Database Configuration

Database Configuration:

     Start **Sybase** Database Configuration

Summary of Database Configuration tasks:

- **Step 1:** Ensure the creation of a Web Application in the WebSphere Application Server.

- **Step 2:** Create the SAMPLE database. (Create a SAMPLE tablespace in Oracle).
  The SAMPLE database contains the data used by all Samples and is seperate from the database used by IBM's WebSphere Application Server. We use the database name SAMPLE in these instructions but you can name the database as you desire.

- **Step 3:** Create a user named **wsdemo** for the SAMPLE database. The wsdemo user is used to read from and write to the SAMPLE database. (For DB2, you will also create a **wsdemo** system user).

- **Step 4:** Create the DataSource Object.
  The DataSource is used by the Sample applications to access the database, SAMPLE.

  - **Step 4 - SubStep 1:** Create a JDBC Driver

  - **Step 4 - SubStep 2:** Define the DataSource

  - **Step 4 - SubStep 3:** Install the driver

- **Step 5:** Run the database servlet.
  New tables are added to the SAMPLE database and are populated with appropriate data.

Sybase Database Configuration
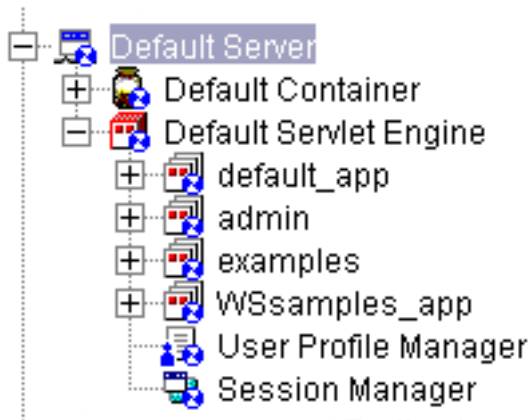
Step 1 ⟶ Step 2 ⟶ Step 3 ⟶ Step 4 ⟶ Step 5

Step 1: Ensure the existence of the WSsamples_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 WSsamples_app web application exists within the servletEngine. It should look like this:

```
Default Server
  Default Container
  Default Servlet Engine
    default_app
    admin
    examples
    WSsamples_app
    User Profile Manager
    Session Manager
```

5. If WSsamples_app does not exist, then create a WSsamples_app Web application.

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- 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.

Sybase Database Configuration

Step 1: Create the WSsamples_app Web application

1. Open WebSphere Application Server's Administrator Console.

2. Choose Console $\longrightarrow$ Tasks $\longrightarrow$ Create a Web Application.

3. **Web Application:**

   ❍ *Web Application Name:* Type in `WSsamples_app`

   ❍ *Enable File Servlet:* Ensure this is selected.

   ❍ *Serve Servlets By Classname:* Select this option.

   ❍ *JSP Version:* Select Enable JSP 1.0

   Click Next.

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

5. **Web Application:**

   ❍ *Web Application Name:* WSsamples_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**WSsamples_app**\web

   ❍ Classpath: <Application Server Install Directory>/AppServer/hosts/default_host/**WSsamples_app**/servlets

Sybase Database Configuration

Step 2: Create the SAMPLE Database

- Create the SAMPLE database.
  Use Sybase's GUI or *isql* command line interface to create an empty database named SAMPLE.

  Using Sybase's command line interface, create a device to store the database by typing:
  1. `disk init`
  2. `name="sample_device", physname="<Some_Dir>/sample.dat", vdevno=<device_number>, size=5000`
  3. `go`
     (Size is the number of 2k blocks. There are about 512 2k blocks in 1Mb, so 5000 2k blocks is approximately 10Mb).

  Next, create the database on the device.
  1. `create database SAMPLE on sample_device=10`
  2. `go`
     (The "10" indicates that the database will span the entire 10Mb device file).

  ### Note:
  - The **name** is the symbolic name for the device which stores the objects that define the database.
  - The **physname** is the actual path to the device. **<Some_Dir>** should be an *existing* directory -- a common place is "<Sybase_Root>/data/" -- on the Sybase server. The command creates the file "sample.dat" in the directory specified.
  - The **<device_number>** is an unused Sybase device number.
    List devices by typing `sp_helpdevice` at the command line, looking in the device_number column, and choosing a number that is not in use.

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

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- Alternatively, you can create a database with any name you choose. Whatever name you give it, specify the same database name in Steps 3 and 4 when you create the corresponding DataSource object.

Sybase Database Configuration

Step 3: Create a Sybase User for the SAMPLE database

- Use Sybase's GUI or *isql* command line interface to create a Sybase user named **WSDEMO**, with a password of **wsdemo1**, for the SAMPLE database.

  Using Sybase's command line interface, type:
    1. `sp_addlogin WSDEMO, wsdemo1, SAMPLE`
    2. `go`

  Next, add the user to the database and grant user permissions:
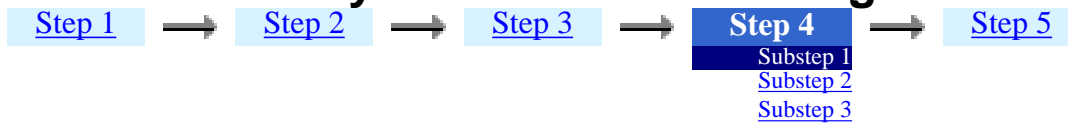   1. `use SAMPLE`
    2. `go`
    3. `sp_adduser WSDEMO`
    4. `go`
    5. `grant all to WSDEMO`
    6. `go`

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

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- Be sure you use *all upper case* letters when creating the **WSDEMO** user.
- Be sure you use *all lower case* letters when creating the **wsdemo1** password.


Sybase Database Configuration

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 `SybaseSampleDriver`

   ❍ *Implementation class:* Select com.sybase.jdbc2.jdbc.SybDriver
   Note: This assumes that you are using jConnect 5.2 drivers.

   ❍ *URL prefix:* Type jdbc:sybase:Tds:<hostname>:<portnumber>
   Be sure to enter the actual hostname for the **<hostname>** field.
   The port number "4100" is the default port number used by Sybase but it can be altered during the installation process. Use the default port number or the port number that was specified during the Sybase install.

   ❍ *JTA Enabled:* Select false.

5. Click OK.

6. Go to Substep 2

Sybase Database Configuration
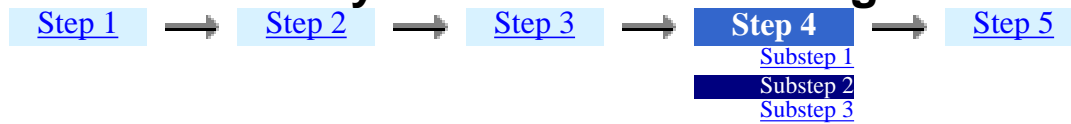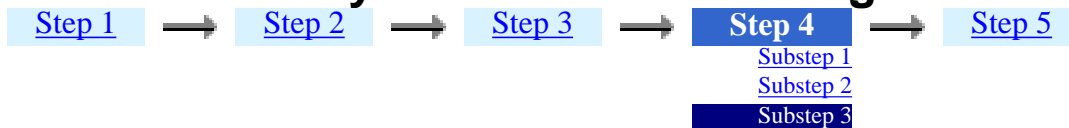
Step 4: Create a DataSource Object

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` (All letters lowercase)
   - **Database name:** Type the actual name of the database created in Step 3: `SAMPLE`
   - **Driver:** Select the JDBC driver you created in Step 4-SubStep 1: SybaseSampleDriver
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

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- The name of the DataSource must be *sample* but the name of the database 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 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.)

Sybase Database Configuration

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 the file containing the driver. It is likely to be located in:
   <Sybase_Root>/jConnect-5_2/classes/jconn2.jar
   Note: This assumes that you are using jConnect 5.2 drivers.

6. Click Install.

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- 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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Sybase Database Configuration

Step 5: Run the Database Servlet

The servlet creates aliases and authorities for the demo user, *wsdemo*, which you created in Step 3. Then the servlet creates and configures the tables in the SAMPLE database by using *wsdemo*'s authorities.

User:	WSDEMO
Password:	*******
Database:	Sybase
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.