



# IBM DB2 Query Management Facility, Version 8.1

### **Introduction**

The consensus among industry experts is that enterprises are going to be confronted with a dramatic increase in data during the next few years. According to the GartnerGroup, levels are already 30 times higher than they were in 1999, and data amounts will continue to grow larger as corporations add more information sources.

As a result, narrowing the gulf between available data and the ability to use it wisely is fast becoming a strategic imperative. This is where a Business Intelligence (BI) strategy can make a big impact. BI ensures that you can readily access targeted, specific information to make more informed, real-time business decisions. From an IT standpoint, BI is the system that empowers users to spot major trends or patterns in the information that is under scrutiny.

A good BI solution essentially automates the data gathering process. It turns data into valuable business information in the form of reports, tables, charts and graphical maps. By doing so, users can focus on the business questions they are trying to answer such as what products are selling the fastest and who are our best customers?

To help companies maximize the value of their information, IBM has released DB2® Query Management Facility (DB2 QMF™), Version 8.1, a comprehensive BI tool for the IBM DB2 Universal Database™ family. DB2 QMF not only tackles the problem of growing data levels, it also enables organizations to transform the information within their IT systems into insightful, relevant data. By doing so, companies can make better business decisions and compete more effectively in the marketplace.

More than just a new release, the next-generation DB2 QMF family has been enhanced with new levels of data richness and usability, empowering companies to easily understand their strengths and weaknesses. In doing so, IBM has created a BI solution that stands out in the market. While other offerings may have depth in a particular function, they usually show limitations in other areas, such as the ability to customize, integrate or scale. In contrast, DB2 QMF offers functions previously found only in multiple separate competing products.

It scales extremely well and can be customized to the requirements of virtually any knowledge worker, whether a high-level executive, a skilled analyst, or the average manager, sales person or trainee. In addition, DB2 QMF has been architected to serve the needs of broadly dispersed clients, making information resources both universally available and affordable—essential characteristics of true on demand business intelligence.

**High usability, interactivity and accessibility**

DB2 QMF is built on a model that organizes business data for easy retrieval and extends it outward to support the unique requirements of individual users. The cornerstone of this model is the new data visualization functionality of DB2 QMF, which transforms business data into a visual, on demand information platform. This allows developers to rapidly create visual information applications that offer rich interactive functionality specific to virtually any information need.

DB2 QMF includes a new database explorer to visually navigate and inspect enterprise database assets, including database servers, tables, views, queries, reports and DB2 stored procedures. Using this easy-to-learn, interactive interface, users with little or no data processing experience can, for example, instantly analyze object dependencies to see which tables are accessed by a given query. And they can create customizable folders of “favorites” for easy navigation of frequently used resources.

DB2 QMF also offers a visual drag-and-drop report facility for building true WYSIWYG reports featuring rich formatting and complex report structures.

Other new query and report building features include:

- Pivot tables with multiple levels of grouping on the horizontal and vertical axes.
- A layout designer allowing easy manipulation of query results.
- Conditional formatting of query results, allowing specified values or thresholds to be automatically highlighted with colors or other attributes.

### **Fast time to market**

For faster application development and implementation, DB2 QMF supports new SQL functions in DB2 Universal Database for Linux, UNIX<sup>®</sup>, Microsoft Windows<sup>®</sup>, Version 8 and DB2 Universal Database for z/OS<sup>®</sup>, Version 8. The product also includes:

- A new internal expression language for supporting complex conditions, form calculations and custom definitions, eliminating the previously required installation of Object REXX (some advanced implementations of form functions still require Object REXX).
- XML data import and export capabilities, including a simple extensible style sheet (XSL) format for exported XML reports.
- Features for automatic migration or creation of catalogs to support long names, allowing faster transition from prior versions of DB2 QMF and DB2 Universal Database.

### **DB2 QMF packaging options**

These new enhancements to DB2 QMF allow management teams to drive their businesses with insight and to respond with speed to changing market conditions. To accommodate today's diverse environments, IBM offers DB2 QMF in several different packaging options, allowing users to easily apply their information strategies to single or multiple database and end-user platforms.

The packaging options include three different choices when DB2 QMF is selected as a separately priced feature of DB2 for z/OS. DB2 QMF is also offered as a standalone product, called DB2 QMF Distributed Edition for Multiplatforms, which consists of DB2 QMF for Windows, DB2 QMF for Websphere, and DB2 QMF Visionary Studio. As a feature of the host, the packages options include:

DB2 QMF Enterprise Edition—comprises the entire DB2 QMF technology. DB2 QMF Enterprise Edition consists of the following components:

- **DB2 QMF for TSO/CICS<sup>®</sup>**

DB2 QMF for TSO/CICS is for end users who require information access through TSO/CICS terminals. It includes powerful query building, automation and data integration tools. The product now supports names up to 128 characters in length for Auth ID and table name. Table column names can be up to 30 characters long. Users from predominantly GUI workstation backgrounds can develop reports, and access and run saved QMF for TSO/CICS reports much faster and more easily.

- **DB2 QMF High Performance Option**

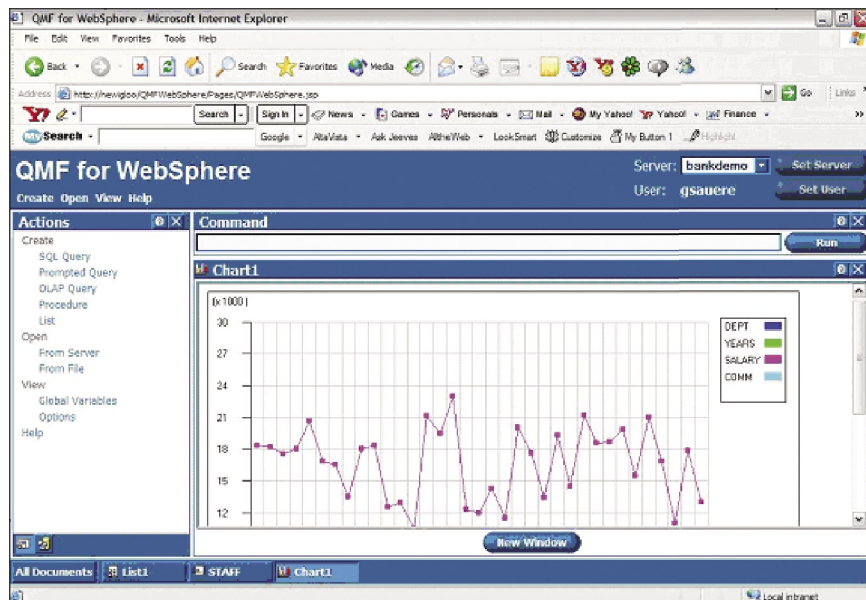
DB2 QMF High Performance Option enables scheduling, management and control over end-user access to information. It allows DBAs to easily track and report end-user query activity and to govern end-user actions according to calendar, ID and elapsed time. The product includes an all-in-one tool to monitor resource usage, manage QMF objects and compile queries into COBOL programs for improved performance.

- **DB2 QMF for Windows**

DB2 QMF for Windows was designed from the ground up for end users who need information access through Windows workstations. It allows application developers to reuse existing DB2 QMF for TSO/CICS objects (queries, forms and procedures) or create new objects from the Windows environment, speeding the development process significantly. The product also allows users to integrate query results with a variety of Windows desktop tools, such as spreadsheets and desktop databases. DB2 QMF for Windows also includes a robust Windows-based API to automate database querying, updating and report distribution tasks, so that users can centralize control over resource consumption.

- **DB2 QMF for WebSphere®**

DB2 QMF for WebSphere is the DB2 QMF family's browser-based portal to business information on demand. DB2 QMF for WebSphere, which supports every IBM WebSphere platform, makes Web browsers zero-maintenance clients for the DB2 Universal Database family of products without plug-ins or special downloads. Users can connect easily via an intranet or the Internet to share many of the query, reporting and OLAP functions found in DB2 QMF for Windows and DB2 QMF for TSO/CICS. It includes a completely redesigned and enhanced multi-document interface, allowing drag and drop grouping and formatting of query results.

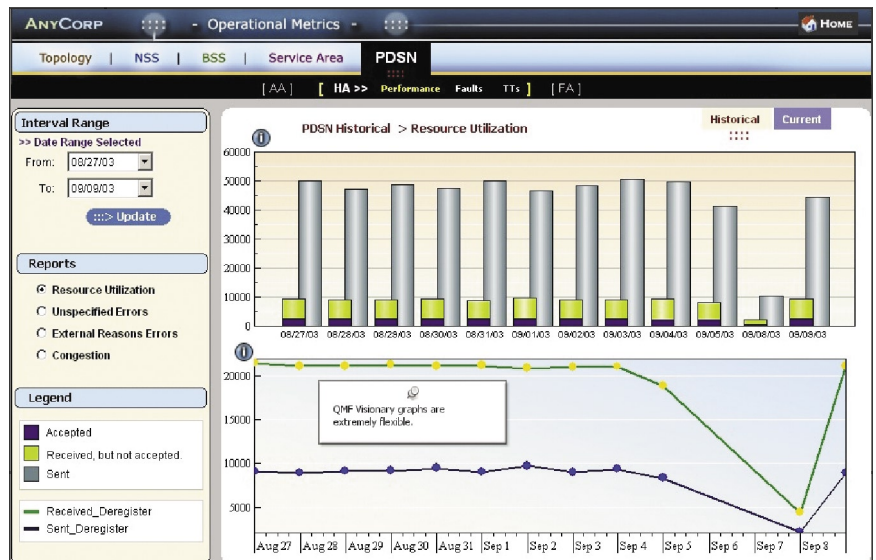


*DB2 QMF for WebSphere, which supports every IBM WebSphere platform, transforms Web browsers into zero-maintenance clients for the DB2 Universal Database family of products.*

## • DB2 QMF Visionary Studio

DB2 QMF Visionary Studio (Visionary) allows developers to rapidly build and deploy powerful visual information appliances — such as executive dashboards — without programming or compiling. More than just a mechanism for ad hoc review, it provides the capability to intelligently analyze and monitor your business success. Visionary allows you to capture your enterprise data in an intelligent and visual fashion, making it readily available to your business users. The product simultaneously displays data from multiple sources in intuitive formats and images such as geospatial maps, charts, graphs, stop lights, meters, pick lists, familiar objects and custom graphics. It also includes a new visual database explorer for effortless access to database assets, enabling users to quickly spot issues of importance. In addition, Visionary includes a

simplified wizard-based interface for creating Visionary layouts from within DB2 QMF for Windows as well as two query wizards for simplifying the creation of SQL queries. Both wizards support built-in and user-defined functions. Visionary also includes a text editor for directly entering SQL statements and a query diagram editor for creating queries via a drag-and-drop interface. In addition, Visionary supports the DB2 QMF catalog, allowing existing DB2 QMF queries to be reused within your Visionary worlds. Central to Visionary is the concept of a scene, which is a visual display of information similar to a presentation slide. Objects in a scene may display data from one or more databases and can be assigned actions triggered by events, such as clicking, viewer proximity and mouse location.



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Other editions of DB2 QMF offer subsets of the DB2 QMF Enterprise Edition, including:

*DB2 QMF Distributed Edition*—supports access to enterprise databases via Web and Windows clients. This edition consists of DB2 QMF for Windows, DB2 QMF for WebSphere and DB2 QMF Visionary Studio.

*DB2 QMF Classic Edition*—supports end users functioning entirely from traditional mainframe terminals and emulators (including IBM WebSphere Host On-Demand). This edition consists of DB2 QMF for TSO/CICS.

#### **The on demand operating environment**

The various packaging options were designed from the ground up to fit into IBM's vision for e-business on demand™:

- Integration appears in multiple contexts, including Web services invocation of BI function and integration of operational systems with the realtime warehouse through DB2 transactional features such as triggers, procedures, replication and messaging-based table functions.
- Open standards feature prominently in the role of SQL and XML as the sole interface to BI function in DB2.
- Virtualization, in the context of federated access to distributed data sources, represents a “single version of the truth” across the enterprise data topology.
- Autonomic computing is built into DB2 itself, in the form of automatic detection and handling of events such as error conditions; in automated setting of configuration parameters based on user-provided guidelines; and in design tools that recommend optimal data structures (such as indexes and summary tables) based on workloads and data models.



DB2 QMF has fully embraced the on-demand business imperative by helping to integrate your information insights with the business processes across your company, and in synergy with key partners, suppliers and customers. This will enable you to respond with flexibility and speed to any customer demand, market opportunity or threat. The DB2 QMF solution enables your company to differentiate itself from the competition, and thereby deliver greater value. Business flexibility is achieved through standardizing, automating and integrating business intelligence with your key business processes.

Across all industries, DB2 QMF gives you the capability to capture, organize, integrate, transform, analyze and use information to create insight. This will enable your business to pro-actively identify customer needs and exceed their expectations, improve customer-oriented processes and achieve better differentiation of products and services, and improve information sharing and collaboration. That will help you increase the productivity and efficiency of employees, business partners, and suppliers.

In fact, DB2 QMF is synonymous with business transformation, and the development of information insights that help you to better leverage the people, process and systems investments you've already made. And this is enhanced with the new DB2 QMF Web functionality provided through DB2 QMF for Websphere. In short, DB2 QMF gives you the ability to connect people, processes and information in a way that allows your organization to become more flexible and responsive to the dynamics of your markets, customers and competitors.

#### **Leveraging DB2 Business Intelligence solutions**

To help provide a real-time view of key business performance metrics, DB2 QMF works with the following DB2 BI solutions:

- IBM DB2 Cube Views.
- IBM DB2 Intelligent Mine™ Scoring.
- IBM DB2 Spatial Extender.
- IBM DB2 Warehouse Manager.

**DB2 Cube Views**

DB2 Cube Views is the latest generation of online transactional processing (OLAP) support in DB2 Universal Database and includes features and functions that make the relational database a first-class platform for managing and deploying multi-dimensional data across the enterprise. With DB2 Cube Views, data architects can provide faster, easier and more manageable OLAP solutions regardless of the particular OLAP tools and technologies used. Version 8.1 of DB2 QMF for Windows and DB2 QMF for WebSphere support DB2 Cube Views. No extensive knowledge of OLAP is required to perform real-time data analysis. Users can drag multiple objects onto predefined layouts to quickly create dynamic OLAP reports. You can open existing OLAP queries using the Database Explorer, create new OLAP queries using the OLAP Query Wizard, and work with the OLAP query results using the OLAP Query Results Explorer.

DB2 QMF brings traditional relational SQL queries and multi-dimensional OLAP queries together in a common interface and exposes both types of results to the same reporting and manipulation features. A Cube developer can also develop associated SQL queries so end users can start with the summarizations of the Cube and then delve into more customized detail than the summary provides.

**DB2 Spatial Extender**

Incorporated into DB2 Universal Database, DB2 Spatial Extender enables users to gather spatial data, such as geographic data, and attach non-spatial business data attributes to it. Spatial data can help users make a wide variety of geographic business decisions, such as:

- Where to open new stores based on potential customers.
- What telephone cables to repair first based on frequency of customer calls.
- Which communities you should direct your advertising campaign to based on home prices.

1	2	3	4	5	6	7	8	9
YEAR								
QUARTER								
Ctrl								
REGION	STATE	FAMILY	SKU	Marketing	Expense	Payroll	COGS	Sale
Colorado		100		224.20	321.90	97.68	779.76	1078
		200		128.00	254.00	126.00	431.00	1070
		300		348.00	698.00	240.00	848.00	1824
		400		165.00	363.00	198.00	494.00	1100
All values for Colorado				365.20	1526.90	661.68	2552.76	5872
Illinois		100		242.00	437.00	195.00	754.00	1821
		200		426.00	594.00	168.00	1406.00	3049
		300		234.00	336.00	102.00	810.00	1948
		400		128.00	254.00	126.00	431.00	1070
All values for Illinois				1030.00	1621.00	591.00	3401.00	7888
Iowa		100		60.00	192.00	132.00	207.00	485
		200		17.00	83.00	66.00	69.00	260
		300		331.00	493.00	162.00	1019.00	2413
		400		469.00	640.00	171.00	1425.00	3017
All values for Iowa				377.00	1408.00	531.00	2720.00	6175
Missouri		100		164.68	326.35	161.67	482.15	1068
		200		75.81	140.82	65.01	280.67	691
		300		193.00	349.00	156.00	384.00	608
		400		103.00	382.00	279.00	298.00	682
All values for Missouri				536.49	1198.17	661.68	1444.72	3049
Ohio		100		258.00	492.00	234.00	504.00	1207
		200		205.00	376.00	171.00	677.00	1397
		300		43.00	109.00	66.00	171.00	428
		400		159.00	321.00	162.00	507.00	1240
All values for Ohio				565.00	1298.00	633.00	1859.00	4272
Wisconsin		100		361.62	623.30	261.79	643.90	1502
		200		110.00	209.00	99.00	355.00	791
		300		94.00	196.00	102.00	323.00	838
		400		235.00	388.00	153.00	372.00	901
All values for Wisconsin				300.52	1416.30	615.78	1693.90	4032

DB2 QMF allows the user to manipulate the Cube via a familiar drag and drop layout.

DB2 QMF for Windows has been enhanced for DB2 Spatial Extender and now includes a user interface that displays spatial maps in a separate window. It also features a drop-down menu for map objects and allows users to easily obtain property and history information for map layers.

### DB2 Warehouse Manager

DB2 Warehouse Manager provides an infrastructure that helps you build, manage, and access data warehouses. DB2 Warehouse Manager enables DB2 QMF for Windows users to register objects, such as spreadsheets, reports and queries, in the DB2 Warehouse Information Catalog. This allows the object to be listed in and launched from the DB2 Warehouse Manager meta data repository.

### **DB2 Intelligent Miner Scoring**

DB2 Intelligent Miner Scoring allows you to import certain types of mining modules into a DB2 table, apply the models to data within DB2 and receive scoring results. By combining the unique capabilities of DB2 QMF with DB2 Intelligent Miner Scoring, you can create a data mining model that can be run against the latest, most complete information available anywhere within the enterprise, enabling greater speed and new levels of insight.

DB2 QMF for Windows provides these functions:

- Intelligent Miner Scoring.
- PredictClusterID.
- PredictClusConf.
- PredictClusScore.
- PredictClass.
- PredictClassConf.
- PredictValue.

### **Hardware and software requirements**

Hardware requirements

- DB2 QMF for Windows requires a workstation that supports:
  - A Windows 32-bit operating system.
  - Network connectivity.
  - Approximately 70MB of HDD space.
  - A minimum of 128MB of RAM.
- DB2 QMF for WebSphere hardware requirements include those required for the supported version of WebSphere Application Server, plus:
  - Approximately 230MB of HDD space.
- DB2 QMF Visionary Studio requires a workstation that supports:
  - A Windows 32-bit operating system.
  - Network connectivity.
  - Approximately 30MB of HDD space (100MB of HDD space are required for developing Visionary worlds that include image and audio content).
  - A minimum of 64MB of RAM.
  - An Intel® Pentium processor.

**Software requirements**

DB2 Query Management Facility for Windows Version 8.1 runs on the following 32-bit operating systems:

- Microsoft Windows 98.
- Microsoft Windows ME.
- Microsoft Windows NT<sup>®</sup> 4.0 SP6a.
- Microsoft Windows 2000.
- Microsoft Windows XP.
- Microsoft Windows Server 2003.

DB2 QMF for Windows Version 8.1 requires at least one of the following products on each user machine for database client access:

- A TCP/IP product that provides a WinSock, Version 1.1 interface
- An SNA product that provides a CPI-C interface
- DB2 Universal Database Runtime Client, Version 7.2, or later
- One or more ODBC 2.x or 3.x drivers

The software requirements for DB2 QMF for WebSphere Version 8.1 are as follows:

- DB2 QMF for WebSphere Version 8.1 runs on WebSphere Application Server, Version 4.0, or later, on any platform supported by WebSphere Application Server.
- DB2 QMF for WebSphere Version 8.1 requires one of the following Web browsers (with JavaScript support enabled) on each user machine:
  - Microsoft Internet Explorer, Version 5.5, or later
  - Netscape Navigator, Version 6.2, or later

DB2 QMF Visionary Studio Version 8.1 runs on the following 32-bit operating systems:

- Microsoft Windows 98.
- Microsoft Windows ME.
- Microsoft Windows NT 4.0 SP4.
- Microsoft Windows 2000, Professional or Server.
- Microsoft Windows XP, Professional or Home Edition.
- Microsoft Windows Server 2003.

DB2 QMF Visionary Studio Version 8.1 requires the following products on each user machine for database client access:

- ODBC, Version 3.510.4202.0 or later.
- ODBC Data Source Administrator.
- DB2 Universal Database for Windows Runtime Client, Version 8.1 or 7.2, for all DB2 database servers that are accessed by Visionary worlds.
- ODBC drivers for all other (non-DB2) database servers that are accessed by Visionary worlds.

#### **Conclusion**

As information levels continue to grow, the need to leverage customer and operational data for business insights has become a strategic imperative. Accordingly, many companies are turning to the DB2 QMF family to help them retrieve actionable intelligence from their data sources. The new data visualization functionality of DB2 QMF allows developers to rapidly create visual information applications that offer rich interactive functionality specific to virtually any information need. In doing so, organizations can maximize the value of their data and take action based on facts and not guesswork.

#### **For more information**

Please contact your IBM marketing representative or an IBM Business Partner, or call 1-800 IBM CALL within the U.S. Also, visit our Web site at:

**ibm.com/qmf**

On this Web site, you can find 60-day evaluation copies of DB2 QMF Visionary V8.1, and DB2 QMF for Windows V8.1, in addition to documentation and demos. You can also visit the Web site: [www.rocketsoftware.com/qmf/](http://www.rocketsoftware.com/qmf/) for additional information and evaluation downloads.



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