

TORONTO USERS GROUP *for Midrange Systems*



September 2004: Vol. 20 No. 1

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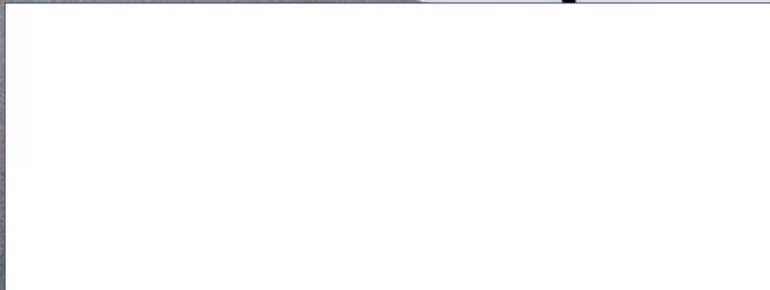
September 22 Meeting...

**Claus Weiss:
WebSphere Forum**

**Mark Buchner:
Enterprise Application
Modernization**

**Peter Beggs:
WebSphere Business
Integration**

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for Midrange Systems

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Moving information is indicative of work being done and the industry's focus has shifted to what this work is and how this work actually gets done.

12 THE AGENDA

Our September Meeting of Members will be held at the IBM Toronto Lab. (Take the Warden Avenue exit North from highway 407, and follow the special IBM ramp off of Warden into the IBM campus.) The address is 8200 Warden Avenue in Markham. See page 12 for all of the details of this exciting evening!

13 SEPARATED AT BIRTH? (i CAN DO IT™)

△ *Dan Duffy*

IBM recently announced the i5 and the p5, but hey! 🎵 Something's happening here. What it is ain't exactly clear. There's a man with a machine over there. Telling me I can run pretty much any operating system I want and it's all the same hardware... 🎵

16 PROJECT MANAGEMENT TALES

△ *Debbie Gallagher*

(This month's PM Tale is entitled *Measure Twice, Cut Once*.) "The City of Yorktown had decided to replace its financial and human resources software. The city had a history of technology projects that were completed late and over budget, and the sponsor for this project was determined that this ERP project would be different...."

18 EAM Primer – ENTERPRISE APPLICATION MODERNIZATION

△ *Mark Buchner*

The focus of the Fall COMMON Conference in Toronto is EAM, so TUG is providing a "warm-up" session on EAM at our next MoM. But what the heck is EAM, anyway? Mark will set you straight with this condensed explanation.

21 COMMUNICATING WITH SAM △ *Sam Johnston*

– **Wireless Integration: Assessing the Risks** – A key business decision is to determine whether it makes sense to integrate your wireless infrastructure to support multiple applications via a single network, or to maintain separate dedicated networks, and upgrade each independent of one another.

24 JACKIE'S FORUM △ *Jackie Jansen*

SQL Query Engine

As has happened many times in the past, as we introduce something new, we now need a name for something existing. The iSeries now supports the new SQL Query Engine (SQE) and the original Classic Query Engine (CQE).

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TUG eServer magazine

is a regular publication of the Toronto Users Group for Midrange Systems (TUG), and is distributed to members and industry associates six times per year. It contains updates on activities of the group, as well as articles from members and non-members, which are of general interest to the "eServer community." All rights reserved. Articles may be reprinted only with permission. Manuscripts should be submitted to the Editor via email. (See address below.)

TUG is a not-for-profit organization that promotes knowledge of the IBM iSeries, pSeries, AS/400, RS/6000, i5, p5, and other midrange technologies. Questions about the users group, and subscription enquiries, should be directed to our Association Manager, Wende E. Boddy, at the TUG office, 36 Toronto Street, Suite 850, Toronto, Ontario, Canada M5C 2C5. Phone: 905-607-2546 Toll Free: 1-888-607-2546 Fax: 905-607-2547 Email: admin@tug.ca



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Current Circulation: 5,200

Canadian Publication mail agreement #40016335



Publishing and Graphic Design
Eclipse Technologies Inc.
416-622-8789
www.e-clipse.ca



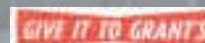
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Deadline for next issue:
Friday, October 8, 2004

Printed in Canada



President's Corner

By *Léo Lefebvre*,
President, Toronto Users Group for Midrange Systems

Here I am, once again, in the Corner! It's my fifth time at the head of this fantastic users group and I just love it! Plus, this is a special year. I don't know if you noticed, but on the cover of this magazine, the volume number is quite a "round" number. Have look at it. (Don't worry, I'll wait for you to come back...) Did you see? Yes, this is TUG's 20th season. What an achievement! Since 1985, this group just keeps rolling (like the Energizer™ bunny.) And we're not out of breath yet! Wait 'till you see the program we are planning especially for you, TUG members!

The Year of the Six MoMs

First of all, let me tell you that I have nicknamed this year, "The Year of the Six MoMs". As you know our regular seasons present five meetings, but this year, we will have one extra. And that special meeting will be presented during the COMMON Fall 2004 Conference here in Toronto, at the Convention Centre downtown. The date: Monday, October 18, 2004. The time: 5:00 pm. Our very special speaker for that meeting will be none other than the iSeries database expert, **Skip Marchesani**, with a preamble by **John Reed**, Director of iSeries Product Management at IBM. Skip will give you few tips and show you some tricks on SQL in his session: "I Didn't Know You Could Do That Using SQL". The invitation is sent to all TUG members. There is absolutely no cost to attend the session and you don't even need to be a COMMON conference attendee. On top of that, if you come early enough, you will be able to visit the free Vendor Expo presented by COMMON. And, if you stay around a bit longer after the session, you are invited to attend the Monday night COMMON Users Discussion Social (CUDS) and meet attendees, speakers and COMMON Directors.



What a day that will be! Of course, if you are attending the COMMON Conference you are invited to join us as well. (You cannot afford to skip Skip's session.) :)

TUG will also be helping to staff the LUG table at the conference, and will have its own booth. The LUG table is open Sunday, Monday, and Tuesday, and will showcase all of the world iSeries Local Users Groups. TUG will be the most prominent. Don't forget, COMMON is coming into TUG's territory, and we are determined to show the world what a group like TUG can do! Stop by, say

hello, and put your name down for some fantastic prizes (to be drawn on Tuesday afternoon). If you would like to volunteer for booth duty any time during the three days, please send an e-mail to Wende Boddy at admin@tug.ca.

September MoM at IBM Toronto Lab

Before COMMON invades Toronto, we will have time for our regular September MoM. On September 22, TUG will host its first meeting of the year at the **IBM Toronto Lab** (at Warden & Highway 7 in Markham). We will start with a brief tour of the facilities at 4:00pm. Then at 4:30pm, **Claus Weiss** will be the moderator of a forum on WebSphere. After that, **Peter Beggs**, from IBM Toronto and **Mark Buchner** of ASTECH Solutions will be the featured speakers for the evening. See the Agenda on page 12, for more details.

Future Venues

Due to the great success we had with our previous visits, we are going back to Woodbine Racetrack for our November meeting. If you don't want to be disappointed, make your reservation early. The place is fun and the food is fantastic.



Léo Lefebvre

This season, we are also planning other special events, including our 20th Anniversary celebration.

What? ... pSeries?

This year we are also planning to embrace the pSeries! As you know, with the announcements in May 2004 of the i5 and in July of the p5, the two machines are physically the same. The difference will be the operating system running in the primary partition. More and more we see companies (including TUG members) venturing into the world of Unix and AIX. So to serve them better, we have formed a committee that will plan for AIX and p5 subjects. If you would like to get involved with that – send me an e-mail.

TEC 2005

Yes, we are preparing another Technical Education Conference (TEC). In 2005, the conference will be on Tuesday April 19 and Wednesday April 20. And, guess what? Even for its 12th annual presentation, we will have something new again. (More on that later.)

A users group like ours cannot survive without the support of its members and a good dialogue between the base and the directors. We need your input. Tell us about your expectations from TUG, what you would like us to present, where, and who we should invite as speakers. As you can see, we will have a ball in our 20th season. Don't miss it. We're going full speed ahead!



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Can Business Integration be Exciting?

By Peter Beggs



The Commercial

Two men are seated before a laptop, Business and IT. IT is showing Business the new company web site. IT is animated and excited about the content, the layout and how icons turn to flames when selected. Business nods but is more restrained in his excitement. Business then muses: "What if the order the customer enters here could be sent automatically to the Order System, which could check Inventory, then Shipping, and lastly send the needed request to Billing, which could check Credit and return a Confirmation to the customer?" Nodding, Business declares, "Now that ... that would be great!" IT is perplexed and says "I ... I don't know how to do that." Fade to blue while jingle plays with voice over "And then it hits you. You are so ready for IBM Middleware." In less than two minutes this television commercial, played a number of years ago, aptly captures the essence of Business Integration.

But what is the value of Business Integration? In the commercial, Business likely considered such things as improved cycle time, fewer errors, less cost to build, deploy and maintain solutions as well as less operational cost. Perhaps improved customer satisfaction or a competitive differentiator was his motivation. In some industries, there are regulatory requirements. Perhaps business integration delivers solutions where traditional solutions are too costly, expensive or not practical. Just a few of the reasons our customers (in this case, Craig Oddy and Scotiabank) cite for focusing on Business Integration include:

- Increase customer satisfaction and process quality
- Load balance, optimize, and prioritize work assignments, use people more wisely
- Better manage operations, exception-based model
- End-to-end tracking with automatic auditing
- Dynamically change processes for business agility
- Create a flexible environment for functional and scaleable growth
- Tie disparate "pieces" together into integrated scenarios

- Position for re-use
- Improved Customer Satisfaction and Reduced cycle time 30-40% (Wachovia)

How do you know you need it? Here is a short test defined by our customers:

- Can you visualize how work gets done? Do you know what people do the most (you may be surprised)?
- Is the process fast enough from start to finish?
- Too much manual work?
- Too many errors?
- Need to ensure policies and business rules followed?
- Too much paper?
- Are people working effectively?
- Is audit a concern?
- Is it easy to reach into, "to see", and measure the business? In real-time? What can you do with those measurements?
- How do you decide what to change? How do you "business case" changes?
- How easy is it to change how you work? Can you analyze it before making changes? Are changes a programming effort or a business analyst effort?

So what is Business Integration? In the past we spoke of EAI – Enterprise Application Integration – the ability to have applications connect with each other to exchange information. Moving information is indicative of work being done and the industry's focus has shifted to what this work is and how this work actually gets done. With many names, this is essentially Business Process Management (BPM) and encompasses architectures, approaches and deployment of technologies. There are five key capabilities to consider:

1. **Model** – Design, simulate and plan business processes
2. **Integrate** – Link people, processes, applications, systems and data
3. **Transform** – Create new business value from existing IT systems
4. **Interact** – Provide secure, single point of interaction to people, data, applications and processes accessed by any device, anywhere, anytime
5. **Manage** – Optimize performance against business measures
6. **Accelerate** – Deploy pre-built intelligent business processes

So, how does IBM apply these five capabilities in delivering solutions? And what is the value in doing so?

Model

In the commercial, Business visualized how he wanted the business to work and he was speaking independent of underlying technology. He had a business view of work being done – the Business Process Model. Would it then not be great if besides visualizing work, he could analyze it, simulate it, and understand the dynamics of cost, time, and resources of his visualization? Typically, customers may document business models via charting tools or “stickies-on-the-wall” but we need to bring that model alive. This is our first concept of Business Integration:

1. Build a process model, perhaps of how work is done today – the “as-is” model
2. Simulate the model and analyze costs, timings, and bottlenecks looking for areas where the way work is done does not make sense and should change.
3. Generate detailed comparisons and cost justifications between the “as-is” and the “to-be” process model and provide a means to instantiate enterprise policies, business rules, and procedure documentation.
4. Build the “to-be” model. Perhaps there are other pre-built processes (third party or by the customer

themselves) that can be reused in this new process. Compare the “to-be” model to the “as-is” model to determine if we are making the improvements the business needs.

How is this accomplished? The tool used here is the **WebSphere Business Integration Modeler** and is a drag and drop; fill in the blanks, visual construction paradigm as illustrated in **Figure 1**.

Analysis can be done via simulations, use-case scenarios, reports, and much more, all generated by the tool. Business can drive quickly to a viable business process which satisfies requirements and at this point Business will almost certainly ask: “Can I deploy the model? Can I run it in production?”

The answer is “yes”.

Business turns the model over IT for deployment but before we discuss how this is done, lets go back to the commercial. As Business describes how he would like the business to run, he alludes to two key concepts of Business Integration. The first concept is the **Service Oriented Architecture** or SOA.

Service Oriented Architecture

In the commercial, Business described a set of Services (Order Entry, Shipping, Inventory, Billing) strung together to get work done. The string is the process model described above and each of Order Entry, Shipping, Inventory and Billing are services invoked by the process to get a piece of work done. Those services may be applications, a collaboration of applications, ERP systems, external systems, manual steps, and so on.

There is one more important aspect to SOA – recognizing the Process Layer. In the past, whether we realized it or not, we built process, or workflow, into our applications. We hard coded such process logic or had people do it manually. This approach made solutions monolithic by functional or organizational silo. Applications were not designed necessarily to work with each other and we often built much “glue code” to accomplish integration. Therefore, one key element the SOA enables is the recognition of the process layer. Just as we recognized the Presentation Layer, the Data Layer and the Business Logic Layer, we now recognize the Process Layer, previously buried elsewhere. Recognizing the Process Layer allows us to use visual tools and moves rules and constructs into an environment simpler to change and deploy.

Enterprise Service Bus

To enable the process layer requires the second key concept of Business Integration, the **Enterprise Service Bus (ESB)**. The various services plug into the Enterprise Service Bus, which provides capabilities to move information from one point to another. (See **Figure 2.**) The pipe is intelligent and includes a range of services including various transport mechanisms delivering synchronous and asynchronous, loosely coupled and tightly coupled, persistent and non-persistent capabilities. Furthermore, the ESB provides mediation services (information routing and transformation) and event-driven publish and subscribe. In other words, any service that plugs into the ESB can exchange

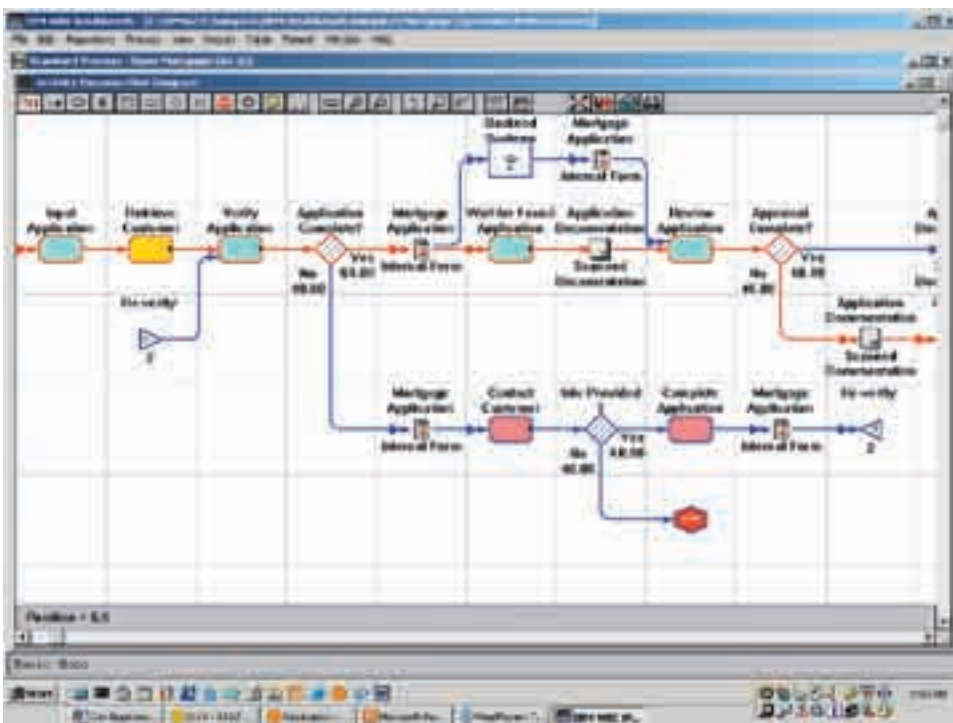


Figure 1

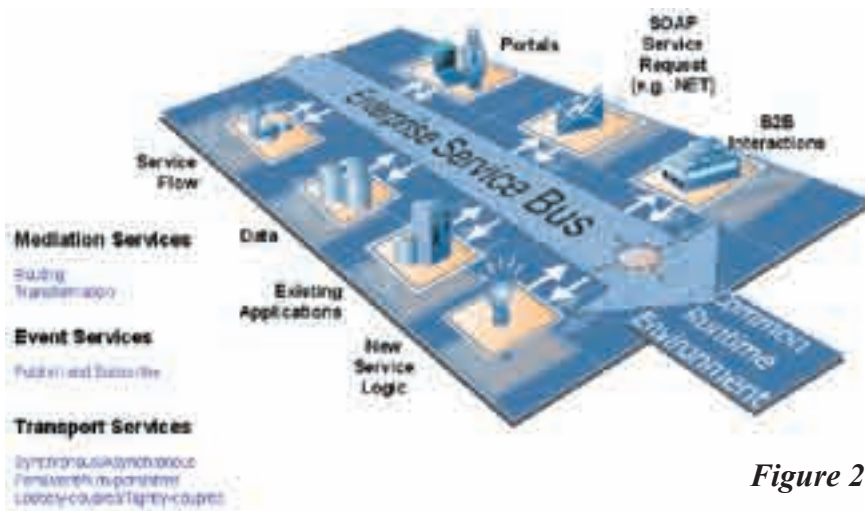


Figure 2

information with any other service plugged into the ESB. Differences in protocols, data formats and applications are managed by the ESB, not the application. Very powerful...

These two concepts, Service Oriented Architecture and Enterprise Service Bus, provide the foundation for a set of runtime capabilities: Integrate, Transform and Interact.

Integrate

As discussed, the Business builds the Process Model and IT prepares it for execution into an environment where services are connected to an Enterprise Service Bus. The process model indicates which service is invoked, and under what criteria, in order to fulfill a particular step in the process. An important bridge exists here between Business and IT. Business has built a process model with no direct implied technology. The second step in the process model development occurs as Business turns the Business Model over to IT. IT, using the same process model, and same tool, adds the necessary information needed to make the model execute. That is, where Business indicated "Get Customer Data", IT knows that the "Get Customer Data" process step is fulfilled by invoking the "Get Customer Data" service which might be a transaction running on an iSeries machine or a collaboration of back-end services to deliver the necessary data. In the WebSphere Business Integration Modeler, IT simply uses the same process model but selects "Integration Mode" and selecting process steps will prompt for additional information via

tabs. Now we will have a process model that can be deployed to a runtime process engine such as WebSphere Business Integration Server. The runtime may also be complemented by technologies such as:

- Messaging,
- Message Brokers,
- Workflow and Collaboration Engines,

- Database and federation of multiple data sources,
- B2B,

... and so much more! Again, all integrated via the ESB and in context of the SOA.

Transform

An important requirement is being able to represent 5250/3270 green screens as a service to be used within the process. Products such as WebSphere Host Access transformation Server (HATS) makes your 3270 and 5250 applications available as HTML through a web browser. The power of HATS lies in its ability to accurately recognize the components of host screens and transform them in real time to a Web interface according to a set of predefined rules.

It is easy to modify the rules according to the specific needs of your application. With HATS, you can add a variety of

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elements to your host screens, such as drop down lists, hot links, tables, buttons, valid value lists, tabbed folders, and graphs. You can also add HTML elements such as logos, graphics, backgrounds, and Web links.

Interact

Often when discussing processes we think only of application-to-application interaction but this only part of the solution. During a process execution there may be a need to require a human to make a decision, or to wait for a fax to arrive, or data from another source such as police and medical reports in an insurance claims process. There is a need to provide many channels of interaction with the process.

A Portal provides a view into a process and using Portlet technology, a very high strength view. Imagine a process requiring a claims adjuster to make a decision pertaining to a suspect claim. A work item is displayed via a browser, perhaps as a pop-up window. Selective the work item, the Portal refreshes the browser and all the Portlets with the information necessary for the Adjuster to make a decision. One portlet may have photos and field information, another police and medical reports, a third may have company policy, a fourth may be a collaborative portlet so the Adjuster may discuss with others, with yet another portlet giving the policy guidance to the Adjuster. Lastly, the process engine displays the various actions the Adjuster may take



Figure 3

(approve, reject, require more information). This personalized portal can control what the Adjuster can see and will authenticate access and the process engine enforces policy.

Besides human intervention in the process, there may other access requirements and interaction with other subsystems. Cell phones, PDA's and other mobile devices, fax machines, content and document management systems, automated voice systems, represent just a few of the many access points. Rather than build infrastructures for each method, these various capabilities are viewed as services, interconnected via the ESB and so a query of a process status made by a call centre will appear to the process engine the same as the query from a mobile device. Security and personalization will of course manage and control the access.

Manage

Inevitably customers will ask to "see into" running processes, either in real-time or over a historical period of time, say last quarter. Business and IT need to monitor how the business is running. The Monitoring capability displays such information from a variety of environments to allow decisions or to optimize a process or to take administrative actions such as stopping work or reassigning work. Importantly, whatever business measures are gathered, we need to be able to feed those metrics back into the process model. In this way, our process model behaves more closely to reality. Information and measurements are displayed via customizable role-based dashboards that can generate reports based on the data gathered. This capability is provided by a number of complementary products such as WebSphere Business Integration Monitor. Integration with systems management capabilities such as Tivoli is key in order to get an end-to-end view of the business.

Accelerate

Accelerators are often overlooked but are very important in the quest to provide rapid deployment of quality components. Think of accelerators as reusable parts, off-the-shelf, or customizable. Examples include:

- Commerce framework and components for optimizing marketing and business relationships, channel management and, of course, conduct commerce.
- Cross-industry solutions encompassing composites of technology for specific industries such as automotive,

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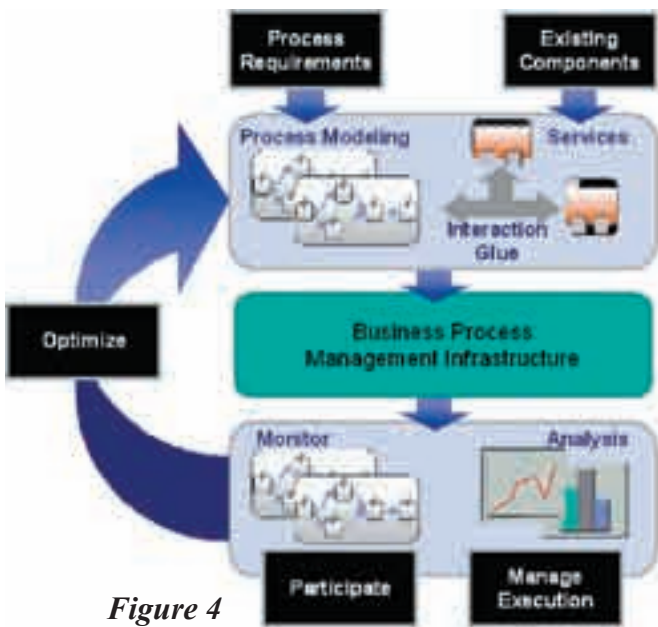


Figure 4

government, retail, manufacturing, telecommunications and others.

- Adapters, the plugs into which services attach to the ESB, is one area where customers might spend significant effort to construct. Off the shelf adapters mean no changes are required for the applications themselves but provide intelligence to interact with the applications. Intelligence means restricting the uniqueness of the interface to the adapter so changes do not ripple through the infrastructure.
- Collaborations are customizable business process templates especially useful where a service requires interaction, or collaboration, between multiple back-end systems. To the requestor however, it appears as a single service request.
- Portlets are available from a number of sources enabling many services to have a browser-based interface.

Recap

We have discussed taking the Business vision, analyzing and simulating it, and finally making it real through deployment. Deployment into a functionally rich runtime environment built as a Service Oriented Architecture running on an Enterprise Service Bus. We can monitor our businesses via customizable dashboards taking all the metrics back into the business model for further optimization. Expediting deployment uses the various pre-built parts or accelerators. All of this comes together in the **IBM Business Integration Reference Architecture**. (See Figure 3.)


And one area we did not discuss was the magnitude of services available to both help with deployment but also the business side in developing competencies in process management. The Business Integration Reference Architecture (Figure 4) supports the process cycle of Business Modeling and Analysis, Deployment (integrate, transform, interact, accelerate) and Monitor.

Prove it!

The list of customers, across all industries and governments is extensive and we cannot do justice to the value WebSphere Business Integration has brought to these solutions.

Please refer to our Customer Reference Database at <http://www-306.ibm.com/software/integration/wbiserver/> (Select Success Stories.)

There are also so many others who are not public references because the value of IBM's integration solution is so critical to their differentiation and value, what and how they use it remains their secret. There is also so much more to say about the breadth of IBM technologies, but that's for another day.

So, in a few words we have looked at the IBM Business Integration Reference Architecture. We have looked at the various capabilities and the value such technology delivers to customers. We have left some homework to check out the WebSphere Business Integration website. Back to our commercial, IT now knows how to deliver what Business envisions. And that is great! 

Peter Beggs is the IBM National Business Integration Solutions Executive for Canada and the Caribbean. He can be reached at beggs@ca.ibm.com.

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THE AGENDA for our next Meeting of Members

Wednesday, September 22, 2004

LOCATION: *IBM Toronto Laboratory* 8200 Warden Avenue, Markham

4:00pm Lab Tour; 4:30pm Web Sphere Forum (with Claus Weiss)

5:15pm Business Integration

SPEAKER: Peter Beggs, IBM Canada Ltd.



Abstract: Citing the need to adapt quickly in an ever changing environment, lower costs and improve client satisfaction, CEOs, CIOs, and Professionals alike, continue to focus on, and cite as one of the most critical issues of the day, Business Integration. From this “must-see” session you will learn about: ✦ What exactly is Business Integration? ✦ IBM’s approach to addressing integration issues: Overview of IBM’s Business Integration Framework ✦ What is a Service Oriented Architecture (SOA)? ✦ What is an Enterprise Service Bus (ESB)? ✦ What is Service Choreography? ✦ What does Business Integration mean to you? ✦ Recommendations of how and where to start: Learn about the Business Integration Value Assessment and the Process Automation Value Assessment, which can help determine the best approach and look at estimated costs and benefits – build the business case! ✦ Learn what other customers have done, how they have used WebSphere Business Integration, and why! ✦ Let’s see a demonstration of the WebSphere Business Integration Modeler, one of the first steps in building on-demand solutions!

Biography: Peter Beggs is the IBM National Business Integration Solutions Executive for Canada and the Caribbean with over 25 years experience in IBM. Originally from the IBM Canada laboratory in Toronto, Peter has held various positions in Development, Management and as Senior Planning Manager he was responsible for product strategies and plans for integration technologies, tools and the initial development of WebSphere. He is now responsible for the deployment of WebSphere Business Integration technologies in Canada.



6:00 pm Intermission TUG Meeting of Members (MoM)

- Mingle and network with professional colleagues.
- Enjoy our complimentary buffet dinner.
- Limited seating • Register with the TUG office of your intention to participate, to be guaranteed a seat.
- You can call, fax, or use the TUG web-site to register, (stating: name, company, phone number, and number attending). www.tug.ca
- Do we have your current e-mail address?



7:00pm Enterprise Application Modernization

SPEAKER: Mark Buchner, Astech Solutions Inc.

Abstract: Like a renovation project at home, Enterprise Application Modernization (EAM) promises to enhance the look, feel, usability, utility and value of assets while preserving the things you value. EAM is a highly appropriate strategy for the majority of AS/400 customers. Its next steps need not be daunting, complex or difficult to understand. This session will use the home renovation analogy to help you understand how to: ✦ Easily enable secure, web-based access to existing applications for CRM, SCM and Employee Workplaces; ✦ Modernize the user interface to enable customers, partners and new employees to use systems with little or no training; ✦ Update the architecture of the system to enable rapid integration with other systems including collaboration, content management and ERP; ✦ Choose open standards and tooling to enable more rapid responsiveness to business needs. Key IBM WebSphere products, IBM eServers, industry best practices and reference customers will be discussed.

Biography: Mark Buchner is the President of ASTECH Solutions Inc with 22 years of experience in the IBM midrange market. Originally from the IBM Canada Laboratory in Toronto, Mark spent 3 years as the Director of IBM Operations at Cognos and 12 years with ASTECH as an independent consultant to hundreds of customers and software firms and as a trainer to thousands of IBMers and Business partners worldwide.

What topics would you like to see in future? Drop us a line with your suggestions at: leo@tug.ca



Separated At Birth?

i Can Do IT™

By Dan Duffy

With the announcement of the i5 and i5/OS, the IBM eServer line-up (and in particular the iSeries and pSeries models) moved much closer together. So much so that only a few different chromosomes separate them from one another – and they don't even get those until they reach the end of the production line in Rochester, Minnesota.

On our beloved iSeries we can now run AIX (Unix) natively in a partition. We can run Linux natively in a partition. We can also run Windows with the aid of the IXS and IXA features. Conversely the pSeries (AIX/Unix) people can now run i5/OS (OS/400) natively in their partitions. Unix? Linux? Windows? Cats and dogs living together? What is a dyed-in-the-wool-iSeries-bigot to do?

Face it and embrace it baby...

iSeries purists have long maligned Unix as some cryptic Stone Age creation written by guys with so many propellers that they could give a wind farm a run for its money. Not only that but if unleashed in their iSeries environment, it would act as an open doorway to various plagues including – but not limited to – deadly viruses and quirky, unrecoverable applications. (See also: Portal of Doom.)

Let's face it. There are thousands of Unix applications running out there and they work well. Let's embrace it. Be the first one in your organization (before the pSeries people do it) to say, "You know what boss? I can run that AIX/Unix application on the iSeries and save us a bunch of time and money and give you better security, better reliability, and

better recoverability. Let me show you how it's done. By the way if you get me a new model 520, 550 or 570 I'll show you what I can do with those Windows and Linux workloads too ... and oh by the way, I'd like to attend COMMON and the TUG Technical Education Conference." (You might as well ask when you have his or her attention.)

The iSeries silo is the best silo. We know that. The rest of the world may not be aware of it, but we know it. Guess what? We can't hang our hats on that anymore. The world right now is looking at workload optimization, server consolidation, head count reduction, and doing more with less. But, guess which IBM eServer fits that model best? You got it Pontiac – the i5.

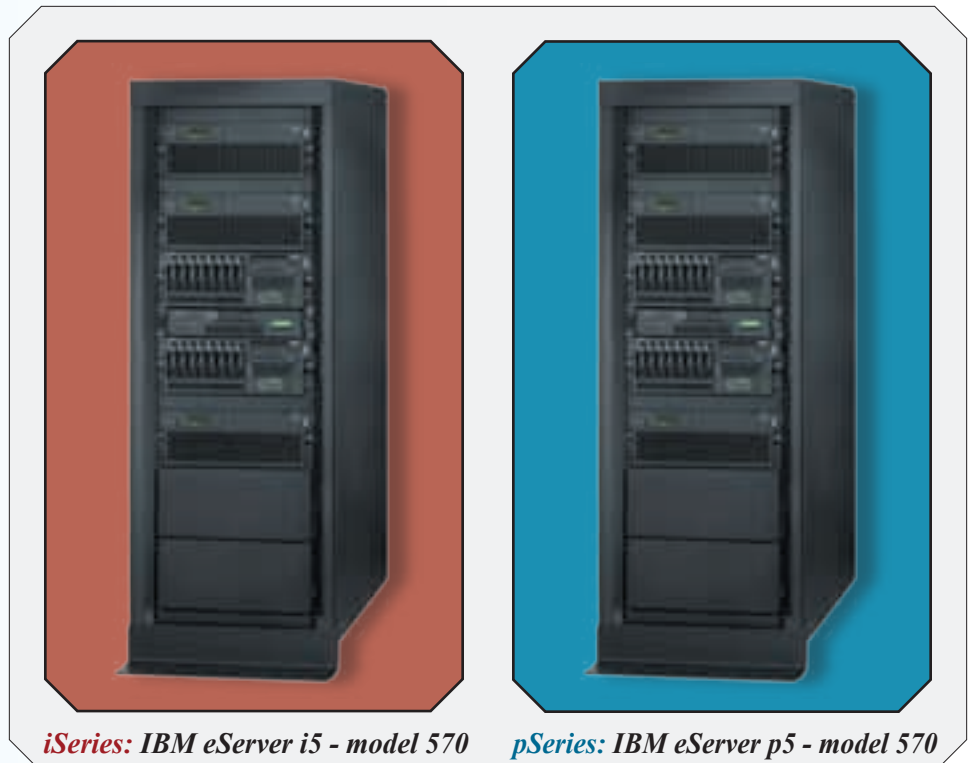


So instead of tilting your head and saying, "That stuff? (Unix, Windows, Linux.) I wouldn't touch it with a 10 foot (3.048 metre) pole," ... embrace this as your new mantra:

“*i* Can Do IT™”



Dan Duffy is President of Mid-Range Computer Group Inc., and an admitted i5 bigot. He can be reached at dduffy@midrange.ca.



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Project Management Tales – Measure Twice, Cut Once

By *Debbie Gallagher*

Each story in this series of Project Management Tales is true, but company names have been changed. Some stories occurred in Canada and others took place in the U.S. and overseas.



Debbie Gallagher

Background

The City of Yorktown had decided to replace its financial and human resources software. The city had a history of technology projects that were completed late and over budget, and the sponsor for this project was determined that this ERP project would be different.

The project manager spent time researching what other cities had done and what had worked well. As a result of this research, there were some things she decided were important to Yorktown's ERP implementation project: (a) all departments would be involved in and committed to the preparation of the business case; (b) the structure of the contracts with the various vendors involved would try to ensure one vendor was responsible for managing all of the vendors; (c) the vendors would be treated as business partners; and (d) the budget would have plenty of contingencies.

Before choosing a software package and vendors, the business case and requirements were prepared. In every department at Yorktown, the department heads signed off on the cost savings and other benefits expected from the new system, including agreement that specific budget cuts would be made to the department once the system was implemented. The cost savings and budget cuts would be made over a five-year period as staff retired, since there were to be no layoffs.

The RFP was issued with a requirement that the vendors bid together as a team, and that the system integrator take some responsibility for managing the other vendors. The bid was to include software and hardware recommendations.

The Situation

After the package and vendors were selected, the business benefits were reworked, taking into account the specific package that had been chosen and its particular capabilities. Again, each Yorktown department head signed off on the business benefits, including the planned budget reductions. At the same time, the costs were refined, based on current information about the package, the infrastructure and the implementation fees.

The contracts with the vendors were negotiated. There were a few key elements that the Yorktown project manager especially wanted included in the contracts: (a) the system integrator was to have implied responsibility for managing the software and hardware vendors; and (b) the vendors were asked to put up some extra contingency dollars. The additional dollars were not laid out in the contract itself but were negotiated at the same time and were to be managed outside of the contract.

The project manager knew that each vendor would already have included some unallocated budget in their own bids, in order to ensure they were not out-of-pocket on this fixed fee price. She too had a miscellaneous category in her own project budget.

However, she also wanted all parties to provide additional assurance by sharing costs for situations on the project where the responsibility for picking up the extra costs could not be clearly defined. She felt this would prevent cost overruns and also lead to better focus on the city and vendors acting as partners instead of each protecting their own budget.



The shared contingency dollars were to be spent on a case-by-case basis when agreed by all parties during the project. The total of the shared miscellaneous budget was approximately one percent of the project budget

Action Taken

The implementation was to take seven months. Almost immediately, Yorktown and the vendors used nearly a quarter of the shared reserve of funds, as additional hardware requirements were identified during the set up of the infrastructure.

During the rest of the project, several smaller items were agreed to be paid out of the shared reserve fund. Most of the remainder of the reserve was used for additional processors, storage, and database licensing.

In each case, when an issue arose that would cost more money, Yorktown and the vendors would, as expected, try to negotiate so that another party would pay for the new item. However, when it became apparent that some items could not be agreed upon, the parties agreed to pay out of the shared reserve.

Epilogue


The ERP system went live on time and on budget, and is expected to deliver the planned business benefits. Yorktown and the vendors did maintain a collegial relationship during the entire implementation.

Conclusion

The time the project manager spent on planning and research was time well spent. The project manager learned a lot from her discussions with other cities. She focused on making sure the key success factors were in place and that potential points of failure were mitigated.

She ensured commitment from the business users by involving them in defining the system requirements and having them take responsibility for budget reductions related to implementation of the new software. The contracts were structured so that one vendor could manage the others, reducing the conflict that can arise when no one vendor is responsible for the outcome.

The shared reserve was an innovative concept that allowed the project manager to honour her commitment to city council to complete the project without going over budget. Just as important, because the reserve was shared by Yorktown and the vendors, there was more of an implied partnership between the parties. They had a means to resolve budget issues that might otherwise cause each to dig in their heels to protect their own budget.

It seems that much of the shared reserve was used for hardware – an especially unpredictable project cost. In the case of this project manager, who built in an extra contingency, when each party already had a contingency, the old expression should be “Measure Twice, Cut Once – And Have Money Handy For More Lumber!” 

Debbie Gallagher is a Manager at Deloitte, Toronto. She can be reached at (416) 643-8767 or dgallagher@deloitte.ca.

[Debbie's previous “Project Management Tales” are available on her personal web site: www.gallaghers.ca/debbie.]

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Enterprise Application Modernization

By Mark Buchner

A suitable analogy to Enterprise Application Modernization is a home renovation. It's just that with EAM one addresses business applications (which often is the company's most valuable asset), instead of ones home (which is often the individual's most valuable asset). We do it for the same reasons: To


1. Increase and protect the value of our assets.
2. Improve or add new utility/function.

3. Be more productive.
4. Improve our quality of life.
5. Improve safety and monitoring 7*24.
6. Increase/size or change layout to handle dynamics.
7. Lower our costs.
8. Appease current standards and tastes.

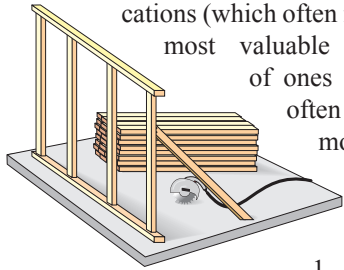
Just like a home renovation project, an EAM project can start with something simple, but grow quickly. And just like a renovation project, it can go horribly wrong if you use the wrong tools, products, or skilled professionals.

iSeries Customers are turning to EAM in 2004 and assessing simple, low-risk tactics that will provide a return on investment and put them on a better path for the future. Typical tactics include:

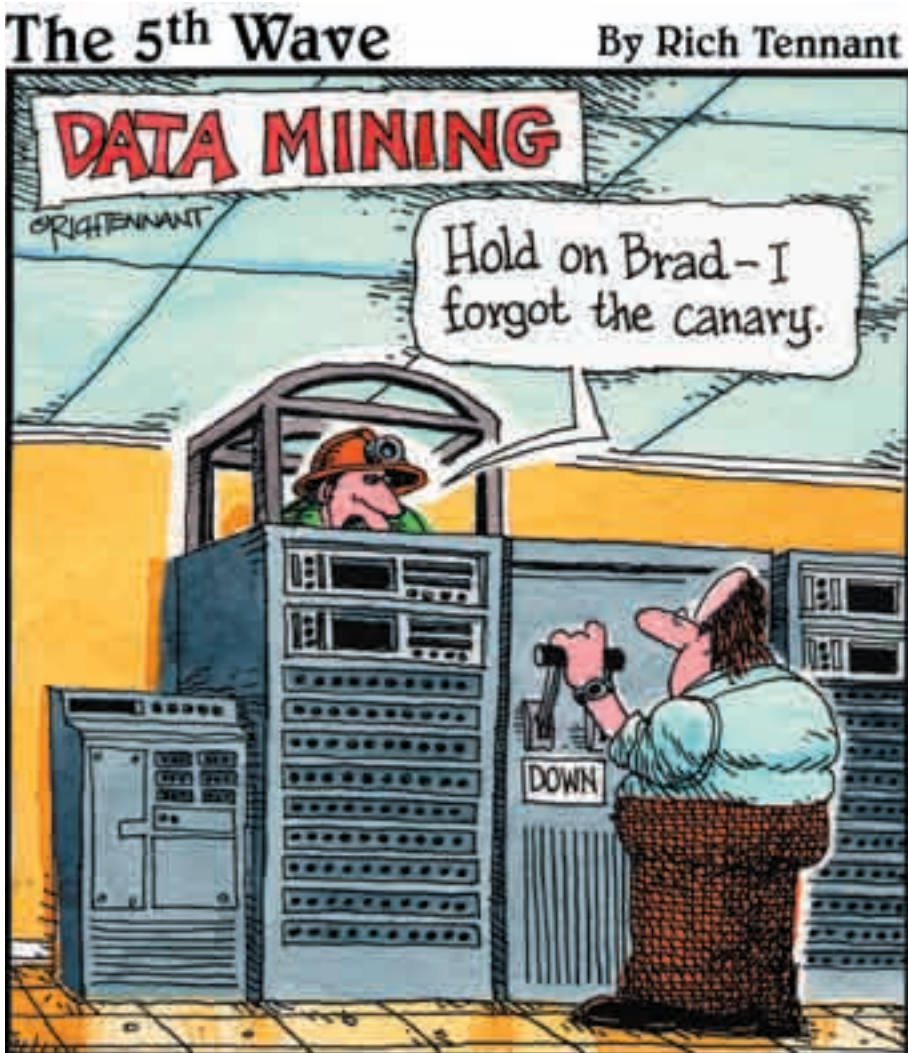
1. Modernizing the infrastructure using i5, i5OS and Linux. We will examine the modern, on-demand infrastructure which addresses reliability, security, privacy, scalability and integration. Importantly, how can the virtualization features of i5 be exploited by SMB customers?
2. Modernizing the tooling. What is the role of Java, J2EE and .net? Customers which enables them to be productive and responsive to changing business needs. Key is the introduction of the WebSphere Development Studio and its graduated use.
3. Modernizing the UI. Extending application to the web so that customers, partners and employees can access information via the internet is a common thread for IT customers. WebFacing, iSeries Access for Web and HATS are three key tactics that are a "must see" for iSeries customers.
4. Modernizing the Middleware. A portal is a highly attractive middleware component with a dazzling amount of business opportunity. Why should a customer be interested in WebSphere Portal Server?

EAM is a highly appropriate strategy for the majority of AS/400 customers. Its next steps need not be daunting, complex or difficult to understand. The EAM session at the next TUG Meeting of Members (Sept 22) will be organized to help attendees determine the value of EAM for their organization and help them to make the first necessary step. 

Mark Buchner is President of **ASTECH Solutions Inc.** He can be reached at mbuchner@aci.on.ca.



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COMMUNICATING WITH SAM

Convergence Final Frontier:

Consolidated Voice Systems



Sam Johnston

Question:

We have recently consolidated servers from our regional offices; including several iSeries, and Exchange servers to a completely central model. This has resulted in a significant decrease in the number of servers. In addition we have centralized our Internet access for all our locations. We have scaled our IP WAN to support the increased traffic. The support and operations savings of supporting all systems in a single data centre and the economy of scale benefits associated with fewer larger systems has significantly outweighed the added network cost. Currently each branch has a PBX and we are looking for ways to reduce the administration and support costs of these systems with external suppliers. Can we do the same with our voice services without risking availability?

Answer:

It is really quite incredible how voice and data have cyclically diverged and converged over the past twenty or so years. In the early 1980's when the first generation WAN networks started to emerge often the small amounts of data traffic were transported over dedicated voice trunks that linked remote offices – what was known as tie-lines. High long distance charges were the incentive to implement dedicated trunks to enable toll bypass while efficient X25 traffic from centralized mainframes were easily handled by the robust voice networks of dedicated trunks. Growth in IP GUI applications, and in particular the advent of e-mail, flooded networks in the 1990's leading to dedicated networks for data and a proliferation of new servers at the edge of the network, while increasingly low long distance rates all but eliminated the need for tie-lines.

Well here we are in 2004 and what is old is new again, with a renaissance in voice and data convergence, albeit for different business justification.

The easy answer to your questions is that absolutely you can centralize your voice processing similar to your data architecture and it's easily done now that you have a fully centralized IP WAN. The core technology that will enable

this strategy is IP telephony, which uses the communications foundation of the Internet to transport voice conversations alongside corporate data. Unlike traditional circuit-based analog phone service, IP telephony segments voice conversations into separate digital packets allowing them to be transported over the IP WAN, eliminating the need for dedicated trunks and ports which make centralizing traditional or TDM calls all but cost prohibitive. In this way you can eliminate the costly long distance charges associated with inter-branch communications using traditional PBX and PSTN technology. This feature also allows you to minimize the number and cost of voice trunks required for voice communications by moving inter-office voice traffic to the WAN and eliminating the need for a voice trunk at each end to support an inter-office call. Eliminating multiple PBX hardware at each remote will also reduce the annual cost of maintenance and simplify the support for voice services by centralizing activity such a user administration.

The question we always get in terms of centralizing voice processing, and adopting a fully converged model is. "Will I be bleeding edge?" The answer is rapidly becoming, "You won't even be leading edge." According to Cisco, the market leader in IP telephony and

VoIP, more than 14,500 organizations now use Cisco IP Telephony products to eliminate costly, inflexible, and redundant proprietary circuit-switched "PBX" office phone systems, while most traditional manufacturers such as Nortel, Avaya and Alcatel rarely ship a traditional system that is not IP-enabled for VoIP.

In the Cisco world, Call Manager is the heart of the IP Telephony solution. It is software running on a Windows 2000 server that extends enterprise telephony features and capabilities to devices such as IP phones, media processing devices, voice-over-IP (VoIP) gateways, and multimedia applications. A Call Manager can handle the call processing functions for your central location and remote branches. This will eliminate the multiple PBX support and administrative issues. Call Managers can be grouped into clusters to provide additional levels of redundancy, given that each remote will now rely on a single processing heart for all voice calls. The same availability principles that you likely have applied to Exchange would apply here.

Once you have centralized call processing, a byproduct will be that calls between offices will now be placed over the WAN without long-distance tolls. Call admission control (CAC) will now

become crucial as it ensures that voice quality of service (QoS) is maintained across WAN links, and automatically diverts calls to alternate public switched telephone network (PSTN) routes when WAN bandwidth is not available.

While CAC and QoS have dramatically improved the call quality to eliminate the first generation weakness of VoIP – echo – it still did not alleviate the large concern with availability. Concern has continued over the potential for mission critical timing sensitive voice transactions being impacted by even small outages in the WAN and users being unable to reach the centralized call processing. Manufacturers such as Cisco have addressed this issue with “skinny” versions of the call processing software for the voice gateways (the WAN router) at each remote to act as temporary backup systems. In the Cisco world, when a central Cisco Call Manager cluster also handles call processing for users at distributed sites, administrators can help ensure continuous phone service using

Cisco Survivable Remote Site Telephony (SRST), Cisco IOS software for Cisco routers. (See **Figure 1.**) If the IP WAN link fails, SRST in the router provides the basic telephone capabilities until the link is restored. The Cisco SRST Telephony Software operates by taking advantage of the keepalive packets sent from both the centralized Cisco CallManager cluster and local Cisco IP Phones. If the WAN link fails, the Cisco IP Phones detect that they are no longer receiving keepalive packets from the Cisco CallManager. The call processing functions are performed by a SRST router until the link is restored and the phone starts to receive keepalive packets again.

Manufacturers such as Cisco have further enhanced the business case for centralized telephony by developing a wide array of applications that work in conjunction with IP Telephony and IP Communications products. Cisco Unified Communications, for example, offers such personal productivity tools as Cisco Unity, a platform for unifying voice and

e-mails into a single message store for retrieval of either message formats from a multimedia PC or a telephone using text-to speech technology, and Cisco Personal Assistant. Both are aimed at managing the large volume of messages employees receive from an assortment of telephone, fax, email, pager and other devices. As you have already centralized your Exchange environment, it will be a natural and simple extension to leverage this platform as a single message store for all users, local and remote, to achieve centralized voice mail in addition to consolidated e-mail services.

Another opportunity to leverage Exchange is the Cisco IP Phone Address Book Synchronizer that is included in Call Manager V4.0. It allows users to synchronize Microsoft Outlook or Outlook Express address books with Cisco Personal Address Book. The Synchronizer provides two-way synchronization between the Microsoft and Cisco products. After the user installs and configures Cisco Personal



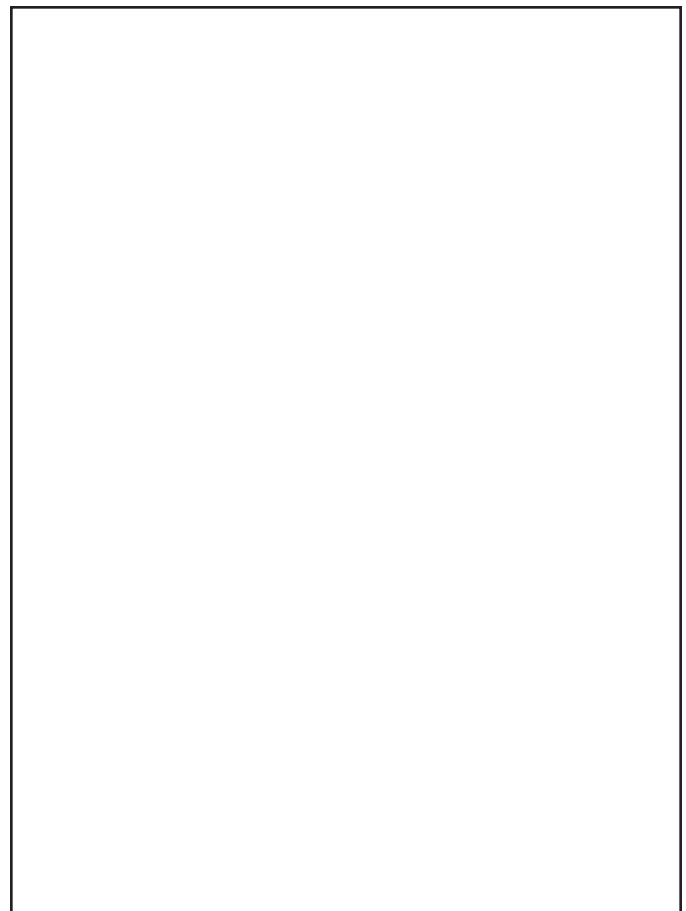
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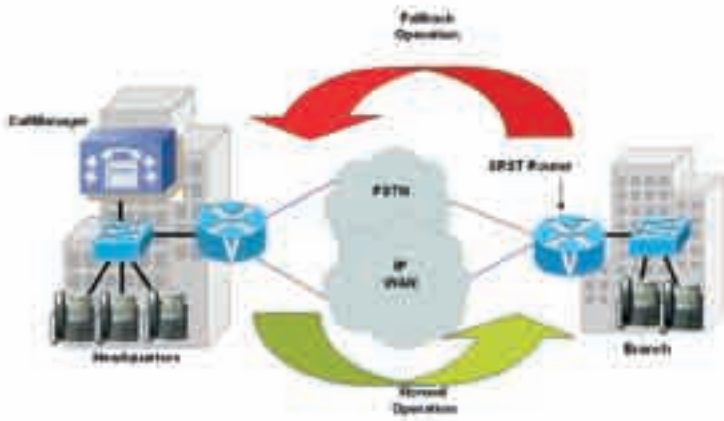


Figure 1: SRST Operation


Address Book, users access this feature from the Cisco IP Phone Configuration web page. Cisco also offers technology for contact centers as well as audio and video conferencing. By combining wireless networking equipment and the Cisco Wireless IP Phone, your employees that are mobile within your enterprise can always have their office phones by their sides.

Aside from the obvious technical support and operations benefits associated with centralizing your voice processing, there are many business benefits that increase the ROI associated with any capital investments.

Quantifiable benefits, some of which have been touched on, include the elimination of long-distance between offices and a reduced number of trunks needed to support internal calls. Should you implement off-net dialing for the ability of a remote site to access a trunk over the WAN to dial out in another city to avoid long-distance, then additional long-distance may be avoided. Further trunk optimization may be possible by allowing remotes that are at or near capacity to share trunks at other sites that are accessible over the network in order to handle bursting requirements rather than adding more trunks at the remote. Of course, a single cluster of servers for call processing is simpler to manage and will eliminate costly servicing, operation and maintenance of a PBX at each remote.

While the hard benefits are important, the soft benefits are likely the means to gaining support from the business in terms of business transformation. Centralizing voice services will make it easier to secure the voice environment (often securing voice mail, and sensitive content that may be contained in these messages is often overlooked), and it also ensures the same consistent level of service is available to headquarters, branches, and remote workers to optimize productivity and morale. A centralized solution also enables the implementation of a single universal extension plan to facilitate better internal communication by making it simpler to reach out to another employee. It may even mean that single receptionist is possible to service the whole organization, which can assist by ensuring that calls are transferred to the right resource regardless of location, while locations that currently do not have a receptionist may be able to add this resource for a more personal touch. By unifying

your voice and message stores should you implement unified messaging, users will also have a single sign-on for voice and data, and new users set-up will be converged for voice and data for added efficiency.

In the end, we have come full circle and what was old is new again, but like any retro trend there is always a new twist. While there is a mad rush to converge voice and data onto a single network, unlike the 1980's it is voice traffic that is now dwarfed by data traffic and can ride for "free" on robust IP networks. While this obvious point is what most observers focus on, the key twist that has important impact on IT strategies is that after years of using network enabling technologies to distribute data applications and servers, IT managers have now used low cost bandwidth to repatriate these services circa 1980 centralized mainframes albeit with an IP flavour. By adding an IP twist to telephony, this path of centralization is now simple and irresistible for telephony just as it is in the data world. 

Sam Johnston is a partner and Chief Technology Officer of Intesys Network Communications Ltd., providing value-added networking and e-commerce solutions to the iSeries community. He can be reached at (416) 438-0002 or via e-mail at sjohnston@intesys-ncl.com. Any TUG member wishing to submit a question to Sam can forward their typewritten material to the TUG office, or to Intesys. The deadline for our next issue is Friday October 8, 2004.



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JACKIE'S Forum

SQL Query Engine



Jackie Jansen

With very little fanfare IBM introduced a new SQL query optimizer for the iSeries in V5R2. Although the existing query optimizer had served us well in the world of online transaction processing, the evolution of more web-based queries and analytical queries created demand for a new optimizer. As has happened many times in the past, as we introduce something new, we now need a name for something existing. The iSeries now supports the new SQL Query Engine (SQE) and the original Classic Query Engine (CQE).

When SQE was first shipped in V5R2 only the very basic SQL single table queries were directed to this optimizer. Adding the latest V5R2 database group PTFs and PTF SI07650 increased the functionality of SQE. One major new enhancement was support for basic join queries. With V5R3 more and more SQL queries are directed to SQE. Some examples of queries that are still directed to CQE include logical file references, using LIKE predicates, and specifying ALWCOPYDTA(*NO).

Non-SQL interfaces such as Query/400, OPNQRYP and QQQQry will always be directed to CQE. As SQE evolves the intent is that all SQL based queries, such as Open Database Connectivity (ODBC) and Java Database Connectivity (JDBC) queries, will be directed to SQE.

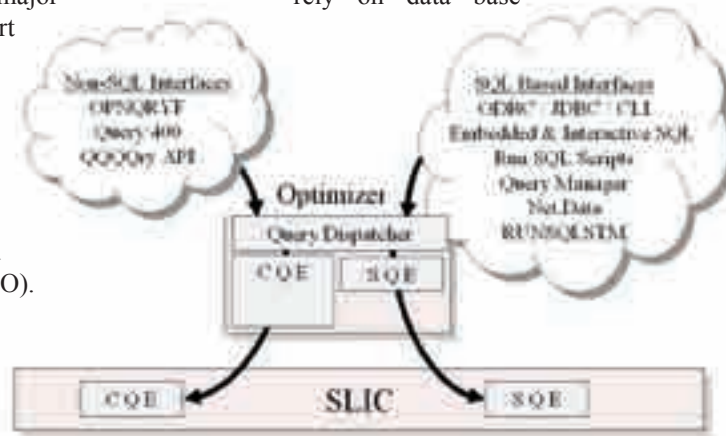
SQE can be very helpful in improving the performance of long running analytical queries. This is particularly appreciated in a Business Intelligence environment.

Two new components for DB2 UDB for iSeries include a Query Dispatcher and a Statistics Manager. The Query Dispatcher analyzes a query as it is

submitted and based on its attributes directs the query to either the CQE or the SQE query engines.

Prior to SQE the query optimizer performed the statistics retrieval. The optimizer used the table header to retrieve information such as total row count and table size. It also used existing binary radix indexes and Encoded Vector Indexes (EVIs) to help analyze the data in the underlying table. With V5R2, for SQE only, Statistics Manager provides an additional statistics source. The Statistics Manager is designed to collect column statistics and provide data to the optimizer. The Statistics Manager will collect statistics such as the number of unique values in a column (cardinality) and the most frequent values that occur in a column. Most databases today


rely on data base



administrators to collect and maintain their database statistics. By default on the iSeries, all statistics gathering is done automatically. When you first run a query that would benefit from statistics over a specific column, the system starts gathering the information for that column in the background. The next time you run the query the system will use the newly collected statistics and possibly modify the access plan. The system keeps track of how “fresh” the statistics are. Statistics are considered “stale”

if the number of rows in the table has increased by more than 15% since the statistics were gathered or if the number of rows that have been changed are more than 15% of the total row count for the table. If a statistic is referenced and it is “stale” the system will automatically start a job in the background to update the column’s statistics.

In a Business Intelligence environment it is very common to change a large number of rows at once during a data load. To help performance when you next run a query you can manually ask the system to update the column statistics ahead of time. For more details on this and many other features of SQE see the IBM SQE redbook SG24-6598.

You can use iSeries Navigator to view existing column statistics. Simply right click on the table name and choose “Statistic Data”. You can then view the “Details” of the individual column statistics. For more information on SQE see the IBM web site www.iseries.ibm.com/db2/sqe.html. 

Jackie Jansen is a Senior Consulting IT Specialist. She currently works in the IBM Americas Advanced Technical Support Solutions Centre. Jackie is a frequent speaker at iSeries Technical Conferences and User Group meetings. Contact her at jjansen@ca.ibm.com.

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source - <http://www.common.org/conferences/conf.html>



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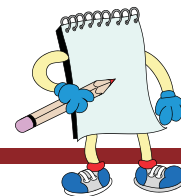
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TUG NOTES



TUG's Calendar of Upcoming Events

- ☒ **September 22, 2004 – MoM**
(at IBM Toronto Lab)
* see page 10 for details
- ☒ **Oct. 17-21, 2004 – COMMON**
2004 Fall Conference, Toronto
- ☒ **October 18, 2004 – MoM**
(On-site at COMMON)
 - ▶ **5:00** Double Session
Speaker 1: John Reed
Speaker 2: Skip Marchesani
- ☒ **November 17, 2004 – MoM**
(At Woodbine Racetrack)

Computer Troubles

I was having trouble with my computer. So I called Harold the computer guy, to come over. Harold clicked a couple of buttons and solved the problem. He gave me a bill for a minimum service call. As he was walking away, I called after him, "So, what was wrong?" He replied, "It was an ID ten T error." I didn't want to appear stupid, but nonetheless inquired, "An, ID ten T error? What's that ... in case I need to fix it again?" Harold grinned, "Haven't you ever heard of an ID ten T error before?" "No," I replied. "Write it down," he said, "and I think you'll figure it out." So I wrote out ... I D 1 0 T (I used to like Harold...)

– submitted by Glenn Gundermann

Letter: QSHELL

By now you've probably received this heads-up from various TUG readers, but thought I'd send it to you anyhow. The article on Qshell was very informative but contained a material typo – the references to "greb" should have read "grep". Regards, Chuck P.

Reply:

I noticed this about one day too late to make the magazine. Good to know that others are reading it to that level of detail. (So much for my advanced typing skills.) Jackie Jansen

A Beautiful Day in June!

That is how the TUG Golf Tournament started off, as ordered by **Richard Dolewski** (our Golf Event Chairman). Well, August 10 was a beautiful day as well! Richard and I met at the **Bloorview MacMillan Children's Foundation** to present **Heather Luckman**, Senior Development Office, with a cheque for \$2,975.00. Also present were **Joan Ferguson**, VP Programs and Services, and **Kirk LeMessurier**, Communication Office.

Kirk LeMessurier



Heather Luckman, Richard Dolewski, Wende Boddy, and Joan Ferguson

This charity was chosen because their focus is on Children and their vision is "defy disability". They are very dedicated to enabling children and youth with

disabilities and special needs to achieve their personal best, and they are a leader in rehabilitation, education, advocacy and research. During a tour of the facilities I was amazed at the innovative ways that the research department have come up with the equipment to enable the Children to get around and participate in many sports (like cycling, skiing, and skating.) And of course, we all know about the amazing wheelchair athletes.

Over the years, prosthesis have become very sophisticated, with joints that move and provide more mobility, and even have designs right in the mold, like an artificial with the Maple Leaf logo or Spiderman. This encourages other kids to ask, "Where did you get that? It's cool." This breaks the ice, and friendships can be formed. Bloorview is making a difference, through camps, clubs and computers; so TUG's donation will certainly be put to good use. We want to thank all the golfers that participated in the Sixteenth Annual TUG Golf Tournament. See you all again in June next year! Keep your children safe and enjoy the rest of the summer...
– Wende

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