DB2 for i Version 7.3 Overview

April 12, 2016

On April 12, 2016, IBM announced IBM i 7.3, a new version of the popular operating system that includes DB2 for i. This version of DB2 for i continues a long list of enhancements over the years to provide robust, scalable, open solutions that build on a key value proposition of DB2 for i: low total cost of ownership!

The enhancements, when looking at them from a broader strategy perspective, are associated with several key initiatives:

- Data Security
- Analytics – from SQL Extensions to full blown data warehouse solutions
- Continuing to Simplify Management of DB2 for i
- Database and Query Modernization – how to leverage the latest technology advances in existing applications with minimal impact
- Performance and Scalability

Data Security

New security support called **authority collection** is available in the IBM i 7.3 release. Authority collection is a capability that is provided as part of the base operating system. At a high level, authority collection captures data that is associated with the run-time authority checking that is built into the system. This data is logged to a repository provided by the system, and interfaces are available to display and analyze the data. The intent of this support is to assist the security administrator and application provider in securing the objects in the application with the lowest level of authority that is required to allow users to perform their tasks and allow applications to run successfully.

Generated columns are enhanced to support auditing detail related to data changes at the row level. This row auditing solution can be used within either an SQL table or DDS-created file. When generated columns are added to a database file, DB2 for i will automatically maintain information about the user, client TCP/IP address, qualified job name, and other environmental details related to row changes.

IBM's Lab Services **PowerSC Security and Compliance Reporting** solution is enhanced to support DB2 Web Query version 2.2. This security solution captures over 1000 security attributes from multiple systems/LPARs and provides out of compliance dashboards to the business to be able to take immediate action to ensure compliance. The latest version includes additional security attribute collection, real time monitoring end alerting of security related events, including enhanced visualizations. In addition, PowerSC provides a small and medium business version that includes Web Query reports, so whether you have one system or hundreds, there is a version to fit your requirements. Click HERE for more information about this solution.

Analytics

Temporal table support allows clients to perform more advanced analytics on their data to plan and forecast, define gaps and build new strategies for business by storing historical and current information within DB2 table structures. Need to know what salesperson covered a specific customer as of 2012? This support allows BI or other applications to more easily understand the historical perspective on data.

SQL programmers will discover a wide array of new **OLAP** capabilities added to the SQL language. The new OLAP built-in and aggregate functions can be used to satisfy requirements to extract insight for BI applications. This new support includes statistical processing such as linear regression that is built right into DB2.

A new version of **DB2 Web Query**, Version 2.2, is being announced that will support IBM i 7.3. The DB2 Web Query for i family of products provide Query/400 modernization in its simplest form, to robust Business Intelligence applications, to full blown data warehousing implementations.

Version 2.2 expands the data sources you can build reports over. Open source databases such as MySQL or Postgres, or really just about any other relational database can be accessed through a generic JDBC adapter. Heterogeneous (non DB2) data source access does require Standard Edition. DB2 Family database access is built into Express Edition.

Developer Workbench, a component used for meta data and advanced dashboard or report development gets a new face lift that has a much more intuitive look and feel. Features such as the mobile layout canvas make it easier to develop dashboards with a mind on deploying to tablets.

Advancements in other user interfaces include the notion of a "responsive" dashboard. An example is a dashboard with perhaps 4 charts displayed, and the ability for dynamic resizing of those views based on your focus or size of browser window. In addition, you can now design and test specific browsers within the development tools.

For more information about DB2 Web Query, click HERE.

Simplified Management

IBM Access Client Solutions will be enhanced mid-year to include Visual Explain, Show (SQL) Statements, and compare SQL performance monitors, as well as a number of other usability features in the Run SQL Scripts function.

Improved capabilities help database engineers effectively manage the data center. New support for locally partitioned data allows database engineers to use SQL to detach and attach partitions. This new capability adds to the unique value of using DB2 Multisystem as part of a very large database strategy.

In the tradition of recent Technology Refreshes, new IBM i services provide useful SQL-based alternatives to traditional IBM i CL commands and APIs. New "work with environment variables" service provides easy access to the job level, system level, and other environment variables.

Extending the life of your legacy applications through Database and Query Modernization

As with many updates to DB2 for i, version 7.3 (and mid release technology refreshes) continue to add additional functional enhancements that provide programmer productivity, portability through industry or de-facto standards support, and enhanced flexibility and extensibility for both new and existing applications. Many of these enhancements extend the life of legacy applications through modernized use of DB2 for i with minimal impact to those applications.

For example, the new temporal table support and generated columns can be implemented using database modernization techniques, often with no changes to the existing application logic.

To read more about database modernization, refer to the white paper DDS and SQL – the winning combination for DB2 for i.

New tools available from IBM Lab Services can be used to discover, analyze, and convert Query/400 definitions into native DB2 Web Query reports. The benefits of such a project are many, including better performance, removing a dependence on a few expert report writers, and a consolidation and reduction of 100's if not 1000's of Query/400 reports into a much smaller, much more flexible set of DB2 Web Query reports. For more information about IBM DB2 for i Lab Services offerings, click HERE.

Performance and Scalability

Many of the OLAP extensions to SQL can improve performance of complex, multi-dimensional queries supporting analytical applications. By letting DB2 do the heavy lifting through use of these SQL constructs, you can often improve query performance versus having that work done by the application reporting server or using other data massaging techniques.

Database parallelism, delivered in the IBM i feature DB2 Symmetric Multiprocessing, can boost performance in table scans (table/file reads of every record), index builds, re-organizations and more. Many clients would like to test out this feature before making a purchase decision, so IBM is making this, and the DB2 Multi-System feature, available on a trial basis.

DB2 for i's industry leading limits (how high it can scale) improves even more, with larger limits for the number of parameters used in an SQL (stored) procedure or function. The number of members referenced in an SQL View is also significantly increased.

More to Come!

IBM will continue to deliver additional DB2 capabilities for the IBM i 7.3 release using the Technology Refresh delivery vehicle. Visit the DB2 for i Technology Updates Wiki on a regular basis to stay current with the latest DB2 enhancements.

For more detailed information on DB2 7.3 enhancements, click HERE.

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