IBM

WebSphere. software

IBM WebSphere Application Server - Express, Version 6.0

Highlights

■ *Provides a full J2EE, Version 1.4 programming model across a broad range of operating environments, including OS/400, i5/OS, Linux, AIX, Windows, HP-UX and Sun Solaris operating environments*

■ *Helps improve time to value with an easy-to-use, out-of-the-box, high-performance application-development tool and deployment environment*

■ *Offers a quick and affordable solution to develop, deploy and manage Web-based applications*

■ *Enables you to take advantage of existing skills with easy-to-use development and administration tools that help you build and manage dynamic Web sites that run on leading-edge application servers*

■ *Helps speed application development through simplified database access and robust user-interface controls*

■ *Increases flexibility with support for the latest specifications for JSP, Java servlets, EJB and Web services*

■ *Minimizes administration requirements through simplified application assembly and deployment*

■ *Allows migration to other WebSphere software products when more-advanced development and deployment capabilities are required*

The IBM Telephone Directory business application is a ready-to-go solution that is provided with WebSphere Application Server - Express, Version 6.0.
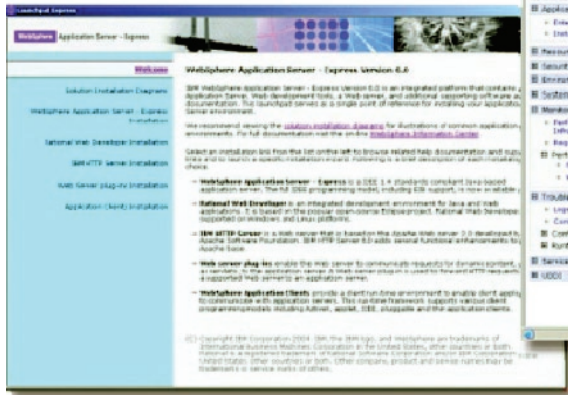
ON DEMAND BUSINESS™

Building dynamic Web sites is an increasingly integral part of business operations. Virtually all companies want to develop and manage Web-based or on demand business applications that help streamline business processes and speed time to value. But with short project timelines and limited IT resources, midsize companies often face unique challenges. IBM WebSphere® Application Server - Express, Version 6.0 software is designed to help companies like yours quickly build and extend dynamic Web sites to help reduce overall costs, improve customer loyalty and adapt quickly to leverage new business opportunities.

Based on the latest Java™ technology and Web services standards, WebSphere Application Server - Express gives you an affordable, ready-to-go solution, including streamlined server functionality, quick-start application templates and robust development tools. Jump-start your way into on demand business with a fast, cost-effective solution that can help generate business value and return on investment (ROI) quickly.
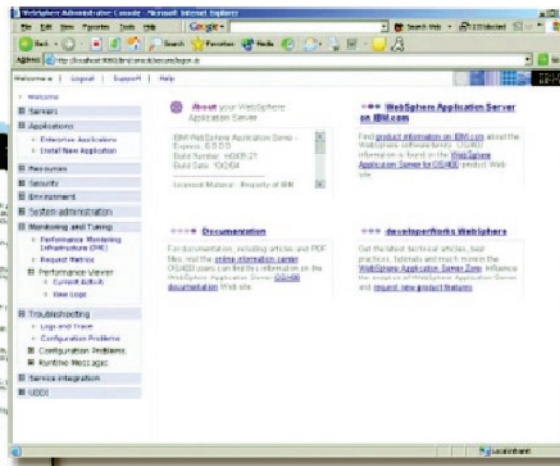
Build your on demand business quickly

A low-risk, affordable entry point to on demand business, WebSphere Application Server - Express is designed to provide end-to-end ease

of use to get your projects up and running quickly. Through an integrated development environment built on Eclipse technology, WebSphere Application Server - Express helps you create, test, deploy and manage dynamic Web sites, applications and Web services. With wizards for quick and simple installation, application assembly and deployment, and very little maintenance, WebSphere Application Server - Express requires minimal administrative resources. Also, Web browser-based administration enables you to manage WebSphere Application Server - Express remotely — and to separate development and deployment tasks.

The installation launch pad serves as your single point of reference for installing your WebSphere Application Server environment.

The WebSphere Application Server administration console has been enhanced with a cleaner and more responsive interface.

WebSphere Application Server - Express also includes a set of applications that can help boost productivity. These applications (IBM Telephone Directory and IBM Welcome Page) demonstrate the value of integrated on demand business solutions by helping you increase worker productivity, provide services that virtually any business would find useful and that are easy to understand and use. And IBM Tivoli® Directory Server provides highly secure, robust directory-management capabilities.

As your business requirements evolve, WebSphere Application Server - Express allows you to leverage your existing financial and development investments. As you migrate to more-advanced IBM WebSphere Application Server and IBM Rational® Web Developer tool configurations, existing applications can run with virtually no alterations. And the skills acquired by using WebSphere Application Server - Express are applicable to other IBM WebSphere software products.

Develop your applications with ease
You want fast, efficient application development to help ensure cost-effective investment of your time and resources. WebSphere Application Server - Express helps you lower your labor costs with a tightly integrated Java development environment, Rational Web Developer, powered by Eclipse technology. WebSphere Application Server - Express can also help you:

- *Improve your time to value with an easy-to-use, out-of-the-box, high-performance application environment.*
- *Build and manage dynamic Web sites with easy-to-use development and administration tools that allow you to make the most of existing skills.*
- *Improve business flexibility by providing the full Java 2 Platform, Enterprise Edition (J2EE) programming model on the entry-level configuration and a consistent foundation across configurations. This flexibility means that as your needs change and grow, you can run your J2EE applications unaltered on other WebSphere Application Server configurations.*

Enhancements that offer the solutions you need
Rapid installation and deployment features enable a tightly integrated solution that offers enhanced usability for faster time to value. New enhancements include:

- *The WebSphere rapid deployment component, a framework within WebSphere Application Server - Express that reduces the complexity of building J2EE applications by automating the most common and tedious aspects of application construction, assembly and deployment.*
- *Simplified packaging with only one (run-time) CD-ROM per platform and a single launch pad that conveniently launches the installations for both run time and tools, which provides the flexibility to support multitier installation scenarios.*
- *Integrated applications, like the Telephone Directory application that you can deploy in minutes to realize immediate value.*

Leverage existing resources

WebSphere Application Server - Express provides ease-of-use enhancements that can help you make the most of existing resources to enable faster time to value, such as:

- *JavaServer Faces (JSF) components that enable you to build dynamic Web user interfaces (WUIs) with drag-and-drop development capabilities.*
- *Service Data Objects (SDO) that easily connect to multiple back-end data sources through a standard interface.*
- *Enterprise Generation Language (EGL) technology that lets you build Java applications without having to know Java or object-oriented programming concepts.*
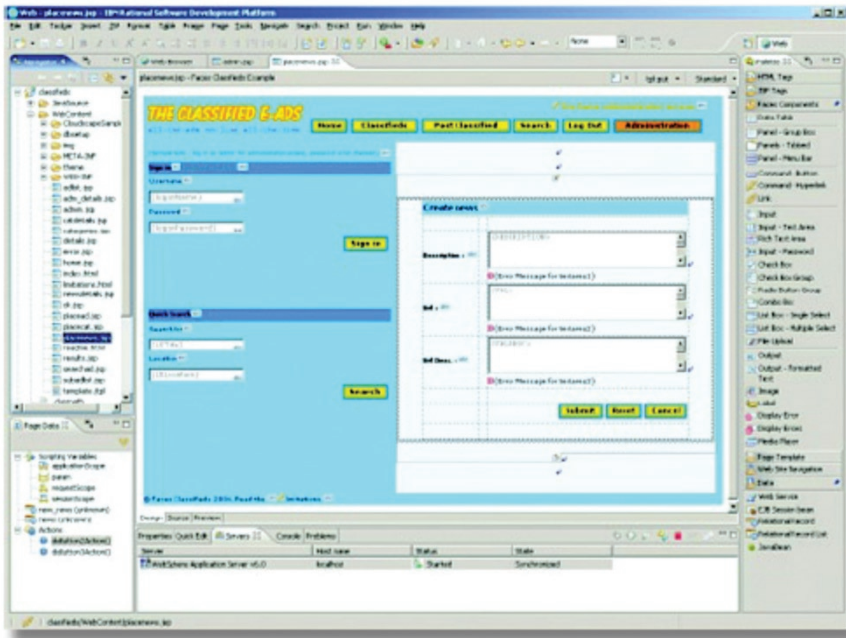
- *Eclipse technology-based improvements that can automatically customize key user tasks through progressive disclosure of capabilities.*
- *Samples and tutorials that ease the learning process for new programmers by providing templates for programming techniques and best practices.*

A comprehensive independent software vendor (ISV) platform meets the needs of ISVs with expanded platform enablement and the full Java programming model, including Enterprise JavaBeans (EJB), the Java messaging engine (Java Message Service, or JMS) and Web services, with:

- *A consistent operating-system foundation that provides greater portability, a larger pool of available solution providers and seamless migration to more-advanced configurations if and when these deployment capabilities are required.*
- *Support for standards-based messaging and the latest Web services standards that enable you to reuse existing assets, help increase your ROI on existing assets and help lower your total cost of ownership (TCO).*
- *A full J2EE programming model in the entry-level application server, so customers have more flexibility and no longer have to buy a higher-end application server to run and develop EJB technology-based ISV applications.*

The Rational Web Developer environment allows you to build, test and deploy Web, Web services and Java applications with an Eclipse technology-based integrated development environment (IDE) that is easy to learn and use and is optimized for WebSphere Application Server.

Other WebSphere Application Server - Express features that are easy to use, migration-ready and affordable include:

- *A Web application server, the Rational Web Developer tool, IBM HTTP server, integrated applications, wizards and samples — all in one product.*
- *Licensing options to fit your needs, including a per-processor license for intranet, extranet or Internet applications and a per-user license for employee intranet applications only.*
- *A quick, wizard-driven installation process.*
- *A visual Web site-management option to create, import and customize complete Web sites with consistent style and layout, using a tree view of the site structure.*

- *One-click application assembly and deployment that can help improve productivity.*
- *Two simple administrative options, depending on your preference, straight from the development tool and through a Web browser-based administration tool.*
- *An option to migrate to other WebSphere Application Server and Rational Web Developer tool configurations when more-advanced development and deployment capabilities are required.*
- *A complete J2EE programming model, which makes it easy to leverage your investment when you are ready to grow.*

Take the first steps toward integrating your business
One of the first ways your organization can become an on demand business is by integrating a Web site with a database. WebSphere Application Server - Express can help you take this step. With support for the latest versions of databases, WebSphere Application Server - Express helps you leverage new features and capabilities in leading databases, including IBM DB2® Universal Database™, IBM Informix®, Oracle, Microsoft® SQL Server 2000 and Sybase. Support for Java Database Connectivity (JDBC) helps users write database applications productively, while database connection pooling helps facilitate efficient connections to these databases.

A flexible on demand infrastructure
IBM WebSphere Application Server is the foundation of the IBM WebSphere software platform—a set of integrated, award-winning on demand business solutions. No matter where you are in the on demand business cycle, the WebSphere software platform enables you to grow at the speed the market demands. Building on this robust platform, you can integrate your current investments and leverage existing skills with a full range of server solutions from the WebSphere software family.

Along with WebSphere Application Server - Express, a comprehensive list of offerings includes:

- *IBM WebSphere Application Server, the core Web services J2EE, Version 1.4 certified application server, which enables leading-edge and flexible deployment options.*
- *IBM WebSphere Application Server Network Deployment, a J2EE and Web services Web application server with advanced deployment services such as clustering, edge-of-network services and high availability for distributed configurations.*
- *IBM WebSphere Application Server for z/OS, a J2EE and Web services application server specifically optimized for the IBM z/OS® operating environment.*

- *WebSphere Application Server for i5, designed to deliver WebSphere Application Server value on the IBM @server® i5 platform. Offerings include IBM WebSphere Application Server - Express for i5, IBM WebSphere Application Server for i5 and IBM WebSphere Application Server Network Deployment for i5. (WebSphere Application Server - Express for i5 Version 6.0 also includes the IBM Web Facing Tool, which is designed to modernize existing 5250 system-based applications.)*

Development licensing is also available. Refer to the specific WebSphere Application Server product information for more details.

For more information
To learn more about IBM WebSphere Application Server - Express and the IBM Business Partner solutions that support it, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/webservers/appserv/express

To learn more about IBM WebSphere Application Server - Express for i5, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/servers/eserver/iseries/software/websphere/wsappserver

IBM WebSphere Application Server - Express, Version 6.0 at a glance

	WebSphere Application Server - Express, Version 6.0	WebSphere Application Server, Version 6.0	WebSphere Application Server Network Deployment, Version 6.0
Java programming model			
Full J2EE, Version 1.4 support	X	X	X
Support for JavaServer Pages, Version 2.0 and Java servlets, Version 2.4	X	X	X
Full XML support	X	X	X
Web services			
Full Web services support	X	X	X
Support for private Universal Description, Discovery and Integration (UDDI) registries	X	X	X
Web services gateway			X
Database support and connectivity			
JDBC and connection management for access to DB2 Universal Database, Microsoft SQL Server 2000, Oracle, Informix and Sybase[1]	X	X	X
JDBC for access to DB2 Universal Database for i5	X	X	X
Application development			
Sample applications	X[2]	X	X
Integrated development tool—Rational Web Developer	X		
Integrated on demand business applications			
IBM Telephone Directory	X		
IBM Welcome Page	X		
Web server support			
IBM HTTP server included	X	X	X
Web server plug-ins	X	X	X

IBM WebSphere Application Server - Express, Version 6.0 at a glance (continued)

	WebSphere Application Server - Express, Version 6.0	WebSphere Application Server, Version 6.0	WebSphere Application Server Network Deployment, Version 6.0
Security			
Basic authentication and authorization for secure access to Web resources	X	X	X
Enhanced authentication and authorization through Common Secure Interoperability (CSI), Version 2.0, single sign-on and support for Lightweight Directory Access Protocol (LDAP)	X	X	X
Advanced authentication and authorization, such as Java Authentication and Authorization Service (JAAS) and Java Cryptographic Extension (JCE) for enhanced security	X	X	X
Platform support			
Broad platform support for rapid implementation on Microsoft Windows® (Microsoft Windows 2000,[3] Microsoft Windows 2003, and Microsoft Windows XP[3]), Linux®, IBM OS/400®, IBM i5/OS™, IBM AIX® systems, Sun Solaris operating environment and HP-UX	X	X	X
Support for Linux on IBM @server zSeries®		X	X
Support for servers with more than two processors[4]		X	X
Application connectivity			
Full JMS technology-supported message-driven beans, including embedded JMS transport	X	X	X
Microsoft component object model architecture to Enterprise ActiveX client and server resources[1]	X	X	X
Performance support			
Enhanced features for performance, such as dynamic caching, IBM Tivoli Performance Viewer software, integration with vendor tools	X	X	X
Administration and workload management			
Simplified administration using the development-tool interface	X		
Web browser-based remote administration	X	X	X
Convenient administration through embedded administrative console	X	X	
Intelligent workload distribution across a cluster			X
Failure bypass			X
Clustering support			X
Simple failover and load balancing		X	X
Migration support			
Migration documentation	X	X	X
Migration tools and assistance	X	X	X

IBM WebSphere Application Server - Express, Version 6.0 at a glance (continued)

Hardware requirements

For AIX operating systems
- IBM @server p5 at 375MHz or faster
- Minimum 970MB available disk space for installation (includes SDK)
- Minimum 512MB physical memory; 1GB recommended
- CD-ROM drive

For HP-UX operating systems
- PA-RISC at 440MHz or faster
- Minimum 1100MB available disk space for installation (includes SDK)
- Minimum 512MB physical memory; 1GB recommended
- CD-ROM drive

For Linux on Intel® operating systems
- Intel x86 (or equivalent) processor at 500MHz or faster
- Minimum 995MB available disk space for installation (includes SDK)
- Minimum 512MB of physical memory; 1GB recommended
- CD-ROM drive

For Linux on i5 operating systems
- i5 models that support logical partitioning (LPAR) (64-bit kernel support only) with a minimum of 450 commercial processing workload (CPW) in Linux partition
- Minimum 16GB available disk space for the OS/400 partition; 2.5GB minimum for the Linux partition
- Minimum 512MB of physical memory; 1GB recommended for the OS/400 partition
- Minimum 512MB of physical memory for the Linux partition
- CD-ROM drive

For Linux on p5 operating systems
- p5 models that support Linux (64-bit kernel support only)
- Minimum 995MB available disk space for installation
- Minimum 512MB of physical memory; 1GB recommended
- CD-ROM drive

For OS/400 and i5/OS operating systems
- IBM AS/400® 170 with processor feature 2385
- IBM AS/400 720 with processor feature 2062
- IBM @server i5 model 270 with processor feature 2252
- IBM @server i5 model 800 with processor feature 2464
- IBM @server i5 model 820 with one of these processor features: 2395, 2396, 2427, 2458
- IBM @server i5 models 520, 570, 810, 825, 830, 840, 870, 890
- For simple Web applications (no EJB), 300 CPW minimum recommended processor
- For more-complex Web applications and EJB applications, 450 CPW minimum recommended processor
- Minimum 1200MB available disk space for installation
- Minimum 768MB physical memory; 1GB recommended
- 2MB Level 2 cache

Note: This information represents the recommended minimum requirements. Deployments that must support many users or require shorter response times might require additional resources. Use the IBM @server Workload Estimator for help to size system configurations. For more information, visit www.as400service.ibm.com/estimator.

IBM WebSphere Application Server - Express, Version 6.0 at a glance (continued)

Hardware requirements (continued)

For Sun Solaris operating environment
- Sun Solaris operating environment SPARC workstation at 440MHz, or faster
- Minimum 1000MB available disk space for installation (includes SDK)
- Minimum 512MB physical memory; 1GB recommended
- CD-ROM drive

Microsoft Windows 2000,[3] Windows 2003 and Windows XP[3] operating systems
- Intel Pentium® processor (or equivalent) at 500MHz or faster
- Minimum 990MB available disk space for installation (includes SDK)
- Minimum 512MB physical memory; 1GB recommended
- CD-ROM drive

For Rational Web Developer on Linux or Microsoft Windows on Intel operating systems
- Intel Pentium III 800MHz processor minimum (higher recommended)
- 768MB RAM minimum; 1GB RAM recommended
- Disk space: The fully installed Rational Web Developer requires 3GB of disk space. Additional disk space is required for other developed resources. (Disk space requirements can be reduced if optional features and run-time environments are not installed.)
    – Additional disk space is required if you download the electronic image to install Rational Web Developer.
    – If your file system is FAT32 instead of Microsoft Windows NT® File System (NTFS), more space is required.
    – 500MB disk space is required in the TEMP directory.
- Display resolution: 1024 x 768 or higher

Software requirements

For AIX operating systems
- IBM AIX, Version 5.1 with the 5100-05 recommended maintenance package
- IBM AIX, Version 5.2 with 5200-02 or 5200-03 recommended maintenance package
- IBM AIX, Version 5.3 (AIX APAR IY58143 required)

For HP-UX operating systems
- HP-UX 11i with Quality Pack level of June 2004 and required HP-UX Java patches

For OS/400 and i5/OS operating systems
IBM OS/400, Version 5.2 and Version 5.3 with:
- The i5 server in an unrestricted state, and your user profile containing *ALLOBJ, and *SECADM special authorities
- IBM Developer Kit for Java, Version 1.4 (option 6)
- IBM OS/400 Qshell (option 30 - required to use scripts)
- IBM OS/400 Host Servers (option 12)
- Cryptographic Access Provider 128 bit for i5
- HTTP server
  - IBM HTTP Server, powered by Apache Server
  - IBM Lotus® Domino® for AS/400
  - Lotus Domino for i5 6.0
  - Lotus Domino for i5 6.5
- i5 and AS/400 optional software
  - IBM OS/400 Digital Certificate Manager (option 34) required for Secure Sockets Layer (SSL) protocol
  - IBM DB2 Query manager and SQL Development Kit for i5 helpful in developing client applications

IBM WebSphere Application Server - Express, Version 6.0 at a glance (continued)

Software requirements (continued)

For Red Hat Linux operating environments on Intel operating systems
- Red Flag Advanced Server, Version 4.1 (only available and supported through IBM China support centers)
- Red Hat Enterprise Linux (RHEL) AS, Version 3.0 with Update 2 or Update 3
- RHEL ES, Version 3.0 with Update 2 or Update 3
- RHEL WS, Version 3.0 with Update 2 or Update 3 (supported for application design, development and testing only; no support for production use)
- SUSE LINUX Enterprise Server, Version 8 with Service Pack (SP) 3
- SUSE LINUX Enterprise Server, Version 9

For Sun Solaris operating environment
- Sun Solaris operating environment, Version 8 with the June 2004 maintenance level
- Sun Solaris operating environment, Version 9 with the June 2004 maintenance level

For Windows operating systems
- Microsoft Windows 2000 Advanced Server with SP4
- Microsoft Windows 2000 Server with SP4
- Microsoft Windows 2000 Professional Server with SP4 (supported for application design, development, and testing only; no support for production use)
- Microsoft Windows Server 2003, Datacenter
- Microsoft Windows Server 2003, Enterprise
- Microsoft Windows Server 2003, Standard
- Microsoft Windows XP Professional with SP1a (supported for application design, development and testing only; no support for production use)

Supported HTTP server environments
- Apache Server, Version 2.0.49
- IBM HTTP Server, Version 2.0.47.1
- IBM HTTP Server, Version 6.0
- IBM HTTP Server for i5
- Microsoft Internet Information Services, Version 5.0 or Version 6.0
- IBM Lotus Domino Enterprise Server 6.0.3 or 6.5.1
- Sun Java System Web Server, Version 6.0 with SP7
- Sun Java System Web Server, Version 6.1 with SP1 (supported for HTTP server functionality, only for this server)

Supported Web browsers
- Microsoft Internet Explorer, Version 6.0 with SP1 on Windows
- Mozilla, Version 1.4 or Version 1.7

IBM WebSphere Application Server - Express, Version 6.0 at a glance (continued)

Tool requirements

Supported operating system environments
- Microsoft Windows XP Professional with SP1 and SP2
- Microsoft Windows 2000 Professional with SP2, SP3 and SP4
- Microsoft Windows 2000 Server with SP3 and SP4
- Microsoft Windows 2000 Advanced Server with SP3 and SP4
- Microsoft Windows Server 2003, Standard Edition
- Microsoft Windows Server 2003, Enterprise Edition
- Red Hat Enterprise Linux Workstation, Version 3.0 (all SPs)
- SUSE LINUX Enterprise Server, Version 9 (all SPs)

Supported Web browsers
- Microsoft Windows operating systems
  - Microsoft Internet Explorer, Version 5.5 with SP2
  - Microsoft Internet Explorer, Version 6.0 with SP1
  - Mozilla, Version 1.4
  - Mozilla, Version 1.7
- AIX, Linux, Sun Solaris operating environment and HP-UX operating systems
  - Mozilla, Version 1.4
  - Mozilla, Version 1.7

For more information on IBM Rational Web Developer tools, visit **ibm.com**/software/awdtools/developer/web/index.html.

Note: Hardware and software requirements are updated frequently. For the most current requirements, visit **ibm.com**/software/webservers/appserv/doc/latest/ prereq.html.

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[1] Not supported for IBM @**server** i5

[2] Samples integrated with the tool for quick-start development

[3] Supported for application design, development and testing only; no support for production use

[4] WebSphere Application Server - Express is restricted to two processors per server. WebSphere Application Server and WebSphere Application Server Network Deployment are not limited.

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