Smithware Readies ActiveX Controls for Btrieve

OLE controls to provide data access on 16-bit & 32-bit platforms

NASHVILLE, Tennessee — Smithware is preparing to ship the latest release of the Smithware Controls for Btrieve product line, ActiveX Controls for Btrieve version 3.0, starting in mid to late July. The company says that the 16 and 32 bit ActiveX controls will provide Btrieve database access capabilities from any ActiveX control container.

“This product retains and improves upon all of the best features of Smithware VBX Controls for Btrieve, allowing navigational model programming resulting in high performance database applications, a property and method interface to Btrieve and data-aware controls to make application development easy, and extended operations support to take advantage of Btrieve’s client/server capabilities,” said Scott Smith, company president.

Smithware hopes to offset the additional size and complexity of OLE control architecture against improved functionality and greater portability in the product, and plans to position it as a tool for developers creating Internet and intranet database applications in the future. The initial release promises compatibility with the “big three” Windows programming languages, Microsoft Visual Basic, Borland Delphi, and Microsoft Visual C/C++. Product features include integrated extended operations support, data aware field controls, data browsing capabilities, and synchronized record navigation controls. The “VAccess” data source control can be loaded, set up and programmed independently, without the data bound GUI controls, for applications which do not require or which need to implement their own interfaces. Other improvements over the VBX version include OLE property and method interfaces to record manager operations, performance optimizations including options to disable the firing of unused container-based events and to eliminate the need for DDFs at runtime, and 32-bit support. The company plans to have product technical specifications available on their web site, www.smithware.com, by press time.

No Third-Party “data binding” support

Asked why the company has decided to stick with a “proprietary” data binding interface for this latest release in the Controls for Btrieve product line instead of attempting to emulate Visual Basic’s data binding interface as some companies have done, Steve Mook, Smithware vice president, explained, “Our goal with this product is to provide the most complete, most robust, and fastest Btrieve database access possible, and do it in the way that makes the most sense for our customers. We have considered the possibility of emulating a Visual Basic data control with this product on several occasions in the past, and have dismissed that as an option for this release for three primary reasons. First, the data

See ActiveX, page 12

SupportAbility for Btrieve Ships

Smithware Calls New Technology “Revolutionary”

NASHVILLE, Tennessee — Smithware is now shipping SupportAbility for Btrieve in both Professional and Standard editions. According to the company, SupportAbility for Btrieve is the “world’s first customizable configuration diagnostic and support tool” designed to be incorporated into distributed applications.

“Applications are increasingly component-based. A single application can consist of hundreds of individual files,” said Dale Hunscher, president of South Wind Design, the company which developed SupportAbility. “Btrieve consists of several different components, and may be shared by multiple applications. Btrieve, like any other component-based system, often functions poorly when older components are used with newer ones, and component conflicts are among the most difficult and time consuming problems to resolve.”

SupportAbility uses “configuration scripts” to check the configuration of installed component files on a computer system. Configuration scripts contain information about the program components which go together to make up a correctly-configured application. A script for an application includes information about the location, version, size, date and time
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You’re reading this publication. So, you already know that Smithware has never shied away from seeking new and innovative ways to communicate with the Btrieve community.

Quite frankly, we’ve come a long way since our old two-line phone sets were rigged up to the IBM-AT with the phone answering board installed, acting like a 40-line AT&T system with an auto-attendant. Now, we have more numerous and advanced communication facilities than we really have the capability to utilize fully.

Case in point. While I was in Paris a few months back, I arranged a meeting with an old acquaintance of mine named Eric Britton. Through his work with Ecoplan International, Eric has been using various methods of communication to facilitate collaborative problem solving. His latest method was the Intel ProShare Video 200 ISDN video conferencing system.

Since I am not one to be outdone in the gadget collection game, I decided to jump on the “collaboration” band wagon and get Smithware hooked up to the video world! In the early part of March, I ordered the ISDN line and the ProShare system with the enthusiastic assistance of a local VAR. What a thought... “When I get this thing up and running in a few more weeks, I’ll be able to communicate with Eric. Then, I’ll get our new technology partners in Israel to get it so we can eliminate expensive travel plans... Then get Yoshio Tanashashi at AG-Tech Corp. in Japan to get it. This will be great!” How naive can one person be?

After the system was installed in mid-March, I quickly realized that this was going to take some time to figure out. I decided that I would spend ten minutes each morning trying to get the system up and running. Should be ready in Mid-April, I thought. Well, it’s mid-June, and guess what? It finally works, sort of... Eric (and his associate on a transportation project in Spain, Mikel Mugra, who is photographed here) finally appeared on my video screen after three-and-a-half months of twiddling. They can call me, and we can see and hear one another. When I call them, we can only hear each other say rather derogatory things about my ISDN providers.

What’s the point of all of this? (BDJ editor Steve Mook will be asking me this question too, so I had better get to the point) It is to demonstrate to you that we are constantly re-thinking the way we do business, primarily in the way that we use technology to be better product and information providers.

It seems that sometimes technology drives ideas more than ideas drive technology these days. Anyway, I’m not precisely sure how we will apply video conferencing to our work in the long run, but I do know that Yoshio left our offices last week headed back to Japan, looking for a good ProShare distributor...

If you would like to give me some first-hand suggestions about how to apply this new-found technology in our business, feel free to contact me via video ISDN at 6153860087:6153860165.
Btrieve Developer’s Journal Gets Managing Editor

NASHVILLE, Tennessee — Btrieve Developer’s Journal is pleased to announce that Katy Jacobson Jones has been named managing editor of the publication. As managing editor of BDJ, Jones will coordinate all production aspects of the journal, including editorial, advertising, and circulation.

Since graduating from the University of Missouri-Columbia in Communications and Journalism, Jones has worked in the newspaper industry for more than ten years. She held a number of positions at the Chicago Tribune, worked at the start-up newspaper, the St. Louis Sun, and most recently, worked in marketing at The Tennessean, in Nashville.

According to Scott Smith, BDJ publisher, “It’s very exciting for us to welcome Kathy to the BDJ staff in her new role as managing editor. As we move into 1997, Kathy will play an important role, helping us to shape and implement our plans for expansion and innovation.”

Btrieve Technologies, Inc. Becomes Pervasive Software

SAN FRANSISCO, California — An era ended here on July 1, with the announcement by Ron Harris at DB/Expo that Btrieve Technologies Inc. had that day changed its name to Pervasive Software.

“We will continue to sell and support our flagship product Btrieve, as well as Scalable SQL and ODBC Interface,” said Harris, “but we will do so under our new name and identity.”

Harris explained the reason for the name change as a symbol of a “more important” transition taking place with the firm’s strategic direction and product focus. “Our mission,” he said, “is to enable commercial developers throughout the world to deliver applications to mass markets.”

To this end, the company will be promoting its “Client/Server in a Box” trademark while continuing to unlock the technology for packaged software and web enabled applications.

Ed. Note: The announcement of the name change from Btrieve Technologies to Pervasive Software caught us right in the middle of the typesetting process for this issue, so you’ll see the company referred to both as Btrieve Technologies and as Pervasive Software (see announcement on page 10) in the articles in this journal. We apologize for any confusion this may cause. When the next issue of BDJ goes to press in the fall, the Pervasive Software name will be, well...pervasive.

— S.M.

Btrieve Technologies, Inc. Becomes Pervasive Software

AUSTIN, Texas — The promotional discounted pricing for BTI’s version 6.15 server products ended on June 1, returning prices to the posted list values. However, even with the end of the discounts, cost per user of Btrieve-based client-server systems for 50 users or fewer remained lower than for any of four major competitors: Raima, Sybase, Gupta, and Microsoft SQL Server. It was within $2 of a fifth product, FairCom, at the 50-user point, and lower than FairCom’s cost for smaller user counts.

At the 10-user level, Btrieve amounts to $80 per user. FairCom, the next lowest in cost at this point, is $150 while the price of Raima’s Velocis works out to $400 per user.

At the 50-user point, cost for Btrieve drops to $50 per user. FairCom comes in at $48 per user for this count. Sybase SQL Anywhere is $100 per user, Gupta SQLBase Server is $140, Microsoft SQL Server is $145, and Raima is $180.

Simultaneously, with the end of discount pricing, BTI added the high performance ODBC Interface Requester to all Btrieve Server Edition products at no added cost. This ODBC driver, unlike those from other vendors, allows applications to take advantage of Btrieve’s inherent capabilities.

Novell continues to ship Btrieve version 6.10 with NetWare; no changes are expected in the near future.

Server Edition Promotion Pricing Ends

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— S.M.
**Magic Version 7 Announced**

**32-bit RAD Tool for Windows 95, NT, and Internet**

**IRVINE, California** — Magic Software Enterprises has announced the release of Version 7 of Magic, the company’s table-driven, cross-platform Rapid Application Development system for developing client and server applications. Many of the largest Btrieve applications in the world, including those at Whirlpool, the city of Milwaukee, and VisionTek are developed with the Magic RAD system.

Magic 7 is a 32-bit tool for Windows 95, Windows NT (on both Intel and DEC Alpha-based systems), and allows for development of Internet and intranet-enabled applications.

Citing an improved graphical user interface and significant performance enhancements for the Magic client and server architecture, this release, according to Uzi Yair, CEO of Magic software Enterprise Inc., “...signifies an important quantum leap in offering very rapid development across Windows 95, Windows NT, and the Internet.”

The most notable enhancement to Magic is the new version’s ability to reuse form templates. Magic 7 allows developers to save time and increase productivity by saving and reusing forms as “Magic Form Templates” which can be integrated into any Magic 7 application as a new form, or added to a preexisting form.

“The support for reusable components completes Magic’s productivity triangle. The table-driven methodology and engine-based technology are now combined with component reusability, offering developers huge productivity gains that far surpass other tools,” according to Jeffrey Starr, Magic’s vice president of worldwide marketing.

“Magic Version 7 has incorporated features that bring dramatic productivity gains for our developers,” said Tom Mitchell, IS Manager for Union Electric Corporation, a beta user of Version 7. “The reusability capabilities combined with OLE support and new GUI controls such as the combo box have enabled us to develop robust, high-performance applications, which greatly enhances our competitive edge.”

Other improvements to Magic in version 7 include enhanced support for the development of multi-lingual applications. Developers need only build one user interface for all supported languages. Developers can also protect against server downtime by automatically shifting the processing of applications to alternate servers. Magic 7 also has the ability to set an “inactivity timer” to release the communication line between the client and server when the connection is no longer being used.

This release also offers new form editor functions which include a new variable palette, enhanced table and control editing, automatic scrolling, as well as new control management and multi-platform features. Magic 7 also supports OLE 2.0 for the linking between Magic and another object in the same operating system.

Magic Version 7 is now available. The price for a single-user Windows development network system begins at $3,500. Pricing for enterprise client development begins at $3,500 and enterprise server development starts at $4,750.

Earlier this year, Magic Software Enterprises and Pervasive Software (formerly Btrieve Technologies) announced a strategic alliance to deliver bundled solutions, combining Magic with Pervasive Software’s information management systems for commercial software developers.

— Smithware, Inc., the leading supplier of Btrieve add-on products and services, has announced plans to integrate its product line with Magic Version 7 and to improve support for older versions of Magic.

Smithware Crystal Reports for Btrieve and Smithware VBX Controls for Btrieve have been the only commercially available products to support Btrieve-based Magic data via extensions to the DDF standard. As more Magic developers and users have turned to Smithware for Magic connectivity, the company has worked closely with Magic management to find a solution to improve the way their products interact.

“Magic applications use what is called ‘control file’ to define the structure of their data tables, among other things,” according to Smithware President Scott Smith. “Since this information is exactly the same as the information contained in DDFs, it never made sense to us that our Magic users had to maintain a second copy of this information in DDFs.”

During Smith’s trip to Elat, Israel for the Magic Business Summit, he met with Magic marketing and technical personnel to discuss ways to eliminate the redundancy. The result was that several Smithware products will now work better with Magic, and Magic will have the automatic capability to build Smithware’s extended DDFs from a Magic 7 control file.

In partnership with Synopsis Systems in Tel Aviv, Israel, a contract development house which works with Magic on API issues, Smithware has helped create and test a feature for Magic 7 that will export DDFs, including Smithware’s extensions to the DDF for Magic support, directly from the Magic table definition screen. Synopsis is also working with Smithware to provide hooks into the Magic 7 control file via the new Magic 7 API to determine table structure information directly from the control file. This new integration with Magic 7 will first appear in Smithware Crystal Reports for Btrieve and Smithware ActiveX Controls for Btrieve, allowing the Magic 7 control file to be substituted for DDFs.

For earlier versions of Magic, DDF Builder will be enhanced to allow quick translation of control files into the DDF format. DDF Builder will add a feature to import table definition files exported from the Magic table designer.

“A product that could read information directly from the Magic control file and eliminate the need for a DDF would greatly enhance our use of Crystal Reports,” according to Lawrence Larsen, automation services administrator for the city of Milwaukee, one of Magic’s large users in the United States. “Because our system was recently developed and installed, we are still in the process of enhancing the system. When you have to maintain two separate sources of table definitions in the Magic control file and DDFs, there is plenty of room for error.”

Smithware has not yet announced when the Magic 7 functionality would ship with its products.
Magic Sponsors Business Summit in Israel

EILAT, Israel — Over 180 attendees from Magic Software Enterprises Ltd., its subsidiaries and business partners converged on sunny Eilat, Israel for the first annual Magic Business Summit (MBS). Held from April 28 to May 3 at the Princess Hotel on the shores of the Red Sea, the conference brought together Magic sales, pre-sales, and marketing people from 55 companies in 30 countries. With the theme, “Expand Your Business, Technology, Universe,” the MBS had a business orientation and focused on exchanging information and building relationships based on Magic.

The MBS officially started on Monday morning with a formal welcome by Magic co-founder and acting CEO Yaki Dunietz and a surprise teleconference with Magic’s President and CEO David Assia, who was unable to attend the conference as he was recovering from injuries received during a recent skiing accident.

The MBS offered a variety of sessions to increase the sales and customer base of Magic and its partners. Interactive sales and pre-sales sessions, win/loss stories, analyses of sales techniques and competitor strategies, and “break-out” sessions all proved to be fertile ground for cooperation.

One of the highlights of the event came when Magic’s Eyal Feifel and Erez Levine demonstrated Magic 7, the new Windows 95/NT/Internet version of what Magic calls “The world’s most productive application development tool.” In a travel agency demo application with integrated video, they showed off Magic’s component reusability (saving and reusing forms as Magic Form Templates), enhanced functionality, and 32-bit performance.

Magic also unveiled the Magic Solutions Partner Program, a new business program for value-added resellers, systems integrators, and software consultants. Participants in the program will benefit from special discounts on software and technical support.

Smithware President Scott Smith also attended the conference to demonstrate how Smithware products currently support Magic. Follow-up versions to Smithware’s existing products including Smithware Crystal Reports for Btrieve and Smithware Controls for Btrieve will have direct support for the Magic 7 control file. “This was a good chance for us to meet the Magic business community. Building solid relationships with the Magic technical and marketing staff as well as Magic resellers was the basis for our decision to provide direct Magic 7 support in many Smithware products,” Smith said.

MBS participants also learned about Magic WebLink (available at http://www.magic-sw.com), the free add-on utility which enables Magic developers to begin building and deploying two-tier and three-tier Internet/intranet-based applications. Magic WebLink provides developers automatic program invocation, request queue handling, variable repository, and a pipeline for HTML output.

Outside the conference rooms, the MBS included a wealth of recreational activities that helped forge new working relationships. A dinner at Eilat’s Dolphin Reef, a seaside lunch complete with water sports, a trip to the ancient Nabatean city of Petra in Jordan, karaoke and a gala dinner at Timna, the site of King Solomon’s copper mines, helped make the MBS a great success.

Dunietz noted, “What made this event so successful was that it was the first time that we brought together all of Magic’s pre-sales, sales and marketing people from our headquarters, subsidiaries, distributors, and Solutions Partners in an open, business forum. It was an opportunity that will bring great dividends throughout 1996 and beyond.”

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SupportAbility for Btrieve

SupportAbility for Btrieve, Professional Edition
Stand alone diagnostic tool for Btrieve-based systems and applications, plus everything needed to customize SupportAbility for your application: Search engine and API, additional configuration scripts, SupportWizzard, sample source code for the API in VB, VC++, and Delphi, and a 50-user license: $349.95

SupportAbility for Btrieve, Standard Edition
Stand alone diagnostic tool for Btrieve-based systems and applications: $79.95

Call 800-828-7438 and order your copy today!

Smithware, Inc.
Power Tools for Btrieve
2416 Hillsboro Road, Suite 201
Nashville, TN 37212 Phone 615.386.3100
Fax: 615.386.3125 E-mail: info@smithware.com
http://www.smithware.com

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One of these things is not like the others. Can you guess which one doesn’t belong?

Because today’s component-based computer programs consist of hundreds and even thousands of individual files, it’s hard to tell when one of the pieces is missing or doesn’t belong with the others. The conflicts and incompatibilities that can arise from using mismatched components are numerous. And as you know, problems like these are among the most difficult and time consuming problems to resolve.

Solving these problems is now and forever revolutionized!

Introducing Smithware SupportAbility for Btrieve – the world’s first customizable support tool designed to be incorporated into your application! With SupportAbility you’ll be able to detect, report and resolve software configuration problems in minutes! No more questions about which piece belongs. SupportAbility keeps your ducks in a row!

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SupportAbility

SupportAbility is a revolutionary approach to solving the support problems that software manufacturers are currently facing,” according to Scott A. Smith, president of Smithware.

“SupportAbility presents a comprehensive solution for adding proactive support utilities to any Btrieve enabled application. This solution is the first to empower users of component based systems such as Btrieve to help solve their own problems, before they call technical support.”

The Professional Edition of SupportAbility for Btrieve includes the SupportWizard configuration script editor, on developers to integrate configuration diagnostic and maintenance features directly into their applications or software installation scripts. SupportWizard guides the developer through the process of identifying and scripting the components that make up an application. The Professional edition includes additional pre-defined configuration scripts for other common component files such as the Visual Basic runtime libraries, MFC libraries, OLE core components, and ODBC core components as well as sample source code in Microsoft Visual C++, Microsoft Visual Basic or Borland Delphi demonstrating the use of the SupportAbility API.

“The SupportAbility Professional Edition will allow developers to design and deploy a customized, proactive support tool with their application in about the same amount of time it takes to write a typical setup script,” said Steve Mook, vice president of Smithware. “Setup programs allow non-technical users to install and initially configure component-based software. SupportAbility allows users, technical support staff, even the application itself, to check and report on its software configuration at any time,” Mook continued.

SupportAbility Professional Edition includes a distribution license which allows developers to distribute SupportAbility to 50 users. Additional 500-user and unlimited user licenses are also available.
Dear Valued Customer,

As a key partner with Btrieve Technologies, I want to inform you in advance of the public announcement of our corporate name change. Effective July 1, 1996, our new name will be Pervasive Software Inc.

This change is part of a long-term strategy to improve the visibility and market presence of our company. As Pervasive Software, we will build on our leadership position as the supplier of world-class database engines "built to be bundled" with high volume, client/server applications.

Our new name will clearly and simply communicate our intent to make web-enabled, client/server software available to the mass market, in partnership with commercial software developers around the world. The recent announcement of our "Client/Server in a Box" Program, covered by PC Week, InfoWorld, and Computer Reseller News, is a key element of this mission.

As Pervasive Software, we will continue to invest aggressively in the development, marketing, sales, and support of Btrieve, Scalable SQL, Inscribe, ODBC, and exciting new products. This new identity will provide the broadened foundation we need to successfully market these products.

Over the next several months, we will launch Scalable SQL 4, our premiere relational client/server database. In parallel, we will have exciting new announcements regarding partnerships, platforms, and programs that are designed to make you more successful.

On behalf of Pervasive Software employees in the USA, Europe, and Japan, I can assure you that our enthusiasm, excitement, and entrepreneurial spirit has never been greater! Thank you for your support, and we look forward to our continued partnership as we jointly develop "pervasive" technology for the mass market.

Sincerely,

Ron Harris
President & CEO

P.S. Please visit our updated web site. It is still accessed at http://www.btrieve.com, and will contain all the latest information on our name change and status of our products and services. Updates will be more frequent in the future - stay tuned!

This letter was sent to BTI's database informing them of the July 1st announcement.
Btrieve Support Changes

AUSTIN, Texas — As announced in January at the Btrieve Developers’ Conference here, BTI’s customer support program underwent major change in mid-Spring. What no one anticipated was the degree of opposition that arose from the developer community when program details became known.

While the long-standing policy of totally free technical support changed to a four-level plan involving per-incident pricing and subscription plans, developers at first failed to realize that the first level of support would remain free. Consequently, a firestorm of commentary on BTI’s CompuServe forum erupted.

A possible trigger for the misunderstanding was the near-simultaneous introduction of an “incident form” for technical support questions posted on CompuServe. Many developers perceived this as the first step toward elimination of free support, and reacted angrily.

The truth of the situation was rather different: the form was an attempt to track BTI’s internal costs and to determine what situations result in the most support questions. The reason for its resemblance to a paid-support form was simple: it was the same form used by the per-incident paid-support plan.

However, resistance was so great that Rich Stroum, vice president of customer support, eliminated its use on CompuServe effective June 5, and posted an open letter to all forum members explaining the situation.

Stroum also announced that the company was upgrading their existing CompuServe connection interface to eliminate the problems involving lost messages and misrouting which had become common with the older message-forwarding software. “We will resolve our present difficulties,” he wrote, “and deliver the type of support that you deserve and expect.” He asked that comments or suggestions be sent directly to him at rstroum@btrvtech.com.

The full support plan, now in effect, involves four levels. The lowest is “Electronic Support” by way of CompuServe and the Internet, available “round the clock, seven days a week. Stroum promises that non-critical questions posted on the forum will be addressed within 72 hours, and that registered users will be able to download maintenance releases and software patches. This support is available to all, at no cost other than the CompuServe connect charges involved.

The next higher support level, and the first requiring payment, is “per-incident pricing.” This option is designed for customers who need only occasional assistance, and offers a “best effort” response time of two hours or less. Available Monday through Friday from 7 a.m. to 7 p.m. Central time, the option can be purchased in 5-incident or 10-incident packs. This is the lowest-cost option that provides telephone support, but it does not support toll-free calls.

The third level, aimed at the majority of BTI customers, is “Gold Support.” This level, available only by yearly subscription good for up to 50 incidents per year, offers the same two-hour response time as per-incident pricing, but provides toll-free access and two specifically named BTI support contact persons. In addition, subscribers receive all software updates and patches, plus monthly usage reports.

The final level, intended for large development firms and corporate users who want maximum support, is “Platinum Support.” This plan guarantees one-hour turnaround, up to five named contact personnel rather than two, access to an account manager, and emergency on-site support. Subscribers to this plan receive early access to beta software and receive a quarterly strategic review, in addition to all benefits of the lower plans.

Customers whose support requirements fail to fit into any of these plans may also arrange for custom support by special negotiation.

Since everyone needs support when installing a new package, BTI provides Gold Support at no charge for the first 30 days after the customer’s first call for support. Only after this period expires will a subscription be necessary to obtain telephone support.

B-Safe, Don’t Be Sorry!

Install BSafe on your system and sleep more easily at night! BSafe will check the integrity of your Btrieve files and log the problems for your review. BSafe is an NLM that can run regularly on a scheduled basis on your N etW are file server, and can also be run on-demand. BSafe is also a file compaction utility that compresses Btrieve files to their minimum size automatically. Keep your computer operation running smoothly... Get BSafe now!

BSafe is available for immediate delivery at $395 per file server license. Call Mesa Business Solutions today and sleep more easily while your Btrieve files are kept safe and secure!
Client/Server In a Box

AUSTIN, Texas — “Client/Server in a Box,” the marketing theme introduced at last January’s Btrieve Developer Conference here, has made its public debut with good notices from computer industry trade journals.

Intended to capitalize on current enthusiasm for “client/server” solutions, the new theme includes new and updated products and licensing plans that feature turnkey administration and scalability. Btrieve has, of course, provided client/server operation for nearly a decade in the Novell NetWare environment, but had not previously taken advantage of the phrase.

Both PC Week and InfoWorld brought out the versatility inherent in Btrieve’s ability to share data from multiple databases and applications. InfoWorld’s report of the launch also noted the enhanced configuration management tools that will be part of the package, but managed to misidentify Btrieve itself as a flat-file database for client-side applications, and Scalable SQL as only a network server.

InfoWorld’s report did correctly note that the cost of the Btrieve components is included in the price of packaged software built on Btrieve. PC Week managed to overlook this while quoting prices of $1,995 for 1,000 seats and $995 for 10.

However, the major trade journals could have done worse. Computer Reseller News managed to miss the whole point of the theme and described it as “a DBMS the company is positioning for acceptance from both ISVs and the software channel as a whole.”

ActiveX ....continued from page 1

source control specification is not portable, it is container dependent, and the only control container it will work in at the present time is Visual Basic — it will not work in Delphi, Visual C/C++, or any other ActiveX control container. By implementing our own data-aware controls and binding mechanism, we are able to support these important programming environments. Second, the VB data-binding mechanism is not very efficient. For example, each individual bound control property containing the “requestedit” flag must obtain permission first, then notify the container after a change has been made, a process not required in our implementation. And third, Microsoft has simply never published the VBDSC specification. Microsoft is keeping the workings of the VB data source under their hat, so we would face a difficult job to implement something which, if it worked at all, would probably not work well, and which will soon be obsolete.

Rather than hack at an unpublished specification, we decided to concentrate our efforts on creating a solid set of database tools using published ones, the Btrieve API and the Microsoft ActiveX control architecture.

Asked whether the company ever planned to add third-party data binding capabilities, Mook said: “Of course we’re watching very carefully where Microsoft is going with that issue, and I think we’ll see substantial changes over the next several months. None of (Microsoft’s) past solutions has been acceptable to us, given our expectations for our products. The published specification, ODBC, was too limited, too large, and too cumbersome for developers trying to squeeze performance out of their applications. As for the unpublished VBDSC specification, even the Visual Basic trade press, which extolled the virtues of the Visual Basic Jet engine and data-bound controls two years ago, is now beginning to admit that some impatient users want their applications to deliver information to them if not instantly, at least sometime this week. The June issue of Visual Basic Programmers Journal actually ran a cover story seriously suggesting to Visual Basic developers that their applications would be faster if they simply declare and call ODBC primitive functions to manipulate their data, the only drawbacks being that they have to declare and pass VB variables as parameters to C-style function calls, write a lot of code, and forsake all of their data bound controls. If that’s not taking two giant steps backwards from the ‘visual’ programming ideal, I don’t know what is. Our development philosophy with the Controls for Btrieve product line has always been to strike the right balance between painless development and acceptable runtime performance. We plan to stick to that philosophy as database access technology improves.”

Crystal Changes Name

VANCOUVER, British Columbia — Crystal, publisher of Crystal Reports and Crystal Info, has changed its name to Seagate Software Information Management Group. The company has been a wholly owned subsidiary of Seagate Technology, Inc., since 1994.

President of Seagate Software IMG, Greg Kerfoot, described the name change as clearly demonstrating the firm’s commitment to the enterprise business intelligence market. “The developer community can continue to rely on Seagate Software to evolve its Crystal reporting technology,” he declared in announcing the name change.

The Information Management Group plans to expand its range of query and reporting tools, and recently acquired Holistic Systems, a leading vendor in the enterprise business intelligence market. For more information, you can visit the Group Web site at http://www.img.seagate.com, or telephone them at 800-877-2340 or 604-893-6392.
Btrieve Technologies is currently shipping v1.0.3 of the 16-bit Windows and 32-bit Windows 95 ODBC Interface. Following are some questions and answers relating to the ODBC Interface.

When I try to use the BTI ODBC Interface with Microsoft Access to view my accounting system data, I receive a Status 204 “Table is Not Defined in Dictionary” error attempting to open tables with names containing underscores. I know the table names are in the dictionary. What's up?

In responding to an ODBC SQLGetInfo() request (a “tell me about yourself” function), version 1.0.1 of the BTI ODBC Interface returns ‘\’ as the “SQL_SEARCH_PATTERN_ESCAPE” character, which means that the backslash can be used to indicate that the following “metacharacter” (‘ ‘ or ‘%’ ) is to be used as a literal in search patterns in the catalog functions.

The BTI ODBC Interface does not use the escape character. When MS Access, MS Query, or another front end generates an SQL statement calling a catalog function like SQLGetInfo() that contains the escape character followed by the character escaped (such as “JOB\_HIST” forJOB\_HIST), the search is performed for the full string (“JOB\_HIST”), and fails with a status 204.

Note: front ends such as Q+E that do not use the ODBC “catalog functions” are not affected by this problem.

This problem is present in both the 16- and 32-bit versions of the BTI ODBC Interface v1.0.1.

It is fixed in v1.0.3: the patch is available on Btrieve Technologies CompuServe forum [GO BTRIEVE] as a self-extracting file called ODBCv103.exe.

Why are different values for char() fields returned by the BTI ODBC Interface and Scalable SQL?

If a field defined in the dictionary as a char(n) type contains embedded binary zero (NULL) characters, the field's value will be different when returned by the ODBC Interface from that returned by a direct Scalable SQL call.

Scalable SQL treats char() fields as fixed-length character fields, and returns the entire width of the field regardless of any NULLs. ODBC treats char() fields as Null-Terminated Strings, and returns only the characters preceding the first NULL in the field. This behavior is consistent across ODBC drivers, including the BTI ODBC Interface, Q+E v2.0 ODBC driver for Btrieve, and Q+E v2.0 ODBC driver for NetWare SQL.

We were not able to find any documentation about the expected behavior of this feature in Microsoft's ODBC 2.0.

Solution:
1) BACK UP odbc.ini and odbcinst.ini (found in the windows subdirectory);
2) In each of these files, replace “Btrieve Technologies ODBC Interface” with something less than 31 chars in length, such as “BTI ODBC Interface”;
3) Test to be sure you can access the database via the ODBC Interface.

Why do the Visual Basic and Access Basic “RegisterDatabase” functions fail with the BTI ODBC Interface?

The ODBC product name “Btrieve Technologies ODBC Interface,” which is stored in the ODBC.INI, is 35 characters long. The RegisterDatabase function for VB and Access truncates this name to 31 characters, and fails, finding no match for “Btrieve Technologies ODBC Inter.”

There does not appear to be a documented maximum length for this string in Microsoft’s ODBC 2.0 Program Reference and SDK Guide.

Solution:
1) BACK UP odbc.ini and odbcinst.ini (found in the windows subdirectory);
2) In each of these files, replace “Btrieve Technologies ODBC Interface” with something less than 31 chars in length, such as “BTI ODBC Interface”;
3) Test to be sure you can access the database via the ODBC Interface.

How do I set up the ODBC Interface for use with Delphi?

STEP 1: First, using the ODBC Administrator (run from either the icon installed by the BTI ODBC Interface installation or from the Windows Control Panel), configure a Data Source for the demo data. If this is done without errors, the name you gave the Data Source should appear in the Data Source listbox of the first ODBC Administrator dialog. At this point, the Data Source should be tested using some direct front end (MS Access, Q+E, etc.), if one is available. Make sure it contains the database and tables you expect.

STEP 2: Now, start the Borland Database Engine Configuration Utility and create a “New ODBC Driver.” Supply a name like “demo” in the “ODBC_” edit control, choose “Btrieve Technologies ODBC Interface” from the “Default ODBC Driver” dropdown list, then choose your newly-configured ODBC Data Source from the last dropdown. After you click on the OK button, you should see “ODBC Demo” (or the name you entered) in the “Driver Name” listbox. If you single-click on it, you should see “Btrieve Technologies ODBC Interface” in the “ODBC Driver” section on the right.

STEP 3: Now select the “Aliases” tab at the bottom, and click on the “New Alias” button. Type a name (like “BTIDemo”) in the first edit control, then select the name you gave the driver in the previous step from the “Alias type” dropdown list. After clicking on the OK button, you should see the name in the “Alias Names” listbox.

STEP 4: Select File|Save from the BDE...
Q & A CONTINUED...

Configuration menu, then exit that utility.

STEP 5: Now create a new TTable on a Delphi form. Select the new Alias for the Database Name Property of the TTable (it should ask you to log in to the database at this point), then select “Patients” from the TableName Property dropdown list.

STEP 6: Now place a TDataSource (connected to the TTable) and appropriate Controls (connected to the TDataSource) on the form. You should be able to double-click on the Active property and get live data into the Components.

Hint: Learn to use the TDatabase component. With it, you can eliminate (at least during testing) the login screen, and can even skip the naming of the Alias in BDE Configuration.

Why do I get a Status 522 (Invalid Keyword) message from the ODBC Interface on a simple select from a table?

Check your table names and field names for Scalable SQL reserved words. A table named “VALUES,” for instance, will cause a Status 522 error. At least one commercial product contains a VALUES table in its dictionary. It is a Btrieve-based product that does not use the dictionaries, but provides them for their customers’ convenience. Other reserved words that are “frequent offenders”: USER, GROUP, and COUNT.

What causes a Status 4 error when I log in to a database using the ODBC Interface?

Data Dictionary Files provided by some vendors will cause a status 4 when used with the BTI ODBC Interface. The DDFs are not constructed correctly, and FILE.DDF does not include entries for any of the other DDFs. It is missing the required entries X$File, X$Field, and X$Index.

In these cases, you will have to contact your vendor for properly structured replacement data dictionaries.

Can I use Scalable SQL’s Scalar Functions with the BTI ODBC Interface?

Most scalar functions work as expected:

```
SELECT LEFT(char_fld_1, 4) FROM tbl
works

SELECT (fn left(char_fld, 4)) FROM tbl works
```

When I use the BTI ODBC Interface to access my database, I get a Btrieve status 6 (Invalid Key Number). What causes this?

The BTI ODBC Interface requires the DDF files to be in a certain format. When the DDFs are first opened, they are checked to see if they have all the appropriate indexes defined. In particular, FIELD.DDF and INDEX.DDF may each be missing an index if they were created with older utilities. If they are missing, the new indexes will automatically be added. If a problem occurs while adding the index, it is not reported to the user. Later, the interface may need to perform a dictionary lookup using the new index, assuming it is available. If it is not, a status 6 is returned.

The new indexes in FIELD.DDF and INDEX.DDF are both defined as unique. The most common reason for the index creation to fail is that there are duplicate entries in the table. This is more often seen in INDEX.DDF than in FIELD.DDF. The nature of the DDFs are such that duplicates should not exist, and if they do, then the DDFs are corrupt or are invalid, and need to be fixed or rebuilt before they can be used with the BTI ODBC Interface.

If you have access to a Scalable SQL query tool such as SQLScope or XQLI, you can use the following query to detect duplicates in INDEX.DDF:

```
select X$File, X$Number, X$Part,
COUNT(X$File) from X$Index
group by X$File, X$Number, X$Part
having COUNT(X$File) > 1
```

Any results returned by this query will indicate which X$File, X$Number and X$Part values are duplicated in X$Index. These three fields are the segments of the unique key that needs to be added to INDEX.DDF. The duplicates need to be removed in order to successfully build the index.

BTI INTRODUCES PREMIUM CUSTOMER SUPPORT

Throughout its history, Btrieve Technologies has provided free unlimited support to its customer base and their end users. As BTI moves to a more competitive business model that includes fee-based support, it has designed a support program that is both competitive and customer-oriented (see charts below). The Premium Support Program, introduced on May 1, 1996, was established to offer better quality support, provide more in-depth technical assistance, and improve overall responsiveness. The Premium Support Program offers a range of options which allow customers to select the level of support required to meet their needs. Free electronic technical support is still available to BTI customers through CompuServe and the Internet. Customer support will continue to operate as a cost center and service revenues from Premium Support offerings will be reinvested to enable BTI to provide the quality, in-depth technical assistance that is crucial to their customers.

The following section describes BTI’s Premium Customer Support Program.

The Premium Support Program

Basic Support

The Basic Support offering, available at no charge, provides electronic access to Btrieve customer support through CompuServe and the Internet. Basic support provides information on known problems, frequently asked questions, and technical tips. Problems of a non-critical nature can be submitted, at no charge, through the CompuServe forum or via Internet to “techsupport@btvtex.com.” Basic support users who have purchased Btrieve products will be able to request the latest patches from BTI and download them via CompuServe at no charge other than connect time. BTI’s electronic support also accepts enhancement suggestions and customer input regarding product defects.

Per Incident Pricing

For those people who do not need the protection and assurance of an annual support agreement, BTI offers per incident pricing with a “best effort” goal of a two
hour response time or less. This is a valuable offering to people who may occasionally need help interfacing with Btrieve databases, ODBC issues, etc. Per Incident charges for support calls that are identified as BTI software bugs will be credited back to the customer.

**Gold Support**

Gold Support provides Btrieve developers and users with an affordable set of support offerings designed to meet the needs of the majority of BTI customers. This package provides two named customer contacts with support of up to 50 incidents per year and response times of less than two hours. The Gold Support offering provides access to all software updates and patches through electronic access or direct shipment. Also included in this offering are monthly usage reports that provide an account of all calls to BTI’s support organization.

**Platinum Support**

The Platinum support package is designed for larger developers and corporate end users who want to take maximum advantage of BTI’s customer support resources. Offering response times of less than an hour, Platinum Support provides access to a named account manager who will be the customer’s primary contact for both tactical and strategic issues. Also, the Platinum Support package provides emergency on-site support (exclusive of expenses). Another key benefit of the Platinum Support offering is early access to beta software and participation in BTI’s beta software activities. Early access to beta software ensures development partners the maximum time for integrating and testing new software releases from BTI.

The following table describes all of the features, differences, and pricing of BTI support offerings:

<table>
<thead>
<tr>
<th>Premium Support Matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Options</strong></td>
</tr>
<tr>
<td>Number of contacts</td>
</tr>
<tr>
<td>Number of Incidents/contract</td>
</tr>
<tr>
<td>Hours of coverage</td>
</tr>
<tr>
<td>Guaranteed response time</td>
</tr>
<tr>
<td>Toll free number</td>
</tr>
<tr>
<td>Dedicated account manager</td>
</tr>
<tr>
<td>Monthly usage reports</td>
</tr>
<tr>
<td>Notification of maintenance releases and patches</td>
</tr>
<tr>
<td>Emergency On-Site support</td>
</tr>
<tr>
<td>Early access to Beta software</td>
</tr>
</tbody>
</table>

**Electronic Services**

- CompuServe: Yes, Yes, Yes, Yes
- Interactive Forum: Yes, Yes, Yes, Yes
- Bug fix and patch information: Yes, Yes, Yes, Yes
- Technical tips: Yes, Yes, Yes, Yes
- Frequently asked questions: Yes, Yes, Yes, Yes
- Ability to download fixes: Yes, Yes, Yes, Yes
- WWW (Future): Yes, Yes, Yes, Yes
- Access to the BTI knowledge base: Yes, Yes, Yes, Yes
- Frequently asked questions: Yes, Yes, Yes, Yes
- Technical tips: Yes, Yes, Yes, Yes
- Bug fix and patch information: Yes, Yes, Yes, Yes
- Faxback (Future): Yes, Yes, Yes, Yes

**Pricing - Annual Agreements**

- Annual Agreement: $25000, $3995, No Charge
- Additional Contacts: 2 - $3995, 1 - $1495
- Additional Incidents: n/a, 20 - $1595

**Per Incident Pricing**

- Per incident: $125
- Per incident - 5 Pack: $599
- Per incident - 10 pack: $1125

**SOLUTION NETWORK PARTNERS RECEIVE A 30 PERCENT DISCOUNT!!**

Custom Support packages will be offered to major accounts who need service and support beyond the premium offerings.

<table>
<thead>
<tr>
<th>Gold Support Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Company</strong></td>
</tr>
<tr>
<td>BTI</td>
</tr>
<tr>
<td>Watcom</td>
</tr>
<tr>
<td>Gupta (Centura)</td>
</tr>
<tr>
<td>Microsoft</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Platinum Support Level Equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Company</strong></td>
</tr>
<tr>
<td>BTI</td>
</tr>
<tr>
<td>Watcom</td>
</tr>
<tr>
<td>Gupta (Centura)</td>
</tr>
<tr>
<td>Microsoft</td>
</tr>
</tbody>
</table>

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**Who’s Who**

**Robert Adams**

Vice President, Marketing

As Vice President of Marketing, Adams leads the company’s efforts in marketing, product design, communications, business relationships, and strategy. He has extensive experience in large and early stage corporations, leading all aspects of the business with particular focus on product, sales, and marketing organizations.

Prior to joining BTI, Adams was a co-founder and CEO of Business Matters, a venture-backed company that he led from product concept through the funding, development, product launch, and implementation of an innovative market-focused business model. Prior to Business Matters, he spent more than eight years at Lotus, attaining broad experience leading their database products division, 1-2-3 group, and a number of sales line and staff organizations. He started his career with Harris Corporation.

Adams earned his MBA from Babson College, where he was an adjunct professor of marketing, and a BS in engineering from Purdue University.

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Summer 1996

Btrieve Developer's Journal 15
NEW PRODUCT PRICING MODELS

Since our inception in April, 1994, Btrieve Technologies, Inc. has expanded its market presence and gained industry recognition as a leading provider of powerful client/server solutions. In response to customer need, we have consistently released new products, fulfilling our promise to deliver high-performance, scalable, multi-platform data management solutions. We have successfully penetrated international markets and forged strategic alliances with a broad range of industry partners. Most important, BTI continues to strengthen its channel—which now includes more than 900 Solution Network Partners.

Btrieve Server Pricing Structure

So that BTI could honor its commitment to customers during our transitional period, we implemented promotional server upgrade pricing geared toward those who were upgrading database products from Novell. In addition, we extended this promotion beyond the upgrade customer base, allowing our customers to purchase Windows NT servers at the promotional price.

Our transition is now complete. Our heavy investments in technology and market development programs are winning new customers around the world. Now, we want to increase Btrieve servers’ profitability for our channel—while also maintaining aggressive price points. Accordingly, we ended the promotional pricing for Btrieve servers on June 1, 1996. What's more, at that time we included our high-performance ODBC Interface Requester with every Btrieve server.

The bottom line: Our developers are now in a position to charge competitive rates for the database server as part of the overall solution, while also maintaining aggressive price points. We have successfully penetrated international markets and forged strategic alliances with a broad range of industry partners. Most important, BTI continues to strengthen its channel—which now includes more than 900 Solution Network Partners.

<table>
<thead>
<tr>
<th>Cost per User Pricing Matrix</th>
<th>10-U ser</th>
<th>20-U ser</th>
<th>50-U ser</th>
<th>200-U ser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Btrieve</td>
<td>$80</td>
<td>$75</td>
<td>$50</td>
<td>$37</td>
</tr>
<tr>
<td>Scalable SQL</td>
<td>$100</td>
<td>$100</td>
<td>$80</td>
<td>$50</td>
</tr>
<tr>
<td>Raima Velocis SQL Client/Server</td>
<td>$400</td>
<td>$200</td>
<td>$180</td>
<td>$45</td>
</tr>
<tr>
<td>FairCom</td>
<td>$150</td>
<td>$240</td>
<td>$48</td>
<td>N/A</td>
</tr>
<tr>
<td>Sybase SQL Anywhere</td>
<td>$170</td>
<td>$150</td>
<td>$100</td>
<td>$25</td>
</tr>
<tr>
<td>Gupta SQLBase Server</td>
<td>$200</td>
<td>$200</td>
<td>$140</td>
<td>N/A</td>
</tr>
<tr>
<td>Microsoft SQL Server</td>
<td>$249</td>
<td>$168</td>
<td>$145</td>
<td>$123</td>
</tr>
</tbody>
</table>

Note 1: Available user count vary by manufacturer. Comparisons are based on the published list prices, as of 3/96, of products required to meet above user counts.

Note 2: N/A indicates that the manufacturer does not publish pricing of these user counts.

BTI OFFERS SPECIAL TRAINING FOR SOLUTION NETWORK PARTNERS

Btrieve Technologies’ Solution Network has grown significantly over the past year to more than 500 partners worldwide. BTI is committed to strengthening its partnerships and has implemented mechanisms for ensuring that all partners receive not only the support, but the information needed to continue servicing customers. BTI has instituted a comprehensive set of programs for their partners and is now initiating product-specific training in conjunction with the next round of Solution Network Authorization Program (SNAP) training sessions in the United States. SNAP trainings update BTI partners on what is new for the coming year and special product training sessions will be delivered by a representative from the BTI support staff to keep everyone abreast of the features and functionality of new products.

SNAP Training

SNAP training seminars are for new and existing members of the Solution Network. The training is designed to help BTI partners take advantage of the many opportunities arising in the client/server database market. Partners attending SNAP trainings will learn:

- How to work with BTI and other Solution Network members to enhance business
- BTI’s corporate strategy and product direction
- How to use the services and sales tools provided by BTI
- Overview of navigational and relational client/server technology
- Examination of BTI’s Microkernel Database Engine
- Scalable SQL 4.0 - New features and functionality
- Overview of Scalable SQL, Btrieve and ODBC licensing structures

Product Training Topic: Migration from Btrieve v6.10 to v6.15

As part of the SNAP training, BTI will focus on migrating customers from Btrieve v6.10 to v6.15. With the complex nature of today’s heterogeneous network environments, one is faced with additional configuration challenges. The need to stay up to date with current technology and gain the benefits of the latest releases brings with it the task of providing customers/users with the proper configuration to run all their Btrieve-based applications simultaneously. This training will cover the migration process so that BTI partners can help customers run their applications with Btrieve v6.15—the current and highest performance version of Btrieve.

Training Schedule

<table>
<thead>
<tr>
<th>City</th>
<th>SNAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phoenix</td>
<td>July 17</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>July 24</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>August 6</td>
</tr>
<tr>
<td>Toronto</td>
<td>August 14</td>
</tr>
<tr>
<td>Atlanta</td>
<td>August 21</td>
</tr>
<tr>
<td>New York</td>
<td>September 4</td>
</tr>
<tr>
<td>Chicago</td>
<td>September 10</td>
</tr>
<tr>
<td>Washington D.C.</td>
<td>September 17</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>October 2</td>
</tr>
<tr>
<td>Dallas</td>
<td>October 9</td>
</tr>
</tbody>
</table>

*Dates are subject to change without notice.

To Register: Call 800-BTRIEVE (800-287-4383) and ask for Sales.
Btrieve Workstation Engine Performance Tuning

Btrieve (DOS, Windows, OS/2, Windows NT/95), v6.15

Performance tuning is a key issue with Btrieve, especially in a multi-user environment. Hardware, memory, network configuration, etc. certainly are all involved in the application’s performance, but there are also some configuration options related to Btrieve that can tune performance. Following are some guidelines for performance tuning the Btrieve workstation engines.

The Btrieve MicroKernel Database Engine (MKDE) supports two configurations: client/server engines and workstation engines. The client/server configuration uses a single MKDE running at a NetWare or Windows NT server handling all the Btrieve I/O requests from multiple clients. The workstation engine configuration requires the MKDE to be loaded at each workstation that wants to access a Btrieve file on a shared (network) drive. In this configuration, each MKDE has to share access to the files with other MKDEs loaded on other workstations. There are configuration options available to tune the performance of the workstation engines so that a file sharing is performed effectively.

The workstation engine configuration requires each MKDE to open a file that potentially another MKDE running at another workstation already has open. The Btrieve Programmer’s Manual provides a detailed explanation of this file sharing. In the client/server configuration, the MKDE running at the server is the only task that physically opens a Btrieve file. It will open files based on requests received from Btrieve applications running at workstations or on the server. This means the MKDE running at the server does not have to share files with any other MKDE, which eliminates the performance overhead required to handle file sharing.

The MKDE architecture includes a set of background writers. These are background tasks that perform all the actual disk I/O on each Btrieve data file. By default, the MKDE bundles together multiple operations on one or more data files into a “system transaction” before signaling the appropriate background writers to initiate the required disk I/O. This provides a performance benefit to client/server or single engine workstation environments, or multi-engine environments where a lot of batch processing is performed. When an MKDE has a portion of a file involved in a system transaction, that entire file is unavailable for disk I/O (reads or writes) by any other MKDE. This is required in order to guarantee the file’s integrity.

In a multi-user workstation engine configuration, an MKDE that has pending system transactions causes other MKDEs to be blocked from accessing the same files, often producing a Btrieve status 85 “File In Use.” It is possible to configure the MKDE to release files more quickly to provide improved concurrent access capability. This may, however, reduce the performance of any given instance of an application.

Before adjusting any configuration options, make sure you are running the latest release of the workstation engine. Currently, the DOS, Windows, and OS/2 workstation engine versions are 6.15.925. The Btrieve for Windows NT/Windows 95 workstation engine is currently at v6.15. To obtain an update, contact Btrieve Technologies Technical Support (as described below) with the serial number of your Btrieve workstation engine. The serial number is located on the installation diskette. If you received your Btrieve workstation engine as a component of an application, you will need to contact the application vendor to obtain the latest update.

If you are not sure what version you are running, check your components against the current components list posted on CompuServe (GO BTRIEVE, LIB 4, file DCMATRIX.DOC) or the Web (www.btrieve.com/service/techpaper/dcmatrix.htm).

There are two parameters that control when the background writers should perform disk I/O. These are called the Operation Bundle Limit and the Initiation Time Limit. The Operation Bundle Limit specifies the maximum number of operations performed on any one file required to trigger a system transaction. The Operation Time Limit specifies the time limit that triggers a system transaction. When either of these two limits is reached, the MKDE signals the background writer to perform the necessary disk I/O and release the files involved in the system transaction.

The default value for the Operation Bundle Limit is 100 and the default value for the Initiation Time Limit is 1000 milliseconds.

The default settings for these parameters were selected based on performance requirements in the client/server environments, in a multi-user workstation engine environment with multiple users needing concurrent file access, it is recommended that these values be decreased. These parameters are modified as follows:

Btrieve for DOS:
Add /g:<Operation Bundle Limit>:<Initiation Time Limit> to the options= line in BTI.CFG. For example, BTI.CFG may have: [Btrieve Client]
options=g:20 /i:60 /t:15 /m:512/u:0 /g:25:100

Btrieve for Windows:
Add /g:<Operation Bundle Limit>:<Initiation Time Limit> to the options= line in BTI.INI. For example, BTI.INI may have: [Btrieve Client]
options=g:20 /i:60 /t:15 /m:512/u:0 /g:25:100

Btrieve for OS/2:
Use the Settings notebook to modify the Operation Bundle Limit and the Initiation Time Limit settings.

Btrieve for Windows NT/Windows 95:
Use the setup utility (W32MKSET.EXE, which modifies the registry) to modify the Operation Bundle Limit and the Initiation Time Limit settings.

Setting both the Operation Bundle Limit and the Initiation Time Limit to the minimum value of 1 is a special configuration. This tells the MKDE that each individual Btrieve operation should be a separate system transaction. Therefore, the background writers will perform the necessary disk I/O and release any locked portions of the file immediately after each operation completes. This special “forced release” configuration is a feature of the MKDE engines released after September 1995.

Depending on the number of users in your environment, the type of application being run, and the amount of I/O requests against the data files, you do not necessarily need to configure these parameters to 1 for the forced release. In a multi-user workstation engine environment, if you are experiencing file or record locking problems, you may want to try setting these both to 1 to verify that the problems are related to the background writer timing issues. If this appears to address the problem, you may want to try other values to improve performance.

It is generally recommended that you provide Btrieve with at least a 4Meg cache. This will usually improve performance, especially for applications performing many write operations. The Btrieve cache is configured through the Btrieve Setup utility provided with each Btrieve workstation engine. In the Btrieve for DOS and Btrieve...
for Windows environments, the cache setting corresponds to the /m parameter on the options= line of BTI.CFG or BTI.INI. If you find you do not need the forced release configuration of the MKDE, you may gain some performance benefit by reducing the Disk I/O Wait Time parameter. This tells the MKDE how long to wait before initiating a new system transaction when one is already active. Depending on the application’s Btrieve activity and the number of concurrent users, this may help performance. This parameter defaults to a value of 1000 milliseconds. In Btrieve for DOS and Btrieve for Windows, this parameter is configured by adding an extra value to the /m: parameter on the options= line of BTI.CFG or BTI.INI. For example, 

options=/h:60 /i:20 /t:15 /m:4096:100 /u:0 /g:25:100

In Btrieve for OS/2 and Btrieve for Windows NT/Windows 95, the Disk I/O Wait Time parameter can be configured through the setup process described previously.

In the Btrieve for DOS environment, the background writers are initiated through a timer interrupt so that they can perform their disk I/O. By default, Btrieve intercepts the user timer to give the background writers a chance to do their processing. There is a parameter setting available in BTI.CFG called Timer=, which can be set to No to disable Btrieve’s use of the DOS user timer interrupt. By default, this entry should always be set to Yes. You may need to change the timer interrupt, or disable the timer completely if you experience systems hangs or abends while running your DOS Btrieve applications. In some cases, customers have set Timer=No to resolve the concurrent file sharing problem. With the September 1995 or later release, it is recommended that the /g:1:1 forced release configuration be used rather than setting the Timer=No. Timer should only be set to No to alleviate interrupt conflicts that may be causing the application to hang.

In the Btrieve for Windows environment, it is important for developers to frequently empty the application’s message queue so that Btrieve’s background writers will get a chance to perform their disk I/O. The background writers will respond to a WMTIMER message when the application relinquishes control.

File sharing in a multi-user workstation environment may require various Btrieve configuration options to be adjusted. The type of application, number of users, and available memory resources are all factors that influence the performance in this environment. In the client/server Btrieve environments, there is no file sharing between MicroKernel engines and, therefore, there is no need to adjust any of the background writer parameters.

**Windows NT/Windows 95 Clients and Btrieve 6.10c**

Btrieve for NetWare, v6.10c

Q: Can the 32-bit Btrieve requesters for Windows NT/Windows 95 be used to access a Novell server running Btrieve 6.10c?

A: Btrieve Technologies, Inc. does not support the use of the Btrieve v6.15 32-bit requesters to access a Novell server running Btrieve v6.10. Since Windows NT and Windows 95 were not shipping at the time Btrieve for NetWare 6.10x was released, support for these workstation platforms was not available. When these workstation operating systems became available, Btrieve workstation requesters were developed in conjunction with our Btrieve v6.15 server engines (NetWare and Windows NT). This server engine version is required in order to support 16-bit or 32-bit Windows applications running on a Windows NT or Windows 95 workstation.

Btrieve for NetWare v6.15 was updated to support a configurable packet size. This version supports Windows NT/Windows 95 workstations running 16-bit and 32-bit applications with the Btrieve v6.15 requester.

**Status 20 with Btrieve for Windows NT Server and RAS**

Btrieve for Windows NT Server Edition, v6.15

After installing RAS (Remote Access Server) on a Windows NT server running Btrieve for Windows NT Server Edition, workstations can no longer access the MicroKernel engine. Status 20 (Btrieve not loaded) is returned to DOS and Windows Btrieve applications.

(Note: when referring to network numbers, we are referring to the IPX network numbers, not the “Internal Network Number,” which is used by Windows NT for internal routing and identification purposes).

Novell’s routing protocol specification does not allow routers to send Routing Information Protocol (RIP) responses to network number zero (network number 0 typically means “this network”). In certain situations, Windows NT will associate a network number of all zeros with one or more IPX frame types which are enabled on the server. When there are no routers on the network, this is acceptable. However, when RAS is installed on a Windows NT server—since RAS is essentially a router—problems can occur. RAS, since it is written to Novell’s IPX Router Specification v1.20, will not route RIP responses on a network with any virtual network numbers of all zeros.

When a Btrieve requester makes a call to the NT server engine, it sends a RIP request for a network route to the server. If RAS is installed, and any of the IPX frame type network numbers are all zeros, RAS will not route. This will cause the RIP request to fail, and the Btrieve requester will issue a “Status 20 - The MicroKernel or Btrieve Requester is inactive.”

(CAUTION: Changing the IPX network numbers manually can cause routing failures and other network related errors, and should be done by qualified personnel ONLY.)

Change all zero IPX network numbers on the server to a non-zero value. The registry settings location is:

H Key, Local Machine
\System\CurrentControlSet\Services\WlnkIpx
\NetConfig\driverName>\NetworkNumber

**Status 96 on Begin Transaction**

Btrieve for NetWare, v6.15

A status 36 “Transaction Error” can occur when you are in a multiple server environment and one of the servers running Btrieve is not configured for transactions. A variation of this is a Status 96 “Communications Error.” Using BRE-QUEST.EXE v6.1x when you do a begin transaction, the requester checks its list of all know attached Btrieve file servers. Then it tries to create an SPX session so that it can check the server to see if it is configured for transactions. This implies that all the servers have to be configured for at least the same number of remote sessions as well as being configured for the same number of transactions. Otherwise, a status 96 may be returned.

Configure all servers running Btrieve for the same number of transactions and remote sessions, corresponding to the number of workstations using Btrieve.

**Multiple Record Locks on a Record**

Btrieve, v6.15

If an application using BTRV() has two active position blocks on the same file, and issues a read with a multiple record lock for the same record from both position blocks, both will get a successful status back. However, when attempting to unlock the record with either a key number of -1 and the position in the data buffer or with a key number of -2, the record will only be unlocked if both position blocks issue the
Btrieve ODBC INTERFACE v1.0.3

BTI announces ODBC Interface v1.0.3 - a patch update to BTI's ODBC Interface. BTI's newest release of the ODBC Interface provides enhanced functionality, reliability and performance. It supports ODBC Conformance Level 1 and many extensions from Level 2. The 16-bit and 32-bit ODBC Interface for Windows supports SQLExtendedFetch and all scalable SQL v3.01 data types.

ODBC v1.0.3 is available on Compu-Serve under our "Go Btrieve" forum in a self-extracting file called ODBCv103.exe.

Enhancements

This section describes the changes and enhancements in the ODBC Interface.

MS Access, Underscore in Field Names

The ODBC Interface now correctly recognizes the SQL _SEARCH_PATTERN_ESCAPE character. When MS Access, MS Query, or another front end calls a catalog function to retrieve the columns for a table with an embedded underscore, it includes the escape character before the underscore (such as JOB_HIST for JOB_HIST). In previous versions, it returned a Status Code 204.

SQLTables

Using the SQLTables ODBC API, if you defined more than 380 views in the database, previous versions of the Interface received a Status Code 210. This release correctly returns that data. The Interface now supports 1680 tables and 1680 views.

Blank-padding of Number Data Types

For NUMERIC, NUMERICSA, NUMERICSTS, BFLOAT, MONEY, and DECIMAL data types, when converting to CHAR, previous versions of the Interface blank-padded the values that a SELECT statement returned. This patch release does not blank-pad these values, correcting the alignment of column values in previous releases of these interfaces.

SQ LBindParam API

When using the SQ LBindParam API, the interface correctly handles the length of the variable name to be bound.

Preview of coming attractions:

ODBC v2.0 scheduled release date - Q4 ’96

Level 2 support with new API’s such as:

- SQLSetPos and bookmarks-related API features,
- SQLDescribeParam, and
- SQLForeignKeys

Full Support for Popular Front Ends like:

- Access 95
- Visual Basic 4
- Powerbuilder 5
- Delphi 2

Support for new datatypes like Timestamp and Nullable
The following is a list of recently uploaded files from BTI's CompuServe forum. They are in descending order by date. The first file is the most recently uploaded file and the last file is the oldest.

<table>
<thead>
<tr>
<th>FILE NAME</th>
<th>LIB</th>
<th>SIZE</th>
<th>DESCRIPTION</th>
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<tbody>
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<td>103806</td>
<td>ODBC Patch for 16- and 32-bit drivers</td>
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<tr>
<td>ODBCV102.EXE</td>
<td>3</td>
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<td>ODBC Patch update for 16- and 32-bit drivers</td>
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<td>BTRWIZ16.ZIP</td>
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<td>173389</td>
<td>Btrieve Wiz-VB4 Add-in for Btrieve &amp; DDF Files</td>
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<td>BTRCLASS.ZIP</td>
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<td>171654</td>
<td>Btrieve &amp; OLE: VB4 Class Library Source Code</td>
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<td>5262</td>
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<td>13696</td>
<td>Configuration issues when running with Microsoft NT</td>
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**CURRENT VERSIONS**

**Btrieve Data Management Products**
- Btrieve Engine for DOS .................. 6.15
- Btrieve Developer Kit for DO S ........ 6.15
- Btrieve Engine for Windows ............. 6.15
- Btrieve Developer Kit for Windows ..... 6.15
- Btrieve Engine for O/S/2.............. 6.15
- Btrieve Developer Kit for O/S/2 ....... 6.15
- Btrieve Engine for Windows NT /Windows 95 .................................. 6.15
- Btrieve Developer Kit for Windows NT/Windows 95 .................................. 6.15
- Btrieve for N etware Server ........... 6.15.430
- Btrieve for Windows NT Server ....... 6.15.430

**Scalable SQL Relational Data Management Products**
- Scalable SQ L Engine for DOS .......... 3.01
- Scalable SQ L Developer Kit for DOS ... 3.01
- Scalable SQ L Engine for Windows ...... 3.01
- Scalable SQ L Developer Kit for Windows ........................................ 3.01
- Scalable SQ L Developer Kit Supplement for O/S/2 .................................. 3.01
- Scalable SQ L for NetWare ............. 3.01

**ODBC Interface Data Management Products**
- ODBC Interface for Windows ............. 1.0.3
- ODBC Interface for Windows 95 .......... 1.0.3

**Query and Reporting Tools**
- Xtrieve for D OS .................. 4.11e
- Xtrieve for O/S/2 .................. 4.11e

**HOW TO REACH BTI**

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E-mail addresses for individual staff members consist of the person's first initial followed by up to seven characters of his or her last name.

Since Tech Corner first appeared in BDJ, it has had much the same style and content. Do you find Tech Corner helpful? What information would you like to see more of? We would like to know. Send us an e-mail message at bdj@smithware.com or visit our web site at http://www.smithware.com/bdj
1996 has not been a very good year for me personally, and the spring especially has been trying. First, my 15-year-old daughter developed a serious illness, hospitalized three times for a total of almost 50 days out of the last three months. Then my son burned himself with hot tea, requiring a rushed visit to the emergency room. My brand new tape drive stopped working. I thought it could not get any worse than that. And then, Scott Smith asked me to evaluate Btrieve for OS/2...

**OS/2—It’s not just an Operating System, it is a commitment!**

Let me start by saying that I am not an OS/2 Warp fan, nor am I an OS/2 Warp foe. I consider myself an agnostic in this particular religious war. I do however find myself rooting for IBM as the “little guy” in the PC operating system wars. Even if I never use OS/2 again (read on, I won’t), I benefit from OS/2 being there, as it keeps Microsoft on its toes. That said, some folks who I respect have tried to get OS/2 up and running reliably, and many have given up. These are not computer novices, but rather computer programmers and consultants. OS/2 has a reputation for being a little difficult to install, a reputation not lessened by the rumor of an IBM CEO having an early install process fail on his own home machine simply because he had a CONFIG.BAK file.

With that background, I went cautiously into the installation of OS/2 Warp that needed to precede installing Btrieve for OS/2. First, I selected the advanced install, since I wanted control over how the install proceeded. I have two hard disks with 4 partitions, and so controlling where OS/2 would install was important to me. Advanced installation was not for the squeamish, but I read the manual cover to cover on one of my train trips to the city visiting my daughter. Once I started the installation, things got ugly. First, it conveniently told me that there were some Windows NT hidden files on my C: drive (not surprising, since I install and uninstall all kinds of software all the time), and it would love to format it for me. I demurred, with the expectation that I would completely back up and then format another partition instead of the C: drive. Upon trying to do that, things did not proceed as the examples led me to expect, not allowing me to take menu options required for the proper operation of the advanced installation onto another drive. This involved some scary interaction with FDISK (never a favorite of mine).

With this, I figured, “What the heck. The Easy installation might be just the ticket. Maybe I am making too much of it trying to use advanced installation. And, in any case, the manual clearly says (page 10, *Users Guide to OS/2 Warp*) that ‘OS/2 will be installed on your primary drive C partition... The partition will not be reformatted.’” So much for manuals. The good news is that I ended up with 960 Meg of hard disk space free. The bad news is that all my programs, compilers, etc. on the C: drive were GONE! It never so much as hinted what it would be doing. In talking on CompuServe with Steve Ryckman of Security Information and Management Systems, Inc., he suggested the following explanation:

> If we are talking about Warp, it will format the drive if it is unable to recognize the partition you requested it be installed on. This can accidentally be set off by disk managers (like OnTrack, etc. for large drive support). I’ve also heard that some SCSI controllers (DPT I believe but don’t remember for sure) return a weird block size. They used the high bits of the block size word for something else for their own utilities which makes other calls think the block size is some weird number like—32735.

Clearly, OS/2 Warp did not like my partition, and I expect there could have been something strange with what I had, since I install and test lots of operating systems. My gripe is that it never gave me a chance to say “No” during the “Easy” installation.

I’m not bitter. On the other hand when I removed OS/2 from the disk, I created setup disks for MS-DOS 6.22 from the MS Developer’s Network CDs. During the install of MS-DOS, the setup program correctly noticed that I had OS/2 system files on the C: drive, and asked—not once or twice, but three...
times—if that was what I wished to do. The final screen was not even a “press enter to continue” screen that I could miss, but rather a screen that required entry of a ‘Y’ to continue. IBM could learn volumes by using the example set by Microsoft as far as installation routines go. Love them or hate them, Microsoft operating systems have never formatted a drive on me unless I asked, and this extends not only to shipping products, but very early betas of several products as well.

I placed a message on the OS2SUPPORT forum on CompuServe about this problem, and I have thus far received an automated acknowledgment of the message, but no response from a human being who could explain the reformatting of my hard disk.

Back to Btrieve (Btrieve for OS/2, to be precise...)

Once I had gotten over the trauma of losing all my data on the C: drive, it was on to the installation of the Btrieve Developer Kit for OS/2. This installation went much more smoothly than the OS/2 installation, and actually looked and felt much like the other Btrieve installations I have been involved with. The installation asks you to select a directory (defaulting to C:\BTI\OS2) following the conventions of DOS and Windows 3.1 Btrieve. The installation is a two disk affair, with one disk for the install, and a second disk provided to allow you to register Btrieve by filling in the on-screen form and sending it to BTI in the provided diskette mailer. This is a winner for BTI, as you are assured of getting the information entered into the BTI registration system without anyone having to interpret your handwriting on a post card. After the compiler or operator error damaged the example C language file, I reinstalled Btrieve to get the sample file back. A plus was that the system appeared to recognize that I was reinstalling Btrieve and did not require me to fill out registration information the second time I installed it on the same machine.

The Developers Kit for OS/2 comes with two manuals: Btrieve for OS/2 Installation and Operation and a generic Btrieve Programmer’s Manual. The Installation manual provides some OS specific information, while the programmer’s manual simply describes the API and how to access Btrieve from C, Cobol, Pascal and Basic.

Programming using Btrieve for OS/2

It is always an experience to start working in a new operating environment, and Btrieve for OS/2 is no exception. In addition, I was using the Watcom compiler (version 10.5), a compiler that I had not used except to generate NetWare NLMs. After working with the compiler for a little while, I was still having a problem with linking the supplied sample C code. I was getting “ unresolved symbol” messages for BTRV and BTRVID. I was sure I had included the .LIB file in the link, and I even tried to add the Btrieve DLL files to the project, thinking that perhaps I had to do this in OS/2. I changed the file from a C file to a CPP (.C++) file, to no avail.

I searched high and low within the provided manuals for details on linking Btrieve applications, with no luck. I did learn that the native function to call in 32 bit OS/2 would be BTRCALL32 and BTRCALLID32. I began modifying the example file to directly call these functions, figuring that the import library probably only provides these two functions. This seemed a bit odd, because I found it difficult to believe that BTI would require modification of the examples for OS/2 compilation. Then, browsing through the directories one last time, I came across BTRAPL.C. This is a file that must be linked in to allow the program to find the BTRV and BTRVID symbols. When that was included in the project, all was well with the world, and the calls in the example file to BTRV and BTRVID were properly resolved to BTRCALL32 and BTRCALLID32. In retrospect, knowing what I was looking for, I was able to find a reference to BTRAPL.C in the C language interface section of the programmer’s manual, but that was not where I would normally look, since I assumed that the problem was related to some strange OS/2 linking problem, and I only needed to find the correct library to include. I have been using Btrieve for Windows long enough that I temporarily forgot about the BTRAPL.C file, since I simply re-use project files from one project to the next, without giving much thought to what files are linked in.

One suggestion for the developer’s kit (and this applies to not just OS/2) would be the inclusion of project files for all the major compiler manufacturers for each platform supported. This project file could then act as a model for exactly what files are required to use Btrieve with that compiler. While this is not a perfect solution, it would go a long way towards making Btrieve easier to use. Another solution would be to provide DLLs in each platform that wrap the platform specific functions up in the calls to the platform independent BTRV and BTRVID functions. Most programmers are able to call DLL’s in the platforms they are working with, and this would provide a way to get the compiler independent interface required on each platform (except DOS, which would still require static linking of the compiled interface module).

The OS/2 Btrieve Utilities

The Btrieve Developer’s Kit for OS/2 provides the same functionality as the other major GUI Btrieve developer’s kits. There is some difference in how they are structured, and the utilities look like OS/2 utilities rather than Windows utilities. The utilities include are:

- Btrieve Engine Console (includes setup options)
- Btrieve Roll Forward utility
- Btrieve File Manager
- Btrieve Function Executor

The notable difference between OS/2 Btrieve and some other platform’s implementations is the Btrieve Engine Console. Rather than just a dummy window that shows the version number and allows you to close out the engine, the Btrieve Engine Console for OS/2 logs some activities (such as allocating and deallocating resources). It also provides the mechanism to set up many system parameters. One seemingly odd difference between OS/2 Btrieve and other platforms is the need to set an environment variable (BTRINTF) to specify use of local, remote, or both flavors of Btrieve. This environment variable can also be used to override the “home” directory specified in the BTI.INI file. The need to use an environment variable to set local/remote access seems a bit strange to me, but it just might be completely consistent with the way OS/2 works.

Another odd behavior was encountered using the File Manager utility. When using it to create a —STAT type file detailing the structure of a Btrieve file, it reported a status 20
(record manager inactive). I overcame this by simply using the function executor (not too different from the other platforms function executor) and performed a version check. Once that was done, the file manager properly returned the statistics on the file in question. Even with the Engine Console open, with resources allocated, the status 20 was returned by the File Manager. Very strange. This could be caused by some failure on my part in setting up Btrieve, but if so, it is not obvious to me.

Files created with the OS/2 version of Btrieve can be read by other versions, assuming that the file format version is compatible (that is, version 5.x of Btrieve for DOS will not read a file created with OS/2 Btrieve using the default of creating files in post 5.x format, but version 6.x of Btrieve for DOS will).

Conclusions

Will I use Btrieve for OS/2? Probably not. Certainly not unless a client provides an additional machine to set up OS/2 or the funds to purchase such a machine. On the other hand, were a project to come along that mandated use of OS/2, I would use Btrieve for OS/2 in a minute. One of the strengths of Btrieve is true cross platform support. I have provided my DOS based utilities to many Btrieve for OS/2 users, who drop down to DOS when they need to rebuild or test a Btrieve file created by their OS/2 based applications. Few other file management platforms offer this level of cross platform compatibility. Using the Watcom or Borland C/C++ compiler for OS/2 along with Btrieve, I could become productive much sooner than I could using another database manager.

But what are the chances of an OS/2 requirement coming along? Not too good. I have long wished to find a project to do on the Mac, and yet no one calls requesting that, even though some of the multimedia applications I have done cry out for a multimedia platform such as the Mac. As I mentioned at the outset, I am an agnostic in the religious wars about operating systems. A better analogy might be a mercenary: I go where the development money is, and OS/2 and the Mac don’t really have the amount of development dollars available that Windows and even DOS currently have. All that said, I really do think OS/2 is a neat system, and I hope that it continues to flourish. I also hope someone re-writes the installation routine so that it will never reformat a hard disk silently.

And my machine? It is happily running a beta version of Windows NT. I had wanted to install it for some time, but since there is no migration path for applications from Windows 95 to NT 4.0, I had delayed, not wanting to take the time to reinstall everything. I like NT 4.0, and I have only IBM to thank for

Inscribe is a complete environment for developing Visual Basic™ compatible scripts that can be executed by the BTI Scalable SQL database engine. The obvious potential applications of this new technology include the ability for developers to build business rules into their database management systems, and to partition application code between the application itself and the database, moving database-related code to a file server platform in networked environments.

The product is set to make its debut with the release of Scalable SQL version 4.0 for NetWare. Architecturally, Inscribe will operate as an extension of the MicroKernel Database Engine. In the initial Scalable SQL version 4.0 for NetWare release, the Inscribe interpreter engine will run as an NLM on the NetWare server, providing external procedure capabilities for Inscribe-enhanced SSQL databases.

Using Inscribe, logic that was previously a part of an application program can be moved into a set of scripts integrated with Scalable SQL’s database definition files. In client/server environments, appropriate pieces of application logic can be moved from the workstation computer to the file server. Applications can be simplified, since Inscribe scripts can handle actions that need to be performed as a result of certain data conditions. For example, an Inscribe script can be executed when the size of a database table reaches a maximum limit, or when certain values are inserted or deleted from a table.

Additionally, Inscribe scripts can execute other programs. For example, when an update operation is performed on a database, a trigger defined for the update operation can call an Inscribe script to update a second database, keeping the two databases synchronized. Similarly, an Inscribe script might be called to send an email notification message when certain conditions are detected in a database table.

Since Visual Basic is used extensively to develop applications, it is important to differentiate how Inscribe uses Visual Basic as opposed to how other products use Visual Basic. Inscribe provides a “back-end” capability that allows Scalable SQL to execute Visual Basic compatible scripts. Other Visual Basic products provide a “front-end” interface for executing Scalable SQL operations. Thus, an application developer might create a Visual Basic program that performs Scalable SQL operations, and these Scalable SQL operations might, in turn, cause Inscribe scripts to be executed. Although Inscribe can be used to execute Scalable SQL operations or operations on other databases, Inscribe is not intended to replace the more extensive development environment provided by Visual Basic for “front-end” application development.

The Inscribe Developer Kit

The Inscribe Developer Kit allows editing and debugging of Inscribe scripts using standard Visual Basic compliant syntax and a feature-rich set of functions. Though Inscribe does support Windows platform-specific features (the development environment includes a dialog box editor, for example), scripts that are written without platform-dependent code can be compiled and ported to any other platform, client or server.

The Inscribe Developer Kit is used to create an Inscribe script, compile it, test it, and then register it with a database.

The Inscribe Developer Kit is available in two versions: WINS-DK16.EXE for Windows 3.1 and WINS-DK32.EXE for Windows 95 and Windows NT. The Inscribe Developer Kit is based on the Softbridge Basic Language (SBL), licensed from Mystic River Software, Inc. It provides a number of features for editing, compiling, and debugging scripts. The editor provides standard editing features such as Cut/Copy/Paste, Undo, Find, and Replace. Extensions to the Basic language syntax include interfaces for ole objects, DDE and ODBC functions, and advanced match and financial functions. Programming and debugging aids include syntax and compilation error highlighting, breakpoints, single stepping, variable inspection, function callback information, animation, error trapping and Assert functions, and an online language reference.

The Inscribe Developer Kit is used to create, compile, test, and then register an Inscribe script with a database so that it can be executed by Scalable SQL. This registration creates an EPMAP.DDF file that contains mapping information about the procedures contained in each Inscribe script. The compiled Inscribe scripts, called modules, are platform independent. That is, a module developed on Windows 3.1 can be executed by Inscribe on Windows 3.1, Windows 95, Windows NT and NetWare platforms. Of course, Inscribe scripts which use platform-dependent constructs will not be portable to platforms which do not support those constructs.
instance, an Inscribe module which created a Windows dialog box could not be used successfully on a NetWare server platform.

**Scalable SQL Interface to External Procedures**

Once an Inscribe module has been registered with a Scalable SQL database, it can be executed as a Scalable SQL external procedure. In Scalable SQL 4.0, external procedures are always modules compiled by the Inscribe Developer Kit.

The interface between Scalable SQL and an Inscribe module is provided through the Scalable SQL Create Procedure and Call statements. The Create Procedure statement defines the name of the external procedure, the procedure parameters, and the types of these parameters. The Call statement is then used to invoke the external procedure. For example:

```sql
CREATE PROCEDURE FindStudentGrade (IN StudentId INTEGER(4),
                              IN ClassName CHAR(60),
                              OUT Grade     INTEGER(4));
EXTERNAL

CALL FindStudentGrade (student_id, class_name, grade)
```

The first statement defines an external procedure `FindStudentGrade` with two input parameters, `StudentId` and `ClassName`, and one output parameter, `Grade`. The second statement then executes the procedure using the variables `student_id`, `class_name`, and `grade`.

From a Scalable SQL program, Inscribe modules can be invoked by directly executing a Call statement, by calling a stored procedure that contains an external procedure Call statement, or by executing an Insert, Update, or Delete operation that causes a trigger to call an external procedure. The use of Scalable SQL triggers to execute external procedures is a very powerful mechanism since it allows Inscribe modules to be executed automatically for certain operations or data values. For example:

```sql
CREATE TRIGGER Trig
BEFORE INSERT ON TempTable
REFERENCING NEW AS InData
FOR EACH ROW
BEGIN
    DECLARE TmpInt1 integer(4);
    DECLARE TmpInt2 integer(4);

    IF (InData.Rate1 > InData.Rate2) THEN
        SET TmpInt1 = InData.Rate1;
        SET TmpInt2 = InData.Rate2;
    END IF;

    CALL ExtFunc(TmpInt1, TmpInt2);
END;

This statement defines the trigger `Trig` on the table `TempTable`. Any insert operation into `TempTable` will result in the execution of the statements between the BEGIN and END keywords. These statements first declare two temporary variables `TmpInt1` and `TmpInt2` and check to see if the first value being inserted into `TempTable`, `InData.Rate1`, is greater than the second value being inserted into `TempTable`, `InData.Rate2`. If so, the temporary variables `TmpInt1` and `TmpInt2` are initialized with the values being...
Aura Equipments Introduces Btrieve - Compatible Link to AS/400

*LES ULIS, France* — Btrieve developers who work with corporate users of AS/400 systems can now offer their clients a direct interface between Btrieve-based applications running on desktop PCs and central data stored on an AS/400 server, thanks to Aura Equipments, a system software developer based here.

Aura’s package, BTR400, consists of EASYCOM running on the AS/400 server, coupled with the Btrieve WBTRCALL.DLL at each PC workstation. The combination provides real time access by the workstation to all AS/400 data resources, while maintaining the high performance of Btrieve. The company claims that data access can be as much as 100 times faster than that obtained by using ODBC SQL, and that AS/400 security procedures retain control of all applications.

The BTR400 interface is totally transparent to the PC developer and to users. Applications developed for Btrieve on stand-alone PCs, using the WBTRCALL.DLL, automatically have access to the AS/400 data via EASYCOM. This is true whether the workstation runs Windows 3.1, 95, or Windows NT.

Languages that support such applications include Visual Basic, Access, Crystal Reports, Powerbuilder, and Clarion, among others. Availability of this interface provides corporate information technology managers the ability to combine the powerful database capability of the AS/400 and the more comfortable user interfaces of Windows on the desktop. Previously, the lack of native SQL on the AS/400 has forced a serious performance sacrifice when interfacing to desktop PC workstations.

An additional advantage to this solution is that PC or LAN applications become instantly portable to the AS/400 client/server environment. It’s even possible to access data on different systems using the same application.

To use BTR400, the site must have an AS/400 model Series B or Supervisor, running OS/400 version 2.20 to 3.10 and connected to the PC workstations via Ethernet, token ring, twinax, or SDLC cabling. On the client side, each workstation must have at least an 80386/25 CPU and be running one of the current versions of Windows (3.x, 95, or NT), APPC routers supported include Netsoft, PCS, Client Access, and Microsoft Client SNA.

The BTR400 package consists of DLLs for the workstations, the EASYCOM object library for the AS/400 server, application examples, and the user guide.

Besides Btrieve, the BTR400 system supports Microsoft’s Jet engine and ODBC. EASYCOM supports additional interfaces to the AS/400 from the PC as well, including remote procedure calling, data queue functions, and job control.

Applications already using EASYCOM include MAGIC, MicroFocus COBOL, ABAL, and the TOTAM video and voice server. A demonstration program is available from Aura.
Replacing Mainframes with Client/Server Networks

By Howard Shirly

Picture the typical MIS department of 30 years ago: one room filled with huge metal boxes, banks of reel-to-reel tape units lining the walls, and one big box in the center, tended by men with thick-rimmed glasses and short-sleeved polyester shirts. The distant end user saw only a dumb terminal, and without intensive training, understood little of what it showed him. Processing time for large jobs could be measured in days, and if one component in the system went down, it all went down.

Picture the MIS department of 20 years ago: the same room, the same boxes, the same men (and maybe a few women) and the same headaches.

Picture the MIS department of ten years ago: the same room, the same boxes...by now you have the idea. But, try to picture the typical MIS department of today. Oh, there are still rooms with boxes out there, but that does not paint the whole picture anymore. Today, the processing power of an MIS department might easily be spread across hundreds of desktops in hundreds of offices. The end user works with Windows or a similar GUI, understanding what he sees and having considerably more control. Large processing jobs can be handled in a few hours, maybe even minutes. And, if a component goes down, nine times out of ten the users never even see a glitch. Not everyone is ready to play the death knell of traditional mainframe-based IS quite yet, but with current advances in client/server technology, the knock is at the door. And, Btrieve is helping to lift the knocker.

Snowed in in Minnesota

Arctco, Inc. of Thief River Falls, Minnesota makes and sells snowmobiles, all terrain vehicles and personal watercraft, along with recreational clothing and accessories. Managing this combination of manufacturing, shipping, sales, design and business information calls for some hefty processing power and a well-integrated database system. For years the company had relied on mainframe technology for their IS, but the costs and headaches were not offset by the performance. In 1993, the company decided to abandon their mainframe for client/server technology based on Bretrieve 6 and Scalable SQL. IS director Ray Koukari, Jr. recalls the decision.

“The cost of our mainframe was escalating rapidly. The next upgrade — just the upgrade — was going to cost about $1.8 million. That paid for our entire conversion to the client/server system. Support was also a big factor; we had very little support on our mainframe, but we had support in-house on our networks and PCs — that made a big difference.”

Other costs came into the decision as well. Maintenance on the mainframe drained about $300,000 a year from the company coffers. And, the mainframe’s user-hostile interface of cryptic data codes and arcane screens brought on other costs. New users spent months in training to learn the system, and even employees familiar with the system had to be retrained each time they moved to a new position in the company. Arctco lost hundreds of thousands of dollars to employee training every year. The consistent interface of Microsoft Windows offered welcome relief for both confused employees and the company bottom line.

Moving down means moving up

Transforming the IS from Arctco’s old mainframe to a client/server architecture meant more than just cost savings. Performance made a dramatic leap upward. “For example, our Materials Requirement Planning — MRP — took between ten to 12 hours to process on the mainframe, so we only did it on the weekend,” Ray explains. “Now we do it daily in three hours.” Performance on weekly sales reports improved even more dramatically. What used to be a 36 hour process on the mainframe can now be completed in nine hours — and with more accuracy. The networked processing power makes the difference.

While the mainframe may have possessed more singular raw power, it can’t match the combined power of multiple PCs. “With the mainframe we had one processor handling our MRP. Now we run five PCs at the same process.”

The network platform also brought improvements in the reliability of Arctco’s IS operations. “We’re more reliable now than we ever were,” Ray says. “On our mainframe we never mirrored or striped to redundant disk arrays. On our network everything is mirrored and striped. If we have a disk fail, we just replace it while it’s going. On the mainframe that would have stopped us.”

The change gave Ray a more flexible, adaptable system. “We just integrated our business system with our engineering system, which is a Unix-based system with SGI hardware. We are now able to look at our engineering drawings in 2-D on our business system. We couldn’t even think of doing that on the mainframe.” Now, with Windows as the front end, users can cut and paste information everywhere. And, with a PC-based operation, Ray can integrate off-the-shelf software packages in with the IS applications. On the mainframe, that would have been impossible. Even minor changes to the database are easier on the network. “If we had to change a file on the mainframe, for example lengthen a file and add a few keys, we had to plan a backup, backup our database, take a weekend to roll that database forward, put that new change in it and then back it up when we were done. It took us a whole weekend to get one small database change. Today our developers add keys on the fly everyday.”
Putting Btrieve and Scalable SQL to work

Ray chose Btrieve 6 as the database engine for its performance and reliability. “If you key Btrieve correctly, it’s the fastest database engine there is,” he says. “It outperforms Oracle and Sybase in our tests.” Btrieve also eased the transition for Ray’s development staff. “The learning curve for our developers was almost instantaneous. The Btrieve database works a lot like the DMS database we used on our mainframe. Teaching our COBOL programmers how to use it was relatively easy and fast.”

While Btrieve serves the OLTP functions, Ray also uses Scalable SQL for reports and add-on applications. “We can design and write a report in ten minutes in SQL that may take four to five hours to write in Visual Basic,” he explains. “We also use SQL for interfacing with disparate systems, like in our manifesting system for shipping small parts and clothing. We have a system from TanData called Progistics Manifest System. It’s based on OS/2 and only works with SQL. With Scalable SQL it was easy to integrate that into the system.”

Still, both Btrieve or Scalable SQL had their limitations. “The one disappointment with any SQL product is they’re not tuned to your engine. It’s tough to write functional reports that you’re going to let your users use without buying lots of hardware just because of the way the SQL spec is written.” As for Btrieve, Arctco’s multiple sites and a sales force equipped with notebooks makes two-way data replication a necessity — a feature Btrieve currently does not offer. To make up for this lack, Ray had to develop his own replication routines and processes. (BTI company sources say the replication feature is planned for a future version of Btrieve.)

Technical challenges, teaching challenges...

Replication problems weren’t the only challenges Ray faced. He chose Windows 3.1 as the network’s front end and selected Visual Basic as a developer’s environment to create the user interface. While Windows and Visual Basic helped Ray’s developers produce easy to use screens and pop-up menus, they quickly encountered problems with Windows’ poor handling of resources. “When you’re making a Visual Basic application or any kind of application, you use a lot of resources. With Windows 3.1 you run out of resources quickly. That’s a design flaw.” For several months during the development process, Ray’s team couldn’t find a solution. Fortunately, serendipity intervened when Connectix released RAM Doubler, and the release of Windows 95 last summer has helped to alleviate the problem — but not completely. “There are cases where I have 32 Megs of RAM, and I can only get ten screens up. My users think they need more than ten screens. They can’t use more than ten, mind you, but they think they need them up.”

The other drawbacks Ray encountered weren’t with the hardware or software, but with the people developing and using the new system. “We had to create our own three-tier approach to solving certain problems, and I had to get my users and developers to understand that,” Ray says. “In a mainframe environment you have queues going so you can queue jobs up at certain times to perform housecleaning functions. We had to create our own queues, per se, in our network system, and that took me a while to get through.”

Ray also had to teach his users and developers not to expect too much from the system. “A lot of the users thought they could use SQL to design their own reports, only to find out they didn’t know what our data elements meant. Our users were frustrated, and our developers were frustrated as well because they thought we could turn report writing over to the users. That just doesn’t happen.”

Out with the old, in with the new

Having the components of your system at the mercy of your end users isn’t everyone’s cup of tea. Somebody may just slip their favorite anti-productivity time killer into their corner of the system, creating nasty conflicts with your proprietary management scheme. Or one spilled cup of hot java (the liquid kind), and you could be out two 2,000 bucks worth of PC. Minor headaches to be sure, but there is something to be said for centralized control. As any network administrator can tell you, when you have boxes scattered around in multiple sites, a lot of things can go wrong. For Ray, a continuing challenge is convincing management that users can’t solve those problems.

“Management feels that the level of expertise required to maintain a client/server system is less than it is on a mainframe. In reality you need the same types of people. You still need your communications experts; you still need your network administrators. Management looks at it differently. They’ll say, ‘This is a PC. You don’t need anybody.’”

But, Ray will tell you those challenges are minor compared to the benefits of using the switch. “I’m saving well over $300,000 a year in maintenance costs. I’m saving at least that in training costs.” One typical example: training an employee to ship just one package using the old shipping and manifesting system took two to three weeks. Now, Arctco can train an employee on their new system in one day. Even the training time for developers has dropped from six weeks to one week. “I just don’t see many disadvantages,” says Ray.

Investing in networks

While individual IS departments choose client/server over mainframe systems for internal reasons, commercial developers are leading other companies to make the same switch by offering software packages that capitalize on client/server’s versatility and power.

Princeton Financial Systems is one developer leading the way. The company markets PAM for Securities, an investment management application based on a client/server architecture. Over 200 investment corporations rely on PAM for Securities to manage over half a trillion dollars in assets, all on client/server networks. “We go back to mainframes,” says Gerald Finsen, Jr., chairman of Princeton Financial Systems. “We’ve been building investment accounting and management systems since the late 1960s. We were nothing but mainframe up until the end of the ‘80s.” But Gerald saw that change was inevitable. “The mainframes were never a very cost-effective means of solving the problem. We saw that not only in our own operations but in our competitors’ operations as well. The mainframes were just becoming very expensive from a programming perspective and from a support perspective and were limited in what the end users could do with them.” In 1987, Princeton Financial Systems began developing prototypes for a client/server based application. By 1989, they were installing PAM in PC based systems. “We continued to operate the mainframe system for about another year. It took us a year to get all the clients converted from the mainframe system to the PC system, and then we shut down the mainframe system.”

Developer’s Paradise

As a developer, Gerald sees significant advantages in the change to a PC platform. “It’s a much more productive environment,” he says. “I can get much more done in a day on a PC than I ever could get done on a mainframe.” Gerald attributes this both to the architecture and to the quality and availability of developer’s tools for the PC environment. “In the mainframe world we found that 75-80 percent of our programming and 75-80 percent of our effort dealt with managing the computing environment rather than solving the business problems. With the development tools available for the PC world we were allowed to focus on solving business problems, we weren’t spending all our time trying to manage computer problems. And that leveraging of the programmer’s time was a major cost benefit to us.”

The benefits also reached into the end product itself. “The support technology offered by Windows NT and OLE has allowed us to build applications that are much more robust than anything we could
do in the mainframe world.” Gerald explains. “We have focused on doing object technology, building business objects as component building blocks within our system and using OLE to allow different components to communicate with each other.” The advantages extend to both developers and users. “People can focus on one component of the system and become powerful in their knowledge of how that one component operates. They don’t have to get all tied down with how it fits in with all the other components, how does a database work, how do the screens work. The component architecture allows people to be really good at what they’re good at. This whole OLE concept of components and being able to bring them together is just something that’s not available in the mainframe world.”

**Btrieve: Gotta have it**

From the beginning, Gerald selected Btrieve as the database engine for the PAM product. “For my database component, for the application, for my user interface component and actually for my programming language also, I sat down and developed a list of ‘gotta haves’ and ‘niceta haves.’” After evaluating several database products against this list, including Ingres and Oracle, Gerald chose Btrieve.

“Just going down the list of absolutely gotta haves, Btrieve was the only product that made the final cut.”

One of Gerald’s “gotta haves” was commit and roll-back processing for transactions. “It’s inconceivable to me how one could build a commercial grade database application that does not support commit/roll-back processing. That feature led to our initial relationship with the Btrieve product.” In yearly evaluations, Btrieve continues to win over other choices. “As a tool Btrieve allows us to build good clients, good solid bullet-proof database applications. Btrieve allows us to focus on building business solutions. Btrieve also provides us with the portability across various operating platforms. With Btrieve we can have a single interface with our programs that works in a DOS environment, a Windows 3.1 environment, a Windows 95 environment and a Windows NT environment. That portability is important because our clients are all over the place with their operating systems.”

Transforming from a mainframe provider to a client/server product turned out to be relatively easy. “We didn’t have a lot of the challenges that some organizations set themselves up for. A lot of that has to do with how the mainframe product has been architected. We were very big into what is now called component architecture. We did a lot of the things that object-oriented technology talks about back in the ‘70s; so from a technology perspective we didn’t have a lot of hurdles to get over. We’ve always had the component architecture mind-set. We benefited greatly from the new tools, but that’s the way we’ve always designed systems.”

Btrieve helped ease the transition even further. “Btrieve is unobtrusive. It allows us to focus on building business information components within the system. We don’t have to focus on a lot of database issues,” Gerald explains. “Btrieve sits very low in the architecture, so it performs very well. We’re able to tune it because we primarily use the navigational model within our application. We use the relational model higher up in the reporting end, but with the core, the guts of the application, we use the navigational model where we can really get some screaming performance out of it. Btrieve allows us to hide it deep down in the application so that the application itself knows nothing about the underlying database and database structure; the application deals only with objects. Btrieve has allowed us to evolve to this object technology without having to change databases. We’re free to work with it the way we need to work with it, not the way the database vendor decides we need to work with it.”

**Perception vs. Reality**

Instead of technological obstacles, Gerald faced greater difficulty in the perceptions of the marketplace. “Btrieve was one of the early players in the PC database arena, so when people hear Btrieve, they think ‘old product’ — they think of the people who were using it back in the 1980s and early 1990s and they equate not-well-written applications with Btrieve. Btrieve has picked up some black eyes through association,” he says. People confuse the issue of maturity with old technology.

“But, these are hurdles we can confront because we can sit down and show them the product. We can show them Btrieve; we can show them that it’s got most of the relational features. We can look at the Scalable SQL product. These are all hurdles that can be overcome. BTI just needs to keep up the battle of public awareness on just what their product is.”

**Looking ahead**

For the future Gerald would like to see Btrieve expand into the object model. “The direction we are headed is full commitment down the object path. I would like to see BTI come up with an object model for the database. I think they have done a very effective job of deploying a navigational model with Btrieve, and apparently they have also done a very good job on the Scalable SQL side. More and more people are going to start heading down the object route. I think the Btrieve product is well positioned to be able to get out in front and lead the way.”

“On the near term, I’d like to see BTI port the server component of their database engine to DEC Alpha machines and other hardware architectures. But, other than that, I’ve got 99 percent of what I need right now.”

The MIS revolution is far from over. As PC technology continues to surge forward in speed and power, more IS departments will turn to client/server technology. Ten years from now, the picture of MIS may be very different indeed. And Btrieve will likely be part of that picture.
Smithware Tech Talk is a regular supplement to Btrieve Developer’s Journal, providing the latest information about Smithware products.

**Tech Tips**

**Error: Data buffer length (Btrieve status 22)**

This error occurs in Smithware DDF Builder, Smithware VBX Controls for Btrieve, and Smithware Crystal Reports for Btrieve if the DDF table definition is shorter than the record being returned. The length of the DDF table definition determines how many bytes of data an application asks for when it tells Btrieve to get a record. A status 22, or data buffer length error, indicates that the record which Btrieve is returning is longer than the record which was requested, and that the data has been truncated to fit in the requested length.

To fix the problem, run DDF Builder, open the DDF, select the table in question, and press the Modify Table Definition button. Then select the View-Table Status menu item. This window shows the Btrieve file information taken directly from the file itself. There are two possible situations that could exist, each of which has a slightly different solution:

1. The variable length check box in View-Table Status is NOT checked. Look at the Record Size listed in the Table Status window. The length of the table definition (the offset of the last field plus its length) should equal the Record Size. Make the table definition long enough to account for any extra bytes by adding an extra field that fills up the remaining space.

2. The variable length check box IS checked. Follow the instructions from possibility number one above, and in addition, make sure you have a field of type “variable length note” or “variable length lvar” as the last field in the definition. Its size should be big enough to accommodate the largest record to be returned. Setting the size will involve some guess work, since the only way of determining the length of the variable length record in DDF Builder is whether or not the data buffer length error occurs.

If the error is happening in Crystal Reports, it should also occur in DDF Builder in the Edit Data window when scrolling through the database. You can use the Edit Data window in DDF Builder to determine if your corrections are working without having to run Crystal Reports repeatedly to troubleshoot the problem.

Note that if the file is variable length, it is possible for only some records to be causing the error. In such a situation, it is possible for an occasional record to be larger than the table definition.

**Smithware VBX Controls for Btrieve: Setting SelectedRecords in code for the Extended Operations Control**

The option to use single quotes to delimit string data when setting the value of the SelectedRecords property for the Extended Operations Control was not implemented at the time the control was initially released. Use instead Chr$(34) to represent the double quote in the following manner:

```vbnet
ExBtrv.SelectedRecords = “Last_Name = “ + Chr$(34) + “Smith“ + Chr$(34)
```

**Updates and Patches**

Each of the patches listed is available from our web site at http://www.smithware.com or from our BBS at 615-386-3295. The patch applies only to the version of the product listed.

**Smithware VBX Controls for Btrieve, version 2.5**

**Patch:** VCBTRV.ZIP

**Problem:** The Validate event for the VAcess data control does not fire. This patch resolves the Validate event bug.

**Problem:** The Refresh method for the VAcess data control is not recognized in Visual Basic 4.0. The VARefresh pseudo-method property was added to solve the problem. Setting this property to any value at run time in VB 4.0 has the same effect as invoking the Refresh method in VB 3.0. This property is not available at design-time, write-only at run time.

**DFD Builder for Windows, version 2.51.008**

**Patch:** WINDDF.ZIP

**Problem:** This patch fixes a problem which could cause inaccuracies in the printing of table definition information.

**From the Tech Support Blotter**

“Do you see a large black cable coming out of the back of your computer and leading to a plug in an electrical outlet in the wall?”  Technical support is a challenging occupation, demanding a high level of creativity, intuition, technical skill, and… well, patience. In an effort to increase mutual appreciation between customer and support representative, we humbly present the following for your consideration.

**Disk failures.**

Fortunately, we have never yet given technical advice which has resulted in physical bodily harm to any of our customers. However, we did receive one support call from a customer who had been confined to the house for three weeks recovering from a prior tech support injury. She had placed a call to the manufacturer after her computer experienced extensive hardware problems following the installation of a replacement hard drive. During the call she was instructed to change some jumper settings within the computer. She got down on the floor to make the changes, and after making them, found she was unable to get back up. She subsequently underwent surgery for a ruptured disk. The Smithware support representative taking the call assured her our advice would involve nothing more hazardous than some light typing, and would endanger neither fixed nor cartilaginous disks.

**No kidding: Is your computer plugged in?**

Often a support representative has to
ask the patently obvious questions. This Socratic method of diagnosing software problems can be frustrating both for the customer and for the support rep, but can be effective if diligently applied. Cross our hearts and hope to die, but we actually had to ask the question that’s become a cliche in tech support departments the world over. The symptoms were not promising. The screen had gone completely black during program execution. Catastrophic software failure? There was no response at all from the system, even after a cold re-boot. Had we unwittingly shipped some new and formidable software virus? Sherlock Holmes once observed that when you have ruled out all of the impossibilities, the remaining explanation which is the least improbable must be the truth. As it turned out, a co-worker had accidentally snagged the power cable to the computer monitor while the caller was away from his desk.

Really bad advice.

A gentleman called wanting to know if Smithware could open a Btrieve file which a disgruntled former employee had encrypted with an owner name. The short answer was “No, we can’t,” but in an effort to be helpful, the technical support representative added, “There are only eight characters in a Btrieve owner name. It probably would not take a program all that long to try every possible combination.”

This was not, however, strictly true. As it turns out if one does the math, it wasn’t even remotely plausible. If the program were to try every eight character combination and permutation of the full 255 character set and made one attempt every second to open the file, it would take roughly 600 billion years to try them all. Limit the combinations and permutations to a 127 character set and the total time to try every possible combination drops to only 2.3 billion years. If the program did not attempt to use anything other than upper and lower case letters, the attempt should take a mere 1.7 million years.

We can only hope that the caller was wiser than the advice given to him. By the time his hacking program found the magic eight characters, probability suggests he would not remember why he wanted to look at the file in the first place. If the gentleman who called is reading this article: We were wrong, and we are sorry.

I have well received the version 2.0 of DDF BUILDER; but my problem is not solved.

Indeed, if I leave to make the WIZARD for the creation of an existent file, that here suitable plant ACCESS during an import.

It is all the more injury that the preceding version functions well up to there.

Here is the message of error:

MSACCESS has provoked a general protection fault in the module MSAJT200.DLL in 0063:15BB

I would like a lot that you rule this problem because it provokes a considerable gene to my clients.

I hold to your disposition the file BTR that puts problem.

Receive, Sir, the insurance of my

We responded asking that the gentleman “Repete en francais, si vous plait,” but perhaps our attempt at French was even less comprehensible to him, for no further information was forthcoming. We respectfully and sentimentally admit to the gentleman, to his clients, and to the considerable gene which this problem would seem to have in some way provoked, that though we have studied the question repeatedly for over a year, we still do not know quite where to begin. We hope that his posterity, or that of his clients, will not think the worse of us for it.

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