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Derby Days

By David Beulke

IBM throws its hat into the open source database ring.

Linux and open-source efforts are more than a fashionable trend. Many companies are saving thousands — even millions — of IT dollars by replacing proprietary systems with open-source alternatives. A company I know of recently saved more than \$750,000 by replacing 11 proprietary operating systems with Linux instead of upgrading the existing software.

Linux and other open-source software aren't charity efforts; in fact, many of these products are making money just as traditional software companies do. For example, Linux distributor Red Hat boasts a market value of \$2.6 billion. Increasing competition from an open-source alternative (such as Star Office) can force traditional vendors (such as Microsoft) to negotiate better licensing deals.

But not all open-source products are competing with commercial offerings. One example: The open-source database MySQL, a popular choice at corporations that need only basic DBMS functionality and want to save on licensing costs, is about to face stiff competition from a new open-source option.

IBM, a long-time supporter of the open-source movement, recently donated the code for Cloudscape, an embeddable, pure-Java RDBMS, to the Apache Software Foundation. The new open-source product is known as Apache Derby. IBM will support Cloudscape (whose future commercial versions will be a snapshot of Derby) for a fee and will provide manuals, articles, white papers, and downloads.

Cloudscape, which IBM inherited in its Informix acquisition, is a wonderful Java database. Its small footprint (only 2MBs) is easily deployed and embedded in Java applications. Most importantly, it provides SQL 92 compatibility and some SQL 99 features that will ease future application migration to large-scale databases (including DB2 and others that comply with the SQL-92 and SQL-99 standards).

This commitment to industry standards, coupled with IBM's community support, is a big distinction from MySQL's more limited feature set.

Another advantage for Cloudscape/Derby is its Java base. MySQL is written in C++, a difference that's critical to enterprises trying to develop solutions that can be deployed to any platform or operating system environment. Cloudscape/Derby also uses standard JDBC methods for connectivity and can use a variety of JDBC drivers, including the pure-Java Type 4 driver and Type 2.0 and 3.0 drivers. All are compatible with JNDI and any Java 1.3.1 or better Java Virtual Machine. This flexibility allows Cloudscape/Derby to be deployed in a standalone fashion or in a variety of client/server configurations.

Cloudscape/Derby's SQL-standards compliance lets developers incorporate triggers and stored procedures from existing applications into the Cloudscape/Derby environment. Existing development methods and conventions can be used throughout the development cycle, regardless of whether the database will be DB2 or Cloudscape/Derby. Triggers and stored procedures are major elements of many companies' development plans because they help centralize code and functionality. Support of these functions gives Cloudscape/Derby a clear advantage over MySQL and a great migration path to DB2.

Perhaps the most important advantage of Cloudscape/Derby over MySQL is its security encryption capabilities. Cloudscape offers the option to encrypt the entire database, which protects its file system and database schema. This ability provides an extra layer of security, which is especially important for remotely deployed databases or databases for wireless or laptop applications. Cloudscape/Derby also verifies signed Java archives and can use external authorization techniques common to other databases, including LDAP, Network Information System NIS+, and JNDI capabilities.

Cloudscape/Derby offers the open-source community an embeddable database with an impressive set of capabilities and functions. Its SQL standards compliance, security safeguards, and IBM-initiated community support will help Derby quickly find its niche.

The International DB2 Users Group (IDUG) Web site offers the latest information about Cloudscape, DB2, and other IBM data management software. You can ask questions and get answers quickly through IDUG's DB2 listserv. The site also offers IDUG conference information, DB2 articles, and other resources, straight from the DB2 database community.

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RESOURCES

IBM Cloudscape

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