

WebSphere Application Server v5 for IBM eServer™ iSeries

Basic Install and Initial Configuration Checklist



This checklist describes the major steps required to install and create a basic configuration of WebSphere® Application Server Version 5 for IBM eServer iSeries. A basic configuration has an HTTP Server and WebSphere Application Server v5 for iSeries installed on a single target iSeries system, contains default values for installation and configuration options, and allocates default TCP/IP ports within the environment. The user is encouraged however to read and understand the **WebSphere Application Server v5 for iSeries Installation and Initial Configuration** documentation available at

<http://publib.boulder.ibm.com/html/as400/infocenter.html>.

Information on advanced configurations can also be found in this document.

This checklist does not detail steps for migrating applications from prior releases of WebSphere Application Server for iSeries. Migration documentation can be found at

<http://www-1.ibm.com/servers/eserver/series/software/websphere/wsappserver/product/migration.html>

The user performing the installation need not have explicit WebSphere Application Server knowledge, but does need basic iSeries Operator skills such as loading and applying PTFs, installing Licensed Program Products, etc. In addition, the OS/400® user profile to be used when implementing the steps below must have *ALLOBJ and *IOSYSCFG special authorities.

Part 1: Plan the Installation

- ❑ 01. Ensure that the target iSeries platform that WebSphere Application Server v5 for iSeries will be installed on meets the following system prerequisites. If the minimum hardware requirements are not met, WebSphere Application Server v5 for iSeries may still be installed and will work properly, however you will likely find that performance for some tasks and applications may be unacceptable. The OS/400 requirement **must** be met.

Feature	Required Minimum
CPW Rating	450
Main Storage	1 GB (750 MB if not using Enterprise Java™ Beans)
Disk Storage	758 MB
Operating System/400	V5R1M0 or V5R2M0

- ❑ 02. Ensure that the following IBM Licensed Program Products (LPPs) are installed. The installation of a particular LPP may be verified with OS/400 command **QSYS/GO MENU(LICPGM)** and selecting option #10. If any are not installed, ensure that their installation media is on-hand.

Product ID	Product Option	Product Name
5722-SS1	30	Qshell Interpreter
5722-DG1	*BASE	IBM HTTP Server
5722-JV1	*BASE	Developer Kit for Java™
5722-JV1	5	Java™ Developer Kit 1.3
5722-TC1	*BASE	TCP/IP Connectivity Utilities

- ❑ 03. A specific OS/400 Cumulative PTF Package is recommended for a WebSphere Application Server environment on iSeries, although IBM recommends that its customers stay current with the very latest OS/400 Cumulative PTF Package. This recommended package level is defined at

<http://www-1.ibm.com/servers/eserver/series/software/websphere/wsappserver/services/service.htm>.

If this package level is not already installed on the target iSeries system, make sure to order it and have it on-hand before continuing the installation process.

- ❑ 04. Order the latest level of the WebSphere Application Server v5 for iSeries Group PTF. This PTF upgrades WebSphere Application Server v5 for iSeries to the equivalent FixPak level available for non-iSeries platforms. It also contains the Group PTFs for the IBM Developer Kit for Java™, IBM DB2 Universal Database, IBM HTTP Server, WebSphere MQ v5.3, and the WebSphere MQ classes for Java™ and JMS V5.3.

This Group PTF is refreshed periodically to new levels, therefore it is important to maintain currency with the latest level after the installation process. To determine the latest levels available for all Group PTFs for the iSeries platform, click the **Fixes** link at

<http://www-912.ibm.com/>

then click the **Group PTFs** link. Ensure that you have the media on-hand before continuing the installation process.

- ❑ 05. Read and understand the Release Notes for the WebSphere Application Server v5 for iSeries Group PTF ordered in the step above. The Release Notes can be found at

<http://www-1.ibm.com/servers/eserver/series/software/websphere/wsappserver/docs/docws50.html#ReleaseNotes>

- ❑ 06. Use OS/400 command **QSYS/DSPSFWRSC** to determine if products **MQSeries for AS/400® V4.2 (5769MQ2)** or **MQSeries for AS/400 V5.x (5733A38)** are currently installed on the target iSeries system. Both of these products are incompatible for use with WebSphere Application Server v5 for iSeries and migration steps must be taken prior to installing WebSphere MQ v5.3 (which is included with WebSphere Application Server v5 for iSeries). To perform this migration, see the migration instructions in the WebSphere MQ for iSeries documentation center at the following URL:

<http://www.ibm.com/software/ts/mqseries/library/manualsa/>

- ❑ 07. Use OS/400 command **QSYS/DSPSFWRSC** to determine if product **MQSeries classes for Java™** and **JMS (5648C60)** is currently installed on the target iSeries system. If this is installed, it must be removed prior to installing WebSphere MQ v5.3 for iSeries and JMS support included with WebSphere Application Server v5 for iSeries. To uninstall this product, enter OS/400 command **QSYS/DLTLICPGM LICPGM(5648C60)**.
- ❑ 08. The installation and configuration of the WebSphere Application Server v5 for iSeries environment will most likely require a system IPL of the target iSeries system. Make sure to plan a time to perform the installation process when it is acceptable to perform this IPL.

Part 2: Install WebSphere Application Server

Note: Some iSeries systems come preloaded with WebSphere Application Server v5 for iSeries, the required OS/400 Cumulative PTF Package, and a specific level of the WebSphere Application Server Group PTF (but it may not be at the latest level). If the target iSeries system is up-to-date with all required software, you may skip Part #2 and proceed directly to Part #3.

- ❑ 09. If the target iSeries system requires the installation of an OS/400 Cumulative PTF package, install it at this time. As other PTFs will be installed later, you should elect not to IPL the target iSeries system.
- ❑ 10. WebSphere Application Server Version 5 for iSeries can be installed from a LAN attached workstation, however this checklist assumes the use of the iSeries CD-ROM drive. Load the WebSphere Application Server v5 for iSeries media (Disk 1 of 2) into the CD-ROM drive of the target iSeries system.
- ❑ 11. Ensure that the target iSeries system is NOT in restricted state.
- ❑ 12. Start a Qshell session on the target iSeries system by entering command **QSYS/STRQSH** at OS/400 command entry. At the Qshell command prompt (**\$**), enter the Qshell command **cd /QOPT/WebSphere**. This directory contains the WebSphere Application Server v5 for iSeries installation script. This script accepts several different parameters that allow you to customize the installation process. However, this checklist assumes the default behavior of the installation script, which installs the language option that matches the primary language of the target iSeries system (or 2924 English if the primary language of the target iSeries system is not supported), WebSphere MQ v5.3 for iSeries, and WebSphere MQ classes for Java™ and JMS v5.4 for iSeries.

Start the installation script by entering command **SETUP** at the Qshell command prompt. A Java™ console appears and messages scroll down the screen that indicate the status of the install. The installation may take up to 120 minutes to complete.

- ❑ 13. The installation is complete when you see the Qshell command prompt (**\$**) again. Press F3 exit the Qshell session.
- ❑ 14. Install the WebSphere Application Server Group PTF per the Release Notes instructions. You should specify to have the target iSeries system IPLed after the PTF has been loaded and applied.

Part 3: Create an Initial Configuration

- ❑ 15. The usage limit from the WebSphere Application Server v5 for iSeries Proof of Entitlement (POE) or invoice must be set before starting the WebSphere Application Server environment. Enter command **QSYS/WRKLICINF** at OS/400 command entry and press enter. Press F11 to Display Usage Information, and move the cursor to the line that contains the product **5733WS5, Feature 5050**. Select option 2 (Change) and press Enter.

On the **Change License Information** screen, press F9 to display all parameters. Update the **Usage limit** keyword (USGLMT) with the usage limit from the POE or invoice (entering a larger number violates the IBM purchase agreement) and update the **Threshold** keyword (THRESHOLD) with the ***USGLMT** value, and press Enter. *Do not leave the threshold set to zero!*

- ❑ 16. Ensure that the maximum number of SQL Server jobs allowed is set to ***NOMAX** by entering OS/400 command **QSYS/CHGPJE SBSD(QSYSWRK) PGM(QSQSRVR) MAXJOBS(*NOMAX)**. If ***NOMAX** is not an appropriate setting for your iSeries environment, specify an integer value for the **MAXJOBS** parameter, which will allow your applications to have enough SQL server jobs to handle the maximum number of JDBC connections required at any given time by your applications.
- ❑ 17. Make sure that the OS/400 date and time system values are accurately set per local values. These system values can be accessed with OS/400 command **QSYS/WRKSYSVAL SYSVAL(*DATTIM)**. Note that changing these system values may impact existing applications so take care in making these changes.
- ❑ 18. Make sure that your TCP/IP interface per the target iSeries system's Internet Address and the **LOOPBACK** interface are active using OS/400 command **QSYS/WRKTCPTS OPTION(*IFC)**. If either of these are inactive, select option 9 (Start) to start each interface.
- ❑ 19. Make sure that TCP/IP host and domain names are defined on the target iSeries system by **prompting (F4)** command **QSYS/CHGTCPDMN**. Ensure that a value exists for both the host name and the domain name parameters as the host name cannot have a value of ***NONE**. Make note of the host name for later steps.

- ❑ 20. Ensure that the host name noted in the previous step exists in the target iSeries system's host table for the TCP/IP interface also noted in the previous step. Use OS/400 command **QSYS/CFGTCP**, and select option #10.

Ensure that the alphabetic case of each character matches that recorded in the previous step. If an entry does not exist for the host name, add it with the OS/400 command **QSYS/ADDTCPHTE INTNETADR('ip-interface') HOSTNAME((host-name))**

where **host-name** matches by alphabetic case the name noted in the previous step and **ip-interface** matches the TCP/IP interface also noted in the previous step.

- ❑ 21. Start TCP/IP with command **QSYS/STRTCP STRSVR(*NO)**. If TCP/IP is already started, message **TCP1A04 - "TCP/IP currently active."** will be displayed.

- ❑ 22. From OS/400 command entry, enter command **QSYS/WRKTCPSTS OPTION(*CNN)**. Press F14 to display ports by number, then press F13 to sort. From the **Select Column to Sort** window, type a 1 in the Opt column next to the **Local Port** column name and press enter.

From the sorted list, ensure that the following port numbers do not appear in the **Local Port** column. These are default ports used by WebSphere Application Server v5 and cannot be allocated by other jobs: **2809, 5557, 5558, 5559, 7873, 8880, 9080, 9043, 9090, 9501, 9502, 9403**

If any of these port numbers are in use, consult the WebSphere Application Server v5 for iSeries Administration documentation at

<http://publib.boulder.ibm.com/html/as400/infocenter.html>

to modify the default WebSphere Application Server instance.

- ❑ 23. An HTTP Server instance must be configured to integrate with WebSphere Application Server v5 for iSeries. This checklist assumes that an instance of the IBM HTTP Server (powered by Apache) at release V5R2M0 will be used and the instance will listen on port 80 for HTTP requests. If a different HTTP server and/or port is required, consult the **WebSphere Application Server v5 for iSeries Installation and Initial Configuration** document instead at

<http://publib.boulder.ibm.com/html/as400/infocenter.html>

for configuration instructions.

From OS/400 command entry, enter command **QSYS/STRTCPSPVR SERVER(*HTTP) HTTPSVR(*ADMIN)**. Then on a workstation client, use a web browser to navigate to the **iSeries Tasks** page at URL

<http://host-name:2001/>

where **host-name** is that recorded in step #19. Login with the user profile used to perform the installation of WebSphere Application Server v5 for iSeries.

- ❑ 24. From the **Tasks** page, click the **IBM HTTP Server for iSeries** link, then click the **Manage** tab.
- ❑ 25. In the **Server** pulldown field in the left-hand side of the web browser, select the **APACHEDFT - Apache** server.

- ❑ 26. Click the **WebSphere Application Server** link in the **Server Properties** section on the left-hand side of the page (you may need to scroll down the left-hand frame to make it visible). Select the **WebSphere version 5** radio button option. Ensure that the WebSphere domain value in the pulldown field is set to **default**. Then click the OK button.

- ❑ 27. Start the **APACHEDFT** server instance by clicking the start icon at the top of the left-hand frame in the web browser, directly underneath the **Server** pulldown field.

- ❑ 28. You should shutdown the HTTP Administration Server with OS/400 command **QSYS/ENDTCPSPVR SERVER(*HTTP) HTTPSVR(*ADMIN)**.

Part 4: Start the Environment

- ❑ 29. Start the WebSphere Application Server environment by entering command **QSYS/STRSBS SBS(QEJBAS5/QEJBAS5)** at OS/400 command entry.

- ❑ 30. Enter command **QSYS/WRKACTJOB SBS(QEJBAS5)** at OS/400 command entry. You should see job **SERVER1** on the screen. Select option 5 (Work with) next to this job and press enter. On the resulting **Work with Job** screen, select menu option 10 (Display job log). Press F10 to display all of the messages in the job log. Refresh the screen periodically with F5, until message **EJB0106 - "WebSphere application server server1 ready"** appears. Then press F3 to exit.

- ❑ 31. From the client workstation, ensure access to the WebSphere Application Server v5 Administrative Console by navigating to URL

<http://host-name:9090/admin>

where host-name is from step #19. You should see the login screen for the Administrative Console.

Part 5: Verify the Installation

- ❑ 32. From the same client workstation, navigate to URL

<http://host-name/hello>

where host-name is from step #19. You should see the **"Hello from the WebSphere Application Server!"** page.

You have successfully installed and configured the WebSphere Application Server on your iSeries platform.

Excellent personalized service and support on iSeries WebSphere doesn't end here. If you would like assistance in understanding more of the details behind building and deploying a WebSphere application on iSeries, creating a skills development plan for your organization, and/or architecting a pervasive e-business infrastructure for your company contact the iSeries Technology Center at (507)-253-9018, or send an e-mail to ITCeBiz@us.ibm.com.

Additional Reference Information

Please use the following links to navigate to additional technical resources, skills development, and implementation services information.

iSeries e-business Technical Product Information Links:

WebSphere Application Server for iSeries
<http://www-1.ibm.com/servers/eserver/series/software/websphere/wsappserver/>

IBM HTTP Server for iSeries
<http://www-1.ibm.com/servers/eserver/series/software/http/index.html>

WebSphere Development Studio Client for iSeries
<http://www-3.ibm.com/software/ad/wdt400/>

WebSphere MQ for iSeries
<http://www-3.ibm.com/software/ts/mqseries/messaging/>

IBM WebSphere for eServer iSeries Buying and Selling Guide
<http://publib-b.boulder.ibm.com/Redbooks.nsf/redpapers/>

iSeries e-business Skills Development Links:

eServer Campus
<http://www-1.ibm.com/servers/eserver/education/index.html>

IBM Technical Training Services
<http://www-3.ibm.com/services/learning/us/>

iSeries Technology Center
<http://www-1.ibm.com/servers/eserver/series/service/itc/ebiz.htm>

iSeries Information Center
<http://publib.boulder.ibm.com/html/as400/infocenter.html>

IBM Redbook Series
<http://www.redbooks.ibm.com/>

iSeries e-business Services:

eServer Solutions Enablement - IBM eServer iSeries
<http://www-919.ibm.com/servers/eserver/series/developer/>

iSeries Custom Technology Center
<http://www-1.ibm.com/servers/eserver/services/>

eServer Solution Connection
<http://www-1.ibm.com/servers/solutions/finder/CSFServlet.wss>

IBM Global Services - iSeries Services Group
<http://www.ibm.com/servers/eserver/series/service/igs/>



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