Accelerating Smarter Computing with IBM zEnterprise System

Every four days we generate more information than all the written works in history. This enormous amount of data contains exciting insights for new innovations but it also raises difficult questions: Can our IT systems handle this explosive growth? How will we power, secure and manage these systems while maintaining IT costs?

Reaching the opportunities of a Smarter Planet takes Smarter Computing…A holistic approach to IT that's: Designed to harness big data for better decision-making and outcomes; Tuned to the task for greater productivity and lower costs; And managed in the cloud to develop and deploy new services fast.

The IBM zEnterprise System is a breakthrough platform to help reach these goals and achieve the promise of Smarter Computing. It couples the industry's fastest, densest microprocessor with extremely high network bandwidth, enabling superior business analytics and a huge portfolio of modern applications on z/OS, Java and Linux.

More than a faster, more powerful mainframe, zEnterprise is a revolutionary system that manages System z, Power and System x resources together. As a freedom by design hybrid computing model, zEnterprise allows applications to run where they run best while they're optimized end-to-end for greater efficiency and flexibility.

The zEnterprise System's scalability, virtualization and hybrid computing model also make it an ideal platform for cloud computing, reducing operation costs by up to 70% and cutting license and environmental costs by up to 90%. Leveraging the zEnterprise for infrastructure transformation, clients have achieved superior economics, improved decision-making, and accelerated innovation that together deliver better business outcomes.

With tools, best practices and services to guide your modernization projects, Enterprise Modernization with IBM Rational speeds up workload and service delivery for IBM System z, zEnterprise, IBM Power systems, and distributed platforms. This improved efficiency lowers the cost of innovation and provides greater return on your software assets, skills and infrastructure investments.

Through a holistic and innovative approach to IT, an IBM Enterprise Modernization Solution can help you achieve the goal of Smarter Computing.

To learn more about IBM Enterprise modernization solutions for System z, please view the companion videos in this series.

IBM Smarter Computing
http://www-03.ibm.com/systems/data/flash/smartercomputing/

IBM zEnterprise System
http://www-03.ibm.com/systems/z/

IBM Systems
http://www-03.ibm.com/systems/

The Business Challenge
Companies that can cut costs, reduce complexity and make effective use of existing investments may be better positioned for growth and increased profitability.

IBM Rational Enterprise modernization solutions for System z can leverage your business applications, people, teams and infrastructure, to provide optimum return on your investments…

…and enable you to quickly deliver new products and services to grow market share – attract new customers and retain existing ones….

And the workload power of System z and zEnterprise is ideal for combining mainframe transactions with new technologies like smarter banking.

Rational solutions for System z also help modify and extend mainframe applications to deliver these improvements.

Companies may then combine new services – like account verification, claims processing, fraud detection and payment authorization – into an automated business process for mobile payment systems.

These "integration-ready" components can be reused, and this solution supports Service Oriented Architecture, delivering software as sharable services.

Being built on proven applications, it also saves you money versus building one from scratch.

The end result is System z integration benefits, and creating a loyal base to drive your business into tomorrow.

Explore the following videos to discover how IBM Rational solutions for System z products can help deliver greater return on your software investments.

Solution: IBM Rational Enterprise Modernization
http://www-01.ibm.com/software/rational/solutions/em/

Brochure: Enterprise modernization made simple
ftp://public.dhe.ibm.com/common/ssi/ecm/en/rab14044usen/RAB14044USEN.PDF

Sandbox: Try our latest products in a virtual online environment
http://www.ibm.com/developerworks/downloads/emsandbox_systemz/index.html

Reuse Proven Applications

To improve customer satisfaction, lower employee training costs, and minimize overall business risk, you can modernize existing CICS applications for wider internal use. IBM Host Access Transformation Services, or HATS, provides a means to add a Graphical User Interface to your green-screen CICS and IMS applications, making them faster to learn and easier to use.

HATS also provides Web service interfaces for integrating 3270 screen-based applications with other applications in the enterprise.

Sonja Muhm from Winnebago Industries said … we are using Host Access Transformation Services as a web service and then from there we are using portlet applications to access that web service and it gives our company the modularity to be able to switch out either system and still be able to communicate so as future technologies are derived we can find the best fit for that system for our company.

Now, your company can extend CICS and IMS applications to employees through the Web, through portals, and over mobile devices.

Solution: IBM Rational Host Access Transformation Services
http://www-01.ibm.com/software/awdtools/hats/

Customer Video: Winnebago uses System z as their primary business system and quickly transforms green screens to easy to use graphical interfaces
http://www-01.ibm.com/software/success/cssdb.nsf/CS/SSAO-8DNSVA?OpenDocument&Site=default&cty=en_us

Case Study: Marsh achieves cost-effective Web-enablement of legacy applications with IBM Rational HATS and an IBM Enterprise Linux Server solution
http://www-01.ibm.com/software/success/cssdb.nsf/CS/STRD-7YELN7?OpenDocument&Site=default&cty=en_us

Manage Application Portfolio

In building new enterprise services, you may require both a top-down and a bottom-up understanding of existing mainframe applications to determine the impact of any proposed changes. Rational Application Portfolio Management solutions include three offerings.

Rational Asset Analyzer helps to create a bottom-up enterprise-wide view of your mainframe applications and define interdependent relationships between distributed applications.

The solution also provides insight into dependencies within and among your mainframe and composite applications. It assists IT personnel with maintenance, extension, and reuse of existing mainframe and Web applications in modernization efforts such as Service Oriented Architecture.

Sihab Kolaparambil, from Wipro IT Business said … IBM Rational Asset Analyzer software is a robust and reliable tool that supports portfolio analysis of large applications in a short period of time, delivering accurate reports that give a clear understanding of the application at the business, architecture and program levels.

Rational System Architect creates a top-down analysis for visualizing, analyzing and communicating enterprise architecture and business process analysis throughout your organization

And Rational Focal Point helps support decision-making about developing products and

services with the right content, for the right market, at the right time.

Additionally, IBM Rational offers application security solutions that help protect against the threat of attacks and data breaches. With support for multiple languages including Cobol, AppScan identifies and remediates the root cause of risk from security defects in the source code during the early stages of the application lifecycle.

Solution: IBM Rational Asset Analyzer
http://www-01.ibm.com/software/awdtools/raa/

White paper: Turning strategy into success
https://www14.software.ibm.com/webapp/iwm/web/signup.do?source=swg-rtl-ppmstrategy

Case Study: Rapid impact analysis supports retail company's modernization efforts
http://www-01.ibm.com/software/success/cssdb.nsf/cs/JJAE-8EHRRL?OpenDocument&Site=corp&ref=crdb

Discover and Manage Business Rules

Your business must respond to changing regulations, introduce new products and grow market share, all while reducing cost and risk. But your processes may be managed by multiple systems, where rules are hard-coded or decentralized. Combined with disjointed processes and paper intensive practices, this can have adverse impacts on speed to market, cost reduction, transparency and efficiency.

IBM Rational Asset Analyzer and the IBM WebSphere ILOG Business Rules Management System make rule identification practical by helping companies identify source statements that implement business rules. These rules can then be captured and exported for validation and management, with flexible decision automation for applications and processes.

It helps companies bring agility to the business by empowering people to adapt their rules in their applications across multiple lines of business.

Try Rational Asset Analyzer and the WebSphere ILOG Business Rules Management System for all your business management needs.

Sihab Kolaparambil, from Wipro IT Business said … IBM Rational Asset Analyzer software is a robust and reliable tool that supports portfolio analysis of large applications in a short period of time, delivering accurate reports that give a clear understanding of the application at the business, architecture and program levels.

Solution: IBM Rational Asset Analyzer
http://www-01.ibm.com/software/awdtools/raa/

Solution: IBM WebSphere ILOG BRMS
http://www-01.ibm.com/software/websphere/products/business-rule-management/

Brochure: Business Rule Modernization
ftp://public.dhe.ibm.com/common/ssi/ecm/en/rab14042usen/RAB14042USEN.PDF

Low Cost and Low Risk Migrations

Applications written in outdated languages often require expensive propriety runtime environments and licenses. These applications can become a liability, impeding innovation, agility, and cost of operation. Companies need to preserve application reliability and functionality, but also take advantage of new computing platforms and architectures.

The IBM Rational Migration Extension (RME) family of solutions automates the conversion of applications written in languages such as Software AG Natural/Adabas, CA Gen, CA Ideal/Datacom, RPG and COBOL to EGL, an open business application language developed on Eclipse.

EGL is designed for developing highly portable, cross-platform applications and services that can be deployed across variety of runtime environments including System z.

RME also modernizes green screens into Web 2.0 -ready applications that integrate seamlessly with converted logic.

The result is a solution that enables platform flexibility and reduces costs by saving you from recurring maintenance fees associated with proprietary legacy languages.

And in business, every dollar counts.

An IBM case study from Atos Origin says…The application conversion strategy provided Atos Origin with an excellent competitive advantage, enabling them to offer their customer significant savings, a more usable system, and faster response to future needs. Atos Origin has quantified the savings up to 55 percent in operating costs with a return on investment of less than one year.

Solution: IBM Rational Application Migration Solutions
http://www-01.ibm.com/software/rational/solutions/em/migrations/

Brochure: IBM Rational Application Migration Solutions
ftp://public.dhe.ibm.com/common/ssi/ecm/en/rab14050usen/RAB14050USEN.PDF

Case Study: U.S. city transforms government efficiency with web services
http://www-01.ibm.com/software/success/cssdb.nsf/CS/CCLE-8CLT5D?OpenDocument&Site=corp&cty=en_us

Accelerate Mainframe Development

Businesses can face skills gaps when their veteran IT professionals begin to retire, and find it difficult to attract and train younger developers with little experience in traditional mainframe development tools. Modern development tools can bridge this divide. These tools can improve developer productivity by up to 40% while also reducing training costs. Developers without mainframe skills can build multiplatform applications in a matter of days.

David Oakes from Trustmark National Bank said… Trustmark realized that they needed to

modernize and be able to have a presence on the Web…We also needed to internally be able to provide a way for our Contact Center, our FSRs, the tellers to interact in the browser-based application.

With IBM Rational Developer for System z (RDz) you can rapidly build and deploy rich client interfaces, Web user interfaces, traditional terminal interfaces, and back-end business logic, deployable to CICS, IMS, DB2, Batch, z/OS Unix and WebSphere Application Server transactional environments.

Your skill gaps can now become a thing of the past.

Solution: IBM Rational System z Unit Test feature
http://www-01.ibm.com/software/rational/products/developer/systemz/unittest/

Analyst paper: Full DEV/TEST environment for Mainframe Apps on a PC!
http://ptaknoel.com/wp-content/uploads/2010/11/Developing-mainframe-apps-on-a-PC-Take-4.pdf

White paper: Accelerating delivery of smarter products and services on System z
ftp://public.dhe.ibm.com/common/ssi/ecm/en/zsw03166usen/ZSW03166USEN.PDF

Portable Mainframe Development

Companies running Mainframe applications often struggle to balance the needs of development and test environments in parallel with production systems.

The IBM Rational Developer for System z Unit Test feature, an optional add-on component to RDz, enables application development teams to create a low-cost dedicated System z development and test environment on existing x86 hardware. Companies can now dedicate specific resources to development environments on lower quality service platforms, where reliability and availability are not as critical. This reduces costs by decreasing application development MIPS usage, which can be reallocated to high value production use.

Your developers can now build and test System z applications anywhere, anytime, without impacting operations, freeing up capacity for additional workloads, while reducing line-of-business development costs.

Eric Simone from ClearBlade said… RDz Unit Test gives our developers the ability to have their own z/OS environment to prototype, compile, debug and test while our customers make the necessary changes to their test, QA and production environments…This shortens our time to delivery, shortens our project cycles, makes our customers happy and increases our margins.

Solution: IBM Rational System z Unit Test feature
http://www-01.ibm.com/software/rational/products/developer/systemz/unittest/

Analyst paper: Full DEV/TEST environment for Mainframe Apps on a PC!
http://ptaknoel.com/wp-content/uploads/2010/11/Developing-mainframe-apps-on-a-PC-Take-4.pdf

White paper: Accelerating delivery of smarter products and services on System z

Increase Organization Agility

Applications written in disparate languages and managed by siloed teams can lead to delays when communications break down. For services to work properly, businesses must manage source control, work items and policies, and coordinate geographically distributed project teams.

IBM Rational Team Concert offers a unified multiplatform infrastructure, including support for System z, IBM Power Systems™ and distributed processor-based systems, helping streamline the application development and deployment lifecycle, and raising awareness of what other developers are doing—in real-time. Organizations using Rational Team Concert can see up to a 20 percent decrease in development times.

Bertrand Ave from Caceis said …our teams around the world can collaborate, and we can also develop programs that are increasingly robust in a minimum amount of time, which enables us to meet the pressing needs of our clients, which are to and develop with increasing speed at lower cost.

Rational Team Concert's planning and process engine allows companies to use both agile and formal development processes. And because it co-exists with legacy SCM tools on any platform, implementation can be phased and collaboration benefits can be seen immediately.

Solution: IBM Rational Team Concert for IBM Enterprise Platforms
http://www-01.ibm.com/software/rational/products/rtc/features/enterprise/

Projects: Rational Team Concert http://jazz.net/projects/rational-team-concert/

Case Study: Sodifrance decreases development time by standardizing on IBM Rational for System z
https://www-01.ibm.com/software/success/cssdb.nsf/CS/CCLE-7WRTRN?OpenDocument&Site=software&cty=en_us

Increase Application Performance

Operating on a limited budget may mean wanting a quick, low-risk way to improve performance and scalability of existing IT infrastructure while keeping costs down.

Enhanced IBM Rational Compilers for programming languages like COBOL, PL/I, C and C++ are designed to help you unleash IBM System z architecture and middleware power by updating applications to enable hardware advances and provide a measurable performance boost.

In tests, z/OS XL C/C++ version 1.12 delivered up to a 60% performance improvement on zEnterprise servers;

Enterprise PL/1 version 4.1 delivered up to a 27% performance improvement on zEnterprise;

And XL C/C++ version 11 and XL Fortran version 13 delivered industry leading SPEC® CPU2006 performance.

Leveraging these capabilities maximizes performance, improves productivity, and shortens development cycles, which results in a lower TCO and a higher return on your company's investment.

Gregg Willhoit from DataDirect Technologies said … the Metal C optimization levels are just incredible. We're really impressed, there is no way that any of us assembler programmers can write code as efficient and keep it readable and do it in a reasonable amount of time.

Solution: COBOL Compilers
http://www-01.ibm.com/software/awdtools/cobol/

Solution: PL/I Compilers
http://www-01.ibm.com/software/awdtools/pli/

IBM Compiler Video: Overview of IBM Rational compiler product suite
http://www.youtube.com/watch?v=fv9EjHntQ3A

Modernize Batch Applications

Globalization can mean maintaining 24x7 uptime for online systems and managing increasing data volumes in a diminishing "batch window". It can also mean bringing economies of scale and efficiency of batch processing to globally integrated businesses dominated by "always-on" transaction processing.

IBM's batch modernization products provide consistent capabilities for end-to-end batch management, and deliver agile, efficient and high performance middleware infrastructure that reincorporates savings of batch processing into today's OLTP environment.

Rational offers common tools and processes to complete batch modernization projects more quickly, at a lower cost, by improving communications and coordination, and reducing the need to integrate processes and toolsets, which better positions your company to compete in the future of business.
Solution: Balancing batch and online processing for better business efficiency
http://www-01.ibm.com/software/os/systemz/batch/

Redbook: Batch Modernization on z/OS
http://www.redbooks.ibm.com/abstracts/sg247779.html

Article: Efficient Business Processing With Batch Modernization
http://www.mainframezone.com/it-management/management-insight/efficient-business-processing-with-batch-modernization/P3

How to get started?

Help your company work more efficiently. Utilize a low-risk approach to audition new capabilities and integrated solutions —without disrupting your existing development environment — optimizing the value of assets, skills, teams and infrastructure investments.

Try these solutions today for free in our virtual online environment - Enterprise Modernization Sandboxes for IBM® System z and Power® Systems.

Sign up for free quarterly Web conference sessions on IBM® Rational® Developer for System z® and related IBM enterprise modernization topics, all with complimentary audio dial-in. The conferences feature technical or tech-education topics presented by IBM technical hosts, augmented by business partner and customer presentations.

And IBM Rational Cafés offer a virtual community for engineers and developers in the COBOL, C/C++, EGL and RPG arenas to learn, collaborate, and more. There you'll find technical tips, business news, conference, seminar, Webcast, and event information about Mainframe related topics.

To learn even more about IBM Rational solutions for enterprise modernization, contact your IBM sales representative or IBM Business Partner, or visit us at IBM.com.

Virtual Sandbox: Try our latest products in a virtual online environment
http://www.ibm.com/developerworks/downloads/emsandbox_systemz/index.html

e-kit: IBM System z can do it
https://www14.software.ibm.com/webapp/iwm/web/signup.do?lang=en_US&source=swg-zcdiekit&S_TACT=109A723W

Developer Community: Join C/C++, EGL, COBOL and RPG developer communities
https://www.ibm.com/developerworks/rational/community/cafe/