

Upgrading IBM WebSphere Application Server

IBM WebSphere® Application Server, Version 5.1 is a proven, agile e-business platform designed to support today's business imperatives. WebSphere Application Server Version 5.1 facilitates reducing overall costs, improving customer loyalty, and adapting quickly to exploit new business opportunities.

Serving as an OS for the Internet, WebSphere Application Server Version 5.1 provides:

- A comprehensive open standards-based integration platform
- A highly integrated application development environment
- Agile application deployment and administration
- Intelligent end-to-end application optimization

WebSphere Application Server Version 5.1 provides several configurations to help a business seamlessly grow from basic to sophisticated as business needs require. Upward compatibility and migration paths are clear.

New Release Benefits

At-a-Glance Comparison of WebSphere Application Server Versions 3, 4 and 5

Version 3.5	Version 4	Version 5.1	Key features
Entry-level Offerings			
WebSphere Application Server Standard Edition Version 3.5	No version 4	WebSphere Application Server - Express Version 5.1	<ul style="list-style-type: none"> • JSPs/servlets • Scripting • Samples • No EJBs • Licensing limits
Lead offerings			
WebSphere Application Server Advanced Edition V3.5	WebSphere Application Server Advanced Single Server Edition Version 4	WebSphere Application Server Version 5.1	<ul style="list-style-type: none"> • WebSphere Application Server Express PLUS • Full J2EE Support • External HTTP server
WebSphere Application Server Advanced Edition Version 3.5	WebSphere Application Server Advanced Version 4	WebSphere Application Server Network Deployment Version 5.1	<ul style="list-style-type: none"> • WebSphere Application Server PLUS • Load balancing • Failure bypass
WebSphere Application Server Advanced Edition Version 3.5 developer license	WebSphere Application Server Advanced Developer Edition Version 4	WebSphere Application Server Version 5.1 For Developers	<ul style="list-style-type: none"> • WebSphere Application Server developer environment

Version 3.5	Version 4	Version 5.1	Key features
Enterprise Offerings			
WebSphere Application Server Enterprise Edition Version 3.5	WebSphere Application Server Enterprise Edition Version 4	WebSphere Application Server Enterprise Version 5.1	<ul style="list-style-type: none"> WebSphere Application Server Network Deployment PLUS Enterprise Services WebSphere MQ
No version 3	WebSphere Application Server Enterprise Version 4 Development Runtime	WebSphere Application Server Enterprise Version 5.1 for Developers	<ul style="list-style-type: none"> WebSphere Enterprise Edition developer environment
WebSphere Application Server Enterprise Edition for OS/390® Version 3.5	WebSphere Application Server Enterprise Edition for z/OS® and OS/390 Version 4	WebSphere Application Server Enterprise Edition for z/OS and OS/390 Version 5.1	<ul style="list-style-type: none"> WebSphere Application Server Enterprise Edition PLUS z/OS Quality of Service (QoS)

Why Renew / Why Upgrade to WebSphere Application Server V5.1

- Web services: provides an extremely rich web services environment allowing you to create new business opportunities.
- Greatly improves ease of integrating with back end systems through advanced support of Java™ Connector Architecture. This simplifies development of applications.
- Lower costs of ownership through enhanced administrative and management services via a new XML-based administrator client.
- Improved handling of transaction volumes allowing for increased scalability. This is done through enhanced performance monitoring, management and performance improvements in software components.
- Improvements to decrease costly downtime.
- Ability to prioritize levels of service and provide improved transactional qualities of service.
- Continued enhancements in security capabilities and flexibility.

New and Enhanced Features and Functions

- The first application server to deliver everything necessary for dynamic e-business, unparalleled integration and the richest and broadest open standards support, especially for Web services.
- Provides the most flexible, high performing and scalable e-business infrastructure, making it easier for you to adapt to changing market conditions with responsive and competitive applications.
- Allows you to leverage applications and skills, both today and tomorrow, with support for the most operating environments, use of industry standard technology and the broadest range of complementary middleware available.
- Provides the most productive environment optimized for developers, through a no-charge configuration of the Application Server, a full range of integrated AD tools and online support from IBM and industry peers.
- Full Java 2 Enterprise Edition (J2EE™) platform certification with the richest set of enterprise Java open standard implementation on the market today.
- Unparalleled connectivity provided by a preview implementation of Java 2 connectivity (J2C), with support for J2EE-based connectors.
- Powerful interoperability between Web services and J2EE, enabling solution offerings for collaboration, business-to-business, portal serving, content management, commerce, and pervasive computing
- Web services: V5 provides an extremely rich web services environment allowing you to create new business opportunities.
- V5 greatly improves ease of integrating with back end systems through advanced support of Java Connector Architecture. This simplifies development of applications.

This document is for Business Partner use only and is not a customer deliverable / handout.

- Lower costs of ownership through enhanced administrative and management services via a new XML-based administrator client.
- Improved handling of transaction volumes allowing for increased scalability. This is done through enhanced performance monitoring, management and performance improvements in software components.
- Improvements to decrease costly downtime.
- Ability to prioritize levels of service and provide improved transactional qualities of service.
- Continued enhancements in security capabilities and flexibility.

WebSphere Application Server Version 5.1 Improvements to Version 4

Enable Dynamic Application Interaction

- WebSphere Application Server Version 5.1 enables dynamic application interaction through native, high-performance Java Messaging Service (JMS), J2EE 1.3 Message Beans and container managed messaging. JMS simplifies development by allowing loosely coupled, reliable asynchronous interactions among J2EE components and legacy systems capable of messaging. Message beans save valuable programming time and skill by allowing requests to be processed when they arrive, as opposed to code that checks for the arrival of messages.
- WebSphere Application Server Version 5.1 also supports container managed messaging. This feature further reduces required skill level and development time to create these asynchronous applications, allowing the Enterprise JavaBean (EJB) container to take care of core messaging aspects that would otherwise have to be coded in the message beans. This added support for JMS, Message Beans and container managed messaging simplifies development without requiring in-depth JMS skills.

Reuse and Integrate Disparate Systems and Applications

- WebSphere Application Server Version 5.1 significantly reduces the complexity of interacting with back end systems through advanced support for Java Connector Architecture (JCA). This feature simplifies the development necessary to connect different types of systems, for example, single-phase resources, such as IBM CICS® to two-phase resources like IBM DB2®.

Unleash Powerful Web Services

- WebSphere Application Server Version 5.1 offers an extremely rich Web services implementation allowing you to create new business opportunities by exposing business and application services for integration by other divisions, business organizations, or platforms.
- WebSphere Application Server Version 5.1 is the most comprehensive Web services implementation across platforms on the market, including IBM iSeries™ and IBM zSeries®. The new version offers the ability to build, deploy and securely externalize Web services for application consumption across the firewall.
- In order to facilitate further business efficiencies for customers, WebSphere Application Server Version 5.1 supports long running flows with intermittent human interaction. Developers can build flows that can be interrupted prior to completion then automatically restarted, in addition to flows that prompt users to perform a task or work list.
- Support for Business Rule Beans and compensation is added in the new version. Business Rule Beans allow a business analyst to dynamically update business rules without having to hand code application changes. This feature further reduces costs of creating more efficient processes.
- Finally, WebSphere Application Server Version 5.1 supports automated compensation to increase developer productivity by reducing the need to create complex logic to manage transactions. This feature allows completing or negating a list of defined transactions that depend on each other to fully complete a unit of work. This ability enables you to visually define the process of the transactions and the appropriate actions to undo or commit the list of transactions in the event of a failure.

Agile Deployment and Administration

- Lower your cost of ownership and minimize start up investment with highly productive and flexible administration, deployment and management services.
- A new XML-based administrator client that works over HTTP is one of many significant usability enhancements to WebSphere Application Server Version 5.1. With this client, the administrator can create and manage the cluster while quickly and easily deploying new components, applications and services. Databases are no longer necessary for administering WebSphere Application Server. However, for simplicity and cost savings, DB2 is included with WebSphere Application Server.
- Additionally, management is made easier in WebSphere Application Server Version 5.1 with support for significant parts of JSR 115, the Java Authorization Service. This allows customers to plug in third party authorization or roles engines to their WebSphere environment.
- Administrators can now easily manage a joint authorization engine and application serving environment.

Intelligent end-to-end application optimization

- Create a competitive advantage and optimize price or performance while meeting the demands of dynamic e-business with an industry leading combination of reliability, availability, scalability, performance and security.
- WebSphere Application Server Version 5.1 improvements allow administrators to work more efficiently and easily. Support for Java Management Extensions (JMX) that records and logs statistics on usage and resources is included in the new version. JMX is a standard way of managing a J2EE environment and exposes the WebSphere administrative data to partners like Tivoli® and others for management integration. This allows administrators to better manage performance through best-of-breed tooling that is tightly integrated with their application-serving environment.
- The combination of JMX and Performance Monitor Interface (PMI) in WebSphere Application Server Version 5.1 allows customers to capture and manage wide-ranging performance metrics. Customers can now capture performance metrics defined in the PMI, plus WebSphere and application specific metrics.
- In addition to JMX, WebSphere Application Server Version 5.1 contains multiple components to improve the ability to handle volumes dynamically with high performance. For example, included in WebSphere Application Server Version 5.1 is Tivoli Performance Viewer (previously named Resource Analyzer). This feature offers smart auto-tuning to simplify the administrator's job by automatically making recommendations to tune critical WebSphere parameters for maximized performance. Tivoli Performance Viewer saves time while enabling improved application performance.

Enable an Always On, Always Available Infrastructure

- WebSphere Application Server Version 5.1 has new elements that decrease costly downtime.
- Additional load balancing is included to allow fail over beyond the cluster level to the domain level.
- The new Content Distribution Framework (CDF) enables business applications and transactions to continue despite down links or limited bandwidth in branch situations or multiple geographic situations. CDF pre-positions Web content closer to end users and makes it available on demand.
- WebSphere Application Server Version 5.1 also provides Transactional Qualities of Service that enable you to give prioritized levels of service to clients. For example, a bank might want to optimize service to their large deposit customers while giving lower priority to small account clients.

Instill Confidence with Security

- WebSphere Application Server Version 5.1 extends security authentication options to include Kerberos tokens - strong authentication security for client/server applications. For those who would prefer to use an alternate authentication and/or authorization security solution, the new version provides open Security Programming Interfaces (SPIs) for integration into those third party solutions.
- WebSphere Application Server Version 5.1 will have an embedded version of Tivoli Policy Director for use with WebSphere. This allows centralized site-wide authentication and access control security into a single repository. This embedded version easily enables extending security beyond WebSphere resources by upgrading to a full license of Tivoli Policy Director.

This document is for Business Partner use only and is not a customer deliverable / handout.

WebSphere Application Server Version 4 Improvements to Version 3

Note: WebSphere Application Server Version 3 went out-of-service at the end of 2003.

Web Services

- Industry-leading 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) - making WebSphere Application Server the first production-ready Web application server for the deployment of enterprise Web Services solutions for dynamic e-business
- Powerful interoperability between Web services and J2EE, enabling key solution offerings for collaboration, B2B, portal serving, content management, commerce and pervasive computing

Standards Support

- Full J2EE (Java 2 Platform, Enterprise Edition) V1.2.1 certification with early support for many of the features specified in J2EE V1.3, as well as industry-leading support for XML
- Broad cross-platform support including Microsoft® Windows NT®, Windows® 2000, Sun Solaris, HP-UX, AIX®, OS/400®, Linux (Red Hat, SuSE, Turbo and Red Flag), Linux/390
- Unparalleled connectivity provided by a preview implementation of the J2EE Connector Architecture (JCA), allowing integration with SAP, PeopleSoft, Oracle ERP Financials, J.D. Edwards, IBM CICS, IBM IMS™ and others

Performance Enhancements

- Enhanced performance through caching of dynamic content

Integration

- Expanded database support and enhanced security
- Improved system management and simplified problem determination via comprehensive Web site content and usage analyzers and reporting tools for systems and application problem determination
- Integration with IBM WebSphere Studio Workbench, the new open development environment

Licensing and Pricing

Questions to Ask: Licensing Entitlement and Compliance

- Would you be interested in lower costs of ownership? For example, through enhanced administrative and management services via a new XML-based administrator client, or decreased downtime?
- Do you need enhanced security capabilities and flexibility?
- Would you be interested in a rich web services environment allowing you to create new business opportunities?
- Would you be interested in greatly improving your ease of integrating with back end systems? For example, through advanced support of Java Connector Architecture, which simplifies development of applications?
- Do you need to prioritize levels of service and provide improved transactional qualities of service?
- Would you like to improve handling of transaction volumes for increased scalability? For example, through enhanced performance monitoring, management and performance improvements in software components?

This document is for Business Partner use only and is not a customer deliverable / handout.

© Copyright International Business Machines Corporation 2004

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

All Rights Reserved

AIX, CICS, DB2, IBM, IMS, iSeries, OS/390, OS/400, Tivoli, WebSphere, z/OS, and zSeries are trademarks of International Business Machines Corporation in the United States, other countries, or both.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Microsoft, Windows, Windows NT, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Other company, product or service names may be trademarks or service marks of others.

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.