DB2 10 for z/OS

Enabling significant enhancements to Business Intelligence and Analytics with QMF 10

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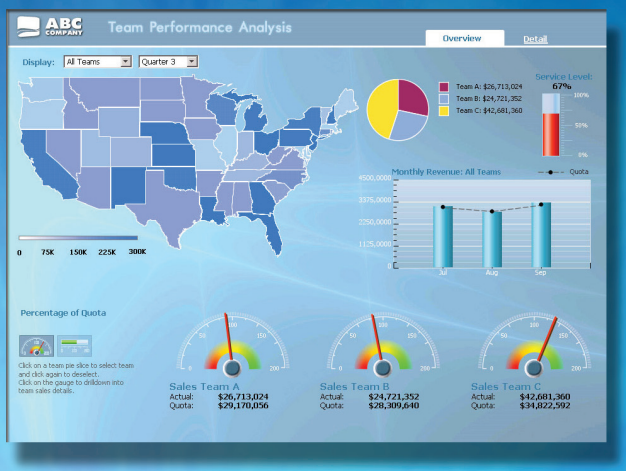

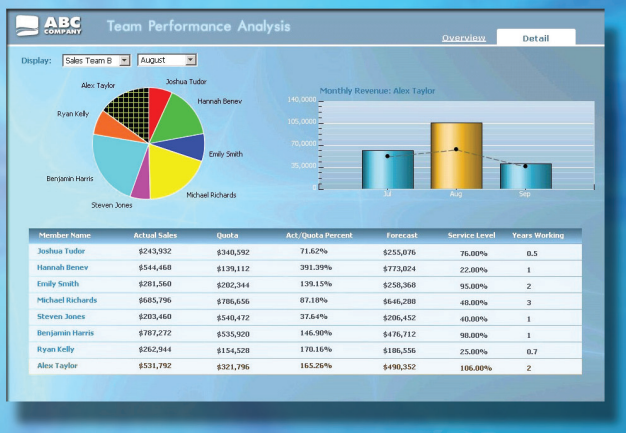

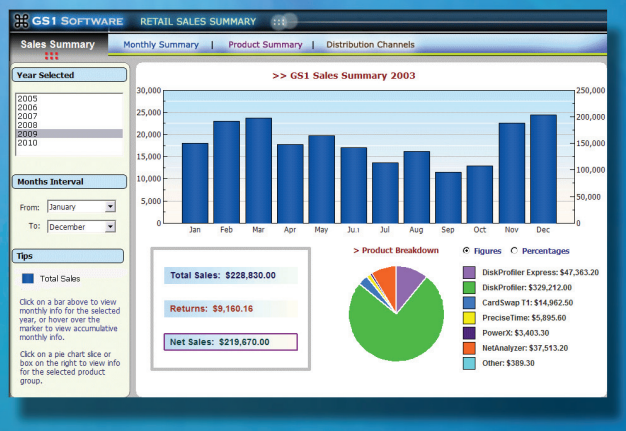

Introduction

QMF 10 gives customers the ability to rapidly disseminate business data throughout the enterprise, providing solutions tailored to the needs of individual constituencies. At least 150 new analytics functions have been added to the new client editions, thus greatly enhancing its Business Intelligence and many other capabilities.

Executive Summary

In today's business and economic environment, the challenge for IT and business is clear: improve operational efficiencies, reduce costs, and adapt quickly to support business growth — all without sacrificing the resiliency required for today's demanding business requirements. Building on the formidable capabilities of IBM ® DB2 ® 9 for z/OS ® (DB2 9) and the IBM System z ® platform, DB2 10 for z/OS (DB2 10) addresses these requirements. This paper specifically focuses on the enhanced business analytics and mathematical functions (QMF 10) of DB2 for z/OS.

In today's business environments every facet of a business needs direct and timely access to enterprise data in order to make the right business decisions. The challenge for end users is to be able to submit queries and application requests to DB2 with confidence in its ability to perform and scale to the ever increasing business demands. This is particularly true where business intelligence (BI) and analytic workloads are becoming more rigorous in their complexity and demands upon the database.

IBM DB2 Query Management Facility™ (QMF™) 10 allows you to do more with your existing QMF investment than ever. Built-in data visualizations and graphical page-based reports extend QMF usage from the traditional technical user to a broader community of business end users. QMF's new metadata layer simplifies the underlying data model, empowering non-technical users with self-service reporting, and extends access to DB2 for z/OS across the enterprise, helping to further increase your return on investment (ROI).

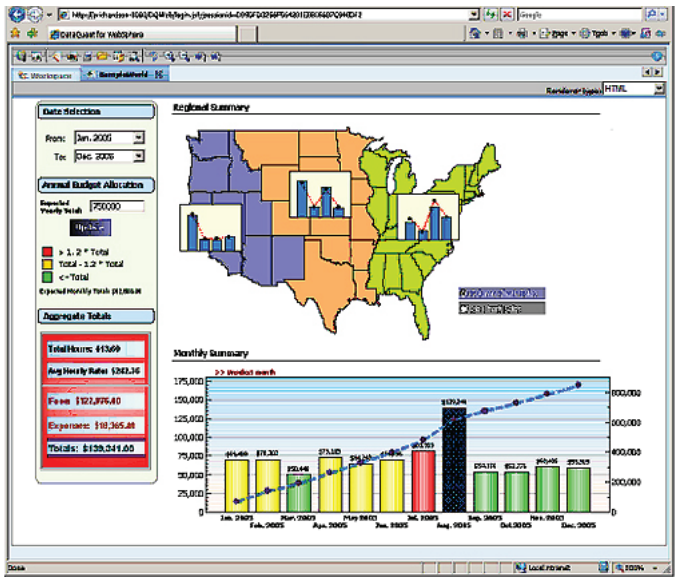

Figure 1: The new look of QMF for Business Intelligence

QMF Classic Edition

IBM has enhanced its QMF Classic Edition with a new set of features, including:

- Greater flexibility and interoperability (query enhancements)
- Improved report performance and resource control
- Enhancements to QMF commands and Structured Query Language (SQL) statement support
- Broader support for data types
- QMF form improvements
- Improved diagnostic capabilities
- Simplified installation
- A host of others

QMF Enterprise Edition

The QMF Enterprise Edition has added numerous enhancements. The QMF product family consists of the following components:

- *QMF for TSO/CICS* ®—Supports end users who work entirely from traditional mainframe terminals to access databases in the DB2 family
- *QMF HPO*—"High Performance Option" for QMF for Time Sharing Option (TSO)/ Customer Information Control System (CICS)
- *QMF for Workstation*—Replicates the key functionality of QMF for TSO/CICS on distributed platforms by way of a rich desktop development environment, and runs on Microsoft ® Windows®, Linux® and Solaris
- *QMF for IBM WebSphere*®—Provides feature set similar to that of QMF for Workstation, using a thin-client, browser-based solution, and runs on Windows, Linux, Solaris, IBM AIX®, Hewlett Packard UniX (HP-UX), IBM iSeries®, Linux on System z and z/OS

QMF High Performance Option Manager

QMF HPO Manager has been significantly enhanced to provide the capabilities and benefits below.

- Dramatically increases the ability to detect, and automatically prevent, waste or abuse of z/OS (OS/390 and Multiple Virtual Storage [MVS]) server resources
- Offers comprehensive object tracking, enhanced governing and job-canceling capabilities
- Automatically manages governing limits through precise specifications, by server, time of day, day of week, calendar dates and group
- Provides ability to rapidly locate QMF object—queries, forms and procedures—by multiple criteria, such as frequency of use
- Ability to administer located objects directly from within the object-tracking interface
- Provides means to delete, rename or move objects and place them directly into the compilation queue
- Ability to monitor and cancel currently executing QMF queries at will

QMF HPO Compiler has also been improved. Some of the new capabilities include:

- Rapid conversion of z/OS (OS/390 and MVS) QMF queries, forms and procedures into COmmon Business-Oriented Language (COBOL) applications
- Automatic generation of well-structured and commented COBOL code, customized as needed, that executes static SQL
- Drastic reduction of costly, labor-intensive hand-tooling of QMF enterprise business reports
- Queueing of objects located in QMF HPO/Manager directly to QMF HPO/Compiler for immediate processing

New QMF Business intelligence features have been added to the QMF for Workstation (rich-client) and QMF for WebSphere (thin-client) components. Both deployment options are included in the package, providing a wide choice of installation options. Within these offerings we now provide:

QMF for Workstation
QMF for WebSphere
QMF Dashboards

QMF for Workstation

QMF for Workstation is a Java™-based, rich-client application built on the award-winning Eclipse platform that provides a graphical environment for the development of query, report, dashboard and database visualization solutions. QMF for Workstation supports multiple workstation environments, including Windows, Linux and Macintosh.

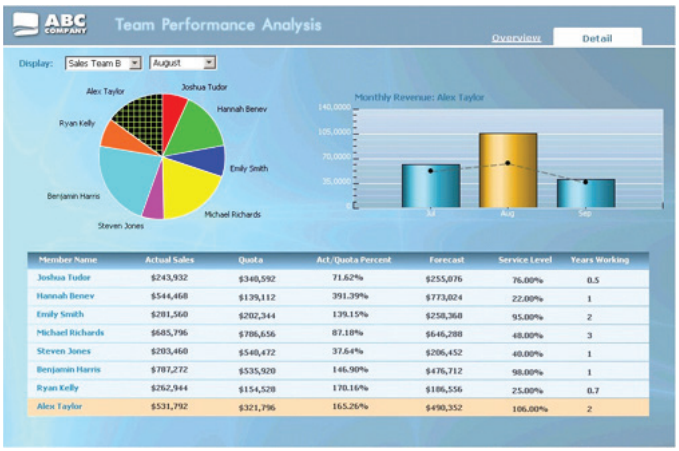

Figure 2: Business Intelligence features

QMF for WebSphere

QMF for WebSphere provides a comprehensive runtime environment that is capable of displaying all QMF content under a thin-client model. QMF for WebSphere runs in WebSphere Application Server (WAS) on all platforms supported by WAS, including Windows, Linux, Solaris, HP-UX, iSeries, Linux on System z and z/OS. It supports most other web application servers, such as Tomcat and JBoss.

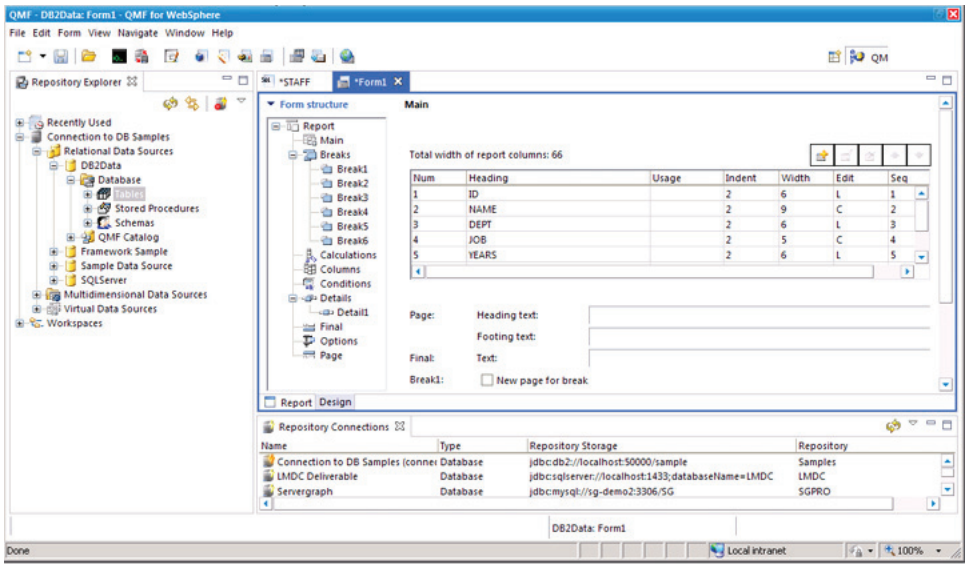

Figure 3: QMF for WebSphere— “Classic” Report Designer

QMF Dashboards

QMF Dashboards enable the ability to present data drawn concurrently from multiple heterogeneous data sources and to support dynamic queries and optional data "write–back."

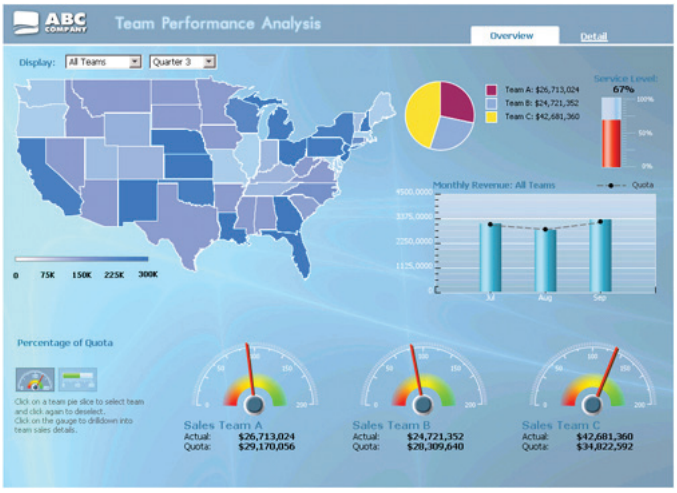

Figure 4: QMF Dashboards

Furthermore, QMF Dashboards can be substituted for visualization applications developed in-house.

Dashboard Authoring

Content is authored using a drag-and-drop visual designer and unique authoring system that allows content authors to build virtually any form of chart or presentation item. Furthermore, Microsoft Excel-like expressions, coupled with an event model, support the development of highly custom solutions.

Figure 5: Dashboard authoring

Content can be deployed to web users in any one of the following formats:

- Adobe® Flash Player (SWF)
- HyperText Markup Language (HTML) and JavaScript
- Portable Document Format (PDF)

Summary

The more people that have access to accurate Business Intelligence information, regardless of position or job title, the more businesses can benefit from this information. Improved access to accurate BI information helps everyone to make more informed, faster and more reliable decisions. For example, executives who lead the organization need fast, accurate information at the right time to make timely decisions.

IBM DB2 10 for z/OS QMF provides:

- Integrated infrastructure, supporting the full spectrum of BI capabilities, from table data editing and ad-hoc querying to graphical reporting and interactive visual dashboards
- BI content that can be deployed to both workstation (rich-client) and browser-based (thin-client) users
- Programming-free, drag-and-drop authoring model
- Content authors the ability to quickly develop interactive dashboards and graphical page-based reports
- Lines of business (LOBs) the ability to refine or design their own reports and dashboards, reducing the burden on the information technology (IT) group
- Rich, graphical reports with a wide variety of output choices, including HTML, PDF, Excel and others
- Support for a wide variety of databases, as any database with Java Database Connectivity (JDBC) support can be accessed by the QMF rich and thin clients
- Interactive dashboards with:
  - Ability to present data drawn concurrently from multiple heterogeneous data sources
  - Support for dynamic queries and optional data "write-back"
  - Rapid dashboard- authoring environment, built based upon the award-winning Eclipse framework.
  - Ability to deploy dashboard solutions to both workstation and web-browser users.
- Ability to embed dashboard content in third-party web pages, portals and web applications.
- Business Intelligence and Reporting Tools (BIRT) report-format support.
- 150 analytic functions.
- Support of online analytical processing (OLAP) sources through MultiDimensional eXpressions (MDX).
- Backward compatibility with existing QMF environments, including:
  - Maintenance of query, form and procedure object compatibility with prior QMF versions
  - Retention of full support for QMF catalogs
  - Ability to create, run, edit and share QMF objects with QMF for TSO1 and prior QMF-distributed products
  - Optional use of resource limits defined in QMF catalogs
  - Provision of substantially similar "database explorer" look and feel for prior QMF users
  - Built-in ability to import QMF Server Definition Files (SDFs) and QMF Visionary solutions
  - Built-in ability to migrate visual reports into the new graphical format

As you can see, this is not the QMF you may be accustomed to. It will be available when DB2 10 for z/OS is available, but you can certainly plan for it today. For more information, or if you would like to see a live, interactive demonstration, please contact the authors of this article:

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