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THE MULTIVALUE TECHNOLOGY MAGAZINE | MAY/JUNE 2012

TASK CONTEXT SWITCHING

Is It Worth It?

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Rolling Your Own MultiValue Connector

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INTERNATIONAL Spectrum
THE MULTIVALUE TECHNOLOGY MAGAZINE

6 **Business Tech: The Cost of Context Switching** A lot has been written about the subject of multitasking and context switching. Most of the articles against multitasking concentrate on a very narrow time definition of a task. This article takes a broader view **BY CHARLES BAROUCH**

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8 **Building RESTful Web Applications — Building a Website in Multivalue** This article about using widely available tools to build your website and using MultiValue to provide the data and the business logic presents a complete step-by-step example of using REST web services. OpenQM supplies the MultiValue data. All other tools are OpenSource. **BY MIKE RYDER**

16 **Rolling Your Own Multivalue Web Connector: Part 3** This series has shown how easy it is to connect just about any MultiValue system to the web using a little bit of Basic, a little bit of PHP, and a single environment variable. Now that the basics have been covered, this final article in this series will tie up a few loose ends. **BY KEVIN KING**

18 **International Spectrum 2012 Conference Recap Interview** At the International Spectrum 2012 Conference, Nathan introduced a roundtable lunch panel with some of the regular Conference speakers. The attendees were invited to ask these panelists ad hoc questions, but as the moderator, Nathan didn't get to express any of his views. So we put him on the spot to hear his answers to some of the questions asked of the panelists, plus find out more about the conference and International Spectrum's plans.

DEPARTMENTS

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From the Inside

For me, it is the time of year to start planning for the rest of 2012 and what we are going to be doing in the beginning of 2013.

For starters, I am currently working on the final hotel contracts for the 2013 Spectrum Conference and looking at what additions or changes may be needed for that. This year we created a block of time to do "Labs" and work on code after the conference was done. This was a successful trial, and it prompted some of my speakers and exhibitors to suggest creating a "Hack-a-thon" to create an Open Source project that will help the MultiValue community.

This was also our second year of session recordings for our conference attendees. These session recordings have pushed Spectrum into providing On-Demand Videos that will supplement our Live Webinars.

The On-Demand Videos are being placed under our Professional Membership program. As you look deeper in the magazine, you'll see more information on the Professional Membership programs. But as a quick overview, the Professional Memberships will allow you as a developer to see examples of how to do things, as well as keep your skills up to date.

While the Live Webinars have been very successful in helping educate the MultiValue Community about new technology, I have found that some people need the information during times that webinars are not scheduled.

We will continue to do Live Webinars, but they will be used to help explain concepts and features and give the developer the ability to discuss problems with experts.

The On-Demand Videos will be shorter and more to the point on how to do or use different technologies. We will also be including a lot of "Basics" to help with training your new developers in the core MultiValue concepts and technologies.

Keep an eye out for emails that notify you when these on-demand videos will be available.

The Professional Membership will not be limited to the just On-Demand Videos and articles. Some of the Professional Memberships provide you free access to Live Webinars and discounted conference attendee packages.

Upgrade your existing Free Membership to a Professional Membership, and take advantage of what Spectrum can offer you and your co-workers.

-NATHAN RECTOR
President, International Spectrum
nathan@intl-spectrum.com

INTERNATIONAL Spectrum
MAY/JUNE 2012

NATHAN RECTOR
President

CLIFTON OLIVER
Editor

TRACEY RECTOR
Layout

Learn more about the MultiValue Symbol and see what MulitValue Technologies and MultiValue Communities exist to help you support and manage your business and systems. To find out more visit
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International Spectrum is published six (6) times per year at the subscription price of $40.00 U.S. in the U.S.A.; $45.00 U.S. in Canada and Mexico; $50.00 U.S. for other countries. Single copy rates are $7.00 U.S. in the U.S.A. and Canada, and $9.00 U.S. in all other countries. International Spectrum is published by International Specturm, Inc., 8956 Fox Drive #102, Thornton, CO 80260; Tel: 720/259-1356; Fax: 603/250-0664 E-Mail: request@intl-spectrum.com. Copyright 2012 International Spectrum, Inc. All rights reserved. Reproduction in whole or in part, without written permission, is prohibited.

PRINTED IN USA

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Fax: (201) 722-9815
Email: info@revelation.com
Web: www.revelation.com

Revelation Software Ltd.
45 St. Mary's Road
3rd Floor
Ealing
London, W5 5RG, UK
Phone: +44(0)208 912 1000
Fax: +44(0)208 912 1001
Email: info@revsoft.co.uk
Web: www.revsoft.co.uk

Revelation Software Australia Pty Ltd.
PO Box 300
Brookvale, NSW 2100
Australia
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The Cost of Context Switching

BY CHARLES BAROUCH

As business professionals we need to look at the effect a growing task list has on a shrinking, or stable, work force. We have some highly evolved skills to help us, because by nature, we are multitaskers. Our world has always come at us from several directions at once. Because of this, we tend to assume that we can stretch to accommodate more work.

There's more to it than that. In order to cope with increased demand, we need to apply our analytical skills to our own situation and understand the effects that demand has on us. This is especially true if we are managing staff and therefore have responsibilities beyond our own workload.

Digital Version On-Line

Scan Me!

When I get stuck on a task, or have to take time out to think, I like to switch gears and work on another open project. Having just one track to travel means that any delay on that project is a dead stop for me.

Based on a True Story

I'm at work and I have to put a project of mine into final testing. To do that, I am required to transfer files from a system I manage to the system my friend Carol manages. She is in the middle of building a test system for a different project — amongst other things — but she stops to help me. In the course of running through the data, we find that we have to involve a third person. While in that third person's office, a fourth person walks in, looking for person number three — are you still following? — and Carol, seeing person number four says, and I quote: "I don't recall what you called me about last night… but did it work?"

Carol, as you can see, has graduated from multitasking to overtasking. She has reached the point where everyone and everything around her requires a context switch to a new topic.

If you see a little, or a lot, of yourself in this story, you are overtasking. It is always easier to see it in others. Recognizing your own overtasking is very important. My friend Dawn likes the phrase, "If you want something done, give it to a busy person." I wonder if she sees the overtasker in herself.

Amazing Stunts

When an overtasker does keep everything all in balance, it is like performing the world's greatest magic trick. You are juggling knives which are topped with spinning plates while dodging bullets as you ride a unicycle on the high wire — which is on fire — and you are navigating blindfolded while… well, you get the idea. The sense of satisfaction is wonderful. Even when you are the only one who knows how clever you've been, there's a rush that comes from pulling it together and pulling it off. I like that rush.

The problem comes when we drop a knife. Overtaskers don't have the same margin for error that regular taskers have. The first slip is often akin to tipping over that first domino. When we succeed, we soar. When we fall behind, the slowdown tends to cascade into a series of missed deadlines.

My most recent wake-up call came when I blew out my neck. That was wasn't the only time when I dropped the knife, but it was the worst. If you are a career overtasker, you probably have your own "drop the knife story", or perhaps a series of drops.

Unfortunately, as the job market keeps consolidating, companies are encouraging us to overtask. They see the magic, but they don't acknowledge the cost.

Bigger Explosions

Years ago, I wrote a re-order program which, much to my surprise, overstated demand by a factor of ten. I caught it after the first run, but one order did go out. The order was inter-company, and it actually triggered a chain of events which benefited both divisions. That was a good mistake. Other stories are less happy.

We have seen stories about people falling asleep on the job. For an IT guy, that's a personnel problem . For a cab driver, it can be life and death. I'm not trying to imply that all errors are

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Building RESTful Web Applications

Building a Website in MultiValue

BY MIKE RYDER

I have been attempting to build a business website for more than 15 years, experimenting with various technologies that have been available within the MultiValue marketplace.

I saw glowing reports on how this or that technology is fantastic, and yet I did not feel comfortable.

My goal was to build a website without using locked in, proprietary solutions. Proprietary things tend to come and go, and it makes your whole business proposition dependent on a third party. That is exactly why Apple doesn't support flash in iOS. I want to do what everyone else in the world is doing and use the language and framework that they are using without any lock-in.

And, in 2010, I read about HTML5 and REST and, wow, my goal is achievable. If you are reading this hoping to find how to build websites in Basic, then this is not for you. This article is about using widely available tools to build your website and using MultiValue to provide the data and the business logic.

Representational state transfer (REST) is a style of software architecture for distributed hypermedia systems such as the World Wide Web. The thing about REST is that it is not tied to any particular technology or platform. It cannot be taken away if a supplier decides to drop it because there is no supplier. A REST web service is a simple web service implemented using HTTP and the principles of REST. A web service supports, among other things, JSON (Javascript Object Notation) which is an easy option for MultiValue because it is just text. Transforming MultiValue data into JSON is trivial.

You can now do everything that others do with PHP. All of a sudden, your 40 year old database friend is up there in the leading edge again.

Digital Version On-Line

Scan Me!

The principle to grasp is that the User Interface (UI) or User eXperience (UX) is completely abstracted from the database and any database-related stuff. The database and business logic stay on the server, and the UI is on the client. I find this difficult because, in MultiValue, database and UI are inextricably linked.

The WCF standard for REST services defines the following methods shown in figure 1.

The examples I will show are derived from PHP+MySQL examples using OPTIONS and extension methods. I show you how to redirect the web application to a Basic+MultiValue web service and plug this into an OpenQM database.

The package of components described will build a web server, install an OpenQM account, and install the jQuery library (table 1, line 1) to provide your own web services. The examples will probably work in any browser, but I recommend FireFox because the diagnostic plugins are so easy.

Basic Components

My environment consists of a virtual machine with 1GB memory and 10GB of disk, 32 bit Ubuntu1 1.10 and QM 2-12-8. There are no MASTER.LOGIN or LOGIN paragraphs. I use 'joe' as my unix editor (because it has WordStar commands) and most of the editable files are created as directories for this reason. It also means that I can easily copy from a Unix directory. Within the code package that you download, there are some utilities to facilitate some database stuff. They are primitive but serve the purpose for this sandbox.

Method	Description
GET	Requests a specific representation of a resource
PUT	Update a resource with the supplied data
DELETE	Deletes the specified resource
POST	Create a resource with the supplied data
HEAD	Similar to GET but only retrieves headers and not the body
OPTIONS	Returns the methods supported by the identified resource
TRACE	Not implemented
CONNECT	Not implemented
extension	The URL structure is understood by the server

Fig. 1

The principle to grasp is that the User Interface (UI) or User eXperience (UX) is completely abstracted from the database and any database related stuff. The database and business logic stay on the server and the UI is on the client.

You will need Internet access from your server because of all of the downloads required.

All server access uses ssh, so you will need an ssh client like putty if you want to connect from another workstation. Type `ifconfig` at the Linux shell to determine your IP address. There is no root access in Ubuntu. All root-like access is handled by `sudo`, for which you need your login password.

Once you have OpenQM up and running, do everything from the OpenQM prompt. Notice that `!cmd` executes a linix shell command.

This is a development account so set permissions as everything (777). You will probably fall over permissions at least once.

The installation and configuration, where possible, is handled by OpenQM programs. You can study the source in WEB.BP to see what they do.

After you have installed your server, add some additional bits to your Linux server

```
sudo apt-get install openssh-server apache2
 →  joe unzip
```

Not necessary, but you may like

```
sudo apt-get install subversion gnome-
  →  terminal mc PHP5-cli
```

Head off to the URL Link in table 1, line 2 and download OpenQM for Linux, get a 30 day license for a minimum of 3 users, and install.

Create the development account using the following commands:

```
sudo bash
mkdir -p /var/qmaccounts/webdev
chmod -R 777 /var/qmaccounts/webdev
exit
```

URL Links Table 1

1	http://www.jeasyui.com/
2	http://www.openqm.com
3	http://openqm.com/cgi/docs/webbp.tar
4	http://localhost/qmweb/webapp/
5	http://localhost/qmweb/webapp/webcommand?c=ws

You will need the code package at the URL link in table 1, line 3 which was built for this article.

```
cd /var/qmaccounts/webdev
qm
!wget http://OpenQM.com/cgi/docs/webbp.tar
!tar xf webbp.tar
CREATE-FILE WEB.BP DIRECTORY
!cp SOURCE/WSH WEB.BP
BASIC WEB.BP WSH
WSH SOURCE/I_INSTALL.SH
```

Load the OpenQM shell again with qm -awebdev.

View I_README in WEB.BP.

The next stage is to configure Apache to provide a website. Command `INSTALLWEB` from the OpenQM shell will do this for you.

After installation, test your new website by browsing to the URL link in table 1, line 4.

Check the log file by using the URL link in table 1, line 5 and you will see a response similar to figure 2. You now have a working website without any content.

Continues on page 10

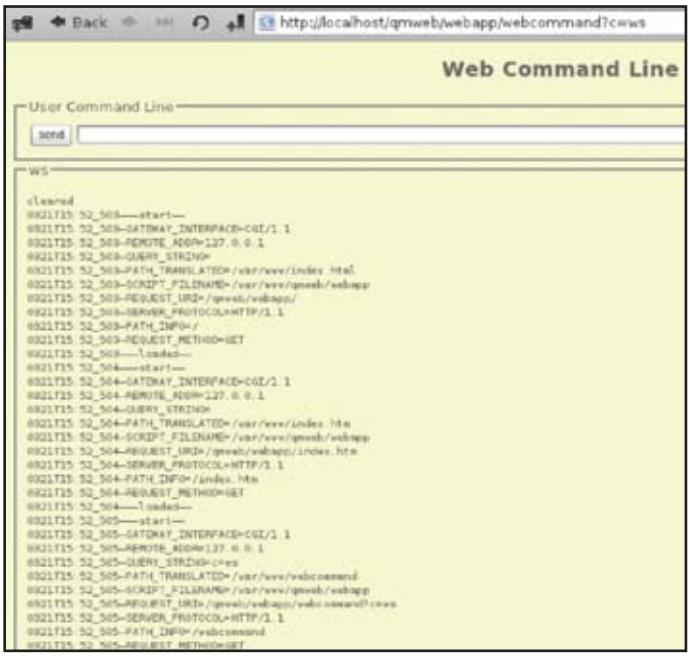

Fig. 2

Continued from page 9

If this doesn't work for you, check that you have followed each stage correctly. Check the log files, and check the permissions on all of the files, because permissions is the most likely cause of failure. The log files you need are in /etc/apache2/log/error.log, logfile/webpages and /usr/qmsys/errlog.

The final part is to install some libraries for web development and some sample web pages to test our website using jQuery and jEasyUI.

Command `INSTALLJQUERY` from the OpenQM shell will install these.

If you examine WEBPAGES, you will see that we now have lots of pages available for testing.

Displaying a datagrid

In your browser, go to the URL link in table 2, line 1. Examine the log to see the three calls. The first loads webpage datagrid3.html, the second demo.css, and the third loads datagrid_data2.JSON. This is a text file with the required data in JSON format that you will find in WEBPAGES.

We want to replace the datagrid_data2.JSON call with our own routine which connects with our OpenQM database table.

1. Create a database table.

```
CREATE.SCHEMA DATAGRID3(ITEMID
  → INTEGER(10),UNIT.COST
  → FLOAT(10.2),STATUS VARCHAR(1),
  → LIST.PRICE FLOAT(10.2),ATTR1
  → VARCHAR(35),PRODUCT.ID VARCHAR(10))
```

2. Add the example data.

```
JSON.IMPORT DATAGRID3 WEBPAGES/datagrid_
  → data2.JSON
```

3. Change WEBPAGES/datagrid3.html to point to our routine which you will find in WEB.BP

URL Links Table 2	
1	http://localhost/qmweb/webapp/datagrid3.html
2	http://www.jeasyui.com/tutorial/app/crud.php
3	http://localhost/qmweb/webapp/webusers.html
4	http://localhost/qmweb/webapp/webcommand
5	http://localhost/qmweb/webapp/webusers.html

```
014 //     url: 'datagrid_data2.JSON',
015       url: 'datagrid3.pgm',
```

4. Go to the URL link in table 2, line 1 again. Figure 3 shows you the result. Check the log with WS to see that we called our routine.

5. Clear the log with `CLEARLOG`.

File Maintenance also known as CRUD

This application uses PHP routines to determine the method. We replace the PHP and MySQL with our own stuff.

Browse to the URL link in table 2, line 2 to see what the author intends.

Get the code. The command `GETCRUDDEMO` will do this for you.

Investigate to see what is needed. Examine the cruddemo directory and you will see four PHP routines. These will be replaced with Basic.

We need the JSON structure. Select view demo on the site using FireFox. In the Firebug console you can examine the JSON feed. We need a table with fields id, firstname, lastname, phone and email.

```
CREATE.SCHEMA WEBUSERS(ID INTEGER(10),
```

Fig.3

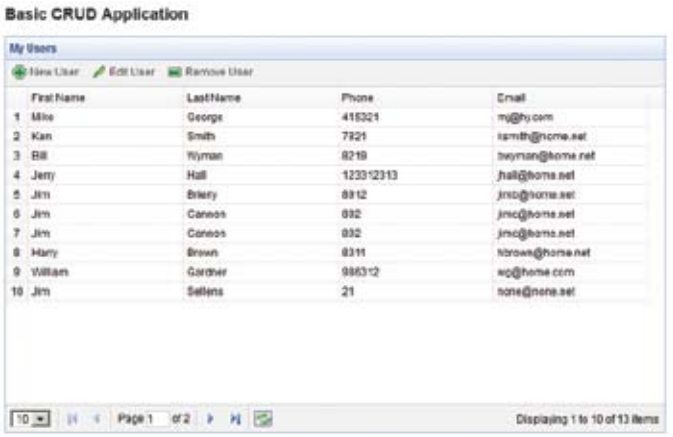

Fig.4

```
→ FIRST.NAME VARCHAR(35),LAST.NAME
→  VARCHAR(35),PHONE VARCHAR(20),EMAIL
→ VARCHAR(35))
```

We need routines named GET_USERS.PHP, REMOVE_USER.PHP, SAVE_USER.PHP, UPDATE_USER.PHP. Copy these from SOURCE to WEB.BP and compile.

Go to the URL link in table 2, line 3 and now you have a simple table maintenance application for the WEBUSERS table (fig. 4).

Add some new users, then go to the URL link in table 2, line 4 and send LIST WEBUSERS.

You have copied a web application without touching the HTML or any of the scripting. The application works out of the box in the way that the web designer intended but using OpenQM webs ervices. You have abstracted the database from the UI.

Of course, the component missing here is locking. For a production purpose you would need to introduce some method to ensure that when the user updates a record they are starting from the latest data.

To make our process more generic and provide reusable methods, we will change to the "extension" method. I have decided that extension qml means get, qmi means insert, qmu means update and qmd means delete.

See the routines QMETHOD.PUT, QMETHOD.DEL and QMETHOD.POST. Copy from SOURCE to WEB.BP and compile.

The URI resource to use is webusers.xxx, which is just a resource name comprising the table and the method.

Edit the webusers.html and replace save_user.PHP with webusers.qmi, update_user.PHP with webusers.qmu, remove_users.PHP with webusers.qmd and get_users.PHP with webusers.qml.

Go to the URL link in table 2, line 5 again. It still works the same. But you will see from the log it uses methods in a different way. The back-end process is now generic by using the extension method.

You can apply the logic covered here for any of the samples that are in WEBPAGES or that you can download. IS

Rocket Announces UniData V7.3

Some emerging technologies associated with UniData V7.3 are high availability and interoperability.

Security

UniData 7.3 offers more protection for your applications. Improvements include the additional option of Digest Authentication for CallHTTP interface in UniBasic. Digest Authentication protocol provides a more secure method of authenticating HTTP calls than basic authentication.

Development

U2 Dynamic Objects (UDO) provide an easier way to exchange data with web services through UniBasic and allows you to easily provide or consume data in JSON format through the creation of a UDO object.

High Availability

This new version of UniData increases your options for keeping your applications available. You can replicate your data to a SQL database in addition to keeping your data safely stored in UniData, and replication using the External Database Access (EDA) feature is now available. Store your data in UniData and it is simultaneously replicated to Oracle, Microsoft SQL Server, or IBM DB2. Use the replicated database for data-mining or reporting while you use UniData as your production workhorse.

Interoperability

UniData 7.3 is even better at interoperating with the SQL world. With the new U2 Metadata Manager (U2 MDM) you can use many SQL based tools to access and manipulate your data while preserving your investment in your application. U2 MDM performs two important functions:

- Generates and maintains metadata that defines your data and makes access from SQL-based tools a snap. MDM generates the basic map of the data for you. Then it's just a matter of fine-tuning the generated map to your specifications.
- Enables data-type enforcement to makes sure your data is in the right format before being stored in the database ■

Summit Professional Education Uses Informer to Analyze Direct Marketing Performance for Events in Real Time

Q/A with Ryan Stout at Summit Professional Education

What challenges were you facing that required improved / more timely information, Ryan?

Our overall goal was to obtain day-of product performance in a high-volume setting. In producing thousands of live events each year, all driven by a direct mail/direct response model, Summit has a predictable response pattern. This pattern is a non-linear response curve that is difficult to calculate for team members on-the-fly, especially in our high-volume setting. Knowing how well a product is performing right now, based on known averages, vastly improves on-the-fly go/no-go, marketing, and development decisions (the quicker a decision is made the better!).

How were you getting the necessary information prior to using Informer?

Prior to Informer, this analysis was always performed post-event or at the end of a product cycle and only meaningful on a large sample size. Breaking down on to a product level was simply too tedious a task to do on a regular basis. Microsoft Excel provided the necessary calculation support but instantly registration data became stale and out-of-date.

How did Informer help you to address these challenges?

Using Informer, we're able to pull in marketing data and apply our target performance rate(s) for all upcoming products in one, very quick report. In the same report, by using Informer's JS handling, calculated columns figure where each product is in relation to our known response curve — by calculating the percentage of registrations that should have occurred as of "today." With this information, Informer is able to show us how far ahead or behind a product is compared to where our averages place it; and do so dynamically whenever running the report. We've also added in calculations for "last week" and a increase/decrease column to help spot the movers and shakers. Hiding the complex calculations in the background of Informer allows for a simple 6-8 column report that shows the important above metrics. They're easy to read and understand for all team members during review settings.

What features of Informer were particularly useful?

Flexibility of Informer's JS handling was key. We were able to hard-code our curve analysis into JS and do all necessary calculations. The fact that Informer doesn't limit JavaScript execution means we can literally do any custom programming necessary as if we were developing a custom reporting/analysis app.

What organizational benefit did you realize by using this approach?

Watching product performance rise and fall daily produces much quicker decisions and product analysis. Due to our production and direct mail timeline, decisions must be made before we have final registration data available. In the past this has been a best-guess situation. Now, we're able to adjust marketing or products mid-stream, rather than waste valuable time waiting on final data. Essentially we now have more confidence in on-the-fly adjustments as they are backed by live data.

For a demonstration of Informer or a FREE 30day trial, email sales@entrinsik.com or call 888-703-0016. ■

PK Wins InterSystems Breakthrough Application Award

InterSystems Corporation announced that PK, a software firm based in The Netherlands, has been recognized with the InterSystems Award for Breakthrough Applications. PK, an InterSystems application partner, was recognized for its CU-BOX mobile application for real-time emergency services response measurement.

CU-BOX leverages the InterSystems CACHÉ high-performance database system and InterSystems Ensemble rapid integration and development platform to provide critical, objective information about the quality of emergency healthcare delivery. The solution includes mobile applications that plot the emergency response timeline by storing key timestamps such as departure time of an emergency vehicle and arrival time at the patient's location and at the hospital. CU-BOX also includes a geographical information system (GIS) and an automated tracking system based on Google Maps and OpenStreetMap. Status information such as the emergency vehicle location and current vehicle status — vehicle is immediately available or vehicle is arriving at patient location, for example — are displayed in real-time at the emergency department at the destination hospital.

Reliability, High Performance, Support for Rapid Application Development

" We faced two major technical challenges in developing the CU-BOX solution," said Jack Paas, founder and President of PK. "The first was the requirement to create a mobile data communication network that offered extremely high reliability and security while also providing the speed and power to enable real-time interaction between emergency vehicles and hospital-based emergency departments. Just as important was the need to capture and integrate all of the data needed to prove the quality of the logistics process during an emergency call."

PK developers selected CACHÉ as the database for data flowing between emergency vehicles operated by first responders and emergency department personnel. "CACHÉ offers the high performance and reliability that are essential for real-time information delivery," Paas said. InterSystems Ensemble was used to build the integration processes that support real-time data flow and accurate measurement and reporting of emergency response processes. "The combined capabilities of CACHÉ, Ensemble and other InterSystems technologies made it possible to build a mobile solution for emergency scenarios that is completely unique in a new market niche," Paas said. "In addition, InterSystems technologies support very rapid application development, a capability that is vital to successfully responding to ongoing organizational, legislative and technology changes in the highly fluid healthcare environment. CU-BOX is a true breakthrough in proving and improving the quality of the commitment of healthcare providers in emergency response situations," Paas stated.

From Development to Market Expansion

CU-BOX was initially developed to enable healthcare providers to deliver accurate data about responding to emergency calls to the Dutch Health Care Inspectorate (IGZ), an agency in The Netherlands that promotes public health through enforcement of health services quality, prevention measures and medical products. Product development began with a proof-of-concept in 2Q11 and was finalized by year-end. It is now being used on a pilot basis by several ambulances and will be marketed to emergency departments and police and fire departments throughout the Netherlands.

Plans are to build a local customer base and to connect with the Dutch 911 emergency response network so that the location of emergency vehicles throughout the country will be visible through CU-BOX. "Once we've accomplished those objectives, we'll be looking for partners in emergency healthcare in order to effectively market and distribute CU-BOX in Europe," Paas said.

"The CU-BOX solution clearly illustrates the innovations that are made possible by merging new mobile platforms with InterSystems' database, integration and Web technologies" said Paul Grabscheid, InterSystems Vice President of Strategic Planning. "It's a pleasure to highlight PK's significant achievement in emergency services response measurement with the InterSystems Breakthrough Application Award."

"We are delighted and honored to be recognized with this international award," Paas said. ■

HealthWare Joins Columbia Ultimate's Family of Companies

Columbia Ultimate, a leader in technology and integrated solutions for the collection industry, announced today that HealthWare has joined the Columbia Ultimate family of companies to help further expand the company's offerings of products and services in healthcare collections. Along with the addition of HealthWare's specialized staff, Columbia Ultimate will also welcome new clients.

"In recognizing the evolving and specialized needs of medical account follow-up, adding a team of experts in that field with tailored solutions became an important goal," said Columbia Ultimate President and CEO R. Fred Houston.

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"Having HealthWare become part of our team speaks to our unique commitment to that industry. They have been a great partner to us over the years and we're very pleased to welcome new clients, new team members and to be able to offer excellent solutions in the field of healthcare collections," said Houston.

The strategic partnership between HealthWare and Columbia Ultimate grew over several years, opening up the possibility of jointly serving clients with improved products and services. "Joining the Columbia Ultimate family of companies was the next logical step to allow us to continue to grow together and reach a greater number of healthcare industry clients," said HealthWare President Wade Treasure.

About the Columbia Ultimate Family of Companies

Established in 1979 and headquartered in Vancouver, Wash., Columbia Ultimate is a privately held corporation with more than 150 employees servicing healthcare, collections agencies, debt buyers, banking and finance, retail and government sectors.

The Columbia Ultimate family of companies includes Columbia Ultimate, RevQ, HealthWare and The Intelitech Group. RevQ provides industry leading software solutions and consulting services to improve collections in the government sector. The Intelitech Group is a business management and debt recovery consulting company that provides technology solutions designed to enhance profitability. HealthWare provides collections solutions to the healthcare industry.

More information is available at www.columbiaultimate.com ■

Kore Technologies Partners with Paciolan and SSB Consulting Group to Launch Ticketing Intelligence Data Warehouse Solution

Paciolan, an industry-leading provider of ticketing, marketing, and fundraising solutions to more than 500 live entertainment organizations, announced today that it has partnered with SSB Consulting Group and Kore Technologies to create a SQL-based data warehouse solution called Paciolan Ticketing Intelligence for its clients. Based on key performance indicators, Paciolan Ticketing Intelligence will provide Paciolan's clients with real-time dashboards, cross-systems reporting and direct data warehouse access that can help them make critical, data driven business decisions. The solution is able to bring together information from multiple databases including the University foundation, merchandise, concessions, ticketing, marketing and fundraising sources. Armed with this data, teams and venues analyze sales and donation data, identify trends and tailor programs to maximize sales growth, enhance customer interactions and increase donation revenues.

"We remain laser focused and firmly committed to providing our clients with the most optimal solutions to help them efficiently run their organizations, increase revenue and be successful," said Dave Butler, chief executive officer of Paciolan. "With Paciolan Ticketing Intelligence they will be able to better analyze data on fans, donors and customers, and make timely and impacting business decisions."

Arizona State University Athletics is the first in college athletics to implement the smart analytics solution into their ticketing and fundraising systems.

"Paciolan Ticketing intelligence provides instant access to critical data, in real time that will help us better manage and measure our efforts through extensive reporting," said Steve Patterson, athletic director of ASU. "This will enhance our ability to provide world class customer service to meet the needs of our fan base, while driving additional revenue."

Paciolan Ticketing Intelligence enables organizations to integrate data from third-party systems, including data-append and lead-scoring services, as well as affiliated fundraising systems to provide sophisticated data analysis across a complex organization to aid revenue growth.

"We are excited about the opportunities to better understand and complement our sales and marketing programs," said Steve Hank, Associate Athletic Director of ASU. "Now we can monitor our sales activity, compare fund development campaigns, and integrate marketing data into a single, visual dashboard to view progress and identify trends. This rich reporting will help us to cohesively manage strategic programs to better communicate internally and externally with our fan base."

"We're very excited to be partnering with Paciolan to provide its clients with our industry-leading data warehouse solution," said Andrew Brodie, president of SSB Consulting. "With this solution, Paciolan's clients will be able to quickly and easily analyze data and trends that can help them make better business decisions based on their unique needs. They can even view live reports through their mobile device including an iPad or smart phone for instant access to critical data."

"Kore is pleased to be partnering with Paciolan and SSB as the MultiValue integration experts," said Mark Dobransky, managing partner of Kore Technologies. "Using Kourier Integrator, our enterprise integration suite, we are able to provide near real-time updates to the SQL Server database used by the Paciolan Ticketing Intelligence solution."

About Paciolan

Founded in 1980, Paciolan is the leader in venue enablement, powering ticketing, fundraising and marketing technology solutions for leading organizations across North America. Collec-

tively, Paciolan powers over 500 live entertainment organizations who sell over 100 million tickets annually. Primary markets include college athletics, professional sports, performing arts, arenas and museums. Paciolan is a wholly owned subsidiary of Comcast-Spectacor.

Visit www.paciolan.com for additional company information

About SSB Consulting Group

Strategic Solutions for Business (SSB) is based in Denver, Colorado. Our mission is to develop quality relationships with our clients by inspiring passion through our work ethic and enthusiasm. Our focus is to deliver high value to our clients with our software, skills, thought leadership, and involvement in the worldwide business community. SSB was born from the idea that consultants should be experts in what they do. Technology and management consultants should focus on one thing: helping their clients succeed. As such, we focus on the needs of our clients first and foremost.

Visit www.itbusinessconsulting.net for additional company information.

About Kore Technologies

Kore Technologies is a leading provider of enterprise integration, business intelligence and eCommerce Web solutions for MultiValue and Microsoft SQL Server databases. Founded in 1999 as a professional services and software development company, Kore specializes in providing business-to-business connectivity and best-in-class product integration with its flagship product — Kourier Integrator. Leveraging this technology, and Kore's extensive experience with enterprise applications and database systems, Kore delivers solutions for integrating disparate applications, building data warehouses, and developing business intelligence solutions.

If you would like more information about implementing a business intelligence solution for your UniData / UniVerse application using Kourier Integrator, please contact your Kore Technologies representative, call us at 866-763-5673 or send an email to sales@koretech.com. ■

Ellucian: New Company Name Announced for Datatel and SunGard Higher Education Combination

The recent combination of two education technology leaders, Datatel and SunGard Higher Education, has a new name: Ellucian.

"Ellucian is much more than two companies coming together; it embodies our focus on helping education institutions thrive in an increasingly dynamic world," said John F. Speer, President and CEO, Ellucian. "The Ellucian brand represents innovative solutions developed in collaboration with a global education community. It stands for providing solutions and sound, strategic guidance to help institutions navigate change, achieve greater transparency and drive efficiencies. And it reflects our unique ability and responsibility to work with our client community to discover new ideas and insights that will help move education forward."

Ellucian helps institutions by:

- Investing in the primary solutions that clients have come to rely on, including Advance, Banner, Colleague, and PowerCAMPUS administrative systems.
- Providing a broader solution portfolio to give clients more choices and capabilities to address their evolving needs.
- Cultivating the collective intelligence of a global client community to benefit all its members, including 2,300 colleges, universities, foundations and state systems in 40 countries.
- Accelerating innovation with an expanded pool of research and development resources and community contributions to deliver the solutions clients need now and in the future, faster and more efficiently.

Speer announced the new Ellucian name to an energetic audience of 6,200 clients at Summit 2012, an annual user conference. The company will celebrate the new Ellucian name again April 1-4 with 2,000 additional clients at the DUG user conference.

"Ellucian evokes the clarity and light that learning brings to life, aspects that we aspire to share in our relationships with institutions of higher, further and vocational education around the world," said Michelle Reed, Chief Marketing Officer, Ellucian. "We are a passionate team, motivated by the possibilities of technology and education. The Ellucian brand amplifies who we are and what we want to be for our clients."

Visit Ellucian at www.ellucian.com, follow Ellucian on Twitter (@EllucianInc), and like Ellucian on Facebook (/EllucianInc).

About Ellucian

Ellucian helps education institutions thrive in a dynamic world. We deliver a broad portfolio of technology solutions, developed in collaboration with a global education community, and provide strategic guidance to help education institutions of all kinds navigate change, achieve greater transparency, and drive efficiencies. More than 2,300 institutions in 40 countries around the world look to Ellucian for the ideas and insights that will move education forward, helping people everywhere discover their futures through learning. Visit us at ellucian.com.

Trademark information: SunGard is a registered trademark of SunGard Data Systems Inc. Ellucian and the Ellucian logo, Datatel and the Datatel logo, Advance, Banner, Colleague and PowerCAMPUS are trademarks or registered trademarks of Ellucian, Inc. or its affiliates in the U.S. and other countries. Other trade names and trademarks used herein are owned by their respective holders. ■

Rolling Your Own

MultiValue Web Connector

Part 3

BY KEVIN KING

In the last couple of issues we've seen how easy it is to connect just about any MultiValue system to the web using a little bit of Basic, a little bit of PHP, and a single environment variable. Now that we have the basics out of the way, let's tie up a few loose ends as we bring this series to a close.

A couple of issues ago we saw how a minuscule Basic program can be called from the login procedure to allow other Basic routines to be run from outside of the MultiValue environment. Last issue we built upon this with a simple PHP script launched from the Apache web server that receives a request from the web and sends it to our MultiValue program, effectively connecting our MultiValue system to the web using a mere couple dozen lines of code.

So far, so good. There is, however, a dark side.

To allow Apache and MultiValue to speak freely, both need to be running on the same machine. This allows Apache to launch our MultiValue program without the complexity of authentication or networking protocols. But in that benefit, my friends, we also find our greatest risk. By intentionally circumventing security, the benefit offered by the connection is overshadowed by the unacceptable risk it presents for our MultiValue data server. So does that mean we've come this far only to fail? Absolutely not! Rather, we simply have a little more work to do.

Digital Version On-Line

Scan Me!

We want to give people access to our information, but we don't want to give that access to the wrong people. Yet how do we know who is who? Fortunately, the problem isn't as difficult to solve as it might sound at first blush.

Anyone with a shred of concern about security would never consider opening up the telnet port on our data server to the outside world. To the plethora of spammers and scammers in the wild, any open port is an invitation to wreak havoc. Yet the same could also be said of http, ssh, or any other network protocol. Though Apache does have numerous security options to secure http, the thought of **any** open port to the outside world should be a cause to pause and seriously consider how much risk we're willing to accept.

We can restrict Apache from accepting connections that we don't recognize, but that effectively defeats the whole point of connecting our MultiValue system to the web. We want to give people access to our information, but we don't want to give that access to the wrong people. Yet how do we know who is who? Fortunately, the problem isn't as difficult to solve as it might sound at first blush.

Because Apache is so affordably priced — that is, FREE — it costs us nothing but a little time to put up another Apache instance on a separate server. Unlike our first Apache running behind the firewall, we can freely open up this second Apache to the world. As long as we can make a reliable connection between the two, we can still offer access to our MultiValue information with much less risk to our production data servers. And with a second Apache server, we may actually improve the overall efficiency of the solution.

With PHP running on both Apache servers, connecting the two can be a snap. All we need is one of several HTTP extensions for PHP. I prefer pecl_http (php_http on Windows). Unfortunately, this extension is not installed by default. But using the PECL (PHP Extension Community Library) or a pre-built DLL for Windows, we can add it to our PHP installation in a matter of moments. Once the HTTP extension is installed, our two Apaches can speak to each other using HTTP (or HTTPS) almost effortlessly.

Once we have a public Apache open to the world and a private Apache behind the firewall (secured as described in the last installment of this series), the last thing we need is a little bit of PHP on the public Apache that will make requests of our private Apache. This could be accomplished with the WebProxy function shown in figure 1. Note the simplicity of this function: We simply build a URL to ask for a web page and it gives us back the results from the private server. Note how this simple function makes absolutely no reference to the names of our subroutines from the public Apache. Even if the public Apache gets hacked, the hacker will get limited information about your MultiValue system. In fact, the hacker likely won't even be able to tell that it is a MultiValue system!

With our web proxy class in place we can now make requests from our public Apache with something as simple as the PHP script in figure 2. While this example is trivial, it does demonstrate everything we need to make a request of our private Apache and capture the information returned. In short, all we need to do is build a URL with some optional parameters and pass it into the WebProxy function and accept whatever it returns.

But this brings up another question. What should our private Apache return?

A typical Apache server is responsible for all forms of web content: HTML, CSS, Javascript, images, and more. In fact, this is a perfect use of our public Apache. But for our private Apache, that's all too much. Our MultiValue data server should be responsible for serving only our MultiValue information, leaving the public Apache to pick up everything else. By moving the rendering of all of our web deliciousness to the public Apache, our private

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```php
<?php
function WebProxy($pageName)
{
    $privateApache = 'http://privateApacheNameorIPaddr/' . $pageName;
    $req = new HttpRequest($privateApache,HttpRequest::METH_POST);
    $req->send();
    if($req->getResponseCode() == 200)
    {
        $result = $req->getResponseBody();
    }
    else
    {
        $result = null;
    }

    return($result);
}
?>
```

Fig. 1

```php
<?php
require_once('WebProxyFunction.php');
$result = WebProxy('readCustomer.php?id=20');
echo $result;
?>
```

Fig. 2

INTERNATIONAL Spectrum

2012 Conference Recap Interview

At the International Spectrum 2012 Conference, Nathan introduced a roundtable lunch panel with some of the regular Conference speakers. The attendees were invited to ask these panelists ad hoc questions, but as the moderator, Nathan didn't get to express any of his views.

So while the following questions aren't the exact questions asked during the panel, we'd like to put him on the spot and hear his answers to some of the questions asked of the panelists, plus find out more about the conference and International Spectrum's plans.

Q: I am sure that the first question that is on a lot of people's mind is how was attendance at this year's conference?

NATHAN: The conference was very well attended this year. Around 40% of our attendees were new attendees (have never been to the conference before) or haven't been to an International Spectrum Conference in at least four years.

I was able to talk with a lot of new attendees this year who came to the conference with big question marks about the MultiValue database and the longevity of it. By the end of the first day, those question marks were gone. By the end of the conference, they were looking for ways to take more advantage of their MultiValue systems.

Q: At the conference, you announced a new premium subscription-based set of services at the International Spectrum website. What is that, and how does it work?

NATHAN: One of the mandates that I had for International Spectrum when I purchased it was to increase the access to MultiValue related materials. As businesses and IT departments have gone through changes, we have been adapting to these new information models, and providing the market resources that you, as developers, can use to help expand your knowledge or train new developers.

> The International Spectrum 2012 not only met, but exceeded all of my expectations. In attending this conference for the first time, I found the content of the sessions to be extremely valuable. The speakers clearly demonstrated their experiences and industry expertise. I learned many valuable business approaches and technical concepts while at the same time gained a much clearer understanding of direction of the MultiValue market. The depth of knowledge, resources, examples, products, solutions demonstrated, and information presented during the conference certainly helped me gain a clearer understanding how companies can tap into their existing MultiValue applications and investments. I would recommend this conference to anyone with the desire to extend their personal career or MultiValue platforms to gain a competitive advantage in today's marketplace.
>
> Jason Crawford
> Trumbull Industries

Digital Version On-Line

Scan Me!

Starting in May/June of 2012, we are introducing our on-demand video library. The Spectrum Membership programs will allow you to access these resources and other materials. The memberships start at $35.00 a month for the Professional Membership.

In addition to the on-demand videos and additional resources downloads, the memberships provide you discounted rates for webinars and the Spectrum Conference attendance.

Q: How was this Conference different from Spectrum Conferences in the past?

NATHAN: The main change in this conference from past conferences is the content and solutions that are being provided.

Over the last six years, we have changed the conference session content into sessions that show attendees how to use the tools their databases and third-party tool providers have in order to create a specific solutions.

For example, this year we had sessions that show attendees how to create mobile applications for their enterprise using the tools they already have. The sessions included more of the how, why, and gotchas involved, and all the pieces needed to connect your enterprise to these business solutions, not just how use the tools to create the solutions.

Q: What do you think the future of MultiValue is? Where is it going?

NATHAN: I think the MultiValue database and application environments have a strong future. These last few years have shown business just how flexible the database and the storage model of MultiValue databases are.

As developers, the need to rapidly alter the business rules and get them deployed has justified our MultiValue applications and databases. The main stream IT magazines have been talking about and pushing the concept of Big Data.

Our applications have been working in the Big Data environments for years without any issues, and with very little design.

I think the MultiValue applications and enterprises are heading more and more into the mobile, web, and BOYD (Bring your Own Device) arena. The flexibility we have for storing and accessing our data, as well as the many options we have for building user interfaces greatly facilitate this.

Q: We hear a lot of people talking about MultiValue joining the NoSQL movement. What do you think about that? How do they compare?

NATHAN: The NoSQL movement was brought about by the "Big Data" concept and how to deal with large amounts of information. Since we have been dealing with large amounts of information for years, the MultiValue database fits into this movement quite well.

The NoSQL movement is in its infancy and has several hurdles to overcome. But the flexibility, reliability, and security of the MultiValue data store has an advantage in that space.

Q: If you could only state one thing about what makes you want to use MultiValue, what would that be?

NATHAN: Flexibility. I personally like the MultiValue data model's and data store's flexibility. You can create a very structured environment using dictionary items and file triggers, or you can store random data in one file in a totally unstructured environment.

Adding new fields to structured data is quick and easy, and the amount of administration, massaging, and optimization that is needed is minimal.

The fact that you can use MultiValue both a database and a data store is, in

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Basic Package

Rasmussen Software	Onsystex

A Special Thank You Goes to Susan Phillips for the 2012 Conference Photographs.

INTERNATIONAL SPECTRUM 2012 CONFERENCE RECAP INTERVIEW

Continued from page 19

my view point, it's greatest strength. Add the fact that Basic is included to handle what would normally be done in stored procedures in other environments, and you have an enterprise system that is second to none.

Q: There was another kind of session this year that was different from previous years — open lab. What was that, and what type of response did you get? Will you have something like that at the next conference?

NATHAN: One of the short comings of the conferences in the past is that you spend a week getting information overload. There is so much to learn but not enough time to apply what you learn. Once the attendees get back in the office the following week, they get inundated with the day-to-day work and lose track of all the information they picked up the previous week.

The Labs were developed to address this problem by providing a time during the conference that attendees can test out examples of what they learned during the week.

This year was our first year doing labs, but it has already prompted the attendees to request more labs. Some are even creating a Hack-a-thon to help improve software development and examples in the MultiValue community.

> For me the conference was very informative and very useful. I appreciate the level effort that went into organizing it – I thought it went very well.
>
> Some of things I learned I believe we will make use of within our organization. The vendors / sponsors were excellent – before the conference I was not familiar with some of them so this was a great way to learn what is available for the MultiValued database community.
>
> It was a great conference. Thank you for making it happen.
>
> **Barry Rutherford**
> **Sr. Programmer / Analyst**
> **MobilexUSA**

Q: Finally, another question that everyone is asking, where is the conference going to be next year?

NATHAN: The International Spectrum Conference for 2013/2014 will be moving back to the western side of the country. These conferences will be in Phoenix, Arizona at The Wigwam. The next conference will be April 15th-18th, 2013.

The decision to move the Spectrum Conference around has turned out to be a good one. As we moved to Denver, and then Florida, we were able to provide the International Spectrum Conference to people that would not normally be able fly across the country to attend.

Now that we are back on the western side of the country, I expect to see a new group of people who haven't joined us for a while.

Q: Any closing comments?

NATHAN: I would like to thank our conference sponsors for their support and input during the conference. I enjoyed spending time talking with the attendees about their problems, solutions, and ideas.

I would also like to express my pleasure in working with my speakers and thank them for their support, time, and knowledge.

If you were one of our attendees this year, don't forget about the conference videos and session downloads you have access to. These will only be available until the end of July.

If you were unable to join us for 2012, then I look forward to seeing you in 2013 in Phoenix. IS

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ROLLING YOUR OWN MULTI-VALUE CONNECTOR: PART 3

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Apache, MultiValue data server, and private network will not be burdened with anything but moving information, which requires minuscule bandwidth and resources by comparison. And using a lightweight data format like JSON, you can transmit complex multidimensional structures from your MultiValue system to the web really quite easily.

While the ease of implementing this is remarkable unto itself, it is far and away not the most impressive aspect of the solution. For all of the moving pieces, this connector is remarkably fast and efficient! In fact, I have been regularly amazed at how fast my Unidata responds when it's not burdened with the screen I/O needed to maintain a working telnet-based application. Furthermore, because this solution doesn't require persistent connections "squatting" on ports, using this kind of connector can help you support more users without having to invest in more database licenses!

In closing, what we've seen in these past few installments has been just a taste of what's possible with very little code and even less financial investment. There is so much more we can do to build upon this foundation, and I encourage you to stretch your imagination dreaming of the possibilities and turning them into reality. Learn a little. Play a lot. And never stop believing in the brilliance yet to come. 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.

BUSINESS TECH: THE COST OF CONTEXT SWITCHING

Continued from page 7

caused by overtasking. The issue is that overtasking ratchets up the chances of an error and multiplies the risk factor as well.

"Joel on Software" (intl-spectrum.com/s1049) actually advocates encouraging employees to single task: "The longer a task switch takes, the worse the multitasking penalty… As it turns out, if you give somebody two things to work on, you should be grateful if they 'starve' one task and only work on one, because they're going to get more stuff done and finish the average task sooner. "

For me, single tasking is a special form of hell. When I get stuck on a task, or have to take time out to think, I like to switch gears and work on another open project. Having just one track to travel means that any delay on that project is a dead stop for me. I can't handle sitting idle. Sorry, Joel, but I need at least three projects at a time.

Thrills, Chills, and Excitement

So, where do we find the balance? For some of us, we simply spread our day over more hours, routinely bringing work home so we can create bigger gaps between our switches. I've found another way.

I try to see all of my projects in a single, broader context. When you view the work as a whole, you aren't switching contexts as you change tasks. It doesn't work for everything. I can't stretch my perspective around disparate client's needs to form a single whole in consulting. Not a useful whole, at least. However, in getting my world divided into the fewest number of bins, I have found a reprieve from much of the switching.

Does that one trick automatically keep all the facts and factors in my head at the same time? No. Does it alleviate some of the switching so I can fit more in at a time?

Yes. It is less exciting. Less switching makes the process of getting things done more mechanical and less magical. I still crave the magic and the thrills, but as I deconstruct my million boxes down to a few big bins, I find deadlines are becoming more achievable again. IS

CHARLES BAROUCH is the CTO of HDWP, Inc. He can be contacted at www.hdwp.com

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CLIF NOTES: SHUT UP AND PUT UP

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is code the pieces to demonstrate the technology works. And keep track of how long it took to code and implement. Many people process information visually. They will literally "see" what it is you have been talking about all this time. The fact that you treated it as a lab exercise and tracked your coding and implementation time (subtract the time for the learning curve) gives you a real metric for determining what level of effort (and cost) would be involved. It might not be highly accurate in actually estimating the project, but it is certainly better and more impressive than "piece of cake." All you have to do is learn the technology and your platform's method of implementing it and code the demo.

I can hear your shocked voice. "He just said that all I have to do is… Is he crazy? My boss will never let me do that! There is no way that he is going to let me spend time working on something that he already said "no" to. Surely he's not suggesting that I sneak around behind my boss's back and run my own private skunk works project?"

No. I was not suggesting that. But where did I say that you were supposed to do it on company time or using company resources? Several of the MultiValue vendors have personal editions of their software that you can use for your own skill building and education. Do this on your own time.

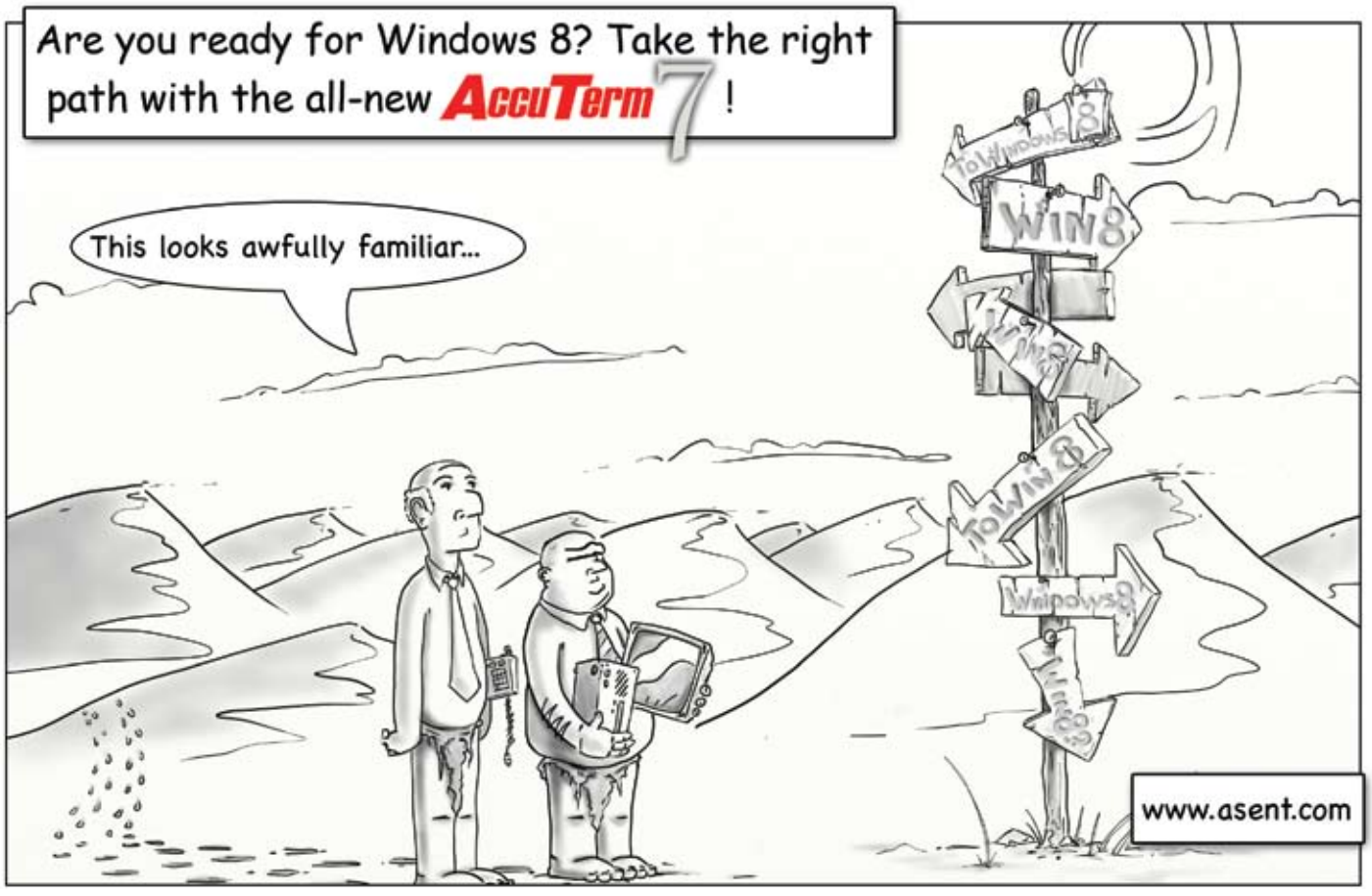
Now I will admit, I know a lot of MultiValue developers who absolutely refuse to learn anything new unless somebody else pays them to do it, be it an employer or a customer.

But at some point, at least if you are serious about wanting to see MultiValue grow and thrive, you are going to have to invest some of your own skin in the game. You can't just sit back and continue to whine about how your vendor doesn't do enough advertising, how Spectrum doesn't give everything away for free, or how your VAR doesn't offer classes in the new technologies at no charge. There comes a time when you have to turn off the TV, grab a set of documentation, and put some effort into learning something on your own.

Will your efforts be rewarded back at your place of (current) employment? Maybe. Maybe not. I have had instances where a proof of concept demo completely turned minds and attitudes around. I have had other cases where it didn't make a single bit of difference. But you don't know unless you try.

So if you want to continue to have a career in MultiValue, even if it is only for enough years so you can retire, you need to start showing people what these systems can do. And that probably means skipping a few football games and learning something new.

After all, if you're not that interested in your career, why should anyone else be? IS



Shut Up and Put Up

BY CLIFTON OLIVER

As I talk to MultiValue developers about modernizing and evolving their MultiValue applications into this millennium's technologies, I find that the conversations tend to fall into a set of patterns. I may have ten or fifteen conversations with people at the conference about this topic, but each of them usually mention only three or four of the same things. So in the hopes of giving you something to think about and alternate ways to approach the problem, I've identified a couple of these and have some suggestions for a different approach.

Pick your battles

Simply put, this means not to waste a lot of your time and energy fighting battles (discussions, arguments, etc.) that you have very little chance of winning. Your time, energy, and motivation would be better spent elsewhere.

For example, if a seasoned MultiValue developer wants to argue that green screen applications are superior to GUI-based applications, or that users prefer green screen because it allows faster data entry, why are you bothering to waste your time trying to convince them otherwise? They obviously have either not talked with the users, or they have very selective filters of what they hear. Their mind is made up, and nothing you can say, do, or show them is going to change it. Give it up and save yourself the wasted time and irritation. Move on. I rather go play with my granddaughter than waste that time trying to convince someone to give up the ED editor and learn to use an IDE. I'm sure that you have better uses for your time, also.

Stop talking

Another story I frequently hear follows the pattern of the teller trying to be the advocate or evangelist for using a new MultiValued technology — web services, data encryption, that sort of thing. The applicant has tried for months, sometimes years, to persuade people in their shop to at least explore the new capabilities and how they might be used to their advantage. But all of the arguments seem to fall on deaf ears.

Now the reason for that can be many different things. No money, "we've always done fine without it," and "it would take way too much work" are among the most common. I could give you a list of talking points to try to overcome each one of these objections. But I would imagine that if you have been fighting these kind of battles for any length of time, you have come up with your own set of responses. And again, although we might be able to hone our arguments or make them more diplomatic and, we hope, persuasive, why waste our time beating a dead horse with a deaf post?

If all of your presentation of facts, list of advantages, and logic has not persuaded them in the past, what makes you think simply repeating yourself is going to persuade them in the future? When someone has heard all of the arguments, thought about them (however briefly), and made up their mind about something, it is a rare person who will reconsider their position based solely on the same rationale being presented to them over and over. In their minds, they have already dealt with this.

You have probably seen the poster that reads, "Get all the facts; then you can ignore them."

Maybe it is time to just shut up.

Prove it

Now please notice that I said shut up, not give up. But at this stage of the game, you have lost the war with words. There is only one thing left to try — prove it to them. Show it to them. Let them actually see what you're talking about. Demonstrate the concept.

In other words, to twist the common phrase a bit, it is time to "shut up and put up."

Let's say that you have been trying to convince your organization that implementing web services would be a way to make the information in your MultiValue database accessible to your customers. Imagine a simple web page where you could enter an order number. It would then use a web service to get the current order status and display it. You could even use someone else's web service, such as the shipping company, to retrieve and display the tracking information.

It doesn't have to be fancy. Remember you are trying to do a proof of concept demo, not a polished application complete with authentication and all the bells and whistles. All you need to do

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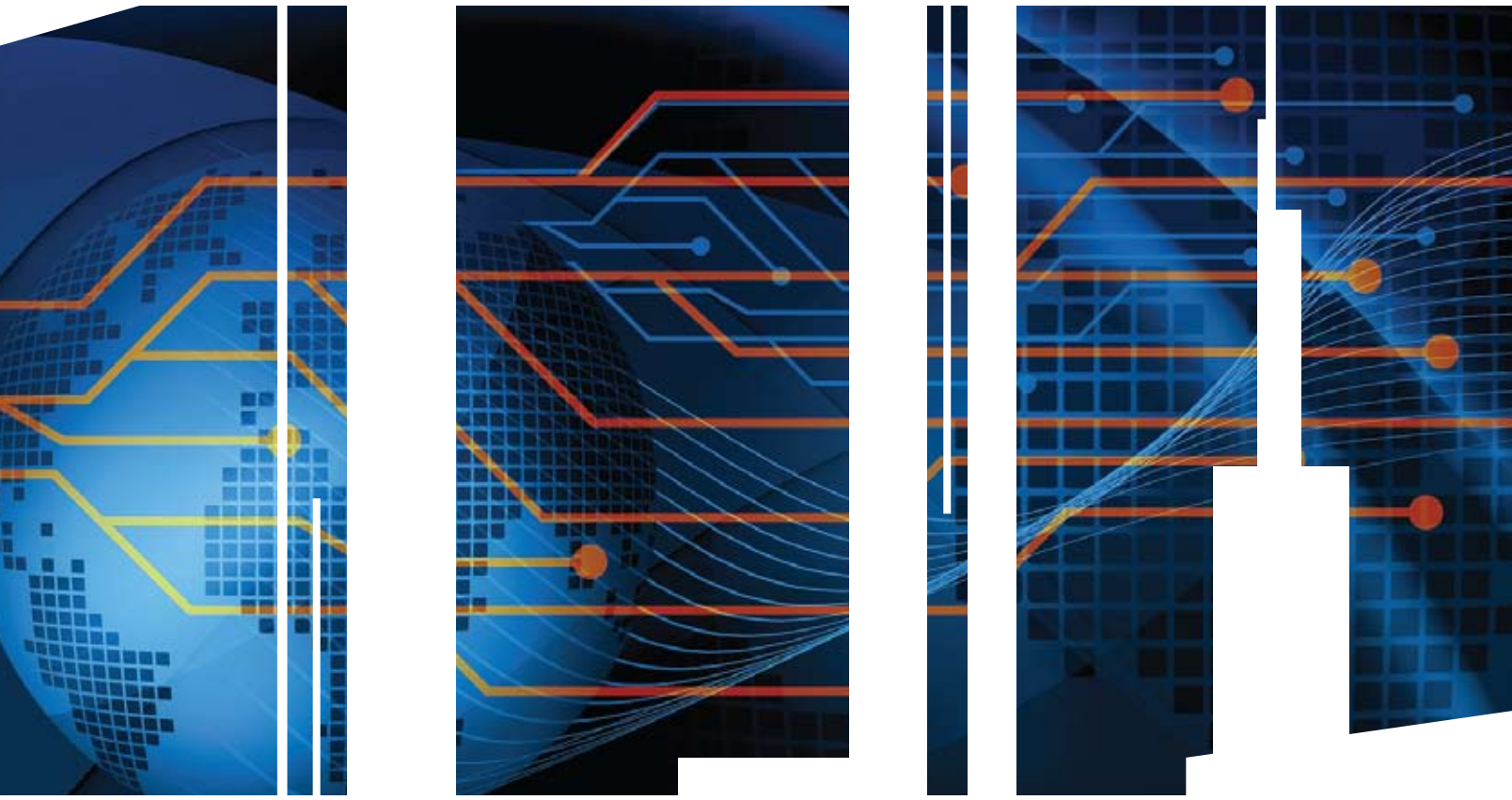

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