Visual application development for Java, Web, Web services and portal applications

Rational. software

IBM Rational Application Developer for WebSphere Software, Version 7.0

Highlights

- ***Enables installation of only the features you need through flexible, granular options***
- ***Extends your Eclipse 3.2 environment and tools***
- ***Leverages an integrated, optimized tool for IBM WebSphere Application Server and IBM WebSphere Portal Server products***
- ***Accelerates Java, portal, Web services and SOA application development using rapid application development tools and visual development techniques***
- ***Shortens the Java learning curve through visual design that updates code, point-and-click database connectivity and visual portal development tools***
- ***Helps improve code modeling and sharing of designs across distributed teams***
- ***Integrates business applications with WS-I–compliant Web services and SOAs***
- ***Enables collaboration and assets sharing using built-in IBM Rational ClearCase LT version-control functionality***
- ***Helps improve code quality with automated tools that apply coding standards and perform run-time analysis***

The IBM Rational® Application Developer for WebSphere Software application helps Java™ developers create Java/Java Platform, Enterprise Edition (Java EE), portal, Web, Web services and service-oriented architecture (SOA) applications. This integrated development environment (IDE) assists in rapidly designing, developing, assembling, testing and deploying these applications. Its visual tools can be leveraged to reduce manual coding by abstracting the Java EE programming model, making it easier for those less familiar with Java technology to complete development projects. It is designed to be a highly flexible development tool—based on the Eclipse open framework and with a range of flexible installation options.

Leverage an easy-to-use tool

It's hard to incorporate new technology into existing processes, so IBM has designed flexibility options into

Rational Application Developer for WebSphere Software to help make it easier to use—beginning with installation. The flexible installation process provides a choice of options at a granular level, enabling each member of the development team to access only the functions needed and to optimize the size of the desktop installation.

Take advantage of the Eclipse open and extensible platform

For many years, software developers have known the benefits of open standards and used the technology in their projects. Now, through Eclipse, all of the benefits of open software have come to the development environment itself. Because Rational Application Developer for WebSphere Software is built on top of the open Eclipse 3.2 platform, you can more easily extend its features to meet specific project requirements through an ecosystem of third-party plug-ins. Eclipse is written in the Java language, which means you can outfit your team across both Microsoft® Windows® and Linux® desktops.

Because Rational Application Developer for WebSphere Software and the Eclipse foundation are modular, installation is highly configurable. Install both Eclipse and Rational Application Developer for WebSphere Software, or install selected Rational Application Developer for WebSphere Software features into an existing Eclipse shell that, for example, supports an established development project or environment. This modularity also makes it possible to unify the data, application and software system development environments on Eclipse.

The XML mapping editor is an intuitive, yet powerful, visual data mapping tool that transforms any combination of XSD, DTD and XML documents.

Comprehensive support for the full Java EE programming model

Rational Application Developer for WebSphere Software supplies full Java EE 1.2, 1.3 and 1.4 compatibility, and it supports Java 5 code across all configurations. It includes full support for Enterprise JavaBeans (EJB), message-driven beans, EJB Query Language, Container-Managed Persistence (CMP), Web archive (WAR) and enterprise archive (EAR)

deployments. Rational Application Developer for WebSphere Software also supports Java Development Kit 5 language.

Several visual tools in Rational Application Developer for WebSphere Software ease the development process—whether you need to create an interface, connect the application or interface to the data, build a portlet, create application logic or analyze the application at a greater level of abstraction. To test applications before deployment, the Rational software includes unit test environments for multiple configurations of IBM WebSphere Application Server software. What's more, it can automate WAR and EAR assembly processes for test and deployment.

Integrate applications using Web services and SOAs

Rational Application Developer for WebSphere Software provides the tools you need to discover, create, build, test, deploy and publish new Web services applications or enable existing applications as Web services-Interoperability (WS-I)–compliant Web services.

Rational Application Developer for WebSphere Software lets you automatically generate from existing assets the Web Services Definition Language (WSDL) and Web Services Inspection Language (WSIL) files needed to describe Web services and prepare them for inspection, or you can design a WSDL file and generate Java code from it. A redesigned WSDL editor and Web services explorer tool help you easily create, validate and detect WS-I–compliant, interoperable Web services. You can encode input and output messages through support for both Simple Object Access Protocol (SOAP) and the open Apache Extensible Interaction System (AXIS) specifications, and you can create a Java proxy to interface with client applications.

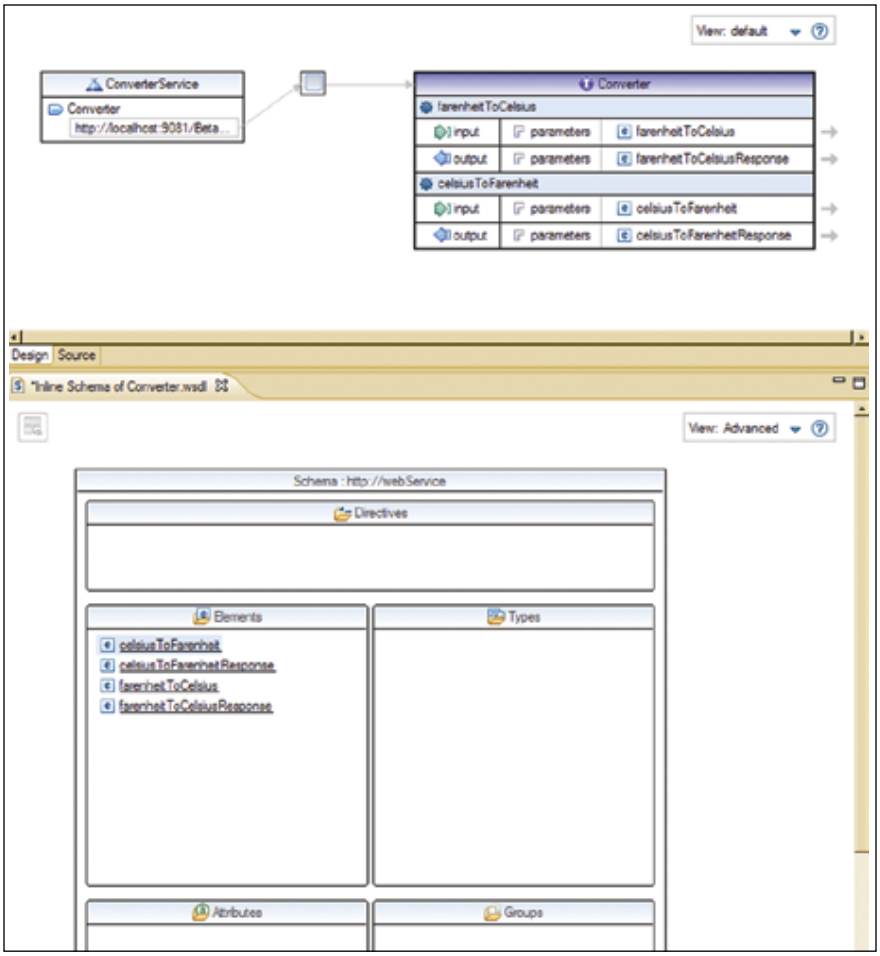
In addition, you can assemble and deploy reliable, asynchronous, secure and interoperable Java Web services for application components. The Web services feature pack is designed for IBM WebSphere® Application Server, Version 6.1 software extended with the WebSphere Application Server feature pack for Web services. This feature supports the development of Web services from annotated Java or from WSDL using any XML Schema by supporting the Java API [application programming interface] for XML Web Services (JAX-WS) 2.0 programming model.

JAX-WS simplifies application development through a standard annotation-based model to develop Web services applications and clients. A common set of binding rules for XML and Java objects makes it easy to incorporate XML data and processing functions in Java applications; and a further set of enhancements helps you optimally send binary attachments, such as images or files, with the Web services request.

Rational Application Developer for WebSphere Software enables you to generate Web services test clients without coding, and to deploy to the Universal Description, Discovery and Integration 2 (UDDI 2) registry. All of these features can help increase productivity.

Simplify Web development and Web site management

Easy-to-use wizards and tools help bring virtually all aspects of Web development—HTML, JavaServer Pages (JSP), JavaServer Faces (JSF) and servlets—into a common interface. Rational Application Developer for WebSphere Software enables developers with diverse technical backgrounds—even those new to Java technology—to build rich, data-driven applications. You can easily build function-rich Web pages in either a visual editing mode or source editing mode using the advanced HTML and JSP editors included with the product. Import an entire Web site and apply global style changes, and visually add or delete pages from a tree-structure view using the Rational software's Web site designer tool.



The Web services creation wizard makes it easy to generate new Web services from existing assets, such as JavaBeans and EJB components.

Rational Application Developer for WebSphere Software is designed to fully support JSF 1.1 to help quickly build rich Web user interfaces and Web forms. You can create managed data beans in the page data view, leverage third-party JSF components, support run-time page templates using tiles, and leverage additional support for Asynchronous JavaScript Technology and XML (Ajax) implementations. Reusable, drag-and-drop JSF components can be leveraged to generate code for event handling, to validate user input and to bind data, creating a more productive end-user experience.

It can often be challenging to create and maintain Web applications that include diverse, intertwined elements—data access, business logic and presentation logic. On the one hand, you need to separate the elements to ease complexity, and on the other hand, you need fast, easy ways of connecting these components. Rational Application Developer for WebSphere Software lets you visually construct and map

Web applications that employ either a Model-View-Controller design or a Struts 1.1 framework—including connecting Web applications to relational databases, EJB components and Web services. Service Data Objects is an emerging industry standard for accessing heterogeneous data, where point-and-click tools in Rational Application Developer for WebSphere Software support its use.

A built-in Crystal Reports tool is designed to help you rapidly create visual data reports, including the ability to design and deploy custom reports or use predefined report templates. A JSF report-viewing component incorporates reports into Web applications or dynamically renders them on the Web.

Visually develop portlets and portal applications

Rational Application Developer for WebSphere Software includes a set of visual portal development tools and a WebSphere Portal unit test environment so you can build and test individual portlets and entire portal applications. Create new portlets using wizards that generate both the Java EE portlet project structure and the complete portlet. These portlets comply with either the IBM Portlet API or with Java Server Request 168 (JSR 168), which is a standard specification for portlet aggregation, personalization, presentation and security. Using the Rational Application Developer portal designer feature, you can visually create and edit portal applications, and visually edit the themes and skins that control their appearance.

Many other facilities in Rational Application Developer for WebSphere Software support portlet development as well. You can design the interface for portlets using JSF components in the page designer tool, and you can visualize the structure and event flows using the Web diagram editor and the Struts framework to make applications easier to maintain.

Improve team productivity with effective change management

Rational Application Developer for WebSphere Software is tightly integrated with IBM Rational ClearCase® and IBM Rational ClearQuest® change management solutions. This deep integration enables a wide range of change management operations to be performed directly from within the Rational Application Developer software, and it allows an integrated view of projects, which helps increase team collaboration.

Rational Application Developer for WebSphere Software includes IBM Rational ClearCase LT software for reliable, entry-level version control and out-of-the-box team support. It also supports Concurrent Versions System (CVS) and third-party software configuration management systems through vendor plug-ins.

Develop data-driven applications

Many powerful features help increase productivity and flexibility by helping you create data-driven applications that leverage a variety of data implementation technologies. Rational Application Developer for WebSphere Software offers comprehensive XML visual tools and functions to create, edit and transform XML and Document Type Definition (DTD) assets, while mapping to relational database tables. Tight integration with IBM DB2® information management software helps speed the process of creating XML documents from DB2 data.

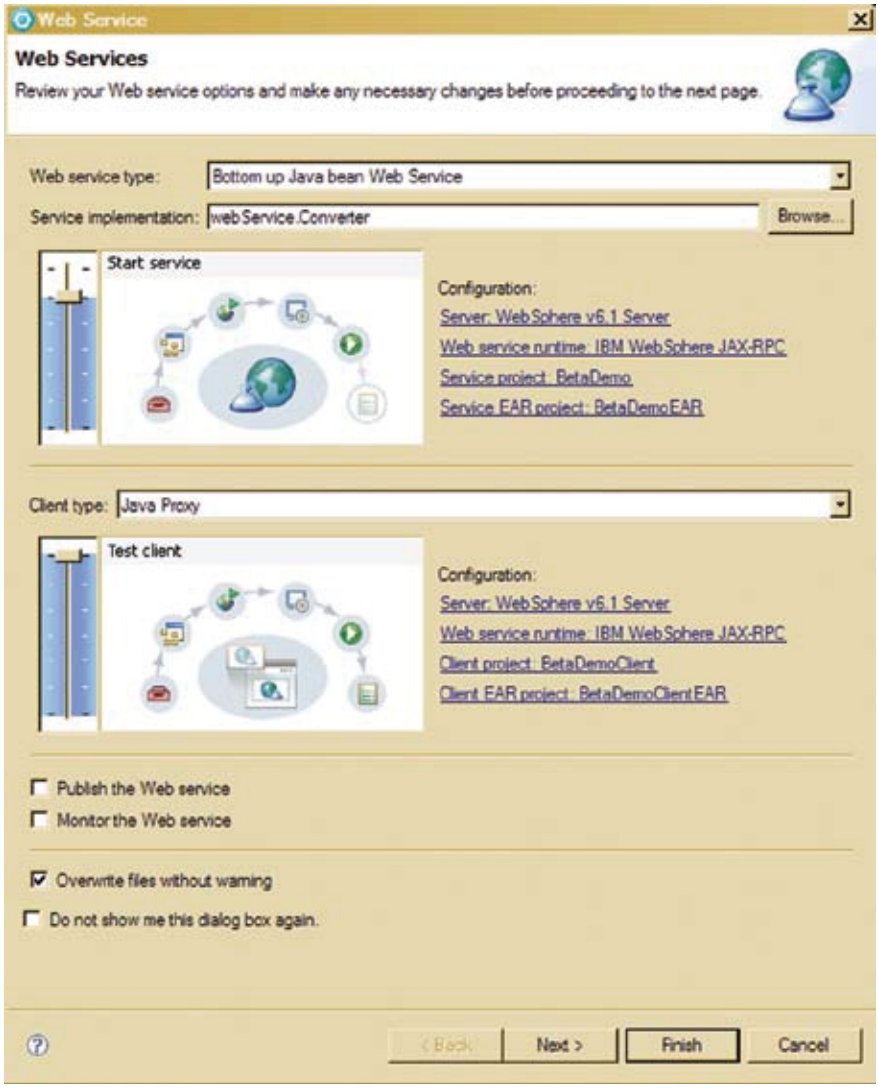
The structured query language (SQL) query wizard and SQL query builder provide a visual interface for defining and executing simple and complex SQL statements, while enabling the use of wizards to create XML documents from the SQL statements. The

database connection wizard makes it easy to establish a Java Database Connectivity (JDBC) connection to a database—like the IBM DB2 Universal Database™, IBM Informix®, Oracle or Microsoft SQL Server solution. There is SQL for Java support as well to meet your varied needs.

Object-to-relational mapping is easy with top-down, meet-in-the-middle and bottom-up support. Simplify the creation and testing of EJB components with wizards. And build applications that target, extract and display the data you want to present—formatted to your customized design. Rational Application Developer for WebSphere Software supports many-to-many mappings to help you generate multiple persistence implementations.

Work at a higher level of abstraction with synchronized code modeling

Hand coding applications takes time. Working at a higher level of abstraction with Rational Application Developer for WebSphere Software code modeling capabilities help increase productivity and can be less error prone. The code modeling editor enables you to graphically visualize and edit Java EE code and data objects. You can



An easy-to-use Web service design user interface enables the creation of either bottom-up or top-down Web services.

work in a visual mode to create Java classes, EJB or data models, and/or jump into a code mode—where each mode is automatically updated with the changes you made in the other mode.

Another modeling editor is the Web diagram editor, which provides a range of capabilities for visually designing complete Web applications with one tool. This single editor supports the creation of data-, JSF- or Struts-based service-driven applications, helping the team save time.

Automate code quality review

The earlier defects are captured, the simpler they are to correct. Rational Application Developer for WebSphere Software includes tools to help developers automate code quality reviews. First, an automated code review feature applies more than 200 Java EE coding standards and best practices to application code, flagging violations and suggesting repairs—including rapid, one-click quick fixes. Existing rule categories include Java EE and Java SE best practices, globalization and accessibility. New rules can be imported with an interactive rules editor.

Automate deployment and system tests for WebSphere servers

WebSphere Application Server, Versions 5.1, 6.0 and 6.1 and IBM WebSphere Portal Server, Versions 5.1 and 6.0 test servers are conveniently included with Rational Application Developer for WebSphere Software to support testing and debugging of applications intended for these deployment platforms. The Rational software is designed for deep integration with the test servers, which means that the test servers autoconfigure for the application under test.

Automated support for creating and debugging the application's wsadmin files helps to expedite testing and deployment processes. Rational Application Developer for WebSphere Software also supports IBM WebSphere Application Server Community Edition and Apache Tomcat software.

Integrate with other facets of the lifecycle

Rational Application Developer for WebSphere Software helps you integrate with other facets of the development lifecycle. Requirements stored and managed in IBM Rational RequisitePro® software can be accessed and associated to corresponding modeling elements and code. Users can generate reports that highlight traceability from requirements to design. The integration with the IBM Rational Unified Process® (IBM RUP®) solution gives teams the ability to work through all of this with common, online and integrated process guidance. These integrations help reduce the risk associated with software development and make application development more predictable.

For more information

To learn more about the IBM Rational Application Developer for WebSphere Software product, or to download a trial version, visit:

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