



IBM Systems - iSeries

e-business and Web serving

WebSphere Application Server - Express Version 5.1
Installation

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 19.

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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Installation

This topic describes the tasks and requirements for installing WebSphere Application Server - Express for iSeries Version 5.1. It provides step-by step instructions to take you through the installation of WebSphere Application Server - Express.

You can print the information in this topic by using the Installation PDF.

The overview of WebSphere Application Server - Express for iSeries provides a brief description of WebSphere Application Server - Express. For more information, see "Overview of WebSphere Application Server - Express for iSeries" on page 2.

Follow these steps to install WebSphere Application Server - Express:

1. PLANNING

"Step 1: Plan the installation" on page 3

This step describes a series of tasks that you should complete before you install WebSphere Application Server - Express for iSeries to ensure that all the prerequisites are met.

2. INSTALLING

"Step 2: Install WebSphere Application Server - Express for iSeries" on page 7

This step describes how to install the WebSphere Application Server - Express product on your iSeries server.

3. CONFIGURING

"Step 3: Create an initial configuration" on page 11

This step describes how to configure your iSeries server, the WebSphere Application Server - Express environment, and your HTTP Server so that WebSphere Application Server - Express runs correctly.

4. VERIFYING INSTALLATION

“Step 4: Verify the installation” on page 14

This step describes how to verify that you successfully installed, configured, and started WebSphere Application Server - Express.



WHAT'S NEXT?

“What’s next?” on page 14

This topic provides links to resources you can use to learn more about WebSphere Application Server - Express. These links include information on configuring and managing WebSphere Application Server - Express servers, application development, and information on the IBM Solutions that you can use with WebSphere Application Server - Express.



TROUBLESHOOTING

“Troubleshoot the installation” on page 15

This topic provides links to resources that you can use to diagnose and correct problems that may occur while installing, configuring, and starting WebSphere Application Server - Express.



UNINSTALLING

“Uninstall WebSphere Application Server - Express for iSeries” on page 15

This topic describes how to uninstall WebSphere Application Server - Express.

Overview of WebSphere Application Server - Express for iSeries

WebSphere Application Server - Express for iSeries allows you to implement and manage server-side Java components. These Java components can add complex business logic and dynamic functions to static HTML Web pages.

WebSphere Application Server - Express consists of these components:

- **The WebSphere Application Server - Express runtime environment**, which is integrated with the iSeries server. The application server includes an administrative console application that needs to be installed and running before it can be used.
- **The HTTP Server Administration interface**, including online help text, that is part of the current i5/OS web-based administration console for the IBM HTTP Server product (5722-DG1), used for administering application servers and their applications.

The application server job runs applications designed for WebSphere Application Server - Express. The application server jobs run in the QASE51 subsystem.

The HTTP Server Administration interface is a Web-based interface that runs on any browser supported by WebSphere Application Server - Express. It provides tools that allow you to administer application servers, as well as their applications. For a list of the supported browsers, see Workstation prerequisites for installing and running WebSphere Application Server - Express (page 5).

1. PLANNING

Step 1: Plan the installation

Before you install WebSphere Application Server - Express for iSeries, complete these tasks to ensure that all the prerequisites are met.

1. Plan to set aside enough time for each step of the process. For more information, see “Time considerations for installing WebSphere Application Server - Express for iSeries.” Depending on your server, the process may take more or less time.

Note: The installation of PTFs for products required by WebSphere Application Server - Express might require at least one initial program load (IPL or restart) of the server, so plan appropriately.

2. Read the product Release Notes for important information about the product. See the WebSphere Application Server documentation page (<http://www.ibm.com/eserver/iseries/software/websphere/wsappserver/express/docs/docexp51.html>)



for links to the Release Notes.

3. Verify that the prerequisites for installing and running WebSphere Application Server - Express for iSeries have been satisfied. For more information, see “Prerequisites for installing and running WebSphere Application Server - Express V5.1 for iSeries” on page 4.

Note: If you are running an iSeries server that does not meet the minimum recommended hardware requirements for WebSphere Application Server - Express, you can still install and run the product. The WebSphere Application Server - Express environment might run slowly, but your applications run successfully when the environment is running.

4. Before you install WebSphere Application Server - Express for iSeries, you need to obtain the base product and current fixes. Depending on the ordering and delivery method, this can take up to two weeks. For more information, see “Obtain WebSphere Application Server - Express and current fixes” on page 5.

**You have completed step 1 of 4.
Continue on to step 2.**



“Step 2: Install WebSphere Application Server - Express for iSeries” on page 7

Time considerations for installing WebSphere Application Server - Express for iSeries

Before you install WebSphere Application Server - Express, use this time table to plan enough time for each step of the process.

Task	Estimated time
Reading Release Notes and migration instructions, and verifying hardware and software prerequisites.	1-2 hours
Obtaining the product and current fixes.	up to 2 weeks
Installing WebSphere Application Server - Express for iSeries.	45-120 minutes
Installing any additional products and i5/OS cumulative PTF package.	1-2 hours
Installing WebSphere Application Server - Express Group PTF. The time for this task is dependent on your system.	Up to 2 hours
Creating an initial configuration.	30 minutes
Verifying the installation.	10 minutes

Prerequisites for installing and running WebSphere Application Server - Express V5.1 for iSeries

Before you install WebSphere Application Server - Express, verify that your hardware and software meet the minimum requirements.

- iSeries and AS/400 hardware requirements (page 4)
- iSeries and AS/400 required software (page 4)
- iSeries and AS/400 optional software (page 5)
- Workstation requirements (page 5)

iSeries and AS/400 hardware requirements

Use the IBM eServer Workload Estimator (<http://www-912.ibm.com/wle/EstimatorServlet>)



for help with estimating all system configurations. To estimate the workload for WebSphere Application Server - Express, chose **WebSphere Workload** on the main menu.

Systems that do not meet the recommended minimums may be used in environments that support a limited number of users and where longer server initialization times are acceptable.

- Your server should meet these requirements:
 - 300 CPW (recommended)
 - 512 MB memory
 - 2 MB L2 cache (recommended)
 - Communications adapter that supports TCP/IP

iSeries and AS/400 required software

- **i5/OS Version 5 Release 1 (V5R1), Version 5 Release 2 (V5R2), Version 5 Release 3 (V5R3), or Version 5 Release 4 (V5R4)**
Your user profile must have *ALLOBJ authority, with *SECADM special authorities. *IOSYSCFG is required to use the HTTP Server Administration interface.
- **IBM Developer Kit for JavaTM (5722-JV1), Version 1.4 (option 6).**
- **i5/OS Qshell(5722-SS1 option 30)**
Required to use scripts in WebSphere Application Server - Express and to install and apply PTFs.
- **IBM Toolbox for Java (5722-JC1)**
Required to start the HTTP server.

- **Cryptographic Access Provider 128-bit for iSeries (5722-AC3)**
- All necessary fixes. For a list of current fixes, see <http://www-1.ibm.com/servers/eserver/series/software/websphere/wsappserver/services/service.htm>



and click PTFs.

- **HTTP server**
Not needed for installation, but required to support requests for servlets and JSP resources that you want to be handled by an HTTP server residing natively on iSeries. WebSphere Application Server - Express supports these HTTP server products:
 - **IBM HTTP Server (powered by Apache) (5722-DG1)**
 - **Lotus Domino for AS/400 R5 (5769-LNT)**
 - **Lotus Domino for AS/400 R6 (5733-LD6)**
 - **Lotus Domino for iSeries 6.5 (5733-L65)**

iSeries and AS/400 optional software

- **IBM Developer Kit for Java (5722-JV1), Version 1.3 (option 5).**
If you want to use the IBM Web Administration GUI to administer instances of WebSphere Application Server - Express, you must install this version of IBM Developer Kit for Java. This version is required in addition to version 1.4, which is required for the WebSphere Application Server - Express product.
- **i5/OS Digital Certificate Manager (5722-SS1 option 34)**
This software is not required for installation, but required if you plan to use Secure Sockets Layer (SSL) protocol.

Workstation requirements

To use your workstation to administer your WebSphere Application Server - Express environment, you can use any workstation capable of running a web browser that supports HTML 4.0 and Cascading Style Sheets (CSS).

Obtain WebSphere Application Server - Express and current fixes

Before you install WebSphere Application Server - Express for iSeries, you need to obtain the base product and current fixes. The list below provides information about how to obtain the necessary products and fixes.

- **WebSphere Application Server - Express for iSeries**
For information on how to order WebSphere Application Server - Express for iSeries, see the **Ordering information** section of the WebSphere Application Server - Express packaging information page (<http://www.ibm.com/eserver/series/software/websphere/wsappserver/express/news/packageexp50.html>)



. For information on electronic ordering, see IBM WebSphere for eServer iSeries Buying and Selling Guide



- **Cumulative PTFs**
WebSphere Application Server - Express for iSeries was tested on a specific i5/OS cumulative PTF package level. To view the cumulative PTF package tested, see WebSphere Application Server PTFs



. From the PTFs page select the link for your i5/OS release level. On the resulting page, click the **Cumulative Package** link. You may be able to install and run WebSphere Application Server - Express for iSeries successfully on earlier or later cumulative PTF packages. For more information about determining your server's cumulative PTF package level, see "Verify that the correct cumulative PTF package is installed."

- **PTFs**

The WebSphere Application Server - Express for iSeries group PTF includes fixes for WebSphere Application Server - Express and other i5/OS products such as IBM DB2 Universal Database, IBM Developer Kit for Java, and the IBM HTTP Server. Installing the group PTF requires an IPL of your server, so plan accordingly.

To determine which group PTF you must order and install, see WebSphere Application Server - Express for iSeries PTFs

(<http://www.ibm.com/eserver/series/software/websphere/wsappserver/services/service.htm>)



. Note that the group PTF numbers differ by i5/OS release level.

Verify that the correct cumulative PTF package is installed

WebSphere Application Server - Express for iSeries was tested on a specific i5/OS cumulative PTF package level. To determine the prerequisite cumulative PTF package level for the version of WebSphere Application Server - Express you plan to install, see the PTF pages (<http://www-1.ibm.com/servers/eserver/series/software/websphere/wsappserver/services/service.htm>)



of the WebSphere product Web site.

From the PTF page, follow these steps:

To determine if the correct i5/OS cumulative PTF package is installed on your server, perform the these steps:

1. Sign onto your iSeries server.
2. Enter the Display PTF Status (DSPPTF) command on the CL command line. The Display PTF Status screen is displayed. This screen lists the PTFs that have been applied to your server.

Here is an example of the Display PTF status screen:

```

                                Display PTF Status
                                System: your.server
Product ID . . . . . : 5722999
IPL source . . . . . : ##MACH#B
Release of base option . . . . . : V5R1M0 L00

Type options, press Enter.
 5=Display PTF details  6=Print cover letter  8=Display cover letter

   PTF                               IPL
Opt ID   Status                      Action
-----
   TL02036  Temporarily applied      None
   TL01302  Superseded                 None
   TL01254  Superseded                 None
   TL01226  Superseded                 None
   TL01163  Superseded                 None
   TL01114  Superseded                 None
   TL01086  Superseded                 None
   RE01148  Permanently applied        None
   RE01089  Permanently applied        None

                                More...
F3=Exit  F11=Display alternate view  F17=Position to  F12=Cancel

```

In the example, the first PTF that is listed, TL02036 (with a status of **Temporarily applied**), correlates to the cumulative PTF that is installed on the server.

You must order and install the prerequisite i5/OS cumulative PTF package before proceeding to the next step in this process.

See the IBM eServer iSeries Support Fixes (<http://www.ibm.com/eserver/series/support/>)



for instructions on ordering PTFs.



2. INSTALLING

Step 2: Install WebSphere Application Server - Express for iSeries

To install WebSphere Application Server - Express on your iSeries server, complete these steps.

1. Install the prerequisite software. For more information, see “Prerequisites for installing and running WebSphere Application Server - Express V5.1 for iSeries” on page 4.
2. “Determine whether or not WebSphere Application Server - Express is preinstalled on your iSeries server”
3. “Install the correct cumulative PTF package” on page 8.
4. “Install WebSphere Application Server - Express V5.1 on iSeries” on page 8.
5. “Install PTFs” on page 9.

If you have problems with any part of the installation, see the “Troubleshoot the installation” on page 15.

Continue



“Determine whether or not WebSphere Application Server - Express is preinstalled on your iSeries server”

Determine whether or not WebSphere Application Server - Express is preinstalled on your iSeries server

You might have WebSphere Application Server - Express for iSeries preinstalled on your V5R2, V5R3, or V5R4 iSeries server. To verify whether or not WebSphere Application Server - Express is already installed on your machine, perform these steps:

1. To access the License Program menu, enter this command at your CL command prompt:

```
go licpgm
```

2. Select option 10 (Display Installed License Programs).
3. Press **F11** twice to display the options.
4. This is what you should see if option *Base is installed:
5722E51 *BASE WebSphere Application Server - Express

This is what you should see if option 2 is installed:

If you have a preinstalled system, WebSphere Application Server - Express is already installed and an instance has been created and configured. To finish the configuration of WebSphere Application Server - Express and start your instance, see Administration considerations for preloaded systems in the *Administration* topic.

Continue



“Install the correct cumulative PTF package”

Install the correct cumulative PTF package

WebSphere Application Server - Express for iSeries was tested on a specific i5/OS cumulative PTF package level. If the correct cumulative PTF package is not installed on your iSeries server, you must install it before running WebSphere Application Server - Express. You might be able to install and run WebSphere Application Server - Express for iSeries successfully on earlier or later cumulative PTF packages.

Note: Loading the cumulative PTF package requires a restart of your iSeries server. If it is not convenient to restart your server, you can load and apply the PTF specifying that the PTFs requiring an IPL be applied at the next normal IPL of the server. However, you should not create a WebSphere Application Server - Express instance until all of the PTFs have been successfully applied.

For information on verifying your cumulative PTF level, see “Verify that the correct cumulative PTF package is installed” on page 6.

If the correct cumulative PTF is installed, skip this step and continue to “Install WebSphere Application Server - Express V5.1 on iSeries.”

To install the cumulative PTF, follow your normal PTF installation procedures. For more information on installing cumulative PTFs, see Install cumulative PTF packages.

Continue



“Install WebSphere Application Server - Express V5.1 on iSeries”

Install WebSphere Application Server - Express V5.1 on iSeries

Understanding the WebSphere Application Server - Express for iSeries options

Before you install WebSphere Application Server - Express for iSeries, decide which options you require. You can install a subset of products and options to meet your needs.

WebSphere Application Server - Express for iSeries (5722E51) options:

- (Option Base) WebSphere Application Server - Express

This option is required for all other options. It can be installed alone if you want to use the plugin in conjunction with an HTTP server to route incoming HTTP requests to remote WebSphere Application Server - Express instances. This option is on the *IBM WebSphere Application Server - Express for iSeries CD*.

- (Option 2) IBM WebSphere Application Server Express V5.1

Option 2 provides the application server run time for WebSphere Application Server - Express. It allows you to deploy and run your web applications. This option is on the *IBM WebSphere Application Server - Express for iSeries CD-ROM*.

After you have decided which options you require, use these steps to install WebSphere Application Server - Express:

1. Ensure that your user profile has *ALLOBJ and *SECADM authority.
2. Place the appropriate CD-ROM in the CD-ROM drive of your iSeries server.
3. To install the *Base option, on the iSeries command line, enter this command:

```
RSTLICPGM LICPGM(5722E51) DEV(OPT01)
```

where *OPT01* is your CD-ROM drive. A confirmation message appears when the *Base option is successfully restored. The *Base option is required to run WebSphere Application Server - Express.
4. To install the Option 2, IBM WebSphere Application Server Express V5.1, on the iSeries command line, enter this command:

```
RSTLICPGM LICPGM(5722E51) DEV(OPT01) OPTION(2)
```

where *OPT01* is your CD-ROM drive. A confirmation message appears when the option is successfully restored.

The install of the *Base option creates these directories:

- **/QIBM/ProdData/WebASE51**
This is the product root directory. Files under this directory structure should not be modified.
- **/QIBM/UserData/WebASE51**

The install of Option 2 creates these directories:

- **/QIBM/ProdData/WebASE51/ASE**
This is the product root directory for option 2. Files under this directory structure should not be modified.
- **/QIBM/UserData/WebASE51/ASE**



"Install PTFs"

Install PTFs

The PTF Group for WebSphere Application Server - Express includes the PTF Groups for IBM DB2, Java, and HTTP Server. The group PTFs must be loaded and applied prior to starting WebSphere Application Server - Express for the first time.

See the PTFs page (<http://www-1.ibm.com/servers/eserver/iseries/software/websphere/wsappserver/services/service.htm>)



to determine which group PTF you must order and install for your WebSphere Application Server - Express edition and for your i5/OS release level.

All product prerequisites must be installed before you install the group PTF packages, or WebSphere Application Server - Express may fail when it is started. For example, the Java PTFs are not installed if IBM Developer Kit for Java 1.4 (5722-JV1, Option 6) is not installed on the server.

These instructions describe how to install the WebSphere Application Server - Express for iSeries group PTFs:

Note: Because some of these PTFs in the Group PTF may require a restart of your iSeries server, the instructions include steps for placing the server in a restricted state and doing the IPL of the server. If it is not convenient to restart your server, you can load and apply the PTFs specifying that the PTFs requiring an IPL be applied at the next normal IPL of the server. However, you should not attempt to start or use the WebSphere Application Server - Express environment until all of the PTFs have been successfully loaded and applied.

1. Verify that all of the prerequisite software (page 4) is installed.
2. Place the PTF CD-ROM into the CD-ROM drive on your iSeries server.
3. Sign on to your server. Your user profile must have *ALLOBJ authority.
4. Enter this command to bring your system into a restricted state:
ENDSBS SBS(*ALL)
5. Enter this command from the CL command line when the system is in a restricted state:
GO PTF
6. Select option 8 (Install program temporary fix package) from the menu.
7. Specify these parameter values and press **Enter**:
 - a. **Device:** (Specify the device name of your CD-ROM drive, for example, OPT01.)
 - b. **Automatic IPL:** Y
 - c. **PTF type:** 1 (All PTFs)

Note: If it is not convenient to restart your server, specify **No** for **Automatic IPL**.

Install Options for Program Temporary Fixes		System: your.server
Type choices, press Enter.		
Device	<u>OPT01</u>	Name, *SERVICE
Automatic IPL	<u>Y</u>	Y=Yes
		N=No
Restart type	<u>*SYS</u>	*SYS, *FULL
PTF type	<u>1</u>	1=All PTFs
		2=HIPER PTFs and HIPER LIC fixes only
		3=HIPER LIC fixes only
		4=Refreshed Licensed Internal Code
Other options	<u>N</u>	Y=Yes
		N=No
F3=Exit F12=Cancel		

After all of the PTFs have been installed, your iSeries server restarts.

8. After you have installed the group PTFs, see the product release notes for information about the release, including a description of known problems and workarounds. The release notes are available on the WebSphere Application Server - Express documentation page (<http://www.ibm.com/eserver/iseries/software/websphere/wsappserver/express/docs/relnotesexp51.html>)



**You have completed step 2 of 4.
Continue on to step 3.**



“Step 3: Create an initial configuration”



3. CONFIGURING

Step 3: Create an initial configuration

This topic describes how to configure your iSeries server so that WebSphere Application Server - Express for iSeries runs correctly.

To configure your iSeries server, perform these steps:

1. “Configure software license information”
This step describes how to configure software license information for WebSphere Application Server - Express. This step is required if you installed Option 2.
2. “Verify and configure TCP/IP” on page 12
This step describes how to configure TCP/IP for WebSphere Application Server - Express.

Continue



“Configure software license information”

Configure software license information

If you have installed WebSphere Application Server - Express, Option 2, after you complete the installation process and before you start the WebSphere Application Server - Express for iSeries environment, you must set the usage limit from the Proof of Entitlement (POE).

To set the usage limit, enter the Work with License Information (WRKLCINF) command on the CL command line, and then follow these steps:

1. On the Work with License Information menu, press **F11** (Display Usage Information).
2. Move the cursor to the line that contains the product 5722E51, Feature 5102.
3. Select option 2 (Change), and press **Enter**. When the Change License Information display is shown, update the Usage limit prompt (USGLMT) as follows:
 - For a POE with a part number of CP0HCNA, enter the number specified on the POE for Quantity. For example, if the POE Quantity value has *1 Processor*, enter 1 for the USGLMT.
 - For a POE with a part number of CP0HENA or CP0HDNA, enter the number of processors that your system has (not the quantity shown on the POE). For example, if your system has 2 processors, enter 2 for the USGLMT.

4. On the Change License Information display, update the Threshold (THRESHOLD) prompt with *USGLMT, and press **Enter**. Do not leave the threshold set to zero.

Note: If the following message is sent, respond by typing G. CPA9E1B: Usage limit increase must be authorized. Press help before replying (C G).



“Verify and configure TCP/IP”

Verify and configure TCP/IP

TCP/IP must be configured properly and must be started before you start the WebSphere Application Server - Express environment.

To verify that TCP/IP is configured correctly, enter the Configure TCP/IP (CFGTCP) command on the CL command line, and then follow these steps:

1. **Verify that your TCP/IP address and LOOPBACK interface are active:**
 - a. On the Configure TCP/IP menu, select option 1 (Work with TCP/IP interfaces).
 - b. Press **F11** to display the interface status.
 - c. Verify that the TCP/IP address is active. If it is not active, specify option 9 (Start).
 - d. Verify that the LOOPBACK interface with IP address 127.0.0.1 is active. If it is not active, specify option 9 (Start) next to the entry with IP address **127.0.0.1** and press **Enter**.
 - e. Press **F3** to return to the Configure TCP/IP menu.
2. **Verify your TCP/IP host name:**
 - a. On the Configure TCP/IP menu, select option 12 (Change TCP/IP domain information).
 - b. Verify that the TCP/IP host name is correct. If the host name is not correct, type the correct host name in the **Host name** field and press **Enter**. If the host name is correct, press **F3** to return to the Configure TCP/IP menu.

Note: The host name cannot be *NONE.
 - c. Press **F3** to return to the command line.

3. **Start TCP/IP:**

If TCP/IP is not started or if you don't know if TCP/IP is started, enter the Start TCP/IP (STRTCP) command on the CL command line.

4. **Verify that the server's IP address is associated with the host name:**

Enter this command on the CL command line:

```
ping hostname
```

where *hostname* is the host name displayed in **Verify a TCP/IP host name**. Verify that the ping is successful and the resulting IP address is correct.

Here is sample output from a successful ping command:

```
Verifying connection to host system MYSYSTEM.MYCOMPANY.COM at address
1.2.3.4.
PING reply 1 from 1.2.3.4 took 0 ms. 256 bytes. TTL 64.
PING reply 2 from 1.2.3.4 took 0 ms. 256 bytes. TTL 64.
PING reply 3 from 1.2.3.4 took 0 ms. 256 bytes. TTL 64.
PING reply 4 from 1.2.3.4 took 0 ms. 256 bytes. TTL 64.
PING reply 5 from 1.2.3.4 took 0 ms. 256 bytes. TTL 64.
Round-trip (in milliseconds) min/avg/max = 0/0/0
Connection verification statistics: 5 of 5 successful (100 %).
```

If the ping fails, follow these steps:

- a. Enter the Configure TCP/IP (CFGTCP) command on the CL command line.
- b. On the Configure TCP/IP menu, select Option 10 (Work with TCP/IP host table entries).
- c. Configure the iSeries system short name to the active IP address that was listed in the first step (“Verify that your TCP/IP address and LOOPBACK interface are active”):
 - 1) Select Option 2 (Change), and type your IP address in the **Internet address** field. Press **Enter**.
 - 2) In the Change TCP/IP Host Table Entry (CHGTCPHTE) menu, edit the **Hostnames: Name** field to match the short name of your iSeries server. Press **Enter**.

Note: The *ADMIN instance of the HTTP server will not start without a host name.

5. Verify your system configuration:

The IPTest Java utility is shipped with the WebSphere Application Server - Express product and can be used to debug TCP/IP configuration problems. To run this utility, enter this command on the CL command line:

```
RUNJAVA CLASS(IPTest) CLASSPATH('/QIBM/ProdData/WebASE51/ASE/bin')
```

Note: The class name parameter that you specify for CLASS (IPTest) is case-sensitive.

This display illustrates the output from this command:

```

                                Java Shell Display

Local Address: 12.34.56.78
Local Name: MYSYSTEM.MYCOMPANY.COM
All addresses for MYSYSTEM.MYCOMPANY.COM:
 12.34.56.78
Java Program Completed

===> _____
_____
_____
_____
F3=Exit  F6=Print  F9=Retrieve F12=Exit
F13=Clear F17=Top   F18=Bottom  F21=CL Command Entry

```

The Local Address is the IP address for your iSeries server. This value must not be blank and must match the IP address verified in the first step (“Verify that your TCP/IP address and LOOPBACK interface are active”). The Local Name is the domain-qualified host name for your iSeries server. If this value is blank, see the instructions in the first step. Press **F3** to exit.

Note: If a host name has not been configured for your iSeries server, you receive an UnknownHostException message.

**You have completed step 3 of 4.
Continue on to step 4.**



“Step 4: Verify the installation” on page 14



4. VERIFYING INSTALLATION

Step 4: Verify the installation

To verify your WebSphere Application Server - Express for iSeries installation, perform these steps:

1. To access the License Program menu, enter this command at your CL command prompt:

```
go licpgm
```

2. Select option 10 (Display Installed License Programs).

3. Press **F11** twice to display the options.

4. This is what you should see if option *Base is installed:

```
5722E51    *BASE    WebSphere Application Server - Express
```

This is what you should see if option 2 is installed:

```
5722E51    2        IBM WebSphere Application Server Express V5.1
```

If WebSphere Application Server - Express did not install, see “Troubleshoot the installation” on page 15.

**You have completed the
installation and initial
configuration.**



“What’s next?”



WHAT’S NEXT?

What’s next?

After you have completed installing WebSphere Application Server - Express, use these resources in the iSeries Information Center to learn more about WebSphere Application Server - Express.

Administration

This topic describes how to configure and manage the WebSphere Application Server - Express product.

Application Development

This topic includes information about how to program server-side Java(TM) components that run in WebSphere Application Server - Express.

IBM Business Solutions

IBM Business Solutions are business applications that you can use with WebSphere Application Server - Express . They work in conjunction with your existing enterprise applications and server components to increase productivity in an easy-to-use environment.

Optionally, you can install the WebSphere Development Studio Client for iSeries, which includes tools for traditional and e-business application development. For more information, see Getting Started with IBM WebSphere Development Studio Client for iSeries



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Troubleshoot the installation

WebSphere Application Server - Express for iSeries offers several methods you can use to troubleshoot problems. Which method you use depends on the nature of the problem. Generally, you use a combination of these methods to determine the cause of a problem and then decide on an appropriate method for its resolution.

These resources provide general troubleshooting assistance.

- See the Troubleshooting section of the WebSphere Application Server - Express for iSeries Information Center.
- Read the WebSphere Application Server - Express Release Notes (<http://www.ibm.com/eserver/iseries/software/websphere/wsappserver/express/docs/relnotesexp51.html>)



Possible installation problems

- **Wrong version of i5/OS installed on your server.**
WebSphere Application Server - Express runs on i5/OS versions V5R1 or later. The product can not be installed on i5/OS version prior to V5R1.
- **Installation fails due to “Object not found” or “Not authorized” errors.**
The user profile of the user installing the product must have *ALLOBJ authority and have a value of *SECADM for special authority.



Uninstall WebSphere Application Server - Express for iSeries

To remove the entire WebSphere Application Server - Express for iSeries product, perform these steps from the CL command line on the iSeries server on which the product is installed:

1. Ensure that your user profile has *ALLOBJ and *JOBCTL authority.
2. Stop the WebSphere Application Server - Express environment.
 - a. Stop your application server. For more information, see Start and test your application server in the *Administration* topic.
 - b. Shut down the QASE51 subsystem. Enter this command at your CL command prompt:
ENDSBS SBS(QASE51)
3. When the QASE51 subsystem has ended, use the Delete Licensed Program (DLTLICPGM) command to delete the product.
 - Enter this command to delete the entire WebSphere Application Server - Express product and all installed options:
DLTLICPGM LICPGM(5722E51)

The QAES5 library, QIWE library, and the /QIBM/ProdData/WebASE51/ASE directory structure are removed from the system when the complete product is removed.

- To remove just a portion of the WebSphere Application Server - Express product, such as option 2, from your iSeries server, specify the optional part to delete. This example removes the components specific to option 2 of the product from your iSeries server.

```
DLTLICPGM LICPGM(5722E51) OPTION(2)
```

Note: Deleting the product does not remove the UserData files. If you have no plans to reinstall WebSphere Application Server - Express, you must also delete the UserData files pertaining to WebSphere Application Server - Express. For more information, see “Clean up product UserData files.”

Clean up product UserData files

Uninstalling WebSphere Application Server - Express from the iSeries server removes all the product libraries and directories. User-defined information is not removed and can be reused if you reinstall the product. You can remove the user data manually. User data consists of these items:

- All directories and files under the /QIBM/UserData/WebASE51/ directory. You should manually delete any files or directories you no longer need.
- Any HTTP server directives (such as LoadModule or Alias) that were added to an HTTP Server Configuration file to enable WebSphere Application Server - Express for that configuration. You can remove these directives using the instructions below.

These topics describe how to remove the directives for your HTTP server:

- IBM HTTP Server powered by Apache (V5R1, V5R2, V5R3, and V5R4) (page 16)
- Lotus Domino Web Server (page 17)

IBM HTTP Server powered by Apache (V5R1, V5R2, V5R3, and V5R4)

To remove HTTP Server powered by Apache directives, perform these steps:

1. Start your JavaScript-enabled browser.
2. In the URL location or address window, type
`http://your.server.name:2001`
where *your.server.name* is the host name of your iSeries server. Press **Enter**.
3. Enter your iSeries user ID and password. Your iSeries user ID must have *ALLOBJ authority.
4. Perform one of the following tasks, depending on your i5/OS version:
 - For V5R1, on the **AS/400 Tasks** page, click **IBM HTTP Server for AS/400**.
 - For V5R2, on the **iSeries Tasks** page, click **IBM HTTP Server for iSeries**.
 - For V5R3, on the **iSeries Tasks** page, click **IBM Web Administration for iSeries**.
5. Click the **Manage** tab. The main configuration page is displayed.
6. Select your Apache server instance in the **Server** listbox, and select **Global Configuration** in the **Server area** listbox.
7. Expand **Server Properties**, and select **WebSphere Application Server**
8. Select **Disable Servlets and JavaServer Pages (JSP)**.
9. Click **OK**. You have removed the WebSphere plugin directives from the Apache configuration file..
10. To remove the directives for the IBM Telephone Directory application (Option 3), perform these steps:
 - a. Click Container Management in the left navigation frame.
 - b. Click the **Locations** tab.
 - c. Select the LocationMatch container with `/itd./*/secure` specified in the URL path or expression column.

- d. Click **Remove**.
- e. A popup window displays a warning that this operation removes not only the selected container, but all configuration directives contained within it. Click **OK**.
- f. Select the LocationMatch container with `/itd/.*/admin` specified in the URL path or expression column.
- g. Click **Remove**.
- h. A popup window displays a warning that this operation removes not only the selected container, but all configuration directives contained within it. Click **OK**.
- i. Click **OK**. You have removed the Apache directives that were added for the IBM Telephone Directory application..

Note: You must stop and restart the Apache server instance for these changes to take affect.

Lotus Domino Web server

To remove Lotus Domino Web server directives, perform these steps:

1. Remove the DSAPI filter configuration from the Domino server document:
 - a. From a Lotus Notes client connected to the Domino server, edit the Domino document, which is found in the Domino server's Domino Directory (names.nsf).
 - b. Within the server document, click the **Internet Protocols** tab and then click the **HTTP** tab.
 - c. Remove from the **DSAPI filter file names** field:
`/QSYS.LIB/QASE51.LIB/LIBDOMINOH.SRVPGM`.
 - d. Save and exit the Domino Server document.
2. Remove the WebSphereInit directive from the notes.ini file.
 - a. Enter the Work with Domino Servers (WRKDOMSVR) command on the CL command line.
 - b. For the appropriate Domino server instance, specify option 13 (Edit NOTES.INI) to edit the server's notes.ini file.
 - c. Remove the WebSphereInit directive from the notes.ini file.
3. Restart the Lotus Domino Web server.

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