Installing the Advanced Edition using IBM HTTP Server and Sybase on Windows

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

- Windows NT 4.0
- IBM Developer Kit, Java™ 2 Technology Edition, 1.2.2
- IBM HTTP Server 1.3.12
- Sybase 11.9.2 or 12
- A single node

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

Steps for installation

Deciding which steps to follow
Installing WebSphere Application Server -- Quick Install option
Configuring WebSphere Application Server for use with Sybase 11.9.2 or 12
Testing the installation
Testing with an Enterprise Bean (optional)
Setting up TCP/IP for standalone operations (optional)

Deciding which steps to follow

If you have not already done so, install Sybase 11.9.2 or 12 and obtain the product CD for WebSphere Application Server or download the product from the Web. The IBM Developer Kit and IBM HTTP Server are provided with WebSphere Application Server and are installed when you install WebSphere Application Server. Instructions for installation follow:

1. Install WebSphere Application Server using the **Quick Install** option.
2. Configure WebSphere Application Server for use with Sybase 11.92 or 12.

If your system is not connected to the network, also complete the steps in "Setting up TCP/IP for standalone operations".

Installing WebSphere Application Server -- Quick Install option

To install WebSphere Application Server, do the following:

1. If IBM HTTP Server or another Web server on your system is running, stop the Web server.
2. Run the downloaded executable if you obtained Version 3.5 from the product Web site. Or, run `\nt\setup.exe` if you have the product CD.

   You will need 100 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.

3. Select a language and click **OK**.
4. Click **Next** to pass the introductory page.
5. On the Install Options page, click **Quick Install** and then **Next**.
6. On the Security Options page, fill in the user ID, password, and confirming password to use for the application server. You must have administrative privileges, your user ID must have the advanced user right "Act as part of the operating system," and you must be installing from a local user ID. Note that if your user ID has insufficient user rights to install WebSphere, it will not successfully register the WebSphere Administrative Server to the NT services database. After you fill in the fields, click **Next**.
7. Specify the destination directory, then click **Next**.

8. Click **Next** again to begin the installation.
9. The next page points you to the README and states where the samples have been installed.

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

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

Configuring WebSphere Application Server for use with Sybase 11.9.2 or 12

To configure a quick installation of WebSphere Application Server so it can use Sybase 11.9.2 or Sybase 12:

1. Add `\product_installation_root\jdk\bin` to your PATH environment variable. For Windows NT, the default product_installation_root is:

   `<drive>:\\WebSphere\AppServer`

2. Download the database conversion assistant from the product Web site. Look for the assistant under the **Tools, service upgrades, fixes, and more** link in the **Support downloads** section of the Support page.
3. Extract the assistant ZIP file contents and follow the instructions in the README file for the assistant. The instructions are repeated in "1.2.3.2.1: Using the database conversion assistant to switch administrative databases." (Be sure to update your locally installed InfoCenter to include changes made in 3.5.1 or later.)
4. Follow the instructions in the assistant interface. For the fields, enter the values shown below:
   Path to administrative configuration file
   > `<product_drive>:\\WebSphere\AppServer\bin\admin.config`

   > *<product_drive>* is the letter of the drive onto which you installed WebSphere Application Server 3.5. If you installed to a directory other than the default, then the path *WebSphere\AppServer* will vary according to where you installed the product.

   Database type
   > `Sybase`

   Database driver name
   > `com.sybase.jdbc2.jdbc.SybDriver`

   Path to JDBC driver file
   > *<jConnect5_2_directory>*`/jConnect5_2/classes/jconn2.jar`

   Database prefix (part of database URL)
   > `jdbc:sybase:Tds:`*<hostname>*`:`*<port>*

   > *<hostname>* and *<port>* depend upon your environment. The default port is 5000. Use the short hostname instead of the fully qualified hostname.

   Database name (part of database URL)
   > `was` or the database name of your choice
   User ID
   > `EJSADMIN`
   Password (and confirm)
   > `EJSADMIN` or the password of your choice

5. Obtain the latest fixpack for IBM WebSphere Application Server Version 3.5 (3.5.2 or later) from the product Web site and apply it.
6. Start the WebSphere administrative server.

Troubleshooting

In general, if the administrative server can start, then the configuration is successful. The database configuration and tables must be correct in order for the server to complete its startup routine.

If the server does not start, try determining the problem as follows:

- Use the database management system to check that the database tables were created successfully in Sybase. If they were not, then double-check the database settings.
- Open the following files in a text editor to confirm that the settings are configured correctly with respect to the values provided in the above instructions:
  - *<drive>*:\\WebSphere\AppServer\bin\admin.config
  - *<drive>*:\\WebSphere\AppServer\properties\initial_setup.properties
- Investigate typical reasons that the administrative server did not start. See InfoCenter section 8 (particularly "8.9.1: Installation problems") for instructions.

Testing 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. To see whether the system is still trying to start the server, examine the **Performance** page of the Task Manager. 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.
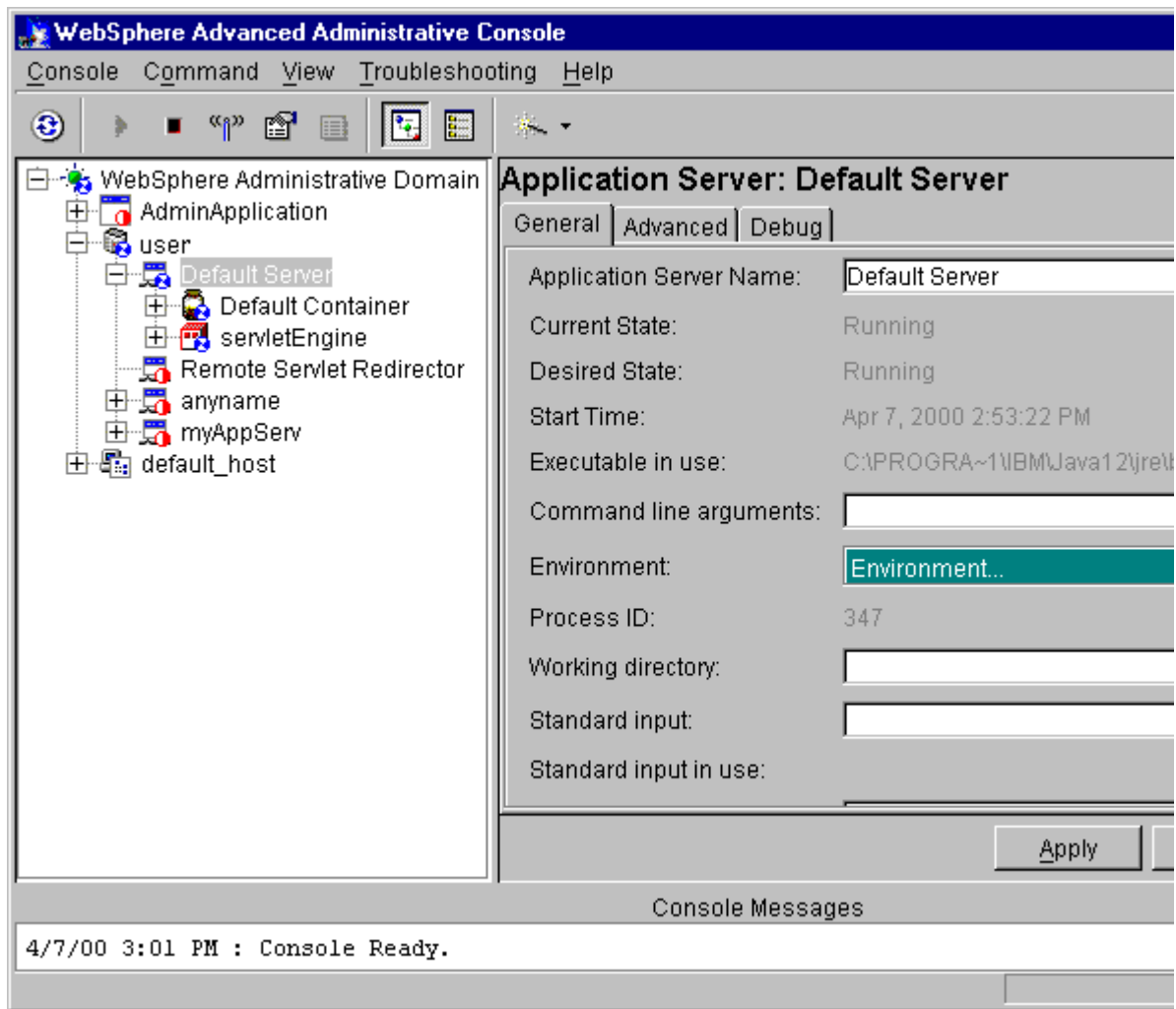
   Hint: You can control the server from a command line or batch file using the following commands:

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

   Explaining the AdminServer: The AdminServer doesn't run any servlets, Java Server Pages, or Enterprise Beans. Each node can have multiple JVMs known as servers which run the application code. The Admin Server manages these servers, and if they stop, it restarts them. Each server can have EJB Containers to run EJBs, and a servlet engine to run servlets. Servers can either be independent, running different code, or clones which are identical, and the infrastructure manages spreading the incoming requests across the servers. A cluster consists of multiple nodes, each with clones.

   Although the installation has created a default server, it hasn't started it, so you can't run anything yet.
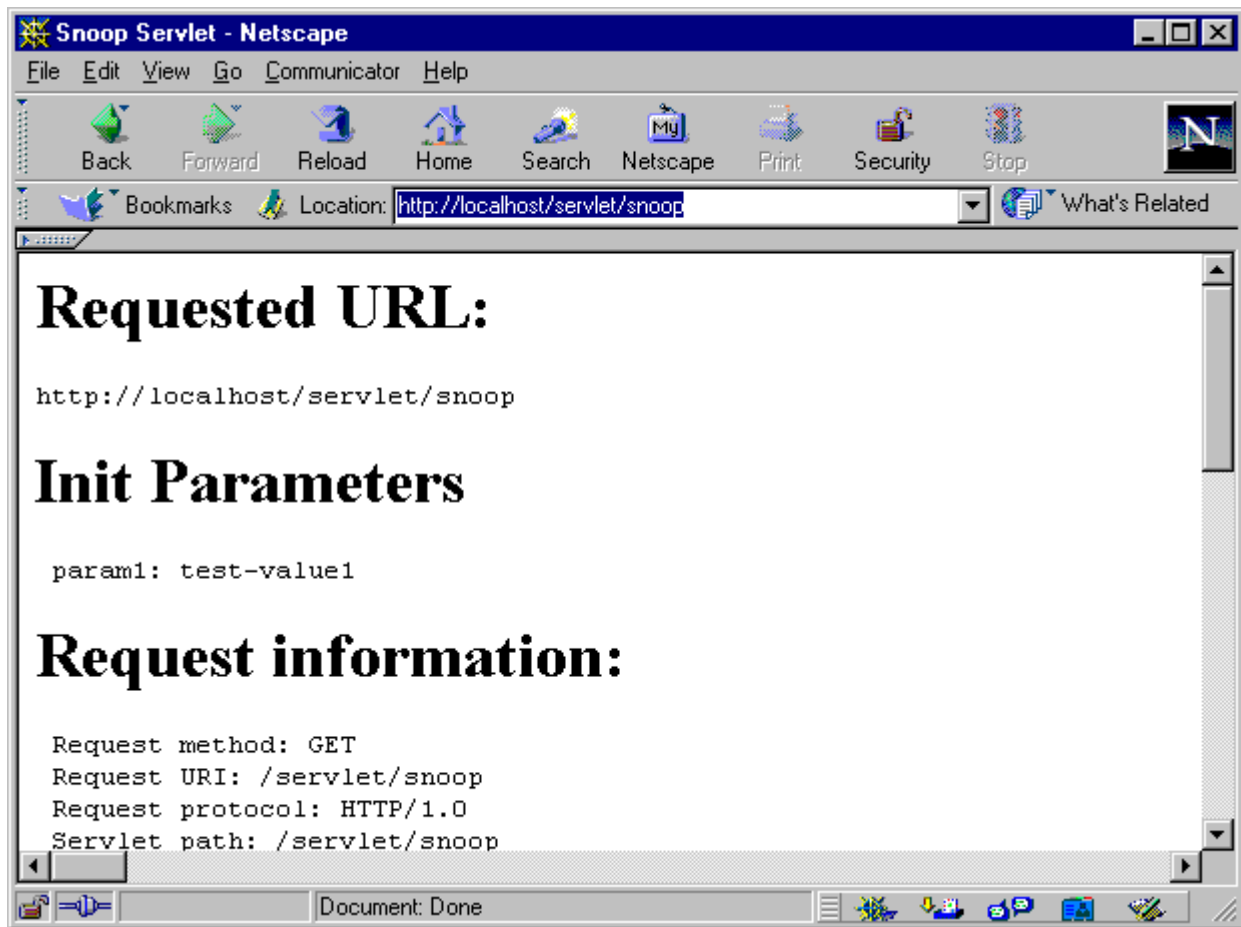
3. To start the server, run the administrative console, which is how you manage WebSphere Application Server 3.5. From the **Start** menu, select **Programs-> IBM WebSphere -> Application Server 3.5 -> Administrator's Console**. This starts the WebSphere Advanced Administrative Console.
4. Wait until 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. (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**.

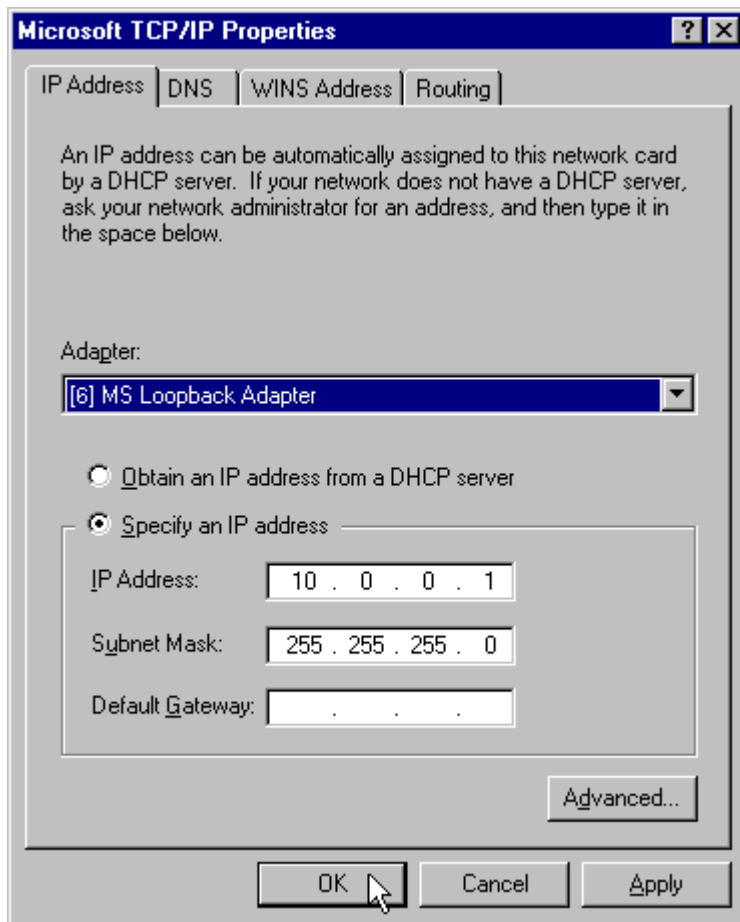The number of hits should display.

Setting up TCP/IP for standalone operations

If your system is not connected to a network, you must set up WebSphere Application Server for standalone operations.
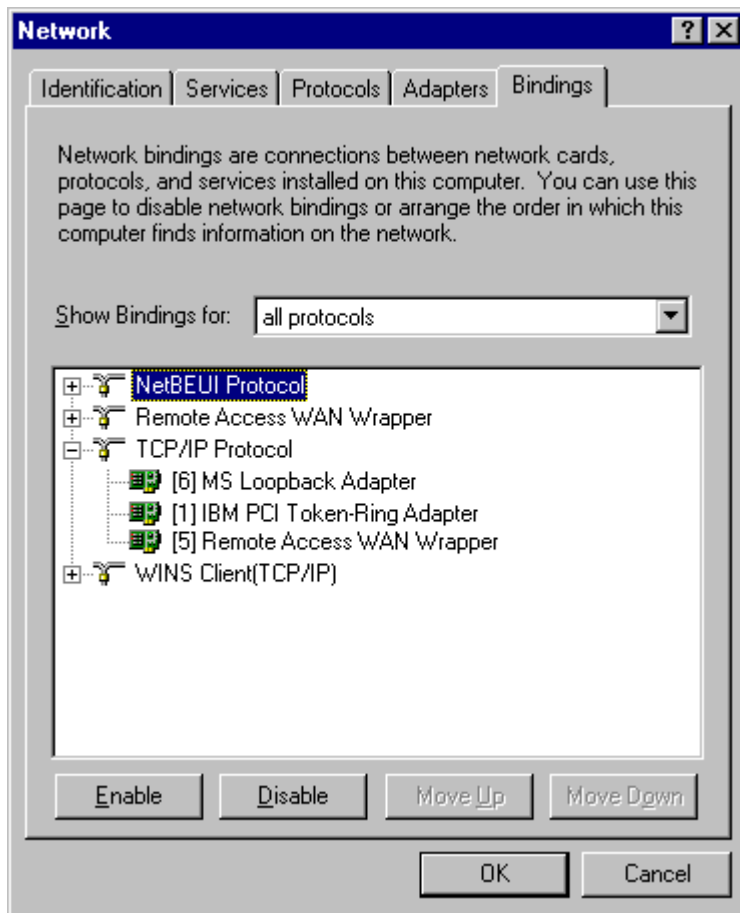
To set up your system for standalone operations, you must have TCP/IP networking installed. If you will run WebSphere Application Server as a standalone (not connected to a network), your host name must remain fixed. WebSphere Application Server is a "networked" system that can be clustered into a single domain, with the administration and other aspects rely upon the IP networking. When the product starts for the first time, it records the host name. When it restarts, it needs to be able to contact that IP address again. If you wish to use WebSphere Application Server "disconnected", you must still always be able to "ping" your host name successfully.

If you need to set up a fixed IP address, go to the **Network** section of the Control Panel, in the **Adapters** tab, and install the **MS Loopback Adapter**.

Then, go to the **Protocols** tab, open TCP/IP properties, and specify a fixed TCP/IP address of 10.0.0.1 (which is an address reserved for private use and thus appropriate for standalone operations), and a subnet mask of 255.255.255.0.

No default gateway for this adapter is specified. Go to the **Bindings** tab, select **all protocols**, expand **TCP/IP Protocol**, and then move the MS Loopback Adapter to the top of the **TCP/IP Protocol** list.

Save the changes and reboot. After rebooting, you should be able to ping your host name whether or not you are connected to a network. To test your new TCP/IP setup, ping your host name while running standalone and, optionally, while connected to a network.