

IBM's Cheetah 2 Informix database proves that it's good to share

Analyst: Matt Aslett

Sector: Enterprise Software

IBM has released version 11.5 of its **Informix** Dynamic Server (IDS) database management system, less than a year after it proved its commitment to the previously neglected IDS with the release of IDS 11. Following on from its positioning of IDS 11 as a more equal partner with the DB2 database, IBM is also now being more forthright about the fact that its multiproduct database portfolio includes not just DB2 and IDS, but three further database lines as well.

The 451 Take

Given IBM's former focus on DB2, it is fascinating to see the company talking about not one or two but five enterprise database products. This is a more realistic approach to the market, and despite some overlaps, each of the products has its own strengths and weaknesses and opportunities to exploit. IDS has proven to have a very loyal following, and with the addition of new functionality – such as the shared-disk clustering capabilities – and in combination with the newly acquired solidDB in-memory capabilities, could begin to provide IBM with a more complete portfolio with which to compete head-to-head with Oracle.

Context

When IBM introduced IDS 11 (code-named Cheetah) in June 2007, we noted that IBM was starting to position Informix as more of an equal partner with its DB2 line, which was previously considered the flagship database, and abandoning its previous denial about having a dual-database strategy. With the introduction of IDS 11.5 (Cheetah 2) the company has gone even further, admitting that it has not two but five distinct database server products in its Information Management portfolio. As well as the mainframe-based Information Management System (IMS), IBM also has the U2 (UniVerse and **UniData**) products that were also part of the Informix portfolio, as well as the recently acquired solidDB.

IBM insists that all of these products are growing steadily (albeit some of them in niche markets) and helped to produce revenue growth of 11% for the Information Management business in the fourth quarter ended December 31, 2007. IBM's middleware products, which include WebSphere, Information Management, Tivoli, **Lotus** and Rational products, generated revenue of \$5bn in the quarter, up 13%.

Strategy

IBM's initial plan upon acquiring Informix for \$1bn in 2001 was to support the customer base and roll the best features into the DB2 product. It didn't count on the loyalty of the IDS users, however, and any suggestions of discontinuing the IDS product were effectively quashed with the release of IDS 10 in 2005.

The relationship between IBM's database products has become more symbiotic, and feature sharing has become more bi-directional. For example, while Label Based Access Control was first introduced in DB2 version 9 (Viper) and then IDS 11, to enable XML support in Viper, the DB2 team worked closely with the IMS team to benefit from its hierarchical data management expertise. Likewise, in delivering shared-disk clustering support for IDS, the IDS team worked with the team responsible for DB2 on System z (see technology).

While there is undoubtedly some overlap – both DB2 and IDS are optimized for high-performance online transactional processing loads, while DB2 on IBM System z mainframes is a potential alternative to IMS – the company is now focused on accentuating the strengths of the various data management products.

Products

Originally created to power the Apollo space program, IBM's IMS database and transaction processing system is still going strong 40 years on and received its most recent update with the release of IMS 10 in October 2007. Running on IBM's System z mainframes, IMS is a hierarchical database management system and is pitched at organizations needing the highest levels of transaction and data volume.

IDS has over 100,000 users, according to IBM, while its Informix Users Group has more than doubled to 20,000 since the acquisition of Informix. Among the factors behind its continuing popularity is the fact that it can be tailored to a very small footprint for customized integration with applications, while administration APIs mean that the database can be administered directly from the application. This makes IDS particularly suitable for distributed application deployments, such as in-store systems in the retail sector, which remain a core target market.

DB2 remains the most popular IBM database by some distance. Pitched at mixed workloads, such as analytics and online transaction processing or a mix of relational and XML, DB2 was most recently updated with version 9.5 (Viper 2) in October 2007 with enhanced transactional XML and deep compression functionality.

Now known as the IBM U2 product family, UniVerse and UniData are multidimensional database management systems that were also acquired with Informix thanks to Informix's 2000 acquisition of **Ardent Software**, which was formed by the merger of UniData and **VMark Software**, the maker of UniVerse. They are now being positioned as an option for applications supporting variable data records.

IBM acquired **Solid Information Technology** in late 2007. The two companies had earlier held proof-of-concept trials to test the solidDB 6 in-memory database deployed as a front-end cache to accelerate access to data in IBM's DB2 relational database. IBM plans to offer solidDB as a front end to DB2 to provide high-performance caching for financial service applications and also as a cache for IDS for use in telecommunications and retail systems such as RFID applications.

Technology

Version 11.5 of IDS adds new functionality in a number of areas, including improved disk-based clustering support, global high availability and support for **Apple's** Mac OS X. With IDS 11 Cheetah, IBM introduced a new 'availability fabric' to expand continuous availability support beyond a single remote failover server to multiple secondary servers. However, the shared-disk clustering approach was limited to read-only access on the secondary node.

With Cheetah 2, IBM now provides read and write access across all nodes for dynamic failover and dynamic workload management. The result is that backup servers can now be used for transaction processing in the event of server failure, while high-availability implementations can now span global deployment.

This is the first time that IBM has offered shared-disk database clustering other than on its System z mainframes, and it sees the IDS developers working with the team responsible for DB2 on System z. While IBM would not comment on the potential for the technology to find its way into the DB2 product, it is being described as appearing 'first' in IDS. By adding support for Mac OS X, IBM is hoping to boost IDS adoption in traditional Apple stronghold market sectors, such as education and government.

Competition

IBM's closest competition in the database sector comes from **Oracle**, which goes head-to-head with both DB2 and IDS and would also provide a potential alternative to the U2 products. Additionally, Oracle's **TimesTen** database competes directly with solidDB. Oracle has also pioneered the enterprise use of shared-disk database clustering on commodity server platforms and has a seven-year lead on IBM in this regard; although IBM maintains that its approach is easier to set up and manage and offers fewer single points of failure.

Microsoft's SQL Server is also a significant enterprise database challenger; although it lacks some of the advanced clustering and high-availability features and has no in-memory database alternative. **Sybase** is a distant fourth place, but retains a strong position in financial services as well as government and telecom – where it would compete directly with DB2 and IDS. Sybase recently introduced a shared-disk clustering edition of its Adaptive Server Enterprise product and has also acquired a license to in-memory database functionality from **ANTs Software**.

Other players in the database market include the open source databases MySQL, PostgreSQL, and **Ingres**, all of which have yet to make a significant impact on commercial enterprise applications (PostgreSQL has been successful in academia and government, MySQL has been deployed at the Web tier and Ingres has a small but loyal installed base after years as a subsidiary of **CA Inc**). However, all three could pose a greater threat in the future. **Sun** has acquired **MySQL AB**, and is planning to provide the resources that will enable it to compete at the enterprise application tier. **EnterpriseDB Corp** has built Oracle compatibility on top of PostgreSQL and also provides support for the PostgreSQL project. And Ingres is planning to raise its profile via an initial public offering following its spin-off from CA in 2005.

Strengths	Weaknesses
Doubts about IBM's commitment to IDS dissipated some time ago, but the multiproduct approach is a more realistic one that should enable the company to provide best-of-breed alternatives to Oracle and Microsoft for different user needs.	IBM will have to be clear with existing and potential customers about the best use cases for each of the products in its database portfolio if it is to ensure that it avoids confusing the market.
Opportunities	Threats
IDS has a tremendously loyal following that should be boosted by the introduction of new features via the IDS line, and also the complementary capabilities that solidDB brings to the table.	The fact that IBM's portfolio has been assembled from multiple acquisitions and includes multiple products is sure to be used by rivals such as Oracle to spread doubt about its capabilities and commitment.

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