



Spotlight on jBASE

Since its founding in 1989, jBASE has become known as a technological trailblazer in the MultiValue industry, offering unparalleled robustness, scalability and connectivity. Twenty one years of hard work and determination has led to the evolution of a product line perfectly placed for today's and tomorrow's application needs. Today, jBASE is positioned to migrate existing MultiValue applications (with functionality intact) to the new world of mainstream application development environments.

jBASE provides complete freedom in your IT environment by ensuring there are no barriers to your growth. The open architecture of jBASE is uniquely designed to allow a wide range of application development tools and backend databases to form part of a jBASE solution. If the answer to your business problem is a mainstream database or 3rd party application, then it is a simple task to integrate using jBASE.

Interoperability with Oracle, DB2, SQL Server

A fundamental design feature of jBASE is database independence. By means of an innovative, open and published interface (jBASE External Device Interface, jEDI), any jBASE developed application can read and write to whichever database is required for data storage just as simply as the jBASE database. This means a jBASE solution can be billed as an Oracle, DB2 or SQL Server solution without a major rewrite and at an economic cost. Major end users can match a corporate requirement for RDBMS compliance while still benefitting from thousands of hours of development in tailored applications written in BASIC. VARs can deliver applications to markets demanding RDBMS databases to capitalize on their investment and expand their business. Even the tough task of merging two companies with diverse IT strategies is easily accomplished by jBASE and its jEDI architecture. Couple this with the variety of operating platforms that jBASE runs on and it's plain to see that your options are endless.

Seamless Integration with Mainstream Development Tools

jBASE runs natively on an operating system so it does not incur the overhead or the

inconvenience of running interpreted code in its own, enclosed, environment like most of the other MultiValue databases. A jBASE program is compiled and catalogued as an operating system level executable that can be called from any other piece of executable code capable of calling external routines. Most importantly, once compiled, interoperability with third-party applications and drivers is seamless and native. If you have BASIC code that is responsible for the routing of your fleet of trucks or for determining the best way to place goods in a warehouse or for assessing risk on a stock portfolio then you can now call it from any other environment – Java, VB.NET, C or C++ or even your favorite IDE.

Running natively with the host operating system ensures that new technologies are easily supported which allows many options relating to future direction. Should Java or .NET or any other tools be used to develop applications, jBASE programs will seamlessly fit alongside or as part of the same application. The design of jBASE means there is no environment or shield between jBASE applications and the underlying operating environment which makes for more elegant interoperability and optimum performance levels.

Future Proof your Application

The combination of powerful tools and a powerful database, together with truly open middleware means that, should you decide on jBASE for your application, you can rest assured in the knowledge that your investment is protected. Your data can be stored in jBASE or in any mainstream RDBMS or file system you require. Whatever the skill set of the developers in your organization, whichever technology you need to use, you can develop using jBASE safe in the knowledge it will be a future proof solution. There is no limit to what you can do with the technology provided by jBASE. The open architecture puts you in control and provides you with choice.

Release 5: Mainstream Benefits

The release of jBASE 5 marks a major new development for jBASE and brings MultiValue users closer to the mainstream than ever before. This true 64-bit release deliv-

ers a new level of resilience through the introduction of the jBASE Dataguard suite. This collection of technologies uses the same concepts as SQL Server, Oracle and DB2 to allow jBASE to operate non-stop as a technology platform.

Why 64-bit? 64-bit removes many of the limitations that have caused problems in the past, for example, Shared Library size on AIX, File handles on Solaris and file sizes on just about everything! As time marches on, the number of computer systems being built on a 32-bit architecture is dwindling and main manufacturers are only delivering 64-bit machines with 64-bit operating systems. While some MultiValue databases might have added 64-bit addressing to overcome 2GB file sizing, jBASE 5 is a complete 64-bit implementation of the database. There are no hidden 32-bit addressing limitations, allowing complex and large applications to be handled with ease.

Non-Stop Computing

jBASE 5 investment has been predominantly in the area of Transaction Journaling which has been substantially engineered to provide an ever greater level of flexibility and robustness.

A number of new structures have been introduced to allow more precision in recovery. One of the major enhancements has been the addition of the concept of Checkpointing. This process periodically sets markers which record the fact that the database is at a known point at that specific time. The recovery modules can refer to these checkpoints to keep the system in a robust state.

Warmstart recovery is designed to enable a database to be returned to a stable, working position following a power failure in a similar fashion to mainstream RDBMS products. It automates the recovery of a system that has been improperly shutdown with no manual intervention required.

The Online Backup facility has been developed to enable system managers to perform necessary regular database backups while still allowing users the ability to perform updates on the database. This

functionality also enables file restoration on a live system.

jBASE 5 delivers not only some of the best system integrity and data security features in the MultiValue database market today but ones that are on par with many mainstream RDBMS products. The new features are all about reducing downtime which is arguably the goal of all data management solutions. For the first time, MultiValue solutions can be billed as non-stop in both application and database.

Java Development

New with jBASE 5 is a whole suite of functionality to benefit enterprise application development. Java Enterprise Edition (JEE) application development on jBASE 5 is supported by both the major JCA enhancements to jBASE Basic and new JDBC implementation.

This is the first time that the full JEE functionality has been supported on jBASE. And the implementation ensures the full Java Enterprise applications can be developed and deployed with ease. To round out the support for the developer the new jRemote Java functionality ensures that whatever the Java requirement, jBASE 5 can deliver. It enables the Java developer to make use of the rich functionality in existing BASIC code and exploit features such as jBASE 5 transaction processing and UTF-8 Internationalization.

For the technical at heart we have enabled Java to include JEE Connector Architecture (JCA) compliance, accept connections with JEE clients and manage the lookup, execution and transactional flow of Enterprise Java Beans (EJB), JMS queues and requests from Message Driven Beans (MDB). For those that prefer SQL, the jBASE query processor has been enhanced to accept SQL commands as well as jQL commands.

SQL Support

One of the main benefits of providing a SQL engine for jBASE is that the database can be used with external tools and APIs. SQL has many benefits that can be applied to the jBASE MultiValue, hierarchical database. In particular with jBASE, SQL allows users to query data where there might be tables within tables and no primary-key/foreign key relationship. This is an extreme advan-

tage not available in most RDBMS systems. As well as integration with external API's, the jBASE SQL engine also allows SQL to be used to interact directly with jBASE files. For example, SQL can be used wherever jQL is used currently while the rich set of SQL functions allows the creation and manipulation of data tables e.g. inserting updating and deleting records.

Ongoing Development

Current customers upgrading to Release 5 can rest assured that the technology is tried and tested in some of the largest banking institutions across the globe. TEMENOS has been shipping the 64-bit version of jBASE technology since April 2007 meaning approximately 250 upgrades and new implementation projects rely on jBASE 5 technology to run their businesses 24/7.

With some 600 banks live or implementing in more than 120 countries, the critical mass for a proven, reliable platform for business software has long been surpassed and today jBASE 5 technology is shipped on a daily basis around the world without concern regarding quality and reliability.

Originally a jBASE VAR, TEMENOS acquired 100% of jBASE Software in 1999 and began to fund research and development on a scale previously unachievable in jBASE's ten year history. When Mpower1 International forged a partnership with TEMENOS and attained the worldwide support, distribution and non banking sector rights to the full jBASE product set in 2002, jBASE core product development continued and remains today at TEMENOS where the team numbers over 30 and growing – forming the largest and best funded team dedicated to MultiValue core product development in the industry.

Since replacing UniVerse and embedding jBASE in their T24 banking application, TEMENOS has grown into its present market leadership position. In the past ten years, TEMENOS has grown from a circa \$25 million dollar company to a circa \$500+ million dollar company with a present market capital value in excess of one billion. TEMENOS are well known to consistently attribute the highest percentage of revenue to R&D in the market and this of course includes continued investment in jBASE technology.

So, as jBASE reaches its 21st birthday, its owners, distributors and most of all users can rest assured they are in safe, forward looking hands on this enviable journey.

Beyond jBASE 5.2

The next phase of development of jBASE is going to be concentrated around the core of jBASE 5.2. The fully funded roadmap shows a phased release of new and improved functionality as opposed to a prolonged development prior to a major new release. This is aimed at a more flexible approach to meeting our customers' needs. Currently being considered are jBASE monitoring improvements including JMX beans for session, lock, and connectivity monitoring, but the key elements to the plan will see a further significant expansion of support for Java. Then, because of the demands of the scale and operational demands from the banks using T24, there will be major investment in high availability and performance improvements.

Easy Upgrade

The upgrade path for all jBASE 4 customers is very straightforward. Russell Bowes, Technical Manager at Infinet Information Management in Australia says their customers have been pushing to deploy their application on modern, 64-bit systems and he began testing as a Beta site in recent months. "We are extremely pleased with all our testing on the new jBASE 5.2 release," he notes. "Our application is operational and, based on the current QA results, should be deployed to our customers in the coming months. This is a major step forward for Infinet Information Management and jBASE International."

jBASE Distributor, Fenlon Computing Services, remarks on the ease of installation. "I installed jBASE 5 at a prospect's site in Sydney and as expected all went to plan," said John Fenlon, Managing Director. "Their Java/JDBC application was operational in less than an hour; at which point they reacted, 'you've finished, its ready? We have to allocate two specialists for most of the day to do this on our Oracle installations!'"

Discover an efficient and elegant way to move your information technology into the next generation. Visit www.jBASE.com.