IBM DataQuant V1.2

The Next generation of QMF

A White Paper

IBM DataQuant for Mulitplatforms (5724-R90)
IBM DataQuant for z/OS (5697-N64)
http://www-01.ibm.com/software/data/db2imstools/db2tools/dataquant/

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Introduction

This paper is primarily intended for the existing QMF customer although anyone considering IBM's DataQuant as a BI solution can certainly gain some insight from the information. QMF has been part of IBM's software portfolio for a long time. It has a large install base with a rich legacy of support for DB2 in delivering reporting and Business Intelligence solutions.

The QMF Family has undergone many changes over the years as IBM has adapted to the changing BI tools market and customer requests. The latest edition in the QMF portfolio is DataQuant. This new product offers a radical departure from the core functionality of the legacy versions of QMF. It offers many functions and features that do not look and feel like the QMF many are accustomed to.

IBM has also acquired Cognos which has some overlap with DataQuant. Both will continue to be sold and supported by IBM. From an IBM corporate strategy, Cognos is where IBM will put the majority of its marketing emphasis in BI and Performance Management. However, the dual strategy of Cognos and DataQuant will continue and both will be enhanced.

The Evolution of QMF

IBM announced the availability of QMF (Query Management Facility) in 1985 as a means to extract information from DB2 using a menu-driven system on fixed function terminals. It quickly proved to be easy to use yet powerful for a variety of users including IT professionals as well as end users. In its long standing tenure as a Business Intelligence tool the market has changed dramatically with many new tools emerging as well as databases from a myriad of vendors. Customers started examining their investment in QMF and demanded change.

In the early 1990's IBM worked with Rocket Software (www.rocketsoftware.com) to create extensions to QMF for tracking, performance, and administration and more. It was titled HPO (High-Performance Option) and gave QMF many new functions customers had been asking for. At this time the QMF Family still existed as a fixed-function ("green screen") product. The world was changing and customers were demanding a workstation version of QMF.

So, again in the 1990's, IBM contracted Rocket Software to create a workstation version of QMF announced as QMF for Windows. The thrust for several years was to keep enhancing QMF on the mainframe and keep QMF for Windows in lock-step with its mainframe counterpart. Rocket then acquired a dashboard solution from the Informix inventory after IBM acquired Informix. This product was added to the QMF arsenal to provide some of the more 'modern' capabilities demanded of newer BI tools. The QMF Family now consisted of a collection of mainframe tools and workstation components bundled into a package and shipped as a feature of DB2.

In 2007 the decision was made to take a dramatic turn ... IBM and Rocket started over. Using the Eclipse foundation development environment, a new product was developed and announced … IBM DataQuant. The best of QMF, QMF for Windows, and Visionary were combined into a single, enterprise enabled BI toolkit. DataQuant may be used as a stand alone BI package or tightly integrated into an existing QMF Enterprise Edition installation. It began a new era of enhanced BI capabilities for IBM's QMF customers.

DataQuant Overview

The dashboard displayed on the cover page of this paper as shown again here is an illustration of the new look, feel, and capability of QMF today with the addition of DataQuant.
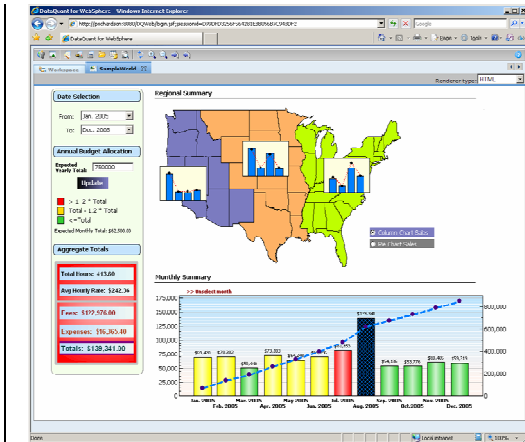
Though the QMF family has a rich legacy of delivering business intelligence output for many years, the BI world of today demands a wide and robust set of output types and presentation styles. There are many customers who deliver traditional 3270-type of output via QMF of the mainframe, but the majority of BI users today demand a more graphical style. DataQuant provides a powerful set of output capabilities as well as the ability to create customized graphics to fit anyone's needs.

DataQuant is a one-time charge, server-based BI tool that ships with the ability to deploy as a thin client (browser based) solution, or a rich client workstation tool. It combines the features of the QMF workstation products as well as offering new data types supported and enhanced BI analytics heretofore not available in the QMF Family. It runs on multiple platforms such as z/OS, zLinux, iSeries, and Windows. It supports most databases that are JDBC compliant.

Due to the investment in developing DataQuant and its radical departure from its predecessors, it was made available as a separate product with its own price and not added to the QMF Enterprise Edition bundle. It can easily function as a standalone BI toolkit thus separating itself from its co-dependence upon QMF.

The rich client interface is required for the creation of certain objects such as a dashboard or some of the more sophisticated graphics. The thin client deployment model allows the user to create queries, produce reports and use dashboard features and functions created in the rich client.

DataQuant and Cognos 8 BI

DataQuant is a standalone BI tool that can be installed "out of the box" as a rich client as well as a web-deployed thin client. It offers a set of easy to use query and reporting functions with a rich toolkit for creating intelligent dashboards and graphics.

Cognos 8 BI, on the other hand, is a full BI "platform" that requires a web ser, application server, and a database to store content in order to operate. Cognos 8 BI has capabilities that exceed DataQuant due to its many extensions that have been added to the platform since it was first announced as ReportNet in 2003.

At the portal level or via the toolkit capabilities of either product, they can be setup to interoperate. For example, they can share the same real estate on a screen (within a portal) or have one product invoke a function from the other. This interoperation is being examined as closer interoperation may be advantageous to customers running either or both products.
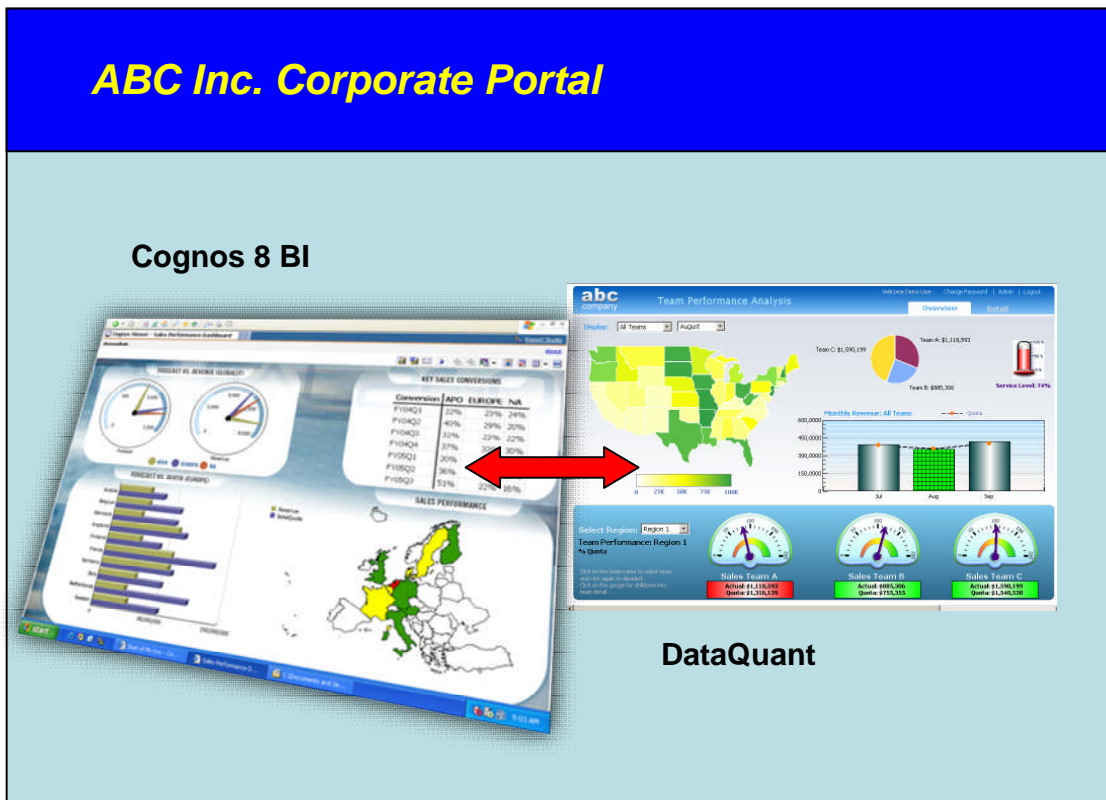
The DataQuant Architecture
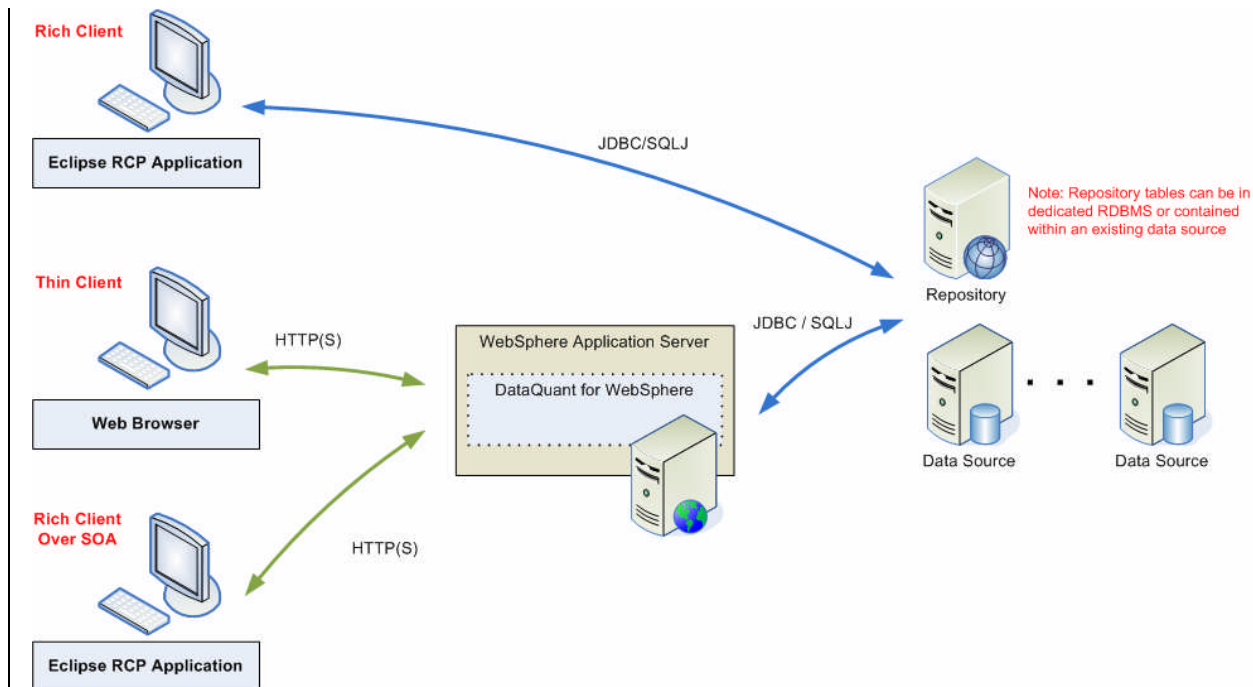
As shown above, there are three deployment models for DataQuant

1. As a rich client enabled on workstations with all functions
2. As a thin client (browser-based)
3. 3. A combination of rich client and thin client

Business Intelligence Operations and Functions

DataQuant has added a number of enhancements previously not available within QMF. Some of the significant extensions are:

- Over 100 built-in mathematical and analytical functions.
- The ability to create compound reports and page navigation for multiple pages of data and multiple sources within a report.
- Multi-platform support including IBM System z™, zLinux, Linux®, I series, Microsoft® Windows®, IBM AIX® and Solaris.
- Multiple drill-down paths with separate actions for each reporting entity.
- Drag-and-drop development of OLAP analytics, SQL queries, embedded sub-queries, tabular reports, graphical reports, and pivot tables
- OLAP query editor with support for MDX OLAP based engines, connecting via XMLA

- Full compatibility with an existing QMF infrastructure and objects
- Support for IBM DB2® and Informix®, as well as most other popular database management systems
- Support for a wide variety of report formats, including XML, HTML, Microsoft Excel® and PDF
- The ability to produce offline active reports for updates
- Ability to launch the BIRT (Open Source – Business Intelligence Reporting Tools) editor directly from within DataQuant
- One click function to populate Excel with DataQuant output with all formatting retained
- Role-based security
- SOA layer for embedding of dashboards in webpages

DataQuant allows the user to develop, deploy and share critical Business Intelligence information with analytics and reporting information for data warehousing and operational data. It provides the ability to develop and deploy executive dashboards, information portals and interactive data visualization solutions from a wide variety of data sources.

It provides a set of rich analytics including: OLAP analytics, cube data, SQL queries, tabular reports, graphical reports, pivot tables, and data analysis views through simple drag-and-drop operations. It also protects critical business intelligence content and data with robust access controls

Built on Eclipse™, an award-winning, open-source platform, IBM DataQuant for z/OS® and Multiplatforms can address your business intelligence needs by deriving even more value from your data warehouse or data mart through its ability to easily create and disseminate analytics and reporting data via dashboards and visual solutions.

While many analytical tools require extensive programming and lengthy deployment times, IBM DataQuant for z/OS and Multiplatforms provides an easy to use, out of the box environment enabling you to quickly and easily develop Business Intelligence solutions. This includes a wealth of easy-to-use charts, controls and graphics that you can drag and drop to quickly create dashboards and reports.

Thin Client and Rich Client Deployment Options
IBM DataQuant includes both an Eclipse-based, rich client, desktop application and an IBM WebSphere®-based, thin-client Web application. The Eclipse-based offering provides a powerful, intuitive and highly productive rich-desktop environment within which queries, reports and visual dashboards can be quickly authored, tested and deployed.

The high-performance environment (thin client) based on WebSphere software extends key functionality to browser-based users across multiple platforms, providing access to all IBM DataQuant BI content, as well as the ability to create queries and reports, and perform ad-hoc, visual drag-and-drop data analysis.

Share BI content internally and externally
IBM DataQuant for WebSphere includes a robust Service Oriented Architecture (SOA), providing a flexible infrastructure that enables you to easily share business intelligence solution components (queries, reports, dashboards, etc.) with partners or clients over secure Web connections.

DataQuant provides an SOA layer allowing dashboards and reports to be directly embedded within third-party Web pages. DataQuant can also embed external content directly in a visual report or dashboard, thus providing a BI portal. Or, DataQuant objects can be imbedded into other portal technologies such as IBM WebSphere Portal. Support of active portlets within WebSphere portal extends the scope of DataQuant to embrace IBM's composite application topology.

Using the SOA capabilities and rich security infrastructure of IBM DataQuant, organizations can distribute BI assets to both internal and external users via a standard, secure Internet connection. Available to both Web and rich desktop application users, these SOA capabilities provide user and group-specific access to BI assets without requiring knowledge or direct access to the underlying databases and data repositories that power them. This allows you to readily share your BI solutions with users both inside and outside of the firewall, all with zero client-side administration. It provides a build once, service many infrastructure as required by SOA deployments.

Security and Personalization
Integrated business intelligence systems require a high level of security to protect mission-critical information. Regulatory requirements for information continue to grow thus one must be able to secure business information at the appropriate level. IBM DataQuant provides granular access control, tailoring the look and feel of available reports and visualizations and data on a per user/group basis. For example, technical users may see a traditional database-centric view, whereas business users see a role-specific view of relevant reports and dashboards. You may opt to tailor off-line schemas to each user/group so that individuals see only those tables and columns relevant to their job function or business area.

IBM DataQuant also supports single sign-on, allowing users to log on to all enterprise assets using a single account. IBM DataQuant logon information can be automatically passed to all databases or derived from specific accounts designated as appropriate for the particular user.

IBM DataQuant security features include:

- Optional 'internally defined' IBM DataQuant user directory
- The ability to directly interface with LDAP directories
- An internal object repository that controls the access and distribution of data sources, queries, reports and dashboards

Make the most of your System z solutions
When used in conjunction with DB2z, IBM DataQuant leverages data warehousing improvements, such as materialized query tables, star join query enhancements and query parallelism. It also helps improves performance during the execution of complex queries, or those that primarily return historical static data, by providing a data cache that shares the same query results across multiple DataQuant users.

Technical Specifications

Software Requirements
IBM DataQuant requires the following software:
Database connectivity requires an appropriate JDBC driver for each type of RDBMS accessed.
DataQuant V1.2 supports the following OLAP data sources:

- DB2 Warehouse Version 9 and above (all editions)
- Other MDX-based OLAP servers with support for XMLA connectivity

The workstation component of IBM DataQuant requires one or more of the following operating environments:

- Microsoft Windows 2000
- Microsoft Windows XP
- Microsoft Windows Server 2003
- Microsoft Windows Vista
- Red Hat Enterprise Linux WS 3, or later
- SuSE Linux 8.2, or later
- Sun Solaris 9 SPARC, or later

The WebSphere component of IBM DataQuant requires the following:

- WebSphere Application Server V6.0.2, or later, on any operating environment supported by WebSphere Application Serve and with other J2E compliant web application servers
- One of the following Web browsers (with JavaScript support enabled) on each user machine:
- Microsoft Internet Explorer V6, or later
- Netscape Navigator V6.2, or later
- Firefox V1.5, or later
- Most other popular Web browsers with JavaScript support enabled

IBM DataQuant for Multiplatforms supports the following data servers:

- DB2 for iSeries™, V5.2, 5.3, or 5.4
- DB2 for Linux, UNIX®, and Windows, V8.1, 8.2, 9.1, and 9.5
- Informix Dynamic Server V9.x ,10, 11
- SQL Server 2000 and SQL Server 2005
- DataQuant provides JDBC-level support for other popular JDBC-compliant data sources

In addition to the database servers supported by IBM, Dataquant on Multiplatforms, IBM DataQuant for zOS supports the following database servers

- DB2 for z/OS Versions: 7.1, 8.1, 9.1
- DB2 Server for VSE and VM Versions: 7.3, 7.4

IBM DataQuant for z/OS requires the following software:

- One of z/OS V1.6 (5694-A01), or later, or z/OS.e V1.6 (5655-G52), or later, if DB2 V7.1 or DB2 V8.1 is used
- One of z/OS V1.7 (5694-A01), or later, or z/OS.e V1.7 (5655-G52), or later, if DB2 9 is used
- In the case where access to existing QMF objects is required, IBM DataQuant for z/OS requires a DB2 QMF Enterprise Edition V8.1 license (5625-DB2), or V9.1 license (5635-DB2).

Summary

DataQuant is proving to be a serious contender in the BI space with a set of features and functions for providing a standalone BI solution as well as for modernizing an existing QMF environment. The BI market has changed dramatically in the past 2 years with acquisitions being the key. The era of independent BI vendors is coming to a close as more and more the customer demands a fully integrated solution (database, ETL, infrastructure, portal, and more).

In the IBM panoply of software, DataQuant has found an exciting niche where it is one of two significant offerings and will continue to offer competitive advantage to IBM's customers looking to usage of such tools to distance themselves from their competitors.