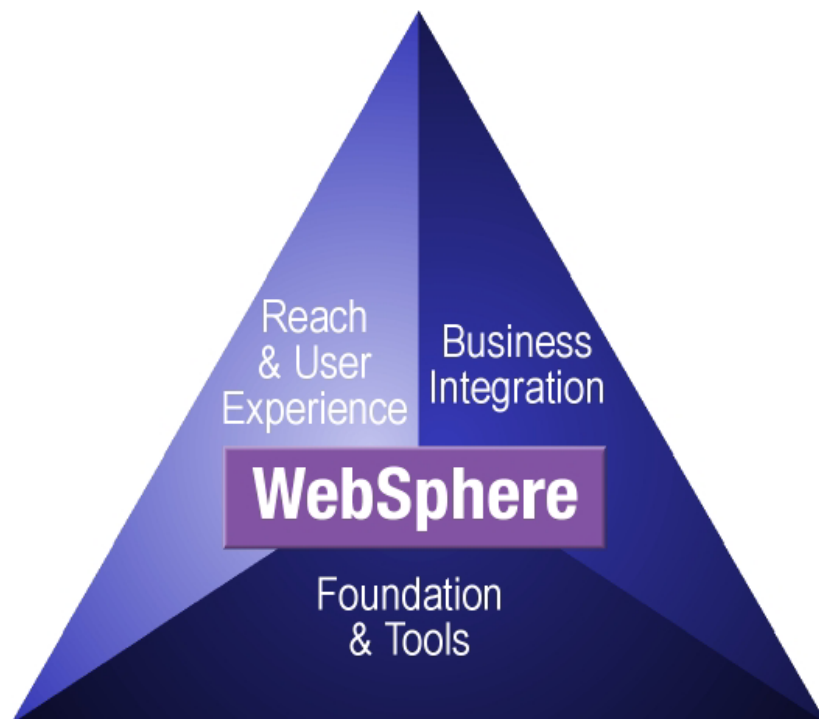




WebSphere Application Server, Version 5

What's New?



WebSphere® Application Server, V5 represents a continuation of the evolution to a single, integrated, cost effective, Web services-enabled, J2EE server foundation for foundation messaging flows and applications that offers customers:

- ❖ One deployment model
- ❖ One administration point
- ❖ One programming model
- ❖ One integrated application development environment

With WebSphere Application Server, Version 5, IBM enables customers to expand their business opportunity and productivity through a world class infrastructure ready for e-business on demand.

Version 4 made tremendous inroads in usability, connectivity, and performance that allowed customers to more easily deploy web applications as well as maximize the performance of those applications. In WebSphere Application Server V5, IBM makes it possible for its customers to participate in the next chapter in e-business.

The past five years of e-business were about web-enabling content and applications. The next chapter is about e-business on demand: dynamically integrating those applications with existing data stores, other applications, and Web services that exist in heterogeneous environments, in multiple programming models, and on different sides of firewalls. With IBM WebSphere Application Server, Version 5 provides a powerful foundation and integrated development environment that supports on demand business applications, provide customers with the four essential characteristics of the On Demand Operating Environment: Open, Integrated, Virtualized, and Autonomic.

IBM recognizes that every deployment environment is unique, and for that reason, WebSphere Application Server V5 is a single application server code-base with multiple configuration options to support a wide range of scenarios, from simple administration of a single server to a clustered, highly available, high volume environment with edge of network services.

Comprehensive Build-to-Integrate Platform

Improve time-to-market by building new integration-ready applications that leverage existing software assets.

Enable Dynamic Application Interaction

WebSphere enables dynamic application interaction through native, high performance JMS (Java Messaging Service), 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 in that they allow requests to be processed when they arrive, as opposed to code that checks for the arrival of messages.

WebSphere Application Server V5 also supports container managed messaging. This feature further reduces required skill level and development time to create these asynchronous applications, allowing the 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 while not requiring in depth JMS skills.

Reuse and Integrate Disparate Systems and Applications

WebSphere Application Server V5 significantly reduces the complexity of interacting with back end systems through advanced support for JCA (Java Connector Architecture). This feature simplifies the development necessary to connect different types of systems, for example, single-phase resources, such as CICS to two-phase resources like DB2.

Unleash Powerful Web services

WebSphere Application Server V5 offers a complete Web services implementation allowing customers to create new business opportunities by exposing business and application services for integration by other divisions, business organizations, or platforms. WebSphere Application Server V5 is the most complete Web services implementation across platforms on the market, including iSeries and zSeries. The new version offers the ability to build, deploy, and securely externalize Web services for application consumption across the firewall.

Choreograph Application Interactions

WebSphere Application Server V5 also includes a Service Choreographer that allows businesses to build and deploy process flow quickly and efficiently.

This new feature enables customers to expose J2EE based applications, Web services, and legacy applications as reusable services, and then mix and match these services to create a new flexible e-business application. This application can then, in turn, be exposed as a Web service.

In order to facilitate further business efficiencies for customers, the new version supports long running flows with intermittent human interaction. Developers can build flows that can be interrupted prior to completion and 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 the cost of creating more efficient processes.

Finally, WebSphere Application Server V5 offers support for automated compensation to increase developer productivity by reducing the need to create complex logic to manage transactions. This feature gives the customer the ability to complete or negate a list of defined transactions that depend on each other to fully complete a unit of work. This ability lets customers visually define the process of the transactions as well as the appropriate actions to undo or commit the list of transactions in the event of a failure.

Agile Deployment and Administration

Lower cost of ownership and minimize startup investment with highly productive and flexible administration, deployment and management services

Manage With Ease

A new XML-based administrator client that works over HTTP is one of many significant usability enhancements to WebSphere Application Server V5. 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 for use in session persistence.

Additionally, management is made easier in WebSphere Application Server, V5 with support for significant parts of JSR 115, the Java Authorization Service. It allows customers to plug in third party authorization/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

WebSphere Application Server V5 improvements allow customers to create competitive advantage and optimize price/performance while meeting the changing demands of dynamic e-businesses with industry leading reliability, availability, scalability, performance and security.

Handle the Volume Dynamically

WebSphere Application Server, V5 improvements allow administrators to work more efficiently and easily. Support for JMX (Java Management Extensions), 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 PMI (Performance Monitor Interface) in WebSphere Application Server V5 allows customers to capture and manage more performance metrics than any other vendor. Customers can now capture not only performance metrics defined in the PMI but also WebSphere and application specific metrics.

In addition to JMX, WebSphere Application Server V5 contains multiple components to improve the ability to handle volumes dynamically with high performance. For example, included in WebSphere Application Server V5 is the 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.

Always On, Always Available

WebSphere Application Server V5 has new elements that decrease costly downtime. Additional load balancing is included to allow failover beyond the cluster level to the domain level, enabling high availability of critical enterprise Java applications. V5 includes improved, weighted workload distribution and failover of clustered application servers, isolation of application servers to avoid single points of failure, and a simpler and improved configuration infrastructure for much better coordination and integrity of related changes. The power of first failure data capture means that your application server will be able to report and analyze problems as they occur.

In addition to these features, Application Profiling delivers powerful new capabilities that allow you to carefully optimize the performance of your applications without impacting any application source code. This capability offers a mechanism for instructing the same component to interact with the runtime infrastructure, such as a database, differently depending on the application that calls it. Therefore, you gain unprecedented control in defining strategies about concurrency, update intent, use of collections, and pre-populating component state and data buffers.

Instill Confidence with Security

WebSphere Application Server, V5 offers outstanding security through its sophisticated infrastructure and through its extensive support of open, standards-based Java specifications. WebSphere Application Server, V5 will support:

- ❖ Java Authentication & Authorization Services (JAAS) to authenticate new principals and manage privilege information for a principal
- ❖ Java 2 Security Model to secure system resources
- ❖ Java Secure Socket Extension (JSSE) to secure communication channels based on transport level security (TLS/SSL)
- ❖ Java Cryptographic Extension (JCE)
- ❖ Java Cryptographic Architecture (JCA) for Java cryptographic extensibility such as for PKI integration
- ❖ Common Secure Interoperability V2 (CSIV2) for interoperability between application servers

Together, these implementations enable you to implement standards-based security capabilities within your enterprise applications. Additionally, sophisticated enterprise topologies and infrastructure can be implemented by leveraging WebSphere pluggable security architecture. This includes:

- ❖ Pluggable user registries that enable you to exploit LDAP or custom registries

- ❖ Web single sign-on exclusively provided by WebSphere or through integration with front-end authentication end-points through Trust Association Interceptor (TAI) technology (Reverse Proxy Security Servers)
- ❖ End-to-end access to enterprise information systems using rich security features and exploiting the pluggable principal and credential mapping facility

The caching proxy provides plug-in support for Tivoli® Access Manager that allows you to exploit the Access Manager infrastructure, and an LDAP plug-in to exploit an LDAP-based repository for storing user authentication and authorization information.

Conclusion

IBM WebSphere Application Server is the foundation of the IBM WebSphere software platform for e-business on demand— a set of integrated, award-winning e-business solutions. WebSphere Application Server V5 provides a rich e-business application deployment environment with a set of application services including capabilities for transaction management, Web services, security, performance, availability, connectivity, and scalability. This new version is truly the next step dynamically integrating applications with existing data stores, other applications, and Web services that exist in heterogeneous environments, in multiple programming models, and on different sides of firewalls.



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