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6 Business Tech: Disaster Planning It is human nature to want to avoid thinking about painful things. But when disaster strikes, not having any plans on how to react or recover can vastly limit our chances of survival — either personally or as a business. This article explores some of the issues of planning business survival after a catastrophe. If you are like most of us, you will find some things that had never occurred to you to think about.

BY CHARLES BAROUCH

FEATURES | MAY/JUNE 2011

8 2011 International Spectrum Conference Feedback As we did last year, we decided it would be more interesting to you to hear what attendees at the conference had to say rather than what we thought of it. In these three interviews we hear the opinions of both seasoned MultiValue developers and a newcomer to our database. **BY CLIFTON OLIVER**

10 Serious Data Compression for Network Transport in MultiValue Systems With the cost of disk space continuing to fall, does anybody except the very largest shops worry about the cost of data storage anymore? Maybe yes, maybe no. It still depends on the circumstances. But although network bandwidth continues to increase, there is still a price to be paid — not just in gigabytes transmitted but also in things like the hidden cost of lost productivity due to network congestion. This article suggests some data compression options, and it includes ready-to-run source code in MultiValue Basic. **BY JOHN RACINE**

14 MultiValue and the Web: Step into the Future If the idea that the green screen is dead and has been replaced by GUI is new to you, you must be reading International Spectrum magazine for the first time. Toss into that Ajax, Web 2.0, Cloud Computing, etc. and you have an entirely new set of customer expectations that you must meet in order to remain competitive in today's modern technology world. This article introduces a new series and explains why and how it will explore this topic. **BY KEVIN KING**

20 Sending E-mail from Your MultiValue Programs — Part 3: Sendmail In the first two articles in this series, you learned how to construct an e-mail with the required header lines and a body. You were then introduced to SMTP using Microsoft's Internet Information Server. Now we take a look at the granddaddy of Internet mail — the venerable Sendmail. **BY NATHAN RECTOR**

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From the Inside

BY NATHAN RECTOR



User Group Members Wanted!

Are you looking to meet up with MultiValue Professionals in your area? Well, so is everyone else in your area. I talked with several people that wanted to start User Groups again, but they didn't know who else would be interested.

For those who have been in the market for a few years, remember the user group meetings that had 30 or more people attending? Then over time, the meetings seemed to get smaller and smaller, until people stopped planning the new meetings.

Ok, so you are saying that is proof that the user groups are dead? I disagree. Many of the people who attended the meetings in the past, would be interested in attending again now. They are just waiting for someone to tell them when and where the meetings are.

There are two road blocks many people find to starting or restarting a user group meeting: location and time. Some might say attendance, but in reality, that is just an issue with the location and/or time.

Let's start with the location issue. Many of us work in buildings or for companies that have conference rooms that can hold 10 to 20 people easily. Check with your boss to see if you can use the conference room for one evening. This allows you to set a location to start with. If you get a large turn out, you can always talk it over with the people that attend to see if they want to do it at another location that you may have to pay for.

I've talk with a lot of people over the last couple years that would love to be part of a User group again, and they would be willing to contribute \$10 to \$20 to pay for a room and/or food.

Now for the time question. Set and plan your meeting one or two months in advance so people have time to schedule. You'll also find that if you schedule two or three meetings over the next six months, you'll get different people each time. Some people can't make it for the first meeting, but will able to make the second one, or the third, if they know when it will be. We all live busy lives, so don't expect a major turnout every meeting.

You don't have to have a meeting every month, but you should always have the next two meetings marked on the calendar.

Once you have decided when and where, advertise it to the community. How you ask? Well, send me an e-mail, and I'll included it in the eXtra newsletter and post it in the social media outlets so that others know.

Now, the question of topic? That is the easier part. Talk about why your company uses MultiValue, or how your company implements a particular product or type of hardware, or what your company does on a day-to-day basis. It does not have to be anything extravagant. Talk about how you just upgraded your system, installed new hardware, or hired a new employee. You can even talk about what your company does and how MultiValue technologies have made it successful.

The trick to the user group is keeping it going. It really isn't very hard, and it only takes about one hour a month (outside of the meeting of course). If you need additional help, just ask. International Spectrum is here to help the community.

-NATHAN RECTOR
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INTERNATIONAL Spectrum

MAY/JUNE 2011

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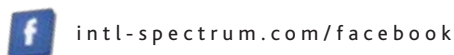
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Business Tech

Disaster Planning



BY CHARLES BAROUCH

Looking at the news out of Japan reminds us that “wildly unlikely” is not the same as “impossible.” Nearly every business above the mom-and-pop level has a disaster plan in place. All of them have a core role for records retention and in most companies, IT is the heart and soul of their records management. That alone earns us a place at the table when the plan is developed.

In the Event of Fire

My family once went out to get Chinese food and, I kid you not, got this fortune in one of the cookies: “In case of fire, remain calm, pay your bill, and leave in an orderly manner.” If you’d done disaster planning, you will immediately complain that the wait staff won’t be able to stay and collect on those bills. Instead, you’ll be setting up procedures for moving the point of sale equipment to the parking lot, having paint handy to establish the queue line for payment, and calculating how far behind the fireman you have to be before setting up the process. The example is a joke, but the concepts are real.

We have to make sure that every phase of the plan is based on ethical and practical priorities. Given a choice between people and computers, let the data burn.

They are real because disaster planning is never about thinking one step ahead or dealing with one vector at a time. You have to look at all the steps — in this case: payment, receipt of payment, recording of payment — and all of the vectors — customer’s sequence, wait staff sequence, register operator sequence — to assure a coherent whole. Try fitting all of that into a fortune cookie.

Life Begins at...

All plans must acknowledge that life is more important than things. Remember that a life at risk creates more risk. If Bob is still in the building, he is in jeopardy and so are the firemen who try to rescue him. We have to make sure

that every phase of the plan is based on ethical and practical priorities.

Given a choice between people and computers, let the data burn.

We Still Haven’t Accounted for Godzilla

I had a lot of opportunity to think about disaster planning when I worked in the international rush courier business. We had multiple chances to test our protocol. You see, when you handle other people’s sealed packages you take a bomb threat very seriously. Our problem was ‘how much is too much.’ I actually sat in a disaster planning meeting once and felt compelled to point out that we had no contingency for an attack by Godzilla. Every plan can be improved, but there is a cost associated with each step.

We do have to account for the likely scenarios. OSHA training includes several of those points. For example, don’t have people exit a burning building in a direction which takes them past hazardous chemicals. If you think your building doesn’t have any, look at the labels on your cleaning supplies. If you aren’t the only tenet in your building -

or the only building on the block - you need to know the what and where of your neighbors' storage.

Disaster Planning as a Martial Art

The rule in most forms of martial arts is 'don't be where the punch will land.' Likewise, if your data routinely has two homes, there are zero steps needed to rescue the data from a single disaster. So, off site storage is good, remote hot backup is better. The trade is expense.

When I take the Monday file-save home on Wednesday, the Tuesday save on Thursday, and so on, I have low expense and moderate safety. When I use a courier to take a backup every night to a secure facility, expense goes up but so does my chance of avoiding loss of data. Another reason to use somewhere other than an employee's home: Security rules about moving confidential data to an unsafe location.

My apartment is many things, but has never been touted as a secure facility. Data isn't just data. We live in an age of electronic fraud and identity theft. We live in an age where credit card processing requires PCI compliance. There are standards and rules which might be at war with your common sense need to have off-site back up. The rules were not created to make off-site harder, they jut happen to do that in the process of improving data security. As the great Billy Joel once sang: "All your choices make you change your mind."

Half a Loaf

So, what is the IT obligation in disaster recovery? Data is only one part of the puzzle. Think several steps ahead and ask yourself if you have the configuration files, dlls, programs, scripts, and other information needed to re-create your entire computer from scratch. Look at the mass of connected systems and ask yourself how much of the corporate data is out of IT's hands. If we don't back up three key files on Sue Ann's computer, did we just lose a key segment of our data?

So, when we approach disaster recovery coherently, as a whole, we have to look at not recovery, but a complete restart. Let's take a concrete example. We'll call it Joe's Sporting Goods. The corporation, there never was a Joe outside of the fellow marketing came up with, has fifteen stores, a massive online web presence, and a huge call center and central inventory receiving at his headquarters.

This means that we can't just look at disaster planning for the HQ. We have sixteen physical locations, plus the web. So, ask the IT questions which go with the rest of the disaster plan:

1. Do we need a way to establish sales registers at an alternate location in the event of a disaster?
2. Do we know where to send paychecks if the store is closed?
3. Do we have access to replacement registers? Replacement computers? Replacement networking equipment?

4. For the HQ, we need to know if we have an alternate place to receive and ship goods.
5. For the HQ, we need a fallback call center.
6. What about the web site? Can we shut it down when there is no ability to fulfill orders? Is it hosted remotely? Does that remote hosting have a disaster plan in place which protects our data?
7. Don't forget the data question we started with: Which machines need to be backed up, what data resides corporately, divisionally, by location, and so on.
8. What about database licenses and other product clearance. Do you have the disks, ESD (Electronic Software Delivery) sites, the serial numbers, the proof-of-sale information needed to start up the 'B' site?
9. When a disaster happens, can management get a staff schedule? You can't confirm the building is clear if

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2011 INTERNATIONAL SPECTRUM CONFERENCE FEEDBACK

BY CLIFTON OLIVER

Interview with Kelvin McLay

IS: *We are talking with Kelvin McLay from Balance Business Systems in New Zealand. That's a long way to come for a conference. What caused you to decide to come all this distance?*

KELVIN: I used to come every second year. I started doing that about 18 years ago. The first one I went to was in Sydney. But as a small company, we fluctuate between the one of the three staff people, over there I don't find we get a lot of input from our distributors. We don't really know what's going on unless we make the effort ourselves. In order to stay up with what's going on, what's available, what people are doing, this was the logical place to come. It wasn't anything specific. It was that practically everyone was here.

IS: *Did you have a particular objective? Or were you looking for a particular type of product or tools in particular?*

KELVIN: I canvassed my customers to see what they particularly want. So I came with a list of questions looking for certain tools. It's very hard to think of of any specific ones at the moment. Like replication was a big one. Visual report writers and visual tools are always relevant. Because we're still a character-based app. We need to make that step some-

time soon. I'm also keen to use contractors to do a chunk of it rather than do it myself. And that means the contacts I have made here in the past, and I keep refreshing, are actually quite important to me.

IS: *Has the conference met your objectives so far?*

KELVIN: Yes it has.

IS: *As a MultiValue developer, would you recommend other MultiValue developers come to the conference?*

KELVIN: I'm surprised there aren't more people from Australia and New Zealand. Very surprised. I would recommend it. I think some of the bigger database vendors should also be here, but they're not. It would be good to have them here just so we could ask some questions and put a face their product, even though they're not really likely to sell anything here. I thought they should've been here just as a measure of PR.

IS: *Even if it's just making themselves even more accessible to their own customers?*

KELVIN: Exactly. Yeah. And probably because of that not just salespeople here but technical guys. Be able to pick their brains, you know. What do you think of this idea? And I think you would be huge theater.

IS: *And what about the sessions? Has the content of the sessions been useful to you?*

KELVIN: Yes, they're always useful. The trouble is that the most useful ones are on at the same time as the other most useful ones.

IS: *That's a problem we haven't been able to solve yet.*

KELVIN: You can't solve it. In some of them go to one and you say, "That was a mistake; I should've gone to another one." Big decisions.

IS: *Any particular type of sessions or specific topics that you would like to see the next time you make it back?*

KELVIN: No. I think that this time was pretty good.

IS: *When we started talking, it sounded like one of the big things was the ability to network with other MultiValue developers in addition to the exhibits and sessions that you come for. Is that a fair statement?*

KELVIN: Yeah. Because I come every second year, there's a bunch of guys who come every second year. You don't keep in contact during those two years, but you know they're there. If you have a question, I could e-mail them and say, "What do you do in this?" And you know they'll answer. So the networking is really important; it's probably 50-50 networking versus content. Really. You take one of those halves away, I probably wouldn't come. **IS**

Interview with Baker Hughes

IS: *We are talking to Baker Hughes of Mauser Electronics. What convinced you to come to the conference? Why are you here?*

BAKER: There are initiatives that Mauser has on the map for this year and coming years, so their commission was to go out there and find and see the tool sets that could be of interest to us to get our business further down the road and to perhaps accelerate our development cycle. Instead of hand coding things, tools that help us do that. And also just to network with other people who are doing the things we want to do so we can learn from them about the hazards, about their successes, about their experiences that would keep us out of the sand pits. Mainly those two things. Tool acquisition and networking.

IS: *Anything in particular that you're looking for? And if so did you find it?*

BAKER: Yes. We were looking for some specific things, as there are some specific projects. In fact, we have a list of things that we were to explore. Off of that list, I think we had some conversations with people that covered most of the topics. There were a few of the vendors that didn't show up this year. And that's their own fault if they didn't show up, because they may have missed some opportunity to talk with us. We do have some increasing requirements for, like, data resilience and data recovery. So we are looking for some help there. To answer the question, did we see the tools? I think we saw some things that are going to be in the running.

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Serious Data Compression for Network Transport in MultiValue Systems

BY JOHN RACINE

Each character of each record and data element in MultiValue systems is made up of eight bit ASCII characters, ranging from 0-255. Most common data sets use only portions of the ASCII table, in relatively consistent patterns. Much data is purely alphabetic, some is alphanumeric, some is numeric, and some is Boolean. Often, complete records fall completely within these subsets of the ASCII table. Most of these subsets can be represented by less than eight bits. This presents an opportunity for serious data compression, especially for network transport.

Cascading Evaluation of Compression Type

The first step in my compression algorithm is the cascading evaluation of the compression type. I resolve the data into the following types:

- Boolean data
- Numeric data
- Alphabetic data
 - All one case
 - Mixed case
- Alphanumeric data
 - All one case
 - Mixed case

I use the CONVERT function repeatedly to remove data from the record to be compressed. To determine if data is Boolean, for instance, I remove all Boolean and all system-delimiters from the data. If the remaining data is null, the original data is Boolean and can be compressed according to

the Boolean algorithm (which is the best compression, down to three bits). If the remaining data is not null, I continue testing the data until the best compression algorithm for that data is found. There is overhead associated with determining the compression type.

```
*
*/ test to see if it is 3 bit data
(booleans)
*
TESTDTA=INDTA
CONVERT '01YN.' TO '' IN TESTDTA
CONVERT SEPS TO '' IN TESTDTA
IF TESTDTA='' THEN
  SEMA='B'
  CALL COMPRESS.3(INDTA,OUTDTA)
  INS SEMA BEFORE OUTDTA<1>
  RETURN
END
```

There is also performance overhead in compressing and expanding the data. In MultiValue Basic, since each byte must be expanded into a set of bytes representing the bits in the byte, rather than being able to work at the real bit level, there is some overhead involved in this expansion of the data. Some versions of MultiValue have a system-level function, usually called 'MB' and used with ICONV and OCONV, which can perform this. I provide Basic subroutines which performs these same functions (called ICONV.MB/OCONV.MB).

```
SUBROUTINE ICONV.MB(BINARY,SQ)
*** converts binary string to ascii
*** sequence
TEST=BINARY
CONVERT '1' TO '0' IN TEST
IF TEST='00000000' ELSE SQ=0; RETURN
IF BINARY[1,1]=1 THEN
```

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SERIOUS DATA COMPRESSION FOR NETWORK TRANSPORT IN MULTIVALUE SYSTEMS

Continued from page 10

```
SSMM=128
END ELSE SSMM=0
IF BINARY[2,1]=1 THEN
  SSMM+=64
END
IF BINARY[3,1]=1 THEN
  SSMM+=32
END
IF BINARY[4,1]=1 THEN
  SSMM+=16
END
IF BINARY[5,1]=1 THEN
  SSMM+=8
END
IF BINARY[6,1]=1 THEN
  SSMM+=4
END
IF BINARY[7,1]=1 THEN
  SSMM+=2
END
IF BINARY[8,1]=1 THEN
  SSMM+=1
END
SQ=SSMM
RETURN
```

The further the data has to be transported, the more processor time (both Central/CPU and other) will be used throughout its journey. It follows then that using data compression becomes more important when working over the Internet and over Wide Area Networks

There are several considerations you might have regarding using my Basic subroutine versus the system-level one. I have little doubt that the system-level function will work with less overhead than my Basic one, though mine is written tightly, if only because the system-level one is written in C or assembler.

However, other issues may be more important to you. If your software has to run on multiple database platforms, issues such as portability, maintenance, coding simplicity, and coding standards could affect your decision. Using my Basic subroutine for this function will allow you to have one version of your software which runs on all platforms. Alternately, you could build in a CASE statement or use compiler INCLUDES to implement platform-specific usage of these functions. You could even take it one step further and ask your database vendor(s) to implement the MB conversion in ICONV/OCONV in their next releases. If you want to take advantage of performance advantages wherever you can, you could use this second CASE/INCLUDE approach. If you are satisfied with the performance of my subroutine, however, I suggest you use it all of the time and simplify the coding and maintenance of your source code.

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Deciding Whether to Use Data Compression

Another consideration is whether to use compression at all. Several factors should be assessed when deciding this:

- Consideration of length of transport
 - LAN
 - WAN
 - Internet
 - Middleware
 - Message Broker/ Message Bus architecture
- Consideration of volume of data
- Consideration of usual type of data
- Note: two bytes of overhead for each record compressed. This could be cut to one if MultiValue vendors supported A=B[2,0] to yield the string from the second byte to the end of the string, no matter how long

The further the data has to be transported, the more processor time (both Central/CPU and other) will be used throughout its journey. It follows then that using data compression becomes more important when working over the Internet and over Wide Area Networks, and also when other intermediate software such as middleware or message brokers are involved. This is not to say that data compression cannot be advantageous over Local Area Networks; it might.

The issue of the volume of data can be two-fold. Data compression can be very advantageous when the volume of data is large. However, if the data is very heterogeneous and comprises bytes throughout the ASCII set, the likelihood of high rates of compression falls with my algorithm. If, however, most of the data will compress to seven or eight bits or less most of the time, regardless

of volume, my compression algorithm could yield impressive results in most situations. Again, other factors such as the length of transport can magnify these effects.

As implied before, the type of the data is very important when assessing the benefits of using my data compression. Because the most advantageous, highest compression types are tested for first, this means that the better the type of data (Boolean, then numeric, then alphabetic, then alphanumeric), the better the compression and also the faster the determination of which algorithm to use is made. The compression of Boolean data will begin earlier than the compression of other types of data and

will result in the highest rate of compression, for instance (fig. 1).

Very small strings of data may be unwise to compress, however, because it takes two bytes of data to describe the type of data compression and this would add to the total amount of data being transported. Personally, I would like to see database vendors support string functions of the type A=B[2,0], which would yield from the second character in B to the end of B, regardless of the length of B (a function necessary to lower this two-byte overhead to one). This really is not possible to do in a reliable way in any other function (including FIELD(B,X,1,999999)) for very long strings. This would allow

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```
SUBROUTINE COMPRESS.3(INDTA,OUTDTA)
*** compresses data from 8 bits down to 3, when appropriate
* booleans, separators, period
OUTDTA=''; BUFFER=''
LGT=LEN(INDTA)
FOR AAA=1 TO LGT
  CHR=INDTA[AAA,1]
  SQ=SEQ(CHR)
  BEGIN CASE
  CASE SQ=48 OR SQ=49; SSQQ=SQ-48
  CASE SQ=89; SSQQ=2
  CASE SQ=78; SSQQ=3
  CASE SQ=46; SSQQ=4
  CASE SQ>=252 AND SQ<=254; SSQQ=SQ-247
  CASE 1; SSQQ=''
  END CASE
  IF SSQQ#'' THEN
    CALL OCONV.MB(SSQQ,BINARY)
    BUFFER:=BINARY[6,3]
  END
  IF LEN(BUFFER)>3 THEN
    N.BINARY=BUFFER[1,8]
    CALL ICONV.MB(N.BINARY,N.SSQQ)
    OUTDTA:=CHAR(N.SSQQ)
    BUFFER=BUFFER[9,999999]
  END
NEXT AAA
IF BUFFER#'' THEN
  N.BINARY=BUFFER'L%8'
  CALL ICONV.MB(N.BINARY,N.SSQQ)
  OUTDTA:=CHAR(N.SSQQ)
END
RETURN
```

Fig. 1



MultiValue and the Web

Step into the Future

BY KEVIN KING

With an early flight home from Spectrum 2011, I left the hotel somewhere around o-dark-thirty, well before the sun — or Starbucks — had awakened. As I turned out of the hotel parking lot onto the street, I noticed things suddenly became very dark, as neither the car nor its sleep deprived commander had remembered to turn on the lights!

Instinctively I reached for the light switch and turned on the windshield wipers instead. A mild but instant panic set in. Where was that light switch? Why can't they make all cars with the light switch exactly where I expect it to be? Fortunately, I found the switch before being noticed by the local police. Then again, it was o-dark-thirty after all.

Pondering this on the way to the airport, I couldn't help but think there was something a little too *familiar* about that feeling of mild panic. Each time I get into a new rental car, there's always the "get to know ya" period figuring out all the dials and gauges. But this was something deeper. This was more reminiscent of that feeling of mild panic associated with coming face to face with a new computer language or technology.

"Why can't they place all the commands where I expect them to be?" I will often wonder. Of course, that's hardly a rational thought because each

This series will focus on various aspects of web technology with a specific emphasis on solving the connector problem once and for all – literally – with minimal effort and investment.

language and/or technology has its own nuances, terminology, and learning curve. Otherwise technology would be homogenized, limited, and boring! Furthermore, what may seem perfectly sane in one language may seem absolutely bizarre in another, making the challenge simultaneously frustrating and yet absolutely brilliant in its potential.

Like it or not, in the global technology landscape MultiValue Basic represents a minuscule blip on the radar. We know MultiValue Basic. We love MultiValue Basic. It's a comfortable, most capable language, and we know how to make it dance quite beautifully. But for all it offers, it remains a very small piece of the puzzle. Are we comfortable with *that*?

In the past several years, one technology has not only grown to prominence, some might say it has completely revo-

lutionized life as we know it. Anyone remember dial-up modems, bulletin board software, or even ordering product from a printed catalog? Some may chuckle at the memory, since the Internet has since made it nearly effortless to connect to anybody and obtain just about anything anywhere and at any time.

Web browsers are on desktops, laptops, net books, tablets, smart phones, TVs, game systems, shopping carts, and even home appliances. Furthermore, the technology shows no signs of slowing down. It's therefore not out of the bounds of reason to expect that in a few short years the browser will not only become the primary user interface, it may very well become the only user interface that matters.

There is every opportunity for MultiValue Basic to be a significant player in this expanding world of web technology. We simply need to incorporate our technology into the most innovative web solutions possible and demonstrate to the world the power what we bring to the party.

"But web technology is SO different," you say. Is it really? Our MultiValue systems today have client workstations talking to servers. Web technology has client workstations talking to servers. Our applications accept input, do some processing, and produce output. Hey, fancy that — so does the Web! If

we look closely, I believe we'll see that while there are differences, there are far more similarities.

What's missing, however, are connectors that allow our MultiValue systems to talk to a browser as easily as we can talk to a telnet client. Once we solve this issue, there will be nothing preventing every MultiValue application from being a full-fledged, card-carrying member of the Web community, with all the rights and privileges of such membership, including:

- Visibility to the widest customer audience — Browsers are everywhere. So wouldn't it be cool if your application could reach everyone, everywhere, and at any time?
- Nearly unlimited support for devices — MultiValue technology on a shopping cart, anyone? Or how about on a refrigerator?
- Fresh user interfaces — Colors, graphics, interactivity, and much, much more!
- Worldwide talent pool — There are a lot of people out there who know a thing or two about web technology. There is a beautiful synergy in the potential of us learning from them while they learn MultiValue from us.

Most importantly, the Web as we know it today is only the beginning. By fully committing to this technology today, I believe we are virtually guaranteed a front row seat to the future. Let me assure you, that's much better than the alternative! **IS**



KEVIN KING is the President and Chief Technologist with Precision Solutions, Inc., a leader in technology solutions, support, and

training. He is also the author of SB+ Solutions, an enthusiastic private pilot, and Christian guitarist and producer... as time allows.

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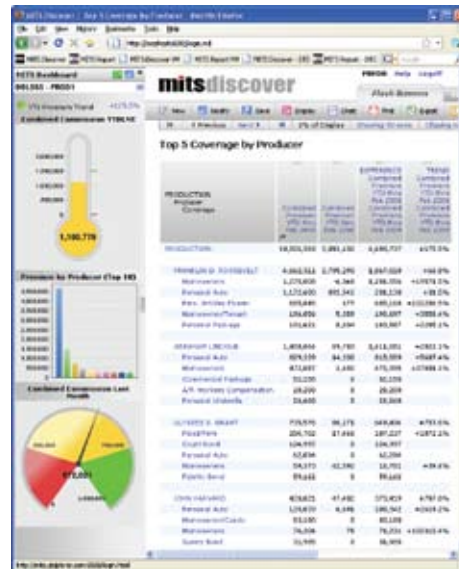
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Case Study J.W Terrill Insurance Provides Management Team with Self-Service Reporting Capabilities

Challenge – Reduce Time Spent Creating and Customizing Reports

J.W. Terrill provides a complete range of property & casualty and employee benefit products and services to organizations of all sizes. The agency is using Vertafore's Sagitta® agency management system, and had been manually creating and distributing all reoccurring reports and using Excel to customize the reports and create user-specific reports. They would then manually distribute the reports via email attachments.

"Reoccurring reports were eating up an average of three days each month," said Kathie Ryan, Training Coordinator at J.W. Terrill. "Not to mention the time that we were spending in other departments."

The agency was also having trouble finding a third-party solution available to Sagitta On-Line agencies and it appeared Vertafore had no plans to upgrade the report scheduling capabilities within Sagitta.

"We were looking for a new reporting solution that would free up valuable resources we needed to work on other projects," says Ryan. "We were spending so much time making sure reports were run on time and follow-ups were scheduled."

Solution – Empower Management with Self-Service Reporting

J.W. Terrill selected Informer software for its ease of use, automated scheduling and distribution capabilities, Live Excel integration capabilities and multiple output options. Informer's calculated columns, drill down analytics and charting capabilities have provided J.W. Terrill with a reporting solution that is powerful, yet easy to use.

"Informer offered us a very easy interface to learn as it translates very well to those who already have Sagitta Report Building knowledge," says Ryan. Informer provided J.W. Terrill with automated scheduling and distribution via email. Integrating Informer with Live Excel enabled the management team at J.W. Terrill to access and customize reports on their own without IT assistance for some of the routine report requests.

"Informer offered us the opportunity to provide managers with some self-serve options without having to train them on new software by using the Live Excel reports."

Results – Desktop Integration Quickly and Easily Delivers Real-time Data

Informer has allowed managers and supervisors at the agency to get access to specific up-to-

date information with the push of a button and it allows them to sort, slice and dice data on the fly. "We didn't have to teach them how to use Informer, just some simple steps in Excel," says Ryan.

"Informer is VERY easy to use and has allowed us to tackle more complex reports and provide calculations within the reports that go to users who are not that adept at Excel formulas," says Ryan. "All of our reoccurring reports now auto-run and auto-distribute without delays due to any absences or vacations."

Contact us for a FREE trial

For a demonstration of Informer Web Reporting or a free 30 day trial call us today at 888-703-0016 or email at sales@entrinsik.com.

About Entrinsik

Since 1984, Entrinsik has been developing, implementing, and supporting database solutions that enable organizations to maximize performance and improve bottom lines by tracking, understanding, and managing information.

With tens of thousands of users across various industries, Entrinsik's Informer Web Reporting software delivers real time access to multiple data sources simply and easily using a built in Web-based query engine to provide a single point of secured information access for ad hoc reporting, report customization and analysis.

Entrinsik's SEMtek ERP software now drives many of the nation's largest professional and con-

tinuing education profit centers. For a product demonstration or a free 30 day trial, call 888 703 0016 or email sales@entrinsik.com. ■



Precision Solutions Announces Red Leaf Version 3

Precision Solutions is pleased to announce the availability of version 3 of the Red Leaf web access portal for the Prelude Advanced Distribution System. This release incorporates an extensive list of improvements including customer budgets, additions of product specifications, accessories, and related products, custom data fields, as well as numerous Excel configuration and web 2.0 improvements.

Red Leaf offers Prelude customers a unique path to the web by providing a completely customizable user interface wrapped around an extensive web API for integration with the Prelude application. Customers can configure their products for their Red Leaf powered site with more information and options than normally available in the standard Prelude application, with the ability to leverage Microsoft Excel and comparable tools for product setup and maintenance.

About Precision Solutions

Precision Solutions (Longmont, Colorado) unravels complex business problems with quality solutions and exceptional customer service. Using our customer centered, results-oriented approach to software development, we're more than just a bunch of technology geeks; we're real people with a passion to deliver solutions that make a real difference.

About Activant Prelude

Activant Prelude fully integrates a distributor's operations. The solution allows immediate transfer of information between departments and permits flexible on-line inquiry into virtually any kind of information. Prelude is a feature rich distribution pack-

age with optional integrated modules such as forecasting, integrated customer relationship management, value-added manufacturing, and business intelligence. ■



mvDesigner 5.1 for Windows Platforms

TigerLogic is pleased to announce the General Availability of mvDesigner 5.1 for the Windows platform. mvDesigner 5.1 introduces innovative functionality that further extends opportunities for D3 and mvBase database application developers

to reach new platforms and the expanding mobile applications market, including Apple iOS based mobile devices.

mvDesigner is a fully integrated, object-oriented, rapid application development environment for the creation of event-driven, graphical enterprise, web and mobile applications. mvDesigner offers an evolutionary approach for Pick/BASIC developers who wish to adopt the latest technologies while leveraging their existing data and server-based business rules.

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SERIOUS DATA COMPRESSION FOR NETWORK TRANSPORT IN MULTIVALUE SYSTEMS

Continued from page 13

me to cut this overhead to one byte. If it were only for my compression routine, I probably not mention this, but I have felt the need for this for some time in many programming tasks. $A=B[2,LEN(B)]$ is actually two function calls and with long strings, significantly adds overhead to the algorithm.

Issues of Data Storage and Network Transport

Segment Marks (ASCII Character 255) are produced during compression and are usually a part of the derived compressed data. This is an unavoidable result of the algorithm but is acceptable to me because the primary purpose of this algorithm is network transport, not data storage. That said, however, some systems may allow data to be stored when it contains Segment Marks. In

my experience, however, few, if any, MultiValue hashed files will handle Segment Marks as part of the data and will either produce error messages, abort, or produce group format errors when such data is saved or retrieved. It may be possible to save this data to operating system level files at the NT, Unix, Linux, etc., level, but that you would attempt at your own risk; I have not tested it. I have posed the question through the years to some database vendors whether delimiting records (using CHAR(255)) in hashed file groups is really necessary and whether it could be accomplished by just working with the length of the data records as shown in the record key header, but I don't think this has ever changed.

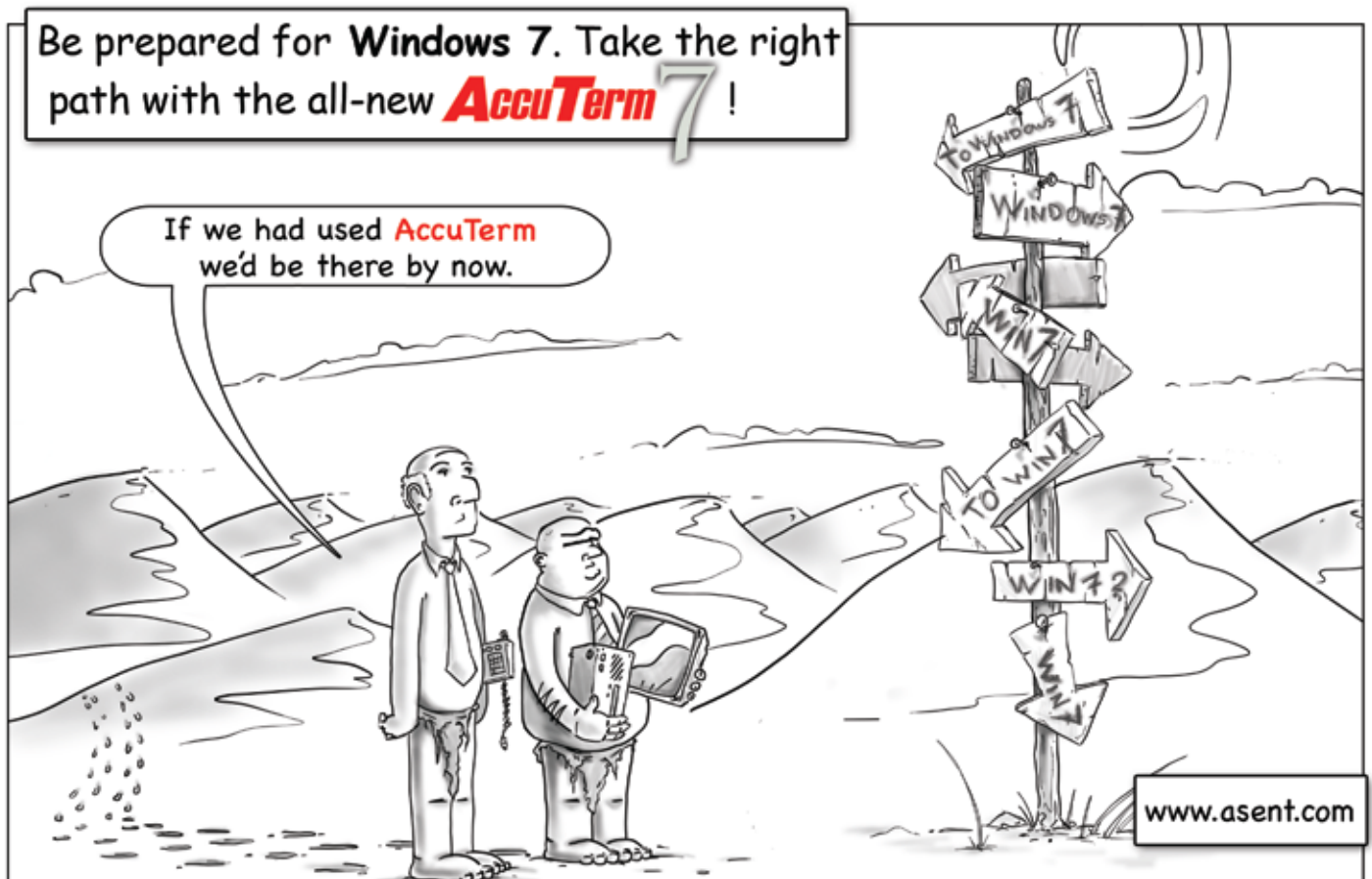
Segment Marks are not usually an issue in network transport. I provide here both MultiValue-side Basic subroutines and Visual Basic-side subroutines. Nathan Rector was kind enough

and skilled enough to translate my algorithm into Visual Basic to supply those subroutines. Thank you again, Nathan.

Licensing and Liability of These Subroutines

These subroutines are a gift to the MultiValue community. They are absolutely free and not subject to any restriction, GPL, or other license. You are free to copy these and even to rebrand them and re-market them, if you see fit, understanding, of course, that I retain the right to distribute my versions free of charge to anyone who wants them and that they will be downloadable from my <http://www.racent.net> home page at any time. While these are being given to promote MultiValue business, of course, I hope to bring people to my web site and promote my own business as well.

These subroutines have been tested, but not thoroughly. The algorithm in-



volved, however, is not as difficult as it might at first appear and we expect to be able to resolve any problems encountered. Any feedback regarding bugs found (and help resolving them) will be appreciated and fixes will be implemented in the code offered in the download on my website, however, I expressly absolve both Nathan Rector and myself from any and all liability regarding the use of these routines.

To the best of my knowledge and Nathan's, and after seeking such compression routines in a fairly thorough manner before I decided to develop my own, these are the only compression subroutines of this type in the MultiValue marketplace. The others I found all seemed to be some variant of RLE or were RLE-based. These are not. For data which is found in database files/tables, we believe this type of compression to be superior to RLE-based algorithms, which may be better suited to image files. **IS**

JOHN PADDEN (PADDY) RACINE
MBA BA. He has achieved an MBA from Strayer University and a BA in Psychology from the University of Delaware. He has experience within the energy, supply chain, information technology (with over 23 years in Pick), insurance, wholesale, and retail industries. His skills incorporate strategic planning, technology development, project management, creative, business, political, and technical writing, teaching, and sales and marketing. Please see <http://examples.racent.net> for more professional information and <http://www.racent.net> for the Racine Enterprises Inc. web site.

Feedback

Want to get a job? When was the last time you updated your coding skills?

So many people came up to me at the last Spectrum conference and asked if the company I worked for had any openings, I thought I was hosting a job fair. When asked what skills they had, for the most part they told me of their decades of Pick programming. When pressed about what other languages they knew, a glazed look would come over their eyes. I hear you when you say that, "I've been doing this for years, and that should have value". Your experience does have value. But companies running MultiValue applications today need more than Pick programming talent. If you're looking in today's market place with 1980's skills, at least steady work is going to be tough.

Learn, Grow, or Fade Away

Don't give up hope. If you're willing to spend a little of your free time, you can update your skills and have a far better chance of landing a new job. All you have to do is go back to school and learn new programming tools. It sounds daunting. I understand. But you don't even need to leave the comfort of your home to learn languages such as: C++, Ruby on Rails, Python, and Java... and all for free. And from major universities such as MIT and U.C. Berkeley, and Corporate learning centers such as Google Code University (intl-spectrum/s1038) and Mozilla School of Webcast (intl-spectrum/s1039).

Now those of you who know me know that I'm a sales-guy, and I'm not a programmer. So what can a salesman tell you about learning a language? Well in January of this year, 2011, I found the Python course offered by MIT and went through it in my spare time. And well, I can now report to you that I will not be leaving sales to take up the fast paced life of a high dollar programmer. I can tell you that I now have a more solid understanding of coding than I did in January. As a sales-guy, that serves me well. And if I had been a coder, I believe the course would have given me the tools to start producing useable code.

After college did you decide that you had learned all you needed to know? Whether you're 25 or 65 when you stop learning, you start fading away. So the choice is yours. It will be work, and it may not come easy. But I can guaranty it will not be dull.

Here's wishing you the time of your life.

Dan Schmitt
Colorado MultiValue Users Group (CMUG)



Sending E-mail from Your MultiValue Programs

Part 3: Using Sendmail

In the last article I showed you an easy way to send e-mails using Windows, but many developers are running their systems on Linux/Unix. For various reasons, this is probably the article you are most looking forward to, besides the one on how to send attachments.

I had a few people ask about which articles are coming up, so I thought I'd mention them now.

- Sending using Exchange, Gmail, and other e-mail servers.
- Creating attachments.
- Create Html and Text e-mails.
- Retrieving, consuming, and interacting with POP3 e-mail boxes.

Now that I have that out of the way, lets get to the topic at hand — sending e-mails using Sendmail.

Why Sendmail?

Why Sendmail? Why not postfix, qmail, or exim? Well, the simple answer is that most Linux/Unix systems already have it installed. This means there is no extra software to install and manage, outside what is already included.

Sendmail can be a bit complex to setup, and it had some security issues in the past if the setup was not done correctly. While this can be a concern, it is also to be expected from a SMTP server that has been around since the beginning days of e-mail.

If you have looked around for how to get Sendmail up and running, you likely found TONS of articles, tutorials, and tech tips explaining the best way to do it. This can be a bit daunting, but don't be scared off. It is really quite easy to get a simple SMTP server setup with Sendmail.

Getting Sendmail setup and running.

The following setups are the simplest I've found to setup and configure a simple Sendmail SMTP server. I am not including setups to configure any security, filters, or user mailboxes. This is purely for configuring Sendmail for sending e-mail only. So if you plan on using Sendmail as your public Internet SMTP server, or plan on receiving e-mails using Sendmail, you'll need to dig deeper into all those articles on the Internet.

The first setup is to edit the “/etc/mail/Sendmail.mc” file. Find the following configuration options, and change the “mydomain.com” to your e-mail domain name:

```
MASQUERADE_AS(mydomain.com)dnl
MASQUERADE_DOMAIN(mydomain.com)dnl
LOCAL_DOMAIN(`localhost.localdomain')dnl
FEATURE(masquerade_envelope)dnl
FEATURE(masquerade_entire_domain)dnl
```

If any of these lines have a “dnl” at the beginning of the line, then remove it. Save the file, compile it, and restart the Sendmail service.

```
# m4 /etc/mail/Sendmail.mc > /etc/Sendmail.cf
# service Sendmail restart
```

Send e-mail

Once it is configured, actually sending the e-mail with Sendmail is quite easy. All you need to do is send the completed e-mail into STDIN, and supply the e-mail address:

```
/usr/sbin/Sendmail joeblow@mydomain.com <
→ mail.txt
```

Just like in the IIS version, the only trick is writing the e-mail to the OS. You can see full sample code in figure 1. You can also download the source code from the Intl-Spectrum web

site. There are few programs that are used within this program to make generic access to OS commands. These can be found on the Intl-Spectrum web site as well.

Drawbacks to Sendmail

One of the major drawbacks to Sendmail is how many different ways there are to configure it. While that is one of its advantages, it also makes it easy to misconfigure. Most security holes found in Sendmail are due to misconfiguration or ignorance of how to configure Sendmail correctly.

Since Sendmail has been around a long time, there are answers and solutions to just about everything that can be done with Sendmail. Make sure you plan your settings correctly.

In the next article I will talk about how to send an e-mail using MS Exchange, Gmail, and other e-mail servers. IS

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```

SUBROUTINE SEND.EMAIL(TO.ADDR, FROM.ADDR, SUBJECT, MSG)
EQU AM TO CHAR(254), VM TO CHAR(253), SVM TO CHAR(252)
*
EMAIL.DATE = OCONV( DATE(), "DWA" ) [ 1, 3 ]
EMAIL.DATE = EMAIL.DATE : ", " : OCONV( DATE(), "DD" )
EMAIL.DATE = EMAIL.DATE : " " : OCONV( DATE(), "DMA" ) [ 1, 3 ]
EMAIL.DATE = EMAIL.DATE : " " : OCONV( DATE(), "DY" )
EMAIL.DATE = EMAIL.DATE : " " : OCONV( TIME(), "MT" )
EMAIL.DATE = EMAIL.DATE : " MST"
*
EMAIL.ITEM = ""
EMAIL.ITEM<1> = "To: " : TO.ADDR
EMAIL.ITEM<2> = "From: " : FROM.ADDR
EMAIL.ITEM<3> = "Subject: " : SUBJECT
EMAIL.ITEM<4> = "Date: " : EMAIL.DATE
EMAIL.ITEM<5> = "MIME-Version: 1.0"
EMAIL.ITEM<6> = "Context-Type: text/plain"
EMAIL.ITEM<7> = "Context-Transfer-Encoding: 7bit"
EMAIL.ITEM<8> = ""
EMAIL.ITEM<9> = MSG
*
EMAIL.ID = "email.txt"
CALL IS.WRITE.OS( "/temp", EMAIL.ITEM, EMAIL.ID )
*
OS.CMD = "/usr/sbin/sendmail " : TO.ADDR : " < " : EMAIL.ID
CALL IS.EXECUTE.OS( OS.CMD, "" )
RETURN
END

```

Fig. 1

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2011 INTERNATIONAL SPECTRUM CONFERENCE FEEDBACK

Continued from page 9

IS: *Has the conference met your expectations?*

BAKER: It has exceeded my expectations. It's amazing to me all the experience and knowledge that shows up at this conference. You get value not just from talking to the vendors or the providers or the guys that are presently wearing a consultant hat — which many of us have done at times. But you also get a lot of value from sitting across the table from somebody that's done the same thing, or they're about to do something, that you've already done. You get a tremendous value out of that. So it has exceeded my expectations in that way, to be able to talk with people.

IS: *As a MultiValue developer, would you recommend that other developers attend the conference?*

BAKER: Yes. In fact, I'd be willing to give up my seat to get some younger guys here. And other years, have some other guys come back. This one of our goals. I came with my associate Austin Turner, and we want to do this so well this year that they see the value, and they want to send us or somebody back next year so this is a regular occurring thing that people from our shop show up here.

IS: *What about the content of the sessions? Was that useful?*

BAKER: Yes it was. I think that I'm especially thankful that even some guys that were vendors who were here presenting a product, especially talking about Martin, he gave

content that was useful to you, say in the area of data resilience, whether you buy his product or not. In fact, I immediately saw some vulnerabilities we have in our backup methodologies because of the way we do things. So I got value whether I take a serious look at his product or not.

IS: *We're glad that the sessions were useful.*

BAKER: Now some of them could've been a little more mature in the material that they presented. Some of the coding examples they presented were, I think, almost an insult to the guys sitting there. A little too simplistic. I guess it's good for those who didn't know anything about the language. So if it was new technology to some people, but I think that nowadays it probably comprises maybe 30% of the developers that show up here, where they just haven't ever seen a certain language. I think most everybody has seen PHP or Java. They've seen some form of it by this point.

IS: *What sort of sessions would you like to see next year?*

BAKER: Definitely on the application side for us. We don't send hardware people to things like this. So probably more on the mobile thing. I'd say more web stuff. I question in my mind whether there are other players who work here already. And I guess there are a few. I think those folks should come to the party so that the pool here has all the competitors, and you could do more analysis by going from session to session and talking person-to-person. So more of the web, more on mobile. Database optimization. Even query optimization. There's a lot of folks who have a lot of legacy reports and or executes scripts that they constructed in a Basic program. And a lot of it is old and probably not optimized. So there could be some sessions on optimizing our database stuff that we do. So challenging the old hands that may think all their MultiValue stuff is passé, and they've been doing it for so long that it works perfectly. And they may not realize that there is a lot of speed enhancement they can give to the user.

IS: *There've been a lot of changes since 1976 when some of these programs were originally written haven't there? I imagine you would like to see that platform specific, since each platform optimizes differently?*

BAKER: Maybe so. I mean some of the tricks could be the same. General things on optimization, optimizing select



statements. Things such as are you using indexes properly? Are you building certain kinds of indexes?

IS: *And then we always like to ask, what do you think could be done better?*

BAKER: Good question. One thing that comes to mind would be if we had certain rooms that were made available for open discussion. Maybe if it could be announced that there's going to be an open discussion on a specific topic. Or a Q&A with a panel, maybe some veterans who have been at it for while. And people can ply them with questions on a specific topic. Sort of like a developers chat session where people just let their hair down. And you sit down being got honest and people can do anything from asking you questions about some of the topics we discussed here, like optimization, or how do you face this problem, or we're considering a GUI product or a GUI project and what do you think of this tool, or how does this tool compared to that one?

IS: *Let's wrap up by talking about TEXMUG (Texas MultiValue Users Group). Now you were instrumen-*



tal in, or the founder of TEXMUG, if I recall correctly. Why did you do that? Why a user group? The general wisdom at the time was that user groups have outlived their usefulness. And yet, we see that TEXMUG seems to be going strong.

Continues on page 24

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2011 INTERNATIONAL SPECTRUM CONFERENCE FEEDBACK

Continued from page 23

BAKER: Well, I think we have reached critical mass finally in TEXMUG. It took us a little while. But we are achieving some consistent numbers, and we are having some of the same faces show up, and people are growing friendships. And that's sort of the basis. It's the personal connectedness that people feel to other users in the area. Where you pick up the phone or you send them an e-mail and you say, I'm facing this problem. What about it? We all have those people, and they may be across the world or across the country now. But to develop those in a regional area is what we envisioned. Our vision was to combine the virtual user group, which we all are probably a member of one or more of those, with a meet-up type group where you actually go and sit down face-to-face and talk about a specific topic. And so that to me was the vacuum. Sometimes people don't know all the people that are the that are the players in the community. So by having a meet-up, you introduce your friend to this other guy and now he knows that guy does the stuff I need to do and he's already doing it. There's the benefit of that just as there is right here. It's just on a more local scale. And some people can come to that who will never show up at International Spectrum. Or they'll never go, or be permitted to go, to even one of their specific industry conferences. But they can take their own time to come and sharpen their skills at a local user group. **IS**



Interview with Austin Turner

IS: *We are speaking with Austin Turner of Mouser Electronics. What convinced you to come to the conference? Why are you here?*

AUSTIN: Well, I had heard about it some. But I didn't know Mouser was sending anyone until they asked me if I would like to come. I said, sure. I'd like to come. See what else is out there and how things are going. They were kind enough to provide us with a nice list of goals and information that I would need to try to find any answers I could to. And to come out here and meet a lot of people and learn about what is going on in the MultiValue world. It's very exciting here.

IS: *Other than the list that work gave you, did you yourself have any particular objective in mind? Or were you looking for something in particular?*

AUSTIN: Yes. There actually is one thing that I am looking forward to learning about tomorrow. That's the PHP with MultiValue. My degree is actually in networking, and I ended up going into programming. I've been programming longer than I have been networking, but my degree was in networking. And I've always been a big fan of UNIX and open source solutions, stuff like that. I honestly do think the future of software development lies in open source development and on charging for services rather than charging for software. So I was excited to hear Charles Baruch mentioning some of the stuff about getting more involved in the open source movement.

IS: *How did you end up in MultiValue? Not to put too fine a point on it, you're one of the younger members here. You don't have to dye your hair. We are always lamenting about not having new blood. So how did we snag you?*

AUSTIN: I had been working on web sites in Fort Worth when I got deployed with the United States Army. When I got back, the recession had just started. I decided, you know, I really need to go to a company that employs a little more than five people. So I applied at Mouser, and they had an entry-level position for UniVerse. I thought, that sounds kind of interesting. I'll see what they've got with that. While interviewing with them, they gave me a choice between .NET and UniVerse. I had already let my biases be known, so I

thought, you know what. UniVerse doesn't sound bad. And the more I talked to them about it, it sounded really interesting. I had actually worked previously in both Microsoft SQL and MySQL, and in both of those databases I had used my own little kludges to make some fields multivalued before I knew what MultiValue was. Basically, I'd throw my own little delimiter in there so I could store multiple values in a single field. When I found out that there are actually databases that supported that natively, I got kind of excited and thought, this sounds pretty cool. I'd love to learn more about it. I'm a big fan of learning new languages too. So it was exciting getting to learn about this thing, and about MultiValue being one of the industry's best kept secrets. I think there's some truth to that, because there's a lot of stuff you can do with it that's very powerful. But I had to find it first.

IS: *It doesn't sound like you have any regrets.*

AUSTIN: I think the only things I miss — actually I was talking to Martin earlier and finding out that Open QM addresses them. Such as object-oriented programming, which is something that I know in the City of community you hear a lot of, well you know that's kind of academic. Or it's not that big of a deal. It's another way of programming. I don't know if the generation that is currently working primarily in MultiValue has heard all that much about MVC, the Model View Controller model where you separate everything. Objects help with that quite a bit. So you actually create your object to do all your business logic, and it abstracts that away from having that even interfering with with your actual display.

IS: *So has the conference met your expectations so far?*

AUSTIN: I actually hadn't formulated too many expectations. It's my first conference.

IS: *Okay, let me phrase the question differently. From a professional standpoint, do you think it was worth your time?*

AUSTIN: Oh yes. It's definitely been valuable. Basically learning about some of the products out there, and finding out that there is some stuff that will already do some of the things we've talked about back at Mauser. We have a habit of home growing a lot of stuff. But sometimes it pays to look and weigh the cost of a product versus the cost of developing a product, especially when it's only for in-house use. So



it's been beneficial learning about some of the stuff that is currently out there.

IS: *What about the sessions? Has the content of the sessions been useful?*

AUSTIN: Yes, I'd say so. There's been some really interesting information that would come out. The one I'm looking forward to the most I've got to admit isn't until tomorrow. So I can't say anything about it yet.

IS: *Kevin King's PHP session?*

AUSTIN: I'm looking forward to finding out about what kind of connection he's using to get into PHP and everything.

IS: *If you are able to come back next year, are there any particular topics or sessions that you would like to see added?*

Continues on page 26

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for

mv.NET Solution Objects

2011 INTERNATIONAL SPECTRUM CONFERENCE FEEDBACK

Continued from page 25

AUSTIN: I did notice that that there is a very large representation of .NET technology and implementations. It would be really nice to see other other interfaces to languages such as Java. I mean, I know there's one or two classes on Java and the one on PHP. But it would be nice to see other programming languages that you can interface into a MultiValue database. And more classes regarding how to set all that up and other technologies that would work with them.

IS: *Do you feel that you had ample opportunity to network with other MultiValue professionals?*

AUSTIN: Oh yeah. Definitely. I'm coming away with plenty of business cards and phone numbers and e-mail addresses.

IS: *As a newcomer to MultiValue and with a good educational background in the "more modern" technologies, do you see yourself continuing as a MultiValue developer?*

AUSTIN: Well I would like to think that pretty much any language that I work in that I will continue to try to keep up with the language and continue to use it. And I don't see myself leaving Mauser in the near future, so I definitely plan on continuing to use it there, that's for sure. I like to leverage whatever languages I do learn. MultiValue is really good at doing certain things, but if there's anything it's not quite as good at as something else, such as regular expressions. I'd love to see implemented. I haven't ran into it yet, but if there are is a MultiValue Basic implementation of regular expressions, that's another one of those things that's on my wish list. I find myself using a lot of Perl for that. Perl and PHP both are good.

IS: *One final question. As a younger professional with a computer degree which is fairly recent I would assume — within the last five years?*

AUSTIN: Yes.

IS: *What was your reaction when you first walked in and saw everybody sitting here using green screens?*

AUSTIN: Well to be honest, at first, before I started learning anything about the language, I probably thought for a split second, what did I get myself into? It wasn't so much the green screens that worried me, but the everything being in ALL CAPS, which I found out since then, is not an actual requirement. That's more of a holdover from when it used to be a requirement. I know a lot of developers my age and probably younger now are more accustomed to using camel case in our development. And IDE's are handy. **IS**

SHORT-LINKS

What are those short links in the text of some articles?

As our authors share their knowledge and experience, they also point you to the Web for more info. Some of these URLs are long and cumbersome to use.

To make the URL easier to read and use, we are now using Short-Links to redirect you to the web page the author recommends.

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Reading/Writing OS Files

Reading and writing OS files is very important in the new hybrid systems we have to write these days. Most of our applications are pretty self-contained, and don't need to interact with programs or applications outside the MV environment. But that is slowly changing.

We now have e-mail sending programs, printer overlay programs, SQL Command lines, and many, many other applications that use OS files. The need to read/write OS files continues to go up, and each programmer does it differently.

If you don't already do this on your own, we have compiled some SUBROUTINE (Stored Procedures) that will make it easier for you. If you already read and write OS files, then these subroutines will provide you with a comparison.

Since each MultiValue database implements writing to OS files differently, you have some options to choose from. It also makes it difficult to implement a common set of subroutines without creating limitations.

The major limitation of these subroutines is that they load the complete record into memory. This is not a problem with small OS files, but if you are working with large file (3MB, 4MB, or 10MB), it can become a problem. In these cases you will have to implement a means of reading and writing chunks from the file.

The general syntax for these subroutines is shown in figure 1. You'll notice in the example (fig. 2) that the directory is based on LINUX/UNIX file system structures. If you are writing windows files, you will need to use Windows file systems structures.

To access the code, go to the following link:

<http://www.intl-spectrum.com/s/19xS1> **IS**

Do you have a Tech Tip to share? E-mail it to editor@intl-spectrum.com



```
SUBROUTINE IS.READ.OS(DIRECTORY,DATA.ITEM,FILE.NAME,ERROR.ITEM)

DIRECTORY = the path/directory location in the OS file system to read the information
from
DATA.ITEM = the information from the file with CR:LF/LF Replaced with AM
FILE.NAME = File name, without the DIRECTORY information.
ERROR.ITEM = Information about errors when reading the file
    <1> = 0 - Successful
    <1> = 1 - Item Not Found
    <1> = 2 - Access Denied
    <1> = 99 - Unknown Error

SUBROUTINE IS.WRITE.OS(DIRECTORY,DATA.ITEM,FILE.NAME,ERROR.ITEM)

DIRECTORY = the path/directory location in the OS file system to Wite the information
to.
DATA.ITEM = the information for the file with AM. AM will be replaced with CR:LF/LF
FILE.NAME = File name, without the DIRECTORY information.
ERROR.ITEM = Information about errors when reading the file
    <1> = 0 - Successful
    <1> = 1 - Item Not Found
    <1> = 2 - Access Denied
    <1> = 99 - Unknown Error
```

Fig. 1

```
* Example
FILE.NAME = "temp.txt"
CALL IS.READ.OS("/temp",TEMP.ITEM,FILE.NAME,ERROR.ITEM)
IF ERROR.ITEM<1> > 0 THEN CRT "Error Reading ": FILE.NAME
*
CRT TEMP.ITEM
END
```

Fig. 2

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1. What is your job function/title?

- | | |
|---|---|
| <input type="checkbox"/> Principal/Owner | <input type="checkbox"/> Sales/Marketing |
| <input type="checkbox"/> President/GM/CEO | <input type="checkbox"/> Programmer/Analyst |
| <input type="checkbox"/> MIS/DP Manager | <input type="checkbox"/> Purchasing |
| <input type="checkbox"/> Controller/Financial | <input type="checkbox"/> Consultant |
| <input type="checkbox"/> VP/Department Head | <input type="checkbox"/> Other _____ |

2. Is your company a (check one):

- | | | |
|---|---|---|
| <input type="checkbox"/> Computer System Supplier | <input type="checkbox"/> Dealer/OEM/VAR | <input type="checkbox"/> Software House |
| <input type="checkbox"/> Consultant | <input type="checkbox"/> End User | <input type="checkbox"/> Other _____ |

3. What MultiValue Databases does your company use? (check all that apply)

- | | | | |
|--------------------------------|--|-----------------------------------|--------------------------------------|
| <input type="checkbox"/> D3 | <input type="checkbox"/> Native MultiValue | <input type="checkbox"/> Reality | <input type="checkbox"/> Other _____ |
| <input type="checkbox"/> jBASE | <input type="checkbox"/> uniData | <input type="checkbox"/> UniVerse | <input type="checkbox"/> uniVision |

5. What major business/industry most clearly describes your company?

- | | | | |
|--|------------------------------------|---|---------------------------------|
| <input type="checkbox"/> Accounting | <input type="checkbox"/> Medical | <input type="checkbox"/> Direct Marketing | <input type="checkbox"/> Legal |
| <input type="checkbox"/> Banking/Finance | <input type="checkbox"/> Dental | <input type="checkbox"/> Construction | <input type="checkbox"/> Retail |
| <input type="checkbox"/> Education | <input type="checkbox"/> Insurance | <input type="checkbox"/> Other _____ | |

6. What are your firm's approximate gross annual sales?

- | | |
|---|--|
| <input type="checkbox"/> Under \$500,000 | <input type="checkbox"/> \$500,000 - \$1 million |
| <input type="checkbox"/> Over \$1 million - \$5 million | <input type="checkbox"/> Over \$5 million - \$10 million |
| <input type="checkbox"/> Over \$10 million - \$25 million | <input type="checkbox"/> Over \$25 million - \$100 million |
| <input type="checkbox"/> Over \$100 million - \$500 million | <input type="checkbox"/> Over \$500 million |

BUSINESS TECH: DISASTER PLANNING

Continued from page 7

you don't know who was supposed to be there. Likewise, a guest sign-in list.

10. Your business has many specific issues. How do they affect a restart plan?

As a businessman, I also want another phase to disaster planning: What did I lose? You see, Insurance companies don't like to pay to replace things based on guesses. So, while you are looking at saving the data at a remote location, and looking at replicating hardware/configuration/licenses/etc., you also need to know the reverse. What was subtracted by the earthquake, fire, or flood?

So, disaster planning isn't just data preservation. It is business preservation. Since most disaster plans are chopped into departmental areas, it is easy to forget the totality. Records are of little value to a company which is out of business. We want the data so we can restart, in the original location if possible, or anywhere else we have to restart. If I have the data but no database, I have failed. If I have the hardware but can't configure it, I have failed. We need to use our analytical skills with this problem as we do with other business problems. When I put on my business hat and look at any disaster plan, I primarily want to know one thing: Come hell or high water, I'll still be in business. **IS**



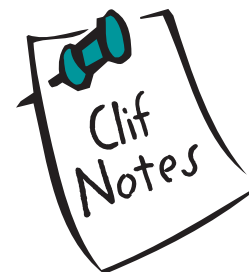
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Where's My Yada-Yada?

BY CLIFTON OLIVER



On a recent flight, I was flipping through a copy of *The Economist* magazine. Not my usual entertainment material, but a guy has to have something to read until they allow him to turn his Kindle back on. I spotted a small article titled “Spare us the e-mail yada-yada.” It was subtitled “Automatic e-mail footers are not just annoying. They are legally useless.”

Annoying? I can certainly agree with that. I absolutely detest those big legal disclaimers automatically added to every outgoing e-mail a company’s server sends. The article went on to point out what I have always suspected, that those disclaimers are totally worthless. I’m not a lawyer, but I know enough to know that you cannot unilaterally place someone else under contractual obligations that requires them to remedy your mistakes. “If you are not the intended recipient of this e-mail, contact the sender immediately.”

Oh really? I don’t think so. If a coworker went on vacation and was spiteful enough to set their e-mail to forward everything they receive to my inbox in their absence, and one of their bank statements comes in, that in some way is my fault? Of course if I misuse that information, say to renew his subscription to *Goldfish Fetish Monthly*, I may be engaging in a criminal act. But that is a crime against my coworker, not against the bank. There is nothing obligating me to call his bank and inform them that my coworker had set himself up for divulging his own personal information. And who’s going to compensate me for the time I spend trying to explain to their Fraud Division how I got the information and why I am calling about someone else’s account? Decency, of course, would require that I not peruse his bank statement. I would simply put it in a folder of such items and give them to him when he got back to work and turned his e-mail forwarding off. I probably wouldn’t even point out the faux pas to him. His embarrassment is enough of a lesson.

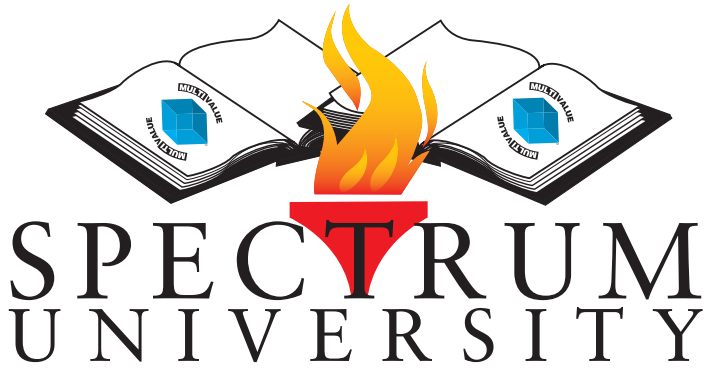
The article continued by stating that legal experts on Internet policy say that no court case has ever had its outcome determined by these disclaimers. So I got to thinking that it might be an interesting topic to talk about. When I sat down to write this column, I thought it might be entertaining to give a few actual examples of the silliness you find in these things. I went back to my year-to-date e-mail archive and started sampling. Out of a couple thousand e-mails, I expected to find numerous examples of legal yada-yada.

I found one.

Apparently the use of these annoying e-mail footers has fallen off, at least among the companies that send me e-mail, including banks, travel reward programs, and the like. And yet I had gotten so used to completely ignoring them (another comment the article made about their ineffectiveness) that I didn’t even notice when I stopped being bombarded with them. I find it disturbing when something that I know as a “fact” turns out not to be. I always wonder how many other things in my head are completely wrong. But either the e-mail that I receive is way skewed by reasonable companies, or the author of the article suffers from the same condition.

What was the one example I found? A blast-o-gram e-mail from *New Scientist* magazine inviting me to participate in a “write the winning humorous caption on this Mars photo and win a prize.” The disclaimer went on with the usual insistence that I contact them immediately if I was not the intended recipient, dire civil and criminal penalties, and so forth. I hit the delete key.

I just hope they don’t get upset about me divulging this information to you. I would hate to have them hunt me down and kill my puppy. **IS**



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Syntax Comparison: MultiValue and C#/VB.NET

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Implement ActiveDirectory Security in MultiValue Applications

All MultiValue Applications have security built into them, but it can be a bit disconnected from the rest of the business enterprise. This webinar will show you how to implement ActiveDirectory security within your application.

Back-To-Basics — Free

The Back-To-Basics webinars allow you to review or train new staff on how to use the basics of a MultiValue database. We will be doing classes that cover topics from Dictionaries, Display Formats, Correlatives, I-Types, PROCs, and many others.

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After working for years in a Top-Down programming environment, changing to a GUI/Event driven environment can be a challenge. This webinar will cover different aspects of GUI development, include ways to translate "Legacy" applications into GUI environments.

Comparison: MultiValue vs SQL

This webinar will compare the MultiValue database structure to the a SQL Normalize structure. We'll generate SQL tables from MultiValue files, as well as create MultiValue files from SQL Table. These webinars are informative, and are provided to help understand the differences between MultiValue and SQL environments.

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Creating file and database triggers can be tricky with a few gotchas that you need to be aware of. This webinar will cover syntax, templates, and gotchas to watch out for.

For more information or to register please visit <http://www.intl-spectrum.com/webinar>