



IBM Systems - iSeries

e-business and Web serving

WebSphere Application Server - Express Version 5.1

Overview

Version 5 Release 4





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Note

Before using this information and the product it supports, be sure to read the information in "Notices," on page 9.

Third Edition (February 2006)

This edition applies to version 5.1 of WebSphere Application Server - Express (5722-E51) and to all subsequent releases and modifications until otherwise indicated in new editions. This version does not run on all reduced instruction set computer (RISC) models nor does it run on CISC models.

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Overview of WebSphere Application Server - Express for iSeries

WebSphere^(R) Application Server - Express for iSeries^(TM) is a lightweight Java^(TM) application server that is packaged with development tools and application samples to provide an integrated e-business solution. As opposed to other WebSphere Application Server editions, WebSphere Application Server - Express provides a simplified programming model and administration interfaces (such as wizards), which make it easier to develop, deploy, and manage dynamic Web sites.

See these topics for more overview information about WebSphere Application Server - Express:

“What is WebSphere Application Server - Express?”

See this topic for an overview of WebSphere Application Server, its high-level functions, and its terminology.

“Overview of WebSphere Application Server - Express architecture” on page 3

This topic describes the software components of the WebSphere Application Server - Express product and the relationships among the components.

“What’s new in Version 5.1” on page 4

This topic lists functions that are new in Version 5.1 of WebSphere Application Server - Express.

“WebSphere Application Server - Express and other WebSphere Application Server products” on page 5

See this topic for a comparison between WebSphere Application Server - Express and other products, including programming API support.

“Get support for WebSphere Application Server- Express” on page 6

This topic describes the program services, voice support, and consulting services for WebSphere Application Server - Express for iSeries.

“Other resources” on page 7

Use the resources that are listed in this topic for more information about WebSphere Application Server - Express.

What is WebSphere Application Server - Express?

WebSphere Application Server- Express allows you to implement and manage server-side Java components, such as servlets and JavaServer Pages (JSP) files. These Java components can add complex business logic and dynamic functions to static HTML Web pages.

How an application server differs from a Web server

Application servers extend a Web server’s capabilities to handle Web application requests, typically using Java technology. An application server makes it possible for a server to generate a dynamic, customized response to a client request.

This example demonstrates this request and response process:

1. A user at a Web browser on the public Internet visits a company Web site. The user requests to use an application that provides access to data in a database.
2. The user request is received by the Web server.

3. The Web server configuration determines that the request involves an application that contains resources not handled directly by the Web server (such as servlets). It forwards the request to a WebSphere Application Server - Express product through the WebSphere plug-in.
4. The invoked application then processes the user request. For example:
 - An application servlet accesses a database to process the user request.
 - The application produces a dynamic Web page that contains the results of the user query.
5. The application server collaborates with the Web server to return the results to the user.

WebSphere Application Server - Express for iSeries supports these Web servers:

- IBM HTTP Server (powered by Apache)
- Lotus Domino HTTP Server

Administrative interfaces

The primary tool for configuring and managing application servers and applications is the HTTP Server Administration interface.

WebSphere Application Server - Express also provides these administrative tools:

- The Web-based administrative console is a graphical administrative interface.
- Qshell scripts are provided for several administrative tasks.
- wsadmin is a command line administrative tool that runs in a Qshell environment.

These features are provided as technology previews:

- ws_ant is an Apache Ant-based command line administrative tool.
- Java Management Extensions (JMX) are a set of Java administrative APIs that you can use to customize WebSphere Application Server - Express administration.

For more information about the administrative tools, see Administrative tools.

Application development

WebSphere Application Server - Express provides application programming interfaces (APIs) for server-side Java components, which are based on specifications published by Sun Microsystems. You can use these Java components to build complex Web applications, such as an e-commerce Web site:

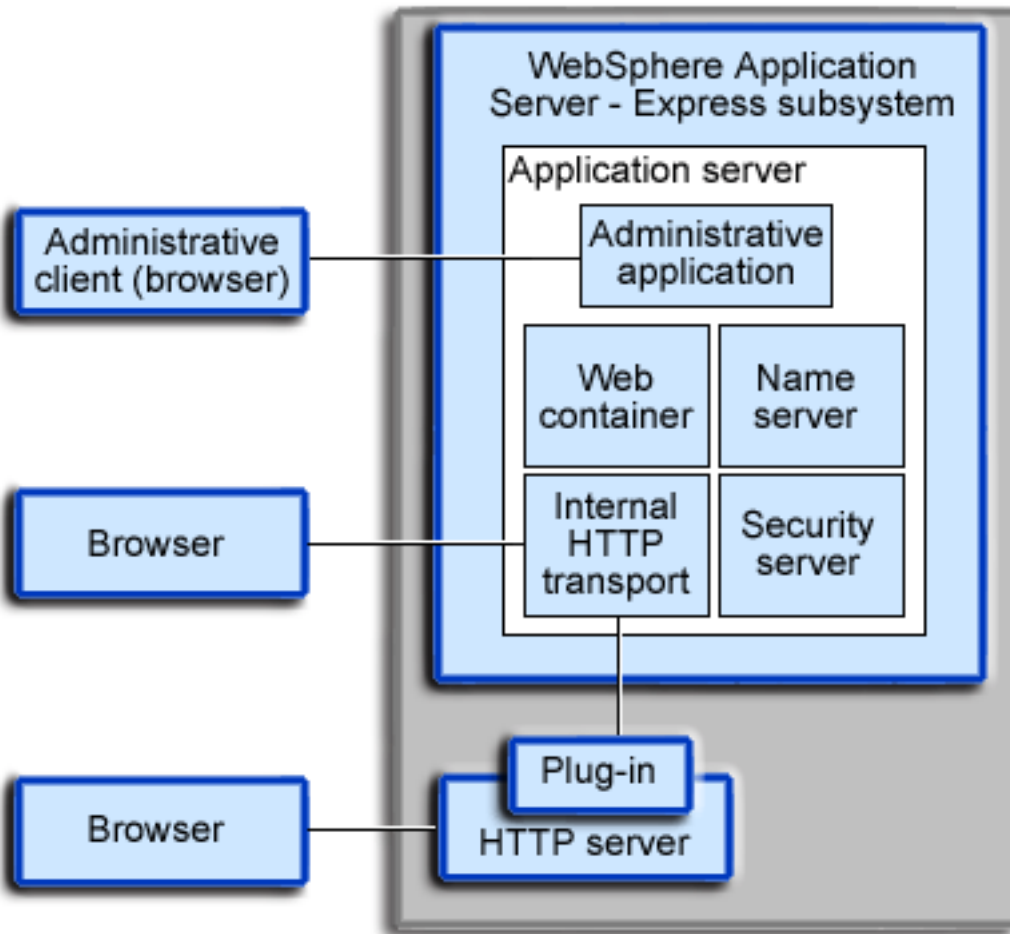
- Support for JDK 1.3
- JavaServer Pages (JSP) 1.2, including custom tag libraries
- Java Servlets 2.3
- Web Services (SOAP 2.2, WSDL, and UDDI client)
- Java Security model, including APIs and J2EE authentication and authorization
- XML tools, including Xerces and Xalan
- Java Database Connectivity (JDBC) 2.0
- Java Naming and Directory Interface (JNDI) 1.2.1
- JavaMail 1.2

For more information on developing applications for WebSphere Application Server - Express, see Application development.

Note: The WebSphere Application Server - Express product does not include programming tools or a development environment for these APIs. However, WebSphere Development Studio Client for iSeries is

shipped with WebSphere Application Server - Express, and it includes several application development tools that run on a client workstation. For more information about WebSphere Development Studio Client, see Application development tools.

Overview of WebSphere Application Server - Express architecture



This image shows the high-level architectural components of WebSphere Application Server - Express for iSeries.

The architecture of WebSphere Application Server - Express consists of these software components:

- **WebSphere subsystem**

The WebSphere Application Server - Express subsystem, QASE51, contains the jobs that pertain to WebSphere Application Server - Express. In addition to the jobs running in the QASE51 subsystem, your applications may also use jobs running in other subsystems.

- **Application server**

The application server provides the runtime environment for server-side Java components (such as servlets and JavaServer Pages). An application server contains the following architectural components:

- **Web container**

The Web container runs within the application server and handles requests for servlets, JavaServer Pages files, and the Web applications that contain them.

- **Name server**

The Java Naming and Directory Interface, or JNDI, is used to provide access to Java components within a distributed computing environment. The WebSphere Application Server - Express name

server provides the implementation of the JNDI service. You can bind WebSphere Application Server - Express resources to JNDI names, which allows applications to access resources such as data sources and mail providers.

– **Security server**

The WebSphere Application Server - Express security server provides security infrastructure and mechanisms to protect sensitive application resources and administrative resources and to address enterprise end-to-end security requirements on authentication, on resource access control, on data integrity, confidentiality, and privacy, and on secure interoperability.

• **HTTP server**

The HTTP server receives requests for server-side components (such as servlets and JavaServer Pages) and passes the requests to WebSphere Application Server - Express through an interface called the WebSphere plug-in. WebSphere Application Server - Express supports these HTTP servers:

- IBM HTTP Server for i5/OS (powered by Apache)
- Lotus Domino HTTP Server

• **WebSphere plug-in**

WebSphere Web server plug-ins enable the Web server to communicate requests for dynamic content, such as servlets, to the application server. WebSphere Application Server - Express ships two plug-ins; one for IBM HTTP Server for i5/OS (powered by Apache) and one for Lotus Domino HTTP Server. The plug-ins use a configuration file to determine whether a request should be handled by the Web server or the application server. For example, the plug-in forwards servlet requests to the application server. If you are using the HTTP server to serve HTML files, then the plug-in forwards HTML requests to the HTTP server.

What's new in Version 5.1

This page describes how WebSphere Application Server - Express Version 5.1 differs from previous versions of the product.

Product packaging

The WebSphere Application Server - Express Version 5.1 packaging is logically equivalent to Version 5.0.

Differences between Version 5.0 and Version 5.1

WebSphere Application Server - Express Version 5.1 supports the following functionality over Version 5.0:

- Java^(TM) 2 Standard Edition (J2SE^(TM)) 1.4.2
- Jython 2.1 scripting language in wsadmin
- Selective SOAP parsing for Web services
- UDDI registry tools for Web services

WebSphere Application Server - Express Version 5.1 for iSeries can coexist with previous versions of WebSphere Application Server - Express. For more information, see the Coexistence statement



on the product Web site. For information about migrating to Version 5.1 see the *Migration* topic.

Application development

WebSphere Application Server - Express Version 5.1 supports these application development specifications:

- Java^(TM) 2 Standard Edition (J2SE^(TM)) 1.4.2 (on iSeries)
- J2SE 1.4.1 (on other platforms)

- Java 2 Enterprise Edition (J2EE^(TM)) 1.3
 - Servlet 2.3
 - JavaServer Pages^(TM) (JSP^(TM)) 1.2
 - J2EE Connector Architecture 1.0
 - Bean Scripting Framework 2.3
 - Java Secure Socket Extension (JSSE) 1.0.3
 - JavaMail 1.2
 - JAX-RPC 1.0
 - Simple Object Access Protocol (SOAP) 2.3

WebSphere Application Server - Express and other WebSphere Application Server products

For Version 5.1, WebSphere Application Server for iSeries is available in the following editions:

- **WebSphere Application Server - Express**
WebSphere Application Server - Express is a simplified Web application server, with a subset of the base WebSphere Application Server functions. It is packaged with a development environment, wizards, and samples that help you create, deploy, and run a simple dynamic Web site.
- **WebSphere Application Server**
The base application server product, WebSphere Application Server, provides full support of the J2EE 1.3 specification, the server-side Java runtime environment, and administrative tools for managing the environment.
- **WebSphere Application Server Network Deployment**
The Network Deployment product provides all the functions of the base product and some additional functions, including support for highly available multiple-system configurations, centralized administration of multiple nodes, and advanced Web services components.

API support

This table summarizes the major differences in API support between WebSphere Application Server - Express and the base product. Note that not all differences are represented.

Product	Servlets (2.3)	JSP (1.2)	JDBC (2.0)	JavaMail (1.2)	JNDI (1.2.1)	Enterprise beans	JMS	J2EE 1.3 compliant
WebSphere Application Server - Express, Version 5.1	Yes	Yes	Yes	Yes	Yes	No	No	No
WebSphere Application Server, Version 5.1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Note that because WebSphere Application Server - Express does not support enterprise beans, it does not support enterprise bean application clients.

Administration support

All Version 5.1 products support these administrative interfaces:

- WebSphere administrative console (browser-based)
- Qshell scripts

- wsadmin (command-line or scripting based)
- Java Management Extensions (JMX) (technology preview)
- ws_ant (technology preview)

In addition to these administrative tools, WebSphere Application Server - Express provides wizards and administrative utilities that are integrated into the browser-based IBM HTTP Server Administration interface. With this interface, you can create and manage your WebSphere Application Server - Express instances, as well as your IBM HTTP Server instances.

Security

WebSphere Application Server - Express supports the same security functions that the other products support, except for functions that are specific to securing enterprise beans.

Get support for WebSphere Application Server- Express

Support services for IBM WebSphere Application Server - Express for iSeries are provided under the usual terms and conditions for iSeries software products. Support services include program services, voice support, and consulting services. To refer to WebSphere Application Server - Express 5.1 for iSeries, specify program number 5722-E51. For more information, see the online information at <http://www.ibm.com/eserver/iserries/support/>



or contact your local IBM representative.

Resolving defects of WebSphere Application Server - Express for iSeries is supported under program services or voice support. Resolving application programming or debugging issues is supported under consulting services.

All programming assistance is supported under consulting services. This includes the program samples that are provided in the WebSphere Application Server for iSeries licensed program product (LPP). Additional samples may be available on the Internet on an unsupported basis.

For the latest information about WebSphere Application Server - Express, including PTF information, frequently asked questions (FAQ), and the Web-based forum, check the IBM WebSphere Application Server - Express for iSeries product Web site (<http://www.ibm.com/servers/eserver/iserries/software/websphere/wsappserver/express/indexexp51.html>)



Get fixes for IBM WebSphere Application Server - Express for iSeries

Program fixes for 5722-E51 (IBM WebSphere Application Server - Express for iSeries, Version 5.1) are available through iSeries Program Temporary Fixes (PTFs). Use the online information that is provided at <http://www.ibm.com/eserver/iserries/support/>



for more information.

For the latest information about fixes, see the IBM WebSphere Application Server - Express for iSeries product Web site (<http://www.ibm.com/servers/eserver/iserries/software/websphere/wsappserver/express/indexexp51.html>)



Other resources

This topic provides links to additional iSeries-specific resources and other general IBM and Java^(TM) resources. You can use these Web sites to gain further knowledge and gather more information.

iSeries-specific resources

IBM WebSphere Application Server for iSeries product Web site

<http://www.ibm.com/eserver/series/software/websphere/wsappserver/>



See this Web site for the most current information about all versions of WebSphere Application Server for iSeries, including fixes, documentation updates, forums, and FAQs. This page also contains a link for related information that includes several articles, white papers, and other resources for the product.

Other IBM resources

IBM Software: WebSphere Application Server product Web site

<http://www.ibm.com/software/webservers/appserv/>



This is the home for IBM WebSphere Application Server on non-iSeries platforms. See this Web site for multi-platform information about the product.

IBM WebSphere Developer Domain

<http://www.ibm.com/software/websphere/developer/>



See this Web site for WebSphere-specific resources for developers, including technical articles, tutorials, certification, and the WebSphere Application Server Zone.

IBM Application Development Software Web site

<http://www.ibm.com/software/ad/>



Includes software product information about WebSphere Studio.

IBM developerWorks: Java technology Web site

<http://www.ibm.com/developer/java>



IBM home page for Java technologies, see this Web site for IBM news, tools, education, developer programs, and resources for Java.

IBM developerWorks: XML Web site

<http://www.ibm.com/developer/xml>



IBM home page for XML technologies, see this Web site for IBM news, tools, education, developer programs, and resources for XML.

Java resources

Sun Microsystems Java Technology Web site

<http://java.sun.com>



Sun home page for Java technology, this Web site is a valuable resource for Java news, specifications, products, APIs, and documentation.

Sun Microsystems Java 2 Platform Enterprise Edition Web site

<http://java.sun.com/j2ee/>



While WebSphere Application Server - Express is not J2EE compliant, it supports several API packages within the J2EE specification. This Web site offers overviews, news, articles, specifications, and other resources for J2EE.

Sun Java Servlet Technology Web site

<http://java.sun.com/products/servlet/index.html>



See this site for servlet specifications, the Java Servlet API, and Java Servlet Development Kit (JSDK) downloads.

Sun JavaServer Pages Technology Web site

<http://java.sun.com/products/jsp/index.html>



See this site for JSP specifications, APIs, FAQs, white papers, and other resources.

Appendix. Notices

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