Installing the Advanced Edition using IBM HTTP Server and Sybase 12 on AIX

The steps that follow describe how to install a single configuration of WebSphere Application Server Advanced Edition that uses--

- AIX 4.3.3
- IBM Developer Kit, Java™ 2 Technology Edition, 1.2.2
- IBM HTTP Server 1.3.12
- Sybase 12
- 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.htm to learn which products and fix levels are supported for your level of WebSphere Application Server.

Steps for installation

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.htm to ensure that you have the correct prerequisites, including operating system patches. If you have not already done so, install Sybase 12 and obtain the product CD for WebSphere Application Server download the product from the WebSphere Application Server Download Web site at www.ibm.com/software/webservers/appserv/download.html. WebSphere Application Server comes with the IBM Developer Kit and IBM HTTP Server. Instructions for installation follow:

Installing Sybase 12

The steps below describe how to--

- Install and configure Sybase 12 on a local AIX machine
- Upgrade Sybase 12 with an Electronic Software Distribution (ESD) fix

Installing Sybase 12

Note: The Sybase 12 installer requires Java to be installed on the local host.

The Sybase 12 product CD contains the files necessary to install and configure Sybase 12 on a local AIX machine. Perform the following steps to install Sybase 12:

1. Ensure that you are logged into the machine with superuser privileges (that is, log in as *root*).
2. You can need to change your system's settings for the following parameters:

    - Shared memory size
    - Shared memory segment sizes

    For details on settings required for running Sybase, refer to the Sybase installation documentation. See your System Administrator for advice on changing these parameters.

3. Invoke smit to enable Asynchronous I/O by entering the command

   ```
   # smit devices
   ```

4. On the Devices screen, select **Asynchronous I/O**.
5. On the Asynchronous I/O screen, select **Change/Show Characteristics of Asynchronous I/O**.
6. On the Change/Show Characteristics of Asynchronous I/O screen, do the following:
   a. Set the value for the **STATE to be configured at system restart** field to *available*.
   b. Set the value of the **State of fast path** field to *enable*.
   c. Accept the default values for the other fields and click **OK**. When the process has completed, exit from smit.
7. Restart your system to enable the new settings to take effect.
8. Ensure that the DISPLAY and TERM environment variables are set correctly for your environment.
9. Create a file system, logical volume, or directory to hold the Sybase software. Ensure that the location you choose has 460 MB of free disk space.
10. If you plan to use Sybase 12 in a production environment, it is recommended that you create a file system on a separate partition to store the database files. Refer to the Sybase 12 installation documentation and your AIX system documentation for more information on creating and mounting a file system.
11. Set the JAVA_HOME environment variable to the directory where Java is installed on the local machine.
12. Invoke smit to create an administrative group for Sybase (named *sybase* in this example), by entering the command

    ```
    # smit mkgroup
    ```

13. In the Add a Group screen, do the following:
    a. In the **Group NAME** field, type `sybase`.
    b. Click **OK**. When this process is complete, exit from smit.
14. Create a separate and distinct user to administer Sybase (named *sybase* in this example) by entering the command

    ```
    # smit mkuser
    ```

    This user must have permission privileges from the top (root) of the operating system directory or disk partition down to the specific physical device or operating system file. It is recommended that this user perform all unloading, installing, upgrading, and setup tasks. See your System Administrator for advice on how to configure this user with root privileges.

15. In the Add a User screen, do the following (the value that you add for the **HOME directory** field can differ from the example shown here):
    a. In the **User NAME** field, type `sybase`.
    b. In the **Primary GROUP** field, type `sybase`.
    c. In the **HOME directory** field, type `/home/sybase`. The HOME directory to which the Sybase files are installed. The default is shown, but you can set a different value for the HOME directory.
    d. Click **OK**. When this process is complete, exit from smit.
16. Ensure that *root* is part of the *sybase* group by entering the command

    ```
    # smit user
    ```

17. From the Users screen menu, choose **Change / Show Characteristics of a User**.
18. In the Change / Show Characteristics of a User pop-up window, beside the **User NAME** field, type `root` and click **OK**.
19. In the Change / Show Characteristics of a User screen, do the following:
    a. In the **Group SET** field, ensure that the group *sybase* is included by clicking the field and scrolling to the end of the entries. If it is not included, append it to the end of the entries.
    b. Click **OK**. When this process is complete, exit from smit.
20. Change the ownership of the home directory to the group *sybase*, user *sybase*, by issuing the command

    ```
    # chown sybase:sybase <home_directory>
    ```

21. Switch to user *sybase* by using the command below. Note that when you log in as user *sybase*, the command prompt changes from # to $ to indicate your login identity.

```
# su - sybase
```

22. Ensure that your DISPLAY, TERM, and JAVA_HOME environment variables are still set properly. Additionally, check that your PATH environment variable includes the path to your Java installation.
23. Ensure that a CD-ROM drive is installed and configured on the machine. If a CD-ROM drive is not installed or configured on the machine, install and configure one according to the installation instructions provided with the drive.
24. Insert the CD into the drive.
25. As *root*, use the **mkdir** command to create a mount point for the CD. The following command creates a mount point for the CD at /cdrom; you can mount the CD at any location in the machine's local file system.

    ```
    $ mkdir /cdrom
    ```

    Note: The commands in this document assume the CD is mounted at /cdrom. If you mount the CD at a different location, use that location when issuing the commands in this document.

26. As *root*, invoke smit for configuring CD-ROM file systems by entering the command

    ```
    $ smit cdrfs
    ```

27. From the **CDROM File Systems** menu, choose **Add a CDROM File System**.
28. In the Add a CDROM File System screen, do the following:
    a. With the cursor in the **DEVICE name** field, click the **List** button and choose the name of the CD-ROM drive that contains the Sybase 12 software CD.
    b. In the **MOUNT POINT** field, type the full path name of the mount point for the CD. Use the name of the directory that you created with the **mkdir** command in Step 25.
    c. In the **Mount AUTOMATICALLY at system restart** field, set the value to either `yes` (to specify that the CD is mounted automatically each time the machine is restarted) or `no` (to specify that the CD is not mounted automatically each time the machine is restarted).
    d. Click **OK**. The CD-ROM file system is added. When this process is complete, exit from smit.
29. As *root*, invoke smit for mounting a file system by entering the command

    ```
    $ smit mountfs
    ```

30. In the Mount a File System screen, do the following:
    a. With the cursor in the **FILE SYSTEM name** field, click the **List** button and choose the appropriate CD-ROM file system that you want to mount.
    b. In the **DIRECTORY over which to mount** field, type the name of the mount point for the CD. Use the name of the directory that you created with the **mkdir** command in Step 25.
    c. With the cursor in the **TYPE of file system** field, click the **List** button and choose **cdrfs**.
    d. Set the **Mount as READ-ONLY system** field value to `Yes`.
    e. Verify or change the entries in the remaining fields, depending on how you want to mount the CD, and then click **OK**. The CD is mounted as a file system. When this process is complete, exit from smit.
31. As *sybase*, navigate to the correct directory on the Sybase 12 CD by entering the command

    ```
    $ cd /cdrom
    ```

32. As *sybase*, enter the following command to begin the Sybase installation process:

    ```
    $ ./install
    ```

    The Installation Type screen displays.

33. Ensure that the radio button beside the **Standard Install** option is selected and click **Next**. (A Standard installation requires 460 MB of disk space. Customized installations can require additional disk space. See the Sybase installation documentation for more information.) The Choose Directory screen displays.
34. Specify the installation location for the Sybase files (make the installation directory the home directory of the *sybase* user) and click **Next**. The Summary screen displays, summarizing all of the installation choices you have made so far.
35. Verify the information on the Summary screen. When you have determined that it is correct, click **Next**. The

Installing screen displays; it tracks the status of the Sybase installation.

36. After the components are installed, the Sybase License Management screen displays. Click **No** to exit from this screen for now.
37. The Sybase License Management screen displays again. Click **No** to exit from this screen for now.
38. The Sybase Installer screen displays. Click **No** to exit from this screen for now.
39. An Information screen displays, informing you that installation is complete. Click **OK**.
40. Create a .profile file in the home directory for the user *sybase*, as follows:
    a. Ensure that you are in the home directory of user *sybase*.
    b. Ensure that you are in the Bourne shell. If you are not, enter the command

    ```
    $ sh
    ```

    c. Copy the file SYBASE.sh to the file .profile:

    ```
    $ cp SYBASE.sh .profile
    ```

    d. If necessary, enter the following commands. The need to enter these commands depends on how user *sybase* is configured on your system. Ensure that you are in the home directory of user *sybase* before entering these commands. Incorrect use of these commands can damage your server's configuration.

    ```
    $ chown -R sybase:sybase *
    $ chown sybase:sybase .profile
    ```

    e. Add the following information to the .profile file (where <*server_name*> is name of your server that you plan to create and <*home_directory*> is the installation directory of the Sybase software and, in this example installation, the home directory of user *sybase*):

    ```
    DSQUERY=<server_name>
    export DSQUERY
    PATH=<home_directory>/ASE-12_0/install:$PATH
    export PATH
    XACONFIGFILE=<home_directory>/xa_config
    export XACONFIGFILE
    ```

    DSQUERY defaults to your machine's host name, but you can change the value to any valid ASE server name.

41. Configure *root* to execute this .profile file on startup. This is required to install and run WebSphere Application Server.
42. Log out and log back in as user *sybase* to enable the changes to the environment.
43. To add licenses to your installation, enter the following command (where <*home_directory*> is the installation directory of the Sybase software and, in this example installation, the home directory of user *sybase*):

    ```
    $ <home_directory>/SYSAM-1_0/bin/lmgr
    ```

44. The Sybase License Management screen displays, asking if you have a Sybase Software Asset Management Certificate to register. Click **Yes**.

    Note: Your license agreement can differ from the type of agreement demonstrated here. Check with your system administrator or refer to the Sybase installation documentation for more information on registering licenses.

45. On the screen that displays, enter information from the Sybase License Certificate for the feature you have purchased. Click **More** if you have more licensed features. This action prompts the installer to record the information you entered entered for the first feature in the license file and to prompt you to enter information for the next feature. For WebSphere Application Server, you must install and define jConnect 5.2 to use JDBC 2.0/JTA. For distributed transactions with the WebSphere Application Server Advanced Edition, a DTM license (ASE 12.0 DTM Option) is required. Click **Done** after you enter all of your license information.

Determine whether you need to update the basic Sybase installation with an ESD fix by reviewing the information on the

Software prerequisites Web site. If you must install a fix, note the fix level and proceed to the section "Upgrading Sybase 12 with an ESD."

Upgrading Sybase 12 with an ESD

To upgrade Sybase 12 with an ESD, do the following:

1. If you have not already done so, see the Software prerequisites Web site to learn whether you need to install a Sybase ESD fix for your level of WebSphere Application Server. Note the ESD fix level needed.
2. Ensure that you are logged into the machine as user *sybase*. Note that when you log in as user *sybase*, the command prompt appears as $, rather than #, to indicate your login identity.
3. Create a directory into which to download the patch file.
4. Open a Web browser window and go to http://www.sybase.com. Move to the downloading site, which can be restricted to registered users, and download the appropriate file. Check with your System Administrator if you cannot access this site.
5. On the host machine, navigate to the directory containing the downloaded file.
6. Uncompress and untar the downloaded file to extract the Sybase 12 files.
7. Navigate to the <*home_directory*>/ASE-12_0 directory by entering the following command (where <*home_directory*> is the installation directory of the Sybase software and, in this example installation, the home directory of user *sybase*):

   ```
   $ cd <home_directory>/ASE-12_0
   ```

8. Recursively copy the download directory contents to the <*home_directory*>/ASE-12_0 directory by entering the command below. <*fix_directory*> is the directory containing the fix files. It usually bears the name of the fix level (such as *ebf8774*, for example):

   ```
   $ cp -R /<download_directory>/<fix_directory>/* .
   ```

To test your installation, proceed to "Configuring and verifying installation of Sybase 12."

Configuring and verifying installation of Sybase 12

Before you can run WebSphere Application Server, you must create a Sybase database named *WAS*, which Application Server uses.

Creating and configuring a database for WebSphere Application Server

Create a database named *WAS* by performing the following steps:

1. Log in as the user *sybase*. Note that when you log in as user *sybase*, the command prompt appears as $, rather than #, to indicate your login identity.
2. Ensure that your DISPLAY, TERM, and JAVA_HOME environment variables are set properly. Additionally, check that your PATH environment variable includes the path to your Java installation.
3. Start the Sybase Adaptive Server setup and configuration utility by entering the following:

   ```
   $ asecfg
   ```

   The ASE Setup and Configuration screen displays.

4. Click **Configure a new server**. The srvbuild-Select Servers to Build screen displays.
5. Click the radio button beside the **Adaptive Server** option and enter the server name. This name must match the value that you defined for the $DSQUERY environment variable.
6. Click **OK**. The srvbuild-Server Attribute Editor screen displays.
7. In the **Master device path** field, enter the following (where <*home_directory*> is the installation directory of the Sybase software and, in this example installation, the home directory of user *sybase*):

```
<home_directory>/master
```

8. Accept the default values for the **Master device size (MB)** and **Master database size (MB)** fields.
9. In the **Sybsystemprocs device path** field, enter the following:

```
<home_directory>/sybsystemprocs
```

10. Accept the default values for the other fields and click **Edit Advanced Adaptive Server Attributes**. The srvbuild-Server Attribute Editor screen displays.
11. In the **Sybsystemdb (two-phase commit) device path** field, enter the following:

```
<home_directory>/sybsystemdb
```

12. Accept the default values for the other fields and click **Build Server!**. The srvbuild-Status Output screen is displayed, which shows the status of the various installation tasks as they execute.
13. Near the end of the installation process, the srvbuild-question screen displays, asking if you want to localize your Adaptive Server to use a language other than U.S. English or to use a different default character set or sort order. For this example installation, click **No**. (If you need to change these parameters, click **Yes**. Refer to the Sybase installation documentation for more information.)
14. If the installation is successful, on the srvbuild-Status Output screen, the following message appears:

```
Server '<server_name>' was successfully created.
Done
```

15. Click **OK** to exit from the srvbuild-Status Output screen. The srvbuild-Select Servers to Build screen displays.
16. Click **Exit** to exit from this screen. A srvbuild-question screen displays, asking if you want to exit from the utility.
17. Click **Yes**.
18. If the ASE Setup and Configuration screen continues to display, click **Exit** to exit from this screen.
19. As user *sybase*, use the following command to log into the Adaptive Server as user *sa* and check to see if the server <*server_name*> is running (where <*home_directory*> is the installation directory of the Sybase software and, in this example installation, the home directory of user *sybase*):

```
$ <home_directory>/OCS-12_0/bin/isql -Usa -P -S<server_name>
```

If server <*server_name*> is running, the **isql** prompt displays (`1>`).

Note: The Adaptive Server installation and setup processes require certain user roles. Different user roles own different responsibilties and privileges. User *sybase* is the UNIX login account that owns all of the Sybase installation directories and files, sets permissions on those directories and files, and performs the installation and upgrading of Adaptive Server. User *sa*, created when you install the Sybase software, is not a UNIX login account; it is specific to Adaptive Server and is used to log in to Adaptive Server with the **isql** command. It is the Sybase System Administrator in charge of creating user accounts, assigning permissions on databases, and creating new databases.

After the initial Sybase install, the password for user *sa* is NULL. As user *sybase*, set the password:

```
isgl -Usa -P -S<server_name>
1> sp_password null, <new_password>
2> go
```

20. Type `quit`.
21. Run the **instmsgs.ebf** script to update your SQL Server Messages to the latest installed fix level. Save the output of this step to an operating system output file.

```
$ <home_directory>/OCS-12_0/bin/isql -Usa -P -S<server_name> -n \
 -i<home_directory>/ASE-12_0/scripts/instmsgs.ebf -o<output_file>
```

22. To create the database *WAS*, perform the following steps:
    a. Enter the command:

```
$ <home_directory>/OCS-12_0/bin/isql -Usa -P -S<server_name>
```

b. Enter the commands:

```
disk init name = 'WASDEV',
          physname = '/<home_directory>/was.dat',
          vdevno = 3,
          size = 5000
```

vdevno must be set to the next available (unused) device. To list devices in use, enter the commands:

```
isql -Usa -P
1> sp_helpdevice
```

size = 5000 is equivalent to 10 MB. You might need to specify a higher value for production use. The Sybase default is 2 MB, which is too small for WebSphere Application Server. You can use the *alter database* command.

c. Enter the following commands to create the database:

```
go
create database WAS on WASDEV = 10

go
use WAS
```

The database will be your WebSphere Application Server administrative repository specified during installation of Application Server. The database name must be in uppercase.

d. Enter commands to create the Sybase user ID for WebSphere Application Server:

```
go
sp_addlogin EJSADMIN, <6-or-more-character_password>, WAS
go
sp_adduser EJSADMIN
```

These commands give the database user ID and password you will use when installing WebSphere Application Server. The user ID must be in uppercase. The password must be a minimum of 6 characters.

e. Create a Sybase user ID for EJBs:

```
go
sp_addlogin EJB, <6-or-more-character_password>, WAS
```

These commands give the user ID and password you will use to access your data source for EJBs in WebSphere Application Server. The user ID must be in uppercase. The password must be a minimum of 6 characters.

f. Enter the following commands:

```
go
sp_adduser EJB
go
grant all to EJSADMIN, EJB
go
grant role dtm_tm_role to EJB
go
COMMIT
```

```
go
use master
go
sp_dboption WAS, "trunc log on chkpt", true
go
COMMIT
go
use WAS
go
COMMIT
go
CHECKPOINT
go
```

23. To use the jConnect 5.2 Java Database Connectivity (JDBC) driver, update the .profile file by setting the JDBC_HOME and CLASSPATH environment variables. Set these variables by doing the following (for this example installation, assume the use of jConnect 5.x with JDK 1.2):
    a. Set JDBC_HOME to the directory where you have installed jConnect (in this example installation, <*home_directory*>/jConnect-5_2).
    b. Set CLASSPATH to the location of your jConnect JAR file (in this example installation, <*home_directory*>/jConnect-5_2/classes/jconn2.jar).
    c. To enable the jConnect verification steps in the section "Verifying installation of Sybase 12," append CLASSPATH with <*home_directory*>/jConnect-5_2/classes.
    d. Log out and log back in as user *sybase* to enable the changes to the environment.
24. Enable DTM by entering the commands:

```
isql -Usa -P -S<server_name>
1> sp_configure "enable DTM", 1
2> go
```

Next, stop ASE:

```
isql -Usa -P -S<server_name>
1> shutdown
2> go
```

Finally, restart ASE:

```
<Sybase_install_root>/ASE-12_0/install/startserver -f RUN_serverfile
```

Later, grant dtm privileges to the user *EJB*.

Verifying installation of Sybase 12

1. Log in as the user *sybase*. Note that when you log in as user *sybase*, the command prompt appears as $, rather than #, to indicate your login identity.
2. Use the following command to check to see if the server <*server_name*> is running (where <*home_directory*> is the installation directory of the Sybase software and, in this example installation, the home directory of user *sybase*):

```
$ <home_directory>/OCS-12_0/bin/isql -Usa -P -S<server_name>
```

If server <*server_name*> is running, the **isql** prompt displays (1>).

3. Use the following commands to perform an additional verification check:
    a. Shut down the server by entering these commands:

```
1> shutdown

2> go
```

b. Navigate to the <*home_directory*>/ASE-12_0/install directory by entering the following:

```
$ cd <home_directory>/ASE-12_0/install
```

c. Start the server by entering the following:

```
$ startserver -f RUN_<server_name>
```

where <*server_name*> is the value that you set for the DSQUERY environment variable.

Check the messages that appear to ensure that no errors are reported.

d. Press Return when a line similar to the following displays:

```
00:00000:00001:2000/05/09 13:19:14.32 server    'iso_1' (ID = 1).
```

4. To verify that the jConnect driver is operating correctly, test the installation by running the supplied **Version** program. The **Version** program connects to a demonstration database that Sybase makes available on the Internet. Therefore, you must have Internet access to run the program successfully. To run the **Version** program, do the following:
   a. Ensure that your JAVA_HOME, JDBC_HOME, and CLASSPATH environment variables are set properly.
   b. Navigate to the directory represented by the JDBC_HOME environment variable (in this example installation, <*home_directory*>/jConnect-5_2) by entering the following command:

```
$ cd <home_directory>/jConnect-5_2
```

   c. Enter the following command to run the Java program:

```
$ java sample2.SybSample Version
```

The SybSample screen displays, showing the source code for the **Version** program in the top pane, text in the middle pane, and status information in the bottom pane. If you see the following text in the middle Sample Output pane, jConnect has been installed correctly:

```
Using JDBC driver version 5.2
jConnect  (TM) for JDBC(TM)/5.2. . .
```

   d. On the **File** menu, click **Close** to exit from the SybSample screen.

Installing WebSphere Application Server Version 3.5

To install WebSphere Application Server using the GUI installer, do the following:

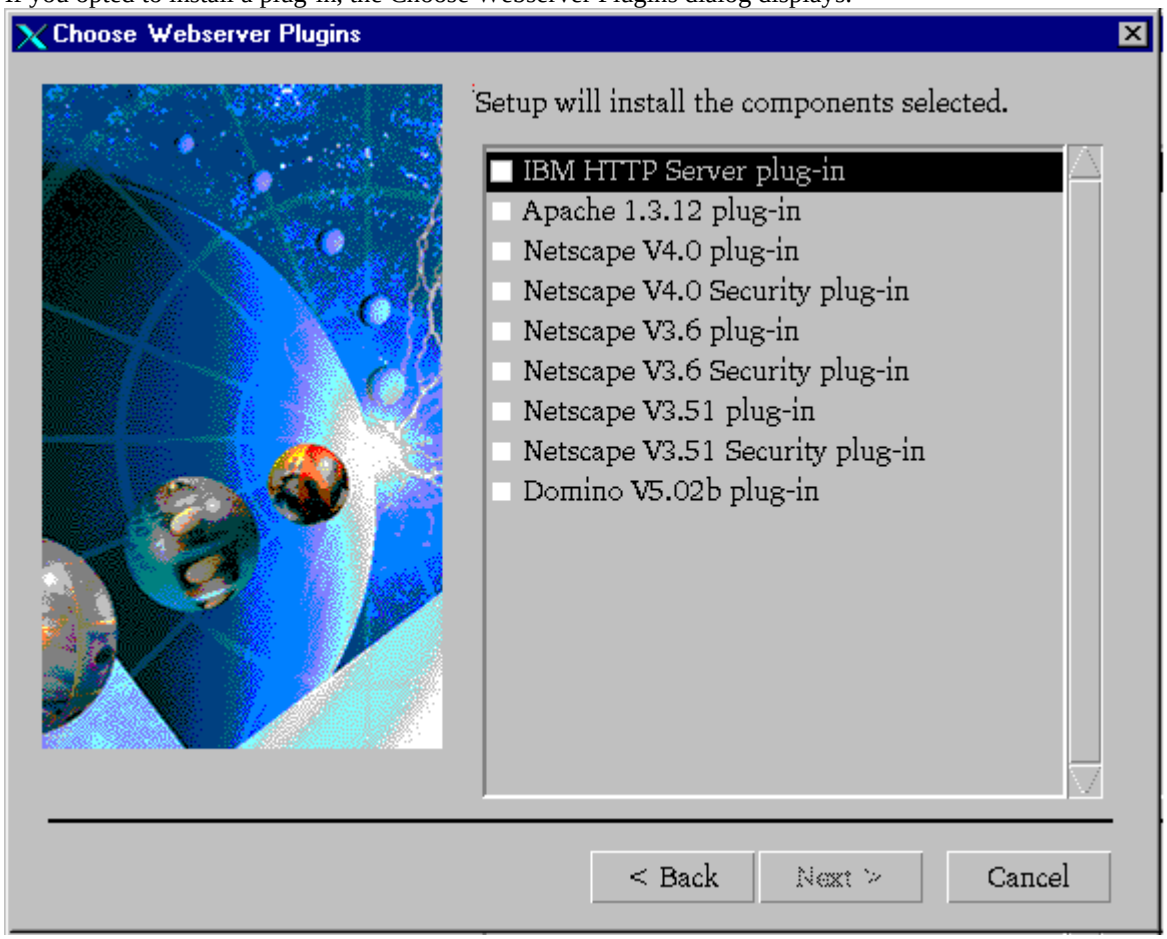
1. Log into your machine with superuser (root) privileges.
2. If IBM HTTP Server or another Web server on your system is running, stop the Web server. Also, if a version of WebSphere Application Server Version is already installed on your system and running, stop all Application Server processes.
3. 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 disable the WebSphere Prerequisite Checker before installing WebSphere Application Server. To do this, perform the following steps:
   a. Copy the prereq.properties file from the /cdrom/aix directory to the /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`.
4. If you have not disabled the Prerequisite Checker as detailed in Step 3, run the installation script file by entering the following command:

```
# /cdrom/aix/install.sh
```

If you have disabled the Prerequisite Checker as detailed in Step 3, run the installation script file by entering the following command:

```
# /cdrom/aix/install.sh /prereqfile  /tmp/prereq.properties
```

5. In the Install Options dialog, select **Custom Installation**; then click **Next**.
6. In the Choose Application Server Components dialog, select those components you want and deselect those components you do not want. You will likely want to include the default options. Ensure that **Configure Default Server and Application** is selected. If you plan on running WebSphere Application Server with a supported Web server, then also select **Web Server Plugins**.
7. Click **Next**. If necessary, shut down all Web servers you plan to run with WebSphere Application Server and proceed.
8. If you opted to install a plug-in, the Choose Webserver Plugins dialog displays.



Select **IBM HTTP Server plug-in**. Only IBM HTTP Server 1.3.12 is provided with WebSphere Application Server. You must separately purchase and install the other supported Web servers.

9. On the Database Options dialog, do the following:
    1. For **Database Type**, select **Sybase**.
    2. For **Database Name**, give the name of the database to use.
    3. For **DB Home**, specify the main Sybase installation directory.
    4. For **DB URL**, specify the URL for accessing the database. You will likely want to take the default.
    5. For **Database User ID**, specify your user name. If you have already installed Sybase 12, ensure that you specify the Username specified when configuring Sybase 12 for use with WebSphere Application Server (for example, `EJSADMIN`).
    6. For **Database Password** and **Confirm Password**, enter your password. If you have already installed Sybase 12, ensure that you specify the Password specified when installing Sybase 12.

7. Click **Next**.

10. On the Security Options dialog, fill in the user ID, security password, and confirming password to use for the application server. If you do not need special key ring files, click **Next** to take the default key ring files and to move to the Product Directory dialog.

    If you need special key ring files, move to the key ring section, designate client and server files and passwords, and then click **Next** until you are at the Product Directory dialog.

11. Specify the destination directories and click **Next**.
12. Click **Next** again and then **OK** to begin the installation.
13. The next page points you to the README. If you select to view the README and a Netscape browser does not open on the README, look in the <*main_Application_Server_directory*>/web/InfoCenter/was directory for the readme.html 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/.

    Click **Finish**.

Testing the installation

1. Start the WebSphere Administrative Server by running the startupServer script in the /usr/WebSphere/AppServer/bin directory:

   ```
   ./startupServer.sh
   ```

2. Wait patiently. If the server is slow to start or does not start successfully, look at the tracefile log. If the trace file says *server is open for e-business*, the server has started.
3. Start the administrative console by running the adminclient script in the /usr/WebSphere/AppServer/bin directory:

   ```
   ./adminclient.sh
   ```

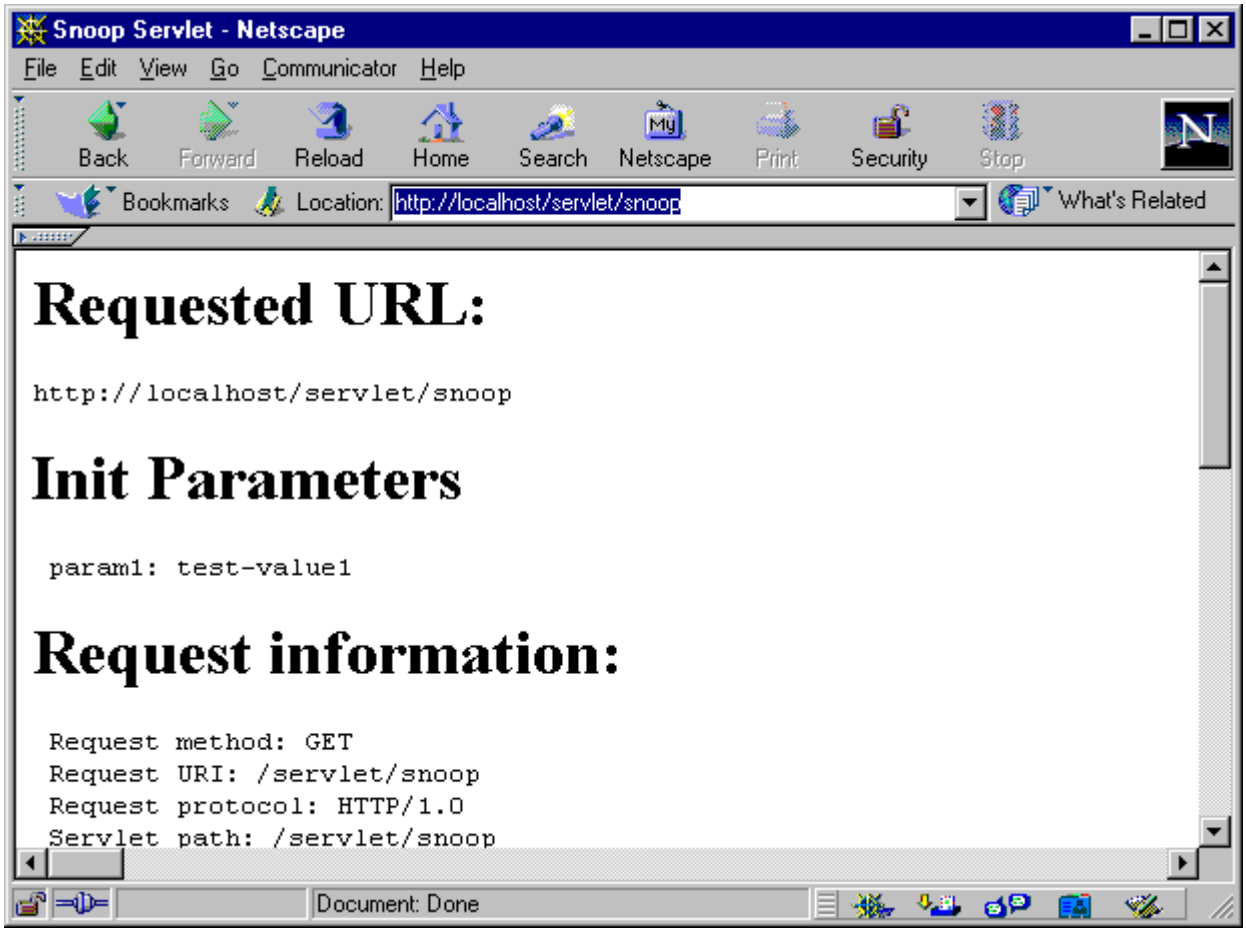
4. Wait until you see the console message *Console Ready*. Then administer the server:
   1. When the Administrative Console opens, the **Topology** tree view is shown. Click on the + sign next to **WebSphere Administrative Domain** to expand the view.
   2. Your host name should be listed. Expand the view of that node, and you should see an entry called **Default Server**. Expand that and you will see the default container and servletEngine.
   3. Select **Default Server**. If the **Current State** of DefaultServer is *Stopped*, click the **Start** icon on the tool bar. After an information dialog displays, stating that the server us running, click **OK**. Note that the current state changes from *Stopped* to *Running*.

      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. If the IBM HTTP Server is not running, start the server by entering the following in the /usr/HTTPServer/bin directory:

   ```
   ./apachectl start
   ```

   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.


Snoop Servlet - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Stop
Bookmarks Location: http://localhost/servlet/snoop What's Related
Requested URL:
http://localhost/servlet/snoop
Init Parameters
param1: test-value1
Request information:
Request method: GET
Request URI: /servlet/snoop
Request protocol: HTTP/1.0
Servlet path: /servlet/snoop
Document: Done