

## Installing the Advanced Edition using iPlanet Web Server Enterprise Edition and Sybase 12 on Solaris

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

- Solaris 2.6, 7, or 8
- Sun SDK 1.2.2
- iPlanet Web Server, Enterprise Edition 4.0 or 4.1
- 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.html](http://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 [iPlanet Web Server, Enterprise Edition 4.0](#) or [iPlanet Web Server, Enterprise Edition 4.1](#)

[Installing Sybase 12](#)

[Installing WebSphere Application Server](#)

[Testing the 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.html](http://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 appropriate Solaris patches and Sun SDK. If you have not already done so, install the Web server and database, then obtain the product CD for WebSphere Application Server or [download](#) the product from the Web. Instructions for installation follow:

1. Install [iPlanet Web Server, Enterprise Edition 4.0](#) or [iPlanet Web Server, Enterprise Edition 4.1](#)
2. [Install Sybase 12](#)
3. [Install WebSphere Application Server](#) using the **Custom Install** option

### Installing iPlanet Web Server Enterprise Edition 4.0

This document contains the following:

- How to install iPlanet Web Server Enterprise Edition 4.0
- How to verify the installation
- How to start and stop the server

#### Installing iPlanet Web Server Enterprise Edition 4.0

To install iPlanet Web Server, which you can obtain from the [iPlanet Web site](#), perform the following steps:

1. If you have not already done so, see the [Software Prerequisites Web site](#) to learn what level of iPlanet you need to download.
2. Download the appropriate version of iPlanet Web Server and any required patches from the iPlanet Web site at [www.iplanet.com/downloads/download/](http://www.iplanet.com/downloads/download/). Follow the steps given to download the file.
3. Ensure that you are logged into the host machine with superuser (root) privileges.
4. Move to the directory containing the downloaded file.
5. Unzip and extract the files.
6. Launch the installation program by typing the following command:

file://D:\temp\info\docsrc\adv\three\_five\solaris\_adv\_iplanet\_sybase.html

5/10/2001

```
# ./setup
```

A welcome screen appears.

7. Press Enter to exit from the welcome screen and continue installation.
8. Type **Yes** to accept the software licensing agreement and press Enter.
9. A warning screen can appear that alerts you to any potential installation problems. If you want to resolve any problems, type **No** and press Enter to exit from the installation program. If you want to proceed with the installation, type **Yes** and press Enter to close the warning screen.
10. Choose the type of installation you require by typing the appropriate number and pressing Enter. For this example, type **2** for **Typical installation**.
11. Type the directory path for the location where the server files and directory structure are to be installed or accept the default location `/usr/netscape/server4` and press Enter.
12. Choose the **iPlanet Web Server, Enterprise Edition** option and indicate that you want to select from all of its components by typing **All** and pressing Enter.
13. Choose the components you want to install by typing the number of each, separating each entry from the next with a comma. Press Enter. To accept the default installation of all components except **WAI Support**, press Enter.  
**Note:** See the iPlanet Web Server documentation for descriptions of each component. If you do not install a component and later decide that you need it, you can run the installer again and install just the missing component; however, you cannot uninstall individual components after they are installed.
14. If the default *host\_name* shown in brackets ([ ]) is correct, press Enter. If your *host\_name* (the name of your host machine) differs from the one shown in brackets, type the correct *host\_name* and press Enter.
15. Type the UNIX user name to use when running the default instance of iPlanet Web Server. For this example, accept the default user name of *nobody* and press Enter.
16. Type the UNIX group name to use when running the default instance of iPlanet Web Server. For this example, accept the default group name of *nobody* and press Enter.
17. Type the UNIX user name to use when running the Administration Server. In most cases, this is *root*. Press Enter.
18. Type the Administration Server user name to use for authentication. For this example, type the default name *admin* and press Enter. (This user is not a UNIX user, but a user name set up in the Netscape environment.)
19. Type the Administration Server password to use for authentication. For this example, type the default name *admin* and press Enter. (This password is not a UNIX password, but a password set up in the Netscape environment.)
20. Retype the Administration Server password and press Enter.
21. Type a number between 1024 and 65535 for the port on which to run the Administration Server, or accept the default of 8888 and press Enter. Note this number for later reference.  
**Note:** If you want to use a port number lower than 1024, you must be logged in as root to start the server.
22. Type a number for the port on which to run the iPlanet Web Server and press Enter. For this example, accept the default of 80. Note this number for later reference.  
**Note:** If you want to use a port number lower than 1024, you must be logged in as root to start the server. If you choose a port number other than 80, the Uniform Resource Locator (URL) used to gain access to your home page changes. For instance, if your host is called *www.host\_name.com* and you choose port 9753, your server's URL becomes `http://www.host_name.com:9753/`.
23. Specify whether or not you are using a Lightweight Directory Access Protocol (LDAP)-based directory server. For this example, accept the default **No** and press Enter.
24. Type the path for the root directory where your server's content files are to reside or accept the default of *server\_root/docs*, where *server\_root* refers to the directory path to the location of the server files that you specified in Step 11. Press Enter.
25. Type **Yes** to indicate that you want to use your own Java 2 Software Development Kit (SDK) and press Enter.
26. Type the absolute path to the directory on your system where the SDK is installed and press Enter.
27. A screen can appear that lets you specify a path name to your SDK libraries if they are not found in the `/jre/lib` subdirectory of the SDK directory. For this example, press Enter.
28. A screen can appear that lets you specify a path name to your SDK library classes if they are not found in the `/lib` subdirectory of the SDK directory. For this example, press Enter.
29. After the installation program extracts and installs the iPlanet Web Server components, a message is displayed, indicating that installation is complete. Press Enter.

### Verifying installation of iPlanet Web Server Enterprise Edition 4.0 and starting the server

To demonstrate that iPlanet Web Server is operating correctly, perform the following steps:

1. Go to the directory that stores the server files (the directory that you specified in Step [11](#) in the section Installing iPlanet Web Server Enterprise Edition 4.0). In this example, the directory is `/usr/netcape/server4`.
2. Start iPlanet Web Server Enterprise Edition 4.0 by typing the following command:  
  

```
# ./startconsole
```
3. In the Netscape:Password screen, type the Administration Server user name and password that you specified in Step [18](#) and Step [19](#) in the section Installing iPlanet Web Server Enterprise Edition 4.0 (in this example, `admin`). Click **OK**.
4. On the iPlanet Web Server Administration Server screen, select the server by clicking the server name button beside the field **Select a Server**.
5. Click **Manage** beside the server name button.
6. On the iPlanet Web Server 4.0 Server Manager screen, click **Server On**.
7. The Netscape:Question screen confirms that the server has started successfully. Click **OK**.
8. Open a browser window and type the Web address `http://host_name/`, where `host_name` is the host name you specified in Step [14](#) in the section Installing iPlanet Web Server Enterprise Edition 4.0. A default page provided by the Netscape installation is displayed.
9. Type the Web address `http://host_name:administration_port_number/`, where `administration_port_number` is the port number that you defined in Step [21](#) in the section Installing iPlanet Web Server Enterprise Edition 4.0. You can be prompted for the Administration Server user name and password.

When these steps are complete, iPlanet Web Server is installed and operating correctly. If you are going to install WebSphere Application Server, you must stop your iPlanet Web Server.

### Stopping the iPlanet Web Server Enterprise Edition 4.0

Before installing WebSphere Application Server, stop the Web Server by performing the following steps:

1. On the iPlanet Web Server 4.0 Server Manager screen, click **Server Off**.
2. The Netscape:Question screen confirms that the server has stopped successfully. Click **OK**.

### Installing iPlanet Web Server Enterprise Edition 4.1

This article describes how to perform the following procedures on a Solaris SPARC machine from files downloaded from the iPlanet Web site at [www.iplanet.com/downloads/download/](http://www.iplanet.com/downloads/download/):

- Install iPlanet Web Server Enterprise Edition 4.1.
- Test the installation.
- Start and stop the Web server and Servlet Engine.

It is recommended that you install iPlanet Web Server before installing WebSphere Application Server. The WebSphere Application Server installation process changes a Web server's configuration so that the Web server directs certain requests (such as servlet requests) to WebSphere Application Server. If the Web server is not installed before WebSphere Application Server, WebSphere Application Server might function incorrectly.

These instructions assume the following:

- You do not have a previous version of iPlanet Web Server already installed on your machine. If you do have a previous version of iPlanet Web Server installed, you might need to perform migration tasks based on the version installed. In this case, do not follow these instructions. Instead, refer to iPlanet product documentation on the iPlanet Web Server Documentation Web site at [docs.iplanet.com/docs/manuals/](http://docs.iplanet.com/docs/manuals/).
- Your machine has enough memory and disk space for your installation. See the iPlanet product documentation on the iPlanet Documentation Web site at [docs.iplanet.com/docs/manuals/](http://docs.iplanet.com/docs/manuals/) for the necessary requirements.
- You have checked the WebSphere Application Server Supported Hardware, Software, and APIs Web site at [www.ibm.com/software/webservers/appserv/doc/latest/prereq.html](http://www.ibm.com/software/webservers/appserv/doc/latest/prereq.html) to learn what level of iPlanet you need to

download.

- You have downloaded the appropriate version of iPlanet Web Server and any required patches from the iPlanet Web site at [www.iplanet.com/downloads/download/](http://www.iplanet.com/downloads/download/) by following the steps given on that Web site.

## Installing iPlanet Web Server Enterprise Edition 4.1

To install iPlanet Web Server, perform the following steps:

1. Ensure that you are logged into the host machine with superuser (root) privileges.
2. Move to the directory containing the downloaded file.
3. Unzip and extract the files.
4. Launch the installation program by typing the following command:

```
# ./setup
```

A welcome window opens.

5. Press Enter to close the welcome window and continue installation.
6. Type **Yes** to accept the software licensing agreement and press Enter.
7. A warning window might appear that alerts you to any potential installation problems and asks if you want to continue with the installation. If you want to resolve any problems, type **No** and press Enter to exit from the installation program. If you want to proceed with the installation, type **Yes** and press Enter to close the warning window.
8. Choose the type of installation you require by typing the appropriate number and pressing Enter. For this example, type **2** for **Typical installation**.
9. Type the directory path for the location where the server files and directory structure are to be installed or accept the default location `/usr/netscape/server4`, and press Enter.
10. Choose the **iPlanet Web Server, Enterprise Edition** option and indicate that you want to select from all of its components by typing **All** and pressing Enter.
11. Choose the components you want to install by typing the number of each, separating each entry from the next with a comma. Press Enter. (To accept the default installation of all components except **WAI Support**, press Enter.)
 

**Note:** See the iPlanet Web Server documentation for descriptions of each component. If you do not install a component and later decide that you need it, you can run the installer again and install just the missing component; however, you cannot uninstall individual components after they are installed.
12. If the default *host\_name* (the name of your host machine) shown in brackets ([]) is correct, press Enter. If your *host\_name* differs from the one shown in brackets, type the correct *host\_name* and press Enter.
13. Type the UNIX user name to use when running the default instance of iPlanet Web Server. For this example, accept the default user name of *nobody* and press Enter.
14. Type the UNIX group name to use when running the default instance of iPlanet Web Server. For this example, accept the default group name of *nobody* and press Enter.
15. Type the UNIX user name to use when running the Administration Server. In most cases, this is *root*. Press Enter.
16. Type the Administration Server user name to use for authentication. For this example, type the default name *admin* and press Enter. (This user is not a UNIX user, but a user name set up in the iPlanet environment.)
17. Type the Administration Server password to use for authentication. For this example, type the default name *admin* and press Enter. (This password is not a UNIX password, but a password set up in the iPlanet environment.)
18. Retype the Administration Server password and press Enter.
19. Type a number between 1024 and 65535 for the port on which to run the Administration Server, or accept the default of 8888 and press Enter. Note this number for later reference.
 

**Note:** If you want to use a port number lower than 1024, you must be logged in as *root* to start the server.
20. Type a number for the port on which to run the iPlanet Web Server and press Enter. For this example, accept the default of 80. Note this number for later reference.
 

**Note:** If you want to use a port number lower than 1024, you must be logged in as *root* to start the server. If you choose a port number other than 80, the Uniform Resource Locator (URL) used to gain access to your home page changes. For instance, if your host is called *www.host\_name.com* and you choose port 9753, your server's URL becomes `http://www.host_name.com:9753/`.
21. Specify whether you are using a Lightweight Directory Access Protocol (LDAP)-based directory server. For this example, accept the default **No** and press Enter.

22. Type the path for the root directory where your server's content files are to reside or accept the default of *server\_root/docs*, where *server\_root* refers to the directory path for the location of the server files that you specified in Step 9. Press Enter.
23. Type **Yes** to indicate that you want to use your own Java 2 Software Development Kit (SDK) and press Enter.
24. Type the absolute path to the directory on your system where the SDK is installed and press Enter.
25. A window might appear that prompts you to specify a path name to your SDK libraries if they are not found in the */jre/lib* subdirectory of the SDK directory. For this example, press Enter.
26. A window might appear that prompts you to specify a path name to your SDK library classes if they are not found in the */lib* subdirectory of the SDK directory. For this example, press Enter.
27. After the installation program extracts and installs the iPlanet Web Server components, a message is displayed, indicating that installation is complete. Press Enter.

### Testing installation of iPlanet Web Server Enterprise Edition 4.1 and starting the server

To demonstrate that iPlanet Web Server is operating correctly, perform the following steps:

1. Go to the directory that stores the server files (the directory that you specified in Step 9 in the previous section. In this example, the directory is */usr/netcape/server4*).
2. Start iPlanet Web Server Enterprise Edition 4.1 by entering the following command:

```
# ./startconsole
```

3. In the Netscape:Password window, type the Administration Server user name and password that you specified in Step 16 and Step 17 in the previous section (in this example, *admin*). Click **OK**.
4. In the iPlanet Web Server Administration Server window, select the server by clicking the server name button beside the field **Select a Server**.
5. Click **Manage** beside the server name button.
6. In the iPlanet Web Server 4.1 Server Manager window, click **Server On**.
7. The Netscape:Security Warning window informs you that the information you are about to submit is insecure and could be observed by a third party while in transit. For this example, click **Continue Submission**.
8. The Netscape:Question window confirms that the server has started successfully. Click **OK**.
9. Open a browser window and type the Web address *http://host\_name/*, where *host\_name* is the host name that you specified in Step 12 in the previous section. A default page provided by the iPlanet installation is displayed.
10. Type the Web address *http://host\_name:administration\_port\_number/*, where *administration\_port\_number* is the port number that you defined in Step 19 in the previous section. You might be prompted for the Administration Server user name and password.

When these steps are complete, iPlanet Web Server is installed and operating correctly. If you are going to install WebSphere Application Server, you must stop iPlanet Web Server and the iPlanet Servlet Engine.

### Stopping iPlanet Web Server Enterprise Edition 4.1 and the iPlanet Servlet Engine

Before installing WebSphere Application Server, stop the Web Server and Servlet Engine by performing the following steps. (At several points in this process, the Netscape:Security window might open to inform you that the information you are about to submit is insecure and might be observed by a third party while in transit. For this example, click **Continue Submission** in each case.)

1. In the iPlanet Web Server 4.1 Server Manager window, click **Server Off**.
2. The Netscape:Question window confirms that the server has stopped successfully. Click **OK**.
3. In the iPlanet Web Server 4.1 Server Manager window, click the **Servlets** tab. The Enable Servlets window opens.
4. Under the **Activate the Servlet Engine?** field, click the radio button beside the **No** option and then click **OK**.
5. The Save and Apply Changes window appears. Click **Save and Apply**.
6. The Netscape:Question window confirms that your changes are saved and applied. Click **OK**.

### Installing Sybase 12

This document describes the following:

- Installing and configuring Sybase 12 on a local Solaris machine
- Upgrading 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 Solaris machine (the machine to which the CD-ROM drive is attached). Perform the following steps to install Sybase 12:

1. Ensure that you are logged into the machine with superuser (root) privileges.
2. Change your system settings as needed. Ensure that you have set the following UNIX shared memory parameters properly in `/etc/system`:
  - o SHMMAX
  - o SHMSEG

Further, ensure that Asynchronous I/O is set to *enable*.

After setting these values, reboot your system so the new settings can take effect. For more information on setting values for these parameters, refer to the Sybase 12 installation documentation.

3. Ensure that the `DISPLAY` and `TERM` environment variables are set correctly for your environment.
4. Create a file system, logical volume, or directory to hold the Sybase software. Ensure that the location you choose has 604 MB of free disk space.
5. 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 Solaris system documentation for more information on creating and mounting a file system.
6. Set the `JAVA_HOME` environment variable to the directory where Java is installed on the local machine.
7. Use operating system utilities to create the group *sybase*:

```
# groupadd sybase
```

8. Use operating system utilities to create the user *sybase*. Use the location you created in Step 4 as the user's home directory.

```
# useradd -d <home_directory> -g sybase sybase
```

9. Edit the `/etc/group` file to do the following:
  - o Add the user *sybase* to the group *sybase*.
  - o Add the user *root* to the group *sybase*.
10. Change the ownership of the home directory to the group *sybase* with user *sybase*:

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

11. Log in as user *sybase* 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
```

12. Ensure that your `DISPLAY`, `TERM`, and `JAVA_HOME` environment variables are still set properly.
13. Insert the Sybase 12 CD and, if necessary, mount the CD-ROM drive. On most Solaris systems, the Volume Management daemon (**vol**) mounts the CD automatically and immediately, as well as each time the machine is restarted. If the **vol** process is not running on your machine, see your Solaris documentation for instructions on how to mount the CD-ROM drive.

The steps that follow assume that the CD is mounted at `/cdrom`.



14. Enter the following commands to begin the Sybase installation process:

```
$ cd /cdrom/sybase
$ ./install
```

The Installation Type screen displays.

15. Ensure that the radio button for **Standard Install** is selected and click **Next**. (A Standard installation requires 604 MB of disk space. Customized installations can require additional disk space. See the Sybase installation documentation for more information.) The Choose Directory screen displays.
16. Specify the installation location for the Sybase files (make the installation directory the home directory of the user *sybase*) and click **Next**. The Summary screen displays, summarizing all of the installation choices you have made so far.
17. 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.
18. After the components are installed, the Sybase License Management screen displays. Click **No** to exit from this screen for now.
19. The Sybase License Management screen displays again. Click **No** to exit from this screen for now.
20. The Sybase Installer screen displays. Click **No** to exit from this screen for now.
21. An Information screen displays, informing you that installation is complete. Click **OK**.
22. Create a .profile file in the home directory for the user *sybase*, as follows:
  - a. Ensure that you are in the Bourne shell in the home directory of user *sybase*.
  - b. Copy the file SYBASE.sh to the file .profile by entering--

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

- c. Enter the following commands:

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

```
$ chown sybase:sybase .profile
```

- d. Add the following information to the .profile file. In the example below, *<server\_name>* is name of the server that you will create in ["Configuring and verifying installation of Sybase 12"](#) and *<home\_directory>* is the installation directory of the Sybase software and, in this example installation, the home.

```
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.

23. Log out and log back in as user *sybase* to enable the changes to the environment.
24. To add licenses to your installation, enter the command below. *<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
```

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

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.

26. On the screen that displays, enter information from the Sybase License Certificate for the feature you have purchased.

Click **More** if you have more than one licensed feature. This action prompts the installer to record the information from the current feature in the license file and prompts you to enter information for the next additional 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 fix](#)."

### Upgrading Sybase 12 with an ESD fix

To upgrade Sybase 12 with an ESD fix, 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 changes from # to \$ to indicate your login identity.
3. Create a directory into which to download the 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 files.
7. Navigate to the `<home_directory>/ASE-12_0` directory by entering the command below. `<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 `<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 check the installation, proceed to "[Configuring and verifying installation of Sybase 12](#)."

### Configuring and verifying installation of Sybase 12

Before you can effectively run WebSphere Application Server, you must create a Sybase database named *WAS*, which WebSphere 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 changes from # to \$ to indicate your login identity.
2. Ensure that your `DISPLAY`, `TERM`, and `JAVA_HOME` environment variables are set properly.
3. Start the Sybase Adaptive Server setup and configuration utility by entering the following:

```
$ asccfg
```

4. On the ASE Setup and Configuration screen, click **Configure a new server**.
5. On the `srvbuild-Select Servers to Build` screen, click the radio button **Adaptive Server** and enter the server name. The 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 command below. *<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 command below. As before, *<home\_directory>* is the installation directory of the Sybase software and the home directory of user *sybase*:

```
<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 command:

```
<home_directory>/sybsystemdb
```

12. Accept the default values for the other fields and click **Build Server!**. The *srvbuild-Status Output* screen displays, showing 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** and 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.
16. On the *srvbuild-Select Servers to Build* screen, click **Exit**.
17. A *srvbuild-question* screen displays, asking if you want to exit from the utility. Click **Yes**.
18. If the ASE Setup and Configuration screen continues to display, click **Exit**.
19. As user *sybase*, use the following command to log into the Adaptive Server as user *sa* and create a password for user *sa*. The variable *<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> sp_password null, <new_sa_password>
```

**Note:** The Adaptive Server installation and setup processes require certain user roles. Different user roles own different responsibilities 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. Immediately after a new installation, there is no password on the *sa* account, and one must be created.

20. Use the following command to check to see if the server *<server\_name>* is running. As before, *<home\_directory>* is the installation directory of the Sybase software and the home directory of user *sybase*:

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

If server *<server\_name>* is running, you will see the **isql** prompt:

```
1>
```

21. Type **quit**.

22. 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.

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

23. To create database WAS, perform the following steps:

- a. Enter the command:

```
$ <home_directory>/OCS-12_0/bin/isql -Usa -P<new_sa_password> \
-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
```

24. To use the jConnect 5.2 Java Database Connectivity (JDBC) driver, set the JDBC\_HOME and CLASSPATH environment variables by doing the following (for this example installation, assume the use of jConnect 5.x with JDK 1.2):
- Set JDBC\_HOME to the directory where you have installed jConnect (in this example installation, `<home_directory>/jConnect-5_2`).
  - Set CLASSPATH to the location of your jConnect JAR file (in this example installation, `<home_directory>/jConnect-5_2/classes/jconn2.jar`).
  - To enable the jConnect verification steps in the section "[Verifying installation of Sybase 12](#)," append CLASSPATH with `<home_directory>/jConnect-5_2/classes`.
  - Log out and log back in as user *sybase* to enable the changes to the environment.
25. 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

- If you have not done so, log in as the user *sybase*. Note that the command prompt changes from # to \$ to indicate your login identity.
- Use the command below to check to see if the server `<server_name>` is running. `<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<new_sa_password> -S<server_name>
```

If server `<server_name>` is running, you will see the **isql** prompt:

```
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:

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

- c. Start the server by entering:

```
$ startserver -f RUN_$DSQUERY
```

where `$DSQUERY` is the value that you set for this 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 `JDBS_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 appears, which displays source code 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. . .
```

## Installing WebSphere Application Server

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

1. Log onto your machine with superuser (root) privileges.

If your system does not grant you root authority even though you are logged on as *root*, ensure `/usr/ucb` is in the path

for the root login. Edit the install.sh file by adding the following line before the call to the whoami command:

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

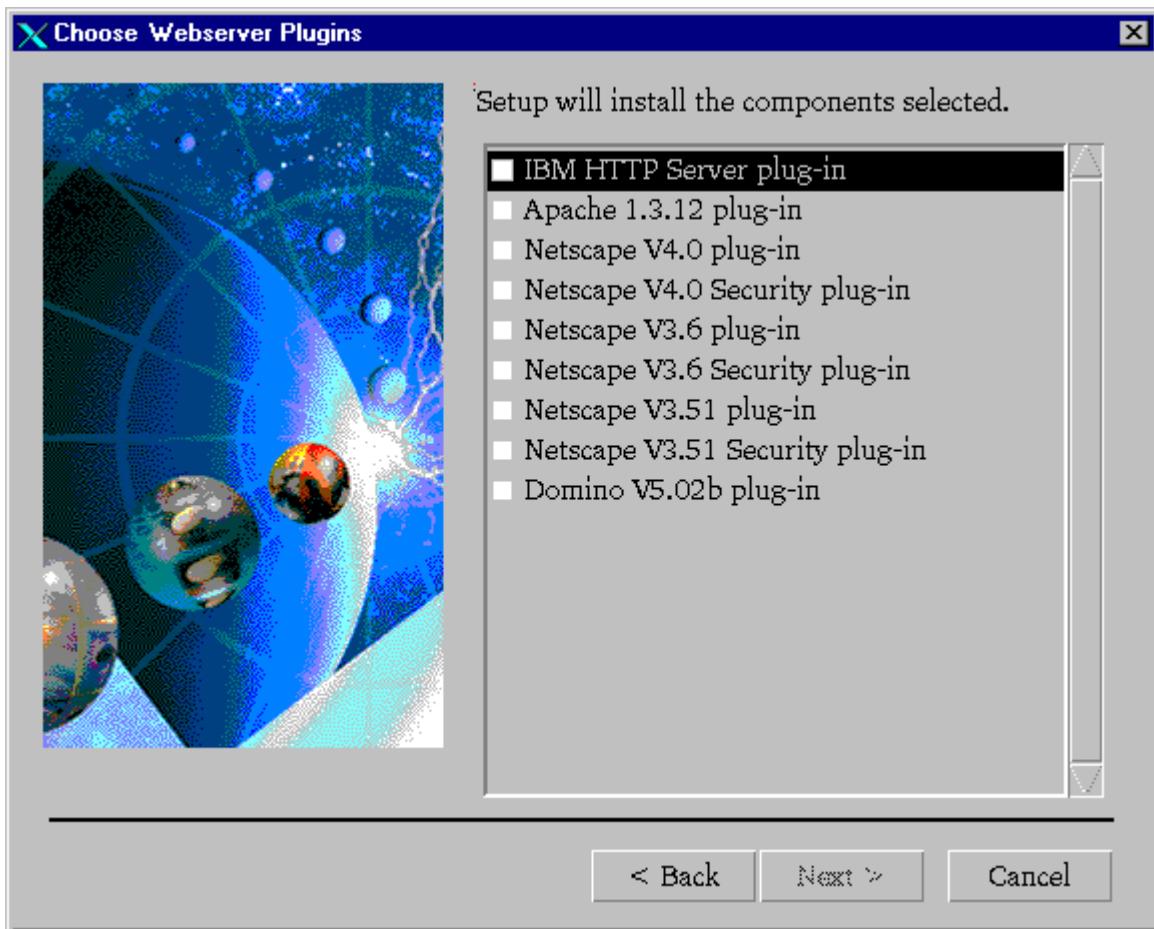
2. If a Web server on your system is running, stop the Web server.
3. If you plan to use a Web server or database at a level that exceeds the current version required by WebSphere Application Server, you must disable the WebSphere Prerequisite Checker before installing WebSphere Application Server. To do this, perform the following steps:
  - a. Copy the prereq.properties file from the /cdrom/cdrom0/sun 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/cdrom0/sun/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/cdrom0/sun/install.sh /prereqfile /tmp/prereq.properties
```

5. Click **Next** to pass the introductory page.
6. In the Install Options dialog, select **Custom Installation**; then click **Next**.
7. 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**.
8. Click **Next**. If necessary, shut down all Web servers you plan to run with WebSphere Application Server and proceed.
9. If you opted to install a plug-in, the Choose Web Server Plugins dialog displays.



Select **Netscape V4.0 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.

10. When prompted, specify the directory and file name for the Netscape Enterprise Server configuration file.
11. 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**.
12. 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.

13. Specify the destination directory and click **Next**.
14. Click **Next** again and then **OK** to begin the installation.
15. 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 /opt/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 in the /opt/WebSphere/AppServer/logs directory. 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 /opt/WebSphere/AppServer/bin directory:

```
# ./adminclient.sh
```

4. Wait until you see the console message *Console Ready*. Then administer the server:
  - a. When the Administrative Console opens, the **Topology** tree view is shown. Click on the + sign next to **WebSphere Administrative Domain** to expand the view.
  - b. 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.
  - c. 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 is running, click **OK**. Note that the current state changes from *Stopped* to *Running*.

After the server starts, the configuration database is automatically updated to ensure that the server is always running. If the server 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 iPlanet Web Server is running. If the Web server is not running, start the server. Then, open a browser and go to the URL address: `http://your_server_name/servlet/snoop`, which is a standard sample servlet installed by default. You should see information on /servlet/snoop.

