variables in SQL queries

Variables are a small part of the computer program code that can be modified while the program is running. In this way, the same program can be used for several actions.

QMF for Windows has two kinds of variables: substitution variables and global variables (which are discussed in the chapter, "Working with Global Variables.")

Substitution variables

Substitution variables are used in QMF objects for substituting variables to strings at runtime. This enables you to substitute a part of an SQL statement and make it more generic. Substitution variables are active only while the object (query, procedure or form) is running. As a result, only one object can access the substitution variable. After the execution the variable will no longer exist.

With substitution variables, you can use the same query to retrieve different information by supplying different values each time you run the query. To retrieve a different set of data, you do not need to rewrite the query. Rather, you just supply different values for the substitution variables in the query when you run it.

A substitution variable is text that you include in a query. It must begin with an ampersand character (&), and can contain up to 18 characters, which can be alphabetic, numeric, or one of the following special characters: ^ ! $ ~ { } ? @ # % \ or _. For example, the following values are valid substitution variables:

```
&VARIABLE1
&DEPARTMENT_NUMBER
```

A substitution variable can appear anywhere in a query, and its value can be anything that you might write in a query (except a comment). For example, you can use a substitution variable in place of a column name, search condition, subquery, or any specific value.

Global variables

Global variables are active while QMF for Windows is active, which means that variables will have the same value until the instance of QMF for Windows is finished, and the global variable can be accessed by all QMF objects. Different instances of QMF will not be able to see each other's global variables.

Running SQL queries with substitution variables

1. Open a new query document and enter this SQL statement:

   ```
   SELECT * FROM Q.STAFF WHERE DEPT >= &MIN_DEPT
   ```

2. Run the query.

   The Enter Substitution Variable Values dialog box opens.

3. In the *Value* field enter a value of 50 and click **OK**.

   The query runs and displays the query results.

Try experimenting with substitution variables by replacing values in the `SELECT` and `FROM` clauses. See what results your queries return with different inputs.

Saving and opening SQL queries

You can save queries on your PC, on a file server, or at a database server.

Saving SQL queries to files

1. From an open query, click **Save** on the toolbar.

   If the query has been saved before, it is saved again. If the query has not been previously saved, the Save As dialog box opens.

2. Enter the name of the file where you want the query stored.
3. Click **OK**.

   The query is saved.

Opening saved SQL query files

1. Click **Open** on the toolbar.

   The Open dialog box opens.

2. Select the file that you want to open.
3. Click **OK**.

   The selected query opens in a new query document.

Saving SQL queries at the database server

Queries saved at the server can be made accessible to other users. If you want to share your queries with other users, save them at the database server.

1. From an open query, click **Save at Server** on the toolbar.

   The Save Query dialog box opens.

2. Enter an owner, a name, select whether to share the saved query with other users.
3. Click **OK**.

   The query is saved at the server.

Note: If a query with this name exists, you are prompted to overwrite the previously existing query.

Opening saved SQL queries at the database server

You can open queries that have been saved at the database server.

1. Click **Open From Server** on the toolbar.
   The Open From Server dialog box opens.
2. Enter a server, owner, and name.
3. Click **OK**.
   The SQL query opens.

Printing SQL queries

You can preview and print your SQL queries.

Previewing a query

1. Open a query and activate the SQL view.
   The SQL statement appears.
2. From the File menu, click **Page Setup**.
   The Page Setup dialog box opens.
3. Make any changes you want to the layout of the page and click **OK**.
4. Click **Print Preview** on the toolbar.
   A preview of the printed query appears.

Printing SQL queries

1. Open a query and activate the SQL view.
   The SQL statement appears.
2. From the File menu, click **Page Setup**.
   The Page Setup Dialog box opens.
3. Make any changes you that want to the layout of the page.
4. Click **OK**.
5. Click **Print** on the toolbar.
   The query is printed.

Chapter 3. Building Prompted Queries

Prompted queries are an easy way for you to create a query by selecting options from menus and lists. Once you have created a prompted query you can save it or convert it to an SQL query.

Building simple queries

You can easily build simple queries using the prompted query interface.

Query menu

Run
Run the prompted query.

Prepare
This option invokes `PREPARE SQL` command. DB2 will check query syntax and the existence of every object associated with the prompted query. Internal calculations will be performed but no data will be sent to client.

This option is very convenient to validate prompted queries. If you have prompted query with big calculations or returns huge amount of data and you are unsure that the syntax is correct the best way to check syntax is use Prepare command.

Cancel
Cancel the prompted query currently running at the database server.

Uppercase
Force the letters you type in a prompted query or procedure window to be all uppercase.

Set server
Select the database server where you want the active query to run.

Set user information
Set your database server user ID, password, and accounting string for the active query.

Set row limit
Determine the maximum number of rows to retrieve from the database server for the active query.

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Set font
Change the display font attributes of your selection.

Add table
Add a table to the active prompted query. This command is available only if the active query is a prompted query, and is the same as adding a table to the SQL query `FROM` clause.

Add join condition
Add a join condition to the active prompted query. This command is available only if the active query is a prompted query, and is the same as adding a join predicate to the SQL query `WHERE` clause.

Add column
Add a column or column expression to the active prompted query. This command is available only if the active query is a prompted query, and is the same as adding a column or expression to the SQL query `SELECT` clause.

Add sort condition
The Sort Conditions dialog box displays when you add or change a sort condition in a prompted query.

Add a sort condition to the active prompted query. This command is available only if the active query is a prompted query, and is the same as adding a column or expression to the SQL query `ORDER BY` clause.

For example, you can write statements such as the following in the **Enter a sort condition here** field:

```
SELECT ID, SALARY FROM Q.STAFF ORDER BY DEPT ASC
```

In this case, the sort condition is a column that does not exist in the result set.

In another example,

```
SELECT ID, SALARY FROM Q.STAFF ORDER BY ID+SALARY ASC
```

In this case, the sort condition is an expression.

Table 3. Sort conditions condition

Table 3. Sort conditions dialog (continued)

Field	Description
Other available columns	Displays other columns from within other available tables in the prompted query
Enter a condition here	Manually enter a sort condition here. Only sort conditions are supported.
Sort direction	Applies ascending or descending sort order to the selected columns in the column list

Add row condition

Add a row condition to the active prompted query. This command is available only if the active query is a prompted query, and is the same as adding a predicate to the SQL query `WHERE` clause.

Convert to SQL

Convert the active prompted query into a new SQL query. This command is available only if the active query is a prompted query.

Opening new prompted queries

From the+ File menu, click **New Prompted Query**. A new prompted query document opens.

Note: You cannot create a prompted query when you access an ODBC server. The following message displays:

```
This feature is not supported when accessing an ODBC server.
```

Prompted query action buttons

Edit prompted queries using the query action button. A set of buttons appears above the section that it controls.

Table 4. Prompted query controls

Prompted Query Action Button	Result
Add	Click to add an item to the prompted query.
Edit	Click to edit the highlighted item in the query.
Delete	Click to delete the selected item.
Move Up/Move Down	Click to move the selected item up and down in the prompted query.

Adding tables to prompted queries

1. In the Tables section of the prompted query document, click **Add**.

   The Tables dialog box opens.

2. Type the owner and name of the table that you want to add and click **Add**.

   The table is added to the query.

   Note: You can use patterns to select objects from a list of matching objects.
   - Use the percent character (%) to match a string of any length containing any characters. For example, to list all tables with a name beginning with the letter A, enter A%.
   - Use the underscore character (_) to match a single character. For example, to list all tables with an owner that has the letter A in the second position, enter _A%.
3. After you enter a pattern, click **Add From List**.
4. Select a table from the resulting list.
5. Add additional table conditions to the query.
6. Click **Close**.

   The prompted query document appears with the new tables listed.

Running prompted queries

You may run a prompted query the same way that you run an SQL query. Click **Run Query** on the tool bar.

The prompted query runs.

Building complex queries

You can also build more complex queries using the prompted query interface.

Adding columns to prompted queries

The Columns dialog box +displays when you add or change a column in a prompted query.

Table 5. Columns dialog

Field	Description
Table	Lists the tables or columns you have added to the prompted query window
Column	Select a column to add to the Columns list in the prompted query window. Select the column then click **Add**. Repeat this procedure to add multiple columns to the Columns list. **Note:** Right-click on a column to add it to the Columns list.
Type	Lists the character or numeric data type found in each column

Table 5. Columns dialog (continued)

Field	Description
Label	Lists any labels associated with the table
Comments	Lists any comments associated with the table
Or, Enter an expression here	A column expression valid for the database server. Use the appropriate format for any identifiers (table owner, table name or column name) in the expression. Enclose character values in appropriate quote characters. If you do not enter an expression, select a column from the Column list.
Summary function	Apply the summary function to the column. QMF for Windows provides a list of summary functions, including `AVERAGE`, `COUNT`, `MAXIMUM`, `MINIMUM`, and `SUM`. The summary function must be compatible with the data type of the column.
New column name	A new column name for use in reports
Add	Enabled when you select a column to add to the prompted query window
Cancel	Cancels the current action and closes the dialog box without applying any changes to the prompted query

Procedure

1. In the Column section of the Prompted Query document, click **Add**.

   The Columns dialog box opens.
2. Select the column you want to add.
3. Click **Add**.

   The column is added to the prompted query.
4. Add additional columns to the query.
5. Click **Close**.

   The Prompted Query document appears with the new columns listed.

   Note: You can apply a summary function to the column by selecting one in the Function field. Available summary functions are: `AVERAGE`, `COUNT`, `MAXIMUM`, `MINIMUM`, and `SUM`.

   Also, you can rename a column in the query by typing a new column name in the New+ column name field.

Using sort conditions

Sort conditions are used to specify the way you want to sort the rows in the query. Rows can be sorted in ascending (A-Z) or descending (Z-A) order.

If you sort your rows by more than one column, the first column is ordered first, then the second column is ordered within the order of the first column, and so on. The Sort Conditions dialog box displays when you add a sort condition in a prompted query. Fields on this dialog box include:

Columns in result set
Displays the columns in the prompted query. If you are adding a sort condition, you can select one or more columns. If you are changing a sort condition, you can select only one column.

Other available columns
Displays other columns from within other available tables in the prompted query.

Enter a condition here
Enter a sort condition here.

Note: Only sort conditions are supported.

Sort direction
Applies an ascending (lowest-to-highest) or descending (highest-to-lowest) sort order to all the selected columns in the column list.

Procedure

1. In the Sort conditions section of the Prompted Query document, click **Add**.

   The Sort Conditions dialog box opens.
2. Select any of the following:
   - the column by which you want to sort
   - additional columns from the selected tables
   - any additional sort conditions
   - the direction in which to sort the results (ascending or descending)
3. Click **Add**.

   The sort column is added to the prompted query. The Prompted Query document appears with the new sort conditions listed.
4. Add any additional sort conditions to the query and click **Close**.

Using row conditions

Add row conditions if you want to view only certain rows in a table. If you do not use row conditions, all the rows in the table are displayed.

The following row conditions are available:

- `EQUAL TO`
- `LESS THAN`
- `LESS THAN OR EQUAL TO`

- BETWEEN
- STARTING WITH
- ENDING WITH
- CONTAINING
- NULL

Row conditions are controlled by the following operators:

- IS
- IS NOT

Procedure

1. In the Row conditions section of the Prompted Query document, click **Add**.

   The Row Conditions dialog box opens.
2. Select the parts of the conditional statement and click **Add**.

   Then the row condition is added to the prompted query.

Table 6. Specify row condition

Part of the row condition	Function
Left side	Select the column you want to examine
Operator	Determine the relationship between the left- and right sides of the row
Right side	Enter the condition for which you want to check

3. Add any additional row conditions to the query.
4. Click **Close**.

   The Prompted Query document displays with the new row conditions.

Using multiple tables in prompted queries

You can include information from more than one table in a prompted query.

You must relate the two tables, specifying one or more join conditions in each. Only rows from the tables where the join columns are equal are included in the results. The data type of each column in a join condition must match. Once you specify a relationship between two columns, QMF for Windows remembers the relationship and suggests it in future queries, which makes the creation of subsequent queries simpler and more efficient.

The Join Columns dialog box displays when you:

- Edit a join condition, or
- Add a join condition and there are only two tables specified in a prompted query

Note: You must specify a join condition when there are only two tables specified in a prompted query.

Table 7. Join conditions dialog

Field	Description
Left column list	Displays the columns in one of the selected tables
Right column list	Displays the columns in the other selected tables
Add	Enabled when you are adding a join condition. Click **Add** to add the join condition to the prompted query. This control is disabled until you select one column from each list.
Cancel	Cancels the current action and closes this dialog box without applying any changes to the prompted query
Close	Closes this dialog box

Creating prompted query join conditions

1. In the Tables section of the Prompted Queries window, click **Add** to add at least two tables.

   Note: If you have never joined tables, the Join Tables dialog box opens. Otherwise, QMF for Windows suggests the join condition you used previously.
2. Select a column with the same data type from each table.
3. Click **Add**.

   The new join condition appears in the prompted query.

Prompted queries and SQL

You can use the prompted query interface to learn SQL.

Viewing SQL for prompted queries

From the prompted query view, click **View SQL** on the toolbar.

The equivalent SQL statement for the prompted query appears. You cannot modify the SQL statement from this view.

Converting prompted queries to SQL

You can convert a prompted query to a new SQL query document. The new SQL query can be modified, saved, printed, and run.

From the Query menu, click **Convert to SQL**. The query is converted to a new SQL query document.

Using substitution variables in prompted queries

Substitution variables can be used in a prompted query in the same way as in an SQL query. See "Substitution Variables in SQL Queries."

For example, substitution variables can be used in:

- a row condition

  DEPT Is Greater Than Or Equal To &MINDept
- a column specification

  &InputNum

Saving prompted queries

Prompted queries can be saved in files on your PC, on a file server, or at a database server.

Saving prompted queries to files

1. From an open prompted query, click **Save** on the toolbar.

   Note: If the query has been saved, it is saved again. If the query has not been saved, the Save As dialog box opens.
2. Enter the name of the file where you want the prompted query stored.
3. Click **OK**.

   The query is saved.

Open saved prompted query files

1. Click **Open** on the toolbar.

   The Open dialog box opens.
2. Select the file you want to open.
3. Click **OK**.

   The prompted query opens in a new query document.

Saving prompted queries at the database server

1. From an open prompted query, click **Save at Server** on the toolbar.

   The Save Query dialog box opens.
2. Enter an owner, a name, select whether to share the saved query with other users.
3. Click **OK**.

   If a query with this name exists, you are prompted to overwrite the existing query.

Opening saved prompted queries at the database server

You can open prompted queries that have been saved at the database server.

1. Click **Open From Server** on the toolbar.

   The Open From Server dialog box opens.
2. Enter a server, owner, and name.
3. Click **OK**.

   The prompted query opens.

Printing prompted queries

You can print your prompted query. You can also print the SQL text of a prompted query. See "Printing SQL Queries."

Previewing prompted queries

You can preview the results or text of a prompted query before you print it.

1. Open a query and activate the prompted view.

   The query appears.
2. From the File menu, click **Page Setup**.

   The Page Setup dialog box opens.
3. Make changes to the page layout and click **OK**.
4. Click **Print Preview** on the toolbar.

   A preview of the printed query appears.

Chapter 4. Working with Query Results

You can apply formatting, grouping, and aggregation directly to query results. This formatting can be saved with the query, or exported as a form. Click anywhere on the query results to activate the Results menu.

There are two ways to format query results:

1. Select the cell, column or row you want to format. From the Results menu, select the type of formatting you want to apply.
2. Select the cell, column or row you want to format and right-click. The Results menu displays.

Formatting

Query results are displayed in the Query window when you run a query. There are several formatting options available to apply to a query result:

- set the color and font of the cells, rows, and columns
- group cells with summaries and no summaries
- display numeric data in currency, decimal, scientific, percent or user currency format
- set date and time format with a separator symbol of your choice
- save formatting as a default setting
- copy and paste formats to rows and columns
- go to specific or relative rows in a query result
- auto-fit columns and rows to content

Working with query results

Users can select, resize, reorder, and sort the data results from a query.

Results menu

Font

This option displays the Font dialog box (Detail tab) where you can change the display font attributes of your select within the results grid. This dialog displays the font attributes of your selection within the results grid. Other selected columns will appear in tabbed format under this dialog.

Note: Choosing Query: Set Font allows you to select the font for column and row headers.

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The Font dialog box (Detail tab) displays when you click Results: Font or right-click on a column.

Table 8. Font options

Field	Description
Font	The name of the font type
Font Style	The style of the font
Size	The size of the font
Foreground color	Sets the color of the text
Background color	Sets the color of the text is against
Sample	Displays a text sample of the current formatting
Apply to all tabs	Applies this formatting to all other font column information tabs. **Note:** When checked, formatting is automatically applied to all other columns. Other column tabs are disabled.
Set as Default	Sets the font, font style, and size as the default font. This font is used to display and print query results until you choose a new font or change the default.
Reset to Default	Returns the font formatting information to its default setting

Format

The Format dialog box (Detail tab) displays when you select a column and click Results: Format or when you right-click on a selected column. Use this dialog to set the formatting options for the selected column, such as horizontal alignment, vertical alignment, options (thousands separator, negative numbers, decimal places, apply to all tabs, which applies this formatting to all other font information tabs).

Note: The appearance of the Format dialog box differs, depending on whether you selected a column with character, numeric, date and time data.

Table 9. Format options

Field	Description
Format	The format of values in the column. • **For numeric data** Choose As Is, Currency, Decimal, Scientific, Percent or User Currency • **For character data** Choose As is, Hexadecimal or Binary • **For date and time data** As is, Windows, or The month, day and year (date), the hour, minute, and second (time), and a Separator symbol
Sample	Displays a sample of the current formatting
Horizontal alignment	Aligns the content of the column to the left, right or center of the cells
Vertical alignment	Aligns the content of the column to the top, bottom or center of the cells
Options	**For numeric data** • *Thousands separator* When checked, places a thousands separator in numeric values (the symbol is taken from Windows settings) • *Negative numbers* Choose the way negative numbers are displayed • *Decimal numbers* Choose the way decimal numbers are displayed **For character data** • *Wrap text* When checked, the contents of the cell will wrap to the next line within the cell **For date and time data** • *Separator symbol* Choose the symbol to display with the data and time format you choose • *12 hour mode* When checked, the time is displayed in a 12-hour interval indicated by AM or PM When unchecked, time is displayed in 24-hour format

Table 9. Format options (continued)

Field	Description
Apply to all tabs	Applies the formatting to all other column tabs
Set as Default	Sets this format as the default format. This format is used to display and print query results until you choose a new format or change the default.
Reset to Default	Returns the format information to its default setting.

No aggregation
Use this option to remove any aggregation or summary formatting from the selected column.

Group with summaries
Use this option to group the selected column with summary information. This moves the selected column to the left in the query results grid.

- Click on the top-right button to expand or collapse the cell, or
- Double-click on a cell to expand or collapse
- Hold down **Shift** and click the button for all rows to expand or collapse

Group with no summaries
Use this option to group the selected column without summary information.

- Click on the top-right button to expand or collapse the cell, or
- Double click on a cell to expand or collapse
- Hold down **Shift** and click on the button for all rows to expand or collapse

Count
This option summarizes the total number of values in the column.

First
Use this option to create a summary row showing the first value in the column.

Last
Use this option to create a summary row showing the last value in the column.

Maximum
Use this option to create a summary row showing the maximum value in the column.

Minimum
Use this option to create a summary row showing the minimum value in the column.

Sum
Use this option to create a summary row showing the sum of the values in the column.

Cumulative sum
Use this option to display the values in the column as a cumulative sum, with a summary.

Average
Use this option to create a summary row showing the average of the values in the column.

Standard deviation
Use this option to create a summary row showing the standard deviation of the values in the column.

Percentage of group
Use this option to display the values in the column as a percentage of the group's total, with a summary row showing the sum of the percentages.

Percentage of total
Use this option to display the values in the column as a percentage of the column total, with a summary row showing the sum of the percentages.

Cumulative percentage of group
Use this option to display the values in the column as a cumulative percentage value of the group total, with a summary row showing the sum of the percentages.

Cumulative percentage of total
Use this option to display the values in the column as a cumulative percentage value of the column total, with a summary row showing the sum of the percentages.

Copy formatting
Copy the formatting of the selected column.

Paste formatting
Paste the copied formatting to the selected column.

Reset all formatting
Reset all formatting of the query results.

Autofit
Autofit the contents of selected columns, all columns, all rows, or all (the contents of the results grid) to accommodate the cell with the largest string of data.

Sort

Ascending: Sort the contents of the results grid in lowest-to-highest order (such as A-Z).

Descending: Sort the contents of the results grid in highest-to-lowest order (such as Z-A).

Sort by: Sort the data in the results grid by a specific column, in ascending or descending order, by a specific sort type. You can specify sub-sorts to sort by additional columns.

Go-to

This dialog box displays when you select Results: Go to. Use this dialog box to navigate the rows of the query results grid.

Table 10. Go to options

Field	Description
Go to	Enter a numeric value
Absolute row	The query results grid will scroll down to the row number you have entered. For example, 17 will bring you to row 17.
Relative to current row	The query results grid will scroll down to the next number of rows from the row you have selected in the results grid. For example, if you select row 17 and enter 3, you go to row 20.
Percent of result set	The query results grid scrolls down to the percentage of the results grid you have entered. For example, if yo u enter 75, you will scroll down 75% of the results grid.

Display report

Select the form to use for displaying the report. Options are:

- default form
- from query
- from database
- from file
- from open document

Start cell contents

Open the contents of the selected cell in the appropriate Windows application (such as Notepad).

Note: This applies only if a file name is associated with the cell.

Retrieve all LOB values

Retrieve all large object (LOB) values in the query results.

Column LOB associations

Open the Column LOB Type Associations dialog box where you specify the applications associated with the large object (LOB) values in the column.

The Column LOB Type Associations dialog box opens when you select **Column LOB Associations** from the Results menu or by double-clicking on a LOB locator cell in the query results grid.

Table 11. LOB type options

Field	Description
File Extension	Displays the file extension of the LOBs in the column. The list options are drawn from those in the Windows Registry.
Mapping column	Displays the column containing mapping values and their corresponding extensions.

Click **Mapping** from the Column LOB Type Associations dialog box to display the File Extension Mapping dialog box.

Table 12. File extension mapping options

Field	Description
Mapping value	Display the value of the column to map to the LOB data. Edit a value by selecting the row and clicking **Edit** or by double-clicking the row under the mapping value column.
File extension	Display the file extension of the LOB to map. Edit an extension by double-clicking the row under the file extension column. **Note:** File extensions are first displayed as **.LOB**. You need to edit the file extension so that it corresponds to the mapping value. For example, if the mapping value is bitmap, then the file extension needs to be **.bmp**.

Save to database

Open the Save Data dialog box to save the query results to a database server table. You can run a query at one database server and save the query results to a table at a different database server.

Note: This command is available only when you are viewing query results.

Save to file

Export query results to a file with the file name, locations, and format you specify. This command opens the Export Data dialog box and is available only when you are viewing query results.

Send to

Send the current document to the specified application or target in your Send To: folder.

Selecting columns and rows

Once you have run a query, you can use the controls in the Results view to edit and select information.

Table 13. Select columns and rows

Column and row selectors	Function
Row selector	Click to select all the data in a row.
Column selector	Click to select all the data in a column.
Cell	Click directly on the cell to select it.
Scroll-to-bottom and Scroll-to-top buttons	Click to scroll to the top or bottom of a set of query results.

Resizing columns and rows

You can change the appearance of a set of query results by resizing its columns and rows.

You can apply formatting, grouping, and aggregation directly to query results. This formatting can be saved with the query, or exported as a form.

Table 14. Resize options

Option	Description
Sorting and sizing query results	You can select, resize, reorder, and sort the data results from a query
Selecting columns and rows	Once you have run the query, you can use the controls in the Results view to edit and select information.

Table 15. Query results options

Column and row selectors	Function
Row selector	Select all the data in a row.
Column selector	Select all the data in a column.
Cell	Click to select the cell.

Table 15. Query results options (continued)

Column and row selectors	Function
Scroll-to-bottom and Scroll-to-top buttons	Scroll to the top or bottom of the query results.

Resizing columns and rows

You can change the appearance of your query results by resizing its columns and rows.

1. Using the mouse select the black dividing line between two columns or two rows.
2. Drag the divider line from side to side or up and down to resize the column or row.

   Note: If you save the query after resizing its rows or columns, that query always displays using the new formatting.

Auto fitting columns and rows

You can size columns and rows to fit the data they contain.

Using the mouse, select an entire column or row and double-click on the black dividing line between it and the adjacent object. The column or row is resized to fit its data.

Note: If you save the query after resizing its rows or columns, that query displays using the new formatting.

Sorting query results

Once you have run a query, you can sort the results alphabetically by column. Select one of the following methods:

- From the Results view of a query, select a column, then select Results: Sort Ascending.

  The query results are sorted in ascending order.
- From the Results view of a query, select a column and select Results: Sort Descending.

  The query results are sorted in descending order.

  Note: To apply more complex sorting to the selected column, select Results: Sort.

Reordering columns

From the Results view of a query, select a column and drag it to its new location. This changes the order of the columns in the query results.

The column appears in the new order.

Formatting query results

You can change the font used to display queries and query results. The choice of fonts varies according to what has been installed on your computer. For more information on adding fonts, refer to your operating system's help facility.

Note: If you save the query after selecting a new query results display font, those results are always displayed using the new font.

Selecting the query results display font

1. From the Results view, select Results: Set Font.

   The Font dialog box opens.
2. Select the font and type size for displaying the results of the query.
3. Click **OK**.

   The query results display in the selected font.

   Note: Click **Set As Default** to use the selected font as the default font for all query results.

Formatting numeric query results

1. From the Results view, select a column containing numeric values and select Results: Format.

   The Format dialog box opens.
2. Specify the formatting that you want to apply.
3. Click **OK**.

   The values are formatted according to your selection.

   Note: Click **Set As Default** to use the selected font as the default font for all query results.

Converting query results formatting to a form

1. From the Results menu, select **Display Report**.

   The Select Form dialog box opens.
2. Select **From Query**.
3. Click **OK**.

The query results formatting is converted to a form and opened in a new form window.

Grouping and aggregating query results

You can apply grouping, aggregation, and summary formatting to query results.

1. Select the column that you want to group.
2. From the **Results** menu, select the type of grouping that you would like to apply.

   The column is grouped according to your selection.

Summarizing query results

You can summarize query results by column:

1. Select the column that you want to group.
2. From the Results menu, select the type of summary that you would like to apply.

   The column is summarized according to your selection.

Saving query results and formatting

You can save query results and save the formatting as a form.

Saving query results as a table

You can save query results as a table at a database server.

1. From the Results menu, select **Save to Database**.

   The Save Data dialog box opens.
2. Enter an owner and table name.
3. Click **OK**.

   The query results are saved as a table at the database.

Saving query results to files

You can save query results to a file on your PC or a file server.

1. From the Results menu, select **Save to File**.

   The Export Data dialog box opens.
2. Specify the location to which you want to save the file, any export options.
3. Click **OK**.

   The query results are saved to a file.

Previewing query results

1. Open and run a query.
   The query results appear.
2. From the File menu, select **Page Setup**.
   The Page Setup Dialog box opens.
3. Make changes to the layout of the page.
4. Click **OK**.
5. Click **Print Preview** on the toolbar.
   A preview of the printed query results appears.

Printing query results

1. Open a query and activate the **Results** view.
   The query results appear.
2. From the File menu, select **Page Setup**.
   The Page Setup Dialog box opens.
3. Make changes to the layout of the page.
4. Click **OK**.
5. Click **Print** on the toolbar.
   The query results are printed.

Chart options

This dialog box displays when you select **Display Chart** from the Results menu. Use this dialog to define graphical attributes for charts created from forms. These forms were created from query results. You can also display the Chart Options dialog box when you click **Display chart** from the Form menu.

The following fields are found on this dialog box:

Title

Report page heading

The title of the report. The report page heading is used as the report title, by default.

Text

Enter your own title for the chart.

Labels

Category (x) axis

The label to include on the category, or horizontal, axis of the report.

Value (y) axis
The label to include on the value, or vertical, axis of the chart.

Dimensions

Width
The width of the chart, in pixels.

Height
The height of the chart, in pixels.

Working with LOBs

QMF for Windows can retrieve LOBs from a database, export LOB data to your PC, and save LOBs to a database. With this feature, you can insert data types such as text, graphics, audio, video, mixed media, and photo images.

Because these data types take up memory, DB2 provides three data types to store these data objects as strings of up to two gigabytes. These include:

- Binary large objects (BLOBS)
- Single-byte character large objects (CLOBs)
- Double-byte character large objects (DBCLOBs)

LOBs can be retrieved from a database and edited in an application that supports the file type you retrieved. For example, a bitmap can be edited in Microsoft Paint (R), as long as Paint is installed on your computer. LOBs are stored in QMF for Windows tables and you manipulate the LOBs as you would any other type of data stored in a QMF for Windows table. LOBs are supported by DRDA®¬, CLI, and ODBC connections. For each server, LOB support is determined by which connection is used. For example, a DRDA connection does not support LOBs for all UPB servers. For a UPB server, however, LOBs are supported by a CLI connection.

Features

The features include:

- LOBs can be retrieved from a database and exported to your PC
- you can insert files such as bitmaps and .gifs to your query results
- you can edit LOBs in the appropriate application

  For example, a bitmap can be edited in Microsoft« Paint«, as long as it is installed on your computer.
- LOBs are stored in QMF for Windows tables on a database and you call the LOB as you would any other type of data stored in a QMF for Windows table
- LOBs can be retrieved only through a CLI connection

LOB data can be:

- viewed
- edited
- exported as an IXF, TXT, or HTM file

  Note: Exporting as an IXF file is recommended.
- included in HTML reports
- saved to the database

Retrieving LOBs from a database

Follow these steps to call LOBs from the database:

1. Run the query or procedure to call the table where the LOB is stored on the database.

   The table with the LOB data is retrieved from the server.

   Note: The picture column is labeled with "LOB Locator."

   The QMF for Windows status bar at the bottom of the screen may display the message, `All rows retrieved, more LOB data to retrieve.` This is because transferring LOB data can be resource-intensive. By default, QMF for Windows returns LOB locators that refer back to the actual data on the database. The LOB data will be retrieved on demand or when a function requires it.
2. Optionally, select View Menu: Options to adjust the default behavior when retrieving LOBs.

   The Options dialog box displays.
3. Click the LOB tab to change the default options.
4. Check *Override LOB options, if possible* to make changes in the LOB tab.

   Note: You can do this only if your database administrator has granted override authority to you.

View and Edit LOB data

Viewing and editing LOB data is similar. Editing allows you to update the LOB on the server. Follow these steps to view or edit LOB data:

1. Double-click on a LOB locator cell.

   The Column LOB Type Associations dialog box displays. Use this dialog box to specify the Windows file format of the data.
2. Click **Mapping**.

   The File Extension Mapping dialog box displays.
3. Make changes under the File Extension column.
4. Enter the file extension that corresponds with the mapping value.

For example, if the mapping value is bitmap, change the file extension to **.bmp**.

5. Click **OK** to return to the Column LOB Type Associations dialog box.
6. Click **OK** on the Column LOB Type Associations dialog box.

   The dialog box closes. Also, the LOB opens in the designated application.

   Note: Certain applications display specific file extensions. Refer to the manual for your application to determine which files are supported.
7. Click **OK** when you finish editing the value, or click **Cancel** to end editing without saving any changes.

   A message box indicates how many rows in the database will be affected by the operation.
8. Click **OK** to accept changes, or **Cancel** to end the operation without affecting any rows in the database.

   A message box confirms the action was completed and displays how many rows in the database were affected.
9. Click **OK**.

   The LOB locators column now contains icons corresponding to the application.

   Note: Steps 7-9 are used only when editing.
10. Save to the server by choosing Results: Save to Database or by clicking **Save Data** on the toolbar.

Exporting LOB data

Map the file extensions before you export LOB data retrieved from the database (see *Viewing and Editing*). Once you do this, the export is similar to exporting ordinary data, but with LOB option specifications.

For example, you export a LOB bitmap and name it photo.htm, and save it as an HTML file (*.htm) in the Export Data dialog box.

For most LOB data, an HTML form may make the most sense because the file can be displayed as an HTML address for HTML reports and web pages. For more sophisticated web pages, use the HTML Form capabilities in QMF for Windows.

Procedure

Follow these steps to export LOB data into an IXF, TXT or HTML file:

1. Choose Results: Save to File or click **Export Data** on the toolbar.

   The Export Data dialog box displays.

2. Name the file and choose a file type (*.ixf, *.txt or *.htm) in the Save as Type list box.
3. Click **Options**.

   The Export Text/DEL Options (General tab) dialog box displays.
4. Click the LOBs tab.

   The Export Text/Del Options (LOB tab) dialog box displays.
5. Choose a directory and a naming convention for your LOB data (database name).
6. Click **OK**.

   The Export Data dialog box displays.
7. Click **Save** to save the file to the specified directory.

   When opened, the text file displays the LOB query results information that was exported from the query results grid. The HTML file displays an active link.
8. Click this link to display the LOB data in the appropriate application.

Zoom Edit

The Zoom Edit dialog box displays when you select a cell and press **Shift** + **F2**. Use this dialog to edit individual cells of data on the results grid.

There are two options for accessing the Zoom dialog box:

- Select a cell, right-click, and select **Zoom Edit**, or
- Select a cell and press **Shift** + **F2**

Fields

As is

Displays the data as it appears in the cell.

Advanced

This control toggles the Zoom Edit dialog box between simple and advanced mode.

- **Numeric editing**

  The Advanced button is disabled when you edit a numeric cell
- **Character editing**

  The **Advanced** button is enabled when you edit a character cell

When **Advanced** is enabled, another dialog appears and displays the *As is* data in hexadecimal or binary format.

Hexadecimal

The **Advanced** button displays the *As is* data in hexadecimal format. You can edit the hexadecimal numbers to change the *As is* data. Also, you can change the hexadecimal numbers by highlighting the *As is* data and making updates.

Binary

The **Advanced** button displays the *As is* data in binary format. You can edit the binary numbers to change the *As is* data. Also, you can change the binary numbers by highlighting the *As is* data and making updates.

Chapter 5. Building Reports

Reports are created by combining query results with formatting from a form.

Forms

Forms are sets of formatting instructions used to create, display, and print a report.

Form menu

Edit
Edit the contents and formatting of the form from the Form dialog box.

Check
Check the form for errors and warnings.

Perform check on OK
Validate the form automatically when you click **OK** in the Form dialog box. If the form is valid, the change is applied.

Convert to HTML form
Convert the active form to an HTML form.

View in a Web browser
View the active HTML report in your default Web browser.

Select query for data
Select the query document from which to get data for the report.

Refresh from query
This option becomes available if you created report using query. The option will refresh the report's format using the latest format of associated query.

For example, you run a query, receive a result set, and create a report from the result set. Then, you display the report and run the query. If you return to the query and make modifications, such as adding breaks or aggregations, when you return to the report, the result set will take on the format of the updated form.

Set server
Select the database server where you want the form to run.

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Set user information

Set your database server user ID, password, and accounting string for the form.

Set font

Change the display font attributes of your selection.

Understanding forms

Forms are composed of a number of components. These components can be edited in a form document.

Table 16. Form components

Component	Description
Main	The primary components of a form, including headings, footings, and breaks.
Breaks	Characteristics, content, and placement of up to six subtotal lines in a report.
Calculations	Report calculation expressions. **Note:** You must have IBM's ObjectREXX installed on your machine to use form calculations.
Columns	Appearance and formatting of columns in the report. Definable characteristics include column order, format, usage, indentation, and width.
Conditions	Conditional formatting constraints. For example, you can set the form to not display rows that do not meet certain characteristics.
Details	Report detail headings and body text. This is where you can combine or replace tabular data with free-form text to create form letters or address labels.
Final	Content and placement of your report's final text. For example, you can choose to include final text and summary data at the end of the report.
HTML	Content and placement of HTML tags and formatting in HTML reports.
Options	Miscellaneous appearance options for your report.
Page	Content and placement of the page heading and footing on your report.

Producing a report using a form

Reports are created by combining query results with the formatting options contained in a form. You can produce multiple reports from a single set of query results by repeating this process:

1. From the Query Results view, click **Display Report.**

The Select Form dialog box opens. Depending on the type of form you select in the Select From dialog box, you are asked to provide additional information.

2. Specify the file location or owner and name, or document title.
3. Click **OK**.

   The report is generated using the selected form and current query results.

Editing a form

The Form window provides many options for editing and formatting forms.

From an open form, display the Form menu. The Form menu lists options for editing and formatting your form. You can also edit any of these components by clicking the corresponding button on the toolbar.

Creating a form

These steps include sample data from the table `Q.STAFF`. Try experimenting with different settings to create your custom forms.

Step 1. Create a form

1. Run the following SQL query to retrieve the data to display in the report:

   ```
   SELECT * FROM Q.STAFF ORDER BY DEPT,NAME
   ```

   The query results appear.
2. Click **Display Report** on the toolbar.

   The Select Form dialog box opens.
3. Select the default form.
4. Click **OK**.

   QMF for Windows displays the default report.

   Note: To make changes to the default format, click one of the form component buttons on the toolbar. A button for each form component is displayed on the Form toolbar.

Step 2. Change column order

Select `NAME` as the first column in the report and `ID` as the second. The order of the columns is specified in the Columns component of the form.

1. Click **Columns** on the Form menu to display the Columns tab of the Form dialog box.
2. Change the sequence of a column by typing over the existing sequence value.
   - To make `NAME` the first column in the report, change its sequence number (the column in the list labeled Seq) to 1.

- To make ID the second column in the report, change its sequence number to 2.

3. Click **OK**.

   QMF for Windows displays the report with the new column order in the Form window.

Step 3. Change column headings

Set the first column heading to be EMPLOYEE and the second to be COMMISSION. Column heading text is specified in the Columns component of the form.

1. Click **Columns** on the Form menu to display the Columns tab of the Forms dialog box.
2. Change the column heading by typing over the existing column heading text.
   a. Change the first column heading to EMPLOYEE.
   b. Change the last column heading to COMMISSION.
3. Click **OK**.

   QMF for Windows displays the report with the new column headings in the Form window.

Step 4. Change the column format

Change the SALARY column to displayed with the appropriate currency symbol. The format of a column is determined by its edit code, which is specified in the Columns component of the form.

1. Click COLUMNS on the Form menu to display the Columns tab of the Forms dialog box.
2. Change the SALARY column edit code to D2 by typing over the existing edit code.
3. Click **OK**.

   QMF for Windows displays the report with the SALARY column using the appropriate currency symbol in the Form window.

Step 5. Add summary information

Divide the report into separate sections for each department. In addition, present the total SALARY and COMMISSION for each department at the end of each section. To do this, specify how we want each column in the report to be used. The usage of a column is determined by its usage code and is specified in the Columns component of the form.

1. Click **Columns** on the Form menu to display the Columns tab of the Forms dialog box.
2. To divide the report into sections based on DEPT, change the usage code of DEPT to BREAK1.

Usage codes beginning with the word BREAK produce a section break for the specified column. The number that follows the word BREAK determines the break level; up to six break levels are supported in a report.

3. Include a total SALARY and COMMISSION for each DEPT.
4. Change the usage code of SALARY and COMMISSION to SUM.
5. Include descriptive information at the end of each section break by clicking **Breaks** on the Form menu.
6. Specify break footing text on the Breaks tab of the Form dialog box. Set the first break footing line to Department Total.
7. Click **OK**.

   QMF for Windows displays the Form window.

Step 6. Add page headers and footers

Add a page heading and footing to the report. Page headings and footings are specified in the Page component of the form.

1. Click **Page** on the Form menu to display the Page tab of the Form dialog box.

   The top portion of this dialog is used to specify the page heading.
2. Set the first line of the page heading to Department Report and the second line to Total Salary and Commissions.
3. Choose how you want to align the heading.
4. The bottom portion of this dialog is used to specify the page footing. Set the first line of the page footing to End Of Page.
5. Choose how you want to align the footing.
6. Click **OK**.

   QMF for Windows displays the Form window.

Saving forms

You can save forms on your PC, on a file server, or at a database server.

Saving a form to a file

1. From an open form, click **Save**.
   a. If the form has been saved before, select **Save**.
   b. If the form has not been previously saved, the Save As dialog box opens.
2. Enter the name of the file where you want to store the form.
3. Click **OK**.

   The form is saved.

Opening saved form files

1. Click **Open** on the toolbar.

   The Open dialog box opens.
2. Select the file to open.
3. Click **OK**.

   The selected form opens in a new form document.

Saving forms at the database server

Forms saved at the server can be made accessible to other users. If you want to share your forms with other users, save them at the database server.

1. From an open form, click **Save at Server** on the toolbar.

   The Save Form dialog box opens.
2. Enter an owner, a name, and select whether to share the saved form with other users.
3. Click **OK**.

   The form is saved at the server.

   Note: If a form with this name exists, you are prompted to overwrite the existing form.

Opening saved forms at the database server

You can open forms that have been saved at the database server.

1. Click **Open From Server** on the toolbar.

   The Open From Server dialog box opens.
2. Enter a server, owner, and name.
3. Click **OK**.

   The form opens.

Printing reports

You can produce printed reports.

1. Open a form and click **Page Setup**.
2. Make changes to the layout of the page.
3. Click **OK**.
4. Click **Print Report** on the File menu.

   The report is printed.

Exporting reports

You can export a report to a file.

1. Open a form and click **Page Setup**.
2. May changes to the layout of the page.
3. Click **OK**.
4. Click **Export Report** on the File menu.
   The Export Report dialog box opens.
5. Enter the name of the file where you want the report stored.
6. Click **OK**.
   The report is exported.

Chapter 6. Working with Procedures

Linear procedures enable you to run queries, generate reports, edit data, and perform other functions by executing a single `RUN` command. For a complete listing of all the procedure commands supported by QMF for Windows, refer to the online help facility.

QMF linear procedures

A QMF Linear procedure is a QMF for Windows object that contains procedure commands instead of containing SQL commands. Where SQL manipulates data, procedure commands manipulate QMF objects (tables, queries, forms, and even other procedures). One way to define procedures is that the user is automating actions that would normally be done by clicking buttons and menu selections.

Procedures are sets of commands that enable the DBA or other users to run:

- queries
- print reports
- import data
- export data
- perform other functions

Like any other QMF object, procedures can be stored at the database server, or saved in a file locally or on a file server. All commands issued through procedures are governed by the resource limits you configured.

Running procedures

Procedures are used to execute multiple functions with one command.

Procedure menu

Run

Run the active procedure. A procedure is a set of commands that enable you to run queries, print reports, import and export data, and perform other functions with a single command.

Close all result windows

This option closes all result windows generated by the procedure so, when the procedure ends, no result windows will remain open.

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Close intermediate result windows

This option closes all intermediate result windows generated by the procedure so, as the procedure runs, no windows display until the procedure ends.

Uppercase

Format the procedure in uppercase text (if checked) or use the format provided.

Comment

Use this option to comment out a line in a procedure, typically a line that describes what a section of the procedure will do. The text that is commented will not be included when the procedure is run.

This option places two dashes (--) at the beginning of a line in the procedure, such as:

```
SET GLOBAL (DSQQW_RPT_USE_PS=0 dsqqw_rpt_font=terminal,
+dsqqw_rpt_font_sz=5, dsqqw_rpt_orient=1
run query potoole.testq
print report
--USE EOM FORM ONLY
```

Uncomment

Removes the commented line or lines. Once a line is uncommented, it will be read when the procedure is run.

This option removes the comment flag, two dashes (--), from the beginning of a line in the procedure, such as:

```
SET GLOBAL (DSQQW_RPT_USE_PS=0 dsqqw_rpt_font=terminal,
+dsqqw_rpt_font_sz=5, dsqqw_rpt_orient=1
run query potoole.testq
print report
THROUGH 01/01/06
```

Set server

Select the database server where you want the procedure to run.

Set user information

Set your database server user ID, password, and accounting string for the procedure.

Set font

Change the display font attributes for the selection.

Creating a linear procedure

Select New: Procedure from the File menu.

A new procedure document opens.

Creating a procedure with logic

1. Select New: Procedure from the File menu.

   A new procedure document opens.
2. Type an IBM Object REXX comment line as the first line of the procedure.

   IBM Object REXX comment lines begin with /* and end with */
3. Type the QMF procedure command for the procedure.

   Enter the QMF commands in uppercase and enclose the commands in quote marks.
4. Type the IBM Object REXX commands in the procedure.

Note: IBM Object REXX commands are run locally, not at the database server. IBM Object REXX must be installed locally.

Running a procedure at a database server

1. Open a new procedure document and type a set of commands, or open an existing procedure from a file or the database server.
2. Click the **Run Procedure** icon on the toolbar.

   The procedure runs.

Saving procedures

You can save procedures on your PC, on a file server, or at a database server.

Saving procedures to files

1. From an open procedure, click the **Save** icon on the toolbar or select File: Save.

   If the procedure has been saved before, the procedure is saved. If the procedure has not been previously saved, the Save As dialog box opens.
2. Enter the name of the file where you want the procedure stored and click **OK**.

   The procedure is saved.

Opening a saved procedure file

1. Click the **Open** icon on the toolbar or select File: Open.

   The Open dialog box appears.
2. Select the file you want to open and click **OK**.

   The selected procedure opens in a new procedure document.

Saving a procedure to the database server

1. From an open procedure, click the **Save at Server** icon on the toolbar.

   The Save Procedure dialog box opens.
2. Enter an owner and a name.

3. Specify whether to share the saved procedure with other users.
4. Specify whether to register the object in the Information Catalog.

   When checked, the object is registered with the Information Catalog in DB2 Warehouse Manager. See "Using the DB2 Warehouse Manager" below.
5. Click **OK**.

   The procedure is saved at the server and optionally registered with the Information Catalog in DB2 Warehouse Manager.

   If a procedure with this name already exists, you are prompted to overwrite the previously existing procedure.

Opening saved procedures at the database server

You can open procedures that have been saved at the database server.

1. Click the **Open From Server** icon on the toolbar.

   The Open From Server dialog box opens.
2. Enter a server, owner, and name.
3. Click **OK**.

   The procedure opens.

Using the DB2 Warehouse Manager

With QMF for Windows you can register a QMF for Windows object in the DB2 Warehouse Manager Information Catalog. This allows the object to be listed in and launched from the DB2 Warehouse Information Catalog.

How to register objects

QMF for Windows objects may be registered by one of the following methods.

Saving an object at the database server

1. Select File: Save at Server when saving the object for the first time.
2. Click *Register the object in the Information Catalog* (after you provide owner, name and other information about the procedure).

   The Save Procedure dialog box expands and displays additional Registration fields.

   a. **Register immediately**

      A registration request is sent immediately to the DB2 Warehouse Manager when the object is saved. The object is registered in Information Catalog at the same time it is saved at the database server.

      - Catalog

        The name of the DB2 Warehouse Manager Information Catalog to which the object will be registered. Your DB2 Warehouse Manager Information Catalog administrator can give you this information.
      - User ID

The user ID that you are using to register the object. This can be the same as your database user ID.

- Password

  The password that you are using to register the object. The password can be the same as your database password.

b. **Register later**

Bundle the object registration information into a tag file to wait for registration by your DB2 Warehouse Manager Information Catalog administrator.

- Tag file

  The location and file name of the tag file containing the registration information of the object to be saved. Your DB2 Warehouse Manager Information Catalog administrator can provide location and file name information.

  Windows generates a tag file that the user places in a folder designated by the Information Catalog administrator. The administrator uses the Information Catalog to import this tag file which registers the object.

Selecting an object from an object list

You can select multiple QMF for Windows objects to be registered simultaneously.

1. Select an object.
2. Click List: Register in Information Catalog.

   The Register Objects in Information Catalogs dialog displays.
3. Select a registration option:
   - **Register immediately**

     A registration request is sent immediately to the DB2 Warehouse Manager when the object is saved. The object is registered in Information Catalog at the same time it is saved at the database server.

     – Catalog

       The name of the DB2 Warehouse Manager Information Catalog to which the object will be registered. Your DB2 Warehouse Manager Information Catalog administrator can give you this information.

     – User ID

       The user ID that you are using to register the object. This can be the same as your database user ID.

     – Password

       The password that you are using to register the object. The password can be the same as your database password.
   - **Register later**

Bundles the object registration information into a tag file to wait for registration by your DB2 Warehouse Manager Information Catalog administrator.

– Tag file

  The location and file name of the tag file containing the registration information of the object to be saved. Your DB2 Warehouse Manager Information Catalog administrator can provide location and file name information.

  Windows generates a tag file that the user places in a folder designated by the Information Catalog administrator. The administrator uses the Information Catalog to import this tag file which registers the object.

Printing procedures

You can print the text of a procedure.

Previewing a procedure

1. Open a procedure.

   The procedure commands appear.
2. Select File: Page Setup.

   The Page Setup Dialog box opens.
3. Change the page layout.
4. Click **OK**.
5. Click the **Print Preview** icon on the toolbar.

   A preview of the printed procedure appears.

Printing a procedure

1. Open a procedure.

   The procedure commands appear.
2. Click File: Page Setup.

   The Page Setup Dialog box opens.
3. Change the page layout.
4. Click **OK**.
5. Click the **Print** icon on the toolbar.

   The procedure is printed.

Procedure commands

You can create, edit, and run linear procedures and procedures with logic (IBM REXX procedures) from QMF for Windows. Procedures are sets of commands that enable you to run queries, print reports, import and export data, as well as perform other functions. Procedures can be stored at the database server, or saved in a file locally or on a file server. All commands issued through procedures are governed by your resource limits.

Procedure reference

Typically, each line of a procedure contains a single command. However, you can continue a command over multiple lines by placing a plus sign (+) as a continuation character in the first column of each additional line.

You can include comments in a procedure by entering two hyphens (--) on a line. All text following the hyphens through the end of the line is a comment and is not interpreted by QMF for Windows when running the procedure.

You can use substitution variables to parameterize a procedure. Each time you run a procedure, it is scanned for substitution variables before it is run. You must provide values for all substitution variables before you run the procedure. Values for substitution variables can come from a `RUN PROC` command, from global variables, or by displaying the Enter Substitution Variables dialog box.

The Enter Substitution Variables Values dialog box displays when you run a dynamic query that contains substitution variables. You use this dialog box to provide values for these variables. QMF for Windows substitutes the values you enter for the variables in the query and then sends the query request to the database server.

Enter the following information at the Enter Substitution Variables Values dialog box:

- **Name**

  The name of the substitution variable. You cannot modify the variable name.

- **Value**

  The value to use for this substitution variable. QMF for Windows textually substitutes the value for each variable in the SQL statement before it sends the statement to the database server.

  Note: Enclose character values in quotation marks.

Current objects

Many procedure commands operate on named objects in the database or current objects in open documents (referred to as "temporary storage").

The *current query object* is the most recently activated SQL or prompted query document. The *current form object* is the most recently activated form document. The *current procedure object* is the most recently activated procedure document The *current report object* is a synonym for the current form object. The *current data object* is the most recently activated SQL or prompted query document with query results.

Reading syntax diagrams

The procedure command syntax diagrams read from left to right, top to bottom. Each command starts with ">>" and ends with "<<". If a command is continued from one line to the next, the first line ends with ">" and the next line begins with ">".

A command can have two types of parameters:

1. **Positional parameters** must be placed in a certain position within a command.
2. **Keyword parameters** are assigned a value and can be placed in any order within a command.

   The first keyword parameter used in a command must be preceded by a left parenthesis.

No parameter can be longer than 80 characters. All parameters are separated by commas. A right parenthesis is not required, but can be used to end the command.

Required Parameters

Parameters are on the main path if they are required.

```
>>-- CONNECT TO ServerName ----------------------------------------------<<
```

When one parameter is on the main path with others listed below, you must choose at least one from the list.

```
>>-- DISPLAY --- QUERY ---------------------------------------------------<<
              +- FORM ---+
              +- PROC ---+
              +- REPORT -+
```

Optional Parameters

When a parameter is shown below the main path, it is optional. When all parameters are shown in a list below the main path, you can specify any one of them or none.

```
>>-- ERASE ------------- ObjectName -------------------------------------<<
            +- QUERY -+
            +- FORM --+
            +- PROC --+
            +- TABLE -+
```

Sometimes two values are separated by a forward slash (/). This indicates that one of the two values must be entered:

```
>-----------------------------------------------------------------------<<
  +- ( CONFIRM = YES/NO -+
```

BOTTOM command

BOTTOM scrolls to the last row of a query result set. This command is equivalent to FORWARD MAX.

Syntax

```
>>-- BOTTOM ------------------------------------------------------------<<
```

Example

```
BOTTOM
```

CONNECT command

CONNECT will establish a connection to a database server. Subsequent procedure commands will run at the specified server. The running procedure's server will also be changed to the specified server. No immediate action is taken upon any other current objects within the procedure. However, subsequent commands which affect those objects may result in additional processing.

Example

Assume query Q1 has been run but not completed at server X. The CONNECT TO 'SERVER Y' command is then issued, connecting to server Y. Next, the SAVE DATA AS T1 command is issued.

Query Q1 is not immediately affected by the CONNECT command to server Y, but the SAVE DATA command requires completion (or cancellation) of query Q1 at server X. Once the data object is completed, the server for query Q1 is changed to Y, and the data is saved in table T1 at server Y.

Syntax

```
>>-- CONNECT TO ServerName ----------------------------------------------<<
```

Table 17. CONNECT command parameter

Parameter	Description
ServerName	The name of a database server. **Note:** Enclose the server name in quotes if the name includes spaces.

Example

```
CONNECT TO SERVER1
```

CONVERT command

`CONVERT` will convert a prompted query to a new SQL query. The original query (whether a named object in the database or a temporary object) is unaffected by this operation.

Syntax

For a target object in the database:

```
>>-- CONVERT ------------- QueryName -------------------------------------<<
             +- QUERY -+
```

For a temporary target object:

```
>>-- CONVERT QUERY -------------------------------------------------------<<
```

Example

```
CONVERT QUERY
```

DISPLAY command

`DISPLAY` will display an object in temporary storage or an existing object that was saved in the database. `DISPLAY` for an object in temporary storage will act only upon the current object; there is no way to `DISPLAY` an object from temporary storage that is not the current object.

For example, consider the following procedure:

```
DISPLAY QUERY Q1
DISPLAY QUERY Q2
DISPLAY FORM F1
DISPLAY QUERY
```

After this procedure runs, query Q2 is the active window, and is the current query object. Query Q1 is inaccessible from any command accessing temporary storage. F1 is the current form object and is accessible from a command accessing the current form object in temporary storage. For example, `DISPLAY FORM` would display F1.

Syntax

For a target object in the database:

```
>>-- DISPLAY ------------- ObjectName -----------------------------------<<
              +- QUERY -+
              +- FORM --+
              +- PROC --+
              +- TABLE -+
```

For a temporary target object:

```
>>-- DISPLAY --- QUERY ---------------------------------------------------<<
              +- FORM ---+
              +- PROC ---+
              +- REPORT -+
```

Example

```
DISPLAY QUERY USER1.QUERY1
```

DRAW command

DRAW creates a basic query for a table based on the description of the table in the database.

Syntax

```
>>-- DRAW TableName -----------------------------------------------------<<
                     +- ( --- TYPE = --- SELECT -----+
                           |          +- INSERT -+   |
                           |          +- UPDATE -+   |
                           +- IDENTIFIER = CorrName -+
```

Table 18. DRAW command parameters

Parameter	Description
TableName	The name of the table for which to create a query.
TYPE	Specifies the type of SQL query to create. The default is SELECT.
IDENTIFIER	The correlation name to be associated with the table in the resulting query. It is ignored when TYPE=INSERT. There is no default.

Example

```
DRAW Q.STAFF (TYPE=SELECT
```

ERASE command

ERASE removes a query, form, procedure, or table from the database.

Syntax

```
>>-- ERASE ------------- ObjectName -------------------------------------<<
            +- QUERY -+              +- ( CONFIRM = YES/NO -+
            +- FORM --+
            +- PROC --+
            +- TABLE -+
```

Table 19. ERASE command parameters

Parameter	Description
ObjectName	The name of the object to remove from the database.
CONFIRM	Specifies whether or not to display a confirmation dialog before removing the object. If CONFIRM is not specified or is NO, the corresponding resource limit is used.

Example

```
ERASE QUERY USER1.QUERY1
```

EXPORT command

EXPORT copies objects from the database or temporary storage to a file.

Syntax

For a target object in the database:

```
>>-- EXPORT --- QUERY --- ObjectName TO FileName ------------------------<<
             +- PROC --+                          +- ( CONFIRM = YES/NO -+

>>-- EXPORT FORM ObjectName TO FileName ----------------------------------->


>-----------------------------------------------------------------------<<
  +- ( --- CONFIRM = YES/NO -----------+
       +- LANGUAGE = ENGLISH/SESSION -+


>>-- EXPORT TABLE ObjectName TO FileName ---------------------------------->
                                          +- ( --- CONFIRM = YES/NO -+
                                                +- DATAFORMAT = IXF -+
```

For a temporary target object:

```
>>-- EXPORT --- QUERY --- TO FileName ------------------------------------<<
             +- PROC --+               +- ( CONFIRM = YES/NO -+


>>-- EXPORT FORM TO FileName ---------------------------------------------<<
                              +- ( --- CONFIRM = YES/NO -----------+
                                    +- LANGUAGE = ENGLISH/SESSION -+


>>-- EXPORT DATA TO FileName ---------------------------------------------<<
                              +- ( --- CONFIRM = YES/NO -+
```

```
                                        +- DATAFORMAT = QMF/IXF/TEXT/HTML/CSV -+
                                        +- OUTPUTMODE = BINARY/CHARACTER/PC -+
                                        +- LOBSINFILE = YES/NO -+
                                        +- LOBSTO = path1;path2; -+
                                        +- LOBFILE = basefile1;basefile2; -+


>>-- EXPORT REPORT TO FileName -------------------------------------------<<
                                  +- ( --- CONFIRM = YES/NO --+
                                        +- DATAFORMAT = QMF/HTML/TEXT -+
```

Table 20. EXPORT command parameters

Parameter	Description
ObjectName	The name of the object to export from the database.
FileName	The name of the file to which to export the object.
CONFIRM	Specifies whether or not to display a confirmation dialog before replacing an existing file. If CONFIRM is not specified or is NO, the corresponding resource limit is used.
LANGUAGE	Specifies whether a form is exported in English or in the current session language. A form that is exported in English can be run in any NLF session. A form exported in the session language can only be run in a session of the same language. The default value is provided by the DSQEC_FORM_LANG global variable.
DATAFORMAT	Specifies the file format of the exported data. If you omit this parameter, the DSQQW_EXP_DT_FRMT global variable supplies the format to be used. It can be set to any of '0' (text format), '2' (HTML format), '3' (CSV format), or '4' (IXF format). If you specify IXF, the DSQQW_EXP_OUT_MDE global variable can be set to either '0' for character mode System/370™ IXF or '1' for PC/IXF. **For Reports** QMF format is not supported in the Windows environment. HTML format adds the <PRE> tag. TEXT is for a text-based file.
OUTPUTMODE	Specifies the output format of the data.
LOBSINFILE	Specifies whether or not LOBs are included in the exported data.
LOBSTO	The location to save the LOBs.
LOBSFILE	The base name of the exported LOBs.

Example

```
EXPORT QUERY USER1.QUERY TO C:\Queries\query1.qry
```

FORWARD command

FORWARD scrolls forward in a query result set. The only acceptable parameter for this command is MAX, making it equivalent to BOTTOM.

Syntax

```
>>-- FORWARD MAX -------------------------------------------------------<<
```

Example

```
FORWARD MAX
```

IMPORT command

IMPORT copies data from a file into temporary storage or the database.

Syntax

For a target object in the database:

```
>>-- IMPORT --- QUERY --- ObjectName FROM FileName ------------------------>
             +- PROC --+

>-----------------------------------------------------------------------<<
  +- ( --- CONFIRM = YES/NO ---+
       +- COMMENT = Text ---+
       +- SHARE = YES/NO ---+


>>-- IMPORT FORM ObjectName FROM FileName ---------------------------------->

>-----------------------------------------------------------------------<<
  +- ( --- CONFIRM = YES/NO -------------+
       +- COMMENT = Text -------------+
       +- LANGUAGE = ENGLISH/SESSION -+
       +- SHARE = YES/NO -------------+
>>-- IMPORT TABLE ObjectName FROM FileName -------------------------------->
>-----------------------------------------------------------------------<<
  +- ( --- CONFIRM = YES/NO ----------+
       +- COMMENT = Text ----------+
       +- ACTION = REPLACE/APPEND -+
```

For a temporary target object:

```
>>-- IMPORT --- QUERY --- FROM FileName ---------------------------------<<
             +- PROC --+
             +- FORM --+
             +- DATA --+
                +- LOBSFROM = path1;path2; -+
```

Table 21. IMPORT command parameters

Parameter	Description
ObjectName	The name of the object to import into the database.
FileName	The name of the file from which to import the object.

Table 21. IMPORT command parameters (continued)

Parameter	Description
CONFIRM	Specifies whether to display a confirmation dialog before replacing an existing object. If `CONFIRM` is not specified or is NO, the corresponding resource limit is used.
COMMENT	Specifies a comment with the imported object. Enclose the text in quotes.
SHARE	Specifies whether other users are allowed to use the imported object.
LANGUAGE	Specifies whether a form is imported in English or in the current session language. A form that is imported in English can be run in any NLF session. A form that is imported in the session language can only be run in a session of the same language. The default value is provided by the DSQEC_FORM_LANG global variable.
ACTION	Specifies whether to replace the entire database table or append data to the existing table.
LOBSFROM	The LOBs location

Example

```
IMPORT QUERY FROM C:\Queries\query1.qry
```

PRINT command

`PRINT` prints a copy of an object in temporary storage or from the database.

Syntax

For a target object from the database:

```
>>-- PRINT ------------- ObjectName -------------------------------------<<
            +- QUERY -+              +- PRINTER = Printer -+
            +- PROC --+
            +- TABLE -+
```

For a temporary target object:

```
>-- PRINT --- QUERY -------------------------------------------------------<<
            +- PROC --+ +- PRINTER = Printer -+
            +- TABLE -+


>>-- PRINT REPORT -------------------------------------------------------<<

>-----------------------------------------------------------------------<<
  +- ( --- DATETIME = YES/NO ----------+
       +- PAGENO = YES/NO ------------+
       +- PRINTER = Printer ----------+
```

```
+- FORM = --- FORM ------------+
           +- FormName --------+
+- COPIES = NumChars ----------+
+- TYPEFACE = fontname --------+
+- SIZE = NumChars ------------+
+- BOLD = YES/NO --------------+
+- ITALIC = YES/NO ------------+
+- CHARSET = ANSI/DEFAULTS/SYMBOL/SHIFTJIIS/GB2312/ -------+
            HANGUEL/CHINESEBIG5/OEM/JOHAB/HEBREW/ --------+
            ARABIC/GREEK/TURKISH/THAI/EASTEUROPE/ --------+
            RUSSIAN/MAC/BALTIC/ --------------------------+
+- ORIENTATION = PORTRAIT/LANDSCAPE -----------------------+
+- USEFORMPS = YES/NO ----------+
+- LENGTH = NumChars/CONT/AUTO -+
            +- CONT -----------+
+- WIDTH = NumChars/CONT/AUTO --+
```

Table 22. PRINT command parameters

Parameter	Description
ObjectName	The name of the object to print.
DATETIME	Whether to include the current date and time in the page footing. When you print a report, the date and time are printed in the page footing unless you specify `DATETIME=NO` or include the `&DATE` or `&TIME` variables in the page text in the form. If included, the date and time are formatted according to the current Windows regional settings.
PAGENO	Whether to include page numbers in the page footing. When you print a report, page numbers are printed in the page footing unless you specify `PAGENO=NO` or include the `&PAGE` variable in the page text in the form.
PRINTER	The name of the printer on which to print the object or report.
FORM	The form to use when generating the report. You can specify the keyword FORM to use the current form object, or specify the name of a form saved in the database.
COPIES	The number of copies to print when printing the object.
TYPEFACE	The font type face to use when printing the object.
SIZE	The font size to use when printing the object.
BOLD	Whether to use bold text when printing the object.
ITALIC	Whether to use italic text when printing the object.
CHARSET	The character set to use when printing the object.
ORIENTATION	The paper orientation of the printed object.
USEFORMPS	Whether to use the Windows form associated with the object.

Table 22. PRINT command parameters (continued)

Parameter	Description
LENGTH	LENGTH is one of the following: • The maximum number of lines to print on each page (from 1 to 999) • CONT (to cause continuous printing without page breaks) • AUTO If LENGTH is omitted, the values of the `DSQQW_RPT_LEN_TYP` and `DSQQW_RPT_NUM_LINES` global variables are used.
WIDTH	WIDTH is one of the following: • The maximum number of characters to print on each line (from 1 to 999) • CONT (to cause continuous printing without page breaks) • AUTO When you print a report, lines longer than WIDTH are formatted on a subsequent page.

Example

```
PRINT QUERY
PRINT REPORT (LENGTH=60, DATETIME=NO
```

RESET GLOBAL ALL command

`RESET GLOBAL ALL` deletes the names and values of global variables that have been set using the `SET GLOBAL` command.

Syntax

```
>>-- RESET GLOBAL (Variable1, Variable2 ... -------------------------<<
```

or

```
>>-- RESET GLOBAL ALL ----------------------------------<<
```

Table 23. RESET GLOBAL ALL command parameters

Parameter	Description

VariableName	The names of specific variables to be deleted. You can name up to 10 variables previously set by the `SET GLOBAL` command.
	
	ALL deletes the names and values of all variables previously set by the `SET GLOBAL` command. If you do not have several global variables defined, or you do not remember the names of your global variables, you can use this parameter to reset all global variables at one time. Variables whose names begin with **DSQ** are restricted, and cannot be deleted.
	Note: You can use global variables in queries, procedures, and forms, but not in the DB2 Table Editor.
	
	When you issue `RESET GLOBAL ?`, a prompt is displayed. Here, fill in the names of the variables you want to reset.
	
	On the Global Variable List dialog, you can reset a variable by positioning your cursor on the line you want to delete and pressing Delete.
	
	For example, to delete the values for all global variables that were previously set, type:
	`RESET GLOBAL ALL`
	
	To delete the values only for the variables named DEPT and LOCATION, type:
	`RESET GLOBAL (DEPT LOCATION`

Example

```
RESET GLOBAL (Variable1, Variable2
```

or

```
RESET GLOBAL ALL
```

RUN command

`RUN` executes procedures or queries from temporary storage or the database.

Syntax

For a target object from the database:

```
>>-- RUN ------------- ObjectName --------------------------------<<
          +- QUERY -+              +- ( --- &&Variable = Value ----+
                                          +- CONFIRM = YES/NO ------+
                                          +- FORM = --- FORM -------+
                                          |          +- FormName -+ |
```

```
                                        +- ROWLIMIT = NumRows-----+

>>-- RUN ------------ ObjectName ----------------------------------------<<
         +- PROC -+              +- ( &&Variable = Value ... -+
For a temporary target object:
>>-- RUN QUERY -------------------------------------------------------<<
                +- ( --- &&Variable = Value ----+
                      +- CONFIRM = YES/NO ------+
                      +- FORM = --- FORM -------+
                      |          +- FormName -+ |
                      +- ROWLIMIT = NumRows/NO -+

>>-- RUN PROC -------------------------------------------------------<<
               +- ( &&Variable = Value ... -+
```

Table 24. RUN command parameters

Parameter	Description
ObjectName	The name of the query or procedure to run.
&&Variable	Assigns a value to a variable in the query or procedure that is run. The variable name can be from 1 to 17 characters long and the value can be from 1 to 55 characters long. You can specify any number of variables and values on the `RUN` command. The user will be prompted for the values of the variables if there are variables in the query or procedure that are not given values on the RUN command, and these variables are not global variables. Once a global variable it set, the variable can be used for an entire QMF for Windows session. A global variable can be used in a query, form, or procedure. When you include variable assignments in a procedure, you must use two ampersands (&&) to prevent variable substitution before the procedure is run.
CONFIRM	Specifies whether to display a confirmation dialog before replacing or changing an object as a result of this command. If CONFIRM is not specified or is NO, the corresponding resource limit is used. A resource limit specifies limits and controls that govern the use of database and communication resources by QMF for Windows users.
FORM	Specifies a form to use when generating a displayed report using the data retrieved by the query. You can specify the keyword FORM to use the current form object, or specify the name of a form saved in the database.
ROWLIMIT	Specifies the maximum number of rows to retrieve for the query.

Example

```
RUNQUERY USER1.QUERY1 (&&Var1=10
```

SAVE command

SAVE stores the contents of an object in temporary storage into the database.

Syntax

```
>>-- SAVE --- QUERY --- AS ObjectName -----------------------------------<<
          +- PROC --+                 +- ( --- COMMENT = Text ---+
                                            +- CONFIRM = YES/NO -+
                                            +- SHARE = YES/NO ---+


>>-- SAVE FORM AS ObjectName ---------------------------------------------<<
                              +- ( --- COMMENT = Text -------------+
                                     +- CONFIRM = YES/NO -----------+
                                     +- SHARE = YES/NO -------------+
                                     +- LANGUAGE = ENGLISH/SESSION -+


>>-- SAVE DATA AS TableName ----------------------------------------------<<
                     +- ( --- COMMENT = Text ----------+
                            +- CONFIRM = YES/NO --------+
                            +- METHOD = REGULAR/FAST --------+
                            +- SCOPE = NumChars --------+
                            +- ROWIDADD = YES/NO --------+

                            +- ROWIDNAME = Text ---------+
                            +- ROWIDDISP = ALWAYS/BYDEFAULT --------+
                            +- ROWIDDISPnnn = EXCLUDE/CONVERT/ALWAYS/BYDEFAULT+
                            +- ACTION = REPLACE/APPEND -+
```

Table 25. SAVE command parameters

Parameter	Description
ObjectName	The name to assign to the object (query, form, procedure, or table) when it is saved.
COMMENT	A comment with the saved object. Enclose the text in quotes.
CONFIRM	Whether to display a confirmation dialog before replacing or changing an object as a result of this command. If CONFIRM is not specified or is NO, the corresponding resource limit is used.
SHARE	Whether other users are allowed to use the saved object.
LANGUAGE	Whether a form is saved in English or in the current session language. A form that is saved in English can be run in any NLF session. A form that is saved in the session language can only be run in a session of the same language. The default value is provided by the DSQEC_FORM_LANG global variable.

Table 25. SAVE command parameters (continued)

Parameter	Description
METHOD	The method of saving the data. A regular save send data from the client back to the database server to be inserted into the table. Fast saved data reruns the query at the server and inserts the results directly into the table.
SCOPE	The commit scope of the data.
ROWIDADD	Whether to add the Row ID column to the table.
ROWIDNAME	The name to assign to the new Row ID column.
ROWIDDISP	The disposition of the new Row ID column.
ROWIDDISPnnn	The disposition of existing Row ID columns.
ACTION	Whether to replace the entire database table or append data to the existing table.

Example

```
SAVE QUERY AS USER1.QUERY1 (CONFIRM=NO
```

SEND TO command

`SEND TO` exports reports and data from the database or temporary storage and sends them to the specified target or application in your Send To folder.

Syntax

For a temporary target object:

```
>>-- SEND DATA TO Target -----------------------------------------------<<
                                   +- DATAFORMAT = IXF -+


>>-- SEND REPORT TO Target ----------------------------------------------<<
                                     +- DATAFORMAT = HTML -+
```

Table 26. SEND TO command parameters

Parameter	Description
Target	The name of the file to which to export the object. Targets containing space characters must be enclosed in single or double quotes.

Table 26. SEND TO command parameters (continued)

Parameter	Description
DATAFORMAT	The file format of the exported data or report. If you omit this parameter, the `DSQQW_EXP_DT_FRMT` global variable supplies the format to be used. It can be set to: • '0' (text format) • '2' (HTML format) • '3' (CSV format) • '4' (IXF format) If you specify IXF, the DSQQW_EXP_OUT_MDE global variable can be set to either '0' for character mode System/370 IXF or '1' for PC/IXF data.

Example

```
SEND DATA TO "Excel Shortcut"
```

SET GLOBAL command

`SET GLOBAL` sets the values of existing global variables or creates new variables and values. Any new global variables created exist for the entire QMF for Windows session (unless deleted manually).

Syntax

```
>>-- SET GLOBAL ( VariableName = Value, ... ----------------------------<<
```

Table 27. SET GLOBAL command parameters

Parameter	Description
VariableName	The name of the global variable to set or create. Global variable names can be from 1 to 17 characters long. Variables whose names begin with DSQ are restricted, and cannot be created or deleted.
Value	The value to give the global variable. The value can be from 1 to 55 characters long. The values of variables whose names begin with DSQ are restricted. See Working with Global Variables for more information.

Example

```
SET GLOBAL (Var1=abc, Var2=def
```

SHOW command

`SHOW` displays objects from temporary storage and is similar to `DISPLAY`.

- `SHOW QUERY`, `SHOW FORM`, and `SHOW PROC` activate the current query, form or procedure window.

- SHOW REPORT is a synonym for SHOW FORM.
- SHOW GLOBALS opens the Global Variables dialog box.

Syntax

```
>>-- SHOW --- FORM -------------------------------------------------------<<
           +- PROC ----+
           +- REPORT --+
           +- GLOBALS -+
>>-- SHOW QUERY ----------------------------------------------<<
                +- ( --- VIEW = SQL/PROMPTED/NATURAL/RESULTS/STATUS/ ----+
                          +- RESULTSET = NumChars -----------+
```

Table 28. SHOW command parameters

Parameter	Description
VIEW	Specifies the appearance of the target query.
RESULTSETS	The maximum number of characters in the result set.

Example

```
SHOW QUERY
```

WINDOWS command

The WINDOWS command activates the target Windows application, document, or URL.

Syntax

```
>>-- WINDOWS CommandLine ------------------------------------------------<<
```

Table 29. WINDOWS command parameters

Parameter	Description
CommandLine	An application command line, document name, or URL to launch. The command is launched and execution of the procedure continues without waiting for completion of the command.

Example

```
WINDOWS
c:\programs\notepad.exe
```

Sample procedure

The following sample procedure demonstrates how to display, run, and print a report using a query and form. It also creates a new query based on a table, runs that query, exports the data to a file, and saves the data in a table at a different database server.

```
SET GLOBAL (TABLE=SMITH.PAYROLL
DISPLAY QUERY SMITH.PAYROLL_QUERY
RUN QUERY (FORM=SMITH.PAYROLLFORM
PRINT REPORT
DRAW SMITH.PAYROLLTABLE (TYPE=SELECT
RUN QUERY
EXPORT DATA TO C:\TEMP\EXP1.IXF (DATAFORMAT=IXF

CONNECT TO 'OS/2 SERVERC'
SAVE DATA AS SMITH.DATASAVE
SHOW REPORT
```

Chapter 7. Working with Lists

Lists provide you with an easy way to view collections of QMF objects.

Objects

QMF for Windows recognizes four types of objects:

- Queries
- Forms
- Procedures
- Tables

You can use the List window to view the objects based on the object name, owner, and type.

Listing objects

1. Select File: New List.

   The List window opens.
2. Specify an owner and a name.

   Note: You can use patterns to select objects from a list of matching objects.
   - Use the percent character (%) to match a string of any length containing any characters. For example, to list all tables with a name beginning with the letter A, enter A%.
   - Use the underscore character (_) to match a single character. For example, to list all tables with an owner that has the letter A in the second position, enter _A%.
3. Select the type of object for which you are searching.
4. Click **Refresh List**.

   A list of matching objects saved at the database server is displayed.

List window commands

Right-clicking an object in the List window displays a list of commands identical to those on the List menu.

Display object

Opens the selected object for viewing. This option is available for queries, forms, procedures, and tables.

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Run object

Runs the selected object. This option is available for queries and procedures.

Draw object

Creates a query based on the selected table. You can draw an SQL SELECT query, an SQL UPDATE query, an SQL INSERT query or a prompted query. This option is available for tables.

Edit object

Opens the Table Editor for editing this table. This option is available for tables.

Properties

Displays the properties of the selected object, including comments, attributes, and historical usage information. This option is available for queries, forms, procedures, and tables.

Creating lists

You can create lists to serve as collections of objects. For example, you could create a list of all inventory-related queries, forms, procedures, and tables to keep your work in one place. Once created, you can add and remove objects from the list and save the list for future use.

Adding objects to lists

You can add objects to lists.

From an open list, specify the owner and name information of the objects that you want to add and click **Add to List** on the toolbar.

The objects matching the owner and name are added to the list.

Removing objects from lists

You can remove unrelated objects from lists.

From an open list, click **Remove** on the toolbar.

The object is removed from the list, but is not deleted.

Saving lists to files

1. From an open list, click **Save** on the toolbar.

   If the list has been saved before, the list is saved. If the list has not been previously saved, the Save As dialog box opens.
2. Enter the name of the file where you want the list stored and click **OK**.

   The list is saved.

Opening saved list files

1. Click **Open** on the toolbar.
   The Open dialog box opens.
2. Select the file that you want to open and click **OK**.
   The selected list opens in a list document.

Chapter 8. Working with Static Queries

A static query is an SQL query that has been previously passed to a database server and bound into a package. When a static query is run, the database server uses the SQL text bound in the package, rather than the SQL text currently appearing in the query window. Static queries are more resource efficient than dynamic queries, but static queries cannot be edited.

Static queries

Static queries are created from previously existing SQL and prompted queries.

Creating static queries

1. From the Query menu, select **Bind Static Package**.

   The Bind Static Package dialog box opens.
2. Select the Package tab, enter a collection ID and package name and change any other options.
3. If the query contains any substitution variables, select the Variables tab.
4. Replace any substitution variables with host variables.
5. Click **OK**.

   The static query is bound.

   Note: After you bind a query, you must also save that query to a file or to the database server.

Replacing substitution variables with host variables

When you bind a package, you must specify a host variable to use in place of each substitution variable in the SQL text. However, a substitution variable cannot always be directly replaced by a host variable. Substitution variables provide direct text substitution in the query text before the text is sent to the database server. Host variables are sent as part of the query to the database server. Refer to the documentation for your database server for rules on where and how host variables can be used in queries.

After you specify a relationship between a substitution variable and a host variable, QMF for Windows remembers the relationship, and suggests it in future queries, making binding packages simpler.

The valid data types for host variables are:

- CHAR(n)
- VARCHAR(n)

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- INTEGER
- SMALLINT
- FLOAT
- DECIMAL(p,s)
- DATE
- TIME
- TIMESTAMP

Procedure

1. From the Bind Static Package dialog box, select the Input Variables tab.
2. Enter the type of variable for each host variable and click **OK**.
   The substitution variables are converted to host variables.

Running a static query

You run static queries as you would any other queries. See “SQL Queries”.

Chapter 9. Working with the Table Editor

Use the table editor to search for, add, edit, or delete data stored in your tables without having to write SQL statements.

About the Table Editor

The table editor gives you flexibility in editing and searching your data.

Searching for rows using the table editor

1. From the File menu, select **Table Editor**.

   The Table Editor dialog box opens.
2. Specify a table.

   Note: You can use patterns to select table names from a list of matching tables.

   - Use the percent character (%) to match a string of any length containing any characters. For example, to list all tables with a name beginning with the letter A, enter A%.
   - Use the underscore character (_) to match a single character. For example, to list all tables with an owner that has the letter A in the second position, enter _A%.
3. Once you enter a pattern, click **List Tables**.
4. Select a table from the resulting list.
5. Select a Save Mode.
   - **Immediate**

     The table is updated at the database server immediately after each change.
   - **End**

     The table is updated at the database server after you finish entering all changes. Other users will not be able to make changes to the table while you are making your changes.
6. Click **Edit**.

   The Edit Table dialog box opens.
7. Enter search conditions:
   - **Simple search**

     Enter search values in the Value column.
   - **Advanced search**

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Enter search criteria in the Additional search criteria field to specify more complex search conditions.

Note: You can enter any valid SQL predicate in the Additional search criteria field.

8. Click **Start Search**.

   The first matching row is displayed in the Value column.

Adding a row

1. In the Edit Table dialog box, enter information for the new record.
2. Click **Insert Row**.

   The new row is added to the table.
3. Click **OK**.

   Your changes are saved.

Changing a row

1. From the Edit Table dialog box, search for the row you want to change.
2. Click **Next Row** until the row you want to change is displayed.
3. Edit the data in the Value column.
4. Click **Update Row**.

   The row is updated.
5. Click **OK**.

   Your changes are saved.

Deleting a row

1. From the Edit Table dialog box, search for the row that you want to delete.
2. Click **Next Row** until the row you want to delete is displayed.
3. Click **Delete Row**.

   The row is deleted.
4. Click **OK**.

   Your changes are saved.

Editing tables from the query results view

You can edit tables directly from the query results view.

Deleting a row from the query results view

You can delete individual rows from tables in the query results view.

From the query results view, select a row and select **Delete** from the Edit menu. The row is deleted.

Updating columns from the query results view

You can update the contents of individual columns in the query results view.

From the query results view, double click on a cell, enter a new value, and press **Enter**. The table is updated.

Chapter 10. Distributing Data

You can export your data to other databases and applications.

Exporting data

You can export data from QMF for Windows into other applications in the following ways:

- Export the data into a Text, CSV, IXF, or HTML file
- Save the query results to a table
- Add query results directly into a Microsoft Excel or Lotus 1-2-3 spreadsheet

Exporting data to files

1. While viewing query results, click **Export Data** on the File menu.

   The Export Data dialog box appears.
2. Select the desired Output File Type and click **Options**.

   Depending on the type of output file you select, either the Export Text/DEL Options dialog box, the Export HTML Options dialog box, the Export IXF Options dialog box, or the Export CSV Options dialog box appears.
   - You can produce a text file, with a .TXT extension. This is a standard ASCII file with optional string and column delimiters (as specified in the Export Text/DEL Options dialog box).
   - You can produce an HTML file with an .HTM extension file. This is an HTML file that can be viewed by any web browser. All of the HTML tags are automatically generated in the file; it is ready to be published on your Internet or intranet web site. The options you choose on the Export HTML Options dialog box control the appearance of the exported data.
   - You can produce an IXF file. An IXF export preserves all database information, including column headings and data types. It is typically used to transfer information from one database to another.
   - You can produce a .CSV file. A .CSV export is similar to a text export, using a comma as the column delimiter. This format is most commonly used by spreadsheet applications.
3. Select the options for the desired export file.
4. Click **OK**.

   The Options dialog box closes.
5. Click **OK** on the Export Data dialog box.

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The data is exported.

Importing data

You can import data that has been saved in an IXF file. Once data is imported into a query window, it can be saved to a database server, exported to a new file, or used for reports. PC/IXF and character mode System/370IXF files are supported.

1. From the File menu, click **Import Data**.

   The Import Data dialog box opens.
2. Select the file you want to import and click **OK**.

   The imported data is displayed in a new query window.

IXF messages

The IXF Messages dialog box displays when you export or import data successfully into an IXF format file.

Messages

The messages section of this dialog displays detailed data and process information when exporting to or importing from an IXF file, such as the number of rows imported and exported, which rows are rejected, and which data is truncated, for example.

The edit box is read-only; however, you can select and copy these messages.

OK

Closes the dialog box.

Sample messages

Sample messages are presented below:

```
The H record in the PC/IXF file has product "DB202.00, date "20011025
time "160300", single CCSID "0" and double CCSID "0".

The C record in the PC/IXF file has column name "ID", data type "INTEGER",
single CCSID "0", and double CCSID "0"
...
The T record in the PC/IXF file has a name "STAFF", qualifier "Q",
and source "TEST".
...
The application is beginning to export data to file c:\temp.IXF.
...
The row 5 is rejected.
The data in (1,3) is truncated.
The data in (4,3) is truncated
...
Number of rows rejected = 1.
```

```
Number of data truncated = 2.
Number of rows exported = 10.
...
The application has completed processing. "26" rows were exported
 from the file c:\temp.IXF.
```

Saving data to a database server

Imported query results can be saved to a database table.

1. While viewing imported query results, click **Save Data** on the File menu.

   The Save data dialog box appears.
2. Select a database server, enter a table owner and name, or choose any other options.
3. Click **OK**.

   The data is saved.

Using the Microsoft Excel add-in

The 32-bit version of QMF for Windows includes an add-in for Microsoft Excel 7.0 or later. These add-ins enable you to run QMF for Windows from Excel and return query results directly into a spreadsheet. The appropriate add-in is automatically installed if you choose the ″Typical″ installation option, or if you choose the ″Custom″ installation option and select the Microsoft Excel Add-In.

1. Click **QMF for Windows** on the Excel toolbar.

   QMF for Windows activates.
2. From QMF for Windows, select and run a query.

   The query results appear.
3. Select the data you want to return to Excel.
4. From the File menu, click **Return data to Microsoft Excel**.

   Excel activates and displays the QMF for Windows Add-In dialog box.
5. Enter the destination range for the data.
6. Click **OK**.

   The data is added to the spreadsheet.

Using the Lotus 1-2-3 add-in

The 32-bit version of QMF for Windows includes an add-in for Lotus 1-2-3 that enables you to run QMF for Windows from 1-2-3 and return query results directly into a spreadsheet. This add-in is installed if you choose the ″Typical″ installation option, or if you choose the ″Custom″ installation option and select the Lotus 1-2-3 Add-In option.

1. Click **QMF for Windows** on the 1-2-3 toolbar.

   QMF for Windows activates.

2. From QMF for Windows, select and run a query.

   The query results appear.
3. Select the data you want to return to Lotus 1-2-3.
4. From the File menu, click **Return data to Lotus 1-2-3**.

   The Data Option dialog box appears. Lotus 1-2-3 activates and displays the QMF for Windows Add-In dialog box.
5. Enter the destination range for the data.
6. Click **OK**.

   The data is added to the spreadsheet.

Using sample applications

Several sample applications and integration solutions are available for QMF for Windows. Visit the IBM web site at http://www.ibm.com/qmf/ to find out more.

Building an application using the QMF for Windows API

You can build your own applications using QMF for Windows. Refer to the online API online help for a complete listing of all the API functions and their effects. Visit the IBM web site at http://www.ibm.com/qmf/ to see programming examples.

Chapter 11. Working with Job Files

You can schedule and run procedures using job files. Job files store procedure parameters and use the Windows scheduler to run the procedures according to your preset time and date.

Job files allow you to schedule lengthy or resource intensive queries to run at more convenient times.

Job files

You can create job files and store them locally or at the database server.

Query menu

Set server
Select the database server that contains the procedure you want to run.

Set user information
Set your database server user ID, password, and accounting string for the active job.

Run
Run the job in a separate QMF for Windows instance, which leaves the current session open to perform other tasks.

Test
Run the scheduled task at the same time that QMF for Windows runs the SQL for that task. Both are done in the same instance, but in separate windows.

Schedule
Schedule the job using the Windows Schedule Job dialog box.

View scheduled tasks
Open the Scheduled Tasks dialog box.

Creating job files

From the File menu, select **New Job**. A new job document opens. You can save the job file locally or at the database server.

Saving a job file to a file

You can save job files locally or at a database server.

1. From an open job file, select **Save** from the File menu

   The Save As dialog box opens.

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2. Specify a location and file name.
3. Click **OK**.

   The job file is saved.

Saving a job file to a server

You can save a job file to a database server.

From an open job file, select **Save At Server** from the File menu.

Running job files

You can run job files that have been saved locally or that have been saved at a database server.

1. Open a job file.
2. Click **Run Job** on the toolbar.

   The job file runs.

Scheduling job files

You can schedule job files to run unattended using the Windows scheduler.

Note: To schedule a job file that has been saved locally, you must have saved your user ID and password with the job file. Your password is saved as encrypted text, but still could be vulnerable to discovery.

1. Open a job file.
2. Click **Schedule Job** on the toolbar.

   The Schedule Job dialog box opens.
3. Specify the scheduling information for the job file.
4. Click **OK**.

   The job is scheduled.

Chapter 12. Working with QMF Report Center

Use QMF Report Center to produce custom reports by using shared QMF objects (queries, forms, procedures, and tables). With quick access to these objects, you can specify data format preferences and produce custom reports that can be viewed and manipulated in a variety of applications. The Report Center is a simple user interface that launches centrally-shared queries and QMF reports and sends the results to spreadsheets, desktop databases, and browsers.

The QMF for Windows Report Center module is installed with QMF for Windows and QMF for Windows Administrator.

Features

Queries and reports can be stored and run against multiple DB2 database servers. Results may be viewed, formatted, and saved. Individual users can create lists of favorites and send them to Favorites folders on their desktops in various formats, such as Microsoft Excel, Microsoft Access, Lotus 1-2-3 or .txt files.

Administrators can set governing limits based on schedules and user groups that restrict the user from running very large reports to certain times of the day or various days of the week. Additionally, only the administrator can make queries and reports available to Report Center users, and retain distribution and central control over these reports.

Definitions

- A **query** is a description of a result set of data to retrieve from a database server.

  Note: Queries cannot be created or modified in QMF Report Center.
- A **table** is a collection of stored data. You interact with tables by running queries.
- A **form** contains the formatting instructions for generating report from query results.
- A **procedure** is a set of commands for running queries, printing reports, importing and exporting data, and performing other functions.

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QMF Report Center window

Navigation

1. Right-click on any object or folder to activate the same options that are available from the toolbar menus.
2. Click the plus symbol (+) next to any folder to open the first level of contents.

   Note: Hold down **SHIFT** while clicking the plus symbol (+) to open all levels beneath the folder.

Directory structure

The QMF Report Center window contains a tree-like structure of available Favorites, DB2 servers, Public Favorites, objects, and a Recycle Bin.

Objects are represented by an icon, such as a query or database server icon. This allows you to expand the objects for each server and see all other available servers.

Favorites

The Favorites folder contains reports based on objects that reside on a server. Reports are created by copying objects to your Favorites folder. The objects are not physically located on your hard drive; instead, the reports link to objects on the server.

DB2 servers

Lists all DB2 servers that are in your server definition file (SDF). You can also view servers you cannot access.

Reports

Lists, by server name, all available objects to which you have access.

Public favorites

A folder residing on a server. This folder, like personal Favorites, contains reports, though any user can access Public Favorites.

Recycle bin

Contains all folders and reports you delete from your Favorites folder.

Deleted items remain in the Recycle Bin until you empty the bin. The Recycle Bin acts as an "undo" feature because you can move items out of the bin and back to your Favorites.

- **Deleting**

  With the item selected, choose Edit: Delete, or

With the item selected, right-click and choose **Delete**

- **Emptying**

  Choose Report: Empty recycle bin

  Note: You cannot undo this operation because items will be deleted permanently.

- **Restoring**

  Drag the item from the Recycle Bin to the desired location.

Working with folders and favorites

Folders group reports and QMF objects. Folders are named according to object owner names. You can perform the same operations on folders that you do on reports, such as running reports and defining report properties.

Note: Performing operations on a top-level folder applies the operation to every report contained within the folder.

For example, if you want to run the reports within a folder consecutively, select the folder, then select **Run** from the Report menu.

QMF Report Center contains two top-level folders in which you can store reports. The folders contain reports that point to objects on servers. These objects are not contained within the Favorites folders.

- Your **personal Favorites folder** resides locally (on your PC). You are the only user who can access the folder and its contents.
- The **Public Favorites folder** resides on the server and can be accessed by all authorized users.

  You may have access to several Public Favorites folders, depending on your resource limits, although there will never be more than one public Favorites folder on each server.

When you copy QMF objects to the Favorites folders, the folders are renamed automatically to include the object type and owner name. When you copy an entire object type (for example, a folder of same-type objects) from a server (for example, containing all queries), the server name is also included in the new folder name.

Adding reports to Favorites

You can add any object or report from a server to your personal Favorites folder, or to the Public Favorites folder on a server (with permission from your system administrator).

Personal Favorites: Select the report or object, then choose:

- **Add to favorites** from the Report menu, or

- drag the report or object to your personal Favorites folder

A report is added to the top of your personal Favorites folder with the following naming convention:

```
Objecttype OWNERNAME.OBJECT NAME
```

For example:

```
Query QMFGUEST."SELECT"
```

Public Favorites: Drag the QMF object or report to the Public Favorites folder on a server. You can add reports from your personal Favorites folder or from any server.

Note: When adding to Public Favorites or modifying reports in Public Favorites, select **Save changes to Public Favorites** from the Report menu before your updates are saved to the server.

Menu options

Report menu

Table 30. Report menu options

Field	Description
Add to favorites	Add a pointer in your Favorites folder to the selected table, procedure, or query.

Table 30. Report menu options (continued)

Field	Description
Create shortcut	Create a shortcut (.QRS file) to the selected personal favorite at the location you specify. You can create a shortcut to specific reports in your Favorites folder. The shortcut lets you access a report by launching QMF Report Center and locating the report associated with the shortcut. Follow these steps to create a shortcut: 1. Select the report. 2. Choose Report: Create a shortcut, or with the report selected, right-click and choose **Create a shortcut**. 3. Specify a filename and location for the shortcut. 4. Click **OK**. The extension .qrs is added to the filename. 5. Double-click the shortcut to launch the report. QMF shuts down automatically after the report runs. **Note:** Shortcuts open when the report name is found. If you have several reports with the same name (under separate folders), the report at the highest level opens.
Save changes to public favorites	Save modifications made to reports in your Public Favorites folder.
New report linked to locally saved query	This option enables you to create a report by selecting a query (.qry) saved locally on your network/hard drive. When this option is selected, the Locate the QMF for Windows query link to dialog box displays. Select the query (or queries) to add. When you select a query, then Report Center will read the SQL, go to the specified server, and create the report dynamically. **Note:** Only the SQL and server information are used; other options saved with the .QRY file are ignored. This is the only situation where SQL can be edited by Report Center. Select the local query report and choose **QMF object text**. Edit the SQL and save the changes. This alters the SQL in the .qry file.
New folder	Create a new folder within the current folder.
Empty recycle bin	Remove all deleted items from the Recycle Bin.

Table 30. Report menu options (continued)

Field	Description
Exit	Exit QMF Report Center. **Note:** Right-clicking on any element displays options also available through the Report, Edit, View, and Tools menu.

Report properties - general

This dialog box opens when you select **Properties** from the Report menu.

Table 31. General options

Field	Description
Report name	One of the following identifiers for the report: • QMF object type followed by OBJECTOWNER.OBJECTNAME • the report description if the selected report is in a Favorites folder
Server	The name of the server on which the report resides. Optionally, use the drop-down list to select another server.
[Object]	[Query/Table/Procedure]: The name of the object. You cannot edit this field directly. To select another object, click **Select** to open the Filter Options dialog box. **Note:** The Formatting, Output, and Procedures tabs are disabled for queries that do not use the SQL SELECT statement because they do not return data (non-SELECT SQL verbs).
View QMF Object text	When checked, displays the text of the QMF object. **Note:** Right-click on the dialog box to display report comments.

Report properties - formatting

This dialog box opens when you select **Properties** from the Report menu, then select the Formatting tab.

Table 32. Formatting options

Field	Description
No formatting (data only)	Returns raw data to the file
Include column headers	Adds labels to report columns. This option is available only when you select the ″No formatting″ option.

Table 33. Output options (continued)

Field	Description
End file name with	Select a date format to be used as a suffix to the filename, if applicable. Select "Random" if you have no preference for a filename but you do no want any previous reports overwritten. QMF Report Center randomly assigns a unique filename. This option is available only when you select the Publish to a temporary file option.
Publish to a specific file	Saves the report to the filename you specify. click **Select File** to specify the filename.
Overwrite file if it already exists	Replaces files of the same name with updated files. If this option is not selected, you are warned if an existing file is about to be overwritten. **Note:** Files other than Lotus 1-2-3, Microsoft Access, and Microsoft Excel are always overwritten.
View report after publishing	Automatically displays finished reports after they are created. If you do not select this option, you can view the report later through Report History.
Run	Runs the SQL
Output range	Click the text box to launch Microsoft Excel or Lotus 1-2-3. The Output range dialog box displays. **Note:** Click the cell in the spreadsheet where the results should be written. The output range will be updated to this cell position.

Table 33. Output options (continued)

Field	Description
Data options *Microsoft Excel or Lotus 1-2-3*	• Data import options – Import data – Group by one column – Group by two columns – Create a pivot table For Microsoft Excel or Lotus 1-2-3 – Create a cross-tab report • Charting – Create a chart – Select chart type • Column grouping – ID – Name – Dept • Calculated fields options – Sum – Count – Max value – Min value – Average value
Printer options	Specify the printer and corresponding attributes for printing your output.

Microsoft Access and Lotus 1-2-3

This dialog box opens when you click **Options** from the Report Properties:

Table 34. Microsoft access options (continued)

Field	Description
Append the above name with	Adds the current date to the object name to create the table name. Use the drop-down list to select a date format.
Overwrite existing data in table	Replaces existing data in the named table with data from the most recent report
Select or enter a report name	To view a predefined Microsoft Access report when the database is opened, select a report name from the drop-down list or type a new name in the text box. This option is useful when you want to view the report after it runs.

Follow these steps to specify output options for a report:

1. Click **Properties** at the QMF Report Center dialog box (main window), then right-click on a report.
2. Click on the **Output** tab.
3. Select Microsoft Excel (.xls) or Lotus 1-2-3 (*.123) as the output application.
4. Click **Options**.
5. Select Lotus 1-2-3 or Microsoft Excel as the output application.
6. Specify the sheet name or QMF object name, whether to append the specified name with a date (in the specified date format), whether to include column names, and output range (the cell on the spreadsheet to which the output data will be positioned).
7. Click **Data Options** to specify additional formatting options for graphing and grouping data.

   Note: **Data Options** is disabled if you selected Default QMF formatting or QMF formatting from the Properties: Formatting tab.
8. The [Lotus 1-2-3 or Microsoft Excel] Data Grouping and Charting Options dialog box displays. Use this dialog to specify:
   - Group by one column [you need to specify the column name]
   - Group by two columns [you need to specify the column names]
   - Create a pivot table [for importing the report to Microsoft Excel] or a cross-tab report [for importing the report to Lotus 1-2-3].
   - Charting options:
     - A checkbox to create a chart
     - Chart types
   - Column grouping options:

  - ID or Cross tab row (if creating a cross-tab report for importing to Lotus 1-2-3)
  - Name or Cross tab column (if creating a cross-tab report for importing to Lotus 1-2-3)
- Column with calculated field (this group box is activated only if grouping by one- or two columns).
- Calculated field options:
  - Sum
  - Count
  - Max value
  - Min value
  - Average value
  - Product*
  - Count nums*
  - StdDev*
  - StdDevp*
  - Var*
  - Varp*

    Note: These options are activated only if you set the data import options to:
    - Group by one column
    - Group by two columns
    - Create a pivot table (for importing the report to Microsoft Excel), or
    - Create a cross-tab report (for importing the report to Lotus 1-2-3)
  - Excel only*

Report properties - procedures

This dialog box opens when you select a procedure, then select **Properties** from the Report menu, then you select the Procedures tab.

Table 35. Procedure options

Field	Description
This procedure produces no output	When checked, indicates that there is no output resulting from this procedure; instead, the procedure runs and a subsequent action takes place. The procedure itself does not produce output such as report results. **Note:** Output options are not available when this option is selected.
The procedure will place output data in the following file	Specify the filename to which the procedure will send output.
View output after running	Display the report after it is produced.

Table 36. Procedure options

Field	Description
The procedure uses the DSQQW_PROC_OUTPUT substitution variable	Indicates the substitution variable in the current procedure. This variable is used to export data to the location you specify. The syntax EXPORT REPORT TO &DSQQW_PROC_OUTPUT must be included in the procedure to use this variable. The substitution variable will be displayed in the Report Properties: Variables dialog box. The output location specified below is passed to the procedure using this substitution variable: • **Publish to a temporary file** Saves the report to a temporary file in the directory indicated. Click **Select** to change the directory. • **Start file name with** Type a prefix to be used with the filename, if desired. This option is available only when you select the Publish to a temporary file option. • **End file name with** Select a date format to be used as a suffix to the filename, if desired. Select ″Random″ if you have no fielname preference but do not want any previous reports overwritten. QMF Report Center randomly assigns a unique filename. This option is available only when you select the Publish to a temporary file option. • **Extension** Select the extension that represents the file format to use for your temporary file. • **Publish to a specific file** Saves the report to the filename you specify. Click **Select** to specify the filename
The procedure will place output data in the following file	Specify the filename to which the procedure will send output.
View output after running	Display the report after it is produced.

Report properties - variables

The Report Properties: Procedure dialog box opens when a procedure is selected and you select **Properties** from the Report menu, then the Procedures tab.

Specify formatting, output, procedures, variables, miscellaneous, scheduling, security, and email preferences. Follow these steps to set report properties:

1. At the QMF Report Center dialog box (main window), right-click on a report.
2. Click the **Variables** tab.

   The Variables dialog box displays with a list of variable names. Values for these variables can be preset and optionally, individually hidden when the report is run.
3. Selecting the variable value box for a given variable lets the user create a "calculated" date value.

   Calculate date is now enabled.
4. Press **Calculated Date**.

   The Calculated date dialog box displays.

Table 37. Variable options

Field	Description
Name	The name of the query or procedure.
Value	Click **Value** to type a variable value to be used each time the current report runs. **Note: Calculated Date** becomes enabled when you click the Value field. This button displays the Set Date Substitution Values dialog box.
Hide this value	When checked, the preset values are hidden. For queries and procedures containing preset variables, you are not prompted for values when the report is run.
Clear values	Removes the variable values displayed above.
Calculated date	When a value is entered, **Calculate date** becomes enabled. When clicked, the Set Date Substitution Values dialog box displays. See "Set Date Substitution Values."

Report properties - Set Date Substitution Values

The Set Date Substitution Values dialog box displays when you click Calculated date on the Report Properties: Variables tab. **Calculate date** is enabled when you click on the Values column on the Report Properties: Variables tab.

Table 38. Set Date substitution values

Field	Description		
Calculated date	By days	Select the number of days prior to the current date	
	By days of the week	Last occurrence in current month	Choose the day to display in its last occurrence in the current month. For example, the last Wednesday of the current month.
		First occurrence of current month	Choose the day to display in the first occurrence in the current month. For example, the first Wednesday of the current month.
		Last occurrence of previous month	Choose the day to display in its last occurrence from the previous month.
		First occurrence in previous month	Choose the day to display in its first occurrence from the previous month.
	By month	Choose occurrence by the first day or the last day of the month and by how many months prior from the current month.	
	By quarter	From the beginning of	Choose the quarter of the year to start the calculated date.
		Fiscal year starts	Choose the month that starts the fiscal year.

Table 38. Set Date substitution values (continued)

Field	Description		
Date format options	Date format	Choose the format in which to display the date	
	Date separator	Choose the symbol to separate the month, day, and year.	
	Use PC date as current date	Uses the current date set on your PC	
	Use DB2 date as current date	Uses the current date set on the DB2 system (to account for time zones)	
Sample date	Click **New Sample** to see an example of how the date will display.		
Current PC date	Displays the current date you have set on your PC		

Report properties - miscellaneous

Table 39. Miscellaneous options

Field	Description
Run as a separate process	Runs reports in a separate instance of QMF Report Center, allowing you to continue working within QMF Report Center. The second window only displays **Cancel**, and the window is not otherwise interactive.
Suppress informational messages	Hides informational messages
Suppress error messages	Hides error messages
Limit the number of rows returned	Restricts the number of rows returned to the report. Type a number in the text box, or use the arrows to scroll in increments of 100. This option applies when you have an individual report selected.

Table 39. Miscellaneous options (continued)

Field	Description
Prompt for variable values prior to running reports	Prompts for variable input for all reports contained in the folder before the first report runs. This option applies when you have a folder selected.
Do not display any of the reports being run	The reports are not displayed after they are produced. If an error occurs, the report stops running. This option applies when you have a folder selected.
Continue running subsequent reports if an error occurs	By default, if an error occurs when running a folder the execution is halted. If this field is checked, then Report Center will attempt to run every report in turn irrespective of any errors that arise.

Report properties - schedule

This dialog box opens when you select **Properties** from the Report menu, then click the Schedule tab.

Table 40. Schedule options

Field	Description
Job ID	The number used to identify each scheduled job. The number is assigned automatically and cannot be edited.
Interval	The frequency at which the job is run, such as once, weekly or monthly.
Days of week	The day on which the job is scheduled to run. This field may be blank or contain "Customized" if the job has been edited using Microsoft's Task Scheduler (R), indicating that QMF Report Center is not able to display the job details.
Days of month	The number of the day of the month on which the job is scheduled to run. For example, a 2 indicates that the run will run on the second day of the specified month. This field is blank if the job is scheduled for specific days of the week.
Time (display)	The time at which the job is scheduled to run on the specified days.

Table 40. Schedule options (continued)

Field	Description
Time	Type the time in the text boxes or use the arrows to scroll up and down. The time is in a 24-hour format.
Days of week to run	The days on which the job is scheduled to run. Choose **Select all** to select all days of the week automatically.
Days of month to run	The number of the days in the month on which the job is scheduled to run. For example, a 2 indicates that the job is run on the second day of each specified month. Choose **Select all** to select all days of the month automatically.
Today only	Run the job on the current day only
Once for the days marked	Run the job only once on the days indicated
Every time for the days marked	Run the job each time the selected days occur. For example, if Tuesday is selected, the job runs every Tuesday until you change the schedule.
Set variable values	Opens the Variable Input dialog box where you specify variables to be used with the report. Variable values must be defined prior to running reports. Queries and procedures can contain variables.
Edit variable values	Opens the Variable Input dialog box where you can modify values set for variables in the current report. The report name must be selected to activate this button.

Report properties - security

This dialog box opens when the selected object is contained in the Public Favorites folder and you select **Properties** from the Report menu, then click the Security tab.

Table 41. Security options

Field	Description
User ID	The names of the users or user groups to which you can assign permission to the current object. Authorized users and their permissions are displayed in the text box below. To add new users, type a user ID in the text box, then click **Add**.
Add	Add the selected user (in the User ID field) to the group of authorized users for the current object
Add all	Add all users to the group of authorized users
Remove	Remove the selected user from the group of authorized users
Read	Allows the selected user to view the current Public Favorite and run it
Write	Allows the selected user to modify any properties of the current object and add new reports and folders if the selected item is a folder
Administer	Allow the selected user to grant or revoke access to the current object
Take ownership	Grant ownership of the current object to the selected user. This option may not be available, depending on your resource limits.
Use these settings for all reports under this folder	Apply the same security settings to all reports and subfolders contained in the current folder

Report properties - email

This dialog box opens when you select **Properties** from the Report menu, then click the Email tab.

Table 42. Email options

Field	Description
Send an email message whenever I run the report	Sends an email notification each time the report is run directly (use the next option for scheduled reports). You determine the email address and messages to be sent.
Send an email message whenever the scheduler runs a report	Sends an email notification each time the report is run through the scheduler

Table 42. Email options (continued)

Field	Description
Attach report output to email/Attach all underlying report output to email message	Includes the report output in the email notification. For folders, this option attaches report output for all reports contained under the folder. **Note:** Select one of the above options when selecting this option.
[Email] properties	Opens the Internet Mail Wizard where you may specify the recipients for the message, the message text, and the attachments.

Edit menu

Cut
Remove the selected item from the active document. You do not see action here until you Paste the item.

Copy
Copy the selected item. To complete this action, you must Paste the item at the desired location.

Paste
Add the copied item at the insertion point.

Delete
Remove the selected item and adds it to the Recycle Bin. QMF objects that reside on a server are not added to the Recycle Bin.

Note: Items deleted from the Recycle Bin are permanently removed.

Rename
Change the name of the selected item.

Note: Right-clicking on any element displays options that are also available through the Report, Edit, View, and Tools menu.

Select server
The Select Server dialog box opens if the report you are editing is linked to an object that resides on a server that is not defined in your SDF (server definition file).

- **Available servers**

  The servers to which you can connect.

View/Edit Server

The View/Edit Server dialog box displays when you:

- choose View: Edit Server from the Edit menu, or
- right-click on a report and choose **View**, then **Edit Server**

You choose this option to view or edit the server against which the report is run without initializing the underlying QMF object located at the server.

The list of servers is disabled when:

- the report is a Public Favorites and the user has permission to read the report only, and
- the report is a locally-bound static query, which is server-dependent

Note: Because the query is not initialized to determine if it is static, users can change the server on static queries. However, this query will fail to run.

Table 43. View/Edit server

Field	Description
Current server	The name of the server where the report is currently located
Available servers	Displays a lit of available servers to relocate the report

View menu

Names

Display the name view of tables, forms, procedures, and queries. This option is a toggle with Comments.

Comments

Display the comment view of tables, forms, procedures, and queries. This option toggles with Names. For objects that do not have comments, the name view is displayed.

Objects on the server may contain comments that include descriptive information about the object. These comments are assigned to the object when the object is created. You cannot modify comments; they are for viewing purposes only. Where comments do not exist, the object name remains displayed.

Display object comments

- Select the object type, owner, or name, and right-click **Choose View**, then choose **Comments**
- Or, with the object type, object, or name selected, choose View: Comments

Comments are displayed for the current level and all levels below. For example, if you selected the type QMF Queries, all owners and objects contained within QMF Queries are displayed with comments.

To return the display of object names, repeat the above process and select Names.

Note: Because retrieving comments may be a time-consuming process, you may want to view comments for a particular object, rather than viewing comments for all objects of the same type.

QMF object text

This option displays the text for the QMF object. Specify the relative display size of text in QMF Report Center.

When you select an object (query, table, or procedure) a pop-up window will display the SQL for the object used to produce the report. The pop-up window identifies the object name, and then displays the text for the object in the main part of the window. For example:

```
Table: DB2ADMIN.MAX_T
Select * from DB2ADMIN.MAX_T
```

Note: You cannot edit the QMF object text using this function unless it is a local query (.QRY) that has not been statically bound to a server.

Filter options

Specify display options for the current object. You can filter by any of the following for the object owner and object name:

- Tables
- QMF queries
- QMF procedures
- QMF forms
- Public favorites
- DB2 forms

Server filter options

Use this option to specify which servers you want to hide. The Select Servers to Hide dialog box displays when you click on Server Filter Options from the View menu.

The Select Servers to Hide dialog box lists the servers included in the SDF (Server Definition File). Check the servers you want to hide, or click **Select All** or **Clear All**. You can still run reports against the hidden server.

Options include:

- **Select all:** lists available servers to be hidden
- **Clear all:** Clears all servers selected to be hidden

Report comments
Displays the name of the report on which you are commenting.

Text size
Specify the relative display size of text in QMF Report Center.

Scheduled jobs
View, edit, and delete scheduled reports.

Report history
View details for reports run, in chronological order.

Activity log
View all activities in chronological order.

The activity log contains detailed information on reports run and errors encountered during QMF Report Center operations.

Refresh
Display an updated view, reflecting any recent changes made to objects on the server. If the "Prompt me with this filter every time" option is selected on the Filter Options dialog box, the Filter Options dialog box is opened each time you select Refresh.

Note: When you right-click an element, options will display which are also available through the Report, Edit, View, and Tools menus.

Tools menu

Set user information
Log in as another user, or specify account information. The Set User Information pop-up window displays when you select this option. Enter the user ID and password, and [optionally] check Remember this password if you want to retain the password. Optionally, enter an account number to track this user's activity.

You can change the name of the current QMF Report Center user by specifying another valid User ID. This option is only available when the active item is on a server (for example, server name, object type, object owner, object name, or Public Favorites is selected).

Run QMF for Windows
Launch the QMF for Windows application (QMF Report Center remains active).

Note: You are not able to use the application if you do not have permission in your resource limits.

Export favorites
Export your personal Favorites folder to a .qrs file.

Import favorites
Import a .qrs file to your personal Favorites folder.

Options
Set QMF Report Center options for the Activity Log, Creating Favorites, Creating Folders, and Miscellaneous options.

Note: Right-clicking on any element displays options that are also available through the Report, Edit, View, and Tools menu.

Print Options

The Print Options dialog box displays when you click **Options** from the Global Options: Creating Favorites dialog box and you select Printer as the application for which you are creating the report.

Table 44. Print options

Field	Description
Select a printer	Select an installed printer from the drop-down list or click **More Options** to select from additional printer. **Note:** Select "Default Printer" to send the report to the default printer defined for the PC.
Use form page setup	Uses the specified form settings when a form is associated with the current report
Number of copies	Use the arrows to increase or decrease the number of copies you want to print, or type the number directly in the text box
Font options	The font type and size to be used in the printed report. Click **More Options** to specify a new font.
Orientation	Select **Portrait** to print the page with the short edge on top or **Landscape** to print the page with the long edge at the top.
Fit to printer page	Automatically sizes the page width or length to fit the size of the printed page
Characters/Lines	Identifies page size according to a specific number of character lines. Type a number in the text box or use the arrows to scroll.
Continuous	Prints continuous pages, without page breaks, or wraps text (for page width)

Table 44. Print options (continued)

Field	Description
Other options	Includes a date and time stamp and/or page number or the report
Margins	Use the arrows to increase or decrease the number of inches for each margin, or type the number directly in the box.

Help menu

Contents

Display the table of contents for the online help system.

About

Display QMF Report Center copyright information.

Connecting to the server

1. If no server names are displayed beneath DB2 Servers, click the plus symbol (+).
2. Click the plus symbol (+) next to a server.

   The Filter Options dialog box opens.
3. At the Filter Options dialog, select the object types that you want to see, then click **OK**.

   The available objects on the server are displayed, grouped by object type (tables, QMF queries, QMF procedures, QMF forms, public favorites, and DB2 forms).
4. You can check the Select all option to select all object types stored at the server.

   You will be prompted for your User ID and Password to access these objects.
5. Select or de-select the option, Prompt me every time with this filter, if you want to display the Filter Options dialog box each time you select an object at a server.

   The default is checked (″yes″).

Working with reports and objects

Reports are based on QMF objects (queries and forms). They contain the formatting and output specifications that you identify. Reports that are contained in the Favorites folder point to objects that reside on the server.

All items in your personal and Public Favorites folders are considered reports; you can manipulate formatting and display options for these items. The items contained in these Favorites folders link to the QMF objects that reside on the server.

You do not actually modify a QMF object. Instead, you modify the link to the object that is referred to as a report. Because reports are based on objects, properties of objects also apply to reports.

You can create reports from objects that reside on a server, but these reports are not saved to the server. This allows you to create one-time reports. After creating a report from objects on a server, you can save the report to your Favorites folder.

Creating reports

You can create reports from reports in your Favorites folders and QMF objects that reside on a server.

Create reports locally

Select one of these options to create a report locally:

Option 1

1. Connect to the server that contains the object on which you want to base your report.
2. Select an object, then drag the object to one of your Favorites folders.

Option 2

Select the object, then choose Report: Add to Favorites.

You can now run the report or define report properties.

Create reports from the server

Select one of these options to create reports from the server:

- Right-click on the object then select **Run**, or
- Modify report properties, then use the first option

Note: Reports created from objects that reside on the server are not saved to the server.

If you choose this method to create a report, you are prompted to save the report in you Favorites folder. If you do not save the report to your Favorites folder, your report is not saved.

Running reports

You can run reports from your Favorites folders or from objects located on the server.

1. [Optional] Select the report or object, then choose Report: Properties.

   The Report Properties dialog box opens.
2. Optionally, define properties. See "Report Properties."

   You can set properties for formatting, output, procedures, variables, miscellaneous, schedule, security, and email for objects that reside in your Favorites folders and objects on the server.
3. Click **Run**.

   You are prompted for your user ID and password. Enter this information.
4. Click **OK**.

   The report is processed.

If you selected View report after publishing at the Report Properties: Output tab, the report is displayed in the application you specified in the Select output application field.

You can also run a report by any of the following methods:

- Selecting the report, then choosing Report: Run, or
- Right-clicking on the report, then choosing **Run**, or
- Double-clicking on the report name.

The query result displays in the way specified in the Report: Properties. By default, it will point to the Notepad application. Within these properties, you can select the form for formatting the query result. Other applications predefined by QMF Report Center include:

- Web browser (.html)
- Microsoft Excel (.xls)
- Microsoft Word (.doc)
- Microsoft Access (.mdb)

Running multiple reports

Repeat the procedure for running reports while a folder in your personal Favorites is selected.

You can also run a report by:

- Selecting the report, then choosing Run from the Report menu
- Right-clicking on the report, then choosing Run
- Double-clicking on the report name

You can run reports in separate memory so you can continue to work in the QMF Report Center while reports are running. Run as a separate process option on the Report Properties: Miscellaneous dialog box to run reports in separate memory.

If you selected the View report after publishing option in the Report Properties: Output dialog box, the report is displayed in the application you specified.

Printing reports

You print Report Center reports from the output application or directly from QMF Report Center.

Procedure

1. Select one of these options:
   - Select the report, right-click, and choose **Properties**, or
   - Select the report, then choose Report: Properties.
2. Select the Output tab to open the Report Properties: Output dialog box.
3. Select a Printer from the output application list, then click **Options**.
4. Specify the desired options.
5. Click **OK**.

The report is sent to the printer when you run the report.

Scheduling reports

You can schedule reports and entire folders within your personal Favorites to be run at a specific date and time, and at regular intervals.

The QMF Report Center scheduler is based on the Windows scheduler; therefore, if you do not have the Windows scheduler running or if you are not authorized to use the scheduler, you are not able to schedule reports. QMF Report Center notifies you if the Windows scheduler is not running when you attempt to schedule jobs.

Note: If you are using an NT machine that does not have the Task Scheduler, only the user whose name was identified as the logon account for running the "AT" scheduler can schedule jobs.

Check with your system administrator to determine which account is set up on your computer.

Procedure

Select one of the following options to schedule reports:

Option 1

1. Select Tools: Set User Information, then check the option, **Remember this password**.

   Note: This option must be selected for scheduled reports to run.
2. Choose one of the following options:
   - Select the report and choose Report: Properties, or
   - Select the report, then right-click, and choose **Properties**.
3. Choose the Schedule tab to open the Report Properties: Schedule dialog box.
4. Select schedule options.
5. Click **OK**.

   The scheduled jobs are run as a separate process, so you can continue to work within QMF Report Center while jobs are run.

Note: If you set up a daily and monthly schedule in which reports will run once a day, two separate jobs are entered (one for the weekly schedule and one for the monthly schedule).

Viewing scheduled reports

You can view the schedule for the reports that have been scheduled to run.

Procedure

Choose View: Scheduled jobs to open the QMF Scheduled Jobs dialog box.

Viewing report history

You can display a chronological list of all reports run. Report History contains date and time, report name, output application, and file location.

Procedure

Choose View: Report history to open the Report History dialog box.

Renaming reports and folders

You can rename the reports and folders contained in your Favorites folders.

Note: You cannot rename QMF objects.

Procedure

Option 1

1. Select the report or folder.
2. Right-click, then choose **Rename**.

Option 2

1. Select the report or folder.
2. Choose Edit: Rename.

Type the new name for the report or folder, then press **Enter**.

Moving reports, objects, and folders

You can move reports, objects, and folders on a server and within your Favorites folders.

Procedure

1. Select one of the following options:
   - Select the item, right-click, and choose **Cut**, or
   - Select the item, then choose Edit: Cut.
2. Select one of the following options:
   - Right-click on the location, then choose **Paste**, or
   - Right-click on the location, then choose Edit: Paste.

Note: Dragging an item does not move the item from one location to another. Instead, dragging makes a copy of the item, except when working in the Favorites folders.

Copying reports, objects, and folders

You can copy reports, objects, and folders from a server or within your Favorites folders.

Copy from a server

1. Choose one of the following options:
   - Drag the item from its current location to the desired location, or

     Note: This is the easiest method.
   - Select the item, right-click, then choose **Copy**, or
   - Select the item, then choose Edit: Copy
2. Choose one of the following options:
   - Right-click on the folder to which you want to copy the item and choose **Paste**, or
   - Right-click on the location, then choose **Edit: Paste**

A message displays that indicates that the item has been successfully pasted. The item is added to the bottom of the current folder.

Copy within Favorites folders

Use the copy and paste method above to copy reports within your Favorites folders.

Note: Dragging reports within the Favorites folders only moves the reports from one folder to another.

Deleting reports, objects, and folders

Objects and reports that you delete from your personal Favorites folder are sent to the Recycle Bin. However, objects and reports that you delete from the server cannot be retrieved and this action cannot be undone.

Note: You may not have permissions to delete items from the server.

Procedure

1. Select one of the following options:
   - Select the item, right-click, then choose **Delete**, or
   - Select the item, then choose Edit: Delete, or
2. For objects and reports that are on a server, you are prompted with a warning message before you confirm the deletion.

Note: The task scheduler must be running for you to delete a report with scheduled jobs and remove it from the Recycle Bin.

Report properties

You can define report properties for objects that reside in your Favorites folders and objects on the server. To set properties, select the report and choose Report: Properties. Or, select the report, right-click, then choose **Properties**.

General

The General tab of the Report Properties specifies the report name, server, query, and optionally, the query text.

Report name

The identifier for the report, which is the QMF object type (table, form, procedure or query), followed by OBJECTOWNER.OBJECT NAME or the report description of the selected report is in a Favorites folder. A Favorites folder is a folder containing reports that you can modify.

- The Personal Favorites folder resides on your PC and you are the only user with access to these reports
- The Public Favorites folder resides on a server and can be accessed by any authorized user.

Server

The name of the server where the report resides. Optionally, use the drop-down list to select another server.

[Object]

The name of the object (query, procedure, or table). You cannot edit this field directly. Instead, to select another query, table or procedure, click **Select** to open the Filter Options dialog box.

Note: The Formatting, Output, and Procedures tabs are disabled for queries that do not use the SQL SELECT statement because they do not return data (non-SELECT SQL verbs).

View QMF object text

When checked, displays the text of the QMF object (query, procedure).

Table 45. View QMF object text options

Control	Description
Run	Runs the SQL
OK	Accept your entries
Cancel	Cancel your entries and return to the previous dialog box
Help	Obtain online help for the dialog box
Select	Open the Object Filter dialog box to select another object by providing its object owner, object name, and whether you want to show QMF queries, tables or procedures

Object filter

This dialog box opens when you:

- Click **Select** from the Report Properties: General dialog box, or
- Select an object on a server, then choose View: Refresh

Object owner

The name of the current object owner. Wildcards can be used to search for a specific owner.

Object name

The name of the current object. Wildcards can be used to search for a specific name.

Show objects

Displays the specified objects available on the server. You cannot select a different type of object and **OK** will be disabled.

Prompt me every time with this filter

Indicates whether this dialog will be opened each time you refresh or connect to a database.

Table 46. Object filter prompts

Control	Description
OK	Accept your entries
Cancel	Cancel your entries and return to the previous dialog box
Help	Obtain online help for the dialog box

Formatting

This dialog box opens when you select **Properties** from the Report menu, then the Formatting tab.

No formatting (data only)

Returns raw data to the file.

Include column headers

When selected, adds labels to report columns. This option is available only when you select the "No formatting" option.

Default QMF formatting

Returns data in the default QMF format, which includes column headers and a vertical line that separates the headers and data.

QMF formatting from form

Specifies the QMF form to use to format the report results. Click **Select Form** to open the Filter Options dialog box where you select the QMF form from which to copy formatting. See Select Form for more information.

Table 47. Formatting options

Control	Description
Run	Runs the SQL
OK	Accept your entries
Cancel	Cancel your entries and return to the previous dialog box
Help	Obtain online help for the dialog box
Select Form	Open the Form Filter dialog box to specify the object owner and object name. The Select a Form dialog box displays for you to select a form to use for QMF data formatting.

Output

This dialog box is opened when you select **Properties** from the Report menu, then you select the Output tab.

Select output application
The application for which you want to format the report. For Microsoft Excel, Lotus 1-2-3, and Microsoft Access, you can click **Options** to define options specific to each application.

You may output the file to a text browser, text viewer, Microsoft Word, Lotus WordPro, Microsoft Excel, Lotus 1-2-3, Microsoft Access, or to a printer.

Publish to a temporary file, in the following directory
Saves the report to a temporary file in the directory indicated. To change the directory, click **Select Directory**.

Use the temporary directory of the machine running this report
Defaults to the temporary directory of the machine from which the report is being run. Check this option to use the machine's temporary directory; otherwise, provide a directory in the Publish to a temporary file, in the following directory field.

Note: This is especially useful for Public Favorites where you may not know the directory structure of the user's machine.

Start file name with
Type a prefix to be used with the filename, if desired. This option is available only when you select the Publish to a temporary file option.

End file name with
Select a date format to be used as a suffix to the filename, if desired. Select "Random" if you have no preference of filename but do not want any previous reports overwritten; QMF Report Center randomly assigns a unique filename. This option is only available when you select the Publish to a temporary file option.

Publish to a specific file
Saves the report to the filename you specify. Click **Select File** to specify the filename.

Overwrite file
The Overwrite file if it already exists option replaces files of the same name with updated files. If this option is not selected, you are warned if an existing file is about to be overwritten.

Note: Files other than Lotus 1-2-3, Microsoft Access, and Microsoft Excel are always overwritten.

View report after publishing
Automatically displays finished reports after they are created. If you do not select this option, you can view the report later through the Report History.

Table 48. Output options

Control	Description
Run	Runs the SQL
OK	Accept your entries
Cancel	Cancel your entries and return to the previous dialog box
Help	Obtain online help for the dialog box
Options	Various dialog boxes open when you click the Options button from the Report Properties: Output dialog box and you have specified Lotus 1-2-3, Microsoft Excel, Microsoft Access, or a printer as your output application. Which dialog box opens depends on the output options. • **REPORT OUTPUT OPTIONS for Microsoft or Lotus 1-2-3:** – Select or enter a sheet name: select a name from the drop-down list or type a new name in the text box for the Excel or Lotus 1-2-3 sheet. **Note:** This option is not available if the Use the QMF object name option is selected. – Use the QMF object name: uses the object name as the Excel or Lotus 1-2-3 sheet name. – Append the above name with: adds the current date to the object name to create the sheet name. Use the drop-down list to select a date format. – Include column names: when checked, displays column headers in the formatted report.

Table 48. Output options (continued)

Control	Description
	• Output range: click the text box to launch Excel or Lotus 1-2-3. The Output Range dialog box opens to specify the range for your query results. You cannot type a range in this field manually • DATA OPTIONS for Microsoft or Lotus 1-2-3: Displays the Microsoft Excel and Lotus 1-2-3 Data Grouping and Charting Options dialog. If your query has substitution variables in it, then you will be prompted for sample values on these so that the column names can be retrieved. **Note:** This prepares, but does not run the query. Data options are disabled unless No formatting (data only) is selected from the Formatting tab of the Properties dialog. – **Data import options** - Import Data - Group by one column - Group by two columns - Create a cross tab report – **Charting** - Create a chart - Select chart type – **Column Grouping** - ID - Name - Dept – **Calculated Field Options** - Sum - Count - Max value - Min value - Average value
	• PRINTER OPTIONS – Specify the printer and corresponding attributes for printing your output.

Table 48. Output options (continued)

Control	Description
	FOR MICROSOFT ACCESS This dialog box opens when you click **Options** from the Report Properties: Output dialog box, and select Microsoft Access as the output application. •

- **Publish to a temporary file:** Saves the report to a temporary file in the directory indicated. To change the directory, click **Select**.
- **Start file name with:** Type a prefix to be used with the filename, if desired. This option is only available when you select the Publish to a temporary file option.
- **End file name with:** Select a date format to be used as a suffix to the filename, if desired.

  Note: Select Random if you have no preference of filename but do not want any previous reports overwritten; QMF Report Center randomly assigns a unique filename.

  This option is available only when you select the Publish to a temporary file option.
- **Extension:** Select the extension that represents the file format to use for your temporary file.
- **Publish to a specific file:** Saves the report to the filename you specify. Click **Select** to specify the filename.

The procedure will place output data in the following file

Specify the filename to which the procedure will send output.

View output after running

Displays the report after it is produced.

Variables

This dialog box opens when you select **Properties** from the Report menu, then click on the Variables tab.

Preset the following variables

Click the Value field to type a variable value to be used each time the current report is run.

Clear values

Removes the variable values displayed above.

Hide preset values when report is run

For queries and procedures containing present variables, you are not prompted for values when the report is run.

Miscellaneous

This dialog box opens when you select **Properties** from the Report menu, then click on the Miscellaneous tab.

Run as a separate process
Runs reports in a separate instance of QMF Report Center, allowing you to continue working within QMF Report Center. The second window only displays **Cancel**, and the window is otherwise not interactive.

Suppress informational messages
Hides informational messages.

Suppress error messages
Hides error messages.

Limit the number of rows returned
Restricts the number of rows returned to the report. Type a number in the text box, or use the arrows to scroll in increments of 100.

Note: This option applies only when you have an individual report selected.

Prompt for variable values prior to running reports
Prompts for variable input for all reports contained in the folder, before the first report is run.

Note: This option applies only when you have a folder selected.

Do not display any of the reports being run
The reports are not displayed after they are produced.

Note: This option applies only when you have a folder selected.

Interval
The frequency with which the job is run (such as once, weekly, monthly).

Days of the week
The day on which the job is scheduled to run. This field may be blank or contain the term ″Customized″ if the job has been edited using Microsoft's Task Scheduler. This indicates that QMF Report Center is not able to display details about the job.

Days of the month
The number of the day of the month on which the job is scheduled to run. For example, 2 indicates that the job will run on the second day of each specified month.

This field is blank if the job is scheduled for specific days of the week.

Time (display)
The time at which the job is scheduled to run on the specified days.

Time
Type the time in the text boxes or use the arrows to scroll up and down. The time is in a 24-hour format.

Days of week to run
The days on which the job is scheduled to run. Choose **Select all** to select all days of the week automatically.

Days of month to run
The number of the days in the month on which the job is scheduled to run. For example, 2 indicates the job is run on the second day of each specified month.

Choose ″Select all″ to automatically select all days of the month.

Today only
Run the job on the current day only.

Once for the days marked
Run the job only once on the days indicated.

Every time for the days marked
Run the job each time the selected days occur. For example, if Tuesday is selected, the job is run every Tuesday until you change the schedule.

Set variable values
Opens the Variable Input dialog box where you specify variables to be used with the report. Variable values must be defined prior to running reports. Queries and procedures can contain variables.

Edit variable values

Opens the Variable Input dialog box where you can modify values set for variables in the current report. The report name must be selected to activate this button.

Table 50. Output options

Control	Description
Add	Schedule a new job
Delete	Delete the selected job from the Scheduler
Edit	Edit the schedule setting for the selected job
Run	Run the SQL
OK	Accept your entries
Cancel	Cancel your entries and return to the previous dialog box
Help	Obtain online help for the dialog box

Note: Click the heading of the column by which you want to sort.

Security

This dialog box opens when the selected object is contained in the Public Favorites folder and you select **Properties** from Report menu, then the Security tab.

User ID

The names of the users or user groups to which you can assign permission to the current object. Authorized users and their permissions are displayed in the text box below. To add new users here, type a user ID in the text box, then click **Add**.

Add

Add the selected user (in the User ID field) to the group of authorized users for the current object.

Add all

Add all users to the group of authorized users.

Remove

Remove the selected user from the group of authorized users.

Read

Allows the selected user to view the current Public Favorite and to add new reports and folders if the selected item is a folder.

Write
Allows the selected user to modify any properties of the current object.

Administer
Allows the selected user to grant or revoke access to the current object.

Take ownership
Grants ownership of the current object to the selected user. This option may not be available, depending on your resource limits.

Use these settings for all reports under this folder
Applies the same security settings to all reports and subfolders contained in the current folder.

Email

This dialog box is opened when you choose Report: Properties, then select the Email tab.

Send an email message whenever I run the report
Sends an email notification each time the report is run directly. You determine the email addresses and message to be sent.

Note: Use the next option for scheduled reports.

Send an email message whenever the scheduler runs a report
Sends an email notification each time the report is run through the scheduler.

Attach report output to email
Includes the report output in the email notification. For folders, this option attaches report output for all reports contained under the folder. You must select one of the above options when selecting this option.

Table 51. Email options

Control	Description
Run	Runs the SQL
OK	Accepts your entries
Cancel	Cancels your entries and return to the previous dialog box
Help	Obtains online help for the dialog box
[Email] Properties	Opens the Internet Mail Wizard to specify the message recipients, the message text, and attachments.

Associating forms with objects

Forms contain formatting for QMF query results. Therefore, you need to associate the form with a corresponding query or table.

Procedure

Option 1
Drag a form from the server on top of a query or table in your personal Favorites folder. The form is associated with the object automatically.

Option 2

1. Select an object in your personal Favorites folder.
2. Right-click and choose **Properties**.
3. Select the Formatting tab to open the Report Properties: Formatting dialog box.
4. Select the QMF formatting from form option to open the Select a Form dialog box.
5. Select a form.
6. Click **OK**.

Copying reports, objects, and folders

You can copy reports, objects, and folders from a server or within your Favorites folders.

Copy from a server

Option 1
The quickest way to copy items is to drag the item from its current location to the desired location.

Option 2
Select the item, right-click, then choose **Copy**.

Option 3

1. Select the item, the choose Edit: Copy.
2. Right-click on the location (a folder) where you want to copy the item.
3. Choose **Paste**.

Option 4

1. Right-click on the location.
2. Choose Edit: Paste.

A message displays that indicates that the item has been successfully pasted. The item is added to the bottom of the current folder.

Copy within the Favorites folders

Use the copy and paste method described in the "Copy from a server," to copy reports within your Favorites folders.

Note: Dragging reports within the Favorites folders only moves the reports.

Moving reports, objects, and folders

You can move reports, objects, and folders on a server and within your Favorites folders.

Procedure

Option 1

1. Select the item.
2. Right-click.
3. Choose Edit: Cut.
4. Right-click on the location to which you are copying the object.
5. Choose **Paste**.

Option 2

1. Select the item.
2. Choose Edit: Cut.
3. Right-click on the location to which you are copying the object.
4. Choose Edit: Paste.

Note: Dragging an item does not move the item from one location to another. Dragging makes a copy of the item, except when working in the Favorites folders.

Deleting reports, objects, and folders

When you delete reports and folders from your personal Favorites folder, they are sent to the Recycle Bin. Deleting objects and reports from the server, however, is a permanent function and cannot be undone.

Note: You may not have permissions to delete items from the server.

Procedure

Select one of these options to delete reports, objects, or folders:

- Select the item, right-click, then choose **Delete**, or

- Select the item, the choose Edit: Delete

For objects and reports that are on a server, a warning message displays before you confirm the deletion.

Note: The task scheduler must be running to delete a report with scheduled jobs and remove it from the Recycle Bin.

Copying tables on a server

You can copy tables from one location on a server to another location on the same server, and you can copy tables between servers. When you copy a table, you only copy the data, not the table itself.

Procedure

Option 1
Select one of these options to copy tables on a server:

- Drag the table (folder or tables) to another location within the Tables object section of the server
- Select the table, right click, and choose **Copy**
- Select the table and choose Edit: Copy

The Save Data dialog box opens.

Option 2
Specify desired options, then click **Save**.

Refreshing objects

You can refresh objects periodically because they reside on a server and can be changed while you are using them.

Procedure

Select one of these options to refresh objects:

- Select an object on a server, then choose View: Refresh
- Select the object, right-click, and choose View, then Refresh

The Object Filter dialog box is opened. Choose **OK**.

Note: All options are inactive when you refresh an object because you are refreshing the view only for the object and all objects below the current level.

All options are active when you refresh a server.

Tips for working efficiently

Here are some ways in which you can work with QMF Report Center more efficiently.

Running reports simultaneously

Group all reports that can be run simultaneously into folders. Instead of running each report individually, choose Report: Run while the folder is selected. All reports contained in the folder are run consecutively.

Running reports as a separate process

Use the Run reports as a separate process option on the Report Properties: Miscellaneous dialog box to run reports in the background while you continue to work in QMF Report Center.

Limit rows returned

You can limit the number of rows of data that are returned to your report to reduce processing time. For example, this is useful when you are only interested in the first 20 results of a query that returns hundreds of results. Use the Report Properties: Miscellaneous dialog box to specify the number of rows to which you want to limit output.

Chapter 13. Using the QMF for Windows API

This chapter describes how an application can access the queries stored in the QMF query repository and manipulate them. QMF for Windows has a set of application programming interfaces (APIs) that enable the application to execute the functions.

What is an API?

APIs are functions with a pre-defined functionality that allows the application to execute that function without any knowledge on how it performed. APIs have well-defined inputs and outputs but the process is transparent. APIs are useful when dealing with device drivers for hardware or software packages.

Most programming languages designed for Windows can access the APIs. The method by which this is done varies between programming languages, but all languages have a way of calling the APIs. Once the APIs are included in the programming language environment, using them is like a regular function in the program.

Any programming language that accesses the Windows API can access the QMF for Windows API, including IBM Visual Age for Java.

In order to develop an application using QMF APIs, no extra middleware is needed in addition to the one required for the end user. This means that there ar no special prerequisites for developers. The basic middleware is the middleware necessary for the network environment, the installation of QMF for Windows on the computer, and the programming language used. The same happens with the final application that you distribute to your users. The only middleware necessary for the application to run is the middleware for the network and QMF installed within the environment.

Blocking calls

All of QMF for Windows API functions are synchronous. This means that, when an API is called in your application, it blocks, or does not return, until the requested action completes. This means that the code just below the line calling the API will not be executed until the API completes its function. This implementation is desirable because it simplifies programming in the client application. However, if your application is single-threaded, it will not be able to respond to user input or perform screen refreshes while it is waiting for a QMF for Windows API function to return.

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The QMF for Windows API responds to one function call at a time from a client. If you client application is multi-threaded, you must:

- wait for one function call to complete before making another, or
- create multiple instances of the QMF for Windows API (one for each thread using the API)

If it is necessary for the application to be synchronous, the programmer has to create a new thread within the application and call the API from the new thread. The new thread will then be blocked, but all other threads will continue to execute normally. The programmer has to manage the timing and execution of the threads. When developing multi-threaded applications, keep in mind that QMF for Windows API responds to one function call to complete before making another, or create multiple instances of the QMF for Windows API (one for each thread using the API).

Unit of work

Each instance of the QMF for Windows API object represents a single "unit of work," and can only connect to a single database server at a time. To connect to multiple database servers simultaneously, you create multiple instances of the QMF for Windows API object: one for each database server. To connect to multiple database servers serially (one after the other) using the same QMF for Windows API object, call Commit() or Rollback() and then InitializeServer(). Calling these functions ends the current unit of work, and subsequent calls start a new unit of work.

Governing

One of the key features of QMF for Windows is its ability to govern, or oversee, your use of database resources based on the resource limits established by your system administrator. The QMF for Windows API enforces all resource limits except warning level limits. When you reach a cancel limit, QMF for Windows generates an error indicating that the current action has been disallowed by your system administrator.

Database connections

Each instance of the QMF for Windows API object creates and uses a single connection to the database for all database activity that is subject to a subsequent rollback or commit, including opening a query, fetching data, and executing SQL statements.

If you create more than one query in a given instance of the QMF for Windows API object by calling InitializeQuery() two or more times, all the queries share the same single connection. However, when you call:

- nDeleteQMFObject()
- nGetQMFObjectInfo()
- nGetQMFObjectInfoEx()

- nGetQMFObjectList()
- nGetQMFObjectListEx()
- nGetQMFQueryText()
- nSaveQMFQuery()

QMF for Windows creates and use a second connection to the database in order to handle administrative database activity (for example, retrieving QMF information). This second connection is necessary to support a consistent rollback and commit mechanism for client applications.

The QMF for Windows API object handles these connections automatically to the database. However, if your system administrator has established a limit for the number of connections allowed, remember that each instance of the QMF for Windows API object may use two connections.

Controlling QMF for Windows with APIs

The following steps provide an overview of how you work with the API to control QMF for Windows:

1. Create an instance of the QMF for Windows API object.

   If you are using Microsoft Visual Basic, add a reference to the QMF for Windows type library, `qmfwin.tlb`. Then use the Dim statement:

   ```
   Dim QMFWin As New QMFWin
   ```

   or the CreateObject statement:

   ```
   Dim QMFWin As Object
   Set QMFWin = CreateObject("QMFWin.Interface")
   ```

   If you are using Microsoft« Visual C++« and MFC, create a wrapper class for the QMF for Windows API object from the QMF for Windows type library, `qmfwin.tlb`. Then use the CreateDispatch() function:

   ```
   COleException e;
   IQMFWin QMFWin;
   QMFWin.CreateDispatch("QMFWin.Interface", &e);
   ```

   Note: If you are using a different development environment, refer to your product documentation on how to complete this step.

2. Select the DB2 server you want to use and call InitializeServer() to initialize a connection to the database.

   Note: You cannot initialize a server until a user ID and password are validated by DB2. You can have QMF for Windows prompt for the user and password, or you can prompt for them in your application and pass them as parameters in the InitializeServer() function call.

3. Select the query you want to run using InitializeQuery(). If the query contains variables, use the SetVariable() function to set the variable values.
4. Open or execute the query. Use the Open() function to open the query's cursor for `SELECT` statements, and use the Execute() function to execute the SQL for non-SELECT statements.
5. If the query is a `SELECT` statement, fetch rows of data by repeatedly calling FetchNextRow(). To fetch more than one row at a time, use FetchNextRows(), or use CompleteQuery() to direct QMF for Windows to fetch all of the rows.
6. If the query is a `SELECT` statement, close the query using the Close() function.
7. Terminate the unit-of-work using the Commit() or Rollback() functions.

QMF for Windows APIs

API example

AddDecimalHostVariable()

```
short AddDecimalHostVariable(long QueryID, short Type, short Precision,
short Scale, const VARIANT& Value)
```

Description

This function applies the data in *Value* to a variable in the static SQL statement initialized with *QueryID*. You call this function for each variable in the statement. QMF for Windows makes no attempt to match values to variables, so you must call this function in the same order as the variables in the SQL statement.

Parameters

Table 52. AddDecimalHostVariable() parameters

Name	Description
QueryID	The ID of the query as returned from InitializeStaticQuery().
Type	The SQL data type of the value to be passed to the database server. This value influences the conversion of Value from a `VARIANT` data type to the value actually passed. The only valid value for AddDecimalHostVariable() is 484 (RSDT_DECIMAL).
Precision	The precision of the decimal value.
Scale	The scale of the decimal value.
Value	The data value to substitute in the statement. To specify a null value, the type of the variant should be set to VT_EMPTY.

Return Value

Zero if successful, nonzero if unsuccessful. If the return value is nonzero, you can call GetLastErrorString() or GetLastErrorType() to get additional error information.

Additional information

For additional information about the APIs for QMF for Windows, see the online help for QMF for Windows. The online help discusses APIs in detail, and lists the APIs by name, description, parameters, and return values. There are approximately 100 APIs to date.

Chapter 14. Working with Global Variables

Global and substitution variables

Global variables

Global variables are variables that stay active while the QMF instance is active. It is possible to configure QMF to save your global variables from one instance to the other.

There are two types of global variables:

- user-defined global variables
- pre-loaded (system) global variables provided with QMF for Windows

A global variable can be used in a query, form, or procedure. Global variables may be viewed or updated by selecting the View\Global Variables option in QMF for Windows.

The QMF for Windows set of global variables is stored in the Windows registry. The system administrator can view and edit the system global variables before installation or export the file to all users (copying from one system to another after installation to keep the variables in sync). The global variables are located in:

```
HKEY_CURRENT_USER\SOFTWARE\IBM\RDBI\GlobalVariables
```

Substitution variables

Substitution variables stay active only during execution of the object; whereas, the global variables stay active while the QMF instance (session) is active and, by updating the Windows registry, may be permanent in the Windows registry.

Substitution variables are associated with QMF objects. Global variables are associated with QMF for Windows and the operating system's registry (if you update the registry to make global variables permanent).

Updating the registry

When using QMF for Windows, you may add user-defined global variables for the current work session. When QMF for Windows closes, these variables will be lost.

Follow these steps to retain user-defined global variables:

1. Open the Registry Editor.

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2. Go to the following location in the registry:
   `HKEY_CURRENT_USER\SOFTWARE\IBM\RDBI\Options`
3. Select New-->DWORD Value.
4. Label the DWORD, **SaveGlobals**.
5. Give SaveGlobals a value of 1.
   The user-defined variables will be retained from session to session.

After you update the registry, all the global variables that you create will be stored in the Windows registry and will be kept from one instance to another.

You can add your own global variables:

- manually
- during a procedure

Note: You cannot add a global variable with a **DSQ** prefix.

Also, you cannot change the value of a global variable with a **DSQAO** prefix.

User-defined global variables

The user-defined global variables are global variables used for executing queries, procedures or forms. In a query or procedure, no dialog box displays for the user to enter a value if a user-defined global variable has been created. The value specified for that global variable will be used instead.

Adding variables manually

Follow these steps to create global variables manually:

1. Go to the View: Global Variables menu.
2. Click the **Add** icon.
   The Add Global Variable pop-up window displays.
3. Type the global variable name and its value.
   Global variable names must be between 1-17 characters. Global variable values must be between 1-55 characters long.

   Note: Variable names prefixed with DSQ are not allowed because they are system variables.
4. Click **Add**.
   The variable will be created and can be viewed at the Global Variables dialog box.

Adding in procedure

Follow these steps to add a global variable during a procedure:

1. Create or open the procedure.
2. Add global information to the procedure such as:

   ```
   SET GLOBAL(MY_GLOBAL=20
   ```

3. You can add multiple variables, such as in the following two examples.
   a. String of variables:

      ```
      SET GLOBAL(MY_GLOBAL=2,START_DATE=&DATE,DEPARTMENT=&DEPT
      ```

   b. Lists each variable and uses the SET GLOBAL command only for the first line:

      ```
      SET GLOBAL(MY_GLOBAL=2,
         +START_DATE=&DATE,
         +DEPARTMENT=&DEPT
      ```

4. Add the following command as the last line in the procedure:

   ```
   RESET GLOBAL ALL
   ```

   Note: This command resets the user variables previously set.

Editing a global variable

Click **Edit** to change the name or value of a user-defined global variable.

Deleting a global variable

Click **Delete** to remove a user-defined global variable.

System global variables

QMF for Windows has a set of global variables that are pre-loaded with the product. You can view the system global variables from the View: Global Variable option at the main QMF for Windows dialog box.

Note: Tooltips are available for each option. This allows you to see the entire short description of the variable.

You cannot change or delete status information for **system global variables**. But, in some instances, you can change the value of the system global variable. System global variables are hard-coded into the procedure. The name of a system global variable cannot be changed.

QMF for Windows provides many variables to use in your queries, forms, and procedures. All of the global variables defined for host QMF are recognized by QMF for Windows; however, many host QMF variables do not apply to QMF for Windows. Only the variables listed below are used and are accessible by QMF for Windows. Any references to queries, forms or procedures to QMF host global variables that are not supported by QMF for

Windows are ignored. QMF for Windows may not recognize a global variable and will use it as a substitution variable at runtime.

Global variables prefixed with **DSQQW** are QMF for Windows global variables. All other global variables prefixed with **DSQ** are supported by QMF for Windows and host QMF.

Viewing variable values

Follow these steps to view the possible values for a system global variables:

1. Double-click the name of the global variable.
   The Change Global Variable Value pop-up window displays.
2. Select the variable from the drop-down list.
3. Click **OK**.

For example, for the `DSQEC_FORM_LANG` global variable, you can select one of the following options:

```
0 - Use NLF language when saving forms
1 - Use English language when saving forms
```

Note: The following message displays if you try to change the value of "protected" global variables:

```
You cannot set the value of [global variable name].
```

Naming convention

The naming convention for global variables is:

```
DSQcc_xxxxxxxxx
```

where `DSQcc` can be one of the following category identifiers:

Table 53. Global variable naming convention

Identifier	Description
DSQAO	State information (controls administrative objects)
DSQCP	Information about the Table Editor
DSQDC	Controls how QMF for Windows displays information
DSQEC	Controls how QMF for Windows executes commands and procedures
DSQQW	Controls specific to the QMF for Windows environment

State information variables

Global variables prefixed with **DSQAO** provide state information about QMF for Windows.

Note: None of these variables can be modified by the `SET GLOBAL` command.

Table 54. State information global variables

Global variable	Length	Description
DSQAO_BATCH	1	Batch or interactive mode. Value can be 1 (interactive session) or 2 (batch session). See `/Batch` command parameter.
DSQAO_CONNECT_ID		The ID used to connect to the current database.
DSQAO_CURSOR_OPEN	1	Status of current query's database cursor. Value can be: • 1 (cursor is open) • 2 (cursor is closed)
DSQAO_DBCS	1	DBCS support status. Value can be: • 1 (DBCS support) • 2 (DBCS support is not present)
DSQAO_NLF_LANG	1	National language ID.
DSQAO_NUM_FETCHED	10	Rows fetched by current query object.
DSQAO_OBJ_NAME	18	Name of current QMF object (query, form or procedure). **Note:** This value is blank if there is no current object.
DSQAO_OBJ_OWNER	8	Owner of current QMF object (query, form or procedure). **Note:** This value is blank if there is no current object.
DSQAO_QMF_RELEASE	2	Release number of application.
DSQAO_QMF_VER_RLS	10	Version and release of application. For example, for QMF for Windows version 7.2, this value is 'QMF V7R2'.
DSQAO_QRY_SUBTYPE	1	Subtype of current query. Value can be: • 1 (SQL query) • 3 (prompted query)
DSQAO_QUERY_MODEL	1	Model of current query. Value can be 1 (relational).

Table 54. State information global variables (continued)

Global variable	Length	Description
DSQAO_SYSTEM_ID	1	Operating system (OS). Values can be: • '6' for Windows 3.x • '7 for Windows 95 or Windows 98 • '8' for Windows 2000 and Windows NT

Table Editor variables

Global variables prefixed with **DSQCP** control the operation of the Table Editor. All of these variables can be modified by the `SET GLOBAL` command.

Table 55. Table editor global variables

Global variable	Length	Description
DSQCP_TEDFLT	1	Default character for a column in QMF Table Editor. The default value is '+'. This variable can also be set on the Options dialog box.
DSQCP_TENULL	1	Default character for a NULL character for a column in QMF Table Editor. The default value is '-'. This value can also be set on the Options dialog box.

Display information variables

Global variables prefixed by **DSQDC** control how QMF for Windows displays information. All of these variables can be modified by the `SET GLOBAL` command.

Table 56. Display information global variables

Global Variable	Length	Description
DSQDC_CURRENCY	18	Custom currency symbol for DC edit code.
DSQDC_DISPLAY_RPT	1	Display a report after `RUN QUERY`. The value can be: • 0 (the default, do not display a report) • 1 (automatically display the report with the form)

Table 56. Display information global variables (continued)

Global Variable	Length	Description
DSQDC_LIST_ORDER	2	Default sort order for objects in List window. The value for the first character can be: • 1 (default order) • 2 (sort by object owner) • 3 (sort by object name) • 4 (sort by object type) The value for the second character can be: • A (sort in ascending order) • D (sort in descending order) **Note:** The default value is 1A.

Command and procedure variables

Global variables whose names are prefixed with **DSQEC** control how QMF for Windows executes commands and procedures. These variables can be modified by the `SET GLOBAL` command.

Table 57. Command and procedures global variables

Global Variable	Length	Description
DSQEC_FORM_LANG	1	Default NLF language for saving or exporting a form. Value can be: • 0 (presiding NLF language) • 1 (English) **Note:** The default is 1 (English).
DSQEC_NLFCMD_LANG	1	Expected NLF language for commands in procedures. Value can be: • 0 (presiding NLF language) • 1 (English) **Note:** The default value is 0.

Table 57. Command and procedures global variables (continued)

Global Variable	Length	Description
DSQEC_RESET_RPT	1	Prompt when handling an incomplete data object. Value can be: • 0 (complete the data object without prompting) • 1 (prompt the user to complete the data object) • 2 (reset the data object without prompting)
DSQEC_SHARE	1	Default value for sharing saved objects. Value can be: • 0 (do not share the object) • 1 (share the object)

Windows environment variables

Global variables prefixed with **DSQQW** are specific to the QMF for Windows connections. These variables can be modified by the `SET GLOBAL` command.

Table 58. Windows environment global variables

Global Variable	Length	Description
DSQQW_AUTOMATION	1	Indicates whether the current instance of QMF for Windows was started to service OLE automation requests (value is 1) or to service the user interface (value is 0).

Table 58. Windows environment global variables (continued)

Global Variable	Length	Description
DSQQW_CONNECTIONS	1	Use server connections while running a procedure. This setting controls the number of server connections for procedures. • 0 = minimize the number of connections Specifying a value of 0 can force QMF for Windows to reset or complete a data object before continuing the execution of a procedure. If set to 0, you specify a linear connection, which means that the first query must complete before the next is run. These queries are run in a series. **Note:** The default is 0. • 1 = all: a new connection for each `RUN QUERY` command If set to 1, subsequent connections are opened so the queries are run in parallel (at the same time). **Note:** This global variable is designed to be used with DSQQW_FST_SV_DATA (by which the query will be `PREPARED` only on `RUN QUERY`.
DSQQW_DQ	″	Double-quote character
DSQQW_EXP_DT_FRMT	1	Format for `EXPORT DATA`. Value can be: • 0 (text) **Note:** The default is 0. • 2 (html) • 3 (csv - comma-separated value) • 4 (ixf) For the EXPORT command, you can export the report to a file name with a file type of .qmf, .html or .txt. **Note:** In a procedure (with a .txt file type), if no options are specified as delimiters, the default is spaces.

Table 58. Windows environment global variables (continued)

Global Variable	Length	Description
DSQQW_EXP_OUT_MDE	1	IXF mode for procedures. Value can be: • 0 (System/370 character mode IXF) • 1 (PC/IXF) **Note:** The default is 1.
DSQQW_FST_SV_DATA	1	Use 'Fast Save' mode for `SAVE DATA`. Value can be: • 0 (do not use fast mode) **Note:** The default is 0. • 1 (use fast mode)
DSQQW_HTML_REFTXT	55	Text for `&REF` form variable. The default is 'Back To'.

DSQQW_PROC_OUTPUT		Report Center will pass the path name and file name to a procedure that uses `&DSQQW_PROC_OUTPUT`.
		`EXPORT REPORT TO &DSQQW_PROC_OUTPUT`
		Alternatively:
		`EXPORT DATA TO &DSQQW_PROC_OUTPUT`

DSQQW_QUERY_LANG	1	Subtype of query created by `DISPLAY QUERY` when no query object exists. Value can be: • 0 (SQL) **Note:** The default value is 0. • 1 (prompted)
DSQQW_QUERY_PREP		Prepare the query on a `RUN` command instead of running. This option invokes the `PREPARE SQL` command. DB2 will check the query syntax, existence of every object concerned with the query, but internal calculations will be performed and no data will be sent to the client. This option can be used to validate queries with complicated calculations or ones that will return significant data. Value can be: • 0 (No) • 1 (Yes)

Table 58. Windows environment global variables (continued)

Global Variable	Length	Description
DSQQW_RPT_COPIES	10	Number of copies for `PRINT REPORT`. The default is 1. **Note:** If `DSQQW_RPT_USE_PS` is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.
DSQQW_RPT_FONT	55	Font for `PRINT REPORT`. The default is'Courier New'. **Note:** If `DSQQW_RPT_USE_PS` is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.
DSQQW_RPT_FONT_BD	1	Bold attribute for `PRINT REPORT`. The default is 0. **Note:** If `DSQQW_RPT_USE_PS` is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.
DSQQW_RPT_FONT_IT	1	Italic attribute for `PRINT REPORT`. The default is 0. **Note:** If `DSQQW_RPT_USE_PS` is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.
DSQQW_RPT_FONT_SZ	2	Font size for `PRINT REPORT`. The default is 10. **Note:** If `DSQQW_RPT_USE_PS` is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.
DSQQW_RPT_LEN_TYP	1	Type of page length for `PRINT REPORT`. The value can be: • 0 to fit the length of the printed page **Note:** The default value is 0. • 1 to specify an explicit number of lines • 2 to specify a continuous report with no page breaks **Note:** If `DSQQW_RPT_USE_PS` is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.

Table 58. Windows environment global variables (continued)

Global Variable	Length	Description
DSQQW_RPT_NUM_CHR	10	Number of characters across a printed page for `PRINT REPORT`. This has an effect only when DSQQW_RPT_WID_TYP is 1. The default value is 80. **Note:** If `DSQQW_RPT_USE_PS` is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.
DSQQW_RPT_NUM_LNS	10	Number of lines down a page for `PRINT REPORT`. This has an effect only when DSQQW_RPT_LEN_TYP is 1. The default value is 60. **Note:** If `DSQQW_RPT_USE_PS` is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.
DSQQW_RPT_ORIENT	1	Page orientation for `PRINT REPORT`. The value can be: • 0 = portrait **Note:** The default is 0. • 1 = landscape **Note:** If `DSQQW_RPT_USE_PS` is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.
DSQQW_RPT_USE_PS	1	Set of page formatting options (page length, page length) for `PRINT REPORT`. The value can be: • 0 (use the values specified on the `PRINT REPORT` command or in global variables) • 1 (use the values specified in the form document's page setup. This is the default. **Note:** If this value is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.

Table 58. Windows environment global variables (continued)

Global Variable	Length	Description
DSQQW_RPT_WID_TYP	1	Type of page width for `PRINT REPORT`. Value can be 0 (fit the width in the printed page) or 1 (specify an explicit number of characters). The default is 0. **Note:** If this value is set to 1, the Page Setup options are used; if it is set to 2, the global variable settings are used.
DSQQW_SHOW_QUERY	1	View of a query for `SHOW QUERY`. Value can be: • 0 = SQL or prompted view **Note:** The default value is 0. • 1 = results view
DSQQW_STRIP_SPACE	1	Remove trailing spaces from objects retrieved from server. Value can be: • 0 = retain trailing spaces • 1 = remove trailing spaces **Note:** The default is 1.
DSQQW_SV_DATA_C_S	10	Rows to insert before commit for `SAVE DATA`. Value can be: • 0 = all rows **Note:** The default is 0. • n, where n is an explicit number of rows
DSQQW_UEDIT_DLL	55	DLL implementing user edit routines. The default value is `rsuedit.dll`
DSQQW_PROC_WNDWS		Procedure results options. Values are: • 0 = leave the most recent objects open at the end of the procedure For example, leave the most recent query and form open at the end of the procedure, but not the most recent procedure. • 1 = leave all objects open at the end of the procedure

Chapter 15. Working from the Command Bar

A command bar is available at the top of the QMF for Windows user interface. From this command line you can enter commands and specify the server at which to run the command. A drop-down list box lists the recent commands.

If it is not visible, select View: Command bar to display the command bar.

Executing commands automatically

Settings and actions can be defined to take effect when QMF for Windows is started. These parameters are defined on the QMF for Windows command line. They can be used to preset settings or to run unattended sessions.

For help on adding command line parameters to an icon or start menu, refer to your operating system's help facility.

Command bar parameters

The command line parameters are listed and described below.

Table 59. Command bar parameters

Parameter	Description
ObjectName	The QMF for Windows file (query, procedure, job, or form) that is opened when you start QMF for Windows.
/IProcName:procedurename	The name of a procedure stored at a database server to run after starting QMF for Windows. To use the */IProcName* parameter, you must also specify the */IServer* parameter if the server is different from the server on which the procedure was created.
/IProcFile:procedurefile	Defines the location and name of a locally-stored procedure file to run after starting QMF for Windows.
/IServer:servername	The server where the startup procedure specified on the */IProcName* parameter is stored.
/IObject:"ObjectOwner"."ObjectName"	The name of an object stored at a database server that will be retrieved after starting QMF for Windows. To use the */IObject* parameter, you must also specify the */IServer* parameter.

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Table 59. Command bar parameters (continued)

Parameter	Description
/IRun	Starts an opened or retrieved object. It is used in conjunction with */IUserID* and */IPassword* parameters. **Note:** This parameter ignores forms and jobs.
/IDisplay	An opened or retrieved object. If */IRun* or */IDisplay* parameters are not specified, then the */IDisplay* parameter is used.
/IUserID:userID	The user ID to use when running an object specified with the */IProcName* or */IProcFile* parameters or with the *Object Name* or */IObject* parameters. It is used in conjunction with the */IPassword* parameter.
/IPassword:password	The user's password specified with the */IUserID* parameter. **Note:** The */IPassword* parameter includes the user's password in plain text.
/Batch	End the current session of QMF for Windows and close the application after running the object specified on the command line. This parameter suppresses all warning and error messages.
&variablename-variablevalue	Define or update global variable values for a procedure or query. Multiple variables can be defined. **Note:** The value sent to the procedure must be enclosed in double quotes (" ").
/ICatalogUserID	The user ID to use when connecting to an ODBC data source. It is used in conjunction with the */ICatalogPassword* parameter.
/ICatalogPassword	The user's password, as specified with the */ICatalogUserID*. This parameter is used when accessing ODBC data sources.
ICatalogUserID	The catalog server's user ID to use when working with a server specified with the /IServer parameters. It is used in conjunction with the /ICatalogPassword parameter.
ICatalogPassword	The password of the user specified with the /ICatalogUserID parameter. **Note:** The /IPassword parameter includes the user's password in plain text.

How to use the command bar

Follow these steps to use the command line functionality in QMF for Windows:

1. Create a procedure.

   For example,

   ```
   run query ObjectTracking (form=ObjectTrackingForm
   export report to c:\qmftrack.rep
   windows notepad c:\qmftrack.rep
   ```

   This example executes a query called ObjectTracking using the form called ObjectTrackingForm for report generation. It will export the report to a file called qmftrack.rep at the local system in c:\directory. The last statement, `Windows Notepad c:\qmftrack.rep`, will open the saved report file using the Windows Notepad application.

2. Save the procedure at the server or as a local file on your system.

   For example,

   ```
   c:\procedure1.prc
   ```

3. Execute the procedure saved at the server or saved as a local file.
4. Issue the following statement at the command line prompt to execute the procedure if **saved at the server**:

   ```
   "C:\Program Files\IBM\QMF for Windows\qmfwin.exe" /IServer:DB2AIX
    /IProcname:DB2INST1.Procedure1 /IUserID:db2inst1 /IPassword:db2inst1
   ```

   Note: Make sure to include the double quotes around the path specification within the statement if the path contains spaces.

5. Issue the following statement from the system command prompt to execute the procedure **saved in a local file**:

   ```
   "C:\Program Files\IBM\QMF for Windows\qmfwin.exe" /IServer:DB2AIX
    /IProcfile:"c:\Procedure1.prc" /IUserID:db2inst1 /IPassword:db2inst1
   ```

   Note: Make sure to include the double quotes around the path specification within the statement if the path contains spaces.

Appendix A. Working with IBM DB2 Spatial Extender

The IBM DB2 Spatial Extender stores, accesses, manages, and analyzes spatial data that you can query. The Spatial Extender works with ESRI spatial visualization tools. This enables you to gather spatial data and attach non-spatial business data attributes to it.

IBM DB2 Spatial Extender is a feature incorporated into IBM DB2 Universal Database that enables spatial data access and analysis. Spatial data consists of values that denote the location of objects and areas with respect to one another. The technology for DB2 Spatial Extender was jointly developed by IBM and ESRI.

An estimated 80% of all data has embedded spatial characteristics. This data can be exploited to formulate queries containing relevant parameters.

Features

- Make spatial data relevant to your business, such as customers, staff, departments, inventory
- Combine spatial data with business data in the same RDBMS to better manage your data within DB2
- Use SQL extensions to handle complex data types and allow applications to store and manipulate objects directly inside the DB2 database
- Make this data more SQL accessible
- Ability to do SQL querying of spatial data or joining this data with conventional business data stored any DB2 database
- Work with visualization tools, such as ArcView, to provide visual map renderings of spatial data

  Note: ArcView is required to use the IBM DB2 Spatial Extender feature.
- Spatial data modeling
- Multiple data types (13)
- Support for popular industry formats, such as ESRI shape files (.shp)

Prerequisites

- DB2 Spatial Extender

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- Licensed copy of DB2 Universal Database Enterprise Edition, or licensed copy of DB2 Universal Database Enterprise-Extended Edition for Windows NT or AIX®«
- Microsoft Windows NT, Microsoft Windows 2000, or IBM AIX

Integration with QMF for Windows

IBM Spatial Extender is integrated in many areas of QMF for Windows.

Export Data dialog box

Two options have been added to the Save as Type menu option:

- **dBase III file (*.dbf)**

  If you press **Options** when you select this file type, the ExportdBase Options dialog box displays. Here, you can select whether to export all data or selected data.

- **Shape file**

  Shape file (*.shp) is an option available under the Save As Type menu option if the result set being exported contains exactly one column with a spatial data type. If you press **Options** when you select this file type, an Export Shape File Options dialog box displays. Here, you can specify whether to export all data or selected data.

Import Data dialog box

Two options have been added to the Files of Type menu option.

- **dBase III files (*.dbf)**

  You can select a dBase file to import. The data is imported into the result set of a new query document, similar to importing IXF data.

- **Shape files (*.shp)**

  You can select a shape file to import. The data is imported into the result set of a new query document, similar to importing IXF data.

Invoking the ESRI Visualization Component

You can invoke the ESRI Visualization Component, which is used to present shape files (*.shp) visually.

Results menu

The Visualize option on the Results menu does the following:

1. Exports the current result set to a temporary shape file.
2. Displays the Visualize Spatial dialog box.

This command is available only if the current result set contains exactly one column with a spatial data type.

Note: Only one layer will be created from each temporary shape file.

List menu

The Visualize command on the List menu (or from the right-click menu in an object list) does the following:

1. Retrieves and runs the selected queries and tables.
2. Exports the result sets to temporary shape files.
3. Displays the Visualize Spatial Data dialog box.

Note: Only one layer will be created from each temporary shape file.

The Visualize command is available only if queries and tables are selected in the list.

Note: An error occurs if any of the result sets do not contain exactly one column with a spatial data type.

File menu

From the Select File menu option, choose Visualize Shape File to browse for an open a shape file. When you choose this option, the Open dialog box displays. Enter search information at this dialog box to search for the shape file. After you select the shape file, the Display Map dialog box displays, with one layer created from the selected shape file.

Note: In the Open dialog box, the Files of Type lists only shape files (*.shp). The Visualize Shape command is always enabled on the File menu.

Display Map

The Display Map dialog box displays spatial data and the corresponding layers used to build the data. This dialog box has two panes: the Layers List and the Result Map.

Layers list

The left side of the Display Map dialog box contains a tree control that displays the layers being visualized. Each layer corresponds to a shape file in the file system, including temporary files.

- For each layer created from a temporary shape file or exported from a query or table, the label for that layer is the name of the query or table, followed by the name of the shape file in parentheses.
- For each layer created from an existing shape file, the label for each layer will be the label of the shape file.

Table 60. Layers list controls

Control	Description
Add	Displays the Add Layer dialog box, where you can add a layer by selecting a result set that contains spatial data, a query or table, or a shape file.
Remove	Removes the selected layer from the right pane display.

Add Layer dialog box

Use the Add Layer dialog box to add a layer from a file, database, or open document. Some options may not be active. For example, you can select an option only if there is at least one result set open that contains spatial data. The selected file is created as a new layer in the visualization.

Click **List Objects** to locate the desired object via the List Objects dialog box.

List Objects dialog box

Use the List Objects dialog box to specify the server, owner, or name of the object that you want to add as a layer. Specify the criteria for locating the object, then select the object from the list.

Result Map

The right side of the Display Map dialog box visually presents the spatial data assembled from the selected queries, tables, or shape files.

Table 61. Result map controls

Control	Description
Zoom In	Changes focus on an area of the result map. The result map will be magnified in the selected area.
Zoom Out	Changes the focus on an area of the result map. The result map will be reduced in the selected area.
Pan	Pull down or pull up the result map to change the vertical view.
Pan Diagonally	Shift the content of the result map diagonally.
Help	Obtain online help.
Save	Save the content of the result map, including its layers.

Procedure Commands

Table 62. Procedure commands

Procedure	Description
`SPATIAL`	Perform spatial operations from a procedure. Below are the forms of the `SPATIAL` command.
`SPATIAL RESET`	Reset the current visualization specification to contain no layers.
`SPATIAL ADD`	Export the current data object to a temporary shape file and add it, as a new layer, to the current visualization specification. **Note:** An error occurs if the current data object does not contain exactly one column with a spatial data type.
`SPATIAL EXPORT TO file-name (DATAFORMAT-JPG|BMP|GIF|...,CONFIRM=YES|NO`	Invokes the ESRI component to visualize the layers in the current visualization specification and export the image to a file with the specified name, in the specified data format. The `CONFIRM` option controls whether an overwrite confirm message should display if the specified file exists. **Note:** An error occurs if the current visualization specification is empty.
`SPATIAL DISPLAY`	Displays the Visualize Spatial Data dialog box to visualize the layers in the current visualization specification. The procedure is suspended until the user closes the dialog box. Then, it continues running. **Note:** An error occurs if the current visualization specification is empty.
`EXPORT DATA`	This procedure command accepts the following values for the `DATAFORMAT` option: • DBF • SHP This function is similar to the `EXPORT FORMAT` command and the Export Data dialog box. **Note:** An error occurs if **SHP** is specified and the current data object does not contain exactly one column with a spatial data type.

Table 62. Procedure commands (continued)

Procedure	Description
`IMPORT DATA`	This procedure works with dBase files and shape files. This function is similar to the `IMPORT DATA` command and the Import Data dialog box. The type of data that is being imported is determined by the file extension, where **.dbf** means a dBase file, **.shp** means a shape file, and anything else means an **.ixf** file (which maintains backward compatibility).

Appendix B. Working with QMF Query for Java

Overview

QMF Query for Java opens data stored in any member of the DB2 family of databases to any web browser client. It uses 100% pure Java technology to provide server platform independence.

This chapter describes the setup and configuration of an HTTP server, a Web application server, and the JDBC drivers on a Windows NT/2000 platform.

Features

QMF Query for Java enables you to create and run SQL queries against DB2 databases and format the results for viewing or use in other applications.

After logging into the database (by specifying the database name, user ID, and password), you can select QMF for Windows SQL queries, prompted queries, or database tables. You can also create a new SQL query manually or by using a prompted query tool. Queries can be parameterized, and you can specify different input values each time you run an SQL query.

Once a query is run and a result set is obtained, there are several ways to view or export the results data. You can:

- apply a QMF form from the server or from your computer to create a report
- generate a QMF form from the query
- export the data in text format for import into other applications
- export the data in comma-separated value (*.CSV) format for import into spreadsheet applications
- save the data to a new or existing database table

The resulting output report or export file (and the database connection) is maintained for the lifetime of the web server session.

Object tracking

Object tracking, similar to that in QMF for Windows, is performed automatically. The tracking data for executed queries is stored in the `Q.OBJ_ACTIVITY_SUMM` and `Q.OBJ_ACTIVITY_DTL` tables.

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Getting started with QMF Query for Java

Connect

To launch QMF Query for Java, open a web browser and enter the following URL:

```
http://serverHost/servlet/QMFJava
```

ServerHost is the server name where QMF Query for Java has been installed. The name of the *servlet* is assumed to be `QMFJava`. If it is not, change the URL.

The QMF Query for Java logon page displays.

Log on

Procedure

Once you install and configure QMF Query for Java, as described in the appendix, "Using QMF Query for Java," in the Getting Started with QMF for Windows manual, you can connect using any Web browser.

Follow these steps to log in to QMF Query for Java before interacting with a database.

1. Enter the name of the database you want to query.
2. Enter your user ID and password.

   Note: Your User ID is the user ID at the selected database. Your database server user ID is not necessarily the same as your local or network ID.
3. Click **Next**.

   The List Objects page displays.

Table 63. Controls on login page

Control	Description
Continue	Open the List Objects page
Back	[This control is disabled.]
Home	[This control is disabled.]
Save	[This control is disabled.]
Exit	Closes QMF Query for Java and logs off the current user
Help	Display the online help facility
Options	[This control is disabled.]

You are now logged on to QMF Query for Java. After logging on to the database, you can work with queries or database tables or create a query. You can add parameters to queries and specify different input values each time you run the query.

Select objects

Use the List Objects page to view a list of objects (queries or tables) belonging to the specified owner and name. From this page, you can select the objects you want to view and provide information on how these objects will be sorted on the page. Additionally, you can run, edit, or delete the object. There are also options to create an SQL or prompted query if the desired object does not exist for this owner and name.

Fields

Owner

The owner of the object, such as `Q`.

The owner is taken from the Login page. If you leave the default name, (**%**), all objects will be listed for this owner and ID.

Name

The name of the object, such as `APPLICANT`.

The name is taken from the Login page. If you leave the default name, (**%**), all objects will be listed for this owner and ID.

You can specify "like" information to work with particular queries or tables, such as:

```
Objects with an owner like: MA%
           and a name like: REPORT%
```

Object type

Specify the objects with which you want to work. You can choose from *queries* and *tables*.

Sort list by

Specify the sort condition for the List Objects. You can choose from *owner and name* or *comment*.

Note: A comment describes the query. A comment can be up to 80 characters in length. Comments are optional.

List Objects

This table lists the objects that meet your criteria (owner, name, or object type - table or query).

The owner and name of the object are listed, along with comments, if any. The objects listed are listed alphabetically, in descending order, by owner and name or comment.

The icon to the left of the object identifies whether the object is an SQL query or a prompted query. This determines the page to which you advance when editing the query.

Procedure

Working with an existing object

1. Type the *owner* or *name* of the object with which you want to work.

   Optionally, you can type the owner and (object) name.
2. Check the object type. Choices are *query* and *table*.

   Optionally, you can select query and table objects.
3. Specify how you want to sort the List Objects. Choices are by *owner and name* or by *comment*.

   Note: Comments are optional and may not exist for queries and tables.
4. Click **Refresh** to update the List Objects based on your entries.
5. Locate the object in the List Objects.
6. Click on the object, then click **Continue** or double-click on the object.

   Note: You cannot double-click on an object if you are not using a grid.

   The Format Query Results page displays. See "Format Query Results" for more information about this option.

   Other options are described below.

Controls

Table 64. Controls on List Objects page

Control	Description
Continue	Open the next page
Back	Return to the prior page. Your entries are cancelled.
Home	[This control is disabled.]
Save	[This control is disabled.]
Exit	Closes QMF Query for Java and logs off the current user
Help	Display the online help facility

Table 64. Controls on List Objects page (continued)

Control	Description
Options	Display the Options page, where you can customize: • User interface (look and feel) •

```
Text of DB2ADMIN.GRID
```

Procedure

1. Select the query you want to edit.
2. Click **Edit**.

   The Edit SQL Query page displays, and contains the SQL associated with the query.
3. Update the SQL text.
4. Click **Continue**.

   The Format Query Results page displays.

Controls

Table 65. Controls on Edit SQL query page

Control	Description
Continue	Open the next page
Back	Return to the prior page. Your entries are cancelled.
Home	Return to the List Objects page to work with or create a query
Save	Save the current query to the database. This function is not available from all pages.
Exit	Close QMF Query for Java and logs off the current user
Help	Display the online help facility
Options	Display the Options page, where you can customize: • user interface (look and feel) • Query results • HTML reports • Page format • LOB • Exported text data • Exported csv data See "Options" for information on these options.

Create SQL query

You can create an SQL query from the List Objects page. This option creates an *ad hoc* SQL query. A query is a description of a result set of data that you want to retrieve from a database.

Fields

Enter an SQL statement

Use the input field to enter the text of the new query.

Procedure

1. Click **Create SQL query** at the Objects List page.

   The SQL Query page displays.
2. Type the text of the query.
3. Click
4. **Continue** to run the query.

   The Format Query Results page displays.

Controls

Table 66. Controls on Create SQL query page

Control	Description
Continue	Run the query
Back	Return to the prior page. Your entries are cancelled.
Home	Return to the List Objects page to work with or create a query
Save	Save the current query to the database. This function is not available from all pages.
Exit	Close QMF Query for Java and logs off the current user
Help	Display the online help facility
Options	Display the Options page, where you can customize: • user interface (look and feel) • Query results • HTML reports • Page format • LOB • Exported text data • Exported csv data See "Options" for information on these options.

Save object

The Save Object page displays when you click **Save** from any page where **Save** is enabled.

Fields

Query owner
The owner of the object being saved.

Query name
The name of the object being saved.

Comment
A comment, up to 80 characters, that describes the object. You can leave this field blank.

Share the query with other users
When checked, makes the query available to other users.

Replace the query if it already exists
When checked, replaces any query that shares the same owner and name.

Procedure

1. Define the *Query Owner* and *Query Name*.
2. Optionally, at the *Comment* field, add a comment to describe the query.
3. Specify whether the query can be shared.
4. Define whether to replace an existing query if it has the same name.

   A message displays that the object was saved.

Controls

Table 67. Controls on Save Object page

Control	Description
Continue	Save the query or prompted query
Back	Return to the prior page. Your entries are cancelled.
Home	Return to the List Objects page to work with or create a query
Save	[This control is disabled.]
Exit	Close QMF Query for Java and logs off the current user
Help	Display the online help facility

Table 67. Controls on Save Object page (continued)

Control	Description
Options	Display the Options page, where you can customize: • user interface (look and feel) • Query results • HTML reports • Page format • LOB • Exported text data • Exported csv data See "Options" for information on these options.

Create prompted query

You can create a prompted query from the List Objects page. A prompted query is a graphical representation of the components that make up a query. If you are not familiar with SQL syntax, use the Prompted Query page to create and edit your queries.

At least two components are required to create a prompted query: tables and columns. You need to specify join conditions if you select more than one table for the prompted query. Row conditions and sort conditions are optional.

The Create Prompted Query page is a form that is laid out in logical order. The sections below describe how to complete the form by identifying the required input fields for each element included in the prompted query.

Add Tables

Displays the names of the tables in the prompted query. The tables from which you are retrieving data are the first elements you specify in a prompted query. You must include at least one table in this list to run a prompted query.

Note: No tables will be associated with the prompted query when you select the create function. You must add at least one table to the prompted query before you can add columns, join conditions, sort conditions, and row conditions. These fields are disabled until you add a table to the prompted query.

The Add Table page displays when you click **Add Table** from the Create Prompted Query page. Use this page to identify which tables will be added to a new prompted query.

Fields

Select a table to add

Specify the criteria for adding a table to the prompted query. Choices are:

Table 68. Table selection criteria

Table criterion	Description
Tables with owner like	The owner of the table you want to include in the query. Use % as a wildcard, if applicable.
And a name like	The name of the table you want to include in the query. Use % as a wildcard, if applicable.

How do you want to sort the list of objects?

Specify the criteria for sorting the tables added to the prompted query. Choices are:

Table 69. Table sort criteria

Sort criterion	Description
By owner and name	Sorts the List Objects alphabetically by owner and name
By comment	Sorts the List Objects alphabetically by the comment associated with the object. **Note:** Not all objects have comments.

Procedure

1. Type the *owner* and *name* of the table you want to add to the prompted query.
2. Click on the sort option to sort the tables in the prompted query by *owner and name* or *comment*.
3. Click **Continue**.

   The Select Table page displays. This page presents the same information as the List Objects page, including listing tables by owner, name, and comments.
4. Double-click on a table or select a table and click **Continue**.

   You return to the Create Prompted Query page. The table will be listed. Next, you can specify the columns from the selected table to include in the prompted query. See "Add Columns" for more information.

Add Column

The Add Column page displays when you click **Add Column** from the Create Prompted Query page.

Use this page to identify which columns will be added to the new prompted query from the selected tables.

Fields

Select a column

Choose the columns to add to the prompted query. The columns that display are the columns from the selected table. If you select two or more tables, the columns from each table are prefixed. For example,

```
A.TEMPID
A.NAME
A.ADDRESS
B.TEMPID
B.NAME
B.INTDATE
B.STARTDATE
```

Use **Ctrl** to select multiple columns, if applicable.

Enter an expression

(Or enter an expression here): Enter an SQL expression to take some kind of action against the selected column. For example:

```
Q.ID+10
```

This expression will add 10 to each ID.

New column name

This field enables you to rename a column. The new column name will be included in the result set. For example, you can change `A.OBJECTLEVEL` to `AUTHORIZATION`. This allows you to rename the column for the result set but not the table.

Summary function

The summary function enables you to obtain different types of summary information for a column. For example, select a column (`Q.SALARY`) then choose the summary type (`AVERAGE`) to determine the average salary of a department. The following summaries are available:

- Average
- Count
- Maximum
- Minimum
- Sum

Procedure

1. From the column list, select the column or columns you want to add to the prompted query. The columns are taken from the selected table or tables.

   You can use **Ctrl** to select multiple columns.
2. Alternatively, you can enter an expression,
3. Click **Continue**.

   You return to the Create Prompted Query page. The columns will be listed.

   [Optional] You can specify the join conditions to link tables in the prompted query. This is required if more than one table is selected and the tables have matching columns. See "Add Join Conditions" for more information about this option.

   [Optional] You can specify sort conditions to organize the query results based on the columns included in the table or tables. See "Add Sort Conditions" for more information about this option.

   [Optional] You can specify row conditions to determine which rows are returned in the query results. See "Add Row Conditions" for more information about this option.

Add join conditions

Displays the join conditions used to connect the tables in the query. When you add more than one table, you must specify at least one join condition for each table. Any table that is not part of at least one join condition is deleted from the query automatically.

The Join Condition page displays when you click **Add Join Condition** from the Create Prompted Query page. The join condition will be used to connect the tables in the query. The join condition specifies how the tables are related.

Note: This control is disabled if a single table is selected for the prompted query.

Fields

Table [ ]: The left- and right columns list the columns in each table from which you can make a join condition.

Note: Rows that have equal values in those columns will be joined.

Procedure

1. Click a column from the left- and right lists of columns in each table.

   Select columns with equal values from each table, such as joining the following tables by `NAME`:

Table 70. Sample Join Conditions

Table [A]	Table [B]
OWNER (CHARACTER) NAME (CHARACTER) TYPE (CHARACTER) SEQ (NUMERIC)	TEMPID (NUMERIC) NAME (CHARACTER) ADDRESS (CHARACTER) EDLEVEL (NUMERIC)

2. Click **Continue**.

   The Create Prompted Query page displays. The join conditions will be listed.

   [Optional] You can specify sort conditions to organize the query results based on the columns included in the table or tables. See "Add Sort Conditions" for more information about this option.

   [Optional] You can specify row conditions to determine which rows are returned in the query results. See "Add Row Conditions" for more information about this option.

Sort conditions

The Sort Condition page displays when you click **Add Sort Condition** from the Create Prompted Query page. The sort condition will be used to organize the query results, based on the columns included in the tables. For example, if you selected the following columns from two joined tables (prefixed by A and B), select a single column by which to sort the query results.

Note: Sort conditions are optional in a prompted query.

Table 71. Sample sort conditions

Column to sort by
A.OWNER (CHARACTER) A.NAME (CHARACTER) A.TYPE (CHARACTER) A.SEQ (NUMERIC) A.APPLDATA (LONG VARCHAR FOR BIT DATA) B.TEMPID (NUMERIC) B.NAME (CHARACTER) B.ADDRESS (CHARACTER) B.EDLEVEL (NUMERIC) B.COMMENTS (CHARACTER)

If sorting by multiple columns, the results will be sorted by the first sort condition, then the second sort condition within the first, and so on. In the example below, the primary sort is on Manager (in descending order), Salary (in ascending order), then Name (in descending order).

Table 72. Sample sort conditions

Manager	Salary	Name
Salloum	$50,000 $57,500 $60,000	Sweeney Parker Demoura Zidonis Blair Albright Albrizio LeVine Coughlin
Graham	$48,000	Sullivan Romano
Entwistle	$40,000 $45,000	Orr Gretzky Buckner

Fields

Select a column to sort by

Lists the columns you selected from the table (or joined tables) for which you can define a sort condition for organizing the query results.

Ascending/Descending

Click one of the following options:

- **Ascending** to sort the query results by the specified column and table in ascending order (1, 2, 3, 4...; A, B, C, D...)
- **Descending** to sort the query results by the specified column and table in descending order (10, 9, 8, 7...; Z, Y, X, W...)

Procedure

1. Click a column for which you are defining sort conditions.

   The column list displays each column from the selected table or tables.

   Note: You can select multiple columns for the sort condition.
2. Click **Ascending** to sort the query results from lowest-to-highest (such as 1, 2, 3, 4...; A, B, C, D...).
3. Otherwise, click **Descending** to sort the query results from highest-to-lowest (such as 10, 9, 8, 7...; Z, Y, X, W...).
4. Click **Continue**.

   The Create Prompted Query page displays. The sort condition will be listed.

[Optional] You can specify row conditions to determine which rows are returned in the query results. See "Add Row Conditions" for more information about this option.

Row conditions

The Row Condition page displays when you click **Add Row Condition** from the Create Prompted Query page. Use this option to specify which rows to

include in the query results. For SQL users adding a row condition is the same as adding a predicate to the query `WHERE` clause.

Note: Row conditions are optional in a prompted query.

Fields

Select a column

Lists the columns included in the query.

You can select a column from the list of available columns or enter an expression valid for your database server.

Is/Is Not

Click **Is** or **Is Not** to specify the operator for the expression. For example, to specify "Not Equal To", click **Is Not** and select the **Equal To** operator.

If the Column expression is numeric, you cannot use the *Starting With*, *Ending With* or *Containing* operators.

If all conditions are connected with **Is**, the database server returns only those rows that meet all of the row conditions. If all conditions are connected with **Is Not**, the database server will exclude all rows that meet the row conditions.

Note: This switch ("is" or "is not" and the accompanying condition, described below) works in conjunction with the fields to the right of the page (fields labeled p1 - p6).

Conditions

Conditions include:

- **Equal to (p1) or (p2) or (p3)...or (p6)**

  Enter up to six expressions. If you specify more than one expression here, a compound row condition is created using the Or connector. For example, `ID = 10 Or 20 Or 30 Or 40`.
- **Less than (p1)**

  Specify one expression.
- **Less than or equal to (p1)**

  Specify one expression.
- **Greater than (p1)**

  Specify one expression.
- **Greater than or equal to (p1)**

  Specify one expression.

- **Between (p1) and (p2)**

  Specify two expressions. For example, `ID Between 10 And 20`.
- **Starting with (p1) or (p2)**

  Enter up to six expressions. If you specify more than one expression here, a compound row condition is created using the Or connector. For example, `ID = 10 Or 20 Or 30 Or 40`.
- **Ending with (p1) or (p2)**

  Specify one expression.
- **Containing (p1) or (p2)**

  Enter up to six expressions. If you specify more than one expression here, a compound row condition is created using the Or connector. For example, `ID = 10 Or 20 Or 30 Or 40`.
- **NULL**

  You cannot enter an expression if the operator is NULL.

p1 - p6

Enter column or expression valid for your database server in each of these input fields based on the selected condition.

Note: Use the appropriate identifier (table owner, table name, or column name) in the expression. Enclose the character values in the appropriate quote character.

Object owners and object names, including column names. The maximum length of table owners and table names depends on the version and platform of DB2.

Normal characters include uppercase letters, digits or the following characters: _ @ # # $. Enclose any special characters in quotes. If the identifier contains a quote character, double each occurrence of the quote character and then enclose the entire identifier in quote characters. For example, enter the identifier pro″ject as ″pro″″ject″.

If you use lowercase letters and do not enclose the identifier in quotes, any lowercase letters are not changed to uppercase.

Enter expression here

Enter an expression valid for your database server in each of the input fields. Use the appropriate identifier (table owner, table name, or column name) in the expression, and enclose character values in the appropriate quote character.

Procedure

1. Click a column for which you will set conditions to limit the query results returned by the database.

   The column window lists the columns included in the query.
2. Click **Is** or **Is Not** as the operator for the expression (described in step #3).
3. Click on the appropriate condition, which works in conjunction with the fields on the right of the page (p1 - p6). Each condition identifies the field with which it is associated.

   Conditions include:

   - Equal to (p1) or (p2) or (p3)...or (p6)
   - Less than (p1)
   - Less than or equal to (p1)
   - Greater than (p1)
   - Greater than or equal to (p1)
   - Between (p1) and (p2)
   - Starting with (p1) or (p2)
   - Ending with (p1) or (p2)
   - Containing (p1) or (p2)
   - NULL

   Note: See "Conditions" above for a description of the conditions and related input fields.
4. Enter values in the fields on the right of the Row Conditions page (p1 - p6) based on the selected condition.

   Note: Use the appropriate identifier (table owner, table name, or column name) in the expression. Enclose the character values in the appropriate quote character.
5. At the **Enter expression here** field, enter an SQL expression to limit the query results returned by the database.
6. Click **Continue**.

   The Create Prompted Query page displays.
7. Click **Continue**.

   The Format Query page displays and has been updated with Row Condition information.

Controls

Table 73. Controls for Create Prompted Query

Control	Description
Add	• **Table** Display the Add Table page so you can add a table to the prompted query. For SQL users, this is the same as adding a table to the query using the FROM clause. When you add a table, QMF Query for Java assigns to it a correlation ID. See "Add Table" for more information on this option. • **Column** Display the Add Column page so you can add columns to the query results. See "Add Column" for more information on this option. • **Join Condition** Display the Add Join Conditions page. For SQL users, this is the same as adding a join predicate to the WHERE clause in the query. See "Add Join Conditions" for more information on this option. • **Sort Conditions** Display the Add Sort Conditions page. See "Add Sort Conditions" for more information on this option. • **Row Conditions** Display the Add Row Conditions page. See "Add Row Conditions" for more information on this option.
Edit	Update the column description, join condition, sort condition or row condition in the prompted query. **Note:** This control is not available for tables.
Delete	• **For tables** Delete the selected table from the prompted query. QMF Query for Java removes all other related elements automatically (including join conditions, columns, sort conditions, and row conditions) that refer to the table you are deleting from the prompted query. • Remove the column, join condition, sort condition or row condition from the prompted **Note:** Delete- and delete-confirmation prompts display when you select this option.

Table 73. Controls for Create Prompted Query (continued)

Control	Description
Move up	Move the selected table, column, join condition, sort condition or row condition up in the list • Moving a *table* affects the order in which two or more tables are joined • The initial *column* order is taken from the tables • The *join condition* is based on the table order • The *sort condition* controls the primary and subsequent sorts
Move down	Move the selected table, column, join condition, sort condition or row condition down in the list • Moving a *table* affects the order in which two or more tables are joined • The initial *column* order is taken from the tables • The *join condition* is based on the table order • The *sort condition* controls the primary and subsequent sorts
Continue	Run the query
Back	Return to the prior page. Your entries are cancelled.
Home	Return to the List Objects page to work with or create a query
Save	[This option is disabled.]
Exit	Closes QMF Query for Java and logs off the current user
Help	Display the online help facility
Options	Display the Options page, where you can customize: • user interface (look and feel) • Query results • HTML reports • Page format • LOB • Exported text data • Exported csv data See "Options" for information on these options.

Format query results

Use the Format Query Results page to define how to output the query results. Choices are to generate some kind of report, to use some kind of form, or to export the results. Additionally, use this page to define how to format the contents of the report.

Forms are reusable templates for creating your reports. For example, you can present tabular information with specific headings and text to clarify your data. In addition, you can use forms to control the type of data you present, enabling you to generate reports for different audiences from the same query. You can also create HTML reports.

This page displays when you:

- double-click on an object at the List Objects page
- click on an object at the List Objects page and click **Continue** or **Run**
- click **Continue** from the Create SQL Query page or the Create Prompted Query page

Fields

Format option

Select the form or method to use to format the report. You can generate a report, apply a form, or export the results to a spreadsheet.

- **Generate a default report**

  Generates a new report for the query using generic form options. See "List Reports" for more information on this option.

- **Generate a query report**

  Generates a new report for the query using the formatting that has been applied to the query results. See "List Reports" for more information on this option.

- **Apply a QMF form from database**

  Generates a report using a form selected from forms stored at the database server. See "Apply Form" for more information on this option.

- **Apply a QMF form from file**

  Generates a report using a form saved as a file at your local computer. See "Apply Form" for more information on this option.

- **Export data to text file (*.txt)**

  Saves the data as a plain text file. A text export produces an ASCII text file. This format is typically used to export information to spreadsheet and word processing applications. See "Export Data" for more information on this option.

- **Export data to spreadsheet file (*.csv)**

A CSV export is similar to a text export, but it uses a comma as the column delimiter. This format is used most commonly by spreadsheet applications. See "Export Data" for more information on this option.

- **Export data to database file**

  Export the data to a database. You need to define the target for the export, including specifying the table owner, table name, tablespace and other specifics. See "Export to Database" for more information on this option.

Report formatting

Select an option for formatting the selected report. Choices are:

- **Plain text**

  Format the selected report or form in plain text format (*.txt). The subsequent page presents a list of reports or forms that can be generated in this format, if applicable.

- **HTML text**

  Format the selected report or form in HTML format (*.htm), which is suitable for a browser, but is largely unformatted in terms of specialized headings, tables, and other formatting features. The subsequent page presents a list of reports or forms that can be generated in this format, if applicable.

- **HTML table**

  Format the selected report or form in a structured HTML table, complete with headers and other formatting features. The subsequent page presents a list of reports or forms that can be generated in this format, if applicable.

- **Chart**

Procedure

1. Select the method by which you want to format query results, either as a report, form or exported file.
2. Select the type of formatting for the report, either as text or HTML.
3. Click **Continue**.

Controls

Table 74. Controls on Format Query page

Control	Description
Continue	Open the next page
Back	Return to the prior page. Your entries are cancelled.
Home	Return to the List Objects page to work with or create

Table 74. Controls on Format Query page (continued)

Control	Description
Exit	Close QMF Query for Java and logs off the current user
Help	Display the online help facility
Options	Display the Options page, where you can customize: • user interface (look and feel) • Query results • HTML reports • Page format • LOB • Exported text data • Exported csv data See "Options" for information on these options.

List reports

The List Reports page displays when you click **Continue** after generating a default report or generating a query report at the Format Query Results page. This page lists the reports that you have generated during the current session.

Fields

Available reports

This page displays a list of reports based on the selected formatting type and formatting option. You can use one of these reports as a template for formatting the generated report.

Procedure

Click on the link for the report you want to use. This report is a template that you can customize.

The formatted report displays in a separate browser window for viewing, saving, printing, exporting, or sending (via E-mail).

Controls

Table 75. Controls on List Reports page

Control	Description
Continue	[This option is disabled.]
Back	Return to the prior page. Your entries are cancelled.

Table 75. Controls on List Reports page (continued)

Control	Description
Home	Return to the List Objects page to work with or create a query
Save	[This control is disabled.]
Exit	Close QMF Query for Java and logs off the current user
Help	Display the online help facility
Options	Display the Options page, where you can customize: • user interface (look and feel) • Query results • HTML reports • Page format • LOB • Exported text data • Exported csv data See "Options" for information on these options.

Apply form

The Apply Form page displays when you click **Continue** after you select the option to *Apply a QMF Form from the Database* at the Format Query Results page.

Fields - Apply form from database

A page similar to the List Objects page displays when you select the option to *Apply a QMF Form from Database*. Use the fields to search for the database form to use as a template for the query results.

Forms are reusable templates for creating your reports. For example, you can present tabular information with specific headings and text to clarify your data. In addition, you can use forms to control the type of data you present, enabling you to generate reports for different audiences from the same query. You can also create HTML forms.

Once generated, you can display your reports, print them, export them to files, or publish them on the World Wide Web.

Owner
The owner of the form.

Name
The name of the form, as it exists in the database.

You can specify "like" information to locate the form, such as:

```
Forms with an owner like: DB2ADMIN
          and a name like: EOY_REPORT_FORM
```

Sort forms in the list by
Specify the sort condition for the list of forms to be extracted from the database. You can choose from *owner and name* or *comment*.

Note: A comment describes the form. A comment can be up to 80 characters in length. Comments are optional.

Forms list
This table lists the forms that meet your criteria (owner and name or comment). The forms are sorted by owner and name or by comment.

The owner and name of the object are listed, along with comments, if any. The objects listed are listed alphabetically, in descending order, by owner and name or comment.

Procedure

1. Enter the owner and name of the form. You can use % as a wildcard in either field to select all forms.
2. Specify how you want to sort the search results:
   - by owner and name
   - by comment
3. Click **Refresh** to update the list of forms to match the criteria you entered.
4. Double-click the form or select the form and click **Continue**.

   The form will be used as a template for the generated report output.

The formatted report displays in a separate browser window for viewing, saving, printing, exporting, or sending (via E-mail).

Fields - Apply form from file

A browse page displays when you select *Apply a QMF Form from File*. Use the input fields to browse for the file in which the form is stored. This enables you to search for a form to use as a template for the query results.

Forms are reusable templates for creating your reports. For example, you can present tabular information with specific headings and text to clarify your data. In addition, you can use forms to control the type of data you present, enabling you to generate reports for different audiences from the same query. You can also create HTML forms.

Once generated, you can display your reports, print them or export them to files.

Browse
Enter a path to the form file name. This enables you to search for the form file and use it as a template for the generated query.

Procedure

1. Click **Browse** and locate the form file in a directory. Continue with step #3.
2. If you know the location of the form file, enter the path in the input field. Continue with step #3.
3. Double-click the form or select the form and click **Continue**.

   The form will be used as a template for the generated report output.

The formatted report displays in a separate browser window for editing, viewing, saving, printing, exporting, or sending (via mail).

Controls

Table 76. Controls on Apply Forms page

Control	Description
Continue	Open the next page
Back	Return to the prior page. Your entries are cancelled.
Home	Return to the List Objects page to work with or create a query
Save	[This control is disabled.]
Exit	Close QMF Query for Java and logs off the current user
Help	Display the online help facility
Options	Display the Options page, where you can customize: • user interface (look and feel) • Query results • HTML reports • Page format • LOB • Exported text data • Exported csv data See "Options" for information on these options.

Export data

The List Reports page displays when you click **Continue** after generating query results and selecting the option to *Export data to the text file (*.txt)* or *Export data to spreadsheet file (*.csv)*. This page lists the reports that you have generated during the current session.

Fields

Available reports

This page displays a list of reports based on the selected file type. You can use one of these forms as a template for formatting the spreadsheet.

Procedure

Select a form and click **Continue** or double-click on a form to use for the spreadsheet.

- If you export the data to a spreadsheet in ***.txt format**, the spreadsheet displays in a browser window. The data in the form is comma-delimited and the content is displayed in a fixed-pitch, unformatted font.
- If you selected a form with a ***.csv file format** (comma-separated values), you are prompted to download the file. Specify whether to open the file or to save the file to disk, for example, in Excel format.

Controls

Table 77. Controls on Export Data page

Control	Description
Continue	[This control is disabled.]
Back	Return to the prior page. Your entries are cancelled.
Home	Return to the List Objects page to work with or create a query
Save	[This control is disabled.]
Exit	Close QMF Query for Java and logs off the current user
Help	Display the online help facility

Table 77. Controls on Export Data page (continued)

Control	Description
Options	Display the Options page, where you can customize: • user interface (look and feel) • Query results • HTML reports • Page format • LOB • Exported text data • Exported csv data See "Options" for information on these options.

Export data to database table

The Export to Database Table page displays when you click **Continue** after generating query results and selecting the option to *Export data to the database table*. Use this form to specify options for the export, including the table's owner and name, the tablespace to create the table, and various data handling and exporting options.

Fields

Table owner
The owner of the table to which you want to export data.

Table name
The name of the table to which you want to export data.

Table space
The name of the table space in which you want to create the specified table, if it does not exist.

Comment
A comment, up to 80 characters, that describes the data in the table. You can leave this field blank.

What should happen to existing data
[What should happen to any existing data in the table?] This field specifies how the exported data is added to the table. Choose one of the following options:

- **Replace any existing data**

  This option replaces the data in the table with the data you just generated.
- **Add to any existing data**

This option appends the newly-generated data to existing data in the table.

Method to save data
This option specifies how the exported data is added to the table. Options are:

- **Regular**

  Regular, run an "INSERT ... VALUES ..." statement for each row of data: With this method, a separate INSERT statement is run for each row of data.

- **Fast**

  Fast, run a single "INSERT ... SELECT ..." statement): With this method, one INSERT statement is used for all of the exported rows of data.

Rows to insert before committing
The number of rows to insert into the table before committing changes to the database.

Procedure

1. Specify the table owner and table name of the form on the database to which you want to export data. Use % as a wildcard, if applicable.
2. Enter the name of the table space in which you want to create the specified table, if it does not exist.
3. [Optional] Enter comments about this report.
4. Specify how you want to handle exporting data to an existing table, whether to replace existing data or append it.
5. Specify how to save the data, by using the regular method or the fast method.
6. Specify the number of rows to insert to the database before committing your changes.

   A message displays after the export operation to indicate the data was saved, if applicable.

Controls

Table 78. Controls on Export to Database Table page

Control	Description
Continue	Open the next page
Back	Return to the prior page. Your entries are cancelled.
Home	Return to the List Objects page to work with or create a query
Save	[This control is disabled.]
Exit	Close QMF Query for Java and logs off the current user
Help	Display the online help facility

Table 78. Controls on Export to Database Table page (continued)

Control	Description
Options	Display the Options page, where you can customize: • user interface (look and feel) • Query results • HTML reports • Page format • LOB • Exported text data • Exported csv data See "Options" for information on these options.

Define form variables

The Form Variables page displays when you select a form that calls for variables. At this page, specify values for unparsed variables that occur in a QMF form or from QMF options.

Form variables prompt you to enter values to produce specific or timely information on the report. For example, a form may contain a variable for `ADDRESSEE` or `START_ID` and `END_ID`. You will be prompted to enter a value for the form variable at runtime.

Fields

[Variable]
This input field is labeled with the name of the variable. Enter a value for the variable in order to continue. Variables help narrow the range of data written to the form or exported to the spreadsheet or database.

Procedure

1. Specify a value for the variable.
2. Click **Continue**.

Controls

Table 79. Controls on Variables page

Control	Description
Continue	Open the next page
Back	Return to the prior page. Your entries are cancelled.
Home	Return to the List Objects page to work with or create a query

Table 79. Controls on Variables page (continued)

Control	Description
Save	[This control is disabled.]
Exit	Close QMF Query for Java and logs off the current user
Help	Display the online help facility
Options	Display the Options page, where you can customize: • User interface (look and feel) • Formatting • HTML reports • Page format • LOB • Text data export • CSV data export See "Options" for information on these options.

Options

Once you log on to DB2 you can click **Options** to customize the QMF Query for Java user interface.

Note: All settings are optional.

Accept

After making updates to any option, click **Accept** (√) to preview the changes prior to continuing. This enables you to view the results without leaving the Options page.

User interface

These options control the appearance of the QMF Query for Java application. You can set options for:

- Background color
- Foreground color
- Use grids
- Use message dialogs
- Row limit for List Objects

Background

Select a background color for the pages in QMF Query for Java. The changes are permanent for this user. Unless you cancel, the changes will be applied when you move to another page.

Note: The default is light yellow.

Foreground color

Select a foreground color for the field labels and titles in QMF Query for Java. The changes are permanent for this user. Unless you cancel, the changes will be applied when you move to another page.

Note: The default is black.

Use grids

Check this box to use applets to display the List Objects as a table. If unchecked, objects are listed in an HTML list in Owner.Name format.

This option is useful if the browser does not support applets or applets are not configured to display non-English characters.

Note: The default is checked, which means that grids will be used.

Use message dialogs

This option controls how messages are displayed. If checked, system messages display in a separate dialog box. If unchecked, messages display at the top right of the page.

Note: The default is checked, which means that messages will display in a separate dialog box.

You can view error messages in a separate window only if your browser is enabled to run Java applets.

Row limit for List Objects

This option controls the number of rows that display in the List Objects on the List Objects page (home page), whether the objects are listed in a grid (table configuration) or an HTML list (in Owner.Name format).

For example, if you set this value to 7, only seven objects will be listed in the grid or selection list. You need to scroll to see additional objects, if any.

The List Objects will be resized automatically to accommodate the row limit.

Row limit for query preview

This value controls the number of rows that display when a query is previewed. This field works in conjunction with the *Query preview mode* field. The default is "Do not show preview," so the value in this field will be ignored if the default is selected.

Query preview mode

This field determines whether you can view a query prior to running the query and generating query results. This field works in conjunction with the *Row limit for query preview* field, if you specified to show query results. Choices are:

- Do not show preview (this is the default)
- Show preview for queries running no more than 10 seconds
- Show preview for all queries

User interface language

This field controls the language used by QMF Query for Java. You can set this field to Autodetect to enable the software to determine the active language, based on the Windows setting.

Character set in use

This field identifies the character set to use, such as the character set used by Windows, ISO, and DOS. When QMF for Windows retrieves data from a database server, it must convert any character data from the coded character set in use at the server to the coded character set in use in Windows. You can instruct QMF Query for Java to autodetect the character set, or choose one from the drop-down list.

User interface direction

Identify the direction in which text is presented on the screen. Choices are:

- Autodetect (the default, which checks the Windows settings)
- Left-to-Right
- Right-to-Left

Report options

These options control how query results are formatted. You can set options for:

- Title of report
- Null values will be displayed as
- Date/time, numeric, and currency values
- Format of the report
- Split report to pages

Title of report

This value specifies what to use as the title for the default report, a report from a query, and for reports.

Display null values as

Specify the string to use for null values in the query results (such as a dash).

Display date, time, numeric and currency values as

Select the language/country upon which the date and time, numerals, and currency values will be based.

Report formatting

Specify how the report output will be formatted. Choices are:

- **Plain text**, which is unformatted and uses a fixed-pitch font
- **HTML text**, which can be read in any browser and has minimal formatting in terms of the title of the report and column headings
- **HTML table**, which applies a high level of formatting to the report, such as presenting information in a grid (table)
- **Chart**, which represents the output in chart format. The type of chart is based on the report that you are applying to the results (such as a form that presents data in bar graph, pie chart, line, or scatter format)

Split report to pages

This field controls whether the report will have page breaks. The default is checked.

HTML reports

These options control how information is presented in HTML format. You can set options for:

- Parameters into HTML tag
- Parameters into Body tag
- Width of table border
- Parameters into Table tag
- Keep spaces in the text for HTML table reports
- Draw borders around empty tabular data cells
- HTML report tags

Parameters into HTML tag

The string inserted into the heading of the HTML file when creating a report, for example, `dir="RTL"`

Parameters into body tag

The string inserted into the entire document tag of the HTML file when creating a report. This does not include the report heading.

Parameters into table tag

The string inserted into the table tag of the HTML file when creating a report. This does not include the HTML tag or body tag.

Width of table border

This value controls whether borders are visible around the table, and if so, the width of the border. For example:

- **0** = no border
- **1** = single border
- **2** = double border

HTML report tags

Enter the HTML tags (the prefix and suffix) for each element on the report, such as the report heading and footing, or the report title: <h2> and </h2>. The report tags change elements of the report, which in turn change the look and feel of the report.

Page format

The Page Format page controls how the report is structured. You can set values for:

- how pages will be placed
- vertical and horizontal size of pages
- page separator for text reports
- page separator for HTML reports
- include date and time
- include page number

Pages will be

Describes how files will be saved in QMF Query for Java. Choices are:

- placed to the separate files
- placed to one file in ″across then down″ order
- placed to one file in ″down then across″ order

Vertical size of pages

The number of rows (text lines) on the page.

Horizontal size of pages

The number of characters in each text line.

Page separator for text reports

The tag used for page breaks in text reports. The default is <PgBreak>; however, you can define a value here, such as a row of asterisks (*) or equal signs (=) to indicate a break.

Page separator for HTML reports

The tag used for page breaks in HTML reports. The default is <hr>, which inserts a horizontal line to signal a page break. Alternatively, you can define a value here, such as <hr size=5> to indicate a break.

Include date and time

This checkbox indicates whether the date and time print on the report. If selected, the date and time format is controlled by the Select the format for

date/time values field on the *Data export options - text format* or *Data export options - CSV format* page of the user options.

Include page number
This checkbox indicates whether the page number prints on the report.

LOBs

Use this form to specify options for handling LOBs (large objects).

QMF for Java allows the retrieval of LOBs from a database as well as exporting LOB data to your PC. By association, you can work with LOB data in QMF Query for Java. With this feature, you can insert data types such as text, graphics, audio, video, mixed media, and photo images.

LOBs can be retrieved from a database and edited in an appropriate application that supports the type of file you retrieved. For example, a bitmap can be edited in Microsoft Paint (R) as long as the application is installed on your computer.

LOBs are retrieved to the table only for queries where LOB extensions are set with QMF for Windows. For example:

1. Create SQL query in QMF Query for Java.

   LOBs do not display.
2. Retrieve LOBs.

   The LOB values display.
3. Click **Browse** <...>.

   The LOB value is retrieved to a separate browser window.

   Note: LOB objects can be placed inside another object or displayed in a separate browser. You can also embed pictures into HTML files.

Default extension for large objects
The default extension for large objects is **.LOB**.

Place large objects inline
This checkbox specifies whether large objects can be placed inline in a report. This field is valid for text in large objects.

Draw images in HTML table for graphical LOBs
This checkbox specifies whether to draw images in an HTML table for graphical LOBs. This applies only to .gif and .jpg files.

Text data export

The options on this form control the format of exported text data. A text export produces a text file. This format is typically used to export information to word processing applications.

Include column headings
Check this box to include column headings as the first row of the exported query results.

String used to separate columns
[Enter the string to use to separate columns]: Enter the string used to separate columns in an exported text file, such as a comma (,).

String used to delimit values
[Enter the string to use to delimit values]: Enter the string used to delimit values in an exported HTML file, such as quotes (").

When should values be delimited
This value determines when to delimit values (as described in *Enter the string to delimit values*). Choices are:

- Always
- Never
- Only when necessary

Which type of values should be delimited
Specify which type of values should be delimited for the following elements:

- Column headings
- Character values
- Numeric values
- Date/time values

Format for date/time values
[Select the format for date/time values]: Specify how to format date and time information on the report. Choices are:

- Local (determined by Java VM)
- ISO (YYYY-MM-DD, HH.MM.SS) - date and time information is exported in the format specified in ISO
- USA (MM/DD/YYYY, HH:MM AM/PM) - date and time information is export in the format most commonly used in the United States
- EUR (DD.MM.YYYY, HH.MM.SS) - date and time information is export in the format most commonly used in Europe
- JIS (YYYY-MM-DD, HH:MM:SS) - date and time information is export in the format most commonly used in Japan

CSV data export

Use this form to define how you want to format data exported in .csv format. Choices are:

- Include column headings
- Format for date/time values

A .csv export is similar to a text export. The file uses a comma as the column delimiter. This format is most commonly used by spreadsheet applications such as Microsoft Excel or Lotus 1-2-3.

Include column headings

Check this box to include column headings as the first row of the exported query results.

Format for date/time values

[Select the format for date/time values]: Specifies the format used to export date and time information. Choices are:

- Local (determined by Java VM)
- ISO (YYYY-MM-DD, HH.MM.SS) - date and time information is exported in the format specified in ISO
- USA (MM/DD/YYYY, HH:MM AM/PM) - date and time information is export in the format most commonly used in the United States
- EUR (DD.MM.YYYY, HH.MM.SS) - date and time information is export in the format most commonly used in Europe
- JIS (YYYY-MM-DD, HH:MM:SS) - date and time information is export in the format most commonly used in Japan

Chart options

This option defines graphical attributes for charts created from query results.

Note: A form's chart specifications will be used instead of those defined here, if available.

Default X size for a chart

The size, in pixels, for the *x axis* of the chart, which is the horizontal axis.

Default Y size for a chart

The size, in pixels, for the *y axis* of the chart, which is the vertical axis.

Value axis label

The default label for the *y axis*, such as **Salary**.

Category axis label

The default label for the *x axis*, such as **Year**.

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