Quickly build and deploy traditional, high-performance Web, composite or mixed-workload applications to support an on demand business environment

**IBM**

WebSphere® software

IBM WebSphere Developer for zSeries, Version 6.0

Highlights

- **Helps developers quickly create and maintain traditional applications, such as CICS, IMS, COBOL, PL/I, and dynamic Web applications, such as Java, J2EE, EGL, XML and Web services applications using rapid application development tools and wizards**

- **Provides developers with tooling that enables them to rapidly create well-architected on demand systems that integrate WebSphere software and traditional transactional environments, including CICS and IMS systems**

- **Promotes the reuse and transformation of existing applications to reduce costs and shorten the development cycle**

- **Facilitates and automates the construction of flexible client applications for on demand systems through visual construction facilities based on open JSF and Struts implementations**

- **Improves productivity to develop and maintain z/OS, CICS, IMS and batch applications, while your organization makes the transition to an on demand architecture**

- **Supports team-member collaboration across the process of development, testing and deployment of multitiered, composite or mixed-workload applications, and facilitates skill and knowledge transfer**

Building service-oriented architectures (SOAs) is a key strategy for many of the largest IT organizations as they move to on demand business. SOAs promote modern interfaces, support process improvements and leverage application reuse — all to enable more rapid delivery of applications to support the highest quality-of-service environments.

Building today's SOAs can be complex, and often requires assembling teams of people with varying levels of technology backgrounds and areas of expertise. Ideally, everyone on these teams would be familiar with all the technologies necessary to construct on demand applications. However, the reality is that these teams include specialists, each with expertise in a different area, such as modern browser-based user-interface (UI) development in Java™ technology, connectivity development with Web services, and business development with languages such as COBOL and PL/I. You want to extend these professional skills across your organization, and exploit both existing and new Web and Web services technologies — along with proven transactional technologies such as IBM CICS® and IBM IMS™ — to speed your entire development and deployment process.
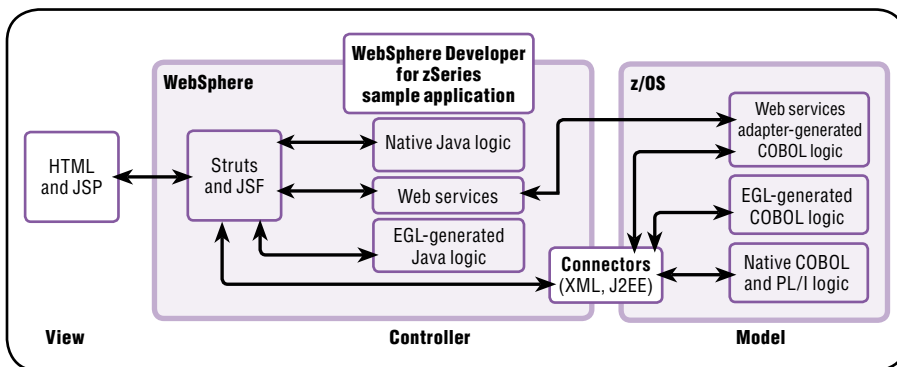
WebSphere Developer for zSeries simplifies the J2EE application-development process by providing a JSF and Struts technology-based, visual-component construction environment supporting enterprise-scale SOAs.

ON DEMAND BUSINESS™

As IBM's premier enterprise application-development environment, IBM WebSphere® Developer for zSeries, Version 6.0 brings traditional development capabilities, the power of Java 2 Platform, Enterprise Edition (J2EE) and rapid application-development support to diverse enterprise application-development teams. With comprehensive development tools to help create, deploy and maintain traditional enterprise and composite applications, developers from different technical backgrounds can easily participate in on demand business projects together. As traditional programmers collaborate in the process of creating modern applications, their exposure to new technologies widens — while they continue to use their existing skills.

Provide IBM development technology throughout your enterprise
Built on Eclipse open-source technology and written to J2EE specifications, WebSphere Developer for zSeries optimizes and simplifies application development today, and for the SOA that you're building to address future needs, through best practices, visual tools, templates, code generation and the most comprehensive development environment in its class. These capabilities enable your developers to share a common view of applications and resources accessible from linked environments.

Employing the common services of an integrated development infrastructure helps facilitate reuse, better management and communication, and reduces requirements for manual integration—ultimately shortening the development process. Eclipse plug-in technology also enables you to integrate complementary development tools to extend the functionality of the total platform so that it can interoperate with other Eclipse technology-based products.

WebSphere Developer for zSeries also includes tools for building the underlying business process and infrastructure for Web applications. These tools support the popular, open-source JavaServer Faces (JSF) and Struts run times. They also include a visual construction environment that allows a developer to quickly link views implemented as HTML and JavaServer Pages (JSP) with business logic implemented with a number of different technologies — such as Web services, J2EE Connector Architecture (JCA) adapters, COBOL and PL/I. This capability allows individuals with a variety of skill sets to contribute to the construction of sophisticated Web, traditional and mixed-workload applications.

Develop, maintain and reuse traditional application processes
Traditional applications can participate in SOAs and new on demand business solutions while meeting your quality-of-service requirements as they handle vital business functionality. WebSphere Developer for zSeries gives you an interactive workstation-based environment to help develop, maintain and reuse traditional COBOL and PL/I, CICS, IMS, and batch applications for traditional processing or for inclusion in an SOA. WebSphere Developer for zSeries, Version 6.0 COBOL and PL/I support includes the following capabilities:

- *The ability to create and generate code to IBM Enterprise COBOL for z/OS and IBM Enterprise PL/I for z/OS compiler specifications*
- *Direct access to IBM z/OS® code without having to copy files from the host to your workstation*
- *Support for z/OS local and remote development to offer workstation-based development with project synchronization and management of z/OS system-based file structures*
- *Local CICS environment to syntax-check and unit-test IBM OS/390® CICS applications*
- *Access to COBOL and PL/I, batch, CICS and IMS application code assist*
- *A new remote system explorer that provides a common view for z/OS datasets and queues with support for hierarchical file system (HFS) files*

- *Color-coded editing of COBOL, PL/I and assembler (ASM) languages as well as job control language (JCL)*
- *Local and remote (to z/OS) syntax check*
- *Remote compile-generation, build and deployment support*
- *Extensible build based on JCL procedures (JCL Procs)*
- *IBM DB2® COBOL and PL/I stored-procedure build and debug support*
- *Remote debug support for z/OS through IBM Debug Tool, which includes COBOL, PL/I and IBM Language Environment® technology-enabled and non-Language Environment technology-enabled high-level assembler (HLASM) support*
- *Integration with IBM Software Configuration Library Management (SCLM) to provide source-code access and management*
- *Wizards to help you create SOA-based Web services processes for CICS and IMS environments*
- *Visual basic mapping support (BMS) map and EGL form what-you-see-is-what-you-get (WYSIWYG) editor (The BMS editor also generates JSF artifacts to simplify conversion from green screens to Web UIs.)*

Leveraging existing assets through an automated code-extraction process can reduce development time and costs. IBM WebSphere Studio Asset Analyzer and IBM Asset Transformation Workbench, separately available, complementary products, provide analysis and assessment of traditional applications and their interrelationships to aid in extension and restructuring efforts.

In WebSphere Developer for zSeries, Version 6.0, IBM provides a technology preview of a capability that is designed to help developers understand applications using WebSphere Studio Asset Analyzer running on the Microsoft® Windows® operating system.

Transform and integrate existing processes using the service-flow modeler

WebSphere Developer for zSeries, Version 6.0 includes a service-flow modeler, a multifunctional tool available as a technology preview. The service-flow modeler is designed to support modern application architectures,

and the transformation and reuse of existing application processes. You can use the quality of service of existing enterprise information systems (EISs) and the IBM CICS Transaction Server run time, while at the same time helping your organization move toward implementing an SOA. With the service-flow modeler, you can:

- *Model a newly composed business service – or flow – by defining an interface and outlining implementation steps.*
- *Capture existing EIS (screen or communication area) interfaces to implement steps in the flow.*
- *Map data between elements in the flow and the request and response messages used in invocation.*
- *Expose business flows as services or Web services.*
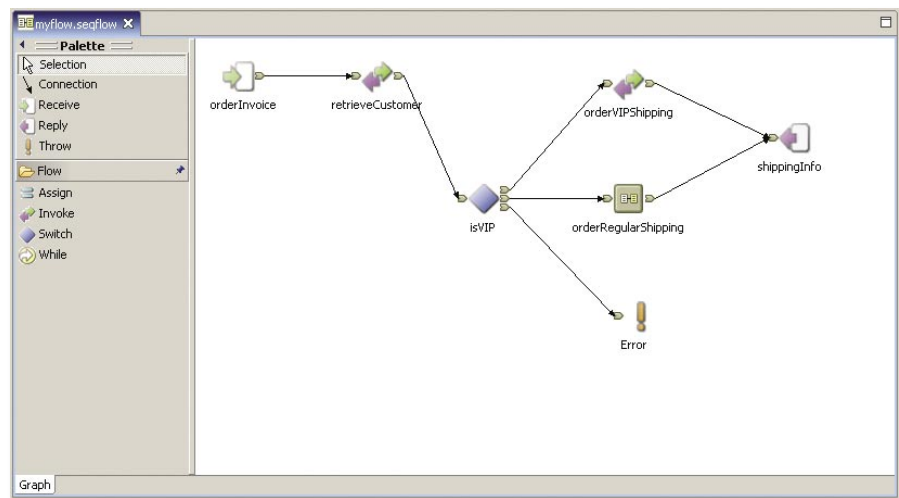
This example shows the flow model for an order-processing routine that delegates to an existing process or invokes a single transaction for a preferred customer.

The generated output of the service-flow modeler is supported on IBM CICS Integrator technology, as part of IBM CICS Transaction Server, Version 3.1, and IBM WebSphere Host Access Transformation Services (HATS) run times.

Build J2EE, traditional and mixed-workload applications using EGL

WebSphere Developer for zSeries includes Enterprise Generation Language (EGL), a proven high-level fourth-generation language (4GL) that procedural developers unfamiliar with Java can use to quickly build data-driven Web applications and business logic. The platform-neutral, high-level EGL syntax shields developers from the intricacies of coding to low-level programming interfaces. And using EGL enables developers with diverse technical backgrounds to write fully functional applications in a fraction of the time.

Using EGL and its tools, developers familiar with Structured Query Language (SQL), COBOL, Report Program Generator (RPG), IBM VisualAge® Generator and IBM Informix® 4GL can easily write and debug their applications.

The developer can then generate and deploy these applications to be run as Java programs under an application server, such as IBM WebSphere Application Server, and as COBOL programs to be run under IBM @**server**® zSeries® CICS and batch environments. Without having to learn Java or object-oriented programming, a new class of developers can use EGL to apply their business domain expertise and reuse their skills as procedural developers.

Applications patterns and other support functions in EGL include:

- *Terminal user interface (TUI) applications accessing DB2, Virtual Storage Access Method (VSAM), IBM WebSphere MQ and CICS data stores deployed to IBM CICS Transaction Server*
- *Batch applications accessing DB2, VSAM, WebSphere MQ and sequential files*
- *JSF user-interface component actions that can be coded in EGL instead of Java*
- *JSF user-interface components integrated with EGL-generated callable CICS services through a simple call interface*

- *An integrated debugger for the EGL source*
- *Creation of Web services artifacts for callable EGL programs*
- *Integration with callable legacy programs running on CICS Transaction Server through a simple call interface*
- *Built-in communications support that uses both CICS external call interface (ECI) and CICS JCA connector technologies*
- *A conversion utility to enable conversion of IBM VisualAge Generator, Version 4.5, CICS and z/OS platform-based TUI and batch applications to the EGL syntax*

With this release, WebSphere Developer for zSeries, Version 6.0 EGL capabilities have been improved to include:

- *Productivity enhancements, such as new data types; more built-in date, time and string manipulation functions; and SQL processing enhancements especially for list processing.*
- *Integration of Jasper reports to develop Web or Java applications that need to produce reports in multiple formats.*
- *Efficiency enhancements, such as a wizard to automatically generate data and logic parts in EGL based on an existing relational table definition.*

- *New tools for program understanding, such as a visual layout editor for EGL forms (3270 and print forms), a hierarchical view of a program and its components, and enhanced search capabilities.*
- *A conversion utility to support those who currently use Informix 4GL for development to convert Informix 4GL source into the EGL syntax.*

Support for the generation and deployment of EGL programs to zSeries batch and CICS environments is provided through the separate IBM EGL for zSeries COBOL generation feature for WebSphere Developer for zSeries. This feature also requires IBM Enterprise Developer Server for z/OS to be installed on the zSeries systems to support deployment.

Visually define Web application interfaces and workflow

A comprehensive view of the Web application flow can help ease maintenance requirements and promote a greater understanding of unfamiliar application construction and components. To help support the JSF and Struts frameworks, WebSphere Developer for zSeries includes both a user-interface-oriented development paradigm and a Web diagram editor that maps applications to help you quickly recognize the flow, structure and components of JSF and Struts technology-based Web applications.

Architects, analysts and developers have quick access to a point-and-click design tool and wizards throughout the development process, including wizards to help quickly generate JSP and Java syntax. As a result, team members can separate responsibilities and improve productivity and focus.

Enhance development capabilities with leading-edge servlet, JSP and EJB tools

You have existing applications that you want to keep and important data residing in existing systems. You need advanced tools to build Web applications that include business logic to preserve investments and reduce development time. With WebSphere Developer for zSeries, you can define JSP components and servlets, and map entity beans to databases. And you can generate Enterprise JavaBeans (EJB)

components and access transaction-processing systems to better use your investments and lower the cost of retooling, integrating and updating existing applications.

WebSphere Developer for zSeries offers a fully supported EJB, Version 2.0 development environment to create and test applications for rapid deployment to application servers. To provide a robust unit-test environment, WebSphere Developer for zSeries integrates tightly with other WebSphere software and enables easy deployment to WebSphere Application Server. A robust query engine supports deployed code by creating SQL strings to be generated into persister classes. WebSphere Developer for zSeries also provides tools to create, edit and validate enterprise archive (EAR) files and editors to format deployment descriptors.
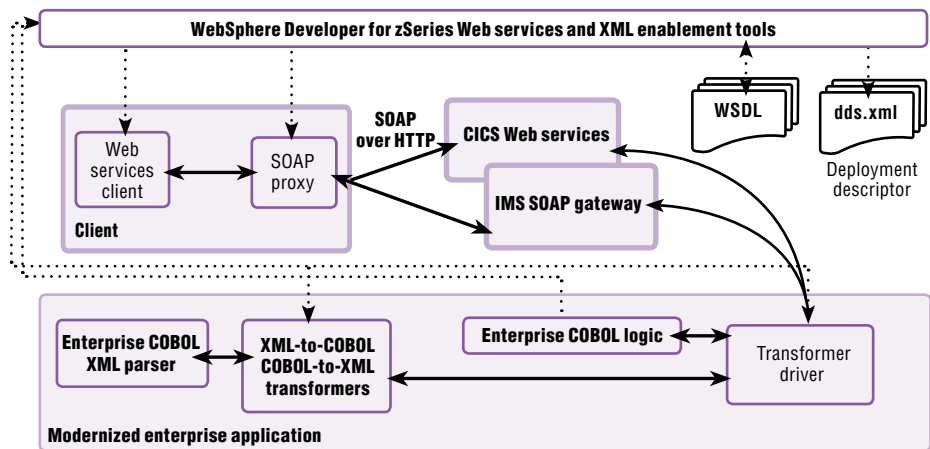
WebSphere Developer for zSeries enables you to create dynamic Web applications.

WebSphere Developer for zSeries, Version 6.0 includes enhancements to facilitate mixed-workload application development, such as:

- *Upgraded XML and Web services support, enabling SOA access to CICS Transaction Server, Version 3.1 and IMS, Version 9. These enhancements also include support for integrated Web Services Description Language (WSDL) generation.*
- *The HATS toolkit is included and runs in the workbench development environment as a perspective. HATS transforms the screens of a host application into Web pages that can be accessed through a Web browser or through IBM WebSphere Portal software.*

New Web and J2EE capabilities include:

- *Portal tools that enable you to visually develop portal applications*
- *Automated J2EE code-analysis and component-testing tools to improve code quality*
- *Enhanced J2EE run-time analysis tools to identify and fix performance problems early in the development cycle*

- *Built-in Business Objects Crystal Reports tools to build robust, interactive data reports*
- *The WebSphere Application Server rapid-deployment feature to accelerate application deployment and simplify system testing on WebSphere Application Server*
- *Eclipse, Version 3.0 support to enable a more responsive, attractive and customizable user interface that increases developer productivity*

Build Web services quickly with a robust XML z/OS tool set

Web services give global businesses a common language with shared definitions to discover each other's resources, connect dynamically and conduct transactions in real time with minimal human input. WebSphere Developer for zSeries provides wizards and tools to help you rapidly develop Web services in distributed and z/OS environments. You can use these standards-based applications — accessed through XML — individually or combine them to perform complex transactions with minimal programming.

WebSphere Developer for zSeries includes a comprehensive XML tool set to help you build document type definitions (DTDs), XML schemas and files, and integrate relational data with Web services. WebSphere Developer for zSeries allows you to quickly and easily transform and combine IBM Enterprise COBOL code into XML-based applications to redeploy them as Web services. The Web services you create with WebSphere Developer for zSeries conform to Universal Description, Discovery and Integration (UDDI), Simple Object Access Protocol (SOAP) and WSDL standards.

WebSphere Developer for zSeries also facilitates Web services development tasks to help you build and deploy Web services-enabled applications for your on demand business across a broad range of software and hardware platforms. These Web services include development tasks such as:

- *Using an enhanced Web services explorer to discover, browse, invoke and publish WSDL in a UDDI registry.*
- *Creating Web services from existing artifacts, such as Java beans, EJB components, URLs that take and return data, IBM DB2 XML Extender calls, DB2 stored procedures and SQL queries.*

- *Wrapping existing artifacts as SOAP and HTTP GET and POST method-accessible services and describing them in WSDL.*
- *Creating Web services, Web services clients and test environments, and deploying them into WebSphere Application Server.*
- *Using the WSDL editor, a graphical tool used to edit WSDL files and embedded XML schemas.*

Specialized z/OS system-based Web services support includes mapping XML schema files, WSDL files, DTDs and other XML documents to and from COBOL data structures, the ability to generate the underlying transformers and high-speed parsing in the IBM Enterprise COBOL language environment. Specific options support deployment to various z/OS run times, including specialized support for the CICS Web services and IMS SOAP gateway features.

Test and debug during run time on local or remote servers

With the WebSphere Developer for zSeries unit-test environment, you can configure local or remote servers to perform cross-platform interactive testing and debugging live in WebSphere, CICS, IMS and DB2 transactional environments,

and in z/OS batch environments. The testing and debugging process begins early in application development, with a break-point and monitor-testing capability available in the visual-assembly environment. This capability enables each aspect of the flow and the associated connections to perform as required.

WebSphere Developer for zSeries includes a validation framework to identify errors on the fly — so programmers can save time and money by immediately identifying and correcting errors. Troubleshooting options include traditional debugging in mixed-workload environments, and distributed code profiling and unit testing in J2EE environments. WebSphere Developer for zSeries enables you to edit, test, check syntax and compile the source code locally. Then recompile the source, build a load module, and test and debug it on a remote z/OS system.

A comprehensive integrated development environment

WebSphere Developer for zSeries, Version 6.0 supports a broad range of developers with added flexibility and the ability to integrate with existing applications. With WebSphere Developer for zSeries, you can:

- *Create Web applications by melding diverse employee skills sets and extending existing systems.*
- *Develop, maintain and integrate CICS and IMS transactional applications and batch applications.*
- *Take advantage of proven run-time environments, leveraging SOAs and Web services, while helping reduce your deployment risks.*

WebSphere Developer for zSeries offers an integrated development environment (IDE) with advanced, easy-to-use tools and features to help diverse developers rapidly design, code and deploy complex applications.

For more information
To learn more about IBM WebSphere Developer for zSeries, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/awdtools/devzseries

IBM WebSphere Developer for zSeries, Version 6.0 at a glance

Hardware requirements

- Intel® Pentium® III 800MHz processor minimum; higher recommended
- 1024x768 display resolution required
- 768MB RAM minimum or higher; 1GB recommended
- 3.5GB available disk space minimum; additional disk space required for new resources

Notes:

1. Disk space requirements can be reduced if optional features and run-time environments aren't installed.

2. Additional disk space needed if the electronic image to install IBM Rational® Application Developer for WebSphere Software is downloaded.

3. If the file system is FAT32 instead of Microsoft Windows NT® File System (NTFS), more space is required.

4. The temporary directory requires 500MB available disk space.

Software requirements

- TCP/IP installed and configured
- One of the following operating systems:
  – Microsoft Windows XP Professional Server with Service Pack (SP) 3 or SP4
  – Windows 2000 and Windows 2000 Server with SP3 or SP4
  – Windows 2000 Advanced Server with SP3 or SP4
  – Windows XP with SP1 or SP2
  – Windows Server 2003 Standard
  – Windows Server Enterprise 2003
- A Web browser to view the readme files and the installation guide
- Java Runtime Environment (JRE), Version 1.2 or later to profile Java applications