Installing the Advanced Edition using Merant SequeLink with Oracle 8*i* in a Custom installation on Windows

IBM WebSphere Application Server supports the use of Merant SequeLink with Oracle databases. The Merant product provides the Oracle database with JDBC functionality.

The topics that follow describe how to install Merant SequeLink for use with a configuration of WebSphere Application Server in the following environment:

- Windows NT or Windows 2000
- IBM Developer Kit, Java™ 2 Technology Edition, 1.3.0
- IBM HTTP Server 1.3.19
- Oracle 8*i* (8.1.7)
- A single node

See "Software Prerequisites" to learn what products and fixpacks are supported for your level of WebSphere Application Server.

Steps for installation

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Installing Oracle 8*i*
Installing the Merant SequeLink Server without a registration key
Installing WebSphere Application Server -- Custom Installation option
Testing the installation
Testing with an Enterprise Bean (optional)

Deciding which steps to follow

If you have not already done so, install Oracle 8*i* and obtain the product CD for WebSphere Application Server or download the product from the IBM WebSphere Application Server Web site. The IBM Developer Kit is installed when you install WebSphere Application Server.

Instructions for installation follow:

1. Install Oracle 8*i*.
2. Install the Merant SequeLink Server without a registration key.
3. Install WebSphere Application Server -- Custom Installation option.

Installing Oracle 8*i* Release 3 and creating a database

These steps cover how to install Oracle 8*i* Release 3 (Oracle 8.1.7), then create and configure a database.

Installing Oracle 8*i*

This section briefly describes how to install Oracle 8*i*. For detailed information on installation, see the Oracle documentation and the Oracle Web site.

To install Oracle 8*i*:

1. Insert the Oracle CD into your machine's CD drive.
2. On the main Oracle dialog, select **Install/Deinstall Products**.
3. On the Welcome dialog, select **Next**.
4. On the File Locations dialog, verify the destination for Oracle 8*i* and click **Next**.
5. On the Available Products dialog, select **Oracle8i Enterprise Edition 8.1.7.0.0** and click **Next**.
6. On the Installation Types dialog, select **Typical** and then **Next**.
7. On the Database Identification dialog, for **Global Database Name** type in `orcl.`*hostname* and then select **Next**.
8. On the Summary dialog, select **Install**.
9. After installation, on the Oracle Database Configuration Assistant dialog, click **OK**.
10. On the End of Installation dialog, click **Exit**.

Completing the above steps installs the Oracle 8*i* code and creates a global database named orcl.*hostname.database_domain*.

Configuring an Oracle 8*i* database

To use an Oracle database with WebSphere Application Server, you must configure the database:

1. Add the following line to the initialization file:

   ```
   open_cursors = 220
   ```

   On Windows NT or 2000, the initialization file is typically located at \Oracle\Ora81\database\Initxxx.ora, where *xxx* is your SID (example, *orcl*).

2. Using a Services panel, stop and restart the Oracle services *OracleServiceORCL* and *OracleOraHome81TNSListener*.
3. Define a WebSphere administration ID with database authority by creating the Oracle user EJSADMIN using the commands below. For the values needed in the first command, enter `system` as the ID and `manager` as the default password. As to the second command, *EJSADMIN_password* is the password for EJSADMIN.

   ```
   sqlplus system/manager
   create user EJSADMIN identified by EJSADMIN_password;
   grant connect,resource,dba to EJSADMIN;
   quit
   ```

   If you are using EJB functionality or will use the WebSphere Application Server samples, define an ID for use in deploying entity beans. As to the second command, *EJB_password* is the password for EJB.

   ```
   sqlplus system/manager
   create user EJB identified by EJB_password;
   grant connect,resource,dba to EJB;
   quit
   ```

   If you are using the Advanced Edition and do not want EJSADMIN to have *dba* authority, do not enter the commands above but, instead, complete the following two steps.

   1. Enter the commands:

      ```
      sqlplus system/manager
      create user EJSADMIN identified by EJSADMIN_password quota 100M on SYSTEM;
      ```

```
grant connect,resource to EJSADMIN;
create user EJB identified by EJB_password quota 100M on USERS;
grant connect,resource to EJB;
quit
```

2. After you later start the WebSphere Admininstrative Console, edit the data source for the HitCount bean (select **Default Server**, **Default Container**, **HitCount Bean**, and **DataSource**) so the **User ID** and **Password** are set to `EJB` and then click **Apply**.

4. Test access to the new database using the EJSADMIN user ID:

```
sqlplus ejsadmin/ejsadmin
```

After a message displays indicating a successful connection, enter `exit`

Installing the Merant SequeLink Server without a registration key

Use the following steps to install the Merant SequeLink Server from the standard Merant DataDirect CD-ROM. This kind of installation does not require you to enter a registration key.

For steps that reference the *Merant DataDirect SequeLink Installation Guide*, obtain the guide from the Merant documentation site at www.merant.com/products/datadirect/download/docs/dochome.asp.

Installing the Merant SequeLink Server without a registration key on Windows NT or Windows 2000 systems

1. Insert the DataDirect CD_ROM into your CD_ROM drive.
2. On the CD drive, navigate from the root directory of the DataDirect CD to the folder for the product you want to install (*SequeLink_directory*\win\oracle for Oracle or *SequeLink_directory*\win\sqlsrv for Microsoft SQL Server, where *SequeLink_directory* is the SequeLink directory on the CD).

   If the installer window appears automatically after you insert the DataDirect CD, click **Exit** to close the window. **You cannot install the OEM SequeLink Server using the standard installer.**

3. At the command prompt, run the setup program with the following parameter:

```
setup.exe /v"IPE=NO"
```

   You are not be prompted for a registration key. The setup program creates a default SequeLink service.

Installing the Merant SequeLink Server without a registration key on supported UNIX systems

To install the Merant Sequelink Server without a registration key, you must use the installation script **install.sh** provided by Merant. **You cannot install the SequeLink Server without a registration key by installing the product directly from the Merant DataDirect CD-ROM with the Merant standard installer.** The preferred way of accomplishing this task is to instead transfer the tar file appropriate for the database that you are using from the Merant DataDirect CD-ROM to your machine, extract the SequeLink Server files, and run the installation script. To do this, perform the following steps:

1. Ensure that you are logged into the machine with superuser (root) privileges.
2. Ensure that the DISPLAY and TERM environment variables are set correctly for your environment.
3. Create a home directory for the SequeLink software called sqlnk by using the **mkdir** command as

follows:

```
# mkdir /usr/sqlnk
```

4. Insert the Merant DataDirect CD-ROM and, if necessary, mount the CD-ROM drive. This procedure varies per platform.
   - For Solaris systems, the Volume Management daemon (**vold**) normally mounts the CD-ROM automatically and immediately, as well as each time the machine is restarted. If the **vold** process is not running on your machine, see your Solaris documentation for instructions on how to mount the CD-ROM.
   - For HP-UX systems, mount the CD-ROM by following the instructions in the article "Mounting a CD-ROM on HP-UX".
   - For AIX systems, mount the CD-ROM by entering the following command:

     ```
     # mount -o ro -v cdrfs /dev/cd number /cdrom
     ```

     In this command, *number* is the CD-ROM number for your system, usually 0 (zero).

   - For Linux systems, mount the CD-ROM by entering the following command:

     ```
     # mount -t iso9660 -r /dev/cdrom /cdrom
     ```

     Note: Some window managers automatically mount a CD-ROM for you. Consult your operating system documentation for more information.

   The following steps assume that the CD-ROM is mounted at /cdrom.

5. Navigate to the directory on the Merant DataDirect CD-ROM appropriate for your platform.
6. Transfer in binary format the appropriate tar file for the database that you are using to the SequeLink home directory that you created in Step 3.

   For information about transferring tar files, refer to the installation procedure in the *Merant DataDirect SequeLink Installation Guide* under the topic "Installing on a Server Without a CD-ROM Drive > Transferring SequeLink Server Files."

7. Navigate to the SequeLink home directory that you created in Step 3.
8. Ensure that you are working in the Korn shell by entering the following command:

   ```
   # ksh
   ```

9. Execute the script **install.sh** with the **-n** parameter as follows:

   ```
   # install.sh -n
   ```

   Using the **-n** parameter ensures that you will not be prompted for a registration key during the installation process.

10. Follow the on-screen instructions as documented in the *Merant DataDirect SequeLink Installation Guide* under the topic "Installing on a Server Without a CD-ROM Drive > Running the Installation Script."

Installing WebSphere Application Server -- Custom Installation option

To install WebSphere Application Server along with the IBM Developer Kit and IBM HTTP Server, do the

following:

1. Ensure that you will be installing WebSphere Application Server under a local Windows user ID that is in the Administrative group and has the advanced user rights "Act as part of the operating system" and "Log on as a service."
2. If IBM HTTP Server or another Web server on your system is running, stop the Web server.

   If you have a level of IBM HTTP Server prior to 1.3.19 on your system, you must uninstall it for the WebSphere Application Server installation program to install IBM HTTP Server 1.3.19.

3. If you obtained Version 4.0 from the product Web site, run or unpack the downloaded executable.
4. If you plan to use a Web server or database at a level that exceeds the current version required by WebSphere Application Server, you must do one of the following:

     - Download the most current prereq.properties file from the Web site
       http://www.ibm.com/software/webservers/appserv/tools.html to a directory such as c:\tmp on the machine onto which you will install WebSphere Application Server.
     - Disable the WebSphere Prerequisite Checker before installing WebSphere Application Server.
         a. Copy the prereq.properties file from the \nt directory to the c:\tmp directory on the machine on which you will install WebSphere Application Server.
         b. Edit this file by finding the line `prereq_checker=1` and changing it to `prereq_checker=0`.

5. If you have *not* downloaded a new prereq.properties file or disabled the Prerequisite Checker (Step 3), run `setup.exe` or, if you have the product CD, run `\nt\setup.exe`.

   If you *have* downloaded a new prereq.properties file or disabled the Prerequisite Checker, enter the following command:

   ```
   setup.exe -prereqfile c:\tmp\prereq.properties
   ```

   You will need 135 MB free in your temp directory (usually on the C drive), even if you are installing on another drive, because the installation shield package unpacks to the temp directory. This will kick off an installation shield package.

6. If the Choose Setup Language dialog is displayed, select a language and click **OK**.
7. Click **Next** to pass the introductory page.
8. If WebSphere Application Server is already installed on your system, a dialog giving you the option to backup and uninstall WebSphere Application Server displays. You now have three options:
     - To backup your files and uninstall WebSphere Application Server, click **Backup and Uninstall** and then **Next** to continue with the installation.
     - To install to a different directory, simply click **Next** and continue with the installation.
     - To migrate your files from a previous release, click **Perform Migration**. Complete the migration, then run the WebSphere installation program again.

   If WebSphere Application Server is not already installed on your system, proceed to step 9.

9. In the Installation Options dialog, select **Custom Installation**; then click **Next**.
10. In the Choose Application Server Components dialog, select those components you want and deselect those components you do not want.

If you want to install **Application and Administrative Server**, **Administrator's Console** or **Application and Development Tools**, you must also install the IBM JDK or specify a valid JDK in the Select Java Development Kit dialog.

Clicking **Other JDK** displays the Select Java Development Kit dialog. If you have a non-IBM Java development kit installed, we recommend that you specify that you want the Java Development Kit (IBM Developer Kit 1.3.0.). Also specify the destination directory for the IBM Developer Kit. Further, to use the IBM Developer Kit, you must remove your other JDKs from the jre\lib\ext directory. If you use a JDK other than IBM Developer Kit to run WebSphere Application Server, it must be at the XML4j/Xerces 3.1.1 level. Click **Next** to confirm your selections. Otherwise, click **Back** to exit the dialog.

If you want to install **Samples**, you must also install **Application and Administrative Server** or have the Application Server product already installed on your system.

As to **Web Server Plugins**, no plugins are required to bring up the Application Server or the administrative console. However, for production applications, you generally will not be able to serve servlets without a Web server plugin and a valid Web server. For non-production applications, you can use the internal HTTP transport system to serve servlets without an HTTP plugin by simply using the internal HTTP transport port (9080). For example, to serve the sample snoop servlet without an HTTP Web server, you use the URL http://*your_server_name*:9080/servlet/snoop, with 9080 being the internal transport port number and *your_server_name* being `localhost` if the Application Server is on the local machine. The internal transport mechanism lacks the performance for production applications available with a plugin.

As to **IBM HTTP Server**, you must install this Web server if you intend to select the IBM HTTP Server plugin and do not have IBM HTTP Server installed.

These installation instructions assume that you will install all of the components.

11. Click **Next**. If necessary, shut down all Web servers you plan to run with WebSphere Application Server and proceed.
12. On the Choose Web Server Plugins page, select **IBM HTTP Server** and 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.
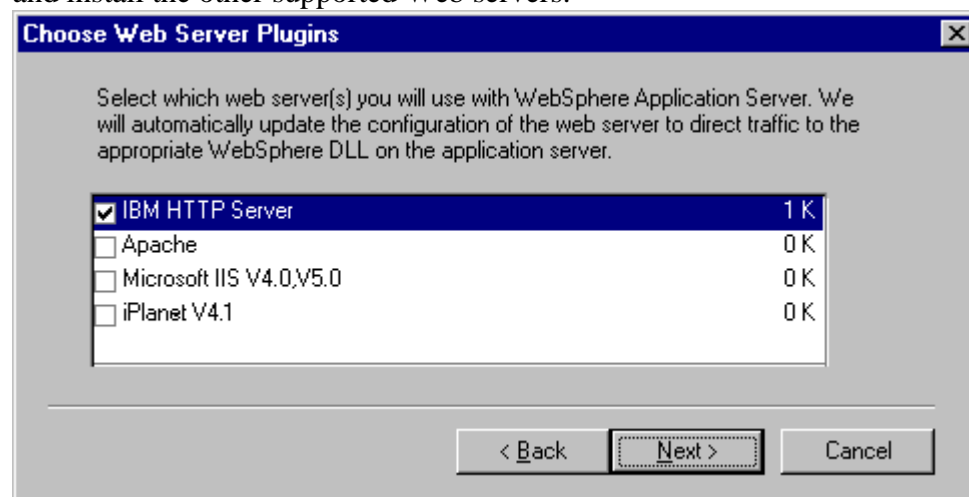
13. On the Security Options dialog, fill in the user ID and password to use for the application server. Do not use the characters < or > for the user ID or password. After you fill in the fields, click **Next**.

14. Specify the destination directory for WebSphere Application Server. If IBM HTTP Server is not installed already, you can also specify the destination directory for that product. Then, click **Next**.
15. On the Database Options dialog, do the following:
    1. For **Database Type**, select **Merant**. If the Application Server will be using a database that is installed on a machine other than the one onto which you are installing WebSphere Application Server, select the **Remote Database** check box.
    2. For **Database Name**, give the name of the database to use. The default is **was40**.
    3. For **Database User ID**, specify your user name. Note that if you use an invalid user ID to install WebSphere, it will not successfully register the WebSphere Administrative Server to the NT services database. If you have already installed Oracle 8*i*, ensure that you specify the Username specified when configuring Oracle 8*i* for use with WebSphere Application Server (for example, EJSADMIN).
    4. For **Password** and **Confirm Password**, enter your password. If you have already installed Oracle 8*i*, ensure that you specify the Password specified when installing Oracle 8*i*.
    5. For **Path**, specify the path for the database program.
    6. For **Server**, specify the server containing the database program. You will likely want to take the default.
    7. For **Port**, specify the port for the database. You will likely want to take the default.
    8. Click **Next**.
16. Select a program folder and click **Next**.
17. Click **Next** again to begin the installation.
18. After the installation completes, check the box to view the README file.

    For the most recent version of the README or release notes, go to **Library** section of the product Web site at http://www.ibm.com/software/webservers/appserv/.

19. Click **Finish** and, to complete the installation, restart your computer.

Testing the installation

You can use the First Steps dialog to test the WebSphere installation. Your Web server must be running to use the First Steps dialog. Access the dialog by selecting **Start -> Programs -> IBM Websphere -> Application Server V4.0 -> First Steps**.

Alternatively, you can do the following to test the installation:

1. Check that WebSphere administrative server has been registered in the Services dialog. Open the Control Panel and select **Services**. If you scroll down you should see **IBM WS AdminServer**.
2. Start the service by selecting **IBM WS AdminServer** and then selecting **Start**.

    Wait patiently. If the server is slow to start or does not start successfully, look at the last line in the \WebSphere\AppServer\logs\tracefile log. If the trace file says *server is open for e-business*, the server has started.

    Hint: You can control the server from a command line or batch file using the following commands:

    ```
    net start "IBM WS AdminServer"
    net stop "IBM WS AdminServer"
    ```

3. To start the server, run the administrative console, which is how you manage WebSphere Application Server 4.0. From the **Start** menu, select **Programs-> IBM WebSphere -> Application Server 4.0**

-> Administrator's Console. This starts the WebSphere Administrative Console.

4. When the Administrative Console opens, the tree view is shown. Click on the + sign next to **WebSphere Administrative Domain** to expand the view. Your host name should be listed in the **Nodes** folder. Expand the view of your host name node and of **Application Servers**, and you should see an entry called **Default Server**.
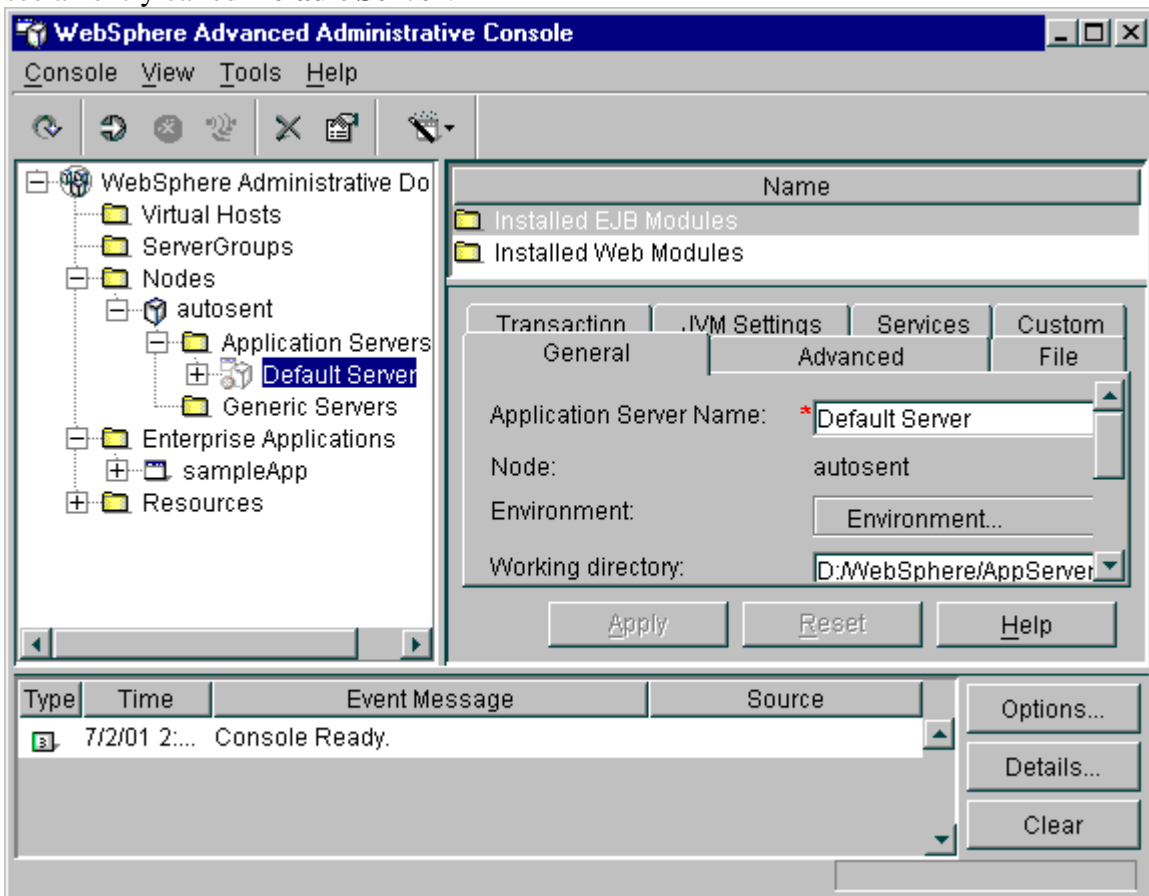

Right-click on **Default Server** and select **Start**. To ensure that the server is running, right-click on **Default Server** and select **Ping**. After an information dialog displays, stating that the server is running, click **OK**.

Once the server starts, it is marked in the configuration database that it should be running. If it stops, or if you reboot the machine, the administrative server will automatically restart it. Even if the administrative server fails, it will continue to run.

5. Test the server. Ensure that the IBM HTTP Server is running. (The status for **IBM HTTP Server** in a Services dialog, which is accessible from a Control Panel, shows *Started*.) If the IBM HTTP Server is not running, use the **Start** option in a Services dialog to start the server, or select **Start -> Programs -> IBM HTTP Server -> Start HTTP Server**. Then, open a browser and go to http://localhost/servlet/snoop, which is a standard sample servlet installed by default. You should see information on /servlet/snoop.
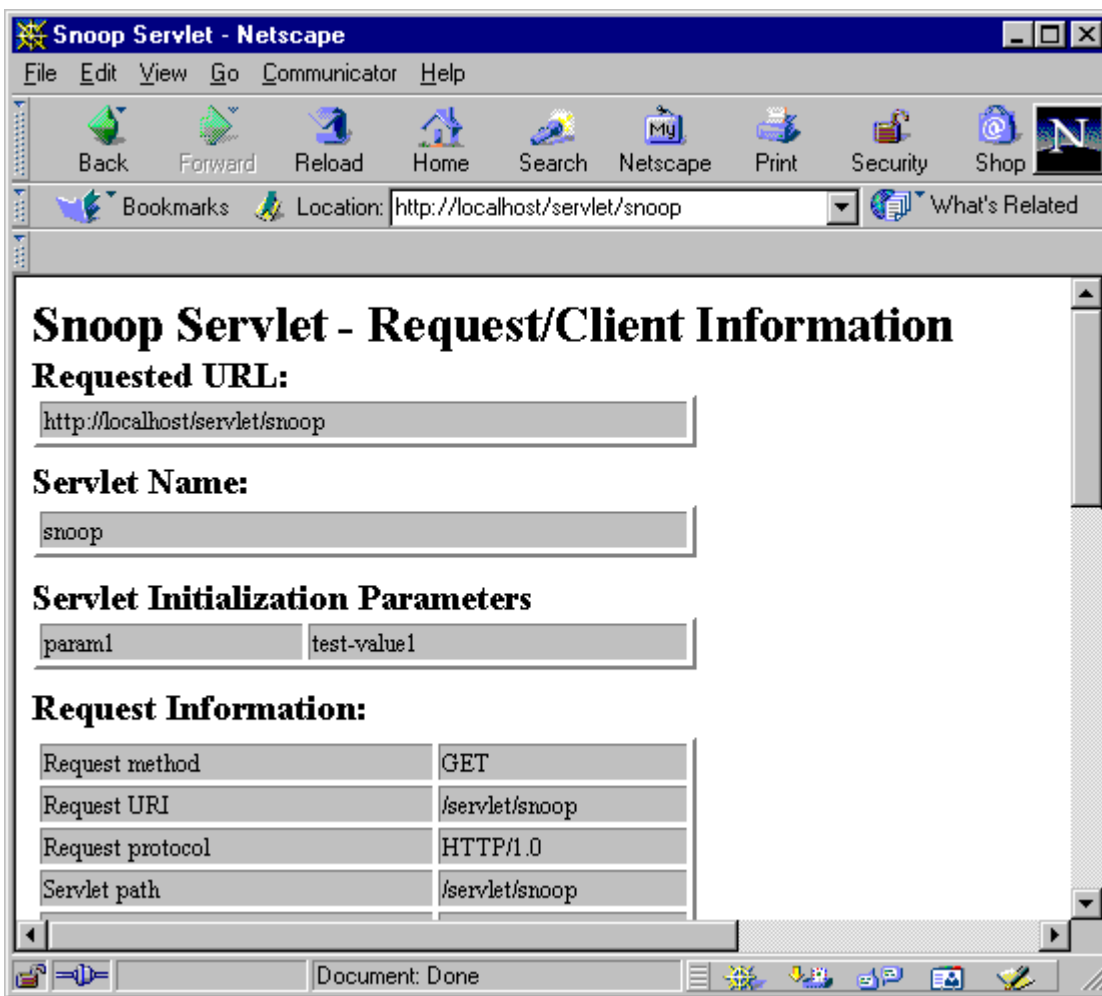
Testing with an Enterprise Bean

After you install WebSphere Application Server, you can test an enterprise bean using the Inc sample:

1. Go to the administrative console.
2. Ensure that default server and the Inc bean are already started.
3. Start your Web browser and specify for the URL address:
   `http://your_host/webapp/examples/HitCount`. You should see a Web page with selection options.
4. From the list **Generate hit count using**, select **Enterprise JavaBean**. From the list **Transaction Type**, select **None**.
5. Click on **Increment**.

The number of hits should display.

Uninstalling WebSphere Application Server

To uninstall WebSphere Application Server:

1. Run the uninstwas40.exe file in the main WebSphere Application Server directory. For example, enter the command `uninstwas40` at a prompt in the main product directory.
2. Select **Yes** when asked if you want to uninstall the product.

3. Select whether you want to back up your product files.
4. After the uninstallation program runs, reboot your system.

Note that, instead of running the uninstwas40.exe file, you can uninstall WebSphere Application Server using the Add/Remove Programs option of the Windows Control Panel.

If WebSphere Application Server files do not completely uninstall from your system--for example, there is a power failure or a system crash--then you can do the following to remove the WebSphere Application Server files:

1. Backup any WebSphere development and configuration data that you want saved.
2. Stop any WebSphere services that are running.
3. Delete WebSphere program files. That is, delete the WAS_HOME directory.
4. Delete WebSphere registry entries under

   ```
   HKEY_LOCAL_MACHINE\Software\IBM\WebSphere Application Server\4.0
   ```

5. Delete the Service entry in the registry:

   ```
   SYSTEM\\CurrentControlSet\\Services\\IBM WS AdminServer\\Parameters
   ```

6. Delete the uninstall entry in the registry:

   ```
   HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall\IBMWebASDe
   ```

7. Ensure that the environment variable WAS_HOME does not exist. If it does exist, remove it.
8. Ensure that WAS_HOME\bin was not added to the PATH environment variable. If it was added, remove it.
9. Reboot your system.

IBM HTTP Server is not uninstalled by the WebSphere Application Server uninstall program. If you installed IBM HTTP Server as part of the WebSphere Application Server installation, you must run the IBM HTTP Server uninstall program.