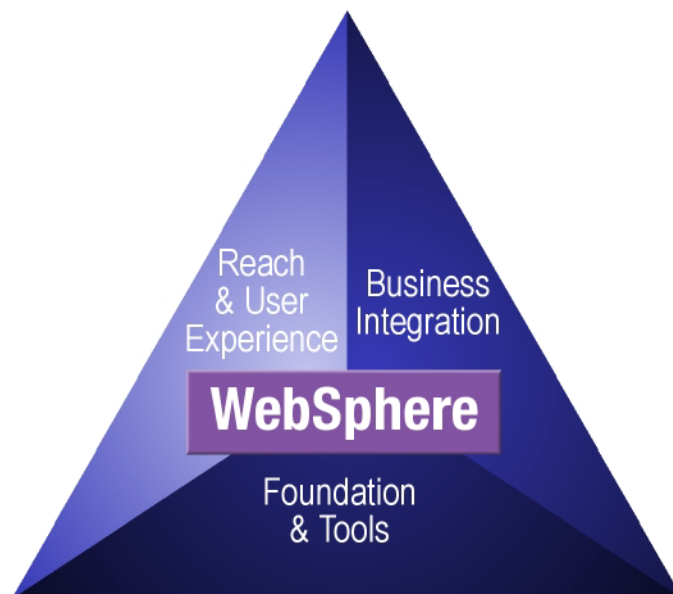




World Class Infrastructure for On Demand Business

WebSphere Application Server, Version 5



Agile Deployment and Administration

Deployment and administration of e-business infrastructure have been challenging. Point products have provided a variety of administration systems and because many of the e-business platform products were first or second generation, their ease-of-use capabilities were limited. As the application server platform becomes the new OS for the Internet, it must provide a simpler, more unified deployment and administration model.

An infrastructure must provide a stable base for the services and applications built on top. And it must provide for the ability to grow over time with minimum disruption to the existing infrastructure and applications.

WebSphere Application Server system management has been significantly enhanced in version 5. It is now easier to update and manage both middleware and applications within 7x24 operations, utilizing an improved administrative client. The overall result is improved integrity, and scalability; reduced administrator training time and operations costs; and improved application service and uptime.

In addition, migration tools and documentation enable simplified migration of infrastructure from previous versions or different configurations of WebSphere Application Server -- or even from other Web application servers.

Efficient Deployment

WebSphere Application Server, V 5 delivers a centralized web-based user interface to remotely manage multiple applications and/or middleware. The updated administrative client with an intuitive user interface provides a comprehensive look at applications, servers, and resources within the Web Application Server environment. The administrative client interface has a consistent implementation across WebSphere Application Server configurations - reducing training and experience-level required to implement or migrate to multiple configurations.

Installation of WebSphere Application Server has been improved via a single consistent installation across platforms and configurations -- and even more simple, WebSphere Application Server - Express offers a true one-touch installation suitable for mid-sized companies and departments. Typical set-up time for *WebSphere Application Server, V5* ranges from 5 to 30 minutes depending on the configuration.

Application server configuration information is stored and managed as an XML file and can be used to rapidly and conveniently configure new servers that have similar requirements. In addition, each application server is started from that local configuration file, avoiding dependency on a central repository and eliminating a single point of failure.

WebSphere Application Server, V5 can be installed and interoperate with previous versions of the server within the same network and even the same machine. Additional nodes of the server can be dynamically added and managed in the network asynchronously regardless of individual or overall network status.

To efficiently reuse XML and the new Java™ applications and components, *WebSphere Application Server, V5* implements a service-oriented architecture to achieve reusability of critical business processes. A service-oriented architecture allows virtually any software resource to be seen through

the lens of a business service interface. This generalized notion of services builds upon the Web services value proposition to provide a consistent and inclusive programming model that easily incorporates existing assets into new solutions. The result is faster assembly and deployment of new applications with re-use of existing investments.

New capabilities for installing, deploying and updating applications and components within 7x24 operations available in *WebSphere Application Server, V5* include the graphical Application Assembly Tool; an expanded command line interface, now based on the *Bean Scripting Framework*, offering support for JACL; and executable ANT tasks for common administration functions. Application components can be installed and uninstalled on-the-fly enabling updates to be implemented without impacting other application components operation. In addition, applications can be started and stopped manually or via application logic individually without impacting overall application server availability.

The administrator at a large global enterprise can take advantage of these capabilities to easily manage updates to Intranet applications that are accessed by employees around the world, around the clock, requiring 7x24 operation. For example, the administrator can update pricing methodology within an application component at the time a new sales tax law becomes effective without impacting the rest of the product pricing application operation by first uninstalling and then installing the new component on-the-fly. Via the remote administrative client the administrator can update the component on both the primary and back-up servers located anywhere in the world with no impact to the 7x24 operation.

Automated Management

WebSphere Application Server, Version 5 delivers automation across many application server management functions, enhancing productivity and reducing the cost of administration.

Administration of the server(s) is easy with an expanded XML-based administration console that works over HTTP. This console gives the WebSphere administrator more capabilities than ever through a simpler interface that renders the tasks associated with administering a WebSphere Application Server environment more efficient. With the enhanced administration capabilities, WebSphere Application Server clusters can be created and managed, and new components, applications, and services can be deployed quickly and easily. The administrative client is a J2EE application itself and can remotely manage all networked application servers from a single client. The admin client can run on any installed application server or even separately on its own "admin server" as it can be installed and run with its own application server.

A DB2 database is included in the WebSphere Application Server Network Deployment for session persistence and container-managed persistence – providing a database right in the box to take advantage of these application server features.

Basic administration functions such as error messages now provide more intuitive help giving administrators and developers better insight into application or server issues. In addition, the IBM WebSphere InfoCenter on-line has been improved to offer additional guidance to help more quickly resolve issues and improve WebSphere Application Server implementations.

Performance Monitoring

From an application and server management perspective, *WebSphere Application Server, V5* supports JMX (Java Management eXtensions), recording and logging statistics on usage and resources which can in turn be picked up and used by more extensive performance monitoring and management products from Tivoli and others that also support the JMX standard. *WebSphere Application Server, V5* supports JMX in a distributed, quality of service context with operating environments involving:

- Multiple processes
- Multiple Web application server nodes
- Distributed events
- Performance Monitoring Interfaces through JMX

The Java Management Extensions standard (JMX) provides a simple, lightweight method of assigning Java objects. Throughout the WebSphere platform, manageable objects are being exposed through JMX so that compliant management systems will be able to manage WebSphere resources in a standard way. A resource that has been instrumented with JMX can expose its read only and read/write attributes, expose methods that can be invoked to perform operations on the objects within the managed resource, and enforce event notification registration to allow management systems to be notified when a particular event occurs within the managed resource.

A central and open management interface helps customers administer multiple applications and components from the same environment, thus reducing the complexity inherent in application and systems management. Open interfaces to other management and monitoring products from Tivoli as well as third-party partners and software vendors. (See "End-to-end application optimization" section for more information on this topic.)

Performance Tuning

There are several tools available to ease common administrative tasks for verifying implementations and tuning the application server for improved performance. For example, Autotuning simplifies the administrator's job by automatically tuning the most critical WebSphere parameters to maximize performance. This leverages live data collected from a running system to refine the specific application and environment. These capabilities are critical in a scenario where the administrator is responsible for successful operation, performance and management of a high volume application running on networked servers. As website volume grows, say due to an advertised holiday sale at a commerce-oriented website, overall application performance will obviously be affected. With *WebSphere Application Server, V5* the administrator can monitor critical performance indicators using an integrated Tivoli or third-party tool. The administrator can then take action to adjust workload for any application server on the network via the remote administrative client or using the Autotuning capability - all easily accomplished with *WebSphere Application Server, V5*.

Grow From Any Starting Point

As needs change -- whether in terms of workload type, volume or new business efficiency objectives -- the e-business infrastructure won't have to. WebSphere provides a range of choices for getting started today and for growing over time.

WebSphere Application Server V5 supported growth scenarios include:

- ❖ Extending or migrating onto new hardware and operating system platforms
- ❖ Upgrading to more sophisticated configurations of WebSphere
- ❖ Consolidating operations from other application servers onto WebSphere

WebSphere Application Server V5 provides several configurations to help a business seamlessly grow from basic to sophisticated as business needs require. Upward compatibility and migration paths are clear. WebSphere Application Server - Express provides an easy on-ramp to e-business. For a distributed environment with diverse platforms and multiple enterprise systems on the "back-end", one can start with the fully J2EE™ 1.3-compliant flagship WebSphere Application Server product, with the Network Deployment option for clustering and workload management. Additional integration, application framework and deployment services designed to simplify complex mixed enterprise environments are provided by WebSphere Application Server Enterprise.

WebSphere Application Server supports the industry's broadest range of platforms. Customers routinely run WebSphere across a variety of hardware and software platforms. Companies can develop and pilot the application on Windows and later deploy on a Unix or Linux-based system.

With the introduction of Version 5, new competitive migration help is available. The Migration Zone on WebSphere Developer Domain (accessible via www.ibm.com/websphere) provides current information on this rapidly growing set of tools, documentation and services.



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