

WebSphere Application Server
Standard Edition Version 3.02 for OS/2



Getting Started

WebSphere Application Server Standard Edition
Version 3.02 for OS/2



Getting Started

Note

Before using this information and the product it supports, read the general information under “Appendix C. Notices” on page 35.

First Edition (May 2000)

This edition applies to version 3.02 of WebSphere™ Application Server for OS/2® Standard Edition and to all subsequent releases and modifications until otherwise indicated in new editions.

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About this book

This book focuses on preparing for installation, completing the installation, getting WebSphere Application Server Standard Edition Version 3.02 for OS/2 (WebSphere Application Server) started after it is installed, troubleshooting tips, and testing tips. It also contains information about the WebSphere Administrative Console including client side installation and common tasks. This book also lists the contact information for WebSphere Application Server technical service and support.

The Getting Started book is intended as a quick reference with detailed information about WebSphere Application Server installation components and options and Lotus® Domino™ Go Webserver configuration file modifications. This book contains an index to help you find specific topics quickly.

Additional information resources are available for learning to use WebSphere Application Server features. These resources include the Document Center and the WebSphere Application Server help system (see “For more information” on page 4).

Who should read this book

This book is intended for the users of WebSphere Application Server Standard Edition Version 3.02 for OS/2 including installers, system administrators, developers, and system architects.

Conventions and terminology used in this book

The following conventions are used in this book:

- **Boldface type** indicates the name of an item you need to select, field names, and folder names. It also indicates controls (when used in procedures), such as:
 - Menu bar choices
 - Radio buttons
 - Push buttons
 - List boxes
 - Check boxes
 - Entry fields
 - Read-only entry fields
- *Italic type* indicates technical terms, book and diskette titles, words of emphasis, or variable information that must be replaced by an actual value.
- Monospace type indicates coding examples, special characters, text you must type, or displayed text.

Chapter 1. About IBM WebSphere Application Server

This chapter provides a brief overview of WebSphere Application Server. This chapter contains information about the following topics:

- WebSphere Application Server enhancements
- WebSphere Application Server features
- Servlets and accessing Web site content
- Java[®]Server Pages
- WebSphere Application Server as an environment for Web-based applications

What is WebSphere Application Server?

WebSphere Application Server enables Web transactions and interactions for e-business applications. It provides a portable, Java-based Web application deployment platform focused on supporting and executing servlets, JavaBeans, and JavaServer Pages (JSP) files. WebSphere Application Server works with a Lotus Domino Go Webserver to provide enhancements for security and control.

Refer to “WebSphere Application Server Version 3.0 features” for more details on WebSphere Application Server capabilities.

WebSphere Application Server enhancements

WebSphere Application Server provides a powerful deployment environment and set of application services for managing Java applications and components. New enhancements include:

- Extensive performance and scaling improvements in deploying servlets and JSP files
- Improved deployment manager interface and application execution services
- Additional protocol and application adapter interface support
- Improved security controls and management

WebSphere Application Server Version 3.0 features

The marketplace of the World Wide Web continues to grow rapidly. Increasingly, Web sites with dynamic HTML pages gain the competitive edge by offering interactivity and self-serve transactions. The business logic applications for this interactivity work behind the scenes to provide immediate access to data in response to user requests.

Businesses are more frequently finding Java technologies that provide and support Web-based business logic. Web sites utilizing JSP files, servlets, and Java-enabled database connections support sophisticated transactions and dynamic interaction with customers. This growth introduces some challenges, such as:

- Finding ways to leverage employees’ current skills to exploit Java technologies
- Enabling authors, designers, and programmers to work in parallel when the Web team is expanded to include business logic programmers
- Making optimum use of the collection, storage, generation, and display of data, now that Web sites are data-driven and transactional

- Growing current solutions along with Web presence throughout the business

WebSphere Application Server provides a solution to address these challenges and supporting your company's growth by:

- Providing a solution that is inexpensive, easy to use, and simple to administer
- Helping sites prepare for e-business with an infrastructure for building Web applications

WebSphere Application Server Standard Edition separates Web authoring and design tasks from business logic programming tasks, allowing programmers and more traditional Web team members to work together with maximum efficiency and minimal interference among their roles.

Servlet support for generating and accessing Web site content

To extend the server's capabilities, Java servlets run on a Java-enabled Web server similar to the way Java applets run on a browser to extend the browser's capabilities. Servlets, like other business logic components, can generate Web site content or access content from a database, allowing a new level of responsiveness to user requests.

WebSphere Application Server provides a Java-based servlet engine compatible with several Web servers and operating systems. The servlet engine supports the following:

Servlet configuration

Defines configuration information and initialization parameters for individual servlets, such as the associated class file, whether the servlet loads at startup, and security profiles to determine who can access the servlet.

Virtual hosting

Specifies alternate paths for servlets, allowing your Web server to serve different documents based on the domain specified by the client during a servlet request.

Aliasing

Specifies path-mapping rules allowing users to enter shortcut Web addresses to invoke specific servlets.

Filtering

Associates servlets with Multi-Purpose Internet Mail Extensions (MIME) types so that each time a response with a specific MIME type is generated, a particular servlet is invoked.

JavaServer Pages files support for separating Web content from business logic

Combining Web servers and application servers, a Web team can produce a truly interactive Web site on which customers can perform transactions on a self-serve basis. In addition to HTML, other technologies are available for describing and displaying the data that flows in and out of the Web site from users and back-end databases during these transactions. The technologies are the JavaServer Pages (JSP) files specification from Sun Microsystems and the eXtensible Markup Language (XML).

WebSphere Application Server helps you combine JSP, XML, business logic applications, and HTML to present a Web-based storefront for collecting user requests, summoning business logic applications to generate or access data, and formatting and displaying the results.

The WebSphere Application Server provides a JSP engine and tag support. JSP combines server-side scripting and tagging while allowing you to separate presentation logic (such as HTML) from business logic (such as a servlet). Within each JSP file, you can include JSP syntax, HTML tags, servlet tags, NCSA tags, and inline Java code. JSP files enable you to process user requests by accessing reusable business logic components, such as servlets and Java-based Web applications, as needed. JSP files also let you separate document structure, content, and presentation. This enables Web team members to work in parallel with minimal impact on one another's work.

WebSphere Application Server also provides XML Document Structure Services, which comprises a document parser, a document validator, and a document generator for server-side XML processing. These features let you leverage the power of XML, a tagging alternative to HTML. XML makes it easier to:

- Describe, determine, validate, and search document content
- Exchange information among disparate applications and users, including foreign language users

A capable environment for Web-based applications

WebSphere Application Server provides a secure, scalable environment for deploying and managing Web-based applications.

Plug-in for Lotus Domino Go Webserver

WebSphere Application Server provides a plug-in for the Lotus Domino Go Webserver, enabling it to extend into a Java application server.

Security

WebSphere Application Server provides a security server that works with the servlet engine and Lotus Domino Go Webserver to provide access control to Web resources, including HTML pages, CGI-BIN programs, servlets, and JSP files. The security server provides centralized security policy control and security services, such as authentication and authorization.

WebSphere Application Server can authenticate users against the users already defined by your Lightweight Directory Access Protocol (LDAP) service, Lightweight Third Party Authentication (LTPA) service, or underlying operating system. Local authentication uses LAN services file and print user profile management.

Both basic and custom authentication are available. Custom authentication allows you to customize your security for protecting your Web resources.

LTPA support provides the framework to achieve the convenient single-sign on. In other words, after authenticating themselves at the beginning of a session, users can access various resources on WebSphere Application Server and Lotus Domino Go Webserver without authenticating again.

Security information in the WebSphere Application Server Document Center discusses additional security features and guides you through the security set-up. For more information, see "Document Center" on page 4.

Session tracking

WebSphere Application Server supports user profiles and session tracking for Lotus Domino Go Webserver. This feature helps you to maintain information about Web site users and to group requests from the same user into a session.

Connection pooling

WebSphere Application Server provides a connection pooling feature that caches and reuses connections to Java Database Connectivity (JDBC)-compliant databases. When a servlet needs a database connection, it can get one from the pool of available connections, eliminating the overhead required to open a new connection for each request.

Extensive monitoring

WebSphere Application Server provides extensive monitoring capabilities to track resources including servlets, threads, system resources, database connection pools, and user sessions. The monitoring interface provides chart and table views that make it simpler to diagnose the health and performance of the system. Tracing and logging are also provided.

Samples

WebSphere Application Server has a sample gallery that includes a set of small generic samples. The samples give you a quick way to add common function to your own Web sites, teach the basic concepts of the WebSphere Java programming model, and demonstrate handy techniques for getting the most out of WebSphere Application Server. The sample gallery also has a complete intranet Web site for a fictitious company, YourCo. The YourCo Web site shows you how you can apply and adapt the simple samples in the gallery to a real life situation.

After you have started WebSphere Application Server, you can access more information about the samples, at the IBM WebSphere Samples Gallery:

`http://<your_server_name>/WebSphereSamples/index.html`

Note: To use the samples, you need a Web browser that supports HTML 4, Cascading Stylesheets (CSS), and Java applets. An example of such a browser is Netscape Communicator 4.61 for OS/2. Further, many samples using a database require that you use a DB2 database.

For more information

There are several ways to get more information about WebSphere Application Server, including the WebSphere Application Server Documentation Center, the WebSphere Administrative Console Help, and the WebSphere Application Server Web site.

Document Center

The Document Center provides easy access to the product programming documentation, the WebSphere Administrative Console Help, the Javadoc, the Web site, and other product resources.

To access the Document Center, you need a Web browser that supports HTML 4, Cascading Stylesheets (CSS), and Java applets. An example of such a browser is Netscape Communicator 4.61 for OS/2. Open:

`<as_root>\web\doc\begin_here\index.html`

where *<as_root>* is the directory where WebSphere Application Server is installed.

WebSphere Administrative Console Help

The WebSphere Administrative Console is a component of WebSphere Application Server that provides the systems management interface for the WebSphere Administrative Server. The Help includes a tutorial on how to perform the primary tasks, help for dialogs, and help for input fields. To access the Help, you need a Web browser that supports HTML 4, Cascading Stylesheets (CSS), and Java applets. An example of such a browser is Netscape Communicator 4.61 for OS/2.

You can access the Help within the WebSphere Administrative Console by clicking **Help** in the menu bar. To access the Help outside of the Console, use your browser to open:

<as_root> \web\help\helpcon.htm

where *<as_root>* is the directory where WebSphere Application Server is installed.

Information on the Web

The WebSphere Application Server Web site includes:

- General information about WebSphere Application Server
- Product support, including a discussion forum
- Product news
- Case studies and education
- Ordering information

Visit the site at:

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

Chapter 2. Planning to install WebSphere Application Server

This chapter discusses various concepts that must be considered before installation. This chapter covers the hardware and software requirements, topology, migration from a previous version, installation options, and installation tips and hints.

Hardware requirements

The minimum hardware requirements for installing and operating WebSphere Application Server are as follows:

- A Pentium® II or comparable processor or later
- 256 MB of RAM (512 MB recommended)
- 200 MB of free disk space for product installation
- Display with 800x600 resolution (1024x768 recommended)
- Network adapter for TCP/IP communication

Software requirements

The minimum software requirements for installing and operating the WebSphere Application Server are as follows:

- OS/2 Warp Server for e-business with the following components installed:
 - Runtime component of either IBM® OS/2 Warp Developer Kit, Java Edition, Version 1.1.7 or IBM OS/2 Warp Developer Kit, Java Technology Edition, Version 1.1.8
 - LAN services file and print
 - Network adapters and protocol services
 - TCP/IP
 - REXX support
- Lotus Domino Go Web Server Version 4.6.2.6 or later (required)
- Netscape Communicator for OS/2 Version 4.61 or later (required)
- DB2 Universal Database Version 5.2 Fixpak 11 or later or Version 6.1 Fixpak 3 or later (optional)

Note: Lotus Domino Server (not Lotus Domino Go Webserver) can not coexist with WebSphere Application Server. You must uninstall Lotus Domino Server before installing WebSphere Application Server.

WebSphere Application Server supported topology

WebSphere Application Server Standard Edition Version 3.0 supports one topology: a basic configuration with all components on a single physical machine. The basic topology is as follows:

- Runs on one workstation
- Features one or more application servers accessed by Web servers on a single node
- Performs best supporting servlets and JavaServer Pages (JSP), JavaBeans, and data access JavaBeans

This topology provides the following advantages:

- Minimal administration
- Marginal barrier between application development and deployment
- Simplicity for integrating persistent, single database data into dynamic Web application

This topology allows only one server group and does not allow clones. Use the configuration shown in Figure 1.

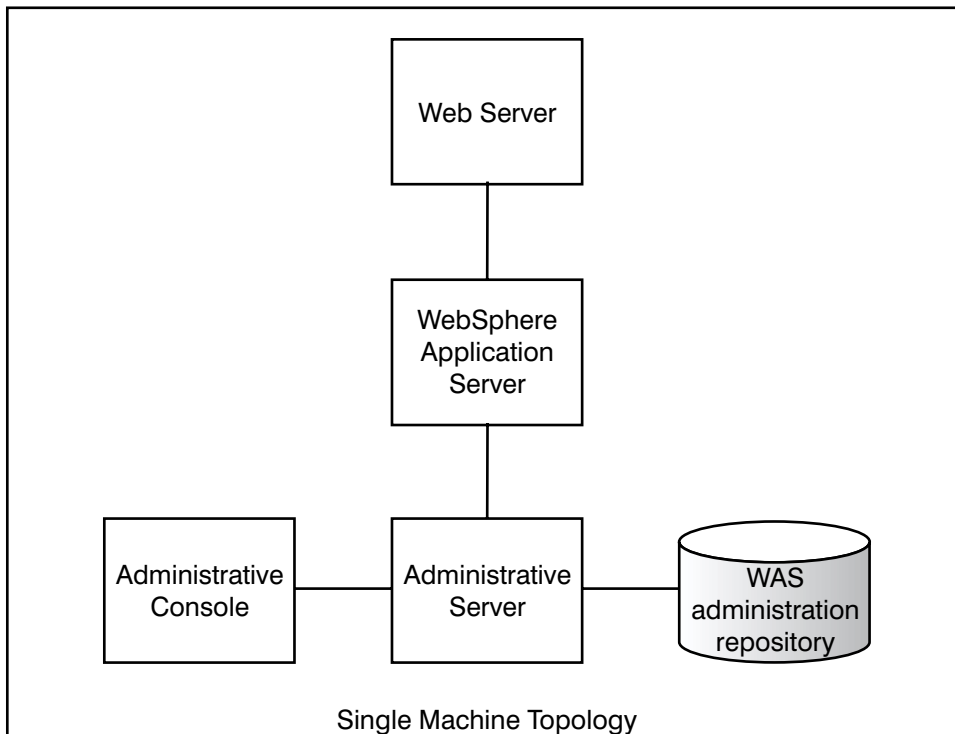


Figure 1. Single machine topology for WebSphere Application Server (WAS)

Migrating servlets and uninstalling previous versions

Before installing WebSphere Application Server version 3.0, back up any servlets from a previous version that you want to migrate to the current version. Migrating your servlets is a two step process. The first step, backing up your servlets, is covered in this chapter. The second step is covered in “Chapter 6. Migrating from WebSphere Application Server Version 1.1” on page 19. After backing up your servlets, you must uninstall the previous version using the instructions below.

Backing up servlets before uninstallation

Before uninstalling a previous version of WebSphere Application Server, ensure the servlets you want to migrate will be saved. Back up the servlets to a directory outside the WebSphere Application Server installation directories prior to installing WebSphere Application Server Version 3.0.

This is the first step to migrating servlets to WebSphere Application Server version 3.0. The second step must be completed after you install WebSphere Application Server version 3.0. (See “Chapter 6. Migrating from WebSphere Application Server Version 1.1” on page 19.)

Uninstalling previous versions of WebSphere Application Server

You must uninstall any previous versions of WebSphere Application Server before installing version 3.0. To uninstall WebSphere Application Server, complete the following steps:

1. Double-click the **WebSphere Application Server** folder. By default, this folder is on the OS/2 desktop.
2. Double-click the **Uninstall** icon to start the uninstall program.
3. Press **Enter** or click **Uninstall** to proceed with the uninstallation process. Panels guide you through the uninstall process.

WebSphere Application Server installation components and options

The WebSphere Application Server installation program allows you to choose which components of the WebSphere product to install. The installation program also allows you to set the administrative domain settings of the WebSphere Application Server to their default values and to install a plug-in for Lotus Domino Go Web Server. WebSphere Application Server includes the following installation components and options:

Production Application Server

Installs all the files necessary for the application server to run properly.

Developer's Client Files

Installs JAR files that enable your client programs to access the server's code libraries.

Administrator's Console

Installs the WebSphere Administrative Console for managing application servers.

Development Kit

Installs JAR files for developing new Java servlets in the WebSphere environment.

Documentation

Installs the help and documentation for the WebSphere Application Server.

Samples

Installs sample Java servlets and beans for e-business.

Configure Administrative Domain With Default Settings

Sets the Administrative Domain Settings to their default values.

Lotus Domino Go Webserver Plug-in

Installs the plug-in necessary for WebSphere Application Server to work with Lotus Domino Go Webserver.

WebSphere Application Server installation hints and tips

These tips are intended to highlight some important points about successfully installing WebSphere Application Server. This section includes tips for before, while, and after installation.

Before installing

Before installing WebSphere Application Server, read through the following items.

Migrate servlets before installing

If you have any servlets from a previous version you would like to migrate to this version of WebSphere Application Server, back up the files before you start installing. See “Backing up servlets before uninstallation” on page 8 for more information.

Verify the product prerequisites

Pay special attention to the product prerequisites, especially the versions and maintenance levels. See “Software requirements” on page 7 for more information.

Uninstall Lotus Domino Server

Lotus Domino Server (not Lotus Domino Go Webserver) can not coexist with WebSphere Application Server. You must uninstall Lotus Domino Server before installing WebSphere Application Server.

Install Lotus Domino Go Webserver or remove the Java servlet component

It is important that Lotus Domino Go Webserver be installed before installing WebSphere Application Server. WebSphere Application Server must modify the Lotus Domino Go Webserver configuration files in order to work properly. Install Lotus Domino Go Webserver without the Java servlets component.

If you have already installed Lotus Domino Go Webserver with the Java servlets component, run the installation utility to remove the Java servlet component. Refer to the Lotus Domino Go Webserver documentation for specific instructions for removing this component.

Stop Lotus Domino Go Webserver

Stop the Lotus Domino Go Webserver before installing WebSphere Application Server.

Verify the environment is correct

Be sure the PATH, LIBPATH, and CLASSPATH are properly set. To verify that the environment is correct, execute the `java -fullversion` command from a command prompt.

Install WebSphere Application Server last

WebSphere Application Server should be installed last. Look over the Software Requirements (see “Software requirements” on page 7) and make sure you have installed all the software listed there before you install WebSphere Application Server.

While installing

This section contains hints and tips you may need while installing WebSphere Application Server.

Destination Directory

During installation, you can change the directory where you install WebSphere Application Server. If you install WebSphere Application Server in a directory other than the default directory, use only standard ASCII characters in the directory name. WebSphere Application Server does not support diacritical or accented characters in directory names.

Installation information

The installation panels prompt you for various information. Read over the following list and have this information ready when you install WebSphere Application Server.

Security Server ID and Password

A valid Security Server user ID with administrative privileges on the operating system. These are required entries. The installation program does not supply default values.

Client Key File and Password

The class file and password for the client security key ring.

Server Key File and Password

The class file and password for the Server Key File.

DB2 Universal Database information

The installation dialog also prompts you for the following information if you are using DB2 with WebSphere Application Server:

DB2 User ID and Password

A valid DB2 User ID and password with access to the entire database. These are required entries. The installation program does not supply default values.

Database Name

The name of the database used for the administrative server repository. A DB2 database will be created the first time WebSphere Application Server is started. The name of the database will be the name you enter in this field.

After installing

This section contains hints and tips you may need after installing WebSphere Application Server.

Start Lotus Domino Go Webserver

You must start Lotus Domino Go Webserver after installing WebSphere Application Server. During installation, WebSphere Application Server installs a plug-in for Lotus Domino Go Webserver and modifies the Lotus Domino Go Webserver configuration file. For these changes to take affect, you must start Lotus Domino Go Webserver after installing WebSphere Application Server.

Test the installation using the snoop servlet

WebSphere Application Server 3.0 includes a snoop servlet for testing purposes. For WebSphere Application Server Version 3.0, it is necessary to start the WebSphere Administrative Server and the WebSphere Administrative Console to enable the snoop servlet to run.

Use the WebSphere Administrative Console **Topology** tab to start the Default server. When the servlet engine is running, you can view snoop from a Web browser.

For more information on starting the WebSphere Application Server, see "Starting the administrative server" on page 21. For more information on using the snoop servlet for testing, see "Chapter 8. Testing and troubleshooting the installation" on page 25.

Chapter 3. Installing and configuring WebSphere Application Server

This chapter discusses how to install and configure WebSphere Application Server and its components. This chapter also discusses how to enable Web distribution using the WebSphere Administrative Console.

Installing WebSphere Application Server

Before you install WebSphere Application Server, read through the information in “Chapter 2. Planning to install WebSphere Application Server” on page 7. The information in “WebSphere Application Server installation hints and tips” on page 9 is especially important.

Main steps for installation

The following chart lists the main steps you need to take to install WebSphere Application Server successfully. If you have read “Chapter 2. Planning to install WebSphere Application Server” on page 7, you might have already completed some of the steps.

Table 1. Main steps for installation

Installation Steps	More Information
1. Verify that you meet the hardware and software requirements. Install any necessary software, e.g. Lotus Domino Go Web Server and DB2.	See “Chapter 2. Planning to install WebSphere Application Server” on page 7.
2. Back up any servlets you want to migrate from previous versions to WebSphere Application Server 3.0.	See “Backing up servlets before uninstallation” on page 8
3. Uninstall any previous versions of WebSphere Application Server.	See “Uninstalling previous versions of WebSphere Application Server” on page 9.
4. Stop the Lotus Domino Go Webserver.	See the Lotus Domino Go Webserver documentation.
5. Remove the Java servlet component from Lotus Domino Go Webserver.	See “Before installing” on page 9 and the Lotus Domino Go Webserver documentation.
6. Select and install the WebSphere Application Server components you want.	See “WebSphere Application Server installation components and options” on page 9 and “Installing WebSphere Application Server”.
7. Start the administrative server.	See “Starting the administrative server” on page 21.
8. Start the administrative console.	See “Starting the WebSphere Administrative Console” on page 21.
9. Start the Lotus Domino Go Webserver.	See the Lotus Domino Go Web Server documentation.
10. Verify that WebSphere Application Server works as intended.	See “Chapter 8. Testing and troubleshooting the installation” on page 25.

WebSphere Application Server installation

Have the information outlined in “WebSphere Application Server installation components and options” on page 9 ready before installing WebSphere Application Server. Then complete the following steps:

1. Download the WebSphere Application Server package file from Software Choice.
2. Unzip the installation files from the package file into a temporary directory.
3. From the temporary directory where you unzipped the installation files, run the command `install`.

A series of panels guides you through the installation process.

Alternate installation methods

The installation process can be modified in a number of ways. The installation program allows you to save your installation settings to a text file. This text file can then be used for both attended and unattended installations. The following list includes the commands for creating the text file and using the text file for both attended or unattended installation.

install /r *filename*

This command does not install WebSphere Application Server. It shows you each installation panel and saves the settings you enter to a text file called *filename*. You may name the file anything you like.

install /p *filename*

This command executes an unattended installation. The installation program uses the settings saved in the text file. No panels are displayed.

install /l *filename*

This command executes an attended installation using the settings in the text file. The panels appear prepopulated with the settings from the text file, but you must still advance each panel.

install /nl

This command executes an attended installation. The installation program does not read any values from a text file, but settings are prepopulated with default settings written in the installation code. These settings can be changed during installation.

Configuring security runtime

The WebSphere Application Server security runtime requires post-installation steps, such as giving it system privileges and editing some WebSphere Application Server properties files. The `secure2.htm` help file in the `web/help` subdirectory of your WebSphere Application Server installation describes the necessary steps pertaining to security.

Chapter 4. Installing WebSphere Administrative Console

It is possible to install only the WebSphere Administrative Console. You can install the console on an OS/2 Warp server for e-business or an OS/2 Warp Version 4.0 client. This enables you to use the console to administer WebSphere Application Server remotely. This section covers the hardware and software requirements and WebSphere Administrative Console installation.

Hardware requirements

WebSphere Administrative Console has the following minimum hardware requirements:

- Pentium II or comparable processor or later
- 64 MB of memory
- 60 MB of free disk space for installation
- Display with 800x600 resolution (1024x768 recommended)
- Network adapter for TCP/IP communication

Software requirements

WebSphere Administrative Console has the following minimum software requirements:

- OS/2 Warp Version 4.0 with Fixpak 5 and the following components installed:
 - Runtime component of either IBM OS/2 Warp Developer Kit, Java Edition, Version 1.1.7 or IBM OS/2 Warp Developer Kit, Java Technology Edition, Version 1.1.8

Note: If you are using IBM OS/2 Warp Developer Kit, Java Edition, Version 1.1.7 with an OS/2 Warp 4.0 client, you must set `classes.zip` in the classpath.

- Network adapter and protocol services
- TCP/IP
- REXX support

WebSphere Administrative Console installation

There are two ways to install WebSphere Administrative Console. The first is a standard installation. The second is a Web-distributed installation. This section gives the instructions for both methods.

Standard installation

To install only the WebSphere Administrative Console, complete the following steps:

1. Download the WebSphere Application Server package file from Software Choice.
2. Unzip the installation files from the package file into a temporary directory.
3. From the temporary directory where you unzipped the installation files, run the command file **install.cmd**.
4. On the "Select Components" panel, select the following items:

- Administrator's Console (required)
 - Developer's Kit (optional)
 - Documentation (strongly recommended)
 - Samples (optional)
5. On the "Host Name Configuration" panel, enter the host name of the server you want to administer.
 6. Complete the rest of the panels as directed.
 7. Delete the temporary directory where you unzipped the installation files.

Web distributed installation

After WebSphere Application Server is installed, you can enable Web distribution of the WebSphere Administrative Console. This enables you to install the WebSphere Administrative Console on any client machine on the network. To complete a Web distributed installation, you must complete two steps. First, you must enable Web distribution of the WebSphere Administrative Console. This creates a number of Java JAR files that contain the necessary classes and files to run the WebSphere Administrative Console. Second you must download the WebSphere Administrative Console JAR file to the client machine and unzip the JAR file. The steps for installing WebSphere Administrative Console are as follows:

1. Enable Web distribution of the WebSphere Administrative Console.
 - a. Install WebSphere Application Server selecting all the installation components and options including **Lotus Domino Go Web Server Plug-in** and **Configure Administrative Domain with Default Settings**. See "WebSphere Application Server installation components and options" on page 9 for more information about the components and options.
 - b. Open a command prompt window and go to the `<as_root>\bin` directory where `<as_root>` is the root of the WebSphere Application Server installation, such as `D:\WebSphere\AppServer`.
 - c. Run the script `setupClients`.
 - d. Start the WebSphere Administrative Server (see "Starting the administrative server" on page 21).
 - e. Start the WebSphere Administrative Console (see "Starting the WebSphere Administrative Console" on page 21).
 - f. Start the default server (see "Starting and stopping an application server" on page 22).
 - g. Be sure that the Lotus Domino Go Web server is started and accessible.
 - h. Test your installation by accessing the default URL, **`http://<your_server_name>/admin`**, through a Web browser.
2. On the client machine, download the WebSphere Administrative Console Java JAR file and extract the console files from it.
 - a. Open a Web browser and go to the following URL:
`http://host_name/admin`. Where `host_name` is the machine where WebSphere Administrative Server is running.
 - b. On this Web site, click the **Administrative Client** link.
 - c. Click the **Administrative Client for OS/2** link, and save the file to the client machine.
 - d. Follow the on screen instructions for extracting and installing the WebSphere Administrative Console files.

Chapter 5. Uninstalling WebSphere Application Server

WebSphere Application Server includes an uninstaller program. The uninstaller program can be executed from the desktop or a command prompt. Instructions follow for both execution methods.

Uninstalling from the desktop

To uninstall WebSphere Application Server from the desktop, complete the following steps:

1. Stop Lotus Domino Go Webserver.
2. Stop the WebSphere Administrative Console and WebSphere Application Server.
3. Double-click the **WebSphere 3.0** folder on the desktop.
4. Double-click the **Uninstall** icon.

Uninstalling from a command prompt

To uninstall WebSphere Application Server from a command prompt, complete the following steps:

1. Stop Lotus Domino Go Webserver.
2. Stop WebSphere Application Server and the WebSphere Administrative Console.
3. Open a command prompt window.
4. Change to the `<boot_volume>\os2\itj` directory, where `<boot_volume>` is the directory OS/2 boots from.
5. To run an attended uninstallation, enter the following:
 - `junist <as_root>\UnInst -n -lfilename`
where `<as_root>` is the directory where WebSphere Application Server is installed and `filename` is the uninstall log file that will be created.

To run an unattended uninstallation, enter the following:

- `junist <as_root>\UnInst -s -lfilename`
where `<as_root>` is the directory where WebSphere Application Server is installed and `filename` is the uninstall log file that will be created.

Chapter 6. Migrating from WebSphere Application Server Version 1.1

This chapter discusses the second part of the migration process, the part to perform after installing WebSphere Application Server. This is the second of two steps. For information about the first step, see “Backing up servlets before uninstallation” on page 8.

Migrating servlets

After uninstalling WebSphere Application Server Version 1.1, complete the migration by placing the servlets you backed up in the first part of the migration process back into their respective directories. If you had other directories than those WebSphere Application Server creates for you, create your custom directories in the same manner you had in the previous version of WebSphere Application Server.

Activating migrated servlets

After you have manually migrated your preexisting servlets, you can use WebSphere Application Server to manage your servlets. WebSphere Application Server monitors the `<as_root>\servlets` directory and automatically reloads servlets when the servlets change.

If you have servlets in other directories and do not want to move them to the `<as_root>\servlets` directory, you can use the WebSphere Administrative Console to specify additional directories to be monitored.

Chapter 7. Starting and stopping WebSphere Application Server

This chapter provides you with information on how to start and stop:

- The WebSphere Administrative Server
- The WebSphere Administrative Console
- Application server processes (the Default Server or any you might have created)

Starting the administrative server

The administrative server can be started from a command prompt or from the desktop.

Starting the administrative server from the desktop

To start the administrative server from the desktop, complete the following steps:

1. On the desktop, double-click the **WebSphere 3.0** folder.
2. Double-click the **Admin Server** icon.
3. Several messages are displayed in the command window for the administrative server. The last message indicates that the administrative server is running and ready. The message is:

AdminServer A WebSphere Administration Server open for e-business.

Starting the administrative server from a command prompt

To start the administrative server from a command prompt, complete the following steps:

1. From a command prompt, change to the `<as_root>/bin` directory where `<as_root>` is the directory where WebSphere Application Server is installed.
2. From this directory, execute the command `startupServer`.
3. Several messages are displayed in the command window for the administrative server. The last message indicates that the administrative server is running and ready. The message is:

AdminServer A WebSphere Administration Server open for e-business.

Stopping the administrative server

To stop the WebSphere Application Server, make the WebSphere Application Server window active and press CTRL+C.

Starting the WebSphere Administrative Console

This section covers starting the WebSphere Administrative Console from the desktop and from a command prompt.

Starting the WebSphere Administrative Console from the desktop

To start the WebSphere Administrative Console from the desktop, complete the following steps:

1. On the desktop, double-click the **WebSphere 3.0** folder.
2. Double-click the **Admin Console** icon.

Starting the WebSphere Administrative Console from a command prompt

To start the WebSphere Administrative Console complete the following steps:

1. From a command prompt, change to the `<as_root>/bin` where `<as_root>` is the directory where WebSphere Application Server is installed.
2. From this directory, execute the command `admincli`.

Troubleshooting tip: If the console window does not display

After you start the WebSphere Administrative Console, you might find that the Establishing Connections window preceding the console window remains open and the console window never displays. If this occurs, it might be because the administrative server is not running and, thus, the console cannot connect to it.

To fix this situation:

1. Close the Establishing Connections window.
2. Ensure that the administrative server is running.
3. If the administrative server is not running, start it. (See “Starting the administrative server” on page 21).
4. Try starting the administrative console again.

Exiting the WebSphere Administrative Console

To exit the WebSphere Administrative Console, click **Exit** on the console menu bar.

Starting and stopping an application server

To start an application server process on the WebSphere Administrative Console:

1. Click the **Topology** tab.
2. Expand the WebSphere Administrative Domain tree view.
3. Expand your host name tree view.
4. Click **Default Server** or any server you created.
5. Do either of the following:
 - Click the round green button on the WebSphere Administrative Console tool bar.
 - Right-click the server name; then select and click **Start**.

Similarly, to stop an application server process, follow the same first four steps for starting, then do either of the following:

1. Click the round red button on the WebSphere Administrative Console tool bar.
2. Right-click the server name; then select and click **Stop**.

Note: If you want to stop everything except the WebSphere Administrative Console, refer to “Stopping the administrative server” on page 21.

If you receive an error while starting an application server from the WebSphere Administrative Console, increase the swap space and try again. Example error messages are as follows:

- A dialog box that says **Error creating new process.012 not enough space**
- The trace file has the complaint **Failed to start the bean CreateURIHome**

Chapter 8. Testing and troubleshooting the installation

Now that you have installed WebSphere Application Server and performed the minimum necessary configuration, verify that WebSphere Application Server is functioning correctly. This chapter discusses:

- Testing WebSphere Application Server components
- Accessing and using WebSphere Application Server debugging features
- Recognizing and avoiding known problems

Verifying that WebSphere Application Server is running

Before testing servlets, you must start WebSphere Application Server and the WebSphere Administrative Console:

1. Start the WebSphere Application Server. (See “Starting the administrative server” on page 21.)
2. Start the WebSphere Administrative Console. (See “Starting the WebSphere Administrative Console” on page 21.)
3. Start the default server from the WebSphere Administrative Console. (See “Starting and stopping an application server” on page 22.)
4. Start Lotus Domino Go Webserver. (See the Lotus Domino Go Webserver documentation.)

Testing Lotus Domino Go Webserver

To verify that Lotus Domino Go Webserver is up and running, start the Webserver; then open its front page:

`http://<your_server_name>`

Testing servlets

To verify the WebSphere Application Server installation and test servlets, you must have started the Web servers. After the Web servers are started, use your browser to open:

`http://<your_server_name>/servlet/snoop`

where `<your_server_name>` is your host machine name.

Two sample applications (servlet groups) are installed under the Application Server hosts folder. The applications are `default_app` (which includes `snoop`) and `examples`. To serve servlets from these applications, use your browser to open the servlet URL. To view the servlet URL, use the WebSphere Administrative Console to display the servlet attributes.

Troubleshooting servlets

If you cannot open and display your servlets, be sure that you have correctly installed the Web server and that it is running. Also, make sure you have used

your host name and not localhost and that you have started the Default Server from the WebSphere Administrative Console (see “Starting and stopping an application server” on page 22).

Viewing the current server configuration

To view the current configuration of WebSphere Application Server, complete the following steps:

1. After verifying that WebSphere Application Server is running, open the following page in a Web browser:
`http://<your_server_name>/webapp/examples/`
2. On the page that opens, click the **Show Server Configuration** link.

Debugging, tracing, logging, and monitoring

This section provides an overview of the facilities available for tracing, logging, monitoring, and debugging WebSphere Application Server and its components.

The WebSphere Administrative Console help system provides instructions to help you enable debugging, tracing, logging, and monitoring to detect and diagnose problems in both the Application server and your own programs.

To access the help system separately from the WebSphere Administrative Console, open:

`<as_root>/web/help/helpcon.htm`

where `<as_root>` is the root directory of your WebSphere Application Server installation (for example, `c:/WebSphere/AppServer/`).

You can also access the help directly from the WebSphere Administrative Console **Help** menu.

Chapter 9. Tips for using the WebSphere Administrative Console

If you have completed the instructions in previous chapters, you should now have the WebSphere Application Server and WebSphere Administrative Console running. Further, you might have used the WebSphere Administrative Console to verify the installation with a servlet.

This chapter provides more information about the WebSphere Administrative Console and points you to online helps that describe how to complete administrative tasks using the console.

What you can do with the WebSphere Administrative Console

The WebSphere Administrative Console is a main window from which you can complete tasks using the following resources:

Web applications

Configure combinations of servlets, HTML, and JavaServer Pages (JSP) files into Web applications, enabling you to manage the resources as a single unit.

Application servers

Manage application server processes that enable your Web server to handle requests for applications containing servlets.

Servlet engines and servlets

Manage servlet engines that run within application servers to handle servlet requests.

Files Manage JavaServer Pages (JSP) files, HTML files, and Web resources.

Nodes Manage physical machines in your administrative domain.

In addition, you can use the console to do the following:

- Monitor usage and performance statistics for resources such as servers and servlets.
- Monitor transactions and force outcomes.
- Establish and enforce security policies.
- Provide personalization for the applications running on your Web site including user profile and session support.
- Use virtual hosting to isolate applications and sites.
- Monitor messages and initiate tracing.

Help using the WebSphere Administrative Console

For information on how to complete the tasks listed above and tips on how to use the console, see the online documentation available under the **What is it?** and **How do I?** options in the **Help** menu.

Chapter 10. Obtaining service

The WebSphere Application Server Web site contains frequently asked questions with answers. The questions are about WebSphere Application Server in general and are not specific to OS/2. You can access the site at the following Web address:

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

If you experience a problem with WebSphere Application Server, call:

- Your IBM systems integration consultant, if your implementation is being assisted by IBM Global Services.
- The IBM Software Service Support: 1-800-237-5511

You can also submit a customer support form to the customer support team. To submit the form, complete the following steps:

1. Download the form from the following FTP site:
ftp://ps.software.ibm.com/ps/defect_submission/problem.txt
2. Fill out the information requested in the form.
3. E-mail the form to the email address provided in the form.

To learn more about IBM Software Support, see the IBM support page at:

<http://www.ibm.com/Support>

Appendix A. Components and options available for Installation

This appendix lists the definitions of the WebSphere Application Server installation components and options. The definitions include what each component or option does and under what conditions each component or option is available.

Production application server

This component installs all the files for the production application server. This component is only available if Lotus Domino Go Webserver is installed on the machine.

Developer's client libraries

This component installs the JAR files that enable your client programs to access the server's code libraries. This component is only available if Lotus Domino Go Webserver is installed on the machine.

Administrator's Console

This component installs the files for the WebSphere Administrative Console. This component is always available. However, if Lotus Domino Go Webserver is not installed on the machine, the installation program assumes you only want to install the WebSphere Administrative Console.

Development Kit

Installs JAR files for developing new Java servlets in the WebSphere Application Server environment. This component is always available.

Documentation

This component installs the WebSphere Application Server documentation which includes the Document Center and Help for the WebSphere Administrative Console. Both sets of documents are installed locally. This component is always available.

Samples

This component installs the WebSphere Application Server sample gallery. The sample gallery includes a set of small generic samples. This component is always available.

Configure Administrative Domain with Default Settings

This option sets the Administrative Domain Settings to their default values. This option is only available if Lotus Domino Go Webserver is installed on the machine.

Lotus Domino Go Webserver Plug-in

This option installs the plug-in necessary for WebSphere Application Server to work with Lotus Domino Go Webserver. This option is only available if Lotus Domino Go Webserver is installed on the machine.

Appendix B. Lotus Domino Go Webserver configuration file modifications

During installation, if you select to install the Lotus Domino Go Webserver plug-in, the following modifications are made to the Lotus Domino Go Webserver configuration file:

Lotus Domino Go Webserver (httpd.cnf)

```
NameTrans * C:\WebSphere\AppServer\bin\go46.dll:nametrans_exit
Authorization * C:\WebSphere\AppServer\bin\go46.dll:authorization_exit
Service IBMWebSphere C:\WebSphere\AppServer\bin\go46.dll:service_exit
Service /servlet/* C:\WebSphere\AppServer\bin\go46.dll:service_exit
Service /*.jhtml C:\WebSphere\AppServer\bin\go46.dll:service_exit
Service /*.jsp C:\WebSphere\AppServer\bin\go46.dll:service_exit
Pass /IBMWebAS/websphere/samples/* C:\WebSphere\AppServer\samples\*
Pass /IBMWebAS/* C:\WebSphere\AppServer\web\*
ServerInit C:\WebSphere\AppServer\bin\go46.dll:init_exit
C:\WebSphere\AppServer\properties\bootstrap.properties
ServerTerm C:\WebSphere\AppServer\bin\go46.dll:term_exit
```

This is how the above entries in the configuration file appear after the WebSphere Application Server installation is complete.

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