

## Installing the Advanced Edition using Microsoft IIS and Oracle 8i on Windows

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

- Windows NT 4.0
- IBM Developer Kit, Java™ 2 Technology Edition, 1.2.2
- Microsoft Internet Information Server (IIS) 4.0
- Oracle 8i (8.1.6 or 8.1.7)
- A single node

### Steps for installation

[Deciding which steps to follow](#)

[Installing Microsoft Internet Information Server \(IIS\) 4.0](#)

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### Deciding which steps to follow

If you have not already done so, install IIS, Oracle 8i and then obtain the product CD for WebSphere Application Server or [download](#) the product from the Web. The IBM Developer Kit is provided with WebSphere Application Server and is installed when you install WebSphere Application Server. Instructions for installation follow:

1. [Install Microsoft Internet Information Server \(IIS\) 4.0](#)
2. [Install Oracle 8i](#)
3. [Install WebSphere Application Server 3.5](#) using the **Custom Install** option

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

### Installing and testing Microsoft Internet Information Server (IIS) 4.0

To install IIS, refer to documentation that comes with the IIS product or to the [Microsoft IIS 4.0 Web page](#).

#### Testing the Web server installation

After starting the server, point your Web browser at a URL that gives your machine name.

### Installing Oracle 8i Release 2 and creating a database

These steps cover how to install Oracle 8i Release 2 (Oracle 8.1.6), then create and configure a database.

#### Installing Oracle 8i

This section briefly describes how to install Oracle 8i. For detailed information on installation, see the [Oracle documentation](#) and the [Oracle Web site](#).

To install Oracle 8i:

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 8i and click **Next**.
5. On the Available Products dialog, select **Oracle8i Enterprise Edition 8.1.6.0.0** 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 8i code and creates a global database named `orcl.hostname.database_domain`.

### Configuring an Oracle 8i 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, 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 Administrative 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 WebSphere Application Server

To install WebSphere Application Server, do the following:

1. If IIS 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.

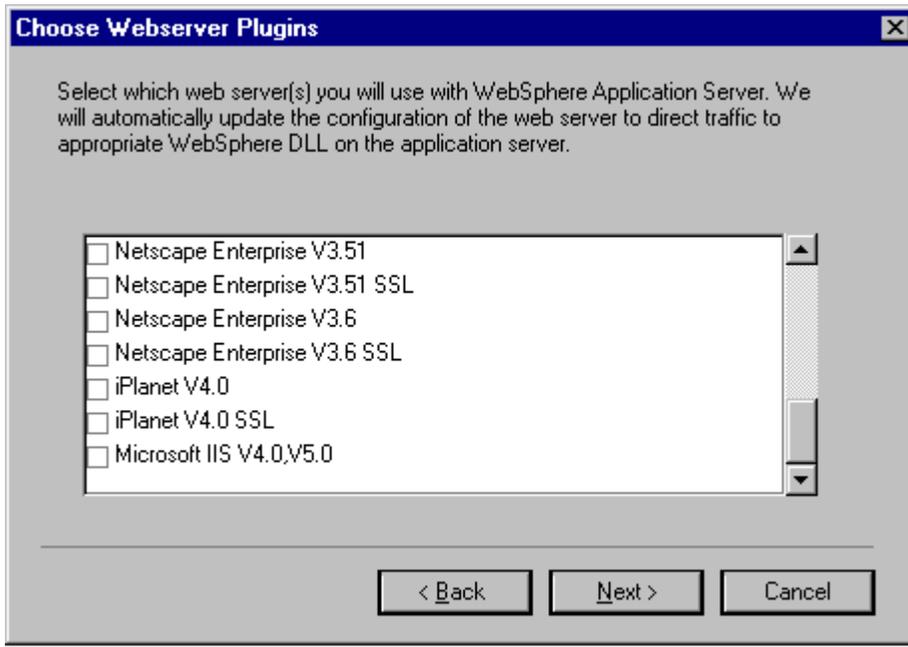
3. Select a language and click **OK**.
4. Click **Next** to pass the introductory page.
5. If WebSphere Application Server is already installed on your system, a dialog giving you the option to backup and uninstall WebSphere Application Server displays. You now have two options:
  - o To backup your files and uninstall WebSphere Application Server, click **Backup and Uninstall** and then **Next** to continue with the installation.
  - o To install to a different directory, simply click **Next** and continue with the installation.

If WebSphere Application Server is not already installed on your system, proceed to step 6.

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 web application** is selected.

Clicking **Other JDK** displays the Select Java Development Kit dialog. If you have a Java development kit installed specify that you want the **Java Development Kit 1.2** (IBM Developer Kit 1.2.2.) and its destination directory; then click **Next**. Otherwise, click **Back** to exit the dialog.

8. Click **Next**. If necessary, shut down all Web servers you plan to run with WebSphere Application Server and proceed.
9. On the Choose Webserver Plugins page, select **Microsoft IIS V4.0, V5.0**. Note that you must separately purchase and install Microsoft IIS. Only IBM HTTP Server is provided with WebSphere Application Server.



10. On the Security Options dialog, fill in the user ID, security 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.

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. Note that if you are using WebSphere Application Server in a production environment, you should [generate your own unique key ring file](#) after installation. The default key ring file is available to all customers and thus is insecure.

If you do need special key ring files, click **Advanced Key Ring Settings**, select **Specify your own key ring files**, designate client and server files and passwords, and then click **Next**. After the Security Options page displays again, click **Next** to move to the Product Directory dialog.

11. Specify the destination directories and click **Next**.
12. On the Database Options dialog, do the following:
  1. For **Type**, select **Oracle**.
  2. For **Database Name**, give the name of the database to use. The default is **orcl**.
  3. For **Path**, specify the path for the database program.
  4. For **URL**, specify the URL for accessing the database. You will likely want to take the default.
  5. For **Database User**, 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 8i, ensure that you specify the Username specified when configuring Oracle 8i for use with WebSphere Application Server (for example, EJSADMIN).
  6. For **Password** and **Confirm**, enter your password. If you have already installed Oracle 8i, ensure that you specify the Password specified when installing Oracle 8i.
  7. Click **Next**.
13. Click **Next** again to begin the installation.
14. The next page points you to the README and, if you are installing the samples, states where the samples have been installed. 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**, and choose to restart.

## 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.

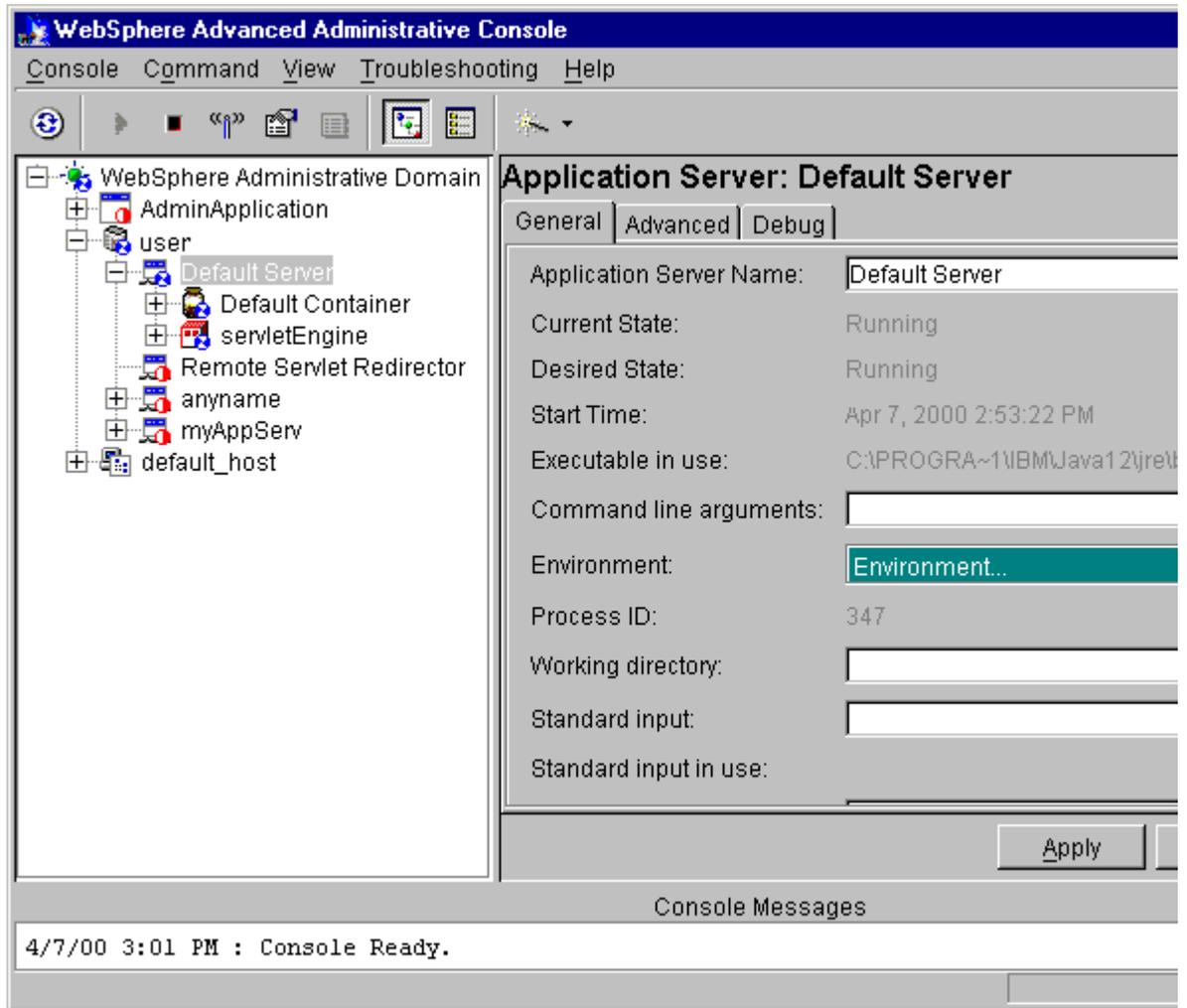
**Hint:** You can control the server from a command line or batch file using the following commands:

```
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.

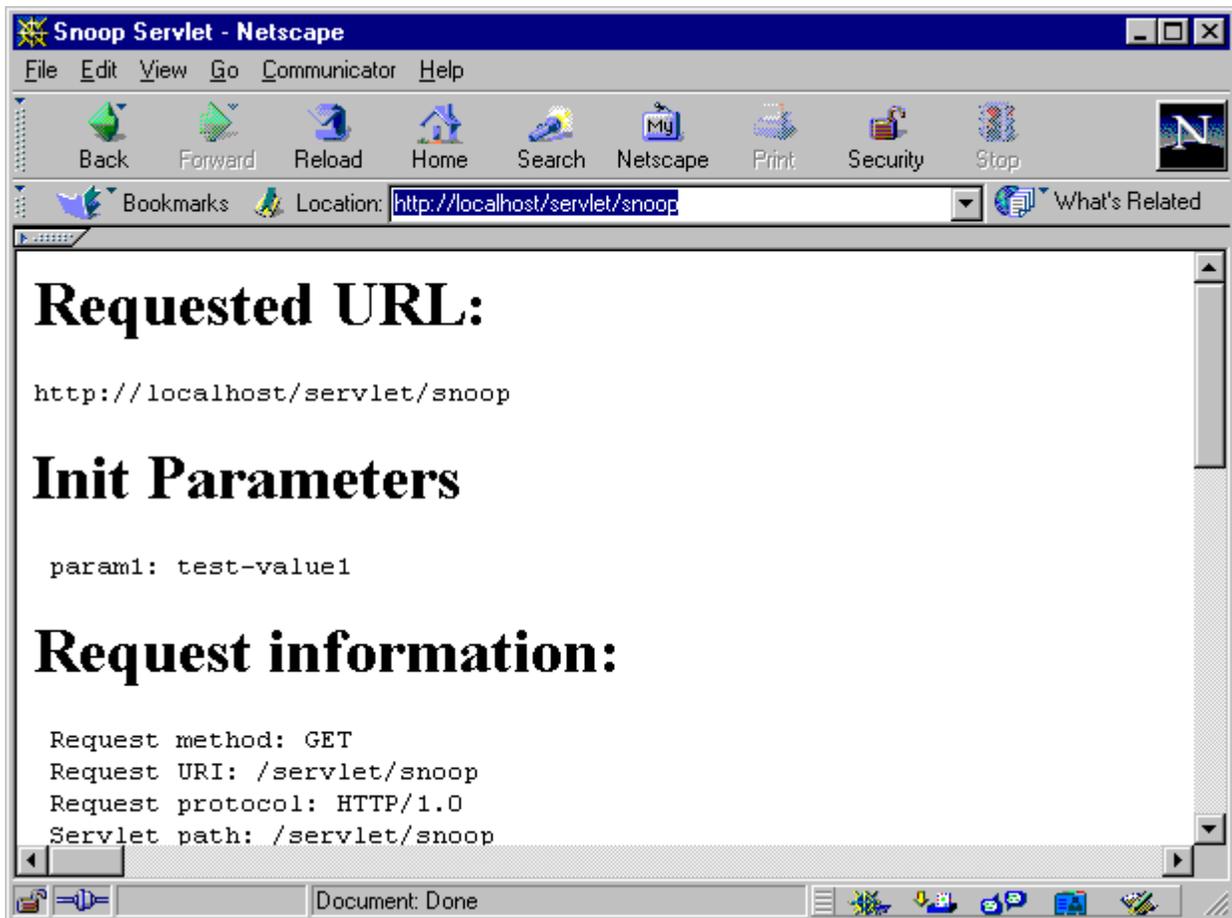
3. To start the server, run the administrative console, which is how you manage WebSphere Application Server 3.5. From the **Start** menu, select **Programs-> IBM WebSphere -> Application Server 3.5 -> Administrator's Console**. This starts the WebSphere Administrative Console.
4. Wait until you see 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.



- Click on **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*.

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.

- Test the server. Ensure that the IIS is running. (The status for ISS shows *Started* in a Services dialog, which is accessible from a Control Panel.) If IIS is not running, use the **Start** option in a Services dialog to start the server. Then, open a browser and go to `http://your_host_name/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.

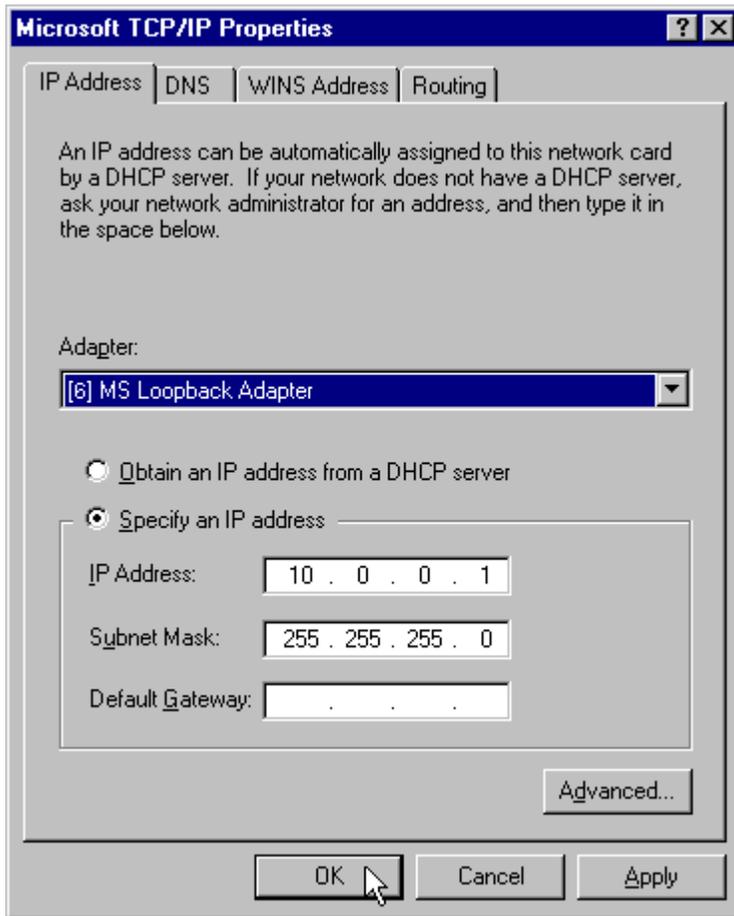
## Setting up TCP/IP for standalone operations

If your system is not connected to a network, you must set up WebSphere Application Server for standalone operations.

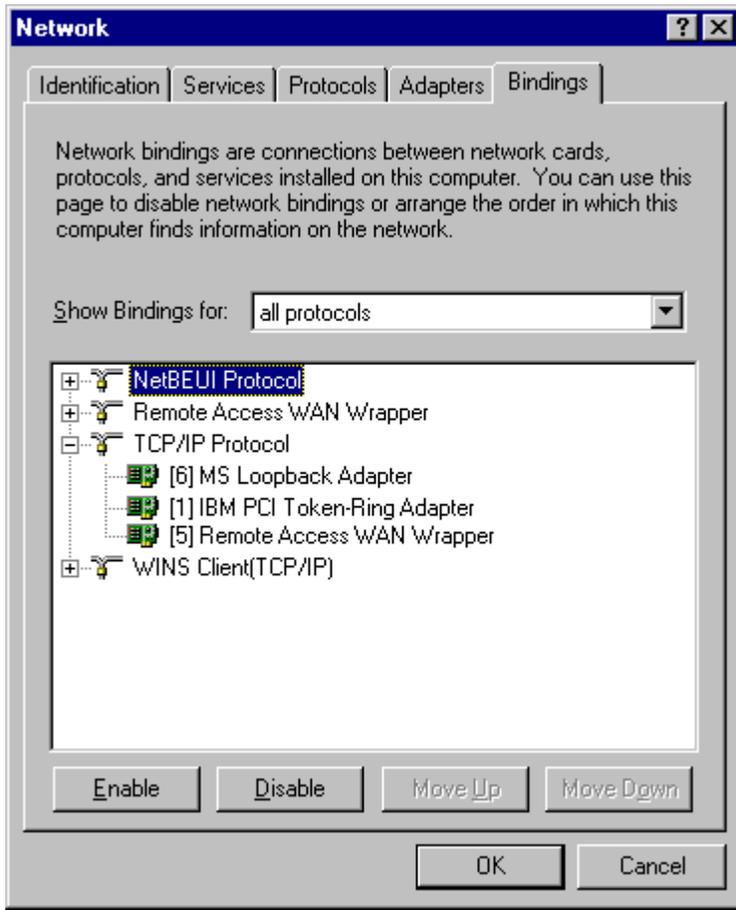
To set up your system for standalone operations, you must have TCP/IP networking installed. If you will run WebSphere Application Server as a standalone (not connected to a network), your host name must remain fixed. WebSphere Application Server is a "networked" system that can be clustered into a single 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.