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IDUG View: pureQuery and DB2 9 Shine

By David Beulke

pureQuery and DB2 for z/OS provide better performance and developer coding flexibility

DB2 9 for z/OS offers many new performance features. The one I find the most exciting combines DB2 9 and pureQuery to convert dynamic JDBC SQL applications into static transactions. This combination, which uses the new IBM Data Server Driver for JDBC, eliminates the overhead of dynamic JDBC security authorization, object verification, and access path creation from every JDBC SQL transaction. In DB2 installations that execute millions of dynamic JDBC transactions every day, converting them to static transactions will save a tremendous amount of CPU and operational overhead.

The pureQuery initiative further extends DB2's object-oriented nature. pureQuery allows the use of traditional JDBC application SQL programming, JDBC 4.0 SQL method calls, and named query styles found in JPA, Hibernate and iBatis. Using pureQuery, developers can write their applications in any coding style and easily migrate dynamic applications into static, secure, robust DB2 applications.

The advancements in pureQuery are available in the new Eclipse-based programming tool, IBM Data Studio v1.1, a free download from the IBM Web site. These features are accessed from a simple menu option within your Java Project perspective. You can use them by packaging and deploying the pureQuery runtime (pdqmgmt.jar) and your JDBC driver on any Java application server (WebSphere, Tomcat, and so on).

DB2 9 has another impressive feature that improves performance while preserving security: "trusted context" for distributed system transactions. This feature allows the creation of a trusted network, combined with database objects and the binding of the application plan or package to be associated to a security database role. Defining the

trusted network platforms, using the ROLE AS OBJECT OWNER key phrase during database object creation, and binding with the trusted context database role, allows the DB2 system to streamline security verification and to reuse dynamic database transaction threads and access plans. By caching and streamlining these remote distributed WebSphere server transactions, DB2 retains the security clearance token for as long as the server is giving transactions to the DB2 for z/OS system. This feature improves security by using the token, eliminating the overhead of secondary security checking for every transaction coming from that server. As I mentioned in the pureQuery discussion, shops with large distributed dynamic transaction workloads will benefit significantly from this capability.

Finally, DB2 9 security allows column-level data encryption. Each of us needs to look closely at this feature. I recently met a British citizen who had to replace his credit cards four times due to information breaches at organizations he did business with (including the British government). These breaches wouldn't have been an issue if the organizations had used encryption. The minor encryption overhead is nothing compared to the goodwill you'll generate when your CEO sleeps better knowing the DBA has it covered.

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