

## Demand for Data Security Continues to Rise; jBASE International Enables Data at Rest Encryption with

# DREM

jBASE International recently announced the availability of its Data at Rest Encryption Module (DREM), a powerful new jBASE cross-platform facility that supports 128 bit encryption and decryption of data at the file system level without the need for application code changes!

### The Problem

As demand for data security continues to increase, organizations are beginning to encrypt critical data inside corporate databases. Industry requirements and the emergence of laws and regulations requiring data protection mean that private information such as medical records, social security and customer credit-card numbers, payroll/benefits data, driver's license numbers and more need to be kept secure.

These requirements for data at rest encryption are driven because of external pressures from:

- Government regulations and non-compliance penalties via such laws as HIPAA, Sarbanes-Oxley and the Patriot Act
- Competitive risk to Value Added Resellers (VARs) from other software vendors offering encryption within their application
- Payment card industry and bank requirements for encryption for companies doing business with them

- Unscrupulous employees stealing customer and other valuable data from the installed systems

### Prior Solutions and Their Weaknesses

The jBASE jBASIC programming language has for some time had the ability to encrypt data strings using its "encrypt" and "decrypt" functions. However, these have proved inadequate for most VARs. Not because they don't work, but because each and every program that requires encryption and decryption must be changed! Each and every dictionary item that wants to display decrypted data must be altered! Many end-user applications require thousands of changes to program code and dictionary items. This is time consuming and costly and in many instances leads to poor performance as well as costly debugging and quality issues. Then, of course, there are the real-world considerations not addressed by these functions, such as the fact that some users are allowed to see the data in its decrypted state when running ad-hoc queries at TCL while others are not. For example, just because the doctor can view a patient's medical record does not mean that this private information should be open to viewing by a different user (such as the receptionist).

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# Technical Update

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These limitations not only impact jBASE but also affect other MultiValue database vendors that only offer the same capability to encrypt and decrypt strings of data using functions within the programming language. The amount of work required to encrypt and decrypt comprehensively, accurately and efficiently using nothing more than encrypt and decrypt functions will at best be time consuming, costly and disruptive! At worst it could be inadequate and put the company at risk. The impact could possibly be as large as the year 2000 COBOL problems were for mainframes for those users requiring encryption.

The real-world situation is even worse for VARs with large installed bases because not only does the VARs application require change, but each individual customer's customized programs require change.

## The DREM Solution

DREM offers an immediate solution that enables organizations to instantly gain the security benefits of encryption while avoiding a massive enhancement project. Developers and users can choose fields within individual files or entire files to be encrypted and decrypted without any involvement from jBASE International. DREM also allows them to choose which users are allowed to see the decrypted data within a given file, no matter which tool is used to view that data.

With DREM your company will not lose customers (and lost customers means lost revenue) because of the inability to encrypt their systems in a timely manner. DREM allows a system to be fully and comprehensively encrypted and compliant within hours. There is no

programming required. There is no ongoing administration.

And how do you encrypt an application if source code for some programs has been lost or destroyed? jBASE's data at rest encryption technology is also the solution to this quickly growing problem. Programs will not need to be recompiled, so the lack of source code is not an issue.

## DREM Is Scalable

The algorithms used by DREM include file compression of the encrypted files and the caching of frequently referenced large records. Although a small number of files may increase in size, other files get even smaller. As a matter of fact, we have seen real-world cases where some files shrank to be about 30% smaller because of jBASE's encryption technology. And that means 30% less disk activity for reads and writes.

All encryption and decryption will cause some performance overhead. DREM minimizes this overhead to a far greater degree than just using the encrypt and decrypt functions provided with the MultiValue database.

## DREM Is Flexible

DREM offers automatic whole file or field encryption as defined by the user during installation. It also offers selective viewing of encrypted data on a file-by-file basis based on individual users or groups of users.

## DREM Deploys Quickly and Easily

In most cases, the entire set of files that needs to be encrypted can be converted within hours without changing any programs or dictionaries. Setting up the policies of which users can see which data within these files takes minutes once user permissions have

been determined and the necessary user groups within the Unix or Windows environment have been created.

## DREM Doesn't Need the Program Source Code to Make It Work

This makes DREM particularly appealing to companies that require encryption, yet do not have or have lost the source code. The implementation of data at rest encryption has zero impact on application programming or the modification of dictionary items, and deployment is easy.

## With DREM There Is No Ongoing Administration

DREM will not increase administrative overhead. Once the file is encrypted and the access groups are assigned the project is complete.

## DREM Requires No User Intervention

There is no need for a user to know anything about encryption. Company management can be secure in the knowledge that they are meeting standards that will pass audit requirements.

## DREM Is Developer Friendly

There is no need for a developer to understand the encryption process. All the developer needs to know is the fields and or the files that require encryption and to create those files with the CREATE-EFILE verb.

## DREM Allows for Individual and/or Group Designated Users

Companies can choose which users see the decrypted data on a file-by-file basis.

## DREM Is Value Priced

End users must compare the cost of changing all programs and dictionary items, delayed new projects, and the use of outside consultants with the competitive price of DREM. It will be easily concluded that DREM is the most cost effective solution by far available on the market today.

DREM Was Created Using jBASE jEDI Technology

This unique jBASE innovation enables developers to achieve seamless integration with foreign databases and external functions. The published interface provides a common set of rules and syntax to access any database or data source. By means of specific jEDI drivers, jBASE BASIC I/O statements can access and manipulate any jBASE file as well as any other database such as Oracle, SQL Server and DB2 as simply as they can access standard jBASE files or other MV database files (UniVerse, UniData, D3, Cache etc). The encryption and decryption of data files is treated by jBASE as a normal read or write to the standard jPLUS (files greater than two gigabytes) or j4 files.

The jEDI system also provides a number of other useful generic facilities to the application developer, such as transaction boundary support across multiple databases and secondary indexing. The Transaction Journaling product uses the jEDI interface to log transactions to just about any device for any and all data sources. All work seamlessly with DREM.

In addition, the jEDI architecture is ideal for sites that require their investment in their application to be maintained while being able to work with DB2, Oracle or other RDBMS and use DREM encryption technology.

The DREM jEDI intercepts the application's open/read/write/delete/clearfile calls to/from the data source and performs the necessary encryption/decryption and security functions at that level. The interface provides a consistent view of all I/O to the calling program and to the rest of the system. DREM works seamlessly to deliver capabilities for securely and efficiently managing data at rest encryption. DREM gives access to the files by using all existing jBASE utilities, verbs, application programs and dictionaries without the need to modify them. Existing records can be encrypted, and encrypted records can be decrypted as easily as creating a new file with the appropriate encryption definitions and using the COPY verb. And DREM requires no changes to the application code, providing the system is jBASE Release 4 compliant.

jBASE Release 4

Interestingly for users of other MultiValue database products, it will often take much less time and be far less costly to migrate an application to jBASE rather than to change the code for encryption capabilities. Migrating to jBASE has been performed successfully and quickly by many users in the past with tools being available to assist in making the migration process easy and effective. The changing, testing and installation of migrated applications on jBASE is an exercise

that normally can be completed in a few weeks rather than months. jBASE International is very price competitive for companies migrating to jBASE as the additional expenditure in acquiring jBASE licenses to replace the incumbent database licenses is taken into consideration. Users will also find that the ongoing support rates are some of the lowest in the industry.

As well as getting access to DREM, there are other advantages to switching to jBASE. jBASE runs on the operating system, not in a virtual environment as do competing products. Basic programs are actually converted to C code and run as native applications on the operating system. Files are stored within the native file system. jBASE provides a flexible, robust and open architecture allowing users to expand into whichever areas of technology they wish without disrupting the core elements of either the application or the data models. With the introduction of the mv.NET product, jBASE has further redefined the boundaries and allows applications to be easily opened to the mainstream world with a complete Microsoft development infrastructure encompassing all the features of Visual Studio (VS2005 compatibility also just released). is

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*For more information, visit [www.jBASE.com](http://www.jBASE.com)*

*or email [sales@jBASE.com](mailto:sales@jBASE.com). jBASE Interna-*

*tional will also be showcasing DREM at the*

*International Spectrum shows throughout the*

*U.S. Check the jBASE Web site for details.*

There is no  
need for a  
developer to  
understand the  
encryption process.  
All the developer  
needs to know is  
the fields and or  
the files that require  
encryption and to  
create those  
files with the  
CREATE-EFILE  
verb.