Technical Education Conference (TEC 2010) Guide

TEC 2010

The Odyssey Continues — April 27-29, 2010

Linux
i for Business
AIX

Keynote Speakers: Larry Augustin   Zeev Suraski   Ian Jarman

TEC 2010

PHP

Mobile App Dev

Power7

Open Source

Modernization

17th Annual Technical Education Conference
Seneca @ York University

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APRIL 2010 VOLUME 25 NUMBER 4

Envision Whirled Peas. And if you can't, then envision World Peace. See back page for details ...

TUG
PRESIDENT'S MESSAGE
APRIL 2010

By Léo Lefebvre, President,
TORONTO USERS GROUP
for Power Systems

Those of you who know TUG well know what we are doing these days (and more precisely what we have been doing since last September) that will be presented on April 27 – 29, 2010. Yes, you guessed it! ... our annual Technical Education Conference (TEC for short).

In this twenty fifth TUG season, the TEC team is once again preparing our seventeenth edition of this famous conference.

We have always had fantastic speakers at the conference, presenting equally fantastic sessions to attendees who are always thrilled with their priceless experience.

Some of us have been working on this conference since day one, back in September of 1993. I am still working on preparations for the conference and I will be—until a few weeks after it's over, but I thought I should take a break and tell you a few things about this year's event.

Over the years, we have seen a few changes in the conference organization and presentation.

We first started with a two-day conference in '94, then we tried three days, to finally come back to the original format. In 2004, we started having labs sessions at the IBM Toronto Lab facilities in Markham. And in 2006, we returned to the three day format again, when we segregated the lab exercises from the tutorial sessions.

TUG's BIG
TWO FIVE
ANNIVERSARY
is coming soon...
How shall we celebrate?

TUG President Léo Lefebvre on his recent sojourn in Hong Kong

Now in 2010, at the start of a new decade (and as I said before—our seventeenth TEC) we're again making changes to our conference format. The biggest change this year is the move to a different venue: **Seneca College** at the York University campus.

Moving to Seneca College for TEC allows us to re-evaluate our offerings and to reach a brand new clientele along with our regular and loyal IBM i community.

In the "new offerings" section we could mention sessions on networking at all levels including Blackberry, more AIX sessions, good coverage of PHP in general, and i-related subjects.

Being located in classrooms at a "professional college" allows us to use many of the college facilities. So, what is quite exciting about the presentations this year is that many of them are offered in classrooms equipped with computer equipment. Many sessions will then be able to take advantage of that equipment and offer "on-the-fly" and quick demos.

And speakers! What a great line up of speakers we were able to attract! Just mentioning names like **Larry Augustin**, CEO of SugarCRM; **Zeev Suraski** co-founder of Zend Technology; and **Ian Jarman**, Power Systems Software Manager is already quite a line up on its own! But what about speakers like **Mel Beckman**, **Jon Paris**, **Susan Gantner**, **Alison Butterill**, and **Claus Weiss**? So many speakers—I don't have enough room to list them all here. Please check the TEC website (www.tug.ca/tec) for more details.

Well, I could tell you a lot more about TEC 2010 but I don't have enough room in this column, and frankly, I still have many things to complete. So, I'll get back to my work and I will hopefully see you all at Seneca College on the York University campus April 27 & 28. TUG

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TEC 2010

The Odyssey Continues

GTA TEC Market Feedback

By Mark Buchner

Over the past few months, I've spent plenty of time on the phone and have had discussions with many of our IBM user community members. In fact, my records say I'm approaching 100 IT managers that I've personally talked to. I thoroughly enjoy this part of my users group duties, and one of the most fascinating parts of these discussions is the opportunity to observe and record IT trends. Often, our local trends reflect global paradigms. What are the technical and sociological trends of our IBM Power Systems user community concerning the following?

- Are companies building or buying applications?
- Where and how are the applications hosted?
- What tools are used for development and customization?
- What OS and platform is used?
- How is the economy affecting IT?

Buy vs. Build

ERP vendors now define the corporate IT landscape. A majority of customers have seen their corporate headquarters (wherever they may be), dictate a global standard ERP and thus cause upheaval to the status quo. The ERP vendors are an oligopoly: they may be Microsoft (MS Dynamics, .net development, and Windows OS), Oracle (increasingly, Oracle does not just refer to the DB and app but a complete solution stack involving SUN hardware and Solaris and Fusion middleware) or SAP (SAP is often implemented with IBM Power systems). While customers seem to be willing to define themselves by their anchored ERP (e.g., "we are wall-to-wall SAP"), the reality is far more complex and involves integration of a variety of new systems such as CRM, Mobile, Business Intelligence, analytics, Web 2.0 and legacy systems to the ERP core.

What this translates to locally, is large cutbacks in local development departments and an emphasis shift from development to integration. Characteristically, customers grapple with how to transition to the new ERP system and how to accommodate or maintain specific features and business process that had been buried in the existing, traditional applications. These projects don't happen overnight (if at all) and typically have 3-5 year windows.

Recentralization

Datacenters are becoming more centralized. TUG members tell me about datacenters being consolidated, often in the U.S. or somewhere other than home. This provides the company greater control over IT assets, including: increasing utilization rates, scalability, energy efficiency, and workload management issues, as well as very specific HA/DR requirements. But, for many, it can mean a lottery to see who gets to own the datacenter and who does not. If you happen to own operations today, you will care INTENSELY about the topics and SLA. Furthermore, BladeCenter, cloud computing and IBM Smart Business appliances reflect the selection of operational choices and customers typically also find increasing emphasis on their network and network architecture.

Platform Shifting

IBM i systems tend to "hang on" to existing workloads that have been running there for decades, often procrastinating OS and hardware upgrades. In the meantime, AIX and Linux shops are aggressively growing and running exciting new workloads. There is often a "silo effect" among different operational groups and they don't always understand or work with each other. If you are an "i" person, it behooves you either to speed up your retirement plans or you start to expand your platform skills. If you are a UNIX

Mark Buchner

user, you should be looking at AIX as the world's #1 and #1 growth UNIX system. The good news is that by modernizing your IBM systems, a single POWER system can be virtualized, sliced-and-diced, and dynamically re-configured to run IBMi, AIX, and Linux at the same time using POWERVM.

Application Development

Overall, I note a shocking lack of AD tools being used for modernization. Far too many i developers on Power Systems still use "old school" tooling such as SEU, PDM, & QUERY/400. AIX users have even less of an identifiable trend and have even older tools and languages. While this may be rooted in experience and long term familiarization, *reluctance to modernize one's AD toolset can no longer been seen as a viable AD strategy*. Many customers tell me that they have tried new tools (WDSc for instance) in the past, but had some setback or disappointment that has kept them from trying again. I see the interest in tools modernization as high, albeit with some reservations and hesitation from existing customers that say, "Show me, IBM..." (even if they are not "from Missouri").

Economic and Cost Woes

The economy is on everyone's mind and it affects people both personally—as they fear for jobs—and professionally. Folks are open to creative use of Open Source. If you really want to cut costs, start thinking about complete open source solution stacks that go far beyond "LAMP" (Linux, Apache, MySQL, PHP) and include

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CRM (SugarCRM), content management (DocuWiki), ERP systems (Compiere), BI (Pentaho), analytics (InfoBright), cloud computing, etc. Members tell me they want to keep up their technical vitality to ensure their skills are in demand. They also want and need to keep networking with vendors and peers.

How TEC 2010 Can Help

Leverage open source to cut costs, for example using: PHP, SugarCRM, and MediaWiki. Highlights include 24A Keynote: "*Enterprise PHP*" with **Zeev Suraski**, co-founder of Zend, and 14A Keynote: "*Commercial Open Source: Smart IT in the next Decade*" with **Larry Augustin**, as well as a customer-led story 25E: "*Deploying MediaWiki on i*" with **John Brenton** from SMT.

Dynamic infrastructure with Power7: We have a large number of sessions with excellent speakers. For instance we bring Power Systems AIX guru **Joel Tendler** for three deep, Power7 architecture topics. We have **Greg Hintermeister** for sessions on IBM Director and PowerVM. **Jay Kruemcke**, IBM's AIX product manager has three sessions on AIX while there are number of i session including an OS update with **Ian Jarman**. We have way cool practical sessions such as 13H: "*Making testing simple and audit compliance*".

Get more out of existing systems and integrate them to new ones: We have an entire track on modernization lectures, re-engineering sessions and PHP and networking labs. Highlight sessions include 13F: "*Modernizing Apps Using Design Recovery*", 16C: "*RPG XML and Web Services*", 13F: "*Refactoring Legacy Applications*", 12C: "*PHP for RPG Programmers*", 13B: "*Build your own IPV6*", and 12E: "*Extend i apps to WebSphere*".

Make a splash. Be a hero: Add real business value by getting on the biggest IT trend: **mobile applications**... Extend your existing enterprise systems to BlackBerry devices and make it easy by exploiting middleware. Highlight sessions include 15A: "*Best practices for BlackBerry App Dev*", 22M: "*BlackBerry Apps Customer Case Study*", 21H: "*Gauging Readiness for BlackBerry apps*", and 23B: "*Kryos Velocity Hands-On Labs*". And finally, a practical session on Business Process Management. **Rahim Lalani** from Lansa will present 15H: "*Business Automation using Business Process Integration and Workflow*".

Re-tool your AD. Let IBM show you the new news on Rational AD products and compilers. Highlights include 13A: "*Rational for Power Systems*", 16F: "*Rational Team Concert*", and 21G: "*New Dev tools for AIX*".

Our website is the most current source of information on TEC 2010, with tracks, session abstracts, and speaker bios. Keep up your technical vitality and ensure your skills are in demand. Network with peers, partners, and vendors. Check us out at www.tug.ca. See you at TEC 2010! ▪TUG

Mark Buchner is Executive Director of TUG and co-chair of TEC 2010. He can be reached at Mark@tug.ca or at (ASTECH) 905-727-2384.

TEC 2010 KEYNOTE SPEAKER

Larry Augustin

By Mark Buchner

TUG is very fortunate to have **Larry Augustin**, an industry icon from Silicon Valley in California, as our featured TEC conference keynote speaker.

Larry will examine the evolution of open source and note the high level of business value available today through Commercial Open Source. Open source today is already pervasive in the enterprise infrastructure, but it has evolved to such a degree that enterprise quality CRM, ERP, E-commerce, BI, Analytics, etc. systems are now ready for industrial deployment. Larry describes enterprise open source software as a "safe bet" for the next decade and provides examples of customers.

Larry will comment on the benefits of Commercial Open Source, including the rapid time to value, cost, skills availability, quality, and support while addressing misconceptions that may exist, especially about reliability.

IBM systems shops are becoming familiar with Open Source through LAMP: Linux, PHP, the Apache Web server, the MySQL database, and PHP. IBM i 6.1 for instance, runs any i/OS release that supports Zend Core PHP and MySQL such as SugarCRM. These customers are looking for a business solution that provides rapid ROI, and they don't care if it's open source or not. Many of the traditional ERP vendors in the AS/400 market have not kept up with modern Web-based technology.

Software as a Service offerings and Cloud Computing options are of high interest to IBM customers, and Commercial Open Source is enabled for even more rapid market penetration through this delivery. Larry will comment on various cloud strategies available to customers and how Commercial Open Source fits in. Expect Larry to provide his candid opinion on IBM systems and channels.

Larry will speak at the TEC 2010 Executive Breakfast April 27, 8:00 am at the Schulich Executive Centre private dining room. Tickets for the breakfast are $50 per person, or free to qualified IT executives. Later the same day at 1:00 pm, Larry will headline the conference keynote session (14A) in room 1206 at Seneca @ York University with the topic "Smart IT in the Next Decade." Go to www.tug.ca/tec to register.

Larry Augustin is an angel investor and advisor to early stage technology companies. He currently serves on the Boards of Directors of Appcelerator, Compiere, DeviceVM, DotNetNuke, Fonality, Hyperic, Medsphere, Pentaho and SugarCRM. Previously he was a Director of JBoss (acquired by Red Hat Software), XenSource (acquired by Citrix), SourceForge (NASDAQ: LNUX, previously VA Linux) and Linux International (LI). He also serves as a Director of the non-profit industry consortium The Linux Foundation.

One of the group who coined the term "Open Source", he has written and spoken extensively on Open Source worldwide. Worth Magazine named him to their list of the Top 50 CEOs in 2000. Previously he served as interim CEO of Medsphere. From September 2002 to December 2004 he was a Venture Partner at Azure Capital Partners where he helped lead Azure's investments in Zend and Medsphere. In 1993 he founded VA Linux (now SourceForge, NASDAQ:LNUX), where he served as CEO until August 2002 and led the company through an IPO in December 1999. In November 1999 he launched SourceForge.net, the world's largest Open Source software development community. Also at VA Linux, he acquired Andover.net, merging SourceForge. net, Linux.com, Slashdot, and other well-known Open Source Internet sites to form the Open Source Development Network (OSDN).

Larry holds Ph.D. and M.S. degrees in electrical engineering from Stanford University, and a B.S. in electrical engineering from the University of Notre Dame. Larry can be found online at http://lmaugustin.com.

SUGARCRM.
THE CLOUD IS OPEN

AGENDA

TUG MoM — APRIL 27, 2010

AGENDA AT A GLANCE	
Time	**Event**
10:30 – 5:00	TEC Sponsor exhibits open in Library Corridor & Kaleidoscope
5:00 – 5:30	Registration for Meeting of Members
5:30 – 7:00	April 2010 Meeting of Members (MoM) **Power Systems in 2010 and Beyond** (Seneca @ York University — Room 1206)
7:00	Wrap-up

Power Systems in 2010 and Beyond

Whether you are registered for TEC 2010 or not, come on over to Seneca Tuesday evening April 27, and take in this special presentation. You might even win a fabulous door prize! Everyone is welcome to attend, including TUG members & non-members, TEC attendees & non-attendees, speakers, sponsors, students, etc.

(Free admission & free parking — ask for parking voucher at MoM registration desk.)

Keynote Speaker **Ian Jarman** is the manager of IBM Power Systems Software. Ian's team has responsibility for a wide range of software offerings that run on Power Systems, including AIX, i, Linux, PowerVM and PowerHA. Prior to joining the IBM Power Systems team, he was the worldwide IBM System i product manager, responsible for product announcements, strategy and positioning.

As a leader in the Power Systems community, Ian is a frequent speaker at customer, business partner, press and analyst events around the world. In the late 1990s, he led the AS/400 strategy for server consolidation with responsibility for the introduction of Logical Partitioning. He has held a wide range of other positions supporting IBM's midrange products including AS/400 client integration marketing manager and serving on the IBM client server development team. He joined IBM in 1986 as a systems engineer in the United Kingdom and relocated to the U.S. in 1991 to work for IBM at its Rochester, Minnesota facility.

Send your suggestions for future topics to: leo@tug.ca

REGISTER ONLINE

Please register in advance at www.tug.ca/t_agenda.html

Ian Jarman, manager of IBM Power Systems Software

BREAKING INTO MOBILE APPLICATIONS ON THE BLACKBERRY SMARTPHONE

How one company created their own custom app to improve business

By Shawn Derby

Anyone who has worked in any kind of collaborative work environment knows that a phone call often doesn't provide the level of clear communication you get when you can talk face to face. And this is especially true when there is a group on the call. But it's one of the ironies of the business world that the people whose role most requires them to have fast and easy communication with team members are the people who are most likely to spend more time away from the office and out of that immediate reach.

The reality of contemporary business is that it happens away from home as much as it happens at home. Your movers and shakers are all too often busy moving and shaking somewhere else.

Ten years ago cell phones did a good job of keeping workers in touch. Five years ago they were able to talk *and* access email. Two years ago they could do all of that and maybe take a photo or listen to some music. But today there is a nearly unlimited potential for directly impacting business flow and productivity directly at hand.

With the right mobile application in place, remote staff can access most all of the data they would be able to find if they were sitting at their desk. But they can do this in the field, where it counts.

This was the thinking of the IT team at Calgary, Alberta's Keyera Facilities. **Keyera** owns one of the largest independent natural gas midstream businesses in Western Canada. They provide a broad range of services to the oil and gas industry, ranging from essential support all the way to product delivery. Keyera also manages the value and growth of a publicly traded income fund that trades on the TSX.

Keyera's IT team knew that they had the tool they needed to streamline business practices right in the hands of their staff; many of their employees are outfitted with **RIM's BlackBerry smartphone**. Keyera recognized a number of key data-driven operations that could benefit from mobile applications, but also recognized that they needed to be able to demonstrate the effectiveness of mobile phone apps to their senior management team.

The IT team at Keyera needed to develop an application that could provide immediate and tangible benefits before they could get support for anything on a larger scale. The challenge for their team was in finding a way to create an application to run on the BlackBerry smartphone in little time, and with little room for any extra overhead. If Keyera was to follow the traditional development model in creating their application it's likely that it never would've happened.

"There are a number of areas of our business where having an app on a phone could help improve efficiency, but since this was an untested technology for us, we knew we might not get immediate buy in from senior management on hiring specialist developers to create something," said **Irene Speers**, a senior IT lead at Keyera working on the project, "the idea was there and the need was there, but it was only when we started working with **Kryos Velocity** that we realized we had the means to deliver."

Keyera owns one of the largest independent natural gas midstream businesses in Western Canada.

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Calgary's Kryos Systems had already helped Keyera with their web content management strategy and implementation. Kryos worked with the Keyera IT team to plan and implement their first custom application on the BlackBerry smartphone through the use of Velocity, the company's rapid application development platform. Velocity allows developers to code for the BlackBerry smartphone in simple XML, avoiding the need to find a team of specialized Java J2ME programmers.

The first application that Velocity and Keyera collaborated on was targeted to helping the Keyera Investor Relations team. The IR team spends around two weeks on the road, meeting with potential investors, at the end of every quarter. The nature of their work often requires group collaboration, and access to key data online is mandatory.

Keyera provides a broad range of services to the oil and gas industry.

Keyera built a custom application to run on their IR team's Black-Berry smartphones that connects the team to each other and to the critical information they need. The application developed pulls data from the major stock market indices and delivers it to the screens of the IR and executive team's phones in near real time. Team members are able to configure the stocks they receive information on, and are also able to comment on any data that is streamed into the app. The comments are visible to everyone that has the application and are stored in a database at the Keyera head office. The Keyera IR team now has the most immediate information possible, and an instant messaging feature allows them to collaborate on the data right from the phone. It's possible to get group opinion and consensus on decisions very quickly. When meeting with expert investors, the Keyera team is now more prepared for the questions they're likely to get, because they've got updated stock information in their back pocket.

"The app can also pull in press releases related to the stock information that our IR team is getting. This provides our IR team and senior executive with a heads-up on changes in our own stock price, competitor stock prices, the markets in general, competitor news, and information that might impact the price in the future. Our application is flexible enough to allow us to specify which content source we get the news release data from – different companies, different news sources.

The main benefit is that we can have our team get all of the information they need, no matter where there are, and have open lines of communication at the same time," commented Speers.

Keyera's IT team sees potential for creating more mobile phone apps to improve other areas of the company's business and hopes to mobilize more key staff in the future. And they aren't alone in that desire. While applications have taken the iPhone by storm—with the number of available apps in the hundreds of thousands—there is an obvious void for the BlackBerry platform. There are currently just over 4,000 available for the RIM device[1]. Yet, according to RIM's latest financial results, there are over 16 million corporate BlackBerry smartphones in North America[2].

Further research indicates that 96% of corporate smartphone users said that they consider having applications on their device as important[3]. All this might change quickly. Until recently, the main barrier to developing applications for the BlackBerry smartphone has been the lengthy timelines and larger budgets required for specialized programmers. However, new technology is able to bridge the gap to rapid development of applications at a fraction of the traditional cost and in a fraction of the traditional time. Applications can use the full BlackBerry platform, including the camera, GPS location, and SMS. It might come as a surprise to many enterprise businesses that a key tool to improving efficiency and workflow has been in the pockets of staff all along. **TUG**

*To find out more about **Keyera Facilities Income Fund** you can find them online at www.keyera.com.*

*To find out more about the **Kryos Velocity** Mobile Development Platform, visit www.kryosvelocity.com.*

kryos velocity

[1] AppWorld.BlackBerry.com, Sept. 8, 2009
[2] Based on analysis of RIM Q3 2010 Financial Statements
[3] InStat Research, 2009

THE KRYOS VELOCITY TEAM

**Kryos Velocity is a Platinum Sponsor,
providing four great speakers for TEC 2010.**

Tom Everett,
Lead Architect Kryos Systems

Tom Everett has been developing software for over 15 years across a broad range of products including Chemical Engineering Process Simulators, License Management, Well Lifecycle Management, and Cost Estimating software. He has held a variety of roles from Developer to Architect to Vice President Development in both public and private software companies. Tom is an experienced Java and Microsoft developer with over two years of hands-on experience developing software for the BlackBerry smartphone.

As a Lead Architect on the Kryos engineering team, Tom was instrumental in the design and development of Velocity, an application development platform for BlackBerry smartphones. At TEC 2010, Tom will be leading a hands-on Velocity Jam Session—a chance for developers to peek beneath the code and understand how Velocity can help them develop BlackBerry smartphone applications quickly, easily, and without compromise.

23B: Kryos Velocity Hands-On Jam Session – Tom Everett

Take a deep dive into the world of developing applications for BlackBerry smartphones with Velocity, a fresh approach to rapid application development that enables you to quickly deliver enterprise apps and centrally manage deployment and updates, without having to learn new tools or hire specialized developer expertise. Tom will provide an overview of the Velocity software architecture, discuss how it compares to native BlackBerry development and web applications, share some sample XML code, and show you how to start building an application in a matter of days.

Bill McNaughton,
Senior Application Architect Kryos Systems

Bill has been working with Lotus Notes/Domino applications since 1988, working with the first pioneering Lotus Notes clients in Europe. After several technical sales and marketing roles at Lotus UK and Canada, he co-founded a CRM application company. He has presented at Lotusphere on "Modernizing IBM Lotus Notes Applications with IBM Lotus Notes 8" and "Building Composite Applications" for IBM Lotus Notes 8, IBM WebSphere Portal and Mobile Audiences.

As a member of the Kryos consulting team since 2006, Bill specializes in architecting the extension and integration of Lotus Domino applications with other platforms including Blackberry devices, Eclipse plug-ins, IBM Portals, Sharepoint and SAP. Bill will be speaking at TEC 2010 on developing BlackBerry smartphone applications in a Domino environment.

24B: Developing BlackBerry Apps in Domino – Bill McNaughton

Developing and deploying applications onto the BlackBerry smartphone can be an extremely challenging exercise that requires specialized skills, tools and training. Organizations such as SAP and SalesForce.com have worked for years in developing their BlackBerry offerings. Bill will discuss the options, challenges and the best practices associated with designing, building and deploying Domino applications onto the BlackBerry platform.

Amanda Summers,
Business Development Manager Kryos Systems

With over 13 years of experience in the IT industry, Amanda is familiar with many types of IT projects and the unique challenges associated with implementation. In the past two years with Kryos Systems she has been focused on IBM Software Solutions, WCM, Portal and Service Delivery and most recently Velocity, a Mobile Development Platform for BlackBerry smartphones.

Amanda is responsible for the overall account relationship with enterprise clients, and works to identify and resolve operational challenges through the deployment of skilled resources and technology. Amanda offers exceptional client management skills and her past experience with IBM has given her a broad understanding of many different industries in both the private and public sectors. At TEC 2010, Amanda will be presenting two customer case studies of how custom enterprise applications were developed and deployed for the BlackBerry smartphone.

22H: BlackBerry Apps Customer Case Study – Amanda Summers

Research shows that extending back-office applications to the smartphone platform can improve workforce productivity, enhance customer service and communication, and reduce operating costs. But how does it all really happen? Amanda will share lessons from two customer case studies – Keyera Energy and Sykes Assistance Services Corporation. Learn how Sykes reduced operating costs and enhanced their customers' experience by extending their roadside assistance program to a GPS-enabled BlackBerry smartphone application. See how Keyera Energy deployed a BlackBerry smartphone app to provide real-time stock price and news release information to senior executives and investor relations' staff.

Laurie Desautels,
Director Service Delivery Kryos Systems

Laurie is an IBM Global Beacon Award winning solution designer and project manager who has successfully delivered numerous portal, web and mobile strategies. She has over 27 years of experience in the IT industry, with a focus on web, portal and collaboration technologies. Laurie has spoken on the subject of Mobile Strategy and Best Practices for Mobile Development at recent online events and meetings in Calgary and Chicago.

15A: Best Practices for BlackBerry App Development – Laurie Desautels

Smartphones are an exciting platform but also introduce a new set of constraints on the Application and Solution Designer. As a Mobile Solution Designer, you will quickly learn that simplifying your solution by frequently asking the question "why?" is essential to its success. Laurie will provide recommendations on overcoming these constraints and review best practices for designing solutions for BlackBerry smartphones.

21H: Gauging Readiness for BlackBerry Apps – Laurie Desautels

Studies show employees' productivity can be increased dramatically when they are able to read and respond to key business information during intervals when they are away from their desks. Enabling these gains by extending your core business applications to mobile devices is becoming increasingly critical. But are you ready for deploying business solutions on smartphones? In this session, Laurie will discuss mobile strategy, considerations for application and infrastructure architecture, and the often-overlooked topics of risks and governance.

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MODERNIZING LEGACY CA:2E & RPG APPLICATIONS

By Stuart Milligan

The concept of reusing existing code or logic is not a new one. The challenge has always been to identify, isolate, and reuse only those designs that are relevant in the new context in which they are desirable. In the case of IBM i, the sheer volume of code, its complexity, and the general lack of resources to understand legacy languages, specifically RPG and CA:2E, represent a tragic potential waste of valuable business assets for hundreds of thousands of companies. In many cases, these expensive and well-established legacy designs have little chance of even having their relevance assessed, let alone being reused.

To fully understand and appreciate the problem domain, just think for a minute of two approaches to the above problems namely: screen-scraping and code conversion.

Simply screen scraping the user interface with a GUI or web emulation product does not improve the situation, the application may appear slightly more "modern" but the cosmetic changes still leave it with all the same maintenance and enhancement issues and it may be not much easier to use for new users. The same applies of building Web services around wrapper programs written to interpret the interactive data stream from 5250 applications.

The other common approach is code conversion i.e., line by line, syntax conversion of a legacy application; this will typically just transfer the same problems from one environment/language to another. Indeed, it will often produce source code that is less maintainable, effectively canceling out the benefit of using modern technologies and architectures in the first place. Syntax conversions are still being done by some companies and are often promoted by vendors of proprietary development tools for obvious reasons. This approach has never to my knowledge produced an optimum long-term result, despite many attempts over the last two decades.

Stuart Milligan

The objective, therefore in a true modernization project is to extract the essence or design of the legacy application and reuse these designs as appropriate in rebuilding the application, using modern languages, development tools, and techniques, and tapping into more widely available skills and resources.

In the previous three articles in this series, I described how to recover application legacy designs assets in a structured and proven manner. In this the concluding article, I will detail how to use these recovered designs to create a modern application.

Modern Application Architecture

Modern applications are implemented with distributed architecture. A popular standard used for this architecture is MVC or Model-View-Controller. **Figure 1** shows a typical legacy and MVC architectures side by side.

MVC allows for independent implementation and development of each layer, and facilitates OO techniques and code reusability rarely used in legacy applications. All these characteristics of a modern application
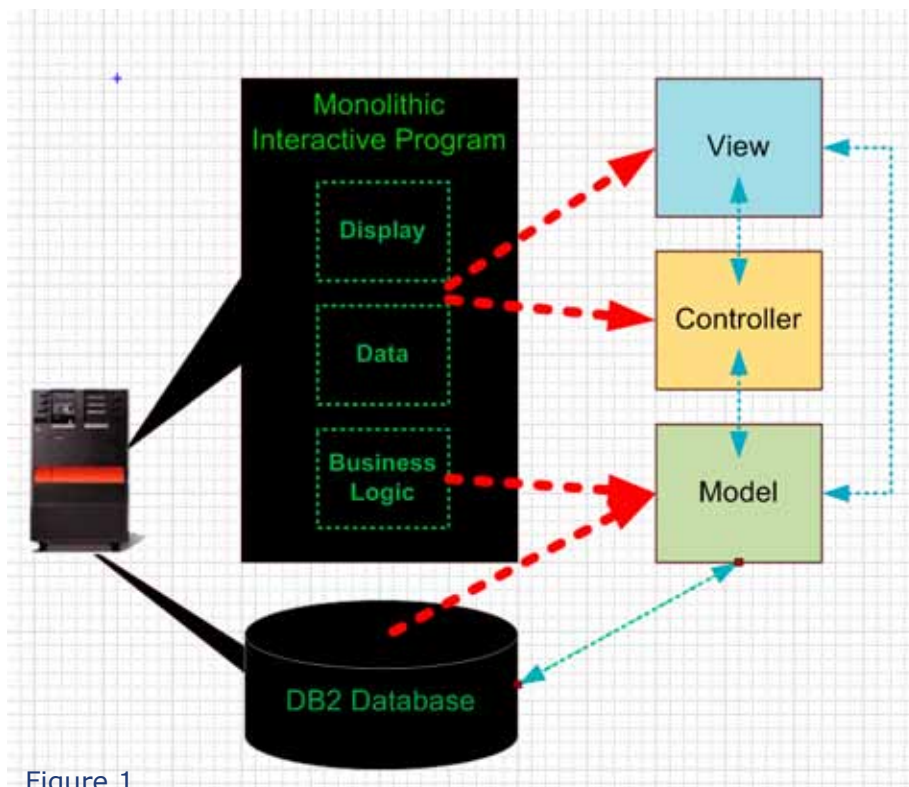

Figure 1

Figure 2

radically improve the maintainability and agile nature. Legacy applications do have these same elements, but they tend to be embedded in and mixed up in large monolithic programs, with vast amounts of redundancy and duplication throughout. Implementing an RPG application using MVC requires that the business logic be separate from the user interface and controller logic. **Figure 2** shows a schematic of the code implementation in a typical modern application.

This architecture can be implemented using 5250 and pure RPG, but it's more likely and common implementation is using a web interface for the view, with the controller logic written in a modern language that supports web interfaces such as Java, EGL or C#. The optimum modernization result is to reduce dependency on legacy and proprietary languages as much as is possible, if not altogether if appropriate. To achieve this recovered design assets are reused as input to redevelop the appropriate layer.

Figure 3 shows an overview of the overall process of modernizing the legacy code using the recovered designs.
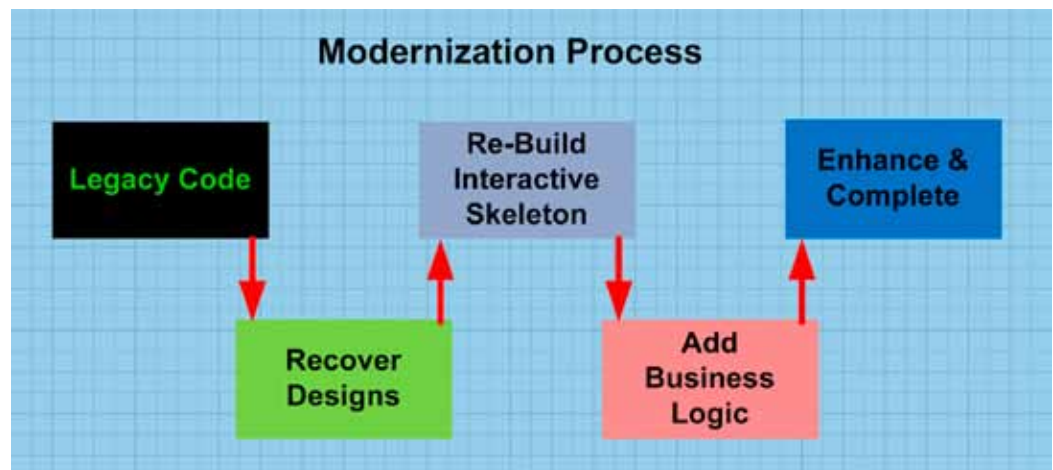
In a previous article "AUDITING LEGACY APPLICATIONS ASSETS" I discussed how to extract the data model and business rule logic from legacy code. In CA:2E applications this extraction is particularly accurate, relevant and clean if taken directly from the model. A CA:2E model is essentially an MVC specification of the application, and maps very neatly to modern MVC architecture. If these extracted designs can be articulated in language or programmatic format such as UML, DDL, XML, or even in a structured database, it is possible to use them programmatically to generate the basis of a new application skeleton. This can save companies millions of dollars and significantly reduce timelines. It also means that the designs can be perfected before any code is even written in the new application. Another benefit is that the generation process can be run repeatedly until the optimum start point of the new application development process is achieved, with very little effort and very rapidly.

This programmatic reuse of recovered application designs requires a certain amount of restructuring of the designs. The legacy designs of the interactive logic and flow of the legacy application can be used to build a modern application skeleton, and thereafter the extracted business rule logic added into this skeleton. Modern resources, tools and methods can then be used independently to enhance and complete the modernization as required. Let's look at these steps in more detail...

Building a Modern Application Skeleton

The most fundamental change and biggest challenge in modernizing a legacy application, is moving from a procedural programming model to an event driven one. This aspect is one of the primary reasons that line-by-line syntax conversions to modern languages, produce results that are often less maintainable than the original code. One of the design elements in a legacy application that is almost directly transferrable to modern, event-driven programming model is individual screen formats. Legacy screen formats largely, if not explicitly, correspond to individual steps in a transaction or business process. An individual Web page or application form largely, if not explicitly, corresponds to an individual step in a transaction or business process.

Figure 3

By simple deduction therefore, all of the design detail relating to the rendering of this specific legacy screen format can be used to specify and build a modern UI component. I will refer to the design information that forms this intersection as a "function definition" which is a standard construct in the CA:2E model as shown in **Figure 4**.

To rebuild a modern application skeleton from the legacy designs a function definition should consist of:

- **Screen fields** – work fields and fields directly traceable to database fields
- **Screen field types & attributes** – fields used as dates, foreign keys, descriptors, size type etc.
- **Screen constants** – column headings, field prompts, function name, command key descriptions etc..
- **Screen layout** – column and row positions can be converted later using relative pixel ratios
- **Screen field database mapping** – where the data for the screen comes from including join rules for foreign keys
- **Screen actions** – command keys, default enter, and sub-file options

Figure 4

This design information is entangled in DDS, program logic and the database of the legacy application. With a reasonable level of skill in legacy languages, one can extract this manually by analyzing the source code manually. With larger systems it is advisable to use tools for the analysis and extraction process. The added benefit of using an analysis and extraction tool over and above productivity, consistency and accuracy, is that the results can more easily be stored programmatically and so be used to automate the next step of writing the code. UML is one way that this can be achieved. The function definitions can be generated as a UML model for an application with a number of specific UML constructs being used that will also assist in modeling and documenting the new application for modern developers. Some of these constructs include Activity Diagrams, Use Cases and Class Diagrams. **Figure 5** shows a UML Activity Diagram that represents the users' flow through a series of legacy programs having multiple screen formats.
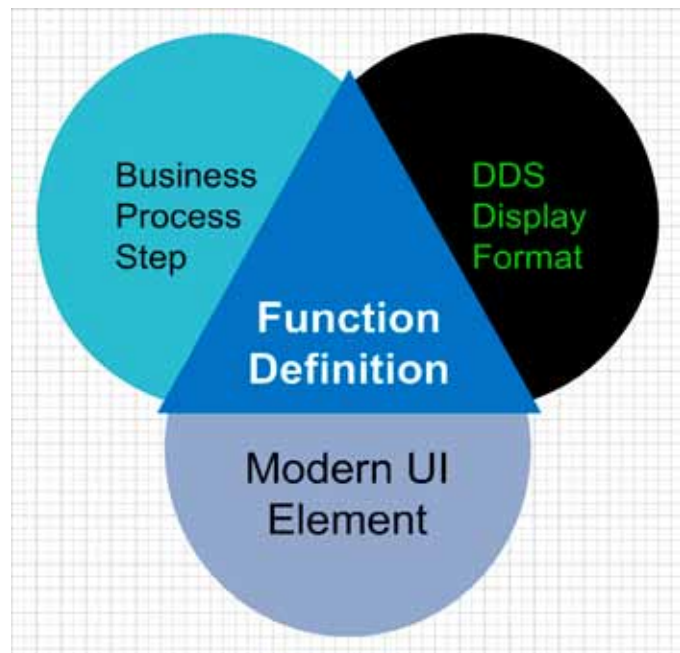
DDL and XML can be used as a means to efficiently specific the detailed aspects of the function definitions. DDL created from the legacy application data model can be imported into a persistence framework or Object Relational Map, such as Hibernate for Java and nHibernate for .Net. An ORM greatly simplifies the subsequent coding required in Java or C# by subcontracting all of the complicated SQL programming required in an enterprise business application. An additional approach is to create a single database I/O class for each table. This removes the need to have I/O logic embedded in every program in the system, this immediately making the application more maintainable and agile.

The function definitions are then be used to create the user interfaces and controller beans in the language and standard of choice (one JSF and corresponding Java bean per legacy screen format). Using XML to store the function definition provides input for both documented specifications for manual rebuilds, and as an input to programs that
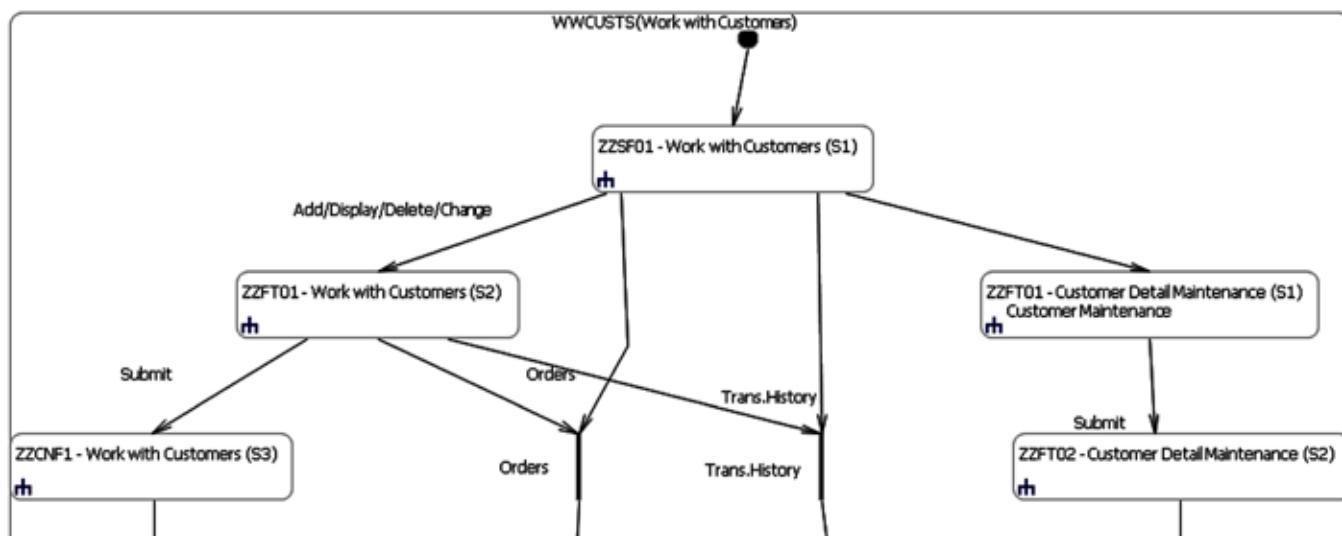

Figure 5

can create the view and controller components. This approach is applicable to Java, EGL, C#, and PHP implementations and can be used for Web, mobile Web, and Rich Client Platform alike. This is an important factor for enterprise applications that often require a mix of device types and even technology implementation options for a single system. **Figure 6** below shows a JSF generated from a function definition that was extracted from a legacy program.
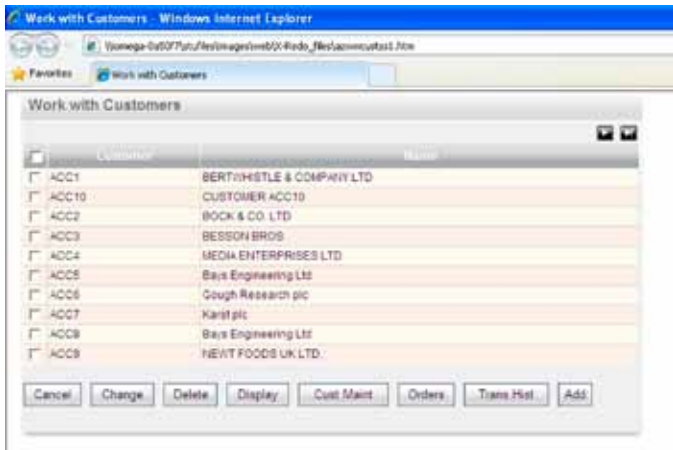

Figure 6

The important factor here is not so much the look and feel, but rather that each button is now associated with an event handler in the underlying JSF bean which is triggered by the HTML code itself. The data in the grid was retrieved from the DB2 for i database using the SQL in the bean created for the underlying database table, which was invoked by the JSF bean when the JSF page was requested by the user, in this instance from a menu on a previous page. The HTML and CSS layout was created by using the information from the function definition, as were what buttons to put into the JSF from the options, command keys and default enter, all extracted from the legacy program. In this instance the design was extracted from legacy RPG/DDS and the JSF and Java beans created both automatically using a tool in a few minutes. The style was implemented using a standard CSS file and supporting images. All industry standard, best practice modern stuff. **Figure 7** shows a small snippet of the underlying HTML code which triggers an event in the bean to invoke the orders page, passing the key of the row selected by the user.

Figure 7

The underlying Java bean knows what to do because the parameter being passed tells it where to go next. In this way the JSF beans can be kept small and simple; another good industry standard and best practice. **Figure 8** shows the record type page that the user is taken to when selecting the record and the change button.

The drop down combo boxes and date controls were added because of the presence of the foreign key information, and date field types

Figure 8

respectively in the extracted function definitions. This simple algorithm can save thousands of hours of configuration and editing of Web pages in a modern application with hundreds or thousands of screen formats.

Adding Business Rule Logic

In a previous article "*AUDITING LEGACY APPLICATIONS ASSETS*" I described how business rule logic could be extracted, indexed and documented from legacy RPG code. In CA:2E applications this business logic can be extracted directly from the action diagrams. One approach would be to add these documented rules manually to the appropriate business logic class in the modern application. This approach should be reserved for cases where very little of the legacy business logic is to be reused, including of course smaller programs that have little or no specific business logic beyond what has already been created in the JSF, JSF bean, and database I/O beans. It is important to reiterate here that the same principals described here using JSF and Java examples are exactly applicable in .Net and even modern RPG applications.

Another more practical approach which has already been automated is to essentially re-factor the original interactive program, to the extent that only the business logic processing is reused. Naturally the re-factoring must include restructuring to turn it from a procedural design to an event driven one. Again this process is applicable whether creating Java, .Net, EGL or even RPGLE business logic components. During the initial modernization effort, the business logic bean should be created as a single class/module/program that services each the modern event driven JSF's that came from the original legacy program. This is a maintainable architecture and follows modern coding practices, but retains at least some reference to the legacy transactions. **Figure 9** shows a schematic representation of the architectural mapping between legacy and modern designs for a single legacy program.

The original legacy program A had 3 screen formats, which become 3 discrete free standing JSF's and corresponding Java beans, 2 database I/O classes determined by the number of unique tables or
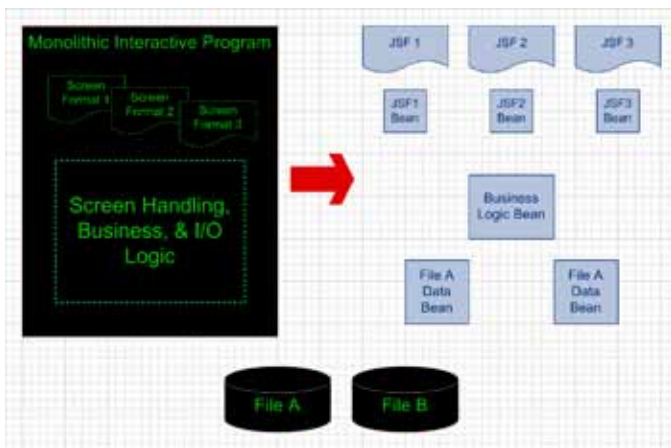
Figure 9

physical files, and a single business logic bean/module/program for the business logic. I have used JSF and Java for this diagram but the same architecture is applicable for any modern language. The same architecture would be consistent with using Spring & Hibernate frameworks too.

The business logic bean now contains a restructured version all of the relevant business logic from the original program. This restricting process turns business logic from procedural into event driven, and in doing so maps the relevant business rules processing to the relevant JSF. The first step to achieving this restructuring is to recover the logic executed before screen 1 is rendered. This will essentially be placed in the pre-entry method or procedure of new business logic bean, and invoked by the JSF Bean before the JSF is displayed. Any legacy UI logic such as interactive indicators is removed during this extraction.

The next step is to map the business logic to each JSF. This is done by identifying the business logic that is executed after the legacy format 1 but before legacy format 2. Ignore the interactive logic, and legacy structures such as indicators, and turned into variables where applicable. This logic is then created as a new method (called JSF1validation for example) in the new business logic bean. This business logic is invoked by the JSF bean that corresponds with legacy format 1, when triggered by the validation event in the new JSF. This is usually the submit button on the JSF itself. This stage is repeated for each of the legacy screen formats/JSF's. The

FURTHER READING
Here are some useful publications that cover almost all of the subjects discussed in this article:

- **IBM Redbook - Modernizing and Improving the Maintainability of RPG Applications**
http://www.redbooks.ibm.com/redpieces/abstracts/redp4046.html

- **Recycling RPG - Strategies to create new applications from legacy code**
http://systeminetwork.com/article/recycling-rpg

- **Recycle Your Legacy Code with Databorough's X-Analysis 8**
http://systeminetwork.com/article/recycle-your-legacy-code-databoroughs-x-analysis-8

documented, indexed business rules described in previous articles in the series, can be used as a reference for auditing the applicable logic during this refactoring and extraction exercise.

Finally the legacy subroutines by simple logic can be considered business logic and as such, have a scope that is potentially applicable to any of the newly created validation methods/procedures. Therefore only the legacy specific code or redundant interactive lines need be removed before these subroutines are code or copied into the new business logic bean. **Figure 10** shows an example program outline documented in a form of platformindependent pseudo code.

I have included only the method outline with one of them expanded and added some simple color coding. The pre-entry method will be executed before JSF1 is rendered, Validation for JSF1 when the user selects the submit button from the Web page and so on. The GETREC through ZGETNAMES are subroutines that have had the interactive logic removed and verified to contain valid business logic in them. It is not possible in such a short article to show the complete detail, but detailed examples are available upon request.

Figure 10

The harvesting of valuable designs is now complete, and the application can now be enhanced, and re-factored. It's worth noting that there are tools available to automate each of the steps described in this process. Staged automation of the recovery and rebuild process can reduce a system rewrite effort by at least 50%. Even executed manually, this approach provides for iterative and parallel use of resources; and is applicable for individual programs, application areas consisting of multiple programs, and even entire systems. It allows for sustained reuse of legacy technology but is not bound by it, while simultaneously producing a real modern application, not an emulated one.
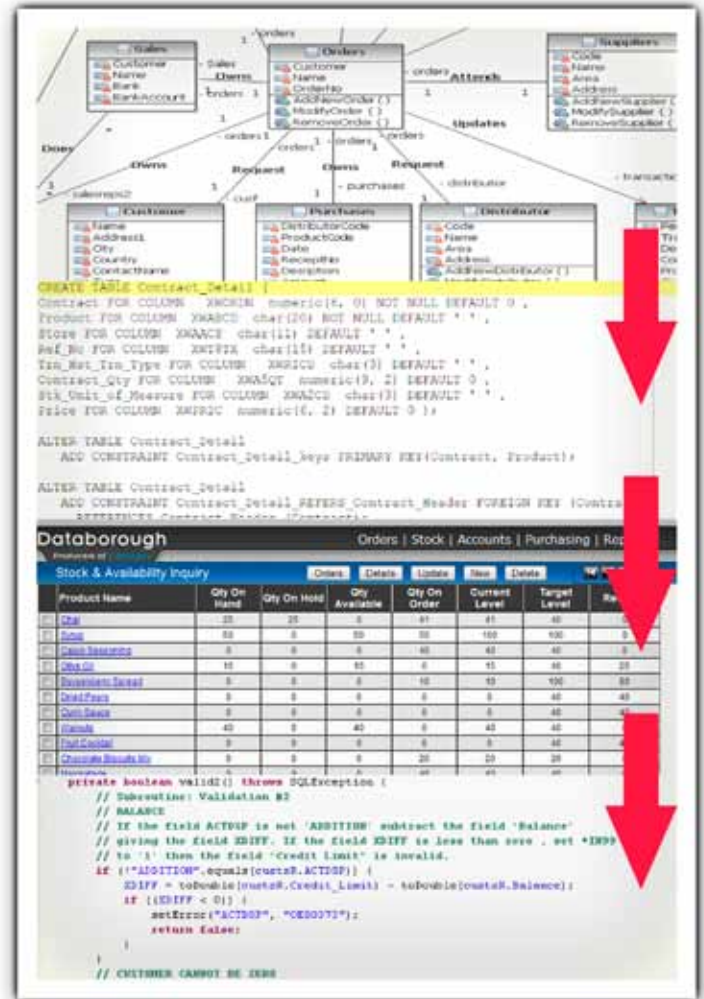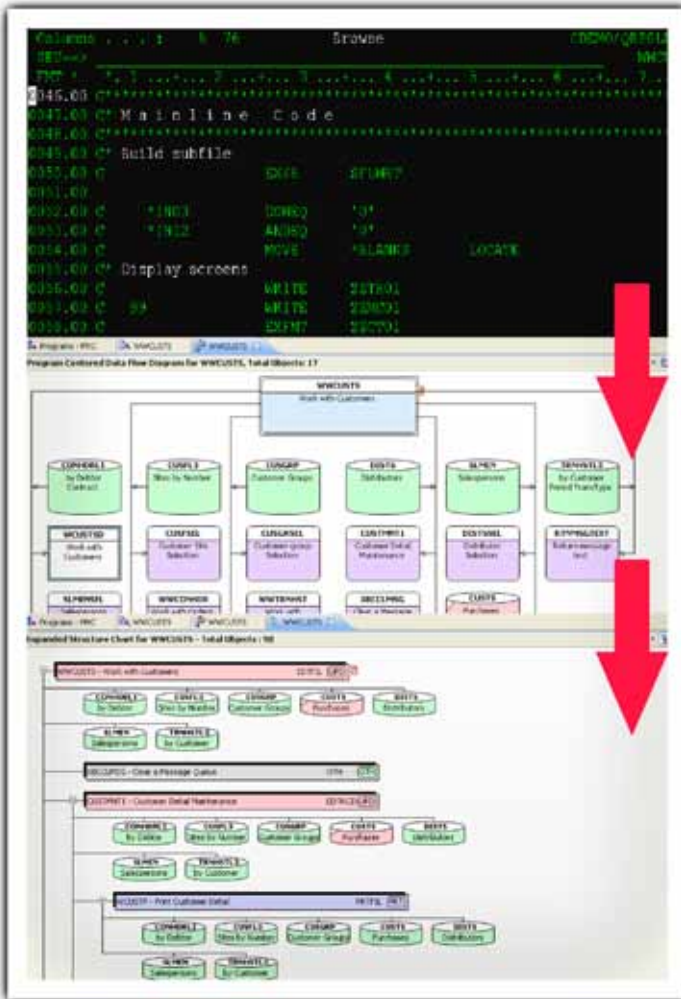
Stuart Milligan is Business Development Director at Databorough (makers of X-Analysis). He specializes in RPG/COBOL legacy analysis and design recovery, Business Rule Extraction, and system application modernization tools & services. Stuart can be reached at 917-267-7523 or stuartm@databorough.com.

LEGACY MODERNIZATION

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Seneca Update

By Russell Pangborn

I am very proud to have come up with the suggestion of holding TEC at Seneca College. It is also gratifying that the Dean of our Department, **Laura Jo Gunter** and the Chair of computer studies, **Evan Weaver**, have enthusiastically embraced the event!

There were a few tense moments that might have affected TEC from November to the end of February as a new contract between faculty and the colleges got worked out. Faculty have only been on strike three times in the last fifteen years and it never dawned on me that this year would be such a close call.

The final vote on the offer to about 10,000 faculty at 24 colleges came out at 51.45% to accept. The very slim majority shows how divisive this issue was. It was a soul-wrenching experience and a few of us wavered in both directions over two separate voting opportunities. The first union vote had a 57% majority in favour of setting a strike date to get management to change their position. Management made some slight changes and forced another vote, and this time the union narrowly lost out on their demand for third party arbitration.

This contract will be in place for the next three years.

I volunteered to do two sessions for TEC 2010 at the college. The philosophy in a college classroom involves more doing than just talking theory. I was hoping that this approach could be embraced with TEC this time. The resources at a hotel like the Sheraton revolve more around comfort and ambience. We don't have that luxurious bar close by, but here at Seneca we have over 60 labs with PCs (hopefully comfortable) and many classrooms. There are over 2,000 desktop machines and there is wireless connectivity for your laptops. We also have two iSeries machines. One is an M25 system model running at V06R01M00 and the other is a model 820 running at V05R04M00. I would like to see a conference hotel match that! What an ideal environment for getting down to work and trying out some features.

In my sessions I will certainly not be the ultimate "expert" like some of the other esteemed featured guests. But—we will discuss a feature and you will roll up your sleeves and actually "play" with that feature. I have found that sometimes you can see something demonstrated, but when you try it out, something new can come up that may take you anywhere from ten minutes to a few hours to figure out. After you have conquered that roadblock you usually marvel at how insignificant it was, even though it didn't seem insignificant at the time. Hopefully in my classroom (with my help or the help of a student lab monitor) you will be on to the next part of your exercise quickly and will have successfully interacted with the presented material.

I look forward to seeing many of you in late April, either in my classroom lab or as a fellow attendee listening to the amazing keynote speakers that **Mark Buchner** has lined up for us!

The 5th Wave

By Rich Tennant

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"Frankly, the idea of an entirely wireless future scares me to death."

TUG/SENECA AWARD

I would like to introduce you to our latest selection for the TUG/Seneca award. Nick Armentano selected Seneca specifically for its inclusion of iSeries subjects in the Computer Programmer Analyst three year diploma program.

He recently told me: "Thanks to the intense workload and the short deadlines at Seneca, I have strengthened my organizational skills and ability to prioritize work, which are worthwhile life-long skills. I am now a more critical thinker, a more strategic problem solver, and have improved my professional skills."

It is also gratifying to hear Nick felt some non-technical abilities, like interpersonal relationships, were improved during his stay at Seneca College. He selected every available iSeries option during the day and distinguished himself when working on a System i project for Aon Re Canada Inc. in a subject called iSP606. I saw Nick in four iSeries subjects, he took two more from another instructor and he insisted on making his Project Implementation subject an RPGLE based project. You would think that that would be enough iSeries for any student. But Nick also decided to take an AS/400 Admin/Security subject that was only offered at night.

When not working, Nick would rather participate in sports than be a spectator. He is currently a martial arts instructor and also enjoys group sports. He enjoys meeting people who share a passion for Latin music and enjoys the fact that this enthusiasm can be shared with people from diverse ethnic and religious backgrounds. He is a Latin dancer and performer, sometimes a competitor and occasionally an instructor. His philosophy of being a team player is "Between music and your dance partner, choose always your dance partner."

Nick is appreciative that Seneca was able to give him a strong foundation in Object-Orientated concepts. We are glad to have been able to challenge Nick during his years here at Seneca College. His final observation about the Seneca experience is astute:

> "One of my best achievements was learning more about myself."

TUG

Russell Pangborn is a professor at Seneca College, and a Director of TUG. He can be reached at russell.pangborn@senecac.on.ca.

TUG/Seneca Award winner Nick Armentano

Walkthrough of TEC 2010 Main Tracks

We've scheduled what we believe to be our most popular presentations in the 1206 Lecture theatre, which seats the most people. This track promises the most diverse and informative track featuring some of our most prominent speakers.

12A. *IBM Smart Business:* ***Amy Anderson*** is the Manager of Emerging Technology in IBM's ISV & Developer Relations organization. She and her team are primarily responsible for helping partners deliver applications that use IBM's SaaS, Cloud, and Smart Business offerings. This is perhaps the first time that IBM Smart Business platform is being unveiled in Canada. Smart Business is essentially IBM's approach to an integrated, packaged, self-contained, cloud-oriented appliance solution stack for SMB clients.

13A. *Rational Update and What's Next for Tools and Compilers:* **George Farr** is a Product Manager and community leader for AD tools from the IBM Canada Lab. This session serves as an informative session to help folks understand how to apply best practices to their AD and utilize newer technology form Rational and IBM to improve their productivity. Many folks have been keen to understand IBM's AD strategy, roadmap and products and there is plenty of new news in 2010.

15A. *Best Practices for BlackBerry App Dev:* **Laurie Desautels** is an IBM Global Beacon Award winning solution designer and project manager. Smartphones are an exciting platform but also introduce a new set of constraints on the Application and Solution Designer. As a Mobile Solution Designer, you will quickly learn that simplifying your solution by frequently asking the question "why?" is essential to its success. Laurie will provide recommendations on overcoming these constraints and review best practices for designing solutions for BlackBerry smartphones. There is an entire series of detailed session including 21H, 22H, 22B, 23B with detail for the mobile app enthusiast.

16A. *IBM i 6.1 and Beyond:* **Ian Jarman** is the manager of IBM Power Systems Software. Ian's team has responsibility for a wide range of software offerings that run on Power Systems, including AIX, i, Linux, PowerVM and PowerHA. This session of for the "i contingent". While Ian is delivering a keynote speech to update everyone on Power Systems and associated software, this session will appeal to the i users and discuss new news on the operations system. What features and functions are new? Why should you move? What are implications?

21A. *Web 2.0 and Social Media:* **Abe Batthish** and **George Papayiannis**. Come to this session to learn about how Web2.0 can become a game changer for your IT and business. Forward leading companies have told me this is one of their most critical investment areas of the year.

22A. *Clustering your DB - DB2 pureSDcale:* Paul Awad. IBM's answer to Oracle RAC scales capacity linearly for transactional workload. It's done by connecting a new node and issuing two simple commands. You don't need to change your application code to efficiently run on multiple nodes. DB2 pureScale provides continuous availability through the use of IBM PowerHA pureScale technology on IBM Power systems and a redundant architecture. The system recovers nearly instantaneously from node failures, immediately redistributing the workload to surviving nodes.

23A. *Power 7 Architecture:* Dr. Joel Tendler is currently an Executive IT Architect. He transitioned to this position in the Fall of 2006 after spending 33 years in the IBM development laboratories. Immediately prior to this assignment, Joel was responsible for IBM's future RISC Systems Strategy in STG. Joel is an indisputable, Worldwide-recognized POWER Systems architectural advocate. If you liked listening to **Frank Soltis**, you will love Joel Tendler.

25A. *Modernizing RPG and 2E Apps Using Design Recovery:* Stuart Milligan and Databorough have experience, expertise and tooling is ready to help you build an end-to-end project deliver you to a new and modern application endpoint. This applies to developers of homegrown RPG, Synon, and users of traditional 5250 ISV packaged applications. End-points include Java, .net or EGL-based Model-View-Controller applications which can be populated with commercial open source, wrapped code or forward-engineered Web services.

A few more special stacks worthy of your attention:

TEC's French Contingent: **Philippe Magne** from Arcad will present Testing automation and audit compliance in session 13H, while **Serge Charbit** will highlight both technology to extent iSeries apps to WebSphere in 12E and ability to extend applications to iPhones in 21B.

AIX Track: Lecture theatre T3132 is ALL AIX ALL THE TIME. We feature AIX product manager Jay Kruemcke, Joel Tendler, Roland Koo. Lisa Jobson and Marija Mijalkovic

User-lead Sessions: **John Brenton** and **Mike Mondeux** from Seaway Marine Transport will walk us through Commercial Open Source enterprise deployment in 25E.

LAMP: There are plenty hands-on labs for PHP 12C and MySQL development 21D, by **Jon Paris** and **Susan Gantner**.

BPM: Finally, a practical session on Business Process Management. **Rahim Lalani** from Lansa will present on "Business Automation using Business Process Integration and Workflow" in 15H.

Networking: **Mel Beckman**, Networking Guru will come to TEC and feature an entire day's worth of networking sessions including a highlight "Build your Own IPV6 lab" session 13B.

Beginner Sessions? **Prof. Russ Pangborn** from Seneca has put special emphasis on making sure we have sessions and tracks that appeal to newcomers. See 13D Journaling and Commitment Control Hands-on for anybody.

IBM i GOES WEB:
ZEND'S ZEEV SURASKI ON PHP AND IBM i

Since we started cooperating with IBM to bring the Zend stack over to the IBM i platform, we've seen a variety of exciting changes and opportunities. I would like to take a few minutes and explore a little about where PHP has come on IBM i and where we see it going.

What is PHP and who is Zend?

As you might know, PHP is an open source scripting language used to build dynamic web pages. Over more than 10 years, PHP has gained massive following, and is now powering a third(!) of all web applications, including facebook and Wikipedia. Simply put, Zend is the PHP company. It was founded in 1997 by Andi Gutmans (today Zend's CEO) and myself (today Zend's CTO). Together, we rewrote the parsing engine for version 3 of PHP, a project that helped boost the popularity PHP. We later spearheaded the development of PHP 4 and 5, and continue to contribute to a number of open source projects, including PHP itself, Zend Framework – a highly successful web application framework, and Eclipse PHP Development Tools project – a popular free PHP code editor. Zend also delivers commercial products and services to thousands of companies that rely on PHP for their business-critical applications:

Zend Studio is our Integrated Development Environment (IDE), which is used by thousands of professional PHP developers

Zend Server is a an enterprise-grade PHP runtime environment that includes a full web application stack as well as various management capabilities, such as application monitoring, problem diagnostics and performance optimization

Zend's services team provides technical support, training on PHP and Zend's products, and consulting

What is the Zend Solution for IBM i?

The Zend solution for IBM includes Zend Server for IBM i and Zend Studio for IBM i. These two products comprise the best environment for PHP developers who are looking to grow beyond RPG, COBOL and CL. For the rest of the article I'd like to focus on Zend Server for IBM i and the interesting opportunities it brings to the i platform.

Zend Server for IBM i enables deployment and management of PHP applications – both off-the-shelf and custom developed. It belongs to the latest generation of runtime environments from Zend, and supersedes two previous generation products - Zend Core for i5/OS

Zeev Suraski, CTO and co-founder, Zend

and Zend Platform for i5/OS. A Community Edition (CE) version of Zend Server is available free of charge, and comes with one year of free support, courtesy of IBM.

At the heart of Zend Server CE for IBM i we find PHP itself, surrounded by a rich selection of extension modules, performance-boosting components and the PHP Toolkit for IBM i. The toolkit allows direct access to IBM i-specific features such as calling RPG programs, reading from data queues and retrieving spooled files. Zend Server for IBM i unlocks the power of PHP, with its rich ecosystem of thousands of free applications and millions of developers – onto the IBM i platform.

The commercial edition of Zend Server includes all of the capabilities of Zend Server CE, while adding a plethora of features for improved performance, application monitoring and root cause analysis.

Zend Server is designed to improve PHP's performance in a variety of ways, including optimizing and caching bytecode, caching data and caching output. Some of it will work out of the box, improving performance without requiring modifications of any kind to the PHP application. Other parts require configuration or minor code changes. All in all, Zend Server's performance boosting components typically yield between 2x and 10x performance gains, depending on the situation. Thanks to focused optimization work done in Zend Server for the IBM i, it is much, much faster than Zend Core and Zend Platform, typically as much as 3x.

On the management front, Zend Server includes setting management of your PHP-based server, application monitoring and code tracing. You can think of Zend Server's monitoring as the PHP equivalent of the QSYSOPR message queue for PHP applications. It is your extra pair of eyes that is constantly watching over your applications and capturing diagnostic data when issues arise. Code tracing takes monitoring to the next level by providing the software equivalent of a black box flight recorder – showing not only what happened when the error occurred, but also the entire execution path that lead to it. Unlike RPG applications where you have to respond with a "D" to capture the important dump information when an escape message is thrown, Zend Server captures all of the information every time! This means that developers and well as system administrators can access a lot of detail about the issue, thus making the resolution process much quicker. Best of all – monitoring and code tracing have been designed with performance in mind, and can work in a live production environment, where reproducing problems is challenging and sometimes just impossible. Pinpointing and fixing application issues has never been easier, in PHP or in any other language.

Finally – Zend Server includes a 5250 Bridge, enabling communications between PHP and green-screen applications. The bridge allows developers to web-enable their green-screen applications while using PHP, create different workflows, merge several screens into one HTML form, and more. The possibilities are truly endless.

Zend Server CE and Zend Studio for IBM i are both still included as part of your IBM maintenance. When IBM releases the new version of IBM i, Zend Server CE will be pre-loaded on the machine with all of the other products that IBM ships. This makes it even easier for IBM i shops to experiment with and adopt PHP while continuing to demonstrate IBM's commitment to PHP as a strategic solution for all IBM i customers.

For those of you who have experienced with Zend Core — you'll be happy to hear that thanks to the combined efforts of IBM and Zend, Zend Server no longer requires two separate Apache instances in order to operate. Zend Server implements PHP via a FastCGI which negates the need for a PASE Apache server. All Apache configuration work is done exclusively in the IBM Apache instance using IBM's well built and powerful administration tools. This simplifies the administration of Apache servers and greatly improves performance, as there is no longer a relay between the Apache servers before content is delivered to the browser.

Another welcome change is that unlocking the full potential of the commercial edition of Zend Server and all of its features only involves punching in a license key – no installations or setup are necessary.

I am truly enthusiastic about the release of Zend Server for IBM i. With highly increased performance, simpler architecture, Code Tracing and simplified installation – PHP on IBM i has never been better and it's never been easier. I hope you enjoy it as much as I enjoyed working on it.

Happy PHPing!

Zeev Suraski *is the TEC 2010 keynote speaker Day 2 session 24A: "Enterprisr PHP". Also catch Zeev's breakout sessions: 23C & 25C.*

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MoM REVIEW

The FEBRUARY 2010 Meeting of Members

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"Unleash the Power of Innovation" Event at the IBM Toronto Lab

By Mark Buchner

Léo Lefebvre

Whether you were a TUG member or just interested in IBM Power Systems and Software, our special meeting: Unleash the Power of Innovation, was the place to be on Feb 17.

On behalf of the TUG group I'd like to thank Karen Hunt, Linda Cole, George Farr, and Kathy Gregson, along with a big team of IBMers, for helping to make it possible. It's a very exciting event because... well ....we sure need a spark in the midst of the WEAK economy ... and IBM gave us just that in the form of POWER 7. It positively affects the entire system, software and solution ecosystem.

We had two special guests, flown in from the US, to support the event which was, yes, a LIVE event ... not a virtual one. Hayden Lindsay, VP of Rational and Danny Mace helped us understand how to Power our Innovation with Rational Software. Chuck Wallace, from Rochester Minnesota detailed the POWER 7 announcement. Here: in picture form, are some of the highlights...

POWER7™
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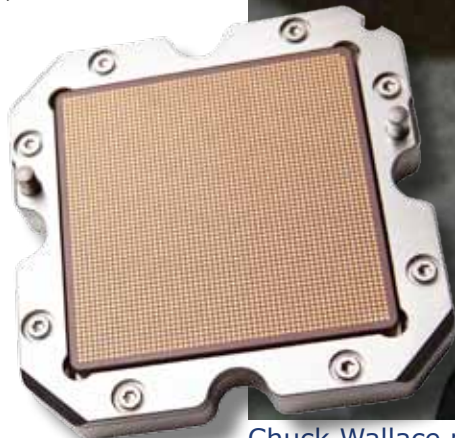
Chuck Wallace presents the Power 7 processor module

February 17 Meeting of Members "Unleash the Power of Innovation" at the IBM Toronto Lab

photos by Léo Lefebvre

L-R: Hayden Lindsay, George Farr, Karen Hunt, Danny Mace, and Mark Buchner

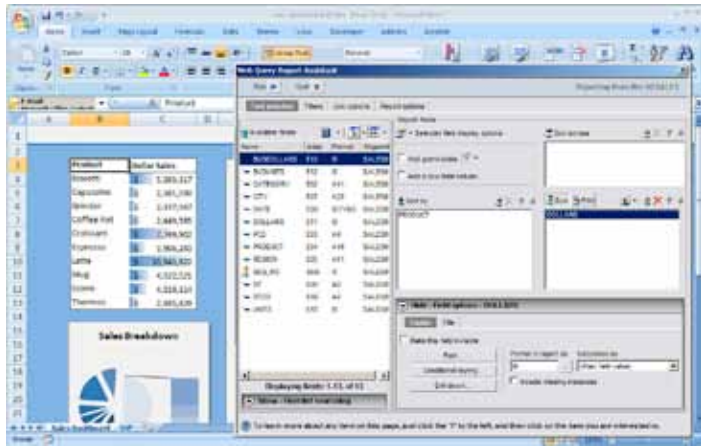# JACKIE's Forum

DB2 Web Query Meets Excel

Jackie Jansen

You already know that DB2 Web Query is great for sending output directly to Excel. This integration has been stepped up with the announcement last year of the DB2 Web Query Spreadsheet Client: 5733-QU2 Option 5. With this announcement a user need never leave the Excel environment. Let's talk about how this will work for different types of users.

End Users with the Spreadsheet Client Excel add-in installed can, from within a spreadsheet, view a list of queries available to them, select one to run, be prompted for any run time input variables and then have their output retrieved directly into their spreadsheet. End users can use Excel to analyze this data and refresh it any time they choose. When they save the spreadsheet they can choose to save the query with it and have the data refreshed upon opening. Anyone who receives a copy of this spreadsheet can open it and see the latest data. An executive might choose to have a dashboard type spreadsheet open on his desk all day long with it set to auto refresh every 5 minutes showing the companies latest real time numbers.

Report Creators are licensed as DB2 Web Query developers. They will have access to a subset of Report Assistant directly from within Excel. The differences between the subset and the full Report Assistant are minor and are based on Excel as the mandatory output format. Data access features such

as joining tables and data retrieval from multiple sources are fully functional from within Excel. Fields can still be conditionally styled and formatted. You no longer have report headers as these are typically created in the spreadsheet itself. From within Excel you cannot create a report that uses dynamic filtering. You must specify a static filter during report creation i.e., COUNTRY = 'CANADA'. This cannot be changed at run time. Reports created from the full Report Assistant and executed from within Excel do allow for dynamic prompting as discussed below.
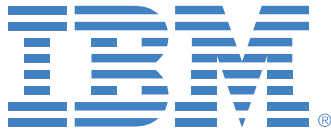
DB2 Web Query will automatically create named ranges for the entire report and for each individual column. This allows for Excel functions and equations to be written referencing columns such as 'SALE' or 'EXPENSES' instead of having to code cell A2 or B16 for instance. This keeps everything very simple when the number of rows in the output report change. The named range will always reference all the rows in the current report.

Using Basic Excel Functionality combined with the Spreadsheet Client users can create one or more reports on a single worksheet. These reports can come from different tables, different AS/400s or even from SQL Server tables. After retrieving the data, you can enhance your analysis by adding your own calculations, columns and graphs. These are maintained when you refresh the data, even if your new data set has additional or fewer rows than the original retrieval.

Users with more advanced Excel skills can produce very sophisticated dashboards and reports with the DB2 Web Query add-in. One technique that I have seen used very successfully is to retrieve all the data you need into a separate worksheet in your Excel Workbook. You can reference

this data retrieved by DB2 Web Query in a dashboard or any type of report, graph, or gauge that you might want to create. When the workbook is opened or the query is refreshed your dashboard will be automatically refreshed. This method allows you to take advantage of Excel pivot tables, filters and the advanced data analysis features that Microsoft has been building into Excel in the latest releases.

DB2 Web Query Developer's can use Report Assistant or Power Painter to create reports that can be accessed from within Excel. Excel users do not actually select from a list of reports, they see a list of HTML pages created in HTML Layout Painter. To make one of your reports available to a user and to allow for dynamic input variables you need to use HTML Layout Painter to create what is known as a Structured Ad hoc Form (SAF). This is the same technique that a developer would use to create dashboards or highly parameterized reports.

Installation and Documentation: The initial installation and configuration process is simple and straightforward. It is explained very well in the documentation. All of our documentation is now available in the DB2 Web Query Wiki at https://www.ibm.com/developerworks/wikis/display/webquery/. In addition, version 2 of the redbook contains an entire chapter on the Spreadsheet Client. If you haven't done so already, it is time to download the redbook again. T⊞G

Jackie Jansen is the IBM i Solutions Manager for Information Builders specializing in DB2 Web Query. Jackie is a frequent speaker at Technical Conferences and User Group meetings. Contact her at jackie_jansen@ibi.com.

Upcoming Events

- **April 27–29, 2010: TEC 2010**

  Keynotes:
  - **Larry Augustin**
    CEO, Sugar CRM
  - **Zeev Suraski**
    CTO and co-founder, Zend

- **April 27, 2010: TUG MoM**

  Keynote:
  - **Ian Jarman**
    Manager, IBM
    Power Systems Software

- **May 19, 2010: TUG MoM**

  (Date may change due to proximity to the conference)

- **June 24, 2010: TUG Golf Classic**

- **Sept 22, 2010: TUG MoM**

- **Nov 17, 2010: TUG MoM**

TUG's 22nd Annual Charity Golf Classic
Proceeds to Bloorview Kids Rehab Centre

Thursday June 24th 2010
Glen Eagle Golf Club, Caledon
Tee-off Time 8:00 am
Cost: $130 per golfer
(including taxes)

Price includes greens fees, power cart, and a delicious New York sirloin steak and chicken dinner.

Limit 144 golfers.

For more information contact the TUG office, Email: admin@tug.ca
Phone 905-607-2546 or 888-607-2546
REGISTER ONLINE at www.tug.ca/reg_golf.php

PAYMENT IN ADVANCE
(We accept Master Card, Visa, and Amex)
Donations to our prize table would be greatly appreciated.
Sponsorship opportunities are also available.

Find TUG on Facebook

We like to keep as many channels open as possible with our members, so we have created a TUG group within Facebook. Check it out at www.facebook.com. You'll probably find that many of your friends are already there!

Reminder

Please remember to register on-line for each Meeting of Members. It helps us to plan for seating and food, and you could win a fabulous door prize!
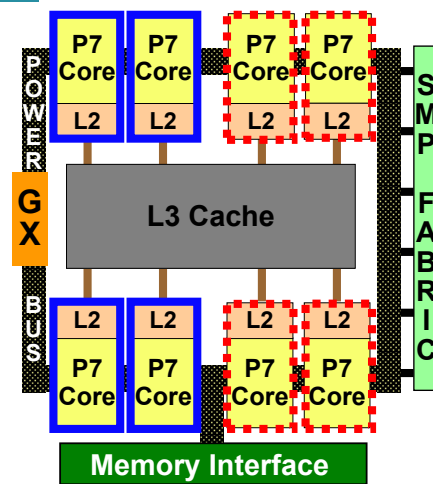
Run for Office!

Elections are coming up! If you would like to serve on TUG's volunteer BOD, call us to get your name on the ballot...

TEC 2010 blog

Have you seen our blog? Check out the latest info about our upcoming conference TEC 2010 at www.tec2010.ca.

Power 7 Chipset

IBM announced the Power 7 chipset at the Hot Chips conference August 27th, 2009. Here are some details:

- The 45nm Power 7 chipset has eight cores, each with up to four SMT4 threads, and 32MB of eDRAM, enabling it to perform 32 simultaneous tasks per chip. Each chip has dual-DDR3 memory controllers for a sustained 100GB per second bandwidth.

- It has a 32MB shared Level 3 memory cache right in the middle of each chip, which keeps frequently used data near the processing units for faster access.

- Power 7 uses on-chip L3 cache with embedded DRAM (eDRAM) which requires one transistor per device, instead of static RAM (SRAM) which requires six transistors per device. eDRAM has a 6:1 latency improvement for L3 accesses relative to an external L3, taking less space and consuming less power.

- As for reliability: Power 7 combines full X8 "chip-kill" with 64 byte error correcting code (ECC) and selective memory mirroring with loads of error-checking and fail-over features; and even the ability to dynamically fail over if the a chip's main clock fails!

- Power 7 can also perform out-of-order (OoO) execution, which lets the processor skip over instructions that are waiting on data.

Three steps to marketing prowess:

1. Fear the wolf.
2. Dance with the wolf.
3. Become the wolf.

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