

DB2 Database Configuration

Step 1

Step 2

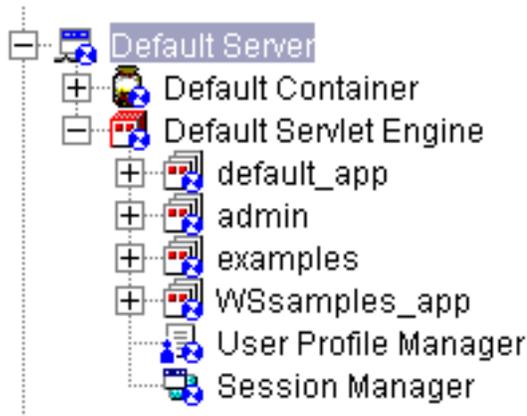
Step 3

Step 4

Step 5

Step 1: Ensure the existence of the WSamples_app web application

1. Open IBM WebSphere Application Server Administrator Console.
2. Click View → Topology.
3. Expand the tree through your system hostname, the Default Server, and the servletEngine.
4. Ensure that the WSamples_app web application exists within the servletEngine. It should look like this:



5. If WSamples_app does not exist, then [create a WSamples_app Web application](#).



- To run the Samples, it may be necessary to specify a fully qualified path name in the Application Server's Host Aliases list.
 1. Open IBM WebSphere Application Server Administrator Console.
 2. Click View → Topology.
 3. Expand the tree once and choose "default_host" towards the bottom of the tree. You will see the "Virtual Host: default_host" window open in the right pane of the window.
 4. Select the "Advanced" tab from the right pane.
 5. Locate the "Host Aliases" list. You should see your machine's "short name" on the list (for instance, "myhost").
 6. If your fully qualified host name -- myhost.mycompany.com for instance -- is not there, then scroll the aliases list down to a blank text field, type in your fully qualified host name, and choose "Apply".
 7. If you added a fully qualified host name, then you need to stop and start the the Application Server's Default Server.
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Step 1: Create the WSamples_app Web application.

1. Open WebSphere Application Server's Administrator Console.
2. Choose Console → Tasks → Create a Web Application.
3. **Web Application:**

- *Web Application Name:* Type in WSamples_app
- *Enable File Servlet:* Ensure this option is selected
- *Serve Servlets By Classname:* Select this option
- *JSP Version:* Select Enable JSP 1.0

Click Next.

4. **Application Resources:** Select Nodes → <hostname> → Default Server → DefaultServletEngine. Click Next.

5. Web Application:

- *Web Application Name:* WSamples_app should be displayed
- *Description:* Type a description (optional)
- *Virtual Host:* default_host should be displayed
- *Web Application Web Path:* This is the URL path to the directory on the HTTP server. (For example, http://<hostname>/WebSphereSamples.) Type in /WebSphereSamples

Click Next.

6. **Web Application:** Ensure settings for the document root and classpath.

- Document Root: <Application Server Install Directory>\AppServer\hosts\default_host\WSamples_app\web
- Classpath: <Application Server Install Directory>/AppServer/hosts/default_host/WSamples_app/servlets

Click Finish.

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Step 2: Create the SAMPLE Database.

- Create the SAMPLE database.

For DB2 on AIX:

Use DB2's command-line processor and type:

1. CREATE DATABASE DB2SAMP
2. [Complete instructions to use TCP/IP to connect to DB2 database.](#)

For all other operating systems:

There are two methods for creating the SAMPLE database:

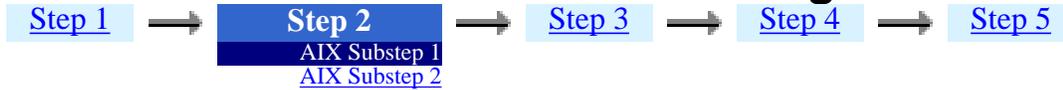
- Run DB2's "First Steps" application
- Use DB2's command-line processor and type:
 1. CREATE DATABASE SAMPLE

Please see DB2 documentation for more information on GUI or command line options.



- AIX users will create a database and an alias which connects to the real database via TCP/IP. The real database name is arbitrary -- we use "DB2SAMP" -- but the alias name must be SAMPLE. The extra steps to connect to the DB2 database prevent StaleConnectionExceptions which occur when too many processes try to access the same shared memory.
 - The database will be created in the default location and will be expanded as needed to hold the tables. The "First Steps" utility creates a database named SAMPLE with tables added to it. Alternatively, you can create an empty database with any name you choose. Whatever name you give it, specify the same database name (or, for AIX, the same database alias) in Steps 3 and 4 when you create the corresponding DataSource object.
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Step 2: DB2 on AIX Database Connection Instructions

Substep 1: AIX Server Setup Instructions

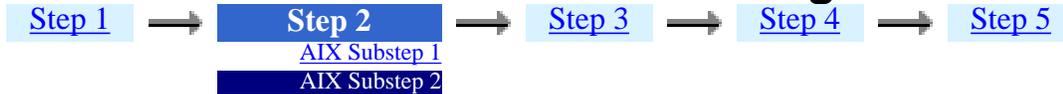
Setup the server machine to use TCP/IP to connect to the DB2 database.

1. On the server, use the operating system command line to login as DB2 administrator and type:
 1. `db2set DB2COMM=tcpip`
2. Setup the server port number on which DB2 will listen for incoming requests.
 1. As **root** user on the server, add the following line to the `/etc/services` file:
`db2srvc <port_number>/tcp #DB2 connection service port`
where
 - `<port_number>` refers to an unused port number (one which is not listed in the `/etc/services` file).
3. Next, you must configure the database to use the new service.
On the Server, use the DB2 command line and type:
 1. `UPDATE DBM CFG USING SVCENAME db2srvc`
4. Restart DB2
5. [Go to AIX Substep 2](#)



- Be sure to enter `db2srvc` in all lowercase letters.
 - The "server" refers to the machine on which the actual DB2 database resides. The "client" refers to the machine that uses the DB2 database which resides on the "server". The "server" and "client" can be the same machine.
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Step 2: DB2 on AIX Database Connection Instructions

Substep 2: AIX Client Setup Instructions

On the client, you must setup DB2 to use the remote database.

1. As **root** user on the client, put the same line in "/etc/services" file that you put in the server's "/etc/services" file:

```
db2srvc <port_number>/tcp #DB2 connection service port
where:
```

- <port_number> should be the same one you used for Step2 - AIX Substep1.
2. Use the DB2 command line to login as DB2 administrator and type:
 1. CATALOG TCPIP NODE SAMPNODE REMOTE <hostname> SERVER
db2srvc
where
 - <hostname> is the hostname of the "server" machine
 3. On the DB2 command line type:

```
1. CATALOG DATABASE DB2SAMP AS SAMPLE AT NODE SAMPNODE
```



- Be sure to enter *db2srvc* in all lowercase letters.
 - The "server" refers to the machine on which the actual DB2 database resides. The "client" refers to the machine that uses the DB2 database which resides on the "server". The "server" and "client" can be the same machine.
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Step 3: Create a DB2 Database User for SAMPLE

- Create an operating system user named **wsdemo** with a password of **wsdemo1**. **wsdemo** does not have to have special privileges.

For DB2 on AIX:

On the client machine, use DB2's command-line processor and type:

1. `CONNECT TO SAMPLE USER <server_db2_admin_userid> USING <server_db2_admin_password>`

where:

- `<server_db2_admin_userid>` is the database administrator's userid on the server
- `<server_db2_admin_password>` is the database administrator's password on the server

2. `GRANT CONNECT, CREATETAB ON DATABASE TO USER wsdemo`

For all other operating systems:

- You can use the DB2 GUI or, on the command line interface, type:

1. `CONNECT TO SAMPLE`

2. `GRANT CONNECT, CREATETAB ON DATABASE TO USER wsdemo`

Please see DB2 documentation for more information on GUI or command line options.



- Be sure you use *all lower case* letters when creating the **wsdemo** user.
 - Specify the *"connect"* and *"createtab"* authorities for the DB2 **wsdemo** user. Others are optional.
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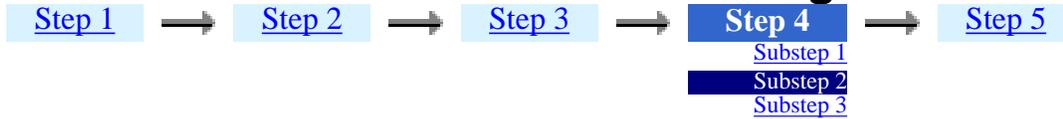


Step 4: Create a DataSource Object

Substep 1: Create a JDBC Driver

1. In the IBM WebSphere Application Server Administrative Console, select the Types view.
2. Right-click JDBCDrivers.
3. From the pop-up menu, select Create.
4. Use these values in the subsequent dialog:
 - **Name:** Enter an arbitrary name for the driver, such as DB2SampleDriver
 - **Implementation class:** Select com.ibm.db2.jdbc.app.DB2Driver
 - **URL prefix:** Enter jdbc:db2
 - **JTA Enabled:** Select false
5. Click OK.
6. Go to [Substep 2](#).

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Step 4: Create a DataSource Object

Substep 2: Define the DataSource

1. In the Types view, right-click DataSources.
2. From the pop-up menu, select Create.
3. Use these values in the subsequent dialog:
 - **Name:** Type `sample`, in lower case.
 - **Database name:** Type the actual name of the database created in Step 3: `SAMPLE`. AIX users enter the database alias, `SAMPLE`. (This points your DataSource to `jdbc:db2:SAMPLE`).
 - **Driver:** Select the JDBC driver you created in Step 4-SubStep 1: `DB2SampleDriver`
4. Optionally you can use the Advanced tab to specify pooling parameters for the DataSource or you can accept the defaults.
5. Click OK.
6. Go to [Substep 3](#).



- The name of the DataSource must be `sample` but the name of the database (or, for AIX users, the database alias) should match the one that you entered in Step 2. The Samples use the DataSource named `sample` to connect to a database and the DataSource uses the database name (or the database alias) to connect to the particular database; therefore, the Samples do not directly use the database name to connect to the database.
 - The DataSource will be stored as "sample" in the `/jdbc` directory. In the servlet files, we specify "jdbc/sample" as the DataSource object and the code uses this to attach to the database. (In the `ConnPoolTest` servlet, we use this directory as the JNDI lookup name to locate this DataSource object as specified in its properties file, `ConnPoolTestStrings.properties`.)
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Substep 3

Step 4: Create a DataSource Object

Substep 3: Install the driver

1. In the IBM WebSphere Application Server Administrative Console, select the Topology view.
 2. Expand the directory tree.
 3. Locate and right-click the driver you created in Step 4-SubStep 1.
 4. From the pop-up menu, select Install.
 5. In the subsequent dialog:
 - Select the node on which to install the driver.
 - Click Browse to find db2java.zip. This is the file containing the driver. The appropriate java directory is in the SQLLIB subdirectory located under the DB2 "instance home" on UNIX platforms and in DB2's SQLLIB directory on NT:
 - JDBC 1.0
 - C:\SQLLIB\java (NT - where C is the hard drive on which DB2 is installed)
 - /home/db2inst1/sqllib/java (HP)
 - JDBC 2.0
 - /home/db2inst1/sqllib/java12 (AIX)
 - /home/db2inst1/sqllib/java12 (Linux)
 - /export/home/db2inst1/sqllib/java12 (Solaris)
- Use the latest version of the JDBC possible.
- Click Install.



- To start the connection, you may need to stop and start the Default Server in the Application Server Administrator Console. To do this:
 1. Select the Topology view.
 2. Expand the tree until the Default Server is displayed.
 3. Right-click on the Default Server and choose "Stop"; the wheel icons indicating the server's status should be red and white.
 4. Once the server is stopped, right-click again and choose "Start"; the wheel icons indicating the server's status should be blue and white.
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Step 5: Run the Database Servlet

The servlet creates and configures the tables in the SAMPLE database by using *wsdemo*'s authorities.

User: wsdemo

Password: ****

Database: DB2

**DataSource
Name:**

This is the DataSource object that you created in Step 4-Substep 2. The default is assumed to be jdbc/sample.

**Poll Sample
Question:**

Enter a question for the Poll sample.
A "Yes" or "No" question is recommended.