

COMMON CONNECT™

The official Journal of COMMON A Users Group

COMMON



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- Advocacy
- Education
- Community

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- ▶ **Software Quality: The Dollars and Sense of Software Quality Control**
- ▶ **Business Case: How Managed EDI Services changed Challenge Dairy**
- ▶ **System i Academic Initiative Goes to Africa**

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Léo Lefebvre



COMMON Staff:
Nancy Boucher
Education Project Manager

Dear COMMON Colleague,

For the past year, COMMON North America has had the great honor of holding the chair of the International User Group Council (IUGC). And since participation in the IUGC traditionally is a responsibility of the COMMON President, by extension, I have been the face of that chair over this term.



The IUGC is a consortium of IBM user groups. It does not have a formal, legal organization. It does not assess a subscription fee or dues to its member organizations. It does not offer any services to the members of its member organizations. It does not produce any publications.

So what the heck is the IUGC and why does it matter to the typical member of COMMON?

The IUGC is a key vehicle for your user group to interact, communicate, and maintain a relationship with the absolute upper levels of the IBM Company. The IUGC also is a key vehicle for your user group to interact, communicate, and maintain a relationship with COMMON's peer organizations.

The IUGC matters to COMMON because we (and our peers) need to constantly remind the upper levels of IBM of the importance of user groups and the value that those communities bring to IBM.

The IUGC matters to COMMON because we need to learn from our peers how we can better serve you as a member. As an organization we learn a lot from the things we do. Our sister organizations learn a lot from the things they do. By sharing those experiences, we all can avoid the sorts of mistakes we might make on our own—mistakes that can cost our organizations, and ultimately the membership, valuable resources.

The IUGC matters to you as a member of COMMON because you, as an IBM customer, do not live and work in a space bounded only by i5/OS. You use a variety of different IBM products and COMMON needs to understand the relationship between those products and the broader IBM strategy. That understanding is key to providing you with the most relevant offerings and services.

Traditionally IUGC membership consisted of user groups representing products from what is now IBM's Systems and Technology Group (STG). Those products are the servers, the operating systems that run on them, and IBM's storage systems. If you have been around the user group community for a while, you may recognize the origins of those groups as Share, Guide, and of course, COMMON. Over time a number of the names have changed, but, for the most part, their heritage comes from the three groups that started up some 50 years ago.

A key initiative for the IUGC, both this year and into the future, is to ask other user communities within the IBM product realm to join. Many of those groups focus on particular software products and many operate somewhat differently than COMMON and the other STG groups; however should they choose to become part of the IUGC the voice of the IBM technology user will be stronger than ever.

Remember that through the IUGC, COMMON gets to develop stronger relationships with the other member groups. Those relationships are beginning to result in joint initiatives, and you will have the opportunity to interact with members from other organizations in the technology and product areas where we both have needs and interests.

Also as a result of these relationships our ability to advocate for our members is stronger than ever. There absolutely is strength in numbers.

The IBM Company is changing. The IT market continues to change, and many of the traditional, highly focused lines of distinction within the industry are becoming increasingly blurred. So you would expect IBM to adapt. Through the IUGC, COMMON is able to quickly adjust and continue to meet your ever changing needs. This is, of course, what your user group is supposed to do for you.

Sincerely,

Randy Dufault
COMMON President
randy_dufault@common.org

A handwritten signature in black ink, appearing to read "Randy Dufault". The signature is written in a cursive, flowing style with a long horizontal line extending to the left.

Nominate a Hard-Working Volunteer for COMMON's Highest Honor

Do you know a COMMON volunteer who has contributed above and beyond what would normally be expected? COMMON's highest Volunteer honor, the Distinguished Service Award (DSA), was created especially to recognize those who have selflessly given to the organization over a significant number of years.

The most recent DSA recipient is COMMON's Community and Networking (CaN) iSocial/Community Outreach Leader, **Larry Bolhuis**, who was recognized at the COMMON 2007 Annual Conference and Expo in Anaheim. Other DSA recipients include present COMMON Board member **Bob Krzeczowski**, recognized at the Fall 2006 Conference in Miami Beach, as well as volunteer speakers **Trevor Perry** and **Larry Youngren** – recognized at the Spring 2006 Conference in Minneapolis, and **Jim Fey** – recipient of the DSA at the Fall 2005 Conference in Orlando.

"Receiving the COMMON DSA was truly a surprise and a joy for me," said Jim Fey. "Every volunteer wants to feel that they have made a difference with their time and effort donated to COMMON. Just knowing that other COMMON volunteers have so appreciated your efforts to single you out for recognition makes volunteering at COMMON a pleasure."

Consider nominating a worthy candidate for the next Distinguished Service Award, which will be presented at the 2008 Annual Meeting & Exposition in Nashville, Tennessee! It's easy—just download the nomination form from COMMON's Web site at www.common.org/meminfo/volunteer/award.html.

The deadline for nominations is February 15, 2008.



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March 30 – April 1, 2008

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Convention Center – Nashville,
Tennessee

April 17, 2008

Webcast: DB2 for i5/OS: Tuning for
Performance

April 28 - May 19, 2008

Webinar: ILE Essentials for RPG
Programmers
by Susan Gantner

May 15, 2008

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Domino 8 Server

October 2008

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Location TBA

April 26 – 30, 2009

**2009 COMMON
Annual Meeting and Exposition**
Grand Sierra Resort – Reno, Nevada



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About COMMON

COMMON is an international professional association, serving the Global Community of organizations and individuals who have an interest in IBM-related technology. COMMON provides a member forum for proactively developing solutions to challenges presented by technology evolution and business requirements. COMMON provides pre-eminent leadership in education. Members receive unparalleled educational benefits that facilitate the effective use of information systems and enhance professional growth. COMMON promotes multiple vehicles for communication, an environment that encourages information exchange through interpersonal knowledge sharing, and a level of support unavailable elsewhere in the information technology industry. COMMON is independent of IBM.

The Dollars and Sense of Software Quality Control

By Thibault Dambrine

Software quality is hard to quantify. How would you justify the value of a separate software Quality Control (QC) team? If your IT manager told you “We have survived for so long without such a staff. Why change now?” What could you say to convince him or her to think differently?

Simply put, the answer to all these questions lies in “economics.” Boiling it down to dollars and cents, quality software happens to cost less—by a wide margin. In this article, I will expose the economics of software quality. In effect, I will describe how one can put a dollar value on quality control and its impact on the enterprise. Should your IT department consider investing in a QC team? Read on!

The aim of this article is to promote an enhanced understanding of how improving software quality can boost your status as a software producer and help cut development costs at the same time. It will describe:

- The components of software quality cost
- Using a software quality costing model, to make a case for a formal quality control process
- Through the above case, an understanding of how software quality can help drive down software costs while improving the perception of the IT department – as one that, more often than not, hits the mark the first time.

The Cost of Quality

Imagine that 100 programs go into production.

- 80 programs install without a flaw
- 20 programs install, but subsequently require remedial actions, fixes, or modifications.

One could say that the first 80 programs complied right from the time of their promotion. They were properly designed, checked, and verified before

being promoted, and there is a cost to all this. This cost will be named the “cost of compliance.”

The last 20 programs were not perfect. They required extra work because they did not comply with the requirements. The cost of fixing these programs subsequently can best be described as the “cost of non-compliance.”

Once all of the programs have reached the point where they are deemed “of good quality,” meaning needing no more fixes, the total cost of quality can be summed up with the formula in **Figure 1**.

Let’s examine the components of these costs.

In the Price of Compliance, the following activities can be found:

Development Activities

- Staff training
- Requirements analysis
- Early prototyping
- Fault-tolerant design
- Defensive programming
- Accurate internal documentation
- Proper Requirements
- Detailed Design Documents

Quality Control Activities

- Design review
- Code inspection
- Unit testing
- End-to-End testing
- Regression Testing
- Beta testing
- Test automation
- Pre-release testing by staff
- User acceptance testing

The activities above are relatively standard and most developers would be expected to be familiar with each one of these line items.

In the Price of Non-Compliance, the following activities can be found: ➤

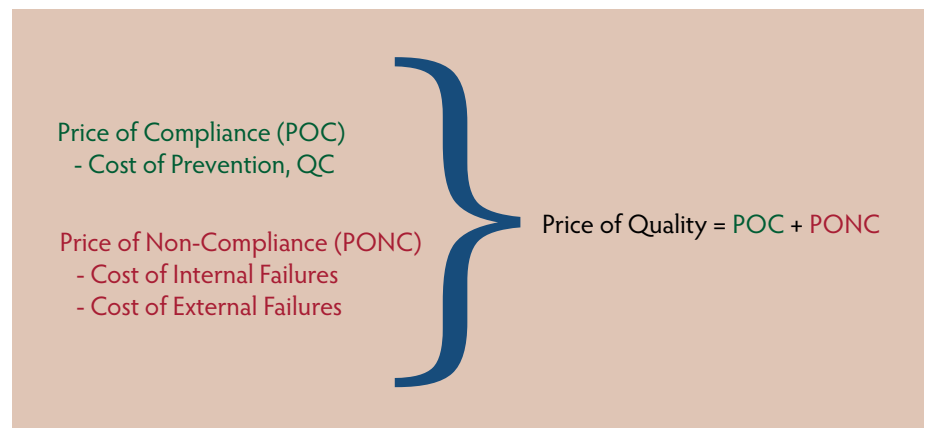


Figure 1.

Internal High Visibility Costs

- Bug fixes
- Wasted in-house user time
- Developer fixing time
- Tester re-testing time
- Cost of late software product shipment
- Receivables potentially affected

External Low Visibility Costs

- Cost of decisions made based on bad data
- Lost Market Share
- Technical support calls
- Investigation of customer complaints
- Refunds and recalls
- Coding / testing of interim bug fix releases
- Shipping of updated product
- Added expense of supporting multiple versions of the product in the field
- PR work to soften drafts of harsh reviews
- Lost sales
- Lost customer goodwill—reputation for producing buggy software

- Discounts to resellers to encourage them to keep selling the product
- Warranty costs
- Liability costs
- Government investigations—if company subject to regulatory rules
- Penalties
- All other costs imposed by law

There are two points to notice here:

- 1) The list of “internal” or “high visibility” costs is relatively limited and easy to quantify. The costs listed there apply to the IT department only.
- 2) The list of “external low visibility” costs touches potentially all areas of the company and its impact is far wider than the first list.

What happens here most often is that when evaluating the cost impact of a given bug, the temptation is to only count the “high-visibility” costs. External or low-visibility costs are typically easy to overlook or minimize because they are hard to quantify. They are also commonly known as “soft costs.”

The 1-10-100 Rule

How would one quantify the cost impact of these “soft costs”? Many have pondered this question. The accepted measure in most quality circles for this type of cost is the 1-10-100 rule. This rule states that:

- It costs 1 unit of labor to fix a bug at the programmer’s workstation.
- It costs 10 units of labor to fix a bug once it has been caught at the Quality Control stage.
- It costs 100 units of labor to the company once a bug has been released to the user.

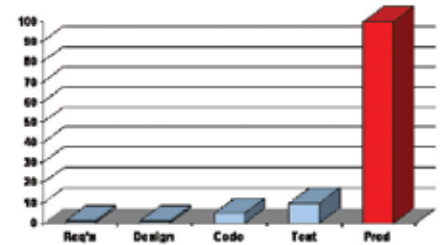


Figure 2.

If you look at the graph in Figure 2, you can see how the cost of bugs can grow exponentially if they are not caught

Table A. Cost of Bug Fixes Without Quality Control:

Cost of Resolving Bug	Cost of Resolving a Bug Immediately	Cost of Resolving a Bug at QC	Cost of Resolving a Bug Once it Reached the Users	Total Cost of Bug Fixes
1-10-100 Rule	1	10	100	
Distribution of 125 Bugs	100 x \$100 x 1	0 x \$100 x 10	25 x \$100 x 100	
Distribution of Costs @ \$100/bug	(100x\$100 x 1) \$10,000	(0x \$100 x 10) \$0	(25 x \$100 x 100) \$250,000	\$260,000
NO QC TEAM COSTS				\$0
Total Cost				\$260,000

Table B. Cost of Bug Fixes With Quality Control:

Cost of Resolving Bug	Cost of Resolving a Bug Immediately	Cost of Resolving a Bug at QC	Cost of Resolving a Bug Once it Reached the Users	Total Cost of Bug Fixes
1-10-100 Rule	1	10	100	
Distribution of 100 Bugs	100 x \$100 x 1	20 x \$100 x 10	5 x \$100 x 100	
Distribution of Costs @ \$100/bug	(100x\$100 x 1) \$10,000	(20x \$100 x 10) \$20,000	(5 x \$100 x 100) \$50,000	\$80,000
+ Cost of QC Team				\$75,000
Total Cost				\$155,000

early. Clearly, it costs less to catch bugs early. To illustrate this concept with a concrete example, I will put forward the following model:

The Case for a Formal Quality Control Process

We now know more about the components of software quality and the fact that bugs cost a lot less if they are caught early than if they are caught late. The following section will illustrate, with a simplified example, the impact of resolving bugs early on software development costs.

Cost of Bug Fixes Without Quality Control (See Table A.)

Let there be:

- An IT department that DOES NOT have any formal Quality Control personnel or process
- 125 bugs a year, 80% caught by developers
- Each bug costs \$100 to fix at the developer workstation.
- NO separate QC cost involved, as per point (1).
- 80% of 125 bugs is 100 bugs, resolved at \$100 times a factor of 1, totaling \$10,000.
- 20% of 125 bugs is 25 bugs, resolved at \$100 times a factor of 100, totaling \$250,000.
- There are no expenses for quality control.
- The total is \$260,000.

Cost of Bug Fixes With Quality Control (See Table B.)

Let there be:

- An IT department that has a formal Quality Control person, 125 bugs a year, 80% caught by developers.
- Each bug costs \$100 to fix at the developer workstation.
- Full time equivalent cost for the Quality Control person: \$75K/annum. This person has an 80% bug catch rate.
- 80% of 125 bugs is 100 bugs, resolved at \$100 times a factor of 1, totaling \$10,000.
- 80% of the remaining 25 bugs are 20 bugs, resolved at \$100 times a factor of 10, totaling \$20,000.
- The remaining 5 bugs reach the customers and are resolved at a cost of \$100 times a factor of 100, total-

ing \$50,000, plus \$75,000 for a QC resource and the total comes up to \$155,000.

The Big Picture

The total return on investment, after spending \$75K on a single quality control resource is an astounding 140% return. Even if the cost of this QC resource was 100K, the return would still be over 100%. **Figure 3** illustrates the cost curve of quality without QC vs. the cost curve with QC.

- The green line shows the cost of quality without QC. In simple terms, every new bug brings an equal amount of cost. (This is a deviation from the 1-10-100 rule, which would make the slope steeper.)

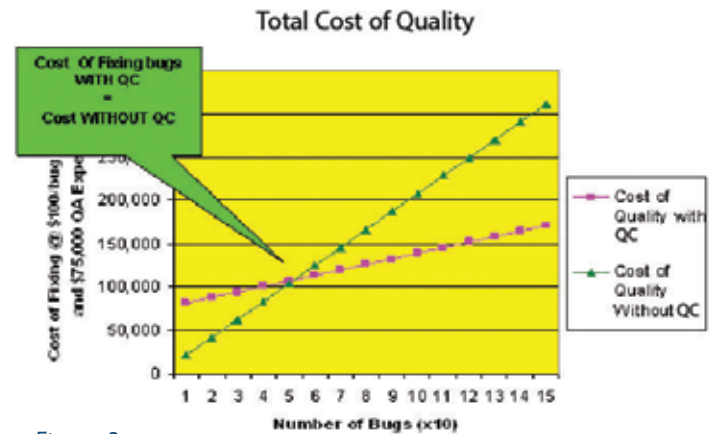


Figure 3.

- The pink line shows the same cost curve with QC. Note that it starts at 75K, which is expensive if you have no bugs to start with, but it has a significantly softer slope than the green line.
- The point where these two lines meet is around 55 bugs. At that point, it costs no more, no less to have or not have a QC resource.

COMMON Career Center — the premier electronic recruitment resource for the industry. Here, employers and recruiters can access the most qualified talent pool with relevant work experience to fulfill staffing needs. Active job seekers can showcase their skills and work experience to prospective employers to find the best job opportunities, while others can take advantage of networking, training and career development services.

If you need additional information, please contact Barb McLaughlin at 312.279.0205 or barb_mclaughlin@common.org

The graph in Figure 4 shows three curves:

- The blue line is an imaginary one: It simply is one that shows, “What if users could see every bug?”
- The green line shows what they really see after the developers have cleaned up 80% of these bugs.
- The pink line below shows what if QC caught 80% of the bugs below the green line.

At the 55 bug point, previously identified as the point where the cost of fixing bugs with QC would be the same as the cost of fixing bugs with QC, a point where there was—on the surface, no advantage to a QC resource.

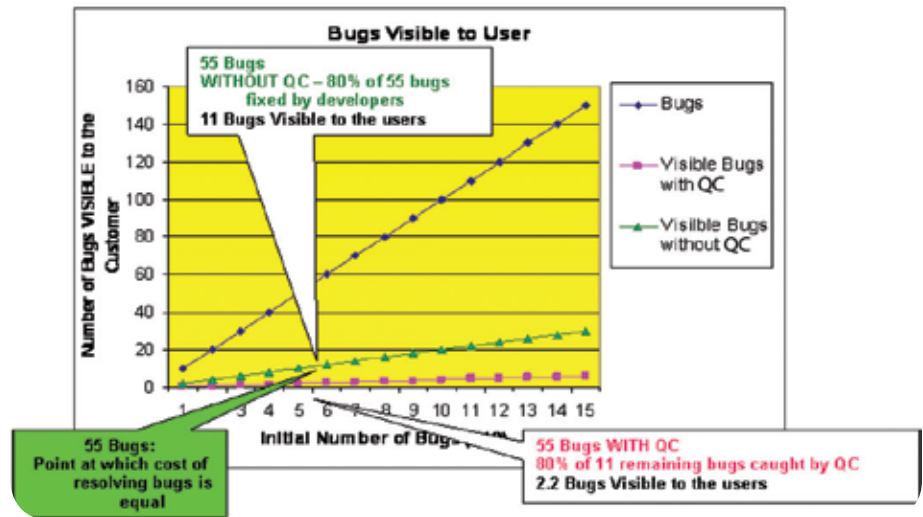


Figure 4.

The visibility curves tell a different story. At the 55-bug data point, without QC, only 80% of these bugs will be resolved—the user will see 11 bugs. With a QC resource added, at that same point, 80% of remaining 11 bugs will be resolved—letting only 2.2 bugs reach the user.

This difference, 11 bugs down to 2.2, can make a phenomenal difference in positive perception from the users towards the IT department.

I used the 80% mark here to clearly make a point. This percentage, for any real life modeling, should be higher. No matter what the percentage is however, the 1-10-100 rule will still show a clear cost and improved user perception for the IT departments that have formal quality processes.

Being consistently reliable when delivering results means an IT department will:

- be trusted to produce reliable content,
- experience fewer service interruptions for emergency fixes,
- command premium budget dollars for salaries and equipment—it will be perceived to be money well spent,
- and get stronger business buy-in when requesting investments in new technology or new staff.



In conclusion

IT is typically a cost center. Understanding that software quality as well as software costs impact the company as a whole is critical to understanding the valuation of quality. Simply put, it goes beyond the boundaries of the IT department.

Bad software quality can adversely affect the entire company in an almost infinite number of ways. Good quality, on the other hand, not only costs less, it also enhances the confidence, trust, and positive perception the corporation can have towards its IT department. Companies boasting such quality IT services will also typically have a bolder attitude towards technology, more open to evaluating new software products ahead of their competitors. These are no small benefits!

If you are wondering if your IT department could benefit from a formal QC process, look at your bug track. Look at your bug fixing costs and apply the 1-10-100 rule using a bug resolution percentage that would be representative of how your developers perform. Use the model provided with this article and see where you could gain both savings and reliability. Ask yourself: What would your QC/QA-driven savings be like? Could your bug visibility curve be pushed down?

About the Author

Thibault Dambrine works for Shell Canada Limited as a senior systems analyst. He holds the ITIL Foundations as well as the Release and Control Practitioner's Certificates. His past articles can be found at www.tylogix.com.

LUG Conferences

Wisconsin Midrange Computer Professional Association (WMCPA)



23 Annual Spring Technical Conference

April 9-10, 2008

Geneva Resort, Lake Geneva, WI

Northeast IBM User Group 18th Annual Conference



www.neugc.org

April 14-16, 2008

Toronto Users Group for System i TEC 2008



www.tug.ca/tec

April 22-24, 2008

Richmond Hill, ON, Canada

Southeast Michigan iSeries Users Group

MITEC – Michigan iSeries Technical Education Conference



www.semiug.org

June, 2008

Southeast Michigan

OCEAN User Group OCEAN – 15th annual “Catch the Wave” Technical Conference & Vendor Solution Expo



www.ocean400.org

July, 2008 Irvine, CA



Even More Reasons to Attend the 2008 COMMON Annual Meeting and Exposition

By Manzoor Siddiqui

Judy Orendorff

The COMMON 2008 Annual Meeting and Exposition promises to be bigger than recent conferences, and will deliver on becoming the premier i5/OS education and networking event. The quality of the education and invaluable networking opportunities will still be the driving force for this annual gathering of the COMMON membership and the i5/OS community. You may all have your own individual reasons as to why a COMMON Conference is an event not to be missed, but here are a few to think about.

Top 10 Reasons to Attend:

10) Cost-effective Education

COMMON conferences have been cited as the most cost-effective means to gain in-depth i5/OS education.

9) Direct Access to IBM

Gain first-hand knowledge about the latest i5/OS innovations through direct access to IBM developers and executives.

8) Professional Development

New sessions will be offered that focus on professional development to help you grow professionally and address daily non-technical challenges.

7) Emerging i5/OS trends and technologies

More sessions available on emerging i5/OS trends and technologies that will impact you and your work environment in the near future.

6) Broad Range of Educational Formats

Variety of educational formats to choose from, including pre-conference workshops, sessions, labs, Integrated Seminars, and case studies.

5) Largest i5/OS-related Exposition

The COMMON Exposition is the largest i5/OS-related solutions featuring over 80 exhibitors, giving you a chance to see first-hand demonstration of products and solutions.

4) Gain Knowledge for Immediate Use

The hands-on labs and workshops provide knowledge and education that you can take away and immediately put into practice at your organization.

3) Invaluable Networking Opportunities


Invaluable face-to-face networking opportunities with industry peers and recognized experts within the System i community.

2) More Session Hours and Education Options, Including V6R1

Choose from over 500 educational sessions and hands-on labs, offered in a wide range of topics that include V6R1, and delivered by recognized industry experts.

1) Focus on Education, Networking, and Fun

COMMON's first Annual Conference promises to deliver a great combination of education, networking, and fun.

If you have other reasons to attend the COMMON Annual Meeting and Exposition, then tell us—we want to know from you what you find invaluable. You can e-mail me directly at manzoor_siddiqui@common.org, or find me in Nashville. Learn more about the 2008 Annual Meeting and Exposition at www.common.org/annualmeeting. 



Manzoor Siddiqui is COMMON's Marketing Manager. He can be reached at manzoor_siddiqui@common.org.

Sunday, March 30

7:00 a.m. - 8:00 a.m.

Registration open
(Workshop Attendees Only)

8:00 a.m. - 8:00 p.m.
8:00 a.m. - 3:15 p.m.

Registration open
Pre-conference
Workshops

1:00 p.m. - 3:15 p.m.
12:30 p.m. - 1:15 p.m.
1:15 p.m. - 2:15 p.m.
2:00 p.m. - 3:00 p.m.
3:30 p.m. - 5:30 p.m.
5:30 p.m. - 8:00 p.m.

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First-Timers' Social
Coffee Break in Expo
Opening Session
Welcome Reception
in COMMON Expo
iSocial – Ask the Experts
Night

8:00 p.m. - 10:00 p.m.

Monday, March 31

7:30 a.m. - 5:00 p.m.
8:00 a.m. - 12:15 p.m.
11:30 a.m. - 2:00 p.m.
12:30 p.m. - 1:30 p.m.
2:00 p.m. - 4:45 p.m.
5:00 p.m. - 7:00 p.m.

Registration open
Concurrent Sessions
COMMON Expo open
Attendee Lunch in Expo
Concurrent Sessions
iSocial – All Attendee
Reception in COMMON Expo

Tuesday, April 1

7:30 a.m. - 5:00 p.m.
8:00 a.m. - 12:15 p.m.
11:30 a.m. - 2:00 p.m.
12:30 p.m. - 1:30 p.m.
2:00 p.m. - 4:45 p.m.
5:00 p.m. - 6:15 p.m.
6:30 p.m. - 9:30 p.m.

Registration open
Concurrent Sessions
COMMON Expo open
Attendee Lunch in Expo
Concurrent Sessions
The Comfort Zone
iSocial – Fun Night

Wednesday, April 2

7:30 a.m. - 5:00 p.m.
8:00 a.m. - 6:15 p.m.
12:15 p.m. - 1:45 p.m.
6:30 p.m. - 7:45 p.m.
7:45 p.m. - 10:00 p.m.

Registration open
Concurrent Sessions
Special Interest Group (SIG)
Luncheon
Meeting of the
Members (MoM)
iSocial – Recognition Night

Thursday, April 3

7:30 a.m. - 3:00 p.m.
8:00 a.m. - 4:45 p.m.
5:30 p.m. - 8:30 p.m.

Registration open
Concurrent sessions
iSocial – Main Event

HMC — You Should Upgrade Yours to Version 7.3

Part II

By Pete Massiello



[In Part I of this we examined dependencies between the HMC and the FSP, as well as how to check the level of Server firmware on the FSP. In Part II we will examine how to check your HMC's level, doing the actual Upgrade to V7R3.1, and how to connect remotely via a browser.]

So far, we have discussed terminology and finding the release levels of the FSP and applying a Service Pack, yet the topic was supposed to be HMC. Well just as with any type of upgrade you do, the planning is the most important part of the upgrade.

Therefore, it was important that we first determined the level of the FSP firmware, and whether or not that level of firmware would communicate with both the current level of HMC code, as well as our anticipated level of HMC code, V7R3.

When it comes to upgrading the HMC, you can do the upgrade via Corrective Service Packs or Recovery CDs (which are actually bootable DVDs). Not all upgrades can be done via a Corrective Service Pack, for example you can't apply Corrective Service Packs to version 6.1 and get to V7.3. You **must** use the Recovery CDs and actually install a new version of the HMC software. You will order these Recovery CDs as you would any other software, either through your business partner or via IBM.

The Corrective Service Packs can be downloaded from a remote system via

FTP to the HMC, or installed from a CD. When doing Corrective Service Packs, I prefer to go to the HMC website and download the CD images, and then burn the .iso images directly to CDs. This is the way that I have put PTFs onto the HMC for all previous releases, as well as applying service pack 1 to the HMC after upgrading to V7R3.

The HMC is completely independent from the managed system (i5). The i5 and all partitions can remain active while maintenance is performed on the HMC, allowing you to easily keep your HMC at the latest maintenance level. If you are using the HMC as your console, you will lose your console while you reboot your HMC. You can just restart the consoles when the HMC comes back up, but it's just a note to be aware of. The HMC software level has to be maintained at the same level as managed system firmware, with periodic Service Packs, individual PTFs, or release upgrades. The HMC firmware is packaged as a full Recovery CD set or as a Corrective Service pack/fix image. The HMC recovery CDs are bootable images and can be used to perform a complete recovery of the HMC (scratch install) or an update to an existing HMC version. You should always have the last set of HMC Recovery CDs and your latest Critical Console Data Save to reconstruct your HMC in case of a disaster. More on Critical Console Data later if you are not familiar with that.

Before we upgrade our HMC to V7R3, we need to make sure we are at HMC V6R1.2. The way to check our HMC code level, is on the left-hand panel: expand Licensed Internal Code Maintenance and then select HMC Code Update. The Right-hand panel will now display the HMC version and release of the software running on the

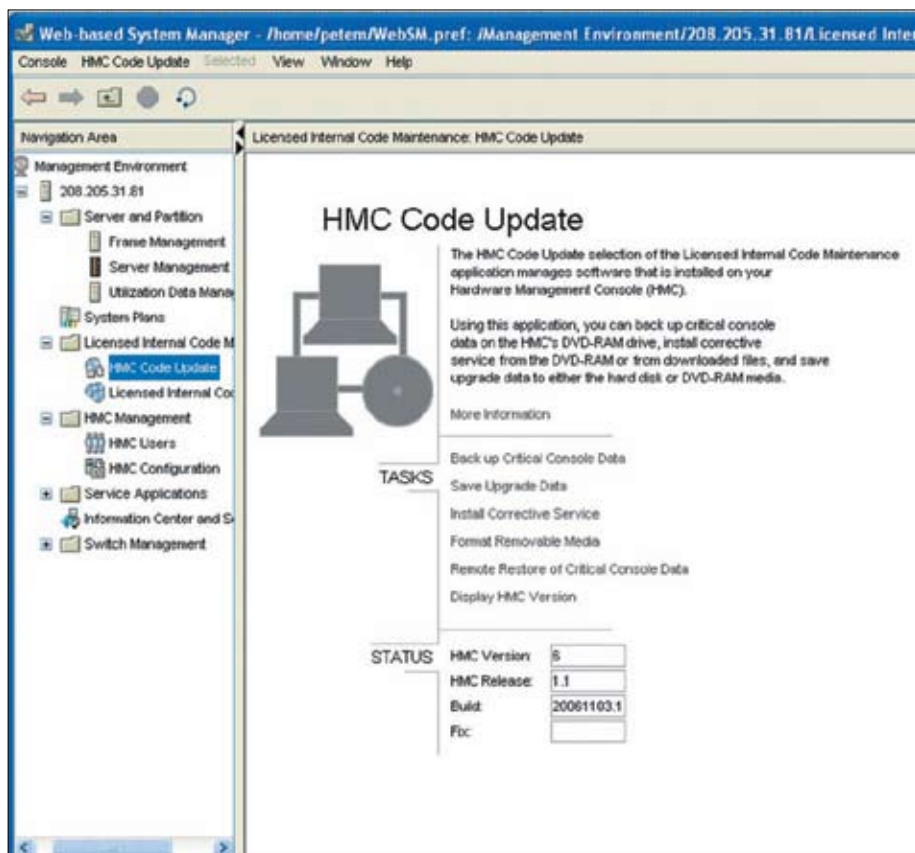


Figure 4. Display of current HMC version and release

HMC, in the status area. If you are on V6R1.2, then you are fine to upgrade to V7.3. If not, you need to insure that you upgrade the HMC to a version that is compatible with your current level of the FSP. As you can see in **Figure 4**, we are not on V6R1.2, so we would need to apply Corrective Service first to get us to V6R1.2. Remember, before upgrading you must make sure that your level of FSP Firmware and the HMC level will be able to communicate between each other. You might also need to go back and forth upgrading the FSP and the HMC to bring them up to the right release in step as we make our way to V7R3.

Now let's assume that we are running V6R1.2 on our HMC, our FSP firmware is 01_SF240_299 or higher (at the time of this writing 01_SF240_320 would be the recommended firmware). We need to think about a backup before we do our upgrade. There are two types of backups on the HMC: saving the Upgrade Data and saving the Critical Console Data. In order to do a backup of the HMC, you must be a member of one of the

following roles: Super administrator, Operator, or Service representative. If you use HSCROOT as the Userid to sign onto your HMC, you will be a member of Super Administrator and have the required authorities. Just as a side note, I sure do hope you have created a few other Userids, but that is a whole separate topic on HMC management.

You should normally be doing a backup of the Critical Console Data. I usually schedule this to run once a week on my HMC scheduler, and then each week just swap between a few DVDs that we use for this backup. This will backup the User-ids, User Preferences, HMC Configuration files, HMC log files, and all of the HMC updates that have been added through installation of Corrective Service.

Right before—and **only** right before—an upgrade, you want to do a backup of the Upgrade Data. The Upgrade data can be saved to a designated special disk partition on the HMC, which is the default for this type of backup, or alternatively to external

DVD media. I recommend that you do both. Backing up of your Upgrade Data allows you to restore all of your settings after your upgrade. I have been burned on earlier HMC upgrades, and I can't say it enough, it will only take about 2 minutes. **Make sure you backup your Upgrade Data to external DVD media before you start.**

If you have never backed up to your DVD, don't worry—it's easy: Just put your blank DVD-RAM media into the DVD Drive on the HMC, and on the left panel expand Licensed Internal Code Maintenance, select HMC Code Update, and then on the right-hand panel select Format Removable Media. You can put both backups on the same media, but I prefer to keep mine separate, so I would format another DVD-RAM at this point for my Upgrade Data. When that completes normally, from the same panel select Save Upgrade Data. Backup that Upgrade Data to the DVD, which will also back it up to the special HMC disk partition. When that completes successfully, we are ready to upgrade. ➤

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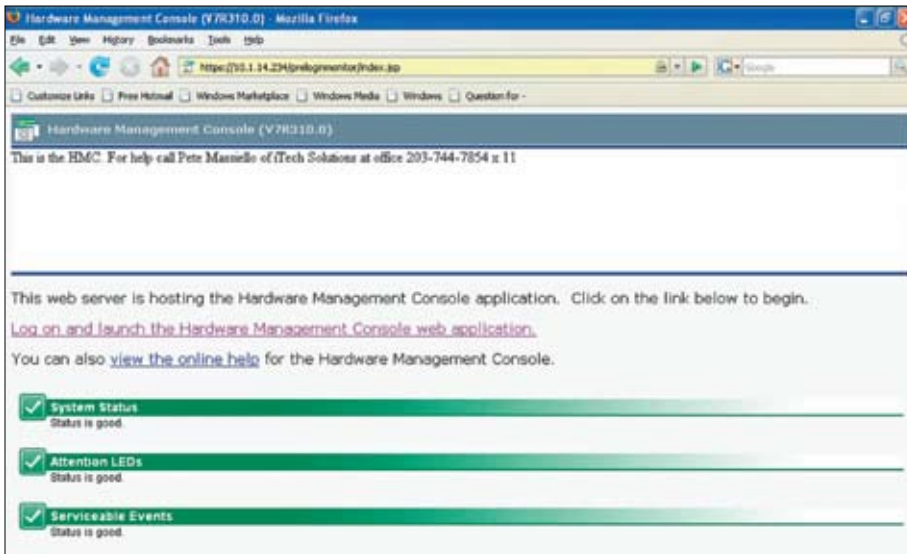


Figure 5. HMC Welcome screen

Upgrade Steps

1. Remove the DVD Media from the DVD drive to which we just wrote our Upgrade Data, and replace it with Disk 1 of the V7.3 Recovery media. (If you are using any 5250 console sessions,

you should end them now.) Then, close the HMC application by selecting the Console menu option from the top of the screen on the menu bar, and then Exit. The HMC will display an option box: select reboot. This will shutdown the HMC and start the upgrade process.

2. The HMC will start to read the media in the DVD-RAM drive and the upgrade Wizard window will appear.

3. Select Upgrade, and then click Next.

4. Select Upgrade from media, and then click Next.

5. Click Finish to start the Upgrade process. It will take about 20 minutes to read the first DVD, and then the message below will appear on the console and the DVD Drive will open. Remove the DVD from the DVD Drive, and place the second DVD (Disk 2 of the V7.3 Recovery media) into the DVD Drive.

1 – Install additional software from media.

2 – Finish the installation at a later date.

Please enter your selection.

6. Select Option 1 and press Enter. Be careful, because the HMC keyboard is very sensitive, and sometimes you will get additional “Enters” when you only hit enter once and expected just one. The following prompt is displayed:

Please insert the media into the drive and press Enter.

7. The HMC Wizard will complete the upgrade. At that point, you can remove the second DVD from the drive, and replace it with the backup of the Upgrade Data that you wrote just prior to starting the upgrade. The HMC restores the data backed up by the Save Upgrade Data task, and then completes the booting process. Remove the DVD and allow the HMC to boot itself.

We have now completed the upgrade, and we can sign onto the HMC. You will be presented with the HMC Welcome screen (Figure 5) and you can select “Log on and launch the Hardware Management Console web application” from this menu. This will then provide us with our new HMC GUI. See Figure 6. This GUI alone is worth upgrading for, since it is very easy and intuitive to use. I would hope that the rest of IBM’s tools in the future would have the same look and feel as this does. I think the best part of the HMC is that now you can connect remotely by entering from any browser <https://hmcaddress>, and you will have the same interface as if you were attached to the HMC locally. You must have your HMC Port ETH1 connected to your corporate

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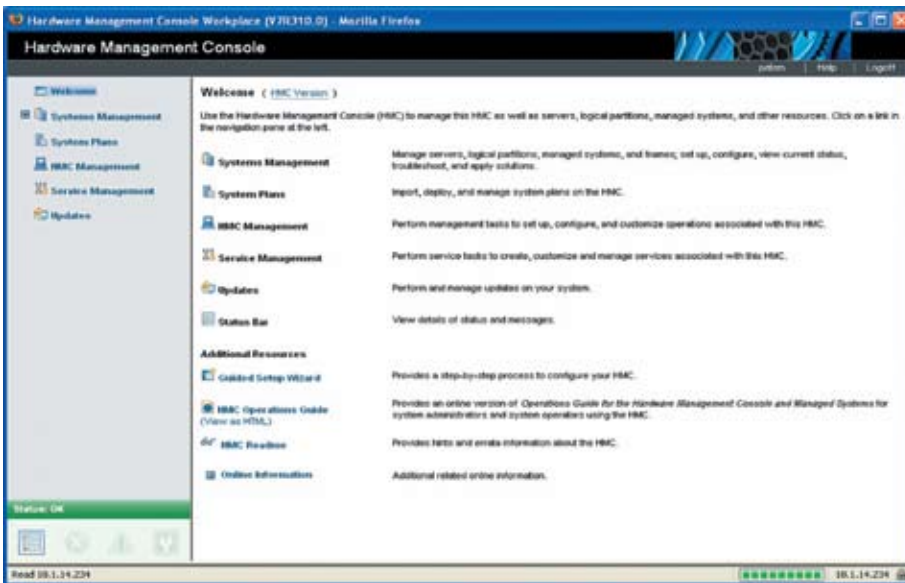



Figure 6. The new HMC GUI

network and configured for this to work. Remember, you need to enter https and not just http. For those people who used WebSM with the previous version of the HMC, you will be delighted that you can get rid of it. This new browser interface is fast, quick, and you do not

need anything located on your desktop. You can see below, all I did was start my Firefox browser (Internet Explorer works as well), enter the address of my HMC, and my connection to my HMC is there. Just as if I was sitting in the computer room. We have upgraded all of our customers

to this version of the HMC, and they all love the interface of the new HMC. After upgrading to this new version of the HMC, don't forget that there is a Corrective Service pack that needs to be installed. It's called Service Pack 1, and we have installed this on all of our HMCs and our customer's HMCs. 

About the Author

Pete Massiello has been working with the AS/400, iSeries, i5 since 1989, focusing on systems management and technical support. He has held numerous technical positions throughout his career. He is the President of iTech Solutions Group, an IBM Advanced Business Partner delivering solutions and services to System i shops throughout the US. He is a member of IBM's certification test writing team, an IBM eServer Certified Systems Expert with certifications in iSeries Design, Administration, Implementation, LPAR, and HMC management. Pete has a BS in Computer Science from Hofstra University, and an MBA from the University of New Haven. He is President of the Fairfield CT AS/400 User Group (FASUG), a past member of the COMMON Board of Directors, and a frequent speaker at user groups.

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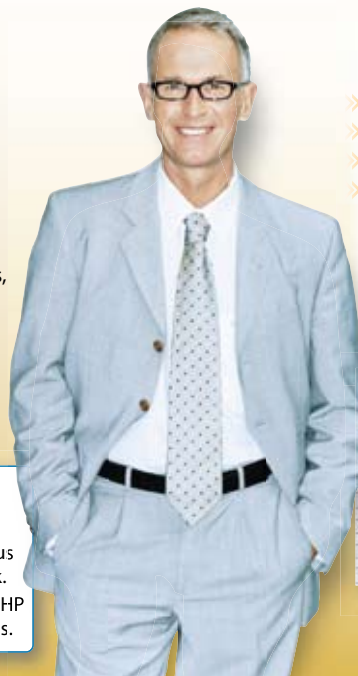
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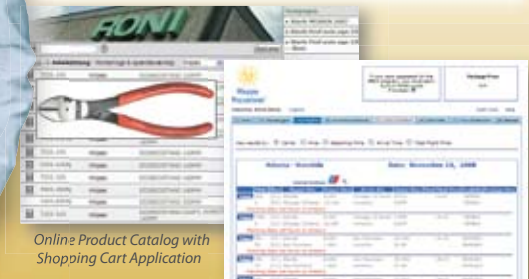
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Try the WebSmart advantage and Develop Robust PHP or ILE CGI Web Applications Faster & Easier

Destination: COMMON Annual Meeting and Exposition

By Gloria Seltzer

Did you know that guests of attendees are welcome at COMMON conferences under a special program known as the “COMMON Guest Program?” I have been taking advantage of this program for many years and I think it’s great! The Guest Pass is available for only \$175, and it enables me to attend the Opening Session, all iSocial events throughout the week, including the iSocial Main Event on Thursday evening, and the COMMON Expo.

Love at First Sight

My husband **Léo Lefebvre** went to his first COMMON conference in Toronto in 1989 and fell in love. COMMON is Leo’s mission and passion, his pride and joy. He has been going to COMMON ever since and always brings me along. My first COMMON conference was in Cincinnati in 1990. To him, I am like the American Express card. (He never leaves home without me!)

Out of his love for COMMON, grew his love for one of the local users groups: TUG (Toronto Users Group for System i.) He has been involved with TUG since 1989 and has served as its President more than once.

Land of the Free

COMMON is a great destination for an inexpensive vacation. With Léo’s airfare and accommodation paid by his company MBL3 (as a corporate expense), and some food paid by the sponsors of the conference and the expo, my most significant out-of-pocket cost is my own airfare, which I pay by air miles accumulated from our trips to the Far East. Over the years, I have visited many tourist destinations which hosted COMMON conferences, including Boston, Denver, Las Vegas, Los Angeles, Miami, New Orleans, San Antonio, San Diego, San Francisco, and was never disappointed.

Live It Up

I have also met many interesting people with interesting jobs and hobbies through the COMMON Guest Program. I remember **Joyce Naylor** hosting the Guest Program, as well as recruiting volunteers for the Book Store in the early nineties. She put together a COMMON cook book and a poem about COMMON wives who endure lonely days and nights without their husbands who are hard at work learning or volunteering at the conferences. Things have changed a lot since then, as the independent and adventurous amongst us take sight seeing trips, and shop till we drop.

Learn from the Masters

I have attended sessions of award-winning speakers, including **Bob Tipton**, **Randall Munson**, and **Trevor Perry**. They not only taught me how to live and work, they also taught me how to have fun doing both. I enjoyed **Jim Sloan’s** Portrait of an Artist including **Michelangelo** and **Van Gogh**. I was repeatedly enchanted by their artistic world of color, beauty, and imagination.

Home of the Brave

Now that Léo is a director of COMMON, we go to the Annual Conference and the Fall Focus each year, as well as to Chicago twice a year for COMMON Board meetings. We always go one day ahead of the meetings so we can enjoy the city. I’ve grown to



Vaughn Dragland

Gloria Seltzer in Miami Beach


love Chicago the Windy City: its cleanliness, art, culture, attractions, and restaurants. Chicago looks like Toronto and feels like home. That’s the way it should be, for Chicago is the home office of COMMON, where the dedicated and fun loving HQ staff work under the leadership of the Board: to ensure the success of COMMON, to make COMMON relevant for its members, and to boldly go where COMMON has never gone before.

Rules of the Road

If you plan to purchase a COMMON Guest pass, please review the Guest Participation Policy below:

- To attend, a “Guest” must be registered as a guest of a fully paid attendee.
- Registered Guests must be 12 years of age or older.
- COMMON welcomes Guests to attend the conferences for a set fee and will provide a designated Guest hospitality area for them.
- Guests may attend sessions where their host attendee is a presenter.
- Guests may attend the COMMON Expo, Opening Session, and iSocial events.
- Attendance at any other session would require the specific approval of the Guest Program Coordinator in advance of a session, on a session-by-session basis.
- Guests may only submit requirements to general committees, i.e. non-projects.
- Guests are encouraged to participate in general volunteer activities, with the exception of Course of Study-specific requirements.

Hand in Hand

Unlike many attendees who miss their spouses while at conferences and meetings, Léo is extraordinary to share his life between his two loves. COMMON and I are truly blessed and we have cause for thanks. Quoting from COMMON President **Randy Dufault**: “Gloria is a fixture at COMMON. When I see Gloria, I know Léo is not far away.” 

About the Author

Gloria Seltzer holds Bachelor of Science and Master of Business Administration degrees from McGill University in Montreal, and a Certified Management Accountant designation. She has worked in IT for over 30 years, as a Business Analyst and a Project Manager. She can be reached at gloria.seltzer@bmo.com.

The Five Steps to System i High Availability

By Bill Hammond

What is true high availability when it comes to computer systems? Is it 95%? Is it 99%? Is it 99.9%?

The answer would seem to depend on your requirements. For a solitary PC user, 95% availability might be adequate; for a company with less than mission-critical IT systems—e-mail servers, for instance—99% might be just right.

But for some companies, 99% or even 99.9% is not sufficient. They need close to 100% system availability—what is generally referred to as the Holy Grail of high availability, or the five nines. This level of availability translates to system downtime of no more than 5.26 minutes a year.

Any organization using IBM® System i™ has come to accept very high levels of uptime as part and parcel of the scenery: after all, the System i (formerly the AS/400™) was engineered from Day One in 1987 to provide among the highest levels of reliability and availability in the industry.

But even those levels are not high enough for some customers, and they need the ability to switch seamlessly and with virtually no disruption from their production system to a backup system. Such a switch is typically needed to avoid planned downtime, or is necessary due to an unexpected outage or emergency.

This approach affords maximum benefit as it eliminates costly, repetitious planned downtime, saves money and enhances profitability, improves productivity, supports revenue growth, and minimizes business risks from unplanned downtime due to hardware failures, human errors, or disasters.

There are five secrets to being truly switch-ready:

- A high-speed, bullet-proof apply process tightly integrated with IBM's remote journaling provides assurance your secondary copies are always up-to-date.
- Powerful audits to know the systems are in synch and you can switch any time you need to, with total confidence, year in and year out. For example, if you change something in your IT environment and forget to proactively tell the HA software, most solutions will not automatically notice the change and it may become a serious issue in the future. Switch time is the wrong time to discover a problem. Consequently, you should look for an HA solution that has an extensive array of continuous, built-in auditing features.
- Autonomics to self-heal and self-monitor the high-availability environment. In high availability,


autonomics offers significant time savings and productivity gains. It means automated, smart detection and correction of issues across the System i source and target environment. High-availability autonomics should be designed to deliver increased responsiveness by adapting dynamically to changing environments.

Autonomics should provide greater business resiliency by discovering, diagnosing, and acting to prevent disruptions. Above all, autonomics capabilities should save you significant effort and detail work. If an HA solution includes these technologies, it should minimize administrative tasks and manual intervention for you or IT staff to such a degree that it requires a simple, once-a-day check of the status screen or a status e-mail/page.

- Automation to mask complexity with simplicity. Automation within

a high-availability solution should focus on making it as easy as possible to perform switches and integrate high availability into operations, such as data backups via tape. In other words, the job of automation is to enable complete simplicity.

- Easy administration: just 10 minutes a day, with minimal resources. The key to “easy-to-use” lies in an interface that matches your requirements but takes little time to understand or use. Some System i professionals have many years' experience and prefer to use the 5250 “green screen” interface. Others have more experience with point-and-click GUI systems. A high-availability solution should not make either user choose. High-availability solutions that are truly easy to use will accommodate user preferences. In addition, one screen should be all you need. All of the complexity of the technology should happen behind the scenes. This means that it should only require one screen to monitor replication, journaling, auditing, error resolution, and other status information.

Bottom line: If you're thinking of implementing System i and want the benefits of an always switch-ready environment as well as the assurance that it will continue to work time after time, the five truths of high availability will help you achieve greater efficiencies and low TCO. Arm yourself with inside information and get the facts about next-generation technologies. 



IBM® System i™

About the author

Bill Hammond directs Vision Solutions' product strategy for information availability software solutions. Hammond joined Vision Solutions in 2003 with over 15 years of experience in product marketing, product management and product development roles in the technology industry. At Vision Solutions, Hammond is responsible for driving product roadmaps, product positioning and messaging, competitive analysis, and marketplace intelligence for Vision Solutions' high availability, data protection and recovery and data integration solutions.

System i Academic Initiative Goes to South Africa

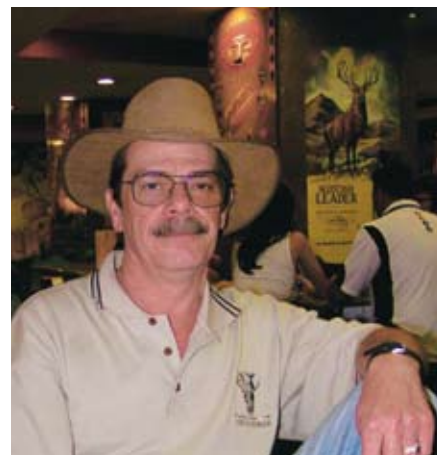
By Jim Buck

The phone rang one afternoon while I was preparing for my evening EGL (Enterprise Generation Language) class. Linda Grigoleit, Program Director for the IBM System i Academic Initiative program, was on the phone. She said, "Hi, Jim! How would you like to go to Johannesburg?" My mind was deep in EGL. I replied, "What state is it in?" With a laugh, she said, "Johannesburg is in South Africa. I thought you knew that!" That is how it started—one of the most fascinating experiences of my life!

IBM needed someone to go to Johannesburg in short order to teach RPG IV for a few weeks and possibly meet with college educators as well. Linda knew that Bryan Meyers and I had recently completed the fourth edition of the *Programming in RPG IV – 29th Street Press* book. She also was aware that I was an advocate of the WDS*c* product and that I taught WDS*c*, and the latest RPG techniques, in my classes at Gateway Technical College (www.gtc.edu) in Kenosha, WI. In fact I had worked with Linda to teach this at the Academic Initiative Summer School in Rochester last summer to fellow professors.

IBM asked me to teach the Intermediate RPG class the first week and Advanced RPG class the second week to a number of IBM customers in South Africa. I say South Africa instead of Johannesburg because students were also coming from Capetown, South Africa, and the country of Botswana. At first I was apprehensive about the trip. I had never taught these classes before, and time was limited for me to acquaint myself with the material. Once I received the materials, every moment not dedicated to my regular classes at the college was dedicated to familiarizing myself with the "Joburg" class materials. I am probably the only person ever to review RPG classes while flying over the Atlantic and Africa.

Reading the materials for the two RPG classes, I noticed that even though WebSphere Development Studio Client (WDS*c*) was not used in the intermediate class, it was suggested that students take a WDS*c* class before the advanced class. I decided to spend the first day of each class acquainting the students with WDS*c* and Code Designer, and then reinforce the use of the IDEs throughout the week. Most of the students had heard of WDS*c* but I



Jim Buck in South Africa

was surprised that not one of them had ever used Code Designer. Do you know that some people in this world still use RLU? Once they learned how easy it was to design screens and print files in Code Designer, the students swore they would never use RLU again. At first intimidated by WDS*c*, by the end of the week most of the students felt that there was good reason to start using WDS*c*.

My students were all professional programmers and their interest focused on the new RPG. They wanted to learn about procedures, subprocedures, and service programs. Their questions focused on the advantages of the new techniques. All of the students were still coding in fixed format. I asked that they code all of the labs in free format and they were surprised at how easy it was to pick up. One of the things that stood out was that most of the students were early for class and wanted to stay late.

The last day of the advanced class had a section on CGI & WebFacing and this was the high point of the week for many of them. They could not believe how easy it was to develop a web application using their current skills. I explained the Developers Road Map, the importance of updating their skills, and RPG code to take advantage of these new tools. But all the students commented on the difficulty of getting training in South Africa in these new technologies.

The last Friday I was in Johannesburg, Craig Zieseniss (IBM System i – Systems & Technology Group) asked if I would go with him to meet with one of his largest customers. I was under the impression that we would be meeting with one manager for a short conversation.



IBM Johannesburg

Imagine my surprise when we entered a meeting room with approximately twelve people. They were interested in two areas: what is IBM planning on doing with System i & RPG and how can they get entry level people on the platform. I quickly stated that I don't work for IBM and I can't speak for IBM's plans and that I teach at a college that teaches System i curriculum. One of the people in the room stated that they knew that I was the president of the Wisconsin Midrange Computer Association (www.wmcpa.org) and I should know what companies are doing in the US. For the next two hours, I fielded questions like what is the future of the System i and RPG (I referred them to the IBM experts such as **George Farr** in Toronto) , what types of training are available in the US and what can be done to interest young people in the platform. I suggested that they help IBM develop relationships with colleges and universities in South Africa, and they all agreed what a good idea that was.

System i curriculum is not currently taught in colleges in South Africa, but



IBM Johannesburg

IBM is working on changing that. Simultaneous to my trip, the Academic Initiative program was planning for **Cally Beck**, System i Academic Initiative Program Manager for Europe and South Africa, to visit and meet with several educational institutions in South Africa early in 2008. As an instructor actively involved with this initiative, I'll do anything I can to assist her! Judging from my experiences in Johannesburg, there are some great opportunities for colleges to teach students about the System i; more importantly that the opportunities for students that know this platform and especially RPG are unlimited.

I did not get much time to see much of Johannesburg or South Africa. The people were very friendly and the food was great... what more could a person ask for? And the IBMers that I met in Johannesburg were great. I want to especially thank **Jacqi de Bruijn** (Learning Delivery Manager SA) and **Kevin Grimwood** for their support while I was in Johannesburg. I hope to see them again.



About the Author

Jim Buck has held a career in IT for more than 25 years, primarily in the manufacturing and healthcare industries, and is the recipient of the 2007 IBM System i Innovation – Education Excellence Award. He is currently the programmer/analyst instructor at Gateway Technical College in Kenosha, Wisconsin, and 2004 – 2007 president of the Wisconsin Midrange Computer Professional Association (WMCPA). Jim has been instrumental in developing evening classes and one-day seminars in IBM's latest programming software, creating an advisory board with recruited local professionals to help design and update the System i curriculum at Gateway, and opening networking opportunities for students. Jim can be reached at jbuck1@wi.rr.com.





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The Cream Always Rises to the Top

Challenge Dairy Spreads Company Growth with Managed EDI Services

By Stephen Rosen

Challenge Dairy knew it was time for a change. Their EDI system was a bottleneck to company growth. An antiquated technology was keeping the company from obtaining its goals. The company's IT leaders knew they had to change their processes, and they had to do it quickly.

A legacy EDI translator was proving unreliable. Data was frequently lost, and there was no error notification system. This caused Challenge Dairy to miss orders, not transmit invoices reliably, and incur occasional charge-backs and penalties.

In addition to potentially damaging existing relationships, the premium butter supplier was also threatened with missing out on new revenue opportunities. New customers, sold on the quality of service and product Challenge guarantees, often

waited weeks or even months to begin active trading. "It would take several months of fiddling around to get a new customer up and running," reported Alan Maag, CFO of Challenge Dairy. "We knew that if we couldn't meet our customer's service requirements, we could lose sales. IT did not want to be the obstacle to achieving business goals."

The legacy EDI system needed constant manual intervention. It could not be customized or provide integration to other applications. It required one full-time-equivalent (FTE) staff person just to manage daily activities. End user departments did not have access to transaction and order data. Documents would get lost, and connectivity with customers was not readily verifiable by users due to inaccessibility to acknowledgements and transaction history.



Challenge Dairy Products, Inc. is a cooperative association responsible for the marketing and distribution of butter products from 700 large, family-owned dairies. Headquartered in Dublin, CA, Challenge is the most recognized, largest selling brand of premium butter in the Western United States. Challenge Butter is often specified by the leading chefs at gourmet restaurants and hotels. The company also sells to retailers, manufacturers, restaurants and bakeries, and has 23 EDI trading partners including Wal-Mart, Tyson, Safeway, Albertson's, Costco, and Kroger/Ralph.

Maag approached his challenge by asking his ERP vendors for a recommendation. "Besides certain functionality, and integration with our ERP system, we needed the fastest conversion possible," said Maag.

Maag identified a vendor that was able to provide the right software solution and a rapid implementation through its Managed Services program. With the EDI and business integration software installed on Challenge Dairy's System i 520 server, the day-to-day management of EDI operations is handled remotely by the vendor's business process experts. This arrangement enabled a quick launch because it does not involve the time for user training, deployments, integration, or the errors associated with a learning curve. The implementation and roll-out met or exceeded every deadline Challenge set. And none of the Challenge Dairy's limited IT team is involved with the tasks required to manage and run a robust and agile EDI initiative.

Another substantial benefit of Managed EDI Services, as opposed to outsourcing, or hosted services, is that the





implemen-
tation, data,
and processes
are on Chal-
lenge Dairy's
own server.

Their IT de-
partment can easily take over manage-
ment at any time. "We like the fact that
the software is behind our firewall," stated
Maag. "And we also like the efficiency with
which we're already running."

Challenge Dairy is now running on a
regular, near-perfect schedule. On-
boarding new trading partners takes a few
hours for full implementation and testing,
as opposed to the long cycle they previ-
ously had. Resolving errors and changing
EDI documents is simple and immediate,
and does not cause delays or
affect other partners or
processes.



"There's been a big
improvement in order
acknowledgements," said
Maag. "And now we can
monitor activity, and easily
respond to customer's
changes and requests.
Our Credit Department
can do their own investi-
gations with the 'User View,'
and can even resend invoices."

Maag and his team are clearly doing
their part to help grow the company.
Immediately upon installation of the
new solution, they were able to on-board
a number of new partners and repair
damaged relationships with customers.
Through this effort Challenge Dairy
realized a substantial sales and revenue
infusion. In addition, they are saving
on charge-backs and penalties because
automation has enabled accuracy, and
their ongoing relationships with partners
has improved. "We were risking the trust
of our customers," said Maag. "We knew
we had to change ... to respond faster
to customers' changes and requests.



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is much higher."

Challenge Dairy also
replaced their legacy
VAN with an IP Portal,
an economical, Internet-
based alternative that al-
lows them to connect to
trading partners no matter

which connectivity or security
method they prefer. This enables secure
transaction exchange and protected
communication via the Internet using
AS2 protocol. "We consolidated our
B2B vendors from four to one when
choosing this last piece of our solution.
We sought to minimize integration is-
sues and wanted a strong business part-
ner to help raise our capabilities. With
the confidence and flexibility we've
gained, we will no longer need to pro-
cess EDI transactions through food bro-
kers," explained Maag. "Now we can go
direct to all customers and we're look-
ing forward to pushing B2B initiatives
through our supply chain as well."



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The provider's Managed Services staff is in constant communication with Challenge Dairy via VPN client and email. The remote staff's responsibilities include partner provisioning, document setup and customization, reporting, administration, issue resolution, problem

detection, and more. Ultimately, Challenge Dairy will take over these tasks, once they are able to allocate the resources. The hand-off will be simple since all systems, applications, and data are located on the Challenge Dairy iSeries server.

The next phase of the project is to further integrate EXTOL Integrator, Ross Computer Systems ERP, and other applications. Transactions will flow from Integrator into Ross for use by customer service, accounting, and shipping, just to name a few departments. Accuracy and efficiency will be dramatically increased, eliminating re-keying, decreasing order fulfillment errors, and greatly reducing the amount of time and resource needed to rectify incorrect shipments.

High standards for service has been at the foundation of the company from its beginnings with only three employees, a wagon, and a rented horse in 1911, to the multi-million dollar provider of premium butter to nearly half the United States. That commitment to quality and service is now supported by their electronic commerce program. They have the IT agility to rapidly respond to the demands of new and existing customers, as well as changing market requirements and business opportunities. 

About the Author

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