



The Mainstream

An article from the IBM @server zSeries software newsletter

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IBM broadens its application lifecycle support for on demand applications

IBM broadens its support for on demand applications with additional support for the application lifecycle and the developer community. This support provides for the delivery of mixed workload applications that will be deployed across multiple platforms, including zSeries.

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With recent announcements, IBM® is increasing its already broad application lifecycle support for on demand mixed workload environments with solutions to discover and understand, develop, test and deploy, and manage applications and business processes that are more efficient and available.

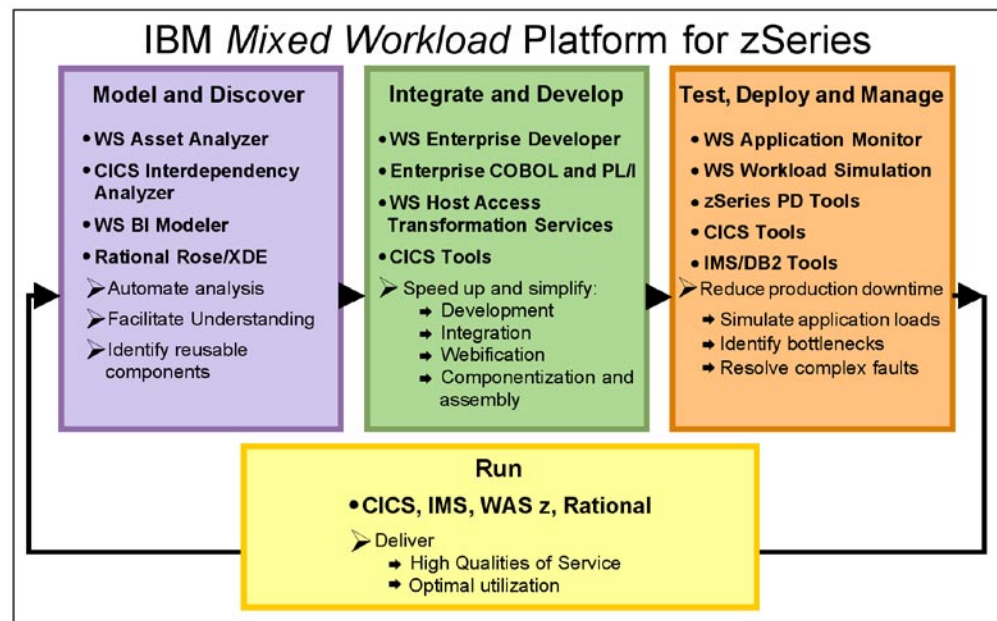
With today's fast changing business environments, today's applications must be able to operate and integrate across heterogeneous platforms and languages. This integration is made possible by the adherence to a set of established standards and architectures. Service Oriented Architecture (SOA) is an approach that is built upon the Web Services standards and support for which IBM has built into its application integration offerings.

By standardizing on Service Oriented Architectures, corporations can leverage the value obtainable through the delivery and assembly of discrete processes as services. Much like the Model View Controller paradigm, SOA's assume a set of services to manage user interaction, a set to control the flow of information, and a set of business processes. This architecture provides the ability to quickly reuse newly created services, reuse existing business processes as services, and deliver services on the platforms, languages, and runtimes that make the most sense. In many cases, SOA's will be deployed to multiple or mixed workload environments which will include both Web Application Servers, such as WebSphere®, and Transaction Processors including CICS® and IMS™.

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Have you never heard the term “mixed workload applications”? What do we mean by them? Mixed workload applications are composite applications that are assembled from independent component parts – parts that could exist in different languages and on different platforms. These applications require tools that can efficiently deal with the complexities caused by these differences. These tools must be able to help maintain a high level of performance and availability of your core assets, and speed the overall end-to-end development effort for these applications.

IBM provides solutions that help manage the end-to-end application development and run-time management cycle in a mixed workload environment. In the discover phase, IBM offers tools to replace the manual and error-prone process of sifting through old, undocumented code through automated analysis capabilities. These automated analysis capabilities facilitate the process of understanding and identifying those portions of traditional systems that can easily become on demand business components.



In the develop phase, IBM provides a set of tools that can speed and simplify the overall end-to-end development effort, from Web to Java™ technology, to mainframe programmer productivity. These tools can automate the Web enablement of older systems. The process of creating



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reusable programs—designed to work with other components and applications, such as older programs that can then be rapidly assembled into on demand business solutions.

In the test and deploy phase, IBM provides tools to help improve the ability to simulate run-time conditions to see how the system behaves and identify possible failures under stress and problem areas in general.

And finally, the run-time environment is the critical component that must ensure the highest qualities of service (QoSs), such as scalability, performance, security and system availability. The IBM portfolio of IBM zSeries® tools helps you successfully handle the complexities of the discover-develop-deploy cycle in mixed-workload run-time environments to help speed up on demand application enablement.

In this article, we will introduce our new products, and new releases that support the *Discover, Develop, Test and Deploy, and Manage and Run* phases of the application lifecycle. If you would like more information about all of IBM's application lifecycle offerings, please go to ibm.com/software/websphere/zadportal .

In the *Discover* phase, IBM WebSphere Studio Asset Analyzer helps you analyze and understand your existing application code and IBM CICS Interdependency Analyzer for z/OS® (CICS IA) supports runtime analysis of CICS applications. IBM has recently announced a new release of CICS IA.

CICS IA automates the detection of runtime resource relationships within your CICS system, and records this data in a DB2® database. CICS IA also provides flexible reports to help you analyze the collected information, build a relationship roadmap and use this data in your daily operations to improve your ability to maintain, enhance and migrate your business applications. In addition to traditional CICS transactions and resources, CICS IA also identifies include those associated with Web Services, CorbaServer, and Enterprise JavaBeans™(5) (EJBs). It also reports on DB2, IMS, and MQ resources which are used by CICS. The on-line queries provided by CICS IA enables you

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to perform detailed resource relationship analysis (e.g. what transactions run in which regions, what affinities were found for a program), as well as resource comparisons (e.g., comparison of applications across regions) to assist with faster application reuse and integration with your on demand processes.

For the *Develop* phase, IBM has recently announced a new release of our premier developer offering. IBM WebSphere Studio Enterprise Developer (WSED) consists of a common workbench, and integrated set of tools that support end-to-end, model-based application development, runtime testing and rapid deployment of e-business applications. WSED V5.1.2 was recently announced with major enhancements, making web, traditional and integrated development faster and developer communities more productive. WSED V5.1.2 provides developers with the following features:

- *Build dynamic Web user interfaces with zero coding using standards-based JavaServer Faces (JSF) components*
- *Visually design and develop rich user interfaces using drag-and-drop reusable components and visual Page Designer*
- *Build data-driven Web pages with zero coding and point-and-click database connectivity*
- *Write business logic and build data-driven Web applications using 4GL skills and EGL procedural language (separately purchase EGL for COBOL Extension feature)*
- *Build rich client user interfaces with performance and maintenance characteristics of thin clients using JSF extensions*
- *Create and test portlets in a visual environment—with no coding—using visual portlet layout and design tools, and leverage both Struts and JSF MVC frameworks*
- *Develop and test applications locally with single user CICS Transaction Server for Windows V5 API and runtime support*
- *Has basic JCA connectors support for CICS ECI, CICS EPI, IMS and HOD upgraded for CICS Transaction Gateway 5.1*
- *Enhanced Job Monitor - The threshold for number of lines of job output to retrieve can now be customized*
- *DB2 Stored Procedure are fully supported*
- *Provides batch interface to XML and Web Service Tooling for COBOL*
- *Provides Batch generation of Web Services Description Language (WSDL) for COBOL applications*

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- *Provides greater flexibility thru the use of JCL Procs and user-specified variables*
- *Provides complete Complex OCCURS DEPENDING ON (ODO) support for XML Enablement*

WSED V5.1.2 supports new industry standards that simplify the development of rich Web user interfaces, and business logic. It includes high productivity tools for business-oriented developers, new to Java, that integrates zSeries COBOL and PL/I processing via Web Services. WebSphere Studio Enterprise Developer speeds Java 2 Enterprise Edition (J2EE) development and is a comprehensive development environment for visually designing, constructing, testing, and deploying Web services, and J2EE applications linking to traditional IBM @server zSeries assets. It simplifies Java, COBOL, PL/I, and Enterprise Generation Language (EGL) development with RAD tools, templates, and wizards.

IBM Fault Analyzer for z/OS, IBM File Manager for z/OS, and IBM Debug Tool Utilities and Advanced Functions for z/OS used with IBM's Debug Tool provide application developers with a powerful portfolio of problem determination tools. These tools help improve productivity and effectiveness during development and test of new and existing applications, and help manage abends in deployed applications.

IBM File Manager for z/OS (FM) helps the developer to quickly and easily create, edit, print, and format or reformat data files in the most popular z/OS and OS/390® file formats. It enables your programmers to manipulate data using COBOL and PL/I record layouts in batch and an online facility. FM V5.1 provides enhancements in performance and usability, making it an even more productive tool than before. Some of the newest features of FM V5.1 include:

- *Support for DB2 V8, including improved support for long names.*
- *Support for Library Management Systems.*
- *Display or print a copybook or base template.*
- *Ability to initialize and insert first segment into an empty IMS database.*
- *Enhance view load module capability.*
- *Provide high performance batch syntax.*
- *Expand field reference numbers and field names in template panels.*

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- *Enhance template creation from multiple copybook members.*
- *Provide HFS file editing for mixed workload support (Post GA PTF).*
- *Support segmented records in browse/edit/copy (Post GA PTF). ****

*** Items delivered via V4R1 ptf's prior to V5R1

IBM Debug Tool Utilities and Advanced Functions for z/OS (DTU/AF) assist the developer in the source-level debugging of compiled applications. Building upon the function in IBM Debug Tool for z/OS V5.1, it provides even more debugging capability, helping to maximize the availability of z/OS and OS/390 applications. Debug Tool and Debug Tool Utilities and Advanced Functions V5.1 offers a number of usability enhancements and new WSED integration enhancements, including:

- *Non-LE Assembler support (DTUAF)*
- *%WHERE built-in function and auto monitor support for Assembler and Disassembly (DTUAF)*
- *WSED enhancements*
 - *Auto monitor support*
 - *Command support for (DESCRIBE CUS, CALL %VER, ALLOCATE, and DESCRIBE ALLOCATIONS)*
 - *Conditional storage change breakpoint not tied to a line*
 - *Local variables window performance improvements*
- *Dynamic debug support for PL/I and C/C++*
- *Enterprise PL/I support for DTCU*

IBM Fault Analyzer for z/OS (FA) assists the developer in quickly analyzing and fixing Deployed application and system failures. It offers the programmer the information required to help determine the cause of failure while further providing assistance in how to resolve the problem. FA V5.1 provides a number of new features to further help application developers in analyzing and resolving problems.

- *WebSphere Phase II support including WAS and JVM support extensions*
- *64-bit DB2 V8 support*
- *CICS system and transaction dump performance and usability improvements*
- *C improvements and PL/I improvements (mapping of pointer based data and structures)*

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- *Interactive report usability and performance enhancements*
- *Improveabend specific diagnostics for most common abends*
- *Formatting of IMS Segment Search arguments from the last IMS call ****
- *DISASM command for storage disassembly by the user ****
- *RUNCHAIN command for storage disassemble by the user ****
- *User provided name and title data, from the IDISNAP call, updatable from ISPF ****
- *CICS modification of SDUMP options via CEA trans for SDUMP performance ****
- *Mapping of storage with user/IBM supplied assembler DSECTs with DSECT command ****

*** Items delivered via V4R1 ptf's prior to V5R1 GA

IBM has recently announced several new releases of existing products and the extension of a Rational product for the *Test and Deployed* phase of the application lifecycle. IBM Rational Functional Tester for Java and Web is IBM's advanced automated functional and regression testing tool for Java and Web-based applications. The IBM Rational® Functional Tester Extension for Terminal-based Applications provide support for the automated testing of 3270 (zSeries) and 5250 (iSeries) applications. Q/A teams traditionally tested COBOL, CICS, etc. applications by performing function and usability tests manually or through tools different from those used to test Java or web-based applications. These methods required teams to support parallel testing efforts where each effort had its own set of test cases, test methods, and test processes. With the new IBM Rational Functional Tester Extension for Terminal-based Applications, Q/A teams can use the same tool for all of their mixed workload testing needs, simplifying their testing workflow and asset management requirements. Also, by having access to the advanced capabilities of Rational Functional Tester, teams can increase the number and quality of their tests in the same time required by their more manual testing methods.

WebSphere Studio Application Monitor (WSAM) enables customers to perform in-depth problem determination and performance analysis of mission-critical enterprise J2EE applications deployed and running on the WebSphere Application Server platform. The technology allows enterprises to open up the Java "black box" to see what is specifically happening within the applications, as well as track and analyze their performance and resource consumption patterns over time. WSAM monitors heterogeneous environments and provides both high-level and detailed views of



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transactions, in real-time, without requiring the modification of application byte code. WSAM also captures and stores resource utilization data at a transactional level, to help the IT staff analyze historical trends and plan for future capacity growth.

WSAM has a feature, the CICS Data Collector that allows the correlation and tracing of transactions that span across WebSphere and CICS software products (similar functions will be available shortly for transactions spanning WebSphere and IMS software products, through the IMS Data Collector). This includes the tracking of CICS transactions coming from terminals and from WebSphere Application Servers. The CICS Data Collector traces events that occur during the course of execution of a transaction, as well as monitors the CICS control regions and provides information regarding availability, paging rate and CPU utilization.

IT personnel can use the problem-determination features of WSAM to debug composite applications and locate problems in WebSphere, IMS or CICS, during development, or after deployment, as well as to fine-tune applications to eliminate potential bottlenecks.

IBM Workload Simulator V1.1 enables you to perform function testing to verify that a new program or subsystem performs according to specifications. Test cases are prepared to verify that the code will execute the job it is designed to run. It also supports regression testing to help you validate that changes made to an application will not unduly impact the function, and supports performance testing to help you determine if the system can handle projected throughput with acceptable response times. Workload Simulator provides SNA, CPI-C, and enhanced TCP/IP support. A new feature for WS will be delivered by PTF in September, which will provide for a much requested feature, password encryption.

In the *Manage and Run* phase, IBM has recently announced two new releases of existing tools. Session Manager for z/OS v1.2, a VTAM or TCP/IP session manager, provides simple and secure access from a single terminal to multiple z/OS or OS/390 systems. This release offers a range of enhancements, particularly to administration functions, together with functions offering improved usability. New administration capabilities include self administration, which allows applications,

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profiles, and users to be added, deleted, or updated by the end user. Dynamic menus allow users and applications to be administered by way of definitions in an External Security Manager, including RACF®. A new capability allows Session Manager to be administered by a batch job, easing the potential administration overhead for mass updates for large sites. Other new functions include enhancements to the multiple sign-on capability to enable it to be easily configurable and to enhance the query and stop user commands with respect to multiple users. Session Manager helps increase user productivity by providing quick access to a variety of applications, while also helping to increase security and reduce costs and efforts associated with network administration.

CICS VSAM Recovery (CICS VR) is an automated recovery tool that helps you recover from loss of VSAM data due to catastrophic hardware failure, software failure, or human error. Along with usability and accessibility enhancements, CICS VR V3.3 new features also include:

- *RCDS Maintenance*
- *Multiple CICSVR groups in same sysplex*
- *Debugging Service Improvements*
- *04F elimination in Logger code*
- *Partial disconnect when out of storage*
- *Disaster recovery improvements*
- *Point in Time Backout*
- *Backup support changes*
- *Backup notification interface*

With the increasing reliability of enterprise hardware and with stable enterprise software systems, catastrophic loss of data is becoming an increasingly rare event. Nevertheless, for most enterprises the residual risk of loss is unacceptable. With careful planning, good operational procedures, careful configuration planning and the services of CICS VR, you can eliminate almost all risk associated with catastrophic data loss.

To conduct an effective on demand business, your applications must run 24x7, with the ability to process unpredictable and sizable amounts of transactions. IBM offers a range of IBM enterprise tools, especially for zSeries, to help you analyze and maximize the functionality and efficiency of



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your core assets. This integrated set of enterprise tools can help you optimize the availability and performance of your critical mixed-workload applications and systems, as well as extend your traditional applications into the on demand world.

If you would like more information, more can be found on the following website:

ibm.com/software/websphere/zadportal.

This website has links to many individual product websites, as well as to whitepapers that can provide you with additional information about the IBM mixed workload application lifecycle solutions. Specifically, the white papers are entitled “Enabling on demand enterprise applications through comprehensive CICS and problem-determination tools” and “Leveraging the information technology organization, IBM @server zSeries tools and the on demand environment”.

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