Installing the Advanced Single Server Edition using IBM HTTP Server on Solaris--Custom Installation

The steps that follow describe how to install a configuration of WebSphere Application Server that uses the following--

- Solaris 7 or 8
- Java 2 Software Development Kit (SDK) 1.3 (version supplied with WebSphere Application Server)
- IBM HTTP Server 1.3.19
- A single node

See the WebSphere Application Server Supported Hardware, Software, and APIs Web site at www.ibm.com/software/webservers/appserv/doc/latest/prereq.html to learn which products and fix levels are supported for your level of WebSphere Application Server.

Steps for installation

Deciding which steps to follow
Installing WebSphere Application Server--**Custom Installation** option
Testing the installation
Testing with an enterprise bean

Deciding which steps to follow

First, check the WebSphere Application Server Supported Hardware, Software, and APIs Web site at www.ibm.com/software/webservers/appserv/doc/latest/prereq.html to ensure that you have the correct prerequisites, including operating system patches. WebSphere Application Server comes with the Java 2 SDK and IBM HTTP Server. If you have not already done so, obtain the product CD-ROM for WebSphere Application Server or download the product from the Web site www.ibm.com/software/webservers/appserv/download.html. Information on installation follows:

1. Installing WebSphere Application Server--**Custom Installation** option
2. Testing the installation
3. Testing with an enterprise bean

Installing WebSphere Application Server 4.0--Custom Installation option

This article describes how to install WebSphere Application Server on a local Solaris SPARC machine. These instructions assume the following:

- Your machine has enough memory and disk space for your installation. See the WebSphere Application Server Supported Hardware, Software, and APIs Web site at www.ibm.com/software/webservers/appserv/doc/latest/prereq.html for the requirements.
- You do not have a previous version of WebSphere Application Server already installed. If you do have a previous version of WebSphere Application Server installed, do not follow these instructions. Instead, refer to the article "Migration overview."
- If you are using IBM HTTP Server as your Web server, you will install it at the same time and onto the same node as you install WebSphere Application Server. If you are using another supported Web server with WebSphere Application Server, you have already installed it onto the same node as WebSphere Application Server.

  Note: You must purchase and install any Web server except IBM HTTP Server *before* you install WebSphere Application Server. IBM HTTP Server is supplied with WebSphere Application Server and can be installed automatically during installation of WebSphere Application Server.

To install WebSphere Application Server, do the following:

1. Ensure that you are logged onto the host machine with superuser (root) privileges.
2. If a preexisting Web server on your system is running, stop the Web server. If you plan to install IBM HTTP Server 1.3.19 as part of the WebSphere Application Server installation and a version of IBM HTTP Server prior to 1.3.19 is already installed on your system, you must uninstall it in order for the WebSphere Application Server installation program to successfully install IBM HTTP Server 1.3.19.
3. Insert the WebSphere Application Server CD-ROM and, if necessary, mount the CD-ROM drive. (On most Solaris systems, the Volume Management daemon (**vold**) mounts the CD-ROM automatically and immediately, as well as each time the machine is restarted. If the **vold** process is not running on the local machine, see your Solaris documentation for instructions on how to mount the CD-ROM drive.) The following steps assume that the CD-ROM drive is mounted at /cdrom.
4. Navigate to the correct directory on the WebSphere Application Server CD-ROM by entering the following command:

   ```
   # cd /cdrom/cdrom0/sun
   ```

5. Ensure that the directory /usr/ucb exists in the PATH environment variable for the *root* login. If it does not, you must edit the **install.sh** script. To edit this script, do the following:
   a. Copy the **install.sh** script from the /cdrom/cdrom0/sun directory to the /tmp directory on the machine on which you will install WebSphere Application Server.
   b. Open this script in a text editor and find the line USERNAME=`/usr/ucb/whoami`.
   c. Add the following line *before* the line USERNAME=`/usr/ucb/whoami`:

      ```
      export PATH = $PATH:/usr/ucb
      ```

   d. Save the edited **install.sh** script.
6. If the supported Web server you plan to use with WebSphere Application Server is newer than the version currently required by WebSphere Application Server, you must update the prereq.properties file or disable the prerequisite checking functionality before installing WebSphere Application Server.

   To obtain an updated prereq.properties file, download the latest version from the WebSphere Application Server Tools Web site at www.ibm.com/software/webservers/appserv/tools.html. Ensure that the updated prereq.properties file is downloaded or copied into the local /tmp directory.

   To disable the prerequisite checking functionality, perform the following steps:
   a. Copy the prereq.properties file from the /cdrom/cdrom0/sun directory to the /tmp directory on the machine on which you plan to install WebSphere Application Server.
   b. Open the prereq.properties file in a text editor and disable prerequisite checking for an individual component by changing the value of the specific key from 1 to 0.
   c. Save the edited prereq.properties file.

7. Run the installation script in one of following ways depending on the actions you have taken in Step 5 and Step 6:
   o If you *have* edited the **install.sh** script as detailed in Step 5 but have *not* downloaded a new prereq.properties file or disabled prerequisite checking functionality as detailed in Step 6, run the installation script file by entering the following command:

      ```
      # cd /cdrom/cdrom0/sun
      # /tmp/install.sh
      ```

   o If you *have* edited the **install.sh** script as detailed in Step 5 and *have* downloaded a new prereq.properties file or disabled the prerequisite checking functionality as detailed in Step 6, run the installation script file by entering the following command:

      ```
      # cd /cdrom/cdrom0/sun
      # /tmp/install.sh -prereqfile /tmp/prereq.properties
      ```

   o If you have *not* edited the **install.sh** script as detailed in Step 5 and have *not* downloaded a new prereq.properties file or disabled the prerequisite checking functionality as detailed in Step 6, run the installation script file by entering the following command:

```
# /cdrom/cdrom0/sun/install.sh
```

- If you have *not* edited the **install.sh** script as detailed in Step 5 and *have* downloaded a new prereq.properties file or disabled the prerequisite checking functionality as detailed in Step 6, run the installation script file by entering the following command:

```
# /cdrom/cdrom0/sun/install.sh -prereqfile /tmp/prereq.properties
```

8. Click **Next** to pass the introductory page.
9. The Install Options window opens. Select **Custom Installation** and then click **Next**.
10. The Choose Application Server Components window opens. Select the components you want to install and deselect the components you do not want to install. Note the following information:
    - The Java 2 Software Development Kit (SDK) is installed by default.
    - The **Server**, **Samples**, **Application Assembly and Deployment Tools**, **IBM HTTP Server 1.3.19**, and **WebServer Plugins** components are selected for installation by default.
    - If you plan to use WebSphere Application Server with IBM HTTP Server, ensure that the **IBM HTTP Server 1.3.19** and **Web Server Plugins** options are selected.
    - If you plan to use WebSphere Application Server with a different supported Web server, ensure that the **Web Server Plugins** option is selected.

      Note: No plug-ins are required to launch the Application Server. However, for production applications, you will not be able to serve servlets without having installed a supported Web server and corresponding Web server plug-in. For non-production applications, you can use the internal HTTP transport system to serve servlets without installing a Web server plug-in by using the internal HTTP transport port 9080. For example, to serve the sample snoop servlet by using the internal HTTP transport, enter the URL

      ```
      http://machine_name:9080/servlet/snoop
      ```

      In this command, *machine_name* represents the name of the machine on which WebSphere Application Server is running. The internal HTTP transport mechanism is not designed for use in a production environment.

    - If you plan to install the Web server plug-in for IBM HTTP Server, you must select the **IBM HTTP Server 1.3.19** option, or have it already installed on the machine.
    - These instructions assume that you are installing all of the components.

    Click **Next** to continue.

11. A window opens that lets you select the plug-in. In this window, do the following:
    a. Select the plug-in option for your Web server.
    b. Click **Next**.

    Only IBM HTTP Server 1.3.19 is provided with WebSphere Application Server. You must separately purchase and install the other supported Web servers.

12. The Select Destination Directory window opens. Specify the directory into which you want to install WebSphere Application Server. You can either accept the default destination directory or specify a different one by typing the full pathname or by clicking **Browse**. Note that if you've selected IBM HTTP Server for installation, you cannot modify its destination directory. Click **Next** to continue.
13. A window opens that lists the options you have selected to install. Click **Install** to begin the installation.
14. If you are installing IBM HTTP Server automatically at the same time as you install WebSphere Application Server, a window opens, prompting you for the full pathname and file name of the configuration file for the IBM HTTP Server, httpd.conf. Type the location of this file and click **OK**.
15. The Setup Complete window opens. To view the ReadMe file, ensure that **Yes, I want to view the ReadMe File** is selected and click **Finish**; the ReadMe file is displayed in a default browser window. To view the ReadMe file at a later time, deselect **Yes, I want to view the ReadMe File** and click **Finish** to exit from the WebSphere Application Server installation program.
16. The WebSphere Application Server - First Steps window opens. You can use the GUI to access product information in the InfoCenter, start or stop the application server, run samples within your application server environment, launch

the administrative console, or launch the application assembly tool. Because you must first start and possibly configure your Web server, close this window for now. If you later want to access the First Steps window, do the following:

    a. Navigate to the directory containing the **firststeps.sh** script (by default, /opt/WebSphere/AppServer/bin) by using the **cd** command, as follows:

```
# cd /opt/WebSphere/AppServer/bin
```

    b. Execute the **firststeps.sh** script, as follows:

```
# ./firststeps.sh
```

17. Unmount the CD-ROM by entering the following command:

```
# umount cdrom/cdrom0
```

You can now eject the CD-ROM.

18. If you are using a Web server other than IBM HTTP Server, start the server. If you installed IBM HTTP Server as part of the WebSphere Application Server installation, you might need to configure it. Perform the following steps to verify that the IBM HTTP Server is installed correctly:

    a. Ensure that the Web server is running or start it by entering the following command:

```
# /opt/IBMHTTPD/bin/apachectl start
```

    b. Open a Web browser window and type the name of the host machine as the Universal Resource Locator (URL) (http://*host_machine* or *localhost*). If you see the Welcome to the IBM HTTP Server page, the server has been installed correctly.
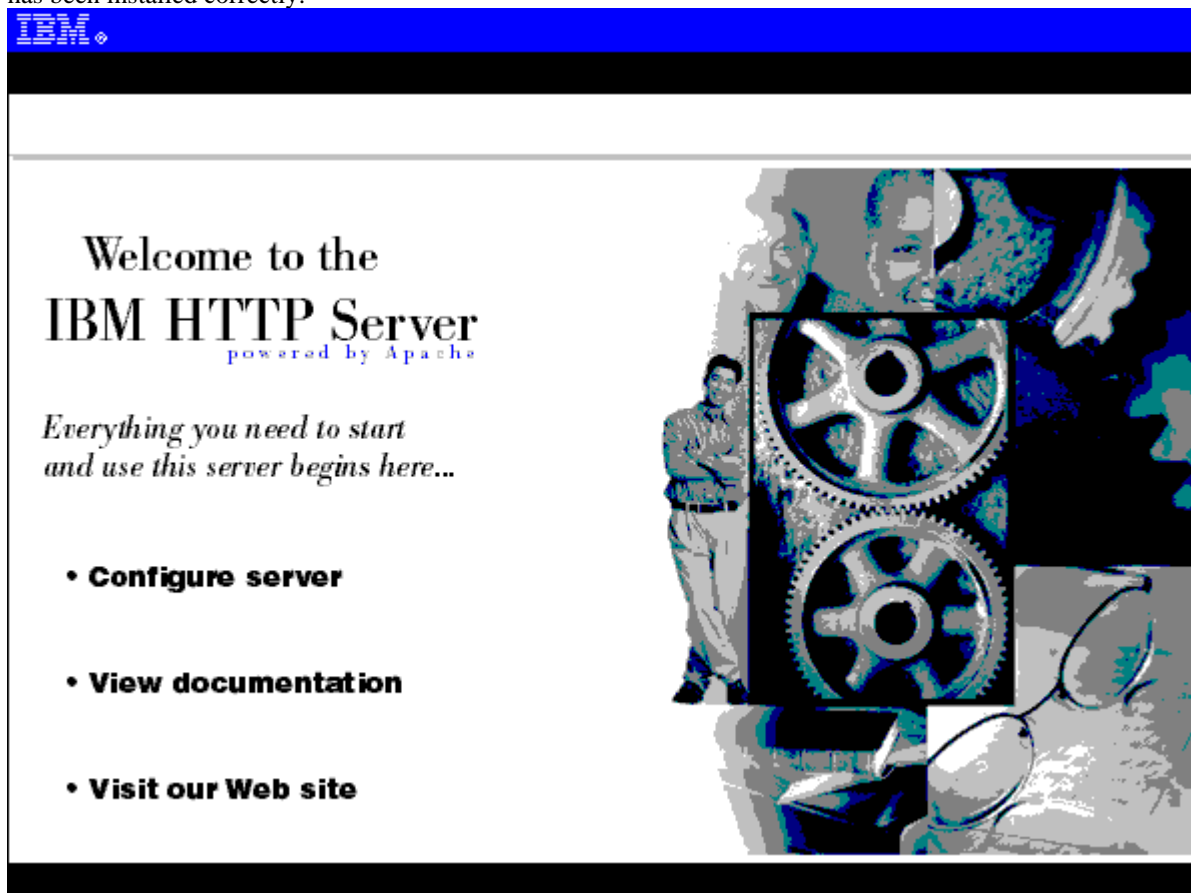
Note that you might need to make configuration adjustments to the server in order to run it successfully on your system. See the IBM HTTP Web Server documentation at www.ibm.com/software/webservers/httpservers/library.html for more information.

To enable the Secure Sockets Layer (SSL) on IBM HTTP Server, see the IBM HTTP Server documentation at www.ibm.com/software/webservers/httpservers/doc/v1319/9atstart.htm for more information.

Testing the installation

This article describes how to test your installation and configuration of WebSphere Application Server. These instructions assume that you have installed a supported Web server and WebSphere Application Server. Perform the following steps to test your WebSphere Application Server installation:

1. Ensure that you are logged into the host machine with superuser (root) privileges.
2. Navigate to the directory containing the **startServer.sh** script (located by default in the /opt/WebSphere/AppServer/bin directory) by using the **cd** command, as follows:

   ```
   # cd /opt/WebSphere/AppServer/bin
   ```

3. Start the server by entering the following command:

   ```
   # ./startServer.sh
   ```

   Ensure that the server has started successfully by checking the file named default_server_stdout.log located in the /opt/WebSphere/AppServer/logs directory. The message `...open for e-business` appears in this file when the server has started successfully.

4. Open a Web browser window and enter the following URL:

   ```
   http://localhost:9090/admin
   ```

5. The Login window opens and prompts you to enter a user ID to which your configuration changes will be saved. Enter a user ID and click **Submit**. If you do not care to save changes using your user ID, click **Submit** without entering an ID and your changes will be saved using the default user ID `User`.

   If the user ID you choose is already in use and in session, you are prompted to do one of the following:
   - Force the existing user ID out of session. The configuration file that was being used by the existing user ID will be saved in a temporary storage area. You will be prompted to load the saved file; choosing not to do so will delete it from the temporary storage area.
   - Wait for the existing user ID to log out or time out of the session.
   - Select a different user ID.

6. Administer the application server by doing the following:
   a. When the console opens, a tree view is displayed. Click the plus sign (+) next to the **Nodes** entry to expand the view.
   b. Identify the name of your host machine and expand the view of that entry.
   c. Click the plus sign (+) next to the **Application Servers** entry to expand the view.
   d. Select the **Default Server** entry and view the information displayed in the right panel. If the value for the **Execution State** field is `STOP`, click the drop-down menu and select `START`.

      After the default server is started initially, it will start automatically if it stops or if you restart the machine.

   e. Click **OK**.
7. Test the server by doing the following:
   a. Ensure that the Web Server is running. If the Web server is not running, start it.
   b. Open a Web browser window and enter the URL for the snoop servlet, which is a standard sample servlet installed by default, as follows:

```
http://machine_name/servlet/snoop
```

In this command, *machine_name* represents the name of the machine on which WebSphere Application Server is running. Information on /servlet/snoop is displayed.

8. To stop the console, close the browser. Ensure that you save any changes that you want to keep. Unless you save the changes, they will be lost when you close the browser.

Testing with an enterprise bean

This article describes how to test your WebSphere Application Server installation by using an enterprise bean and the Increment sample. These instructions assume that you have installed and tested your WebSphere Application Server system. Perform the following steps:

1. Ensure that you are logged into the host machine with superuser (root) privileges.
2. Navigate to the directory containing the **startServer.sh** script (located by default in the /opt/WebSphere/AppServer/bin directory) by using the **cd** command, as follows:

```
# cd /opt/WebSphere/AppServer/bin
```

3. Start the server by entering the following command:

```
# ./startServer.sh
```

Ensure that the server has started successfully by checking the file named default_server_stdout.log located in the /opt/WebSphere/AppServer/logs directory. The message ...open for e-business appears in this file when the server has started successfully.

4. Open a Web browser window and enter the following URL:

```
http://localhost:9090/admin
```

5. The Login window opens and prompts you to enter a user ID to which your configuration changes will be saved. Enter a user ID and click **Submit**. If you do not care to save changes using your user ID, click **Submit** without entering an ID and your changes will be saved using the default user ID User.

If the user ID you choose is already in use and in session, you are prompted to do one of the following:
   o Force the existing user ID out of session. The configuration file that was being used by the existing user ID will be saved in a temporary storage area. You will be prompted to load the saved file; choosing not to do so will delete it from the temporary storage area.
   o Wait for the existing user ID to log out or time out of the session.
   o Select a different user ID.

6. Ensure that the **Default Server** is started by doing the following:
   a. When the console opens, a tree view is displayed. Click the plus sign (+) next to the **Nodes** entry to expand the view.
   b. Identify the name of your host machine and expand the view of that entry.
   c. Click the plus sign (+) next to the **Application Servers** entry to expand the view.
   d. Select the **Default Server** entry and view the information displayed in the right panel. If the value for the **Execution State** field is STOP, click the drop-down menu and select START.

   After the default server is started initially, it will start automatically if it stops or if you restart the machine.

   e. Click **OK**.
7. Ensure that the Web Server is running. If the Web server is not running, start it.
8. Start a Web browser and specify the following URL:

```
http://machine_name/webapp/examples/HitCount
```

In this command, *machine_name* represents the name of the machine on which WebSphere Application Server is running. When the Web page opens, several selection options are displayed.

9. Under the heading **Generate hit count using**, click the radio button beside the option **Enterprise Java Bean**.
10. Under the heading **Transaction Type**, click the radio button beside the option **None**.
11. Click **Increment**.

If the number of hits is displayed, WebSphere Application Server is operating properly.

Uninstalling WebSphere Application Server

Perform the following steps to uninstall WebSphere Application Server from a UNIX machine:

1. Ensure that you are logged into the machine with superuser (root) privileges.
2. If IBM HTTP Server or another Web server is running on your system, stop the Web server.

   Note: Although IBM HTTP Server can be installed using the WebSphere Application Server installation program, it is not uninstalled when you uninstall WebSphere Application Server. It must be uninstalled separately. See the IBM HTTP Server Library Web site at www.ibm.com/software/webservers/httpservers/library.html for more information.

3. Ensure that your DISPLAY and TERM environment variables are set properly.
4. Navigate to the root installation directory (/opt/WebSphere/AppServer on HP-UX, Linux, and Solaris; /usr/WebSphere/AppServer on AIX) and execute the **uninstall.sh** script as follows:

   ```
   # ./uninstall.sh
   ```

5. The uninstallation program starts and the Uninstall dialog box opens. Click **Uninstall** to remove WebSphere Application Server from the machine.
6. To ensure that subsequent installations of WebSphere Application Server do not conflict with files left on the machine from a previous installation, use the **rm -r** command to remove the WebSphere directory structure. Use caution when executing this command to prevent the unintentional removal of portions of the file system.