



# 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. 25+ 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. 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 benefiting 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 Multi-Value 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 Multi-Value users closer to the mainstream than ever before. This true 64-bit release delivers 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 predominately 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 advantage 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.

Visit [www.jBASE.com](http://www.jBASE.com) to discover an efficient and elegant way to move your information technology into the next generation.



## About Zumasys

Founded in 2000, Zumasys develops innovative software products and provides high-touch programming services for the PICK MultiValue community. Its products include jBASE and OpenQM, powerful NoSQL databases for the next generation of PICK developers; MVConnect for RESTful services; AccuTerm software for remote access to PICK applications; and MultiValue Dashboard for presenting reports and business data within a web-based graphical interface. Learn more at [www.zumasys.com](http://www.zumasys.com).

### jBASE/Zumasys Headquarters

1050 Calle Amanecer Ste A, San Clemente, CA 92673-6296 | US: 866-582-8447 | UK: 0808-189-3266 | [sales@jbase.com](mailto:sales@jbase.com)

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