

**Instruction Sheet: Getting started with Tomcat for JWSDP and JWSDP****Setting up your environment**

Make the following changes to your `.cshrc` file:

- Add environment variable `$PUBLIC_SPACE` using the statement:  
`setenv PUBLIC_SPACE /projects/Spring_2005/cse587/mdevnani/public`  
I will use this space to upload resources that need to be accessed by all.
- Add environment variable `$PROJECT_SPACE` using the statement:  
`setenv PROJECT_SPACE /projects/Fall_2005/cse[4|5]86/<your-user-name>`
- Add (or modify) the `$JAVA_HOME` environment variable:  
`setenv JAVA_HOME /usr/j2se`
- Add environment variable `$ANT_HOME` using the statement.  
`setenv ANT_HOME /util/ant`
- Put changes you've made to your `.cshrc` file into effect by using:  
`Source .cshrc`

[N.B. The `.cshrc` file will be in your *home* directory and can be accessed using the command `cd ~`]

**Tomcat for JWSDP and JWSDP 1.6**

Tomcat for Web Services is now separately distributed from Web Services.

1. You can get the installation from either:  
`$PUBLIC_SPACE/cse4586/inst/tomcat50-jwsdp.zip`  
OR from  
`http://java.sun.com/webservices/containers/tomcat_for_JWSDP_1_5.html`
2. To “install” tomcat, place this file in your `projects` directory and unzip it.  
(use the `unzip` command)  
Eg. `$PROJECT_SPACE/project1/unzip tomcat50-jwsdp.zip`

The next step is to install Java Web Services:

3. You can get the installation from either:  
`$PUBLIC_SPACE/cse4586/inst/jwsdp-1_6-unix.sh`  
OR from  
`http://java.sun.com/webservices/downloads/webservicespack.html`  
Note that this is the latest version of JWSDP (Version 1.6). For earlier versions, visit the following URLs:  
`http://java.sun.com/webservices/downloads/1.5/`  
`http://java.sun.com/webservices/downloads/1.4/`
4. To install JWSDP, grant execution rights to the downloaded file:  
`chmod u+x jwsdp-1_6-unix.sh`
5. Execute installer by typing:  
`./jwsdp-1_6-unix.sh -console`

6. Go through the installation wizard
  - a. When the location of the Java 2 SDK is prompted, enter  
`/usr/j2se`
  - b. When the location of the Web Container is prompted, enter  
`/projects/Fall_2005/cse[4|5]86/<your-user-name>/project1/tomcat50-jwsdp`
  - c. Enter installation directory
  - d. Select `typical` as the type of installation.
  - e. Enter one username and password for the tomcat server, and remember this login. Do not use any sensitive passwords since the system stores them in plaintext.
  - f. Do *not* use a Proxy server
7. Set the following environment variables in your `.cshrc` file:
  - a. `setenv CATALINA_HOME /projects/Fall_2005/cse[4|5]86/<your-user-name>/project1/tomcat50-jwsdp`
  - b. `setenv JWSDP_HOME /projects/Fall_2005/cse[4|5]86/<your-user-name>/project1/jwsdp-1.6`
8. Make sure that the following directories are present in your `PATH` variable specified in the `.cshrc`:

```
$JAVA_HOME/bin  
$ANT_HOME/bin  
$CATALINA_HOME/bin
```
9. Put the changes you've made to you `.cshrc` file into effect by using:

```
source .cshrc
```
10. Make changes to Tomcat configuration files:
  - a. `$CATALINA_HOME/conf/server.xml`: Look for default port numbers in this file. The non-SSL Connector port will be specified as 8080. Change this to a unique port of your choice.  
  
The SSL Connector port will be specified as 8443. We will not be using this, so there is no need to change it.  
  
The Server port would be specified as 8005. Change this too, to a unique port of your choice.  
  
Just search for 8080 and 8005 in this file and replace these with your port numbers.  
  
**N.B.** Remember to select port numbers from the range allotted to you.
  - b. `$CATALINA_HOME/conf/tomcat-users.xml`: Add more users and passwords if you want to.

### Working with Tomcat

- **Start tomcat:** Tomcat can be started by executing the script:  
`$CATALINA_HOME/bin/startup.sh`
- **Stop tomcat:** Similarly it can be stopped by executing the script:  
`$CATALINA_HOME/bin/shutdown.sh`
- **Manager Console:** Deployed applications can be seen by the Tomcat Manager. Tomcat manager can be accessed by going to `http://<host name>:<host port>/` in the browser and then clicking on the appropriate link to go to the “Web Application Manager”.
- **Server log:** The log of the server is fed into a file  
`$CATALINA_HOME/logs/launcher.server.log`. A convenient way to view this file is by using the `tail` utility:  
`tail -f logs/launcher.server.log`
- **Web Applications:** Applications can be added to tomcat in two ways:
  - Adding XML files to the `$CATALINA_HOME/conf/Catalina/localhost/` directory
  - Adding web component (.war or even unpacked classes) to the `$CATALINA_HOME/webapps` directory
- **Redeployment:** To redeploy an application, you have to “undeploy” it from the Manager console, physically deploy (or copy) the war to `$CATALINA_HOME/webapps` and then “Deploy” this application by entering the name of the .war file in the “WAR or Directory URL” and clicking on “Deploy”. However, at times, tomcat would automatically deploy a .war as soon as it is physically added to the `$CATALINA_HOME/webapps` directory.

### Running the HelloWorld Demo

1. Get tarfile containing the example into your directory from:  
`$PUBLIC_SPACE/cse4586/sample/JWSDP_Demo_1.tar`
2. Untar this file using the `tar -xvf` command.

Now as you can see there are four different modules in this example with the following functions and methods:

- a. `serviceWSDL`: Generates a service from a WSDL file
  - i. `ant build`: Builds the service classes, etc.
  - ii. `ant deploy`: Deploys the service to the webapps of Tomcat
- b. `serviceIF`: Generates a service from a Java Interface file
  - i. `ant build`: Builds the service classes, etc.
  - ii. `ant deploy`: Deploys the service to the webapps of Tomcat
- c. `client`: Contains a command-line based web-service client
  - i. `ant build`: Builds the command-line-based client
  - ii. `ant run`: Run the client
- d. `webclient`: Contains a JSP module to say Hello.
  - i. `ant build`: Builds the web-based client

- ii. `and deploy`: Create a war file and deploys it into the webapps of Tomcat
3. Try the `serviceWSDL` example, first. To execute the above tasks, go into that directory and give the command to first build, then deploy `serviceWSDL`.
4. Deployed applications can be seen by the Tomcat Manager. So load this up and confirm whether your newly created service, `Hello4586`, is up yet. You can also navigate to the URL - `http://<host name>:<host port>/Hello4586/hello?WSDL`.
5. Once the service is confirmed to have been loaded up, build and run the client. Change the `server.host` and `server.port` properties from the `build.properties` file in the client module before building the client. If all goes well, you will be prompted for your name.
6. Next, you build the `webclient` module. In this, too you need to change the `server.port` and `server.host` properties from the `build.properties` file. Also make sure you change the port number in the `src/hello.jsp` file too. Then build and deploy it and then test it online by going to `http://<host name>:<host port>/Hello4586JSP/`.
7. Try doing the same for `serviceIF`.

Don't forget to go through these files and understand what's going on!

- Try to relate the Interface, Implementation, and WSDL files in the `serviceWSDL` and `serviceIF` folders.
- Where do the `etc/config.xml`, `etc/jaxrpc-ri.xml` and `etc/web.xml` files fit in?

N.B. Please let me ([mdevnani@cse.buffalo.edu](mailto:mdevnani@cse.buffalo.edu)) know if you find any errors in this document.