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EDITOR'S NOTE:

It's been a tradition since *International Spectrum* magazine was founded in 1984 for IDBMA Inc. chairman Gus Giobbi to express his opinions, views and thoughts to the MultiValue community in the "From the Inside" column. This is the first time in the history of the magazine that he will be turning over his forum to a guest writer. A staunch believer and supporter of all things MultiValue, Giobbi says he is giving this issue's column to Tim Holland, president of mvArchitects, to emphasize the importance of the message that is conveyed here.

An Open Letter to the MultiValue Community



IT SEEMS EVERYONE GRIPES ABOUT the weather, but no one does anything about it. Well, here is your chance to actually do something about it; perhaps your last chance. The weather I'm referring to is the lack of marketing and branding support for our community. We have often referred to our MultiValue databases as the "best kept secret" in the field. I would suggest a truer statement might be that we have been the "most poorly marketed database" around.

This issue immediately came to the forefront at the recent International Spectrum show in San Diego when the seven current database vendors were represented on a panel discussion. The audience of ISVs and end users seemed extremely interested in getting some support from the vendors for common marketing efforts or what I'd call branding and name recognition.

Everyone was tired of trying to sell their products and services and getting the response, "What kind of database? Never heard of it. Why don't you just use Oracle?" This refrain is heard over and over again by the ISVs when selling to their customers and by the IT departments of the end users from their management and board.

The vendor panel seemed highly receptive to the idea of forming an independent branding organization. Gus Giobbi was nominated as the only person who has actually done this. Besides running our only national and international trade show, International Spectrum, for the last 20 years, Gus has twice orchestrated a common marketing effort. First with the Spectrum Manufacturers Association (SMA) in the mid '80s and again in the mid '90s with an advisory panel that came up with the highly successful term "MultiValue," now used by the vast majority of the community to refer to the Pick and Pick-like databases. I was nominated to work with him.

Gus and I put together the thoughts we heard at the show, polled the seven vendors and proposed an initial budget and agenda for the organization. This includes explanatory white papers, success stories, a Web site, market-wide size and impact information, attempts to promote us to the outside world and IT opinion makers such as Gartner, and a college-level training effort. All this branded with a common theme and logo to maximize our visibility and impact, ultimately leading to positive brand recognition for all MultiValue databases.

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An Open Letter to the MultiValue Community

Continued from page 6

We recognized immediately that we needed to invite the ISV's, user groups and end users to help us with this effort, but now we must make a much stronger appeal to you. It has become painfully clear that the vendors will have difficulties funding this effort and setting aside their proprietary interests to make this work. The same political dynamics that plagued SMA apart still exist today.

That said, Gus and I are willing to continue working on this for the good of the community, but we desperately need support. You folks whose business depends on MultiValue, who earn your livelihood from MultiValue, need to help drive this effort by your insistence that your vendors support you. Speak to them today. Tell them it is imperative you receive more support material and branding in your efforts to sell and use their databases. Help us get the word out about the business values and ROI of MultiValue databases. Help us sell your customers and bosses on the value of MultiValue. Otherwise, one day your choices will be limited to one of the RDBMS giants.

Make a commitment TODAY to email gus@intl-spectrum.com with your demands for support in this area and your ideas for success. Gus will forward your input to me and the seven core providers of the MultiValue databases so we can use your ideas and your collective voice to help make this happen. The more they hear from you, the more they will understand your needs. Let's have absolutely everyone ask for their support. If 500 or 1,000 companies want to move forward, we will see real progress. The clear alternative is to give up and start seriously studying SQL.

Sincerely,
Tim Holland,
President, mvArchitects

▶ **TIM HOLLAND** has over 30 years of experience in all levels of computer programming and engineering management. He has a degree in electrical engineering from Illinois Institute of Technology. He has a solid IT background with five years on the professional consulting staff of Peat Marwick Mitchell, six years with one of the first large Pick ISV's, and nine years with Pick Systems as senior VP and board member during its critical growth period.

After Pick Systems, Holland co-founded Concurrent OS Technologies, a Pick licensee and porting house, which was quickly acquired by Sequoia Systems, a major fault-tolerant mainframe PICK hardware vendor. He spent five years with Sequoia as vice president of Pick Development. He recently rejoined Pick Systems as CTO and oversaw the integration of the GA database products and the Omnis object-oriented GUI development tools during the merger that formed Raining Data.

He is also a well-known speaker and currently serves as an independent consultant in the MultiValue community through his firm, mvArchitects. His primary focus is helping end users get the most from their existing IT investments, with an emphasis on quality management systems.

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To streamline operations, Mountainland Supply Company, a Utah-based leading supplier of plumbing and industrial piping products, selected Compass Computer Solutions Inc.'s document and report management systems.

The solution from Compass Computer Solutions, a leading provider of document imaging systems, was selected as the best document imaging product with the most competitive pricing, the company said. Compass' imaging products are state-of-the-art and highly effective when applied to the distribution industry.

According to Compass president John Walsh, "Distributors have a huge need to manage documents. By gaining quick access to original sales orders, picking tickets, bill of ladings, proof of delivery, invoices and any other documents related to a sale, Mountainland will significantly improve their ability to collect on their sales and provide a competitive level of service when their customers are ready to re-order."

Mountainland will streamline the process even further by allowing the system to perform automatic indexing of the documents based on barcodes read from the pick tickets during the scanning process.

"With multiple companies sharing the same computers and database, our challenge was to find a company we were comfortable with, and would get personalized service and attention from," said Lloyd Cottrell of Mountainland Supply. "Unlike other imaging companies we were considering, Compass provided that from the start.

"I am also very impressed with the quality of this product. The programming code is very clean and structured."

Lloyd was also pleasantly surprised at the implementation, which was completed ahead of schedule. "I was comfortable with the software immediately. We initially expected two days of installation and training, but had the system up and running in just one day."

Mountainland Supply Co., which runs UniVerse release 9.6, has purchased Compass Computer Solutions' Compass Document Management, a high-performance document scanning and indexing software solution for MultiValue databases. In addition, Compass Report Management has also been purchased by Mountainland to manage their many client statements and reports.

FOR MORE INFORMATION about Compass Document Management and Compass Report Management, or for a dealer in your area, see the Compass Web site at www.compasscs.com.

Softwise Develops New Software Using AccuTerm 2K2

The Softwise Company, which is celebrating its 20th anniversary serving the MultiValue community, has announced a new product, SoftwiseSoftware, developed with AccuTerm 2K2. Softwise, based outside of Cleveland, Ohio, has been concentrating its efforts on GUI for the last two years, says Softwise's president, Michael Gross. And the culmination of that effort is SoftwiseSoftware, a Windows-based MultiValue financial software package.

"We have been using the AccuTerm 2K2 GUI for almost two years, since it was first introduced," Gross explains. "We had been searching for a way to convert our 'green screen' application, INFORM, to a Windows product. We had tried Visual Basic and found the forms easy to create, but linking it to the MultiValue database seemed awkward and difficult. It was probably our inexperience, and we didn't want to use VB programmers to convert our product. We had used ODBC connections and felt these would not be fast enough or reliable enough for large multiuser environments."

What Softwise needed was a solution that would allow its developers to stay in their comfort zone. "Once we saw the AccuTerm GUI product, we felt it was exactly what we were looking for," Gross says. "It uses a GUI Designer to create the forms and all the Windows links, such as grids, lists, forms, controls, etc., but the database portion is written and driven with PICK/BASIC. It creates and updates the PICK/BASIC code for you and you

only add in the specific custom code you need. This code can be called or pasted in from existing programs with the Accusoft Windows Editor. Most importantly, as Pick programmers, we could easily understand how to do the things we are used to doing for our customers. We feel this is the most significant product introduced for MultiValue we have seen in our 23-plus years working with Pick/MultiValue products.”

Gross says that using AccuTerm 2K2 has given the company's products the “Windows look and feel” that end users want, without its developers having to undergo a learning curve. “AccuTerm 2K2 is a product which seems designed for Pick programmers to use GUI,” he states. “It also is vendor independent. It will run on any flavor of MultiValue and the cost per user, we feel, is significantly less than other products. Right now it comes with the upgrade of AccuTerm, which itself is a very cost-effective product.

“It also moves with the operating system. For example, if you upgrade to Windows XP from Windows 98 or NT, your appli-

cation moves right along with the upgrade. You can also mix GUI with green screen during your conversion. We have our users enter 'GUI' at the main menu and run graphical applications we have developed new or converted. When done, it returns right back to their normal menu. AccuTerm 2K2 Internet version also allows everything to be done on the Internet using a telnet connection to a server which is published on the Internet.”

By using AccuTerm 2K2, Softwise has been able to make its product more competitive. “When we first showed our customers GUI products updating their own data, they said, ‘I don't want any more of that Pick stuff, I want these Windows programs,’” Gross recounts. “We tried to tell them it was ‘MultiValue’ but they didn't really care to listen. What happens now is our product is seen like all other Windows products and competes at the same level. End users real-



MICHAEL GROSS,
president of The
Softwise Co., says
using AccuTerm 2K2
to take the company's
products from “green
screen” to GUI was
an easy route.

ly don't care what the database is; they only want a Windows product that is current and easy to use and understand. The response has exceeded our expectations.”

In fact, Softwise is so pleased with its AccuTerm 2K2 experience that it is offering help in converting existing applications to GUI using AccuTerm and two-day training courses on AccuTerm 2K2 for MultiValue programmers who want to convert their applications to GUI using AccuTerm 2K2.

“We now feel that we are positioned at the front,” Gross states. “We took a product which was dying and not being considered anymore by end users, even though it was sound, and leapfrogged to today's current products. We now know we will stay there.” is

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In my humble opinion...it feels good when one's predictions come true.

Especially considering my record: buying stock in both Global Crossing and Raining Data. Fortunately some of the pain goes away when other predictions come to pass.

In 1984, the computer manufacturers like IBM, DEC, TI, and Compaq ruled the stock market. Heedless of common opinion (and possibly good sense) Jon Sisk and I published our prediction that the hot stocks in the data processing industry would soon be the software firms. (*Exploring The Pick Operating System*, 1st ed, page 183, 2nd ed, page 287). Today the bellwether tech stocks are all software: Microsoft, Oracle, and Computer Associates, while Hewlett Packard and Compaq are a family feud. Hardware margins have plummeted like Oscar winners' necklines. So much so that computers are practically free. Perhaps you saw the advertisements where a person buying public network access gets a free PC? (These days when one negotiates for an application system, it just makes sense to ask for a free server to run it. It makes even better sense to give it to the buyer. That way they'll be using the right stuff, and in the long run everybody wins.) In any case, today's \$200 server from the computer shop in my neighborhood is enough to run a small company, and that kind of price certainly constitutes commodity status. You usually spend more for the paper for the printer. So commodity hardware was the first prediction that seems to have come true.

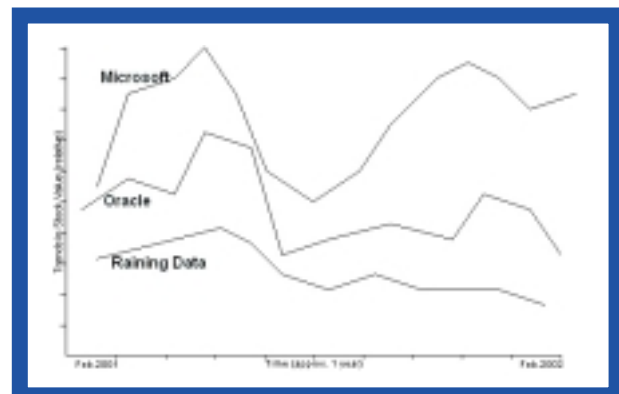
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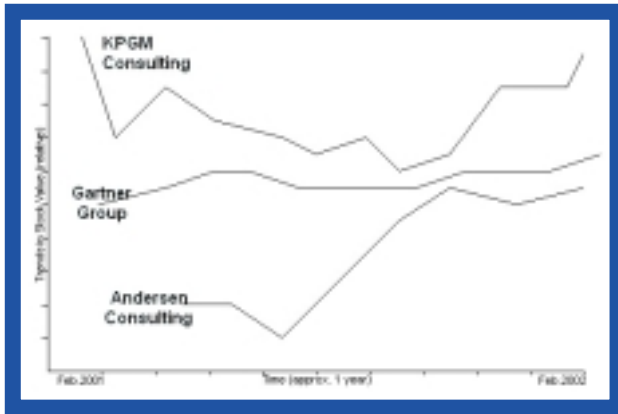
Well, now for the second prediction: commodity software isn't very far away. While at Raining Data just over a year ago, I made another prediction. "Software is just a means to get in the door," I said, "and Services is the next big ticket." Feel free to write me if you've already heard this, but apparently the big companies were listening. (Although probably not to me.)

All Hail. Software is Dead. Long Live the New Services King.

Note: On Wednesday, February 6, 2002, it was announced that Deloitte Consulting is separating from Deloitte Touche Tohmatsu and becoming an independent profit center. Why? Take a look at this totally unscientific collection of lines, representing the trend in the relative values of Microsoft, Oracle, and Raining Data:



Now check out this equally unscientific collection of lines, representing the trend in the values of Gartner Group, KPMG Consulting, and even beleaguered Andersen Consulting:



While it's been a rocky year, I see the beginnings of a clear trend.

Now while software hasn't exactly become a commodity yet, it appears that is where it's headed. First the obvious: Microsoft literally owns the desktop market, now with a government-sanctioned virtual monopoly status. Naturally, the Colossus of the Northwest wants to extend its dominance to the user's server, especially as client/server apps morph into the more efficient server-centric apps. So Microsoft SQL Server with 10 user seats costs under \$1500. (<http://www.microsoft.com/sql/howtobuy/production.asp>) Notice that's less than the cost of 10 MultiValue seats. Even with the price of the operating system, that troublesome additional piece of middleware that your average MV user has to pay still more to get. (Yes, there's always Linux, but is anyone going to argue that installing and using it is totally free?)

In any case, this new economics makes it tough to argue for an MV database. What's it all mean, Alfie? The long-predicted end of an era may be upon us: MultiValue is no longer the cheap-ass alternative, the low-ball proposal, no-effort sale. Those organizations that used to buy MultiValue, those that chose to act like they can't really afford to purchase industrial-strength systems and services, will now use Microsoft. When that's true, then it's "Good Bye Database Market." Oracle at the top, and Microsoft at the bottom, overlapping in the middle.

And now Microsoft has just raised the ante again, by bundling Analysis Services, their data warehouse OLAP and data mining software, into SQL Server 2000. (ref: [\[www.microsoft.com/SQL/evaluation/compare/analysiservicesWP.asp\]\(http://www.microsoft.com/SQL/evaluation/compare/analysiservicesWP.asp\)\)](http://</p>
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Pretty valuable stuff, in the right hands. So? The point is that Microsoft is:

- 1) Continuing to stake out the high ground to be the leading software supplier on both client and server, and
- 2) Threatening the industry that provides OLAP data mining software, since every savvy user that I know really just wants to do his or her analysis on a local OLAP cube with a spreadsheet as much like Excel as possible, and
- 3) Paving the way for the next Big Thing: Professional Services

Now, no one would suggest that Microsoft Analysis Services is the equal of Business Objects or Brio Query. These programs are a delight to use, turning spreadsheets into performance art, and lending beauty to the term "business intelligence."

However, Microsoft's bundling strategy for Analysis Services is more than a simple challenge to the data warehouse software companies. Because, as discussed in earlier articles, getting the data into the data warehouse is not rocket science. Moreover, once the data is in there, the maintenance and sustenance is mostly just good practice (even with last month's recipe for The Perpetual Motion Transformation Engine. Dontcha just love that silly name?). The key product of the 21st century, the next hot ticket, the new up-and-comer in the stock market, is: Knowing What To Do. Let me explain:

The big-ticket, breakthrough technology, the sizzle and the steak, is getting business intelligence knowledge out, or "analytics." Up to now, it was not unusual to see added-layer prices of \$500 to \$3000 per seat for the software to do this job. But how are you going to get people to spend that much, when they can get "good-enough" data mining and graphical presentation software bundled right into their database?

The answer is: you won't. The same cost-basis marketing strategy that made good old "good-enough" SQL Server into the de facto standard (which it is) will ultimately tear down the high prices of BrioQuery, Business Objects, and even the good old MultiValue data mining tools.

Especially since last month: Oracle met the Microsoft challenge by offering its own integrated data mining and OLAP capabilities in Oracle9i. "Oracle9i OLAP...delivers scalable analytical processing by bringing Online Analytical Processing into the database and extending SQL with new analytic capabilities." (http://www.oracle.com/ip/dep/otn/database/oracle9i/index.html?bi_olap.html)

When the computer is a commodity, with no margin left, then all sufficiently developed applications begin to blur and become the same, as prices competitively erode and value is no longer a distinguishing feature. It is at this point that the big boys recognize that it's time to add data warehousing and business analytics to your application, whether the app is purchased or home-grown. Because...just like the doctor that charges \$300 an hour (not for the work, but rather for knowing where to cut), it takes knowledgeable Services to actually get nuggets of knowledge out of those tons of data.

Not surprisingly, it will take similar services to keep MultiValue alive. The final stage for MV is the same as in all other mature industries: "Know-How" is the only thing left that companies will spend the "Big Bucks" to get.

So it's time to "get on board." It's time to "add value." Remember you heard it here first, when MITS is bundled with UniVerse, and MvQuery is put into UniData, and something similar is added to D3. Until then, the VARs clearly need to bundle such software with the applications, at any cost, in order to sell their services to help customers get the most from their own data, and the VARs to get more from their customers. It's more than a trend: it's the predictable truth.

It's a great comfort when your predications seem to be coming true. At least in this one area, the future is clear: don't let your kiddies grow up to be cowboys, or programmers, or computer dealers. Instead, make them into business analysts, system integrators, and project managers. Teach them the value of being teachers. Show them support for their support specialists. Speak kindly of consultants, for the day when they get good enough or gray enough. Because the era of the technology Services Provider is upon them. is

IMHO =/srv

STEVE VANARSDALE is an MV industry analyst, writing for *International Spectrum* and various research and advisory companies in Chicago. Criticisms, complaints, or commissions, always welcome at steve@vanarsdale.com or www.mvconsultants.com

The Origin of the Technology

BY GUS GIOBBI

Long before MultiValue, there was Pick. Begun as a complete computer operating system which emanated from the design of a data management system at TRW Systems in the 1960s for tracking military rocket engine parts, the system was later adapted to track the maintenance and repair of Cheyenne helicopters.

The uniqueness of this project was that the developers were told to create a database with an English-like retrieval language to be used on a computer, which was yet to be specified.

Don Nelson, the original project manager, initially titled the system "Parts Acquisition Data System" (PADS). Richard (Dick) Pick, for whom the system was eventually named, was hired in 1965 to work with Nelson on the project.

In the course of its somewhat complex and colorful evolution, the first specification was released under the name of "Generalized Information Retrieval Language and System" (GIRLS). Then later it was renamed "General Information Management" (GIM), and still later dubbed "Integrated Technical Data System" (ITDS) when the U.S. Army took over the project in 1969 and implemented it on an IBM mainframe to support the Cheyenne helicopter. In that year, the Army was quoted as saying in a published report that ITDS was "by far the finest generalized information management system in the country."

No real commercial use was made of GIM, however, which enabled Dick Pick to continue to research on his own. Once the project was completed, the operating system was deemed to be in the public domain because it had been developed under the auspices of the U.S. Department of Defense. Dick Pick's development continued while he was working for General Analytics Corporation for a period beginning in May 1969. The previously named GIM or ITDS became known as Reactive

Information System (RIS), and it was while he was at General Analytics that RIS was first ported to a minicomputer, the Microdata 800 CPU.

General Analytics filed for bankruptcy in 1970, and Dick Pick continued independently to mold the system to the Microdata 800. He now called the system "ACCESS." In June 1972, Dick Pick founded Richard Pick & Associates and continued his efforts, switching to the Microdata 1600 CPU and naming the overall system "DM512" (comprised of ACCESS software, firmware, and the Microdata 1600). Old-time insiders claim the "DM" stood for "Dick's Machine" and the 512 referred to the number of bytes in a logical disk frame.

In 1974, Microdata acquired marketing rights from Dick Pick, and the system was once again renamed "REALITY" and the retrieval language was called "ENGLISH." From 1970 to 1978, the system was the exclusive property of Microdata. During this period, Microdata marketed its new product through its "Dealer" network (see "History of MultiValue," Jan./Feb. 2002), achieving a moderate amount of success. is

NEXT ISSUE: Dick Pick and

Microdata feud — Pick sets off on his own to license his system to the world.

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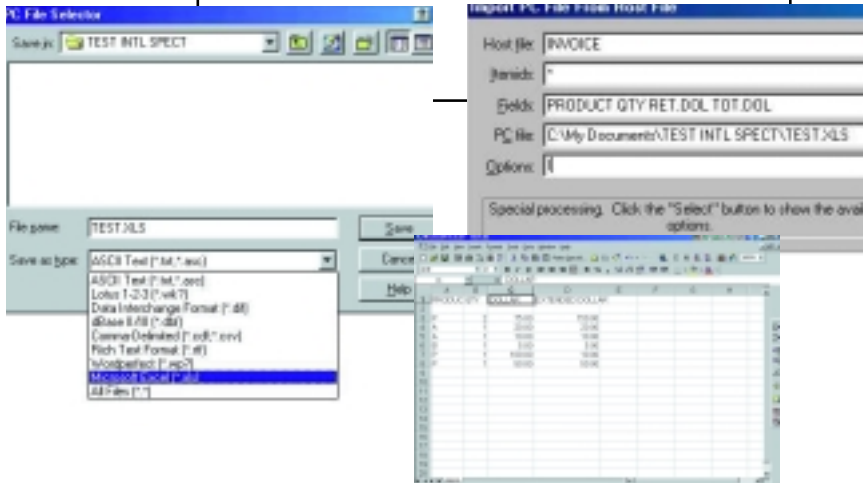
Letters to the Editor

Re: 'Creating Excel Files With MultiValue Data' (March/April 2002)

I am amazed that Mr. Rector went to all that trouble. He uses ViaDuct as his example. Did he not try Help? Did he not ever go to "Select" when finding a path for his test file? Had he gotten to the "File Selector" window he would have discovered that ViaDuct provides a list of file types, among them Excel. One does not even have to get to the File Selector window to use the .xls extension. The result is an Excel Workbook with headings with format conversions (decimals inserted into numbers, dates converted to Excel dates and formatted etc). The column widths are default, but a quick select all columns, double click on a separation between the columns fixes that. If data needs to be repeated to fill single value attributes to match multivalues, that is supported. So why create something when the tool already has the functionality? Below is the simple way. Only thing missing is the large font "Invoice Example." There are probably several simple ways to do this too.

- *Wray B. Buck*

PAGE 1		INVOICE		
INVOICE	PRODUCT	QTY	DOLLAR	EXTENDED DOLLAR
1	P	1	100.00	10.00
2	P	1	50.00	50.00
3	P	2	75.00	150.00
4	A	1	20.00	20.00
5	A	1	10.00	10.00
6	B	1	5.00	5.00



The Author Responds

Wray, thank you for your comments. Yes, I did know that ViaDuct makes it easy to create simple spreadsheets. I've used it quite often and should have mentioned it in my article.

There are a few shortcomings of this feature that can cause problems though. For one, if you need to include formulas in your spreadsheet, then that feature does not work. The formula is converted into actual data instead of the formula that was required.

ViaDuct also converts your data for you, which is nice in most cases, but at times it will convert the data incorrectly. If you have data that is both alpha and numeric, that needs to be right-justified sorted, the data is converted to left-justified regardless. You have to change the information in each cell, instead of a simple column change.

I wouldn't discourage people from using the Excel export of ViaDuct since in most cases it works the best of all the tools I've seen.

Nathan Rector

Readers Respond to Gus Giobbi's April Fool's Joke (March/April 2002)

So Gus, how long will you
be sleeping on the couch?

- *Phil Gerber*
Eversoft Solutions

I found the study you mentioned to be very interesting. This study may force a law about giving too much info to one's husband. It reinforces the old saying, "What they don't know, won't hurt them." Yeah ... that's right ... if my husband says I forgot to tell him something (something I may have bought while out shopping), I'll just tell him I wanted to save him some storage space and prolong his life.

- *Barb Anderson*
St. Croix Press

QuadraMed Affinity System and InterSystems' CACHE Speed HIS Rollout Time at Genesis Healthcare

► Goes Live 25 Percent Faster than Expected

InterSystems Corporation announced that Genesis HealthCare System has gone live with Web-based QuadraMed Affinity applications built on CACHE, the leading database in healthcare.

Genesis, an integrated network of 2,000 healthcare professionals, serves more than a quarter million people in southeastern Ohio. Faced with the need to replace a legacy Health Information System (HIS) that had become unacceptably slow, Genesis evaluated multiple HIS solutions. Product functionality, performance, and scalability were key selection criteria during the six-month search, according to Ed Romito, CIO at Genesis.

"The sophisticated, comprehensive set of applications offered by QuadraMed Affinity are key to fulfilling current needs as well as supporting our organizational plans for the future," he says. "This rich functionality is enabled by the high performance, scalability, and reliability delivered by the underlying CACHE database."

► Fast, Smooth Installation Sets New Record

The implementation, which required converting 20 years of data to the QuadraMed Affinity environment and deploying a series of QuadraMed Affinity financial applications, was completed in nine months. "Our experience with HIS installs is that they typically take 12 to 18 months," Romito says. "Clearly, the CACHE technology helped make the compressed install possible. Overall, this is the smoothest install I've ever been through."

Genesis went live with the first QuadraMed Affinity applications including Patient Registration, Patient Accounting, Clinical Results and Contract Management in January 2002. "Phase one of the rollout involved replacing these core applications," Romito explains. "During phase two, we'll add QuadraMed Affinity's Clinician Access application and follow that with Nursing Documentation, with Web front-ends on the new applications."

The QuadraMed Affinity applications are running on a 600-PC network serving information users in two locations. Since going live, the feedback from the user population has been very positive, according to Romito. "They've gone from a legacy system where day-end processing took six hours to a QuadraMed Affinity and CACHE-based infrastructure, where that same processing is complete within about an hour," he says. "We have a system that users love and backend database technology that IT loves. It doesn't get much better."

Currently supporting about 300 concurrent users, the combination of QuadraMed Affinity's open systems architecture and the highly scalable CACHE database provides the flexibility needed to manage a growing information user base and new IT initiatives including wireless applications.

"Healthcare is one field in which the term 'mission-critical' is absolutely accurate," says Paul Grabscheid, InterSystems vice president of Strategic Planning. "CACHE is optimized to deliver the information healthcare professionals need as rapidly as possible. Our partnership with QuadraMed at Genesis illustrates the success of this approach now and for the future."

Headquartered in Cambridge, Mass., InterSystems Corporation, is the leading provider of high performance database systems for Web applications, with over four million users worldwide. InterSystems' flagship product, CACHE, is a post-relational database with a multidimensional data and application server offering ultra-fast and massively scalable objects and SQL.

Zumasys Names Luke Bucklin Director of Internet Sales

Industry Executive to Lead Web/Portal Initia- tive Using MvInternet and Citrix NFuse Elite

Zumasys Inc., a national solutions integrator and Gold member of the Citrix Solutions Network, has appointed Luke Bucklin as Director of Internet Sales.

In this role, Bucklin is responsible for developing and implementing Web integration and portal solutions for Zumasys' customers. With more than 15 years of sales and technical experience, Bucklin will focus on the Zumasys installed base of more than 10,000 database support users in the United States, Mexico and Canada. Based in Minneapolis, Bucklin will report directly to Paul Giobbi, president of Zumasys.

"We are excited to have Luke join our team and provide our customers with the software solutions they need to rejuvenate their systems," Giobbi said. "Zumasys is well positioned to serve companies seeking improved IT productivity and return on investment. Given his track record, proven technical abilities and sales acumen, we are confident that Luke will harness the potential of our customers and extend our reach in the North American marketplace."

Prior to joining Zumasys, Bucklin was vice president for Infinetivity, a Minnesota-based ISP, where he directed professional services for its enterprise customers. Previously, Bucklin was president of Verity Data, a developer of software solutions for the automotive industry, which he sold to Infinetivity in 1999. Bucklin is the author of Zumasys' CRM WebTrack software and is an IBM RS/6000 Certified Sales Specialist.

Citrix Nfuse Elite is the simple, powerful access portal server that is making the virtual workplace real. With Citrix NFuse Elite, users are free to work wherever they want - in the office, at home or on the road - using any device they choose. Using a browser interface, vital content and applications can be aggregated and personalized so users have everything they need to do their daily jobs - from anywhere at any time. For more information, visit www.zumasys.com/nfuse.htm.

MvInternet helps legacy users connect their database to the World Wide Web using their own BASIC programs. With MvInternet, users can integrate real-time data with images, animations, Flash, JavaScript, DHTML, XML, etc. Any tools available for developing Web pages can be used with MvInternet. MvInternet is compatible with databases from Raining Data, IBM, Basis, jBASE and more. For more information, visit www.zumasys.com/mvinternet.htm.

Raining Data Announces Corporate Changes

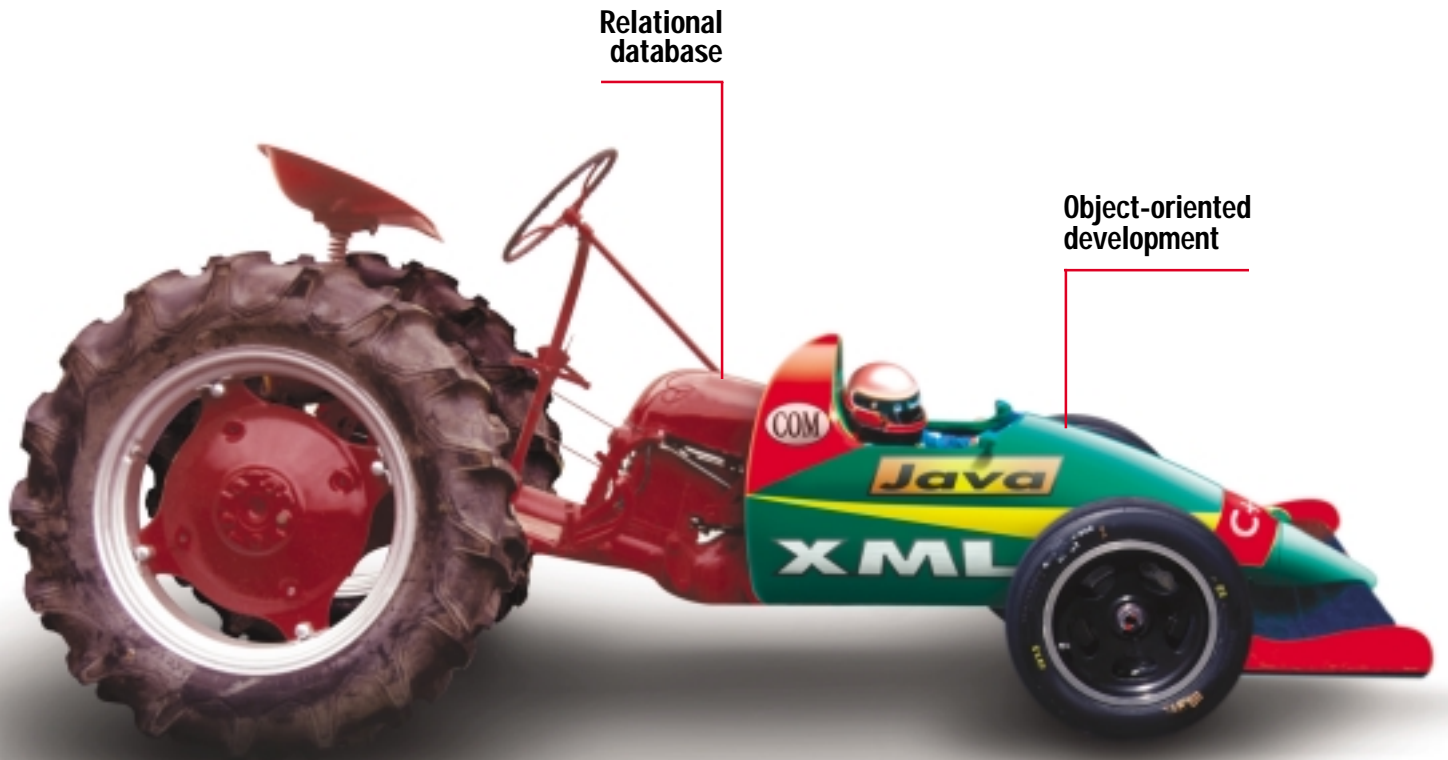
Raining Data Corp.'s board of directors announced the appointment of Brian C. Bezdek as vice president of Finance, corporate controller and secretary, replacing Scott Anderson, the company's former vice president of Finance. Anderson left Raining Data to pursue other business opportunities.

Bezdek, 31, joins Raining Data from Activision Inc., a leading worldwide publisher, developer and distributor of video games and interactive entertainment products, where he spent the last six years in various corporate finance roles, most recently as vice president of Finance. During his time at Activision,

Bezdek experienced the management of rapid revenue growth from \$86 million in FY 1997 to \$620 million in FY 2001. Bezdek, a CPA and CCM, was previously in public accounting.

"We are very pleased to have Brian on board at Raining

Data," said Carlton H. Baab, president and CEO. "His background and experience with growth oriented and innovative organizations will be very beneficial to Raining Data's future."



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An Independent
Review of the

MultiValue Database Industry

A number of people have asked me why I decided to perform an independent review of our industry. I'd like to say it was totally for the altruistic and noble purpose of improving and understanding our industry. It was actually for basic and fundamental business reasons. My clients were in an emotionally reactive state ranging from concern to outright panic about the organizational changes occurring in several MultiValue database companies. At Modular, we share these concerns. We've been in business for 16 years, focused on application software value-add for the MultiValue database platform. While we have grown and diversified our services over the years, 60 percent of our revenue is still directly linked to MultiValue applications. My concern regarding the technological investment we should be making in our future began to gnaw at me.

Our customers have been asking me simple, direct and hard-to-answer questions. They want to know if their MultiValue database products are going to be "obsolete" or part of an "end of life" program. Will their particular MultiValue vendor go out of business; downsize to a point where service is difficult to access; slow down or cease new feature development. Are there other viable MultiValue solutions? Should they be looking at Oracle or SQL Server databases? As I pondered these questions, I began to consider these recent events, and not related in chronological order.

◆ Pick Systems struggled through the changes created by Dick Pick's death, and ultimately merged with Omnis to become Raining Data Corporation. The future of the Pick legacy finally looked to be enthusiastically focused on moving

forward with comprehensive sales and development efforts on D3, mvBase, mvEnterprise and a convergence database product. Layoffs and organizational changes in Fall 2001 have left us wondering how they can survive without a sales organization focused on selling database product.

◆ General Automation ceased to exist; although the GA database products we knew and relied upon had survived through acquisition by Raining Data Corporation. The distribution relationship between General Automation and Northgate Information Solutions for the Reality database appeared to dissolve, leaving Reality and Microdata customers temporarily confused and wondering if they had been abandoned. ►

BY LISA LEVSEN CORBETT
President of Modular Information Systems

◆ VMark merged with Unidata and created Ardent Software which we considered a great organization, and I have always personally thought that it was wonderful that they informally branded the U2 databases in a way that made me correlate my favorite musical group with two great MultiValue database implementations.

◆ The Ardent Software acquisition by Informix created mass confusion and speculation amongst our clients. The unofficial assumption was that Informix had wanted to own the DataStage product family, and had taken the U2 product family for its cash rich annual sales, but were not committed to the U2 products for more than five years.

◆ Just in time to create industry whiplash, IBM acquired Informix. The U2 product family annual revenue, while profitable, is just a drop in the bucket in the overall IBM revenue stream. It's common knowledge that IBM seeks to have its DB2 data-

base become the database industry leader. What will happen to the U2 databases? Indeed, customers wondered why on earth did IBM wish to retain the U2 databases through the acquisition process?

◆ Northgate Information Systems appears on the scene and begins to tell the Reality success story from Europe, and present comprehensive value-add solutions that make us surprised we haven't heard of their success before.

◆ Revelation Technologies reappears out of nowhere and all of a sudden Advanced Revelation, OpenInsight and Java OpenInsight are options again.

◆ jBASE wrote a whole new MultiValue database called jBASE that had innovative new concepts, but customers wondered if they could trust the technology and implementation. Early looks at jBASE demonstrated a fragile product, but the engineering organization held on, and kept working away. What was going on in their organization now?

A Few Facts As We See Them The Multi-Value industry has a tradition of brilliant engineering. The database model is nimble, efficient in disk space utilization, and has excellent performance. It requires less memory. It enabled software developers to create application software rapidly and inexpensively. In the gap between mainframes and the desktop, it allowed the creation of application software solutions that appealed both in functionality and price to the small- to medium-sized business owner; businesses that were not in the Fortune 500, although we snagged a couple of those along the way.

A new technological era introduced the personal computer, the Microsoft and Apple desktops, and made disk, memory, and performance inexpensive. User presentation layers, interoperability, and open data exchange became necessary to meet business requirements.

The MultiValue database manufacturers and software developers find themselves once again faced with the challenge of re-

Continues on page 22

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An Independent Review of the MultiValue Database Industry

Continued from page 21

inventing their products, organizations, tools, and ultimately their value to end users and Value Added Resellers.

What Did We Look For? Well, we wanted the truth. Even if it was bad news. We want our business and our customers to be prepared. Not only to survive, but to excel at the services and technology we offer. What technology should we invest in? Who can we depend on? Who are our leaders and partners? Who can we trust?

A Tale of Two Surveys We decided to collect information from each of the MultiValue database vendors. We created two surveys: financial and marketing; and product functionality. We sent them to the following database vendors seeking information on their databases:

IBM: UniVerse and UniData

jBASE Software: jBASE

Northgate Information Solutions:
Reality

Raining Data Corporation: D3,
mvBase, mvEnterprise

Revelation Software: Advanced
Revelation and OpenInsight

Via Systems: UniVision

The survey questions were prepared by a team of eight professional consultants and Modular staff. Most of the team was comprised of seasoned MultiValue professionals. Two of the team members have little to non-existent MultiValue experience for balance.

The first pass at this effort was limited in scope due to the presentation at the February 2002 International Spectrum Conference. The results of our efforts are published in a White Paper entitled "MultiValue Database Features, Functionality and Comparisons Report," which can be found at www.miscorp.com/whitepapers.asp.

The MultiValue industry has a tradition of brilliant engineering. The database model is nimble, efficient in disk space utilization, and has excellent performance.

The Databases Take a Test The team also evaluated each of the databases independently. Windows NT was selected as the platform. Selection of this platform removed mvEnterprise from our evaluation because it only operates on the IBM AIX pSeries platform. Future plans will allow us to revisit this database specifically. Our evaluation included the following basic criterion:

- ◆ Database installation: time, ease, disk space, path, documentation, authorization, technical support, experience required
- ◆ Migration of a Pick flavored account
- ◆ Successful program compilation
- ◆ Successful program execution
- ◆ Setup and test of tape and printer peripherals
- ◆ Setup and test of user logins

The composite scoring for each database is noted in the following table. Please note that the results for mvBase and Advanced Revelation are incomplete due to test mate-

Continues on page 24

Vendor Name	Database Name	Version Number	Composite Score	Test Exited Successfully
IBM	UniData	5.2.9/NT	8.1	✓
IBM	UniVerse	9.6.1.2/NT	9	✓
jBASE	jBASE	3.4.1/NT	8.6	✓
Northgate Information Solutions	Reality	9/NT	7.8	✓
Raining Data Corporation	D3	7.2.0/NT	8.7	✓
Raining Data Corporation	mvBase	2.0 Beta/NT	8.7 * Incomplete	
Revelation Software	OpenInsight	4.0.1/NT	9.5 * Incomplete	
Via Systems	UniVision	7.0.6/NT	8.4	✓

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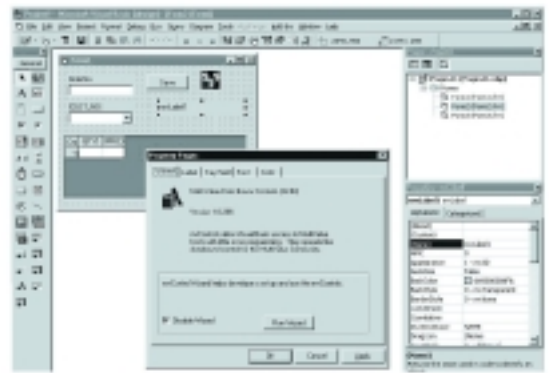
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An Independent Review of the MultiValue Database Industry

Continued from page 22

rials that were not available. Complete testing details can be found in the White Paper. As you can see, the vendors received overall high technical marks, and should go to the head of the class.

Follow the Money is what my husband Bruce Corbett always tells me to do when evaluating the heart and mind of any organization. Because he's our chief financial officer, and a really smart guy, that's what we did. We requested financial information because we think that financial stability and working capital are primary success components to software development and engineering entities. Without adequate resources, engineering cannot continue, and products become obsolete.

We asked each vendor to answer these questions:

- ◆ Division gross revenue for fiscal year 2000 and 2001
- ◆ Division net profits for fiscal year 2000 and 2001
- ◆ Fiscal year 2000 and 2001 sales directly tied to MV databases
- ◆ Percent of revenue tied to database, maintenance & professional services
- ◆ Information related to financial security of their organization

We received some pretty disparate financial information. Some vendors are public companies and denied information because they are publicly traded. Other publicly traded companies provided answers to all of our financial questions. With the excep-

tion of Raining Data Corporation, all of the MultiValue database vendors indicate that they are profitable. A few notes regarding the financial responses we received.

◆ We are troubled and concerned by the lack of response to most of the financial and marketing questions by Raining Data Corporation. Modular contacted Raining Data Corporation numerous times requesting additional information. Initially, out of 45 questions, they only answered 15. Additional information provided has brought the number of answers up to 22 questions, which is still less than half. The referral to the SEC Web site (www.sec.gov) to view their financial statements showed that Raining Data Corporation was not prof-

itable year to date as of September 30, 2001. The SEC Web site also had notification that Raining Data Corporation had terminated Grant Thornton LLP and engaged KPMG LLP as its new independent auditor, and is asking KPMG LLP to re-audit the financial statements for the two fiscal years ending March 31, 2000 and 2001. On an encouraging note, Raining Data reports that it was operationally profitable for the third fiscal quarter of 2002.

◆ We are disappointed that IBM is unable to provide divisional financial revenue information, but respect the fact that they have a corporate policy regarding the sharing of divisional financial information. (Apparently the policy is to NOT share Divisional Financial Statements.) It is our professional opinion that IBM has strong financial resources.

Only one of the MultiValue database vendors is privately held: Revelation Software. The remaining companies are publicly traded on four different exchanges throughout the world. Three of them have parent companies.

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Company Name	Parent Company	Public or Private	Private Stock	Profitable/2001 Gross Revenue
IBM		Public	NYSE:IBM	Yes/Undisclosed
jBASE	TEMENOS	Public	SWX:TEMN	Yes/\$7.84M (sans TEMENOS)
Northgate Information Solutions		Public	London	Yes/159M
Raining Data Corporation		Public	NASDAQ	No/2001 Q1 6M 2001 Q2 5M
Revelation Software	Win Win Solutions, Inc.	Private		Yes/Undisclosed
Via Systems	Electronic Data Processing, Plc.	Public	London	Yes/15.6M

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**Pablo Pazmino, App Dev Mgr,
Vitamin Shoppe Industries**

"The choice was clear once we evaluated the options that were available in the marketplace. The fact that ViaODBC handles MultiValues properly and has the ability to display user friendly column names were both key in our evaluation."

Jeff Bender, COO Harris Computer Systems

Just thought I would let you know about a project I have been working on that has used the (ViaODBC) software. Payroll Budgeting info to an EXCEL spreadsheet. It works really great. By using the software, I have avoided writing a huge program to generate the data."

David Calvert, IT dir, Oklahoma City Housing Authority

"We immediately saw the benefit of easily moving data from our Unidata files into commonly used Windows applications. And, I have been particularly impressed with the improvements that Better Results has effected in the product since we became a customer."

**Chris Schiffhauer, Dayton Metropolitan
Housing Authority**

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An Independent Review of the MultiValue Database Industry

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Are We Singing to the Choir?

We wanted to know who the target market was for each database vendor. All of the vendors indicated that application software developers and value added resellers (VARs) were their primary market focus. Only jBASE and Revelation Software indicated that they were marketing and advertising outside of the MultiValue industry. This leads us to believe that most of the MultiValue database vendors are marketing to the same 700 or so VARs. IBM tells us they are co-marketing with their VARs. How does that effort develop new VARs? What kinds of strategies are being deployed to develop new VARs and software developers? The training schedule from any of the vendors is limited and expensive. MultiValue isn't taught in North American universities or colleges, so where will new developers learn about it? Are we cannibalizing the market by moving our end users from one MultiValue platform to another? Certainly some of this is true, but continued marketing efforts focused only on this goal will lead to industry death.

A MultiValue Census. We asked a pretty simple question. How many sites or installations do you have, and how many licenses or end user seats do you have? We asked the question a couple of different ways. Ideally we wanted to know by hardware platform and by industry sector. After all, wouldn't it be important to know who your customers were? Most of the MultiValue database vendors don't know or aren't telling. Either way we weren't impressed. We did receive overall end user seat numbers from every vendor except Raining Data Corporation, whom we've asked for these numbers at least eight times. I've been told the numbers are on their Web site, but couldn't find them there.

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Company	Sites or Installations	Licenses or End User Seats
IBM U2	65,000	4,000,000
jBASE	3,500	130,000
Northgate		300,000
Raining Data	Undisclosed	Undisclosed
Revelation	49,425	1,405,000
Via Systems	800	18,800
Total	118,725	5,853,800

The Alice in Wonderland Question: Are We Growing Bigger or Shrinking?

We asked how many new MultiValue database licenses were sold in 2000 and 2001 by platform. While we didn't get the platform answer from anyone except Revelation Software, we did get the following answers from jBASE, Northgate Information Solutions and Revelation Software. We're assuming the other companies sold database licenses last year, but are having difficulty quantifying them.

Company	Licenses sold in 2001
jBASE	3,000
Northgate	26,000
Revelation	13,441

This question is really at the heart of our original interest regarding whether or not the MultiValue industry is going to survive. We really want to know whether or not VARs are writing and selling new software using MultiValue databases.

What Did We Learn? This entire process left us with more questions than answers. To find

out if we are cannibalizing ourselves will require a survey that has to go out to MultiValue VARs and application software developers. If the majority of the new licenses being sold are based upon re-hosting and migrating applications, then we are cannibalizing ourselves. We expect to contact the VARs with a survey in the third quarter of 2002.

The question of which industry sectors are growing or shrinking will need to be answered by the VARs, as the MultiValue database companies (with the exception of IBM) do not know the answers to these questions. Ultimately the answer to the question about whether or not new software is being written must also come from VARs and end users. Northgate Information Solutions is the only MultiValue database vendor we know of who is writing and reselling application software using the MV database. If you are a VAR or an end user that would like to participate in a survey regarding your development efforts with MultiValue databases, please e-mail me at lcorbett@miscorp.com.

Product End-of-Life or Obsolescence: IBM?

The IBM U2 databases represent 68 percent of the known database licenses. We have to specify "known," as we are missing the Raining Data Corporation license count. One of our primary concerns was whether or not the MultiValue database industry would survive if IBM decided to end-of-life the U2 databases. After all, DB2 is the IBM proclaimed database of choice. IBM keeps telling us that they are committed to the U2 databases. One thing we know is that if IBM does decide to end-of-life the U2 databases, they will support them forever. Product support is a core part of the IBM corporate philosophy. But the industry would be harmed. Many end users would be forced to re-evaluate their software and platforms, and that decision process could lead end users to non-MultiValue database solutions. We believe that this could lead to a significant loss of MultiValue database market share.

We were able to discern through our test of the MultiValue databases that very viable MultiValue database options are available. We believe that the MultiValue industry would be seriously harmed, but could survive. Please note that VAR re-engineering cost would be a concern in this scenario. Again, please note, we have no statement from IBM that indicates their intention to end-of-life any of the U2 products. We are just considering the ramifications and risk associated with such a decision.

Product End-of-Life or Obsolescence: Non-IBM U2 Databases? After consideration of the former scenario, this is easier to contemplate. There would be some minimal loss of MultiValue database market share. The industry would be harmed, but could survive. VAR re-engineering cost is still a concern. Very good MultiValue database options continue to be available.

In Conclusion. So where does this leave us? In 1985 when our chairman Bruce Corbett founded our firm, he thought we had five good years with MultiValue solutions. It's 2002, and I now head our firm. I think we've got five good years ahead in MultiValue solutions.

You can find our White Paper, "MultiValue Database Features, Functionality, and Comparisons Report," at www.miscorp.com/whitepapers.asp. If you wish to join a MultiValue discussion group specific to these topics, please direct your browser to www.miscorp.com/Mlists.asp. Comments and suggestions are gratefully accepted.

Modular Information Systems self-funded this effort, and will continue to fund our additional research. It's been expensive, with a cost of approximately \$30,000 to date. We want to be independent, and even though some of the MultiValue database vendors graciously offered financial support, we've declined. If you find the White Paper useful and choose to contribute to the effort, we ask that you please send us \$10.00. is

LISA LEVSEN CORBETT is the president of Modular Information Systems, and has experienced over 15 years as a MultiValue consulting professional. Modular Information Systems provides information technology professional services with a focus on integrity, professionalism and experience. Lisa can be reached at lcorbett@miscorp.com.

Modular Information Systems' address is 2303 Camino Ramon, Suite 210, San Ramon, California 94583-1389

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Unlock the POWER of Your MultiValue Database

OVER THE LAST FEW YEARS , the MultiValue database has become more powerful and the possible uses for it have grown. Most of us look at the MVDBMS as purely a business database. Which makes sense because that's how we started in the business.

Now our databases and companies have grown to the point where management is constantly asking if we are locking ourselves into a data structure. A lot of these questions stem from the older programs using "green screen" technology, but not all of them. Management is also seeing all these other technologies like Office, Web, email, PDAs, data mining, and so on.

As our MVDBMS vendors continue to expand their products, and third-party vendors create more add-ins, we are given more opportunity to connect and work with these "new" technologies that everyone wants.

WORLD WIDE WEB

Just about everyone in the market, if not everyone that reads *Spectrum*, knows that they can add Web technologies to their database. We have tons of data that can be used by our customers, and the Web is the easiest method to supply it. Not only does this mean we can sell directly to new markets, but we can also supply constantly changing technical information and pricing changes to our customers.

Many companies are still not taking full advantage of the WWW for their customers. I've run across many manufacturing companies that still only supply

We have tons of data that can be used by our customers, and the Web is the easiest method to supply it.

but by not supplying order tracking or current account information, customers have to call and bother someone when they real-

price updates via price books. They spend thousands printing new price pages and mailing them to their customers. Granted, many of those customers do not have a database for pricing, but many of them do.

Another shortcoming of many WWW sites is the lack of order tracking and account information. They do not have to have order placement on the site,

ly only needed a status update or how much they own currently.

EMAIL

Just about every company has email to a degree now. Most small businesses likely only have a single email address that their ISP hosts, but large companies actually have an email server on site. These email servers are usually something like exchange or some other piece of software that is completely disconnected from the database. We have the ability to send email from the database, but what about receiving and tracking who is using email?

Not many people know that MVDBMS can be used as an email server. There are two products in production (Coyote by EZ-Co and Email-For-Pick by Weaver Consulting) and one in beta that allows you to use your MVDBMS as an email server.

Continues on page 30

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Unlock the Power of Your MultiValue Database

Continued from page 29

One reason to use your database as an email server is the security. You already have all your security and audit trails and the like setup for your database. Why duplicate it? If you have an employee file on your MVDBMS, then you already have a list of people that need separate email addresses. Why duplicate all this information and have additional admin problems by having to work with two systems instead of one?

All of the existing email server software allows the users to use a standard POP3 client like Outlook, Pegasus, or whatever

they are used to using. The product currently in beta supports IMAP in addition to POP3, which allows you to manage your email on the server and not have to worry about what machine your email is on

when you work from both home and work.

MICROSOFT OFFICE

Microsoft Office products have become a standard tool in most offices. Many people know how to use these products and why spend the time and money to retrain them on another product. There are several tools, most of them programming tools, that allow you to create and update Office documents from the MVDBMS.

Most terminal emulators can create Office documents to one degree or another. There are also products in the works that will like-

ly be released within the next year that will allow you to create, update, and manipulate Office documents from MultiValue programs. Keep your eye out for them.

NON-MVDBMS CONNECTIVITY

Many of the "modern" databases are supposed to be able to communicate with each other seamlessly, but people that have worked with them from one degree to another, know that it is not as easy as those vendors say.

They rely on ODBC or a direct SQL connection. All the current versions of the MVDBMS support ODBC and many of them have a direct SQL command line for direct SQL connections, but the real gem is the ability of the MVDBMS to connect to these other databases as if those databases were just another MV file.

These Super-Q-pointers, or virtual files, allow us to use all our existing programming skills and existing programs to access

It went so well last year that we couldn't pass up the chance to do it again!!! Don't miss out on an opportunity to attend this fabulous training conference. As we approach our second year, we anticipate that this conference will become an annual standard by which all other SB+ training will be compared! Our conference combines a variety of fun and education to make this a conference well worth the money! Returning instructors Kevin King, author of the book SB+ Solutions, and George Graham, developer of the SB+ Training CD series are among the top experts in the SB+ field today! Your conference fee includes all sessions and activities, private workstation for all sessions, hotel accommodations and taxes, and breakfast and lunch each day.



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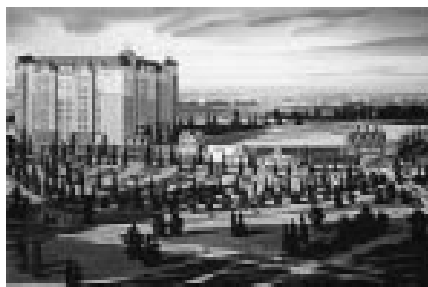
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other databases without having to learn SQL commands. Check with your VAR to see what tools are available. Some of these tools will allow you to connect to just about any database including FoxPro and ACCESS if need be.

WIRELESS

As wireless LANs become more affordable, they can be found in more and more companies. Combine a PDA with a Wireless card, and you now have a portable terminal that you can take anywhere on your company site for less than \$1,000 in hardware.

This opens the door for a lot of different possibilities: Shipping, Receiving, Manufacture Status, and much more.

Not only is internal wireless connectivity more common, but external wireless can be used now as well. A lot of people can now use the cellular data networks to keep in touch with the home office while on the road. How would you like to send new

pickup requests or additional directions to your delivery drivers?

You can even use the wireless Web tools to create pricing programs and data update tools for your sales people while they are on customer sites.

OTHER POSSIBILITIES

I've talked about the standard connectivity tools so far. What I have covered is all the other possibilities we now have. Here are a few more to ponder:

- XML Import/Export
- Voice Recognition
- Biometric Security
- .NET and Web Services (SOAP)

CONCLUSION

There is a lot our database can do that you may not have known was possible. If you have any other thoughts, feel free to contact me. I would be happy to discuss this more. [is](mailto:nrector@natecsystems.com)

NATHAN RECTOR, a regular contributor to *Spectrum*, is owner of Natec Systems, a consulting firm that specializes in D3, AP and R83 environments and custom programming. He can be reached at nrector@natecsystems.com, (707) 443-6716 or www.natecsystems.com

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Stamina Launches Visage, a Thin Client Application Development Framework

Stamina Software Pty Ltd (Wallsend, Australia) launched Visage, a comprehensive thin client application development framework for the multi-valued database market, at the International Spectrum Exhibition and Conference in February.

Visage allows multi-valued developers to leverage their rich legacy of proven business rules and database designs, and quickly transform these into the ultra-thin-client solutions of the 21st century, as a single application can be delivered over a high speed LAN, corporate WAN or the Internet.

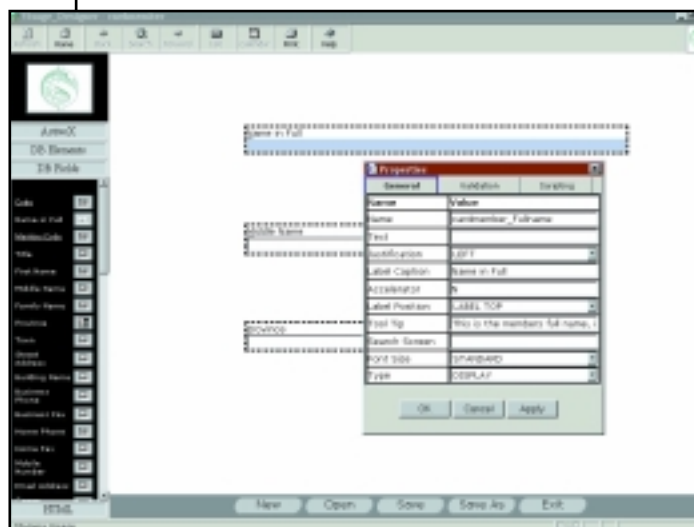
Visage provides a "what you see is what you get (WYSIWYG)" graphical screen designer that features true one step, drag-and-drop integration with your multi-valued dictionary structure, and easy interaction with your host-based logic assets and databases.

Built around industry standards, applications developed with Visage can utilize

technologies like HTTP, SSL, COM/DCOM, XML, Web Services, SOAP, .NET, mainstream scripting languages like JScript & VBScript, and you can easily integrate multi-media technologies like Flash to produce compelling end user experiences and applications.

"The response to Visage has been phenomenal," said Ross Ferris, commenting on the Spectrum launch. "Nearly everyone has commented on the fact that Visage seems to be generations ahead of the other products at the show, and that has been borne out by the fact that we were running one-on-one demonstrations every night until around midnight."

"Although this is the first public outing for Visage, you have to remember that, as a company, we have been developing 4GL tools for over 17 years now, and we have been working on the technologies in this product since 1994," Ferris said.



Visage provides a graphical screen designer that features true one step, drag-and-drop integration with your multi-valued dictionary structure.



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new products

- *Stamina*

Continued from page 32

"Many of the design decisions we made along the way have now been vindicated, and with Visage a multi-valued developer may actually be more buzzword compliant than players coming in from the client-server detour!"

Visage applications operate via non-persistent connections to the multi-valued database host environment, meaning that a single database connection can service many concurrent users.

The Visage Runtime Environment, or VRE, takes care of all of the complex issues associated with management of state and application persistence, allowing developers to concentrate their efforts in producing world class, graphical, event-driven applications using their existing skill set.

"Visage is an addictive and productive environment, and MV programmers can have their first GUI screens up and running in under 10 minutes," Ferris commented. "Developers are amazed at how quickly they can turn out robust applica-

Who is Stamina?

Stamina Software Pty Limited is a private Australian company that was formed in December 1981. Originally providing contract consulting services to a broad range of businesses, the company was restructured in late 1985 to concentrate on software research and development.

For Stamina, truly open systems is the goal. Its mission is to make its products available on the widest possible range of hardware platforms, ensuring that its clients won't be locked into only being able to source "brand X" hardware or suffer from a system that was not able to grow as their company expanded.

Stamina software products are scalable from a single user PC through mainframes capable of supporting thousands of online users, and can be deployed and freely migrated across platforms like Windows NT and popular versions of UNIX, including AIX, HP-UX, Solaris, DG-UX, SCO and Linux.

Stamina exploited the many strengths of the powerful, multi-dimensional database at the core of its products with its own ZAPT! 4GL rapid development tools. Today, Stamina offers 35 software modules that address the needs of the Retail, Wholesale/Distribution, Light Manufacturing/Jobbing, Service and General Accounting sectors, and a number of specialized niche markets. A tribute to the skills of its software engineers and business analysts is the ease with which Stamina software fits into such a diverse range of businesses in terms of size and business activity.

"We recognized the importance of 'getting it right' with our software from day one," Stamina says, "and actively seek the input of long-term computer users, and our own customers, to ensure that our products are relevant to their intended market. In some cases, entire systems and subsystems have been re-engineered to add flexibility, functionality, or features, and to stay in tune with the real world." ■

tions, and the Development Framework can also help keep ongoing application maintenance tasks under control."

"Whilst certainly revolutionary in totality, Visage is actually the culmination of generations of smaller evolutionary steps,

MvEnterprise 4.1 in Production

and we hope people will view it as the Natural Selection for their future development tool."

Though Visage is a relative newcomer to this market space, Stamina Software is already negotiating its first corporate license that will see Visage adopted by a major VAR with a current installed base of 20,000+ seats, which is a major endorsement of the underlying technology. ■

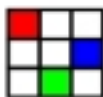
FOR MORE INFORMATION: Contact Stamina Software at +61 249 538 050, [mailto: sales@stamina.com.au](mailto:sales@stamina.com.au) or on the Web at www.StaminaSoftware.com.

RAINING DATA CORP. has announced the latest release of mvEnterprise, 4.1. MvEnterprise offers the ease of use and hierarchical power of the MultiValue database model, with the performance and flexibility of UNIX. The Open Data Architecture and UNIX interoperability tools provide a seamless interface between mvEnterprise and UNIX.

Featured in release 4.1 is the virtual/pseudotape support that allows users to direct input and output to a user-created file on a disk drive, instead of a physical tape or Ethertape device. This new command format allows specification of the input/output disk file, filtering commands, and other elements of the new virtual tape interface. Virtual tape output files can be copied, moved, compressed, FTP'd, encrypted, archived, emailed, or burned to CD-ROM, just like any native UNIX-level file. This eliminates the need to send physical tapes from place to place to transfer mvEnterprise virtual data. ■



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mvDesigner

mvDesigner is Raining Data's groundbreaking object-oriented rapid application development (RAD) tool developed for use with Multi-Value database applications. It is a full-featured graphical environment.

With mvDesigner, developers can deploy elegant GUI front-end applications as client/server or thin Web clients while fully utilizing existing multivalued business rules and file structures, thereby increasing ease of use and marketability of their solutions. This is done by utilizing business rules inherent in the existing application, and without the need for extensive rewriting of existing code or prohibitive learning curves often associated with the adoption of new tools. No need to flatten your files or wrap your code with unnecessary subroutines. A sophisticated SQL browser and multithreaded session manager make data movement a snap. The mvDesigner application server, client software and Web client libraries can be deployed on Linux and Windows utilizing a single application code base.

The mvDesigner environment provides GUI drag-and-drop facilities to build richly fea-

WebWizard

WebWizard leverages the power of your existing computing environment to create sophisticated Web-based applications that will have a direct impact on the bottom line. WebWizard's integration of the newest Web technologies allows you to interface with your data using HTML, XML, and WML.

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- ◆ Getting started is easy with InstaPage, InstaReport, and InstaPublish Wizards
- ◆ Data/Basic programmers can use the WebWizard API to build sophisticated Web-applications with no HTML or JavaScript knowledge.

For more information, please visit www.via.com.

tured, sophisticated front-ends. The built-in Component Store provides all of the controls you need to build robust, state-of-the-art client applications. mvDesigner's component-based architecture supports a native interface to any external component, exposing its methods and properties for easy integration.

Tightly integrated with your MultiValue environment, you will find that mvDesigner allows you to always be in control. User interactions, backend processing, and real-time event reporting are readily available at your fingertips. Whether it runs on D3, mvBase, mvEnterprise, Universe or UniData, mvDesigner will breathe new life into your application and your business.

For more information, please visit www.raining-data.com.

wIntegrate

wIntegrate is IBM's popular terminal emulation and character-based application revitalization tool. wIntegrate makes it easy to give a graphical look to host-based applications and bring them to the Web without altering the existing application.

wIntegrate offers:

High Performance Terminal Emulation - Productivity features include user-definable terminal emulations, customizable toolbars, and scalable fonts

Desktop Interoperability - Graphical Query Builder, "intelligent" copy/paste, and file transfer features allow easy transfer of data from and to host-based applications

Add-on Windows Enhancements - Host subroutines allow users to add desktop integration (email, spreadsheets, text) to your legacy host-based applications in easy, incremental steps.

Complete Graphical User Interface - Dialog Designer and host subroutines provide tools to create a complete interface between the user and the host-based data.

wIntegrate works with most popular host-based systems and a variety of databases including Ultimate, ADDS Mentor, Sequoia Pick/OA, PRIME Information, General Automation, Pick Systems R83, Advanced Pick, D3, C-Itoh, McDonnell Douglas, and even with COBOL applications. wIntegrate is available for local installation or as a thin client. wIntegrate thin client makes server-based applications easier to administer.

Test drive wIntegrate thin client at www.ibm.com/software/data/u2/tools/wintegrate.

Zumasys PDF Output Software

The Zumasys PDF Output Appliance is a powerful new tool designed to provide fast, efficient output of character print routines to PDF (Portable Document Format). The utility allows text output from any application running on Raining Data, Business Basic, IBM or jBASE. It can convert large print jobs to PDF in mere seconds and then files can be easily posted to a Web site or emailed. Once installed on your Windows or Unix MultiValue system, no programming is required to get your reports into PDF files.

OpenInsight

OpenInsight, Revelation Software's flagship database product, defines what a GUI tool should be for the MV world.

Written from the bottom up as a Windows-based development tool, it has been continually upgraded as technology evolves.

A fully integrated IDE, OpenInsight:

- ◆ Is a full 32-bit development tool, running on Windows98SE, NT, 2000 and XP, on either Novell or NT/2000 networks, or standalone

- ◆ Can be deployed for single or multiple users

- ◆ Contains a Form designer, used to create data entry screens, dialog boxes, and menus

- ◆ Works against multiple data sources: proprietary Linear Hash, Lotus Notes, SQL, Oracle, or any ODBC data source

- ◆ Has a powerful editor and debugger

- ◆ Has three different built in reporting tools, plus the ability to generate great output programmatically

- ◆ Is Web enabled, with its own CGI gateway, XML and HTML extensions

- ◆ Contains a User Interface Workspace for creating Popups, Messages and Help

- ◆ Has more features than can be listed here!

A picture is worth a thousand words, and since we're talking GUI here, seeing is believing. A free, fully functional 30-day evaluation can be downloaded from www.Revelation.com.

FlashCONNECT

FlashCONNECT by Raining Data allows you to quickly implement a Web browser interface for Internet, Intranet and Extranet applications. Through easy and seamless integration, the rich FlashCONNECT Application Programming Interface (API) facilitates easy integration of character-based applications with Web pages via a common gateway interface (CGI) or Internet Server Application Programming Interface (ISAPI).

FlashCONNECT's core concept is the separation of content, logic, and presentation layer for ease of and code reuse. FlashCONNECT-enabled applications can use templates designed in any

HTML page design program. Existing BASIC business rules logic may be preserved and integrated into FlashCONNECT projects. The separation of user interface and business rules provides a convenient method for developing applications that may be easily modified or adapted to future environments. The componentization of the application provides for simpler and less expensive maintenance and customization.

FlashCONNECT serves up database content in real-time for absolute timeliness. Another key feature is "persistence," a requirement of transaction-oriented systems. FlashCONNECT provides record locks, variables, and common vari-

ables across multiple Web pages as a transaction progresses. Audit features include assignment of a "user ID" that can be traced in the application, cookies, optional user authentication, and click-through recording.

FlashCONNECT supports both state- and event-driven applications. Java applets, Javascript, and VB Script may be incorporated. In addition to support for dynamic pages, FlashCONNECT can generate part or all of a Web site as static pages based on database content.

Security is always in place to prevent unauthorized use. Most companies understand the significant benefit of separating their public Web server from

their private database server to provide security for their information. The resulting firewall is easily navigated with FlashCONNECT, thereby providing both flexibility and security for private client data.

FlashCONNECT's connectivity allows you to take your existing character-based application to the Web. FlashCONNECT conforms to HTML standards and works with any industry standard Web page development tool to create the graphic look and feel of the application. FlashCONNECT for mvBase, mvEnterprise, UniVerse and UniData is due to be released.

For more information, please visit www.raining-data.com.

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ViaDuct

ViaDuct, from Via Systems, is an industry-leading terminal emulation and Multi-Value connectivity tool.

- ◆ Comprehensive terminal emulation for your Windows 95/98/NT/2000 and XP PC platform.
- ◆ File transfer between your MultiValue database and Windows applications.
- ◆ Copy and paste terminal screens to your Windows applications.
- ◆ Professional edition comes bundled with utilities for file editing (mvEdit), file management (mvExplorer and TCL Wizards), and VB-based extensions for GUI creation.
- ◆ Control language to automate any combination of ViaDuct functions.

For more information, please visit www.via.com.

WinLink & ViaODBC

Via Systems' WinLink and ViaODBC is middleware software providing ODBC connectivity, API links, object calls, and utilities for DBMS-to-Windows development.

- ◆ Transform your host character applications into Windows applications.
- ◆ Use Windows development tools to access your database with API and object calls.
- ◆ Access host data from ODBC-compliant Windows applications with the click of a button.

For more information, please visit www.via.com.


Sentry

SENTRY for UNIX, by Fitzgerald & Long, is an integrated security system utility for the UniVerse, UniData and PI/open database management systems. It simplifies administration of users, groups and file permissions by providing cross-referencing, error checking, user-friendly screens, comprehensive reports, and includes in-person installation and training. You can restrict

access to dangerous verbs like ED, REVISE (or UNIQUERY), DELETE, CLEAR.FILE, and DELETE.FILE without removing the command records from the VOC. SENTRY will allow use of restricted commands from within your application software, while still prohibiting use from the database prompt (TCL). You can protect any sentence, verb, paragraph, menu, PROC or program defined in the VOC file of any account on your system.

Have you found that UNIX file permissions fall just a little short for the in-depth security your site really needs? SENTRY includes support for Access Control Lists (ACLs). You may access all files and directories and maintain both UNIX permissions and ACLs. Fitzgerald & Long's cross-reference and validation features make it easy to add or delete users and groups and to change the permission granted to them. SENTRY allows you to set an ACL on a directory and then update not only the directory but all files and directories below.

For more information, please visit www.fitzlong.com.



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A Unified PixieLink and PixieWeb Product Set

A Web browser accesses HTML text pages and displays them on the Web. PixieLink, from PixieWare Software, is a User-Agent program that can reference the same text pages containing the markup commands and interpret the documents contents without the need of a WebServer.

PixieLink translates the document's content into an appropriate format for the user to access. Features of HTML may be manipulated from within the Pick program. HTML has developed display capabilities well beyond those of VT100, WYSE50, etc., so PixieLink provides a convenient means of adding an attractive GUI interface to an existing PICK application.

In PixieWare's unified model, PixieLink and its Web migration product PixieWeb, the Pick programming is the SAME for both of the following scenarios:

◆ Desktop/local/small-scale-operations/
evolving-terminal-apps/debugging-Web apps.

Simple "2-tier" setup:
MVDB <----> PixieLink

◆ Wide-area/remote-networking/large-
scale-operations/general-public-as-target

More complex "3-tier" setup:
MVDB <----> PixieWeb + WebServer <---
> WebBrowser

GUI is achieved by adding HTML markup tags which do much the same job as the traditional terminal escapes. HTML may include such things as references to other Web documents using hyperlinks, instructions for text formatting and other content such as image placement.

With PixieWare, Web pages (including the HTML) are generated within Pick programs. The output (CRT) of the Pick program includes markup strings built by subroutines which translate the traditional green-screen @(x,y) co-ordinates into positioning co-ordinates that a Web browser or PixieLink can process. For example:

SC = SC:@(10,10):"Customer" is replaced by: CALL WEBDX(10,10,0,0,"Customer", "", "", SC)

PixieLink is also a green-screen terminal emulator. HTML processing is initiated for example by: CRT "<TX>OK</TX>", otherwise it defaults to green-screen mode. WebBrowsers (via PixieWeb) and PixieLink may be used together to provide for a mix of user interfaces — GUI with HTML, and character mode.

For users who want a browser user interface for internal use only, PixieLink is an inexpensive substitute for the combination of WebServer and PixieWeb. No WebServer — simpler maintenance. Since it is a direct Telnet connection, it provides the same field-by-field editing as PixieWeb. Applications initially developed with PixieLink may subsequently be published on the Web by installing PixieWeb and a WebServer, without any change to the application.

PixieLink requires a one-off installation on each client machine, but it does offer some features that WebBrowsers do not: e.g., file upload/download initiated and controlled by PICK/BASIC programs, and PICK/BASIC programs can also remote-control programs, e.g., Word Processing.

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More information on PixieWare Software can be found at <http://www.pixieware.com>

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Fitzgerald & Long

MANY MULTIVALUE “old-timers” are familiar with the name Fitzgerald & Long (F&L). Meaning that if you can remember the heyday of Prime INFORMATION over 20 years ago, for which F&L originally developed its flagship product, FAST (File Analysis and Sizing Tool), then you’ve probably heard about the company. But you may not know the interesting evolution that has brought Aurora, Colo.-based F&L from its origin as a developer of Prime INFORMATION tools to its present status as a developer of contemporary client/server GUI products that support both UniVerse and UniData on Unix and NT platforms. For more than 18 years, F&L has been consistently challenged to keep its venerable automated file resizing utility on top of technology trends, and judging by the functionality that FAST offers today, it has conquered that challenge.

Makes File Maintenance a FAST Task

The idea to create FAST came out of necessity. Consultants Jeff Fitzgerald and Peggy Long, the principals of Fitzgerald & Long, were hired to clean up a Prime INFORMATION system over a weekend.



Fitzgerald & Long founders Jeff Fitzgerald and Peggy Long created FAST to increase the efficiency of MultiValue computer systems by automating file analysis and resizing.

They spent more than 36 hours using HASH.HELP and a calculator, and still fewer than half the files had been analyzed or resized. After the weekend was over, the job was not completed and they also knew that someone had to perform this task at least once a month.

Soon after, the problem of a broken file caused them to again consider the need for a good file maintenance utility. They developed and tested a product prototype that would analyze and resize files, and identify damaged files. Thus, FAST was born in 1983 and has since grown to be installed in more than 2,270 sites.

Today, as then, FAST performs the three main processes of Gather Statistics, Type Analysis, and Resizing. However, as networking and PC connectivity have come to the forefront, FAST has become a client/server product with a GUI interface and more features have been added over the years.

Peggy Long recounts that it has indeed been a challenge to keep up with changing demands. “As functionality was added to Prime INFORMATION, UniVerse and UniData, we have supported the changes made to file structure and resizing,” she says. “The first big change was supporting INFORMATION’s dynamic files.”

To support dynamic files, F&L had to reverse engineer the file structure of FAST. “Prime would not give us any assistance,” she recalls, “but both VMark and Unidata were very helpful in giving us the information we needed so that we were not forced to spend the time on reverse engineering. Both companies had a lot of former Prime analysts who wanted to see FAST run on their software. It was very flattering, and I believe the relationship between the companies was mutually beneficial.”

Looking back, the biggest investment in change for F&L — which required true team

effort—was adding a GUI to FAST. “The change that took the most development time was changing the user interface from character-driven data entry screens and menus to a fully functional Windows interface,” Long reveals. “We also wrote our own communications software so that we were not dependent upon `uvObjects` or some other 'black box' to transfer data between the client and server.

“When I say 'we,' I really mean that my partner Jeff Fitzgerald wrote all of the code for the GUI version. He is a genius at solving technical issues and there were many. My contribution was to focus on making the product intuitive, as bullet proof as possible, and writing documentation that actually tells you what you need to know to use the software.”

Although many features have been incorporated into FAST since it was first developed, the fundamentals of file resizing haven't changed, Long says. “The problem of file maintenance has not changed since Dick Pick created the first database,” she comments. “That problem is overflow, which increases access time in retrieving data. Resizing simply reallocates the file so that access time is minimized.”

Although FAST's basic functions have always been gather statistics, type analysis (finding the best hashing algorithm) and resizing the files, the latest client/server version uses C instead of Fortran and Windows instead of character-based screens.

“By the way, most UniData users don't know that there are two hashing algorithms and that using the one which produces the best distribution can improve performance and reduce overflow,” Long shares. “We actually simulate what the file would look like if we were to resize using each of the different hashing algorithms. UniVerse has 17 algorithms, but we do the simulation using a C program. It's really fast!”

F&L has stayed faithful to its original mission to reduce staff time required for file maintenance and ensure maximum system performance and efficient use of disk space. FAST `c/s` is a key component in keeping users' computer systems running at optimum speed.

According to F&L, hashed files are perfect for supporting a database because they allow rapid access to variable length records with widely ranging keys and data. However, there is a price to pay—maintenance is required to keep hashed files performing at peak efficiency. As data records are added to the file, the groups of the file fill up and the additional data is stored in overflow buffers. As more and more data is added, the chain of overflow can become very long. Retrieving and/or updating data records which are stored in overflow takes more system resources. When a hashed file becomes inefficiently structured, it must be resized, changing the modulo, type and separation of the file to more appropriate values. The effects of resizing are temporary as normal user activities will add, delete and update more records, causing the files to have to be resized again.

Badly sized files also often waste disk space, the company says. The file may be taking up more space than needed because the modulo was made too big. The wrong choice of separation often leads to huge amounts of wasted space in some files. FAST `c/s` allows users to set control parameters which make FAST `c/s` “smarter” about certain files and their needs. The user can also control the amount of avail-

able space left for future growth, the “trigger point” for type analysis and a minimum modulo for files which contract and expand dynamically. The user always has the option to override FAST `c/s`'s recommendations.

“FAST saves time and money because it calculates the best parameters—type, modulo and separation (UniData calls it block size)—and implements the changes,” Long says. “If data retrieval is slow, people waste time waiting for reports, booking orders, etc. If the database administrator has to calculate the parameters by hand, it takes at least 10 minutes per file for someone who really knows the internals. When you consider that most applications have from 1,600 to 3,000 files, you face a boring, time-consuming task when you do it by hand. We like to see people schedule it to run once a week after a full backup.”

The advantages of using a tool like FAST `c/s` are obvious—who wouldn't want to lose a boring, tedious task while gaining a more efficient computer system? Thanks to F&L, which has been refining FAST for almost 20 years, MultiValue users can have an elegant solution to an age-old problem. If you'd like more information about FAST `c/s`, you can download F&L's Technical Overview at www.fitzlong.com. is

The Basics: FAST's Three Core Functions

Gather Statistics - Collects current data describing each file, including type, modulo, separation and numerous other statistics. Recommends the best modulo for each file and evaluates the current type (hashing algorithm). Validates file integrity, producing diagnostics with specific information about any corruption found in any file. Produces a database from which a file statistics report is generated.

Type Analysis - Performs a simulation (in memory), trying each of the possible file types and scoring them based upon the efficiency of the resulting data distribution. Only the files identified as having less than optimum hashing are processed. Because FAST `c/s` uses a simulation to model the types and doesn't rely upon trying to analyze the record keys, the results are superior to standard tools, according to F&L.

Automated Resizing - FAST resizes the files that require it, using the recommended modulo and type from the first two steps. Resizing may be done as a phantom or background process. A complete audit trail is maintained, allowing easy evaluation of time requirements and any errors which may occur.

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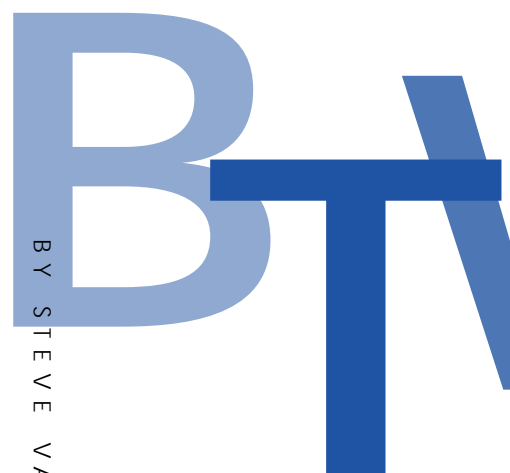
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- \$500,000 - \$1 million
- Over \$5 million - \$10 million
- Over \$25 million - \$100 million
- Over \$500 million

IS 5/02



By the way:

I noticed that the featured software in this issue is FAST from the venerable Jeff Fitzgerald and Peggy Long. I usually have trouble believing that everything is as good as it says it is. As is my nature (and the purpose of this column) I looked a little closer.

From all accounts, FAST is a truly great name for file sizing software. Point one in its favor.

Point two: FAST gets rave reviews from users. Most users. The word is that the sticker shock is formidable. That's not uncommon; the price of good software in the PC and mainframe world is usually a surprise, and usually a bad one. For me, the real spin is: does it justify the price? For FAST software, the first impression might be negative. I asked my posse.

Jake Mathew, a successful super-coder and entrepreneur: "I would write my own. Because you can use the on-board tools, right?"

Chief Hank Clemmensen, a city administrator and all-around computer hero type: "What?!"

Mr. Ray Garrett, one of the original great U2 technicians: "(silence)"

W

But first impressions never tell the whole story (just ask Mrs. VanArsdale). Here's what Bee Fiore, of Fitzgerald & Long, revealed under my ruthless interrogation:

Staff time savings: Check out the time it takes to resize just 100 files. At just \$10 an hour, monthly maintenance would be much more than the cost of the FAST software. And FAST-equipped sites typically can resize every week instead of once a month. Thereby...

Conserving disk space: Users report as much as 30 percent savings. And a little-

known axiom that I often repeat is: $D^2 = A^2 + C^2$, or More Disk Space = More Admin (eventually) and More Costs (inevitably).

Reduced Risk (of file corruption): Because you don't need my gray hair to know that early detection is more cost-effective than even the best remedy. True no matter what the scope of the damage, or the effects.

Improved performance: Possibly this is the real bottom line. In my experience, the bottom line is that system performance rarely has to be instantaneous in all cases. Or even good, in some cases (like life insurance claims). As long as response is as fast (sorry) as it can feasibly be ... which seems more likely with a regularly-scheduled automatic resizing process. A process that coincidentally keeps data files healthy and fit (see analysis points 1, 2, and 3).

Point three: One should still allow for downtime with FAST. Mr. Dale Shifty, consultant to Kaiser Permanente in Atlanta, uses large, distributed files with

logging. He reports that UniVerse and UniData files that are subject to 24-hour operations should not be resized while in use. All he does concurrently is to check the files with FAST and gather the stats, and then run the FAST re-sizing during the downtime.

Here's something that I found out: Fitzgerald & Long get involved personally at such sites. They suggest that most organizations can find some downtime between 2 a.m. to 6 a.m. on the third Sunday each month... including police dispatch, emergency medical services, and even the all-night donut shop carry-outs. So the IT manager needs to make a hard-case analysis of the activity each week or month. In that worst case scenario, like national security or babysitting, Jeff Fitzgerald reminded me that a company can mirror the disk drives, and at an opportune moment, break the mirror, run FAST on the mirrored files, re-sync, and switch the operation to the mirrored drives.

BTW: No problems here. =/srv

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FAST c/s Takes the Stress Out of File Maintenance

FAST c/s for UniVerse and UniData, from Fitzgerald & Long, allows you to perform all file maintenance on both static and dynamic files with one utility. It provides the best Type recommendation, validates file integrity, and totally automates the resize process, offering you the potential savings of disk space. FAST c/s is available for the UNIX, Windows NT/2000, and LINUX environments.

You can run multiple sessions of FAST c/s at the same time as well as schedule multiple sessions to start up via clocks, and create and use various lists of files. FAST c/s will check your disk space before resizing to insure that there is enough temp space for the new copy of the file. If there isn't, FAST c/s will estimate how much temp space you need and report what you have, giving you a chance to do some purging, before starting the resize process. You will be able to use FAST c/s to convert your files from static to dynamic or vice versa.

Having written all of their tools based upon their own experience and experimentation, Fitzgerald & Long says their 2,500+ clients say they do a better job, offer more functionality and ease of use than any other file maintenance utility.

For more information, please visit www.fitzlong.com.

Entrinsik Releases Informer v 1.0 for U2 Family

Entrinsik Inc. announced the general availability release of its newest product, Informer. Informer is Entrinsik's offering enabling direct Web-based reporting of the multi-dimensional databases from IBM's U2 family of relational database management systems.

Informer has a host of features that allows executives, managers, and key administrators easy and interactive reporting from what are often very complex database structures. Further, it allows for customization of data views "on the fly" through sorting, grouping and field selection. Security is managed through a robust role-based mechanism, thus protecting data integrity while allowing different levels of access to solve various reporting needs. Data results can either be exported to MS Excel or printed using Adobe PDF. Unlike other reporting tools, which flatten the U2 data structure to a more SQL-like format, Informer preserves the power of the U2 RDMS data structure.

"This product release is not only an attractive option to our customer base, but further demonstrates Entrinsik's commitment to our Web services initiative," said John Crumpler, CEO of Entrinsik.

Informer, while expanding the reporting capability of Entrinsik's existing products, has been designed to be a powerful tool for anyone using the IBM U2 databases.

Entrinsik, headquartered in Raleigh, N.C., provides software and services focused on the HR and training markets. Entrinsik's latest product offering, Entrinsik HCM (Human Capital Manager), allows companies to focus on their goals through an integrated framework for hiring, developing, training, and retaining top performers. Entrinsik's SEMtek product is the industry leader in CRM software for training providers.

For more information, please visit www.entrinsik.com.

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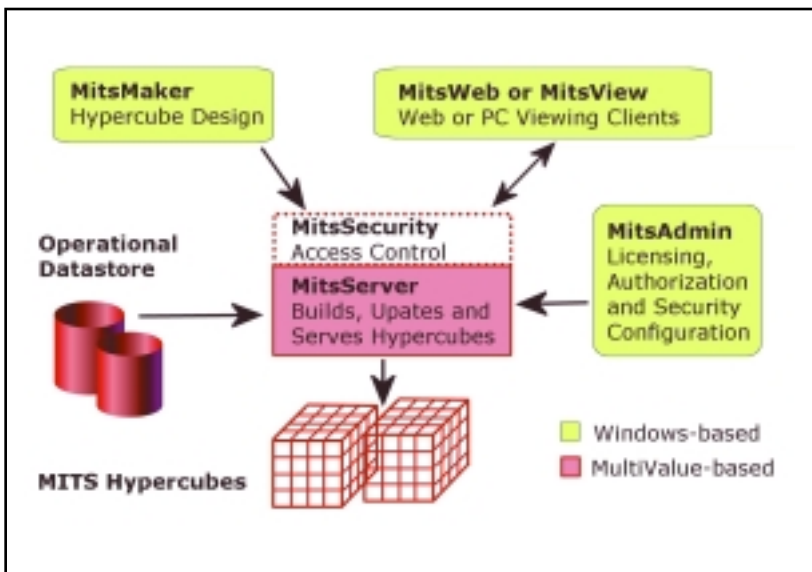
MitsAdmin - provides authorization and security configuration;

MitsSecurity - secures hypercubes down to a user level and;

Two OLAP viewing methods: MitsView, a Windows-based viewing client and MitsWeb, to enable a zero-footprint online viewing client using standard browsers.

MITS is the only BI/OLAP tool specifically designed for MultiValue databases. MITS provides native access to MultiValue data stores, while no ODBC layer or third party software is required. MITS has become one of the fastest, most efficient ways to leverage your business data. MITS is available for UniData, UniVerse, D3, jBASE, mvENTERPRISE and mvBASE databases. Learn more about MITS at www.ibm.com/software/data/u2/tools/mits and download your free trial version of the MITS product suite at www.mitsonline.com. is

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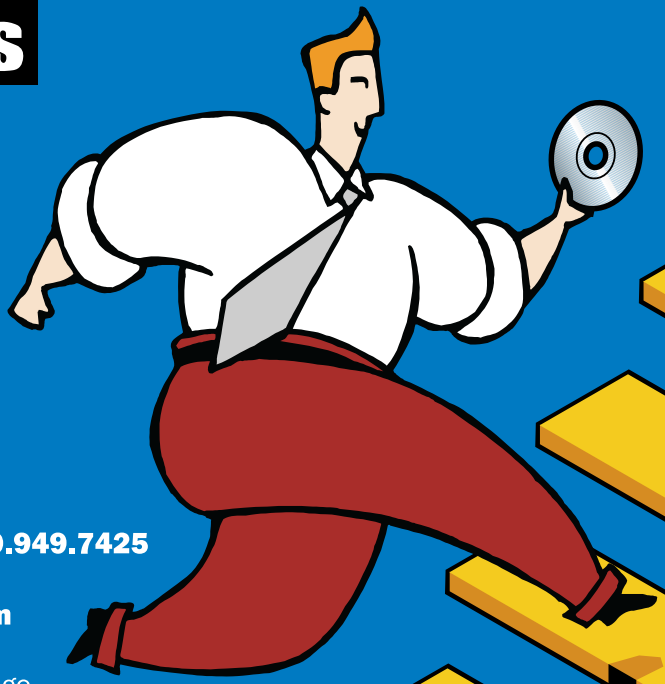
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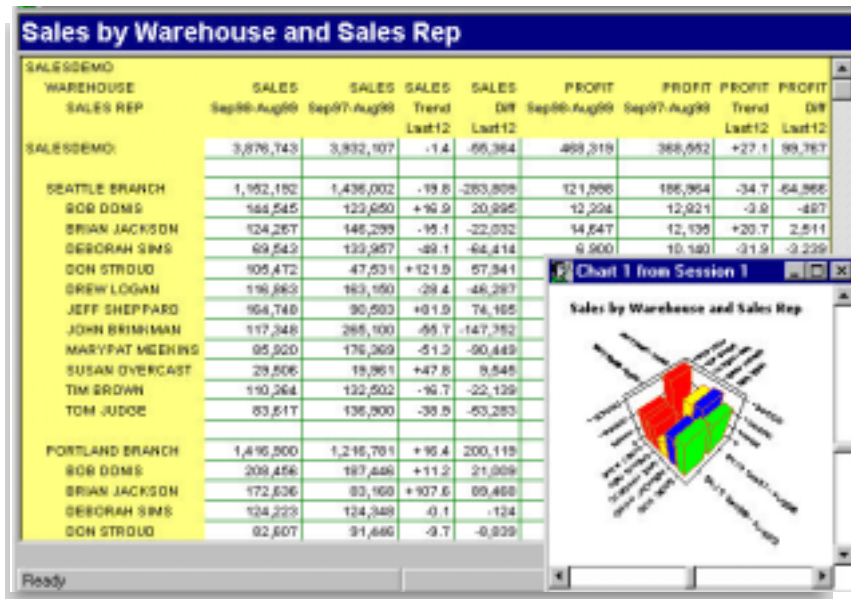
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