Infostructure Associates

The New zEnterprise Software Announcements: Delivering User Value-Add Across the Enterprise

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The New zEnterprise Software Announcements: Delivering User Value

IBM's new System z software announcements – a complement to IBM's zEnterprise launch – deliver new value not only to mainframe-dominated data centers, but also to enterprise IT as a whole. The cumulative effect of extensive improvements in multiple software areas is to provide additional performance, scalability, robustness, and security, as well as to improve the integration of the mainframe with the rest of the enterprise architecture. In effect, these software enhancements not only improve the mainframe as a standalone system, but also the power of the rest of the organization's systems, as these systems increasingly are integrated with the mainframe in order to take advantage of the mainframe's increasing strengths.

Specifically, the new System z software spreads advances in mainframe performance and scalability across the data center and the distributed IT architecture. Likewise, the new software increases the organization's ability to achieve energy savings globally, improve security, reduce network complexity, and give users new flexibility in achieving better price/performance in multiplatform enterprise-wide private clouds.

Below, I describe the notable features and user value of enhancements to IBM's solutions in the areas of:
- Business Analytics
- Dynamic Application Infrastructure
- CICS and Problem Determination Tools
- Batch Modernization
- Unified Multi-Development Platform
- Compilers
- ECM
- Collaborative tools
- Linux on System z
- Integrated Service Management

Business Analytics

New IBM software related to business intelligence and business analytics includes first and foremost the Smart Analytics Optimizer appliance. The IBM Smart Analytics Optimizer is based on columnar-database technology, which has been shown to achieve order-of-magnitude or more improvements in some complex queries. Users can integrate Smart Analytics Optimizer's strengths in querying performance in complex queries with IBM Cognos' long experience and prowess in decision support, reporting/dashboarding, and enterprise performance management (EPM), or with other business analytics software. The result should be significant improvements in complex-query and online analytical processing (OLAP) performance.

A faster query optimizer brings with it additional business analytics benefits. Given additional time, a query optimizer can take into account shifts in workload better and use less CPU overhead. Query optimization using Smart Analytics Optimizer can therefore lead to query handling that is more dynamically responsive to changing workloads, and can handle

CPU-bound transactions where much of the data is stored in large-sized main memory better.

In addition, improvements related to business analytics and business intelligence (BI) include IBM DB2 10 for z/OS with its improved query parallelism and the IBM Smart Analytics System 9600 that integrates Cognos, Information Server for ETL (extract, transform, load), a warehouse, and cubing to present a one-stop BI solution. Also, IBM SPSS predictive modeling capabilities allow use of SPSS' long experience in providing sophisticated statistical tools. The new predictive modeling capabilities are particularly effective in areas such as business performance management, where "what if" scenarios performed during closing can allow rapid changes in budgeting to implement a new strategy or adjust existing plans to reflect unexpected events.

Overall, the new business analytics software allows IBM mainframe users to include the latest in BI and analytics trends and technologies, such as "near-real-time" analysis and EPM; allows users to scale to meet user demands for increased querying on larger data stores, nearer real time; and provide a one-stop complete and global business analytics solution.

Dynamic Application Infrastructure

Dynamic, interconnected business processes and highly effective application infrastructures across the entire business are fundamental to most cost-effective business innovation strategies. Moreover, these are not IT pipe dreams: The tools to implement them are available today to any forward-thinking solution or software architect.

zEnterprise is a superior environment for mainframe-focused Dynamic Application Infrastructure middleware that is able to meet quality of service (QoS) requirements by using the platform that provides optimal price/performance for a given workload, transparently to your applications. You can manage changes to non-functional requirements, such as scalability, availability, and security (mandated by changes in business imperatives or business conditions), relatively easily, by migrating applications from one environment to another without modifying the applications. WebSphere middleware provides standardized interfaces to applications while exploiting the strengths of each underlying hardware platform transparently, without custom coding or tuning. Moreover, zEnterprise is particularly suited to "collocation" (that is, having data and application subsystems of your information infrastructure operating within the same z/OS LPAR). With collocated workloads, customers can expect significant gains in solution performance and robustness, and significant decreases in administrative and networking costs, due to simplification of infrastructure.

Additional enhancements to the Dynamic Application Infrastructure engine include the availability of WebSphere ILOG Business Rules for z/OS, which allows companies to quickly and cost effectively deploy new event-driven BRMS (Business Rule Management System) capabilities to change business requirements for mission-critical applications This

solution is built to align with the zEnterprise philosophy of "author once, manage centrally, and execute anywhere".

CICS and Problem Determination Tools

As a long-standing de-facto standard for transaction processing monitors, CICS streams transactions for and supports development of a large proportion of today's large-enterprise run-the-business applications. The new IBM software announcements include three key additions to CICS: CICS Performance Analyzer for z/OS v3.2, the IBM Problem Determination Tools suite,-and the IBM CICS Deployment Assistant for z/OS.

CICS Performance Analyzer for z/OS is a CICS system and application performance reporting and analysis solution built to address the needs of everyone involved in CICS performance analysis, system tuning, and planning capacity for future use, including those who build, manage, and deploy complex mainframe CICS applications. CICS Performance Analyzer for z/OS provides a greater level of detail and flexibility that helps users easily find new ways to improve CICS system performance, lower maintenance costs, and strategically plan IT investments.

IBM Problem Determination Tools is a suite of tools to increase productivity in developing, tuning, and managing complex CICS and z/OS application deployment. IBM Problem Determination Tools includes IBM Application Performance Analyzer for z/OS v11.1, IBM Debug Tool for z/OS v11.1, IBM Fault Analyzer for z/OS v11.1, and IBM File Manager for z/OS v11.1. IBM Problem Determination Tools v11 adds easier navigation of these tools via a GUI (graphical user interface) integrated with CICS Explorer.

The IBM CICS Deployment Assistant for z/OS software enables semi-automated, policy-driven CICS-system discovery, modeling, model sharing, and additional online application management such as JCL submission. As a result, reporting and change management during deployment of new CICS functionality are much easier, and the deployment process swifter. Integrated with CICS Explorer, IBM CICS Deployment Assistant for z/OS also gives systems programmers a better overall view of existing systems and a more powerful development toolkit.

The new announcements also extend the capabilities of CICS Explorer, the common, intuitive, Eclipse-based environment. New CICS Explorer features include support for statistics and statistics-driven alerting; easier creation or addition of new data sources; a flexible querying and result presentation engine; batch reporting in PDF format; and support for "housekeeping" administrative tasks for DB2 data stores.

Overall, then, the new CICS and Problem Determination Tools functionality makes upgrade and administration of business-critical CICS-based applications – and development of new apps – easier, faster, and less risky. Moreover, where the deployment strategy is focused on extending to or enhancing support of Web-based architectures, the new features make administration and support of those architectures more effective.

Batch Modernization

Batch processing has been around on the mainframe for over four decades; but the new announcements are teaching an old dog new tricks. The new announcements allow z/OS batch-processing users to:

- Leverage modern technologies, modern programming languages, modern tools, and the availability of personnel skilled in these, in order to cut programming and administration costs and better balance batch and online processes
- Share and/or reuse business logic between OLTP and batch applications to speed new-application development
- Run flexible 24x7 batch processes *online* and interleaved with OLTP, to improve system availability
- Drive more workload with existing resources in today's ever-shrinking batch window

IBM continues to provide enhancements and new features across the entire life-cycle of batch applications – from development to operations. Rational provides frameworks and tools to enable batch-application development in the Rational Application Developer (RAD), Rational Developer for System z (RD/z), and Rational Business Developer (RBD) products. WebSphere MQ File Transfer Edition simplifies file conversion for faster processing. WebSphere Compute Grid (WCG), which is a complete platform for batch applications written in Java, provides a robust runtime environment for Java batch applications. WCG also provides integration with Tivoli Workload Scheduler, as well as other industry leading enterprise schedulers, so that users can invoke and manage job flows across the enterprise. The programming model for WebSphere Compute Grid allows you to run Java batch jobs in CICS on z/OS and WAS on z/OS, as well as in WebSphere Application Server on other platforms supported by WAS.

Unified Multi-Platform Development

For users with heterogeneous environments, there are clear advantages to using a single development platform for other-hardware-platform or multiple-hardware-platform code. For example, development organizations save developer training costs, businesses enforce coding and business-rule standards, and development of common code across platforms is speeded.

IBM's Unified Multi-Platform Development solutions emphasize combining IBM Rational Team Concert as a collaborative development tool with upgrades in IBM Rational Developer for System z (RDz), resulting in a development environment that encourages "desiloing" of development teams for z/OS, Linux, and AIX. Rational Team Concert and RDz together provide a single "common desktop" IDE (integrated development environment), common tools across platforms such as build and collaboration tools, and a packaged solution with an attractive price point. Upgrades to RDz in the latest series of announcements include the Unit Test feature that allows users to develop and test z/OS applications in a z/OS and System z middleware "learning environment" on x86/Linux machines, avoiding

the congestion and unneeded costs from "overkill" mainframe service levels that can result from using mainframe LPARs for development. This kind of development flexibility should be especially useful for the line of business level, where mainframe MIPS are not as easily accessible for prototyping and the like as at a large enterprise's central data center.

In particular, UMD gives users a wide array of cross-platform development strategies for the architecture combining System z (z196) and blade (zBX) hardware. For example, users may develop on an x86 architecture for Linux on a blade/mainframe, develop on x86 for z/OS on the mainframe, or develop on Linux on the mainframe for all platforms.

UMD also has implications for enterprises' modernization efforts and at leveraging existing business-critical mainframe applications most effectively. IBM's Enterprise modernization solutions aim not only to modernize mainframe applications, but also to "de-silo" developers and development teams across platforms, as well as to provide integrated infrastructure software on which to develop and a choice of development platforms. UMD provides a way not only to streamline development across platforms, but also to use tools typically associated with other platforms in mainframe-software development.

Compilers

Compilers are the bridge between applications and the hardware architectures on which businesses run. They help customers improve application performance and programmer productivity, resulting in faster time-to-market, better returns on capital investments, and reduced project risk. They provide programming interfaces to allow applications to take full advantage of enhancements in IBM middleware and databases (i.e. CICS, DB2, and IMS).

New versions of z/OS XL C/C++ and Enterprise PL/I for z/OS compilers help users get the most out their zEnterprise 196 architectures. Enterprise COBOL and PL/I are extended to support the integration of existing business critical applications with Web applications. New enhancements to Java and XML support continue to strengthen users' ability to modernize applications on System z, while the 'Metal C' option in z/OS XL C/C++ provides an innovative and simpler way of developing system programs on System z.

Rational also offers a comprehensive suite of compilers to support zEnterprise BladeCenter Extension (zBX). Customers can take full advantage of the scale-out capability of IBM POWER7 blades with IBM's latest C/C++ and Fortran compilers on both AIX and Linux, and the COBOL compiler on AIX. These C/C++ and COBOL compilers are compatible with their counterparts on System z.

ECM

Since the acquisition of FileNet, enterprise content management (ECM) of unstructured and semi-structured data has been an IBM strong point; but up to now, the mainframe has focused more on structured (relational) data. This is changing, as surveys show that data

warehouse users are demanding more access to unstructured and semi-structured data in more of their queries. The introduction of IBM Case Manager (for collaboration and social software capabilities, business rules management, advanced analytics and as a foundation for best-practices templates, among other features) and IBM FileNet Business Process Manager (which manages workflow in content/ case-based business processes) on Linux for System z signal a big step forward in mainframe users' ability to incorporate analysis of non-structured data in their business intelligence efforts and their applications. They should be especially effective in supporting the kind of ad-hoc and Web-related queries that businesses are increasingly finding useful in their business analytics.

Collaborative Tools

IBM Lotus has long been known for exceptional collaboration tools, and these tools now extend to the mainframe Lotus' ability to integrate new social-networking and other Web tools (e.g., presence information, instant messaging, videoconferencing and other online meeting formats, and knowledge sharing via bookmarks and other tools) with existing collaboration mechanisms.

The Lotus collaboration tools are especially useful for enabling mainframe users to employ more effectively today's agile, open-source/"hybrid" (i.e., coordinated between in-house and extra-organizational open-source communities), and collaborative development processes that are demonstrating new levels of development speed and fit with customer needs. For example, Lotus can now allow users to coordinate development of multi-platform composite applications such as those for z196 and zBX in a loosely coupled, flexible, cooperative process.

Linux on System z

Linux on System z has already proven its ability to deliver TCO savings by placing Linux applications on one system in hundreds of virtual machines, thereby reducing key administrative and networking costs dramatically, as well as per-system software license costs. In the area of disaster recovery, the new software announcements add extension of IBM's premier GDPS solution to Linux for System z, Open LUN Management for improved Linux-data consistency and to aid replication for disaster recovery, and Multiplatform Resiliency for System z (xDR). The new software also expands the ability of Linux programs to use z/VM-based virtualization, by introducing virtual server provisioning and administration for Linux guests running on z/VM, and by features in the Unified Resource Manager to create z/VM virtual machines.

The new software not only extends IBM's TCO advantages for a Linux on System z environment, but also delivers business advantages in a heterogeneous environment, e.g., implementation of hub and private-cloud architectures that lead to additional cost savings and agility/interoperability. Linux is often the low-cost, low-risk, faster-deployment-speed on-ramp for initial upgrade of business applications to cloud architectures. Linux on System z applies these advantages to the business-critical and mission-critical applications presently

running on mainframe Linux VMs, thus providing a strong immediate "bang for the buck" as the business evolves towards a cloud architecture.

Integrated Services Management

Cross-platform application operation brings with it a world in which composite applications using shared applications create workloads that change dynamically and must be monitored, administered, and controlled end to end across tiers, from the top to the bottom of multiple software stacks, and with due attention to the relationship between top-level and sub-level "service" applications. To handle these situations, users need to be able to not only discover the software assets they have, but also capture their operational relationships, and monitor and administer at both the overall business level and specifically for each component. For example, IBM notes that it is useful for customers to consider the "affinity" of clusters of applications (e.g., whether they are part of a composite application) in deciding the platform on which to place the resulting cluster of workloads.

IBM's Integrated Services Management (ISM) aims to meet these new user needs. ISM uses the groups of platform-specific tools in the Unified Resource Manager, as well as those in IBM Tivoli solutions, as building blocks. Over these, it provides integration across platforms in such areas as asset discovery, policies, service level management, application performance management, resilience, and identity management. This, in turn, allows cross-platform management in such administrative tasks as provisioning and virtualization (which leverage enterprise IT assets auto-discovered and recorded in a standards-based CMDB). ISM offers a cross-platform "single view" of workloads and services, which will eventually extend to dashboards, data models, policies, and SLAs (service level agreements).

ISM provides two levels of functionality. For platforms for which IBM can't gather information directly (typically those that are not x, p, and z), ISM can capture information and monitor, but not actually change the operation without the cooperation of the non-IBM governance solution. For platforms over which ISM has control, it provides full functionality.

The new announcements represent "stage 1" of ISM. At this stage, ISM has most or all of its features, but deployment and management are less automated than in stage 2 (actively being designed and worked into plans), and therefore users will need to provide some additional customization and administrative effort.

The key ISM value-add at the start should be additional administrative insights: into the full scope of enterprise IT assets, and into the full complexities of resource utilization. Over the longer term, ISM should allow mainframe users in particular and enterprise IT in general to handle the increasing complexities of composite applications across platforms, in clouds or not, in-house or cross-organization.

Conclusions

The zEnterprise software announcements discussed above represent only a portion of the overall new software provided, and even this list of software does not include the profound upgrades in hardware and software-plus-hardware architecture technology also involved in a new zEnterprise generation. The point here is to recognize that these upgrades parallel an ongoing changeover of user architectures to allow optimization of multi-platform, heterogeneous, Web-infused, virtualized, inter-related, and dynamically changing workloads. The scale of the announcements does not mean a do-it-all-right-now-or-else implementation of IT nirvana; it means that organizations choose the path to the future that is best for their business, and that is optimized for their needs at the moment, by choosing and optimizing portions of the menu of options.

That said, certain savvy users should see more immediate "bang for the buck". Those intent on evolutionary development of private clouds should find the integration inherent in ISM, UDM, and collaborative-tool upgrades provides relatively immediate cost savings, flexibility, and increased robustness. Those seeking competitive advantage via composite-application development should see UMD and WebSphere providing better leveraging of enterprise software and increases in common code and collaboration for quicker time to value. Those whose performance and scalability is tested by relentless increases in storage fueled by demands for more analysis, faster, will see not only the new business analytics and ECM capabilities but also the advances in Linux on System z and in compilers as part of a big step forward in performance. For the rest, cost savings are scattered throughout the new software portfolio.

What is also particularly striking is that, more than ever, "software but not hardware" or "hardware but not software" is not a smart mainframer buying option. In a multi-platform world, to get hardware for one platform without the optimization across platforms that integrated software brings is to miss most of the solution's benefits. Likewise, to get the parts of IBM's software that bring additional platform optimization, without the hardware additions it is taking advantage of, is to attain a much smaller part of the performance and scalability improvements. The new IBM zEnterprise software announcements say that buying a full solution is buying smart.