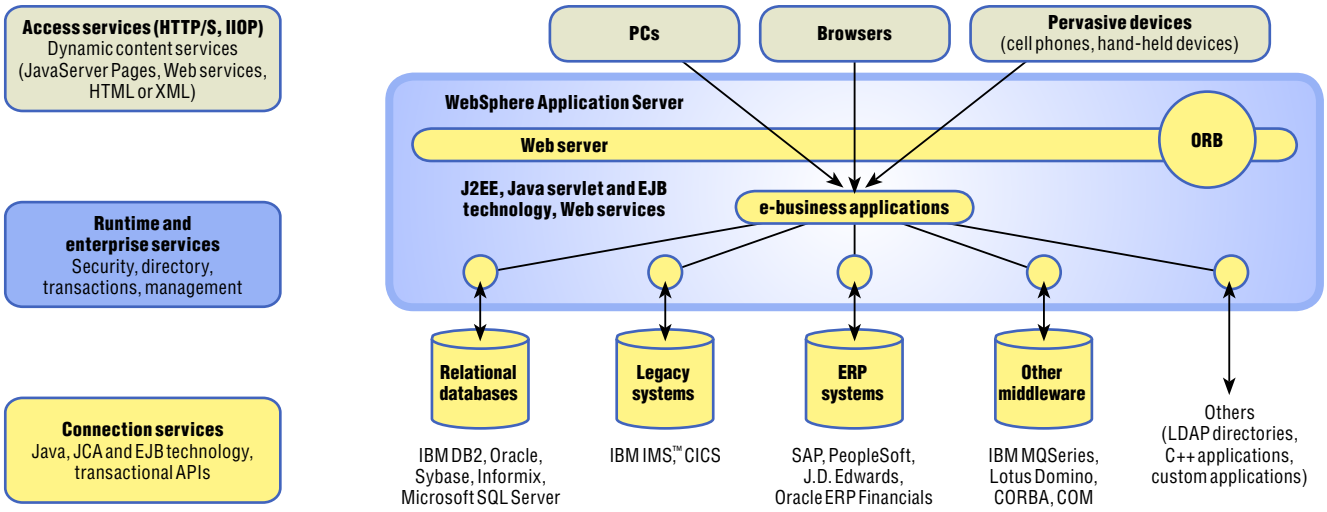
WebSphere software

IBM WebSphere Application Server Version 4.1, Enterprise Edition



WebSphere Application Server Version 4.1, Enterprise Edition builds on and extends the capabilities of WebSphere Application Server Version 4.0, Advanced Edition.

Highlights

- ***Builds on integrated support for Web services and the full J2EE, Version 1.2.1 compatibility with partial J2EE, Version 1.3 support of WebSphere Application Server Version 4.0, Advanced Edition***
- ***Integrates smoothly with WebSphere Studio Application Developer Integration Edition, Version 4.1***
- ***Includes innovations, such as enhanced internationalization capabilities and shared work areas for objects***
- ***Offers a set of enterprise services that plugs directly into WebSphere Application Server, Version 4.0, Advanced Edition to bring additional Java programming and integration capabilities to the base application server***
- ***Delivers business rules designed to provide you with the flexibility to make changes in application logic without reworking any code, even while an application is running***
- ***Includes an industry-leading messaging solution with IBM MQSeries, as well as JMS listener support***
- ***Enables integration of existing Microsoft and CORBA applications, as well as C++ assets, for transformation into new J2EE e-business applications***
- ***Provides support for exceptionally high performance and throughput requirements, as well as business logic written in multiple programming languages with IBM TXSeries***
- ***Supports a service-oriented architecture through a process engine that choreographs interactions with enterprise information systems***

e business software

Extending WebSphere Application Server with leading-edge enterprise services

Today's enterprise-class customers have sophisticated needs. They need to develop flexible applications quickly to help compete in an ever-changing business environment. They need a high-performance server solution that can provide a competitive edge. IBM WebSphere® Application Server Version 4.1, Enterprise Edition builds upon the capabilities of IBM WebSphere Application Server Version 4.0, Advanced Edition to offer leading-edge Web services and Java™ 2 Platform, Enterprise Edition (J2EE) programming model extensions.

In addition, WebSphere Application Server Version 4.1, Enterprise Edition provides advanced integration capabilities that enable integration with enterprise information systems. You can also utilize messaging to smoothly connect multiple applications and adapt existing Microsoft and Common Object Request Broker Architecture (CORBA) assets for use within the J2EE application server environment.

A flexible e-business infrastructure

IBM offers a flexible e-business infrastructure designed to help solve the demands of the most innovative e-businesses and to respond quickly to changing market conditions. IBM WebSphere Application Server Version 4.1, Enterprise Edition allows you to:

- *Make changes in application logic, such as inventory replenishment levels, without reworking code, even while the application is running.*
- *Build J2EE applications that can be deployed internationally and that can easily adapt presentation and application logic for different client locales and time zones.*
- *Efficiently share dynamic customer information from one end of a distributed application to the other.*
- *Integrate with enterprise information systems as reusable business services, connect with existing Microsoft®, CORBA, and C++ applications and handle business events through advanced messaging technology.*

Leveraging existing IT investments

WebSphere Studio Application Developer Integration Edition, Version 4.1 and WebSphere Application Server Version 4.1, Enterprise Edition let you integrate enterprise information systems with J2EE applications through the development and deployment of application adapters based on the J2EE Connector Architecture (JCA) open standard. WebSphere Application Server Version 4.1, Enterprise Edition leverages the strong integration capability of WebSphere Application Server Version 4.0, Advanced Edition by extending the messaging functionality of the base application server. The extended messaging enterprise service includes a Java Message Service (JMS) listener that manages the integration between inbound messages and Enterprise JavaBeans (EJB) operations.

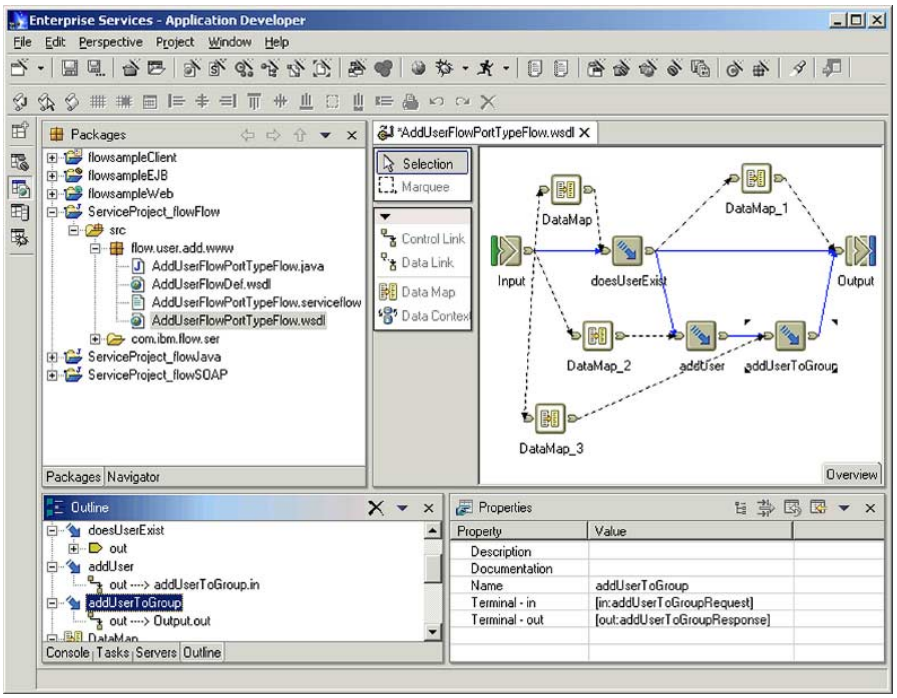
With the inclusion of IBM MQSeries® software in WebSphere Application Server Version 4.1, Enterprise Edition, existing MQSeries software-enabled applications can be integrated with your J2EE environment. WebSphere Application Server Version 4.1, Enterprise Edition also delivers programming model integration — with support for CORBA, technologies based on Microsoft Component Object Model (COM), C, C++, IBM CICS® and IBM Encina® — which can allow you to reuse and integrate your existing IT assets within a J2EE application.

Improving Java programmer productivity

IBM WebSphere Studio Application Developer Integration Edition, Version 4.1, offers developers exceptional productivity gains. The advanced development environment for J2EE application development includes a unit test environment that fully supports the WebSphere Application Server Version 4.1, Enterprise Edition runtime.

IBM realizes a fast, cost-effective way to develop and deploy e-business applications is to leverage and reuse the enterprise information systems that run your business today. WebSphere Studio Application Developer Integration Edition, Version 4.1 enables Java developers to build application adapters quickly and easily, providing access to enterprise information systems from a J2EE application. It offers robust wizards and graphical tools that help reduce the risk, complexity and cost of

creating and customizing application adapters, eliminating the need for extensive coding. WebSphere Application Server Version 4.1, Enterprise Edition also helps reduce the time and cost of developing e-business applications by providing extensive frameworks that can reduce the need for manual programming. These frameworks can absorb much of the work involved in development and automate potentially error-prone coding tasks, such as passing information as parameters on method calls.



WebSphere Studio Application Developer Integration Edition smoothly integrates WebSphere Application Server Version 4, Enterprise Edition flow engine views into a synchronized development environment.

Key elements powering WebSphere Application Server, Enterprise Edition

IBM WebSphere Application Server Version 4.1, Enterprise Edition provides world-class infrastructure software that enables the creation of flexible and adaptable e-business applications. It is powered by four principal elements: WebSphere Application Server Version 4.0 Advanced Edition; enterprise services; IBM TXSeries™ software and MQSeries software.

WebSphere Application Server Version 4.0, Advanced Edition is a Java technology-based Web application server. It provides integrated support for key Web services open standards, such as Simple Object Access Protocol (SOAP), Universal Description, Discovery and Integration (UDDI) and Web Services Description Language (WSDL). It also offers full J2EE, Version 1.2.1 compatibility with partial J2EE, Version 1.3 support. As the foundation of the WebSphere software platform, WebSphere Application Server Version 4.0, Advanced Edition provides core software to deploy, integrate and manage e-business applications.

Enterprise services are aimed at seasoned Java developers whose needs extend beyond the current Web services and J2EE standards. By offering a collection of leading-edge enterprise services that plug into and augment the core WebSphere Application Server Version 4.0, Advanced Edition product, IBM can provide significant value to the base application server. These enterprise services help give customers the flexibility to quickly develop and adapt e-business applications to meet emerging business requirements:

- *Business rule beans. Enable the encapsulation of variable business practices through externalized business rules that can be modified and managed without reworking application code.*
- *Process engine. Executes choreographed JCA-based interactions defined with WebSphere Studio Application Developer Integration Edition, Version 4.1. Customers can now leverage existing investments in business systems and applications with high-level, reusable business services.*
- *Extended messaging support. Brings superior integration capabilities to the application server environment by enabling inbound asynchronous messages to be consumed by message beans through a JMS listener.*
- *Internationalization service. Allows developers to write J2EE applications that intelligently adjust presentation and business logic based on different client locales and time zones, thereby adapting to variations in currency, data and decimal format, language and more.*

- *Shared work areas. Offer developers a way to transparently share information between objects in an application without explicitly passing that information as parameters on method calls. Shared work areas are ideal for propagating information, such as customer profiles, across a distributed application.*
- *Bidirectional CORBA connectivity. Helps enable customers to leverage their existing CORBA investments — including those in popular third-party CORBA servers and clients — within the WebSphere J2EE environment. Support consists of numerous samples, documentation including known restrictions and a value-type library that simplifies calls from CORBA to EJB.*
- *C++ CORBA software developer's kit (SDK). Provides further support for the CORBA programming model. SDK offers a way to integrate C and C++ assets with the J2EE environment, to build and deploy a CORBA 2.1 server and to build and deploy a C++ CORBA client.*
- *ActiveX bridge. Allows customers to extend J2EE EJB connectivity to existing Microsoft COM-based technologies, including Visual Basic, Visual C++ and Active Server Pages with robust qualities of service, such as high availability.*
- *Business process beans technology preview. Provides a look into future capabilities of a planned forthcoming enterprise service involving advanced business process support, including business process coordination and automated compensation.*

IBM TXSeries software supports the traditional procedural programming model. It is used in a high-performance distributed transaction processing environment. When sheer high-speed transaction processing is the goal, TXSeries software can provide a solution in distributed CICS products, typically used for COBOL applications, or IBM Encina products, typically used for C and C++ applications. It enables transaction distribution and coordination over a broad set of resource managers, including relational databases, IBM CICS for S/390® applications and traditional record-oriented resources, such as VSAM datasets, all within a scalable, reliable and security-rich context.

MQSeries enables application integration, which can allow business applications to exchange information across different platforms by sending and receiving data as messages. MQSeries takes care of network interfaces, helps assure once-only delivery of messages, deals with communications protocols, dynamically distributes workload across available resources, helps handle recovery after system problems and helps make programs portable. Programmers can use their skills to handle key business requirements, instead of wrestling with underlying network complexities. MQSeries is included as part of WebSphere Application Server Version 4.1, Enterprise Edition to support the extended messaging enterprise service with its JMS listener and message beans capabilities. MQSeries also enables communication — through asynchronous messaging and queuing — between WebSphere Application Server Version 4.1, Enterprise Edition applications and other standalone MQSeries software-based applications.

Delivering innovations today

IBM is ready to deliver solutions for enterprise customers today. By intensively incorporating and testing J2EE specifications and key Web services open standards, WebSphere Application Server Version 4.0, Advanced Edition provides an e-business infrastructure with full J2EE, Version 1.2.1 compatibility and partial J2EE, Version 1.3 support. However, some e-businesses may need to extend these industry standards to meet important application requirements. WebSphere Application Server Version 4.1, Enterprise Edition builds upon this world-class open standards implementation by offering leading-edge Web services and J2EE programming model extensions.

IBM remains committed to open standards and is an active contributor to the Java community. IBM recently submitted two Java Specification Requests (JSRs) — JSR 149 and JSR 150 — to address the requirements currently met through shared work area and internationalization enterprise services.

WebSphere software platform: building on a firm foundation

WebSphere Application Server, Enterprise Edition is part of the IBM WebSphere software platform — a set of integrated, award-winning e-business solutions. No matter where you are in the e-business cycle, the WebSphere software platform can allow you to grow — at the speed the market demands. Building on this robust platform, you can connect diverse information technology (IT) environments to help maximize your current investments and

leverage existing skills. Deliver your core business applications to the Web using industry standards like Java technology and XML. And create next-generation applications that can differentiate you from the competition. Advance to a powerful platform for integrating e-business—the WebSphere software platform.

For more information

To learn more about IBM WebSphere Application Server, Version 4, visit:

ibm.com/software/webservers/appserv/

To learn more about how the IBM WebSphere software platform can help you succeed in e-business, contact your IBM representative, IBM Business Partner or visit:

ibm.com/websphere

To order IBM WebSphere Application Server Version 4.1, Enterprise Edition, contact your IBM representative or IBM Business Partner, or call 1 800 IBM-CALL. Or visit the IBM Web site:

ibm.com/shop

IBM WebSphere Application Server Version 4.1, Enterprise Edition components

- IBM WebSphere Application Server Version 4.01, with 4.02 prerequisites, Advanced Edition
- IBM Enterprise Edition server and client (delivering enterprise services)
- IBM TXSeries
- IBM MQSeries, Version 5.2

IBM WebSphere Application Server, Version 4 comparison

IBM WebSphere Application Server, Version 4 provides a choice of configurations for its high-performance Web services-enabled J2EE deployment platform.

Capability	Version 4.0, Advanced Edition	Version 4.1, Enterprise Edition
• Full J2EE 1.2.1 compatibility with partial J2EE 1.3 support	x	x
• Web services support (SOAP, XML, UDDI, WSDL)	x	x
• Connection management and pooling	x	x
• XML parsing	x	x
• Apache-based Web server	x	x
• Firewall support	x	x
• Java technology (such as EJB, JMS, servlet)	x	x
• JMS-XA support	x	x
• Integration with WebSphere offerings	x	x
• Lotus® Domino™ interoperability	x	x
• Directory services (LDAP)	x	x
• Application-level workload management	x	x
• Clustering for higher scale	x	x
• Local and remote cloning for fault tolerance	x	x
• Additional caching for faster transactions	x	x
• Distributed security with LDAP support	x	x
• Full remote administration	x	x
• Support for DB2®, including DB2® Universal Database™ for OS/390®, Microsoft SQL Server, Sybase, Informix and Oracle	x	x
• JCA implementation for J2EE connectors	x	x
• Integration with WebSphere Studio Application Developer	x	x
• Integration with WebSphere Studio Application Developer Integration Edition		x
• Message beans and JMS listener		x
• Business rules support		x
• Internationalization service		x
• Shared work area support		x
• Bidirectional CORBA connectivity		x
• C++ CORBA SDK to leverage C++ code		x
• ActiveX bridge to reuse Microsoft assets		x
• Business process beans technology preview		x
• High-speed transaction processing support		x
• Process engine for service choreography		x
• An industry-leading messaging solution with MQSeries software		x

IBM WebSphere Application Server Version 4.1, Enterprise Edition at a glance

Hardware requirements with supported operating environments	
Windows NT and Windows 2000	• An Intel® technology-based PC running Microsoft Windows NT® Server, Version 4.0, Service Pack 6a or higher; or Windows® 2000 Server or Advanced Server Service Pack 2 • Intel Pentium® processor at 500MHz or faster • CD-ROM drive • Minimum of 280MB available disk space for installation (including the IBM Software Developer Kit) • Minimum of 384MB memory, 512MB recommended • Support for a communication adapter
AIX	• IBM @server pSeries™ running IBM AIX®, Version 4.3.3.7 with APAR IY 19277, Version 4.3.3.8 with APAR IY 19277 or Version 5.1 • IBM RS/6000® 604e workstation at 375MHz or faster • CD-ROM drive • Minimum of 300MB available disk space for installation (including the IBM Software Developer Kit) • Minimum of 384MB memory, 512MB recommended • Support for an appropriate network interface
HP-UX	• Any HP 9000 workstation running HP-UX, Version 11.0 • CD-ROM drive • Minimum of 250MB available disk space for installation • Minimum of 384MB memory, 512MB recommended • Support for an appropriate network interface
Linux Red Hat	• Intel X.86 processor at 500 MHz, or faster • Support for TCP/IP and an appropriate communication adapter • CD-ROM drive • Minimum 220MB available disk space for installation • Minimum 384MB memory, 512MB recommended
Sun Solaris	• A workstation running Sun Solaris, Version 7 or Version 8 at a maintenance level of October 2000 or higher • SPARC workstation at 440MHz or faster • CD-ROM drive • Minimum of 220MB available disk space for installation (including the Software Developer Kit) • Minimum of 384MB memory, 512MB recommended • Support for TCP/IP and an adapter
Software requirements with supported operating environments	
Windows NT	• Windows NT Server 4.0, Service Pack 6a or higher • Netscape Communicator, Version 4.7.3 or Microsoft Internet Explorer, Version 5.5, Service Pack 1 • Web browser that supports HTML 4 and CSS
Windows 2000	• Windows 2000 or Advanced Server Service Pack 1 • Netscape Communicator, Version 4.7.3 or Microsoft Internet Explorer , Version 5.5, Service Pack 1 • Web browser that supports HTML 4 and CSS
AIX	• AIX, Version 4.3.3.7 with APAR IY 19277, Version 4.3.3.8 with APAR IY 19277 or Version 5.1 • Netscape Communicator, Version 4.7.3 or Version 4.7.6i • Web browser that supports HTML 4 and CSS
HP-UX	• HP-UX Operating Environment, Version 11.0 • Netscape Communicator, Version 4.73 • Web browser that supports HTML 4 and CSS
Linux Red Hat	• Linux® Red Hat 7.1 or Linux SuSE 7.1 Linux based on Kernel 2.4 • Netscape Communicator 4.76 • Web browser that supports HTML 4 and CSS
Sun Solaris	• Solaris, Version 7 or Version 8 at a maintenance level of October 2000 or higher • Netscape Communicator, Version 4.7.3 • Web browser that supports HTML 4 and CSS

IBM Corporation
Software Group
Route 100
Somers, NY 10589
U.S.A.

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