

Setting up Integrated Development Environment for OpenSSO

Dennis Seah
dennis.seah@sun.com
Staff Engineer
Sun Microsystems Inc.

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Abstract

This paper describes the steps to create project in NetBeans IDE 5.0. It also describes how to build the project; and debug it with Tomcat 5.0 and Sun Web Server 6.x/newer.

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1 Introduction

There are a handful of popular *IDEs* in the market. NetBeans (Figure 1) is commonly used by the OpenSSO developers. Setting up other *IDEs* should be very familiar to this ones, hence we should

not attempt to address them. In the following sections, we show you how to set up NetBeans IDE for developing and debugging OpenSSO.

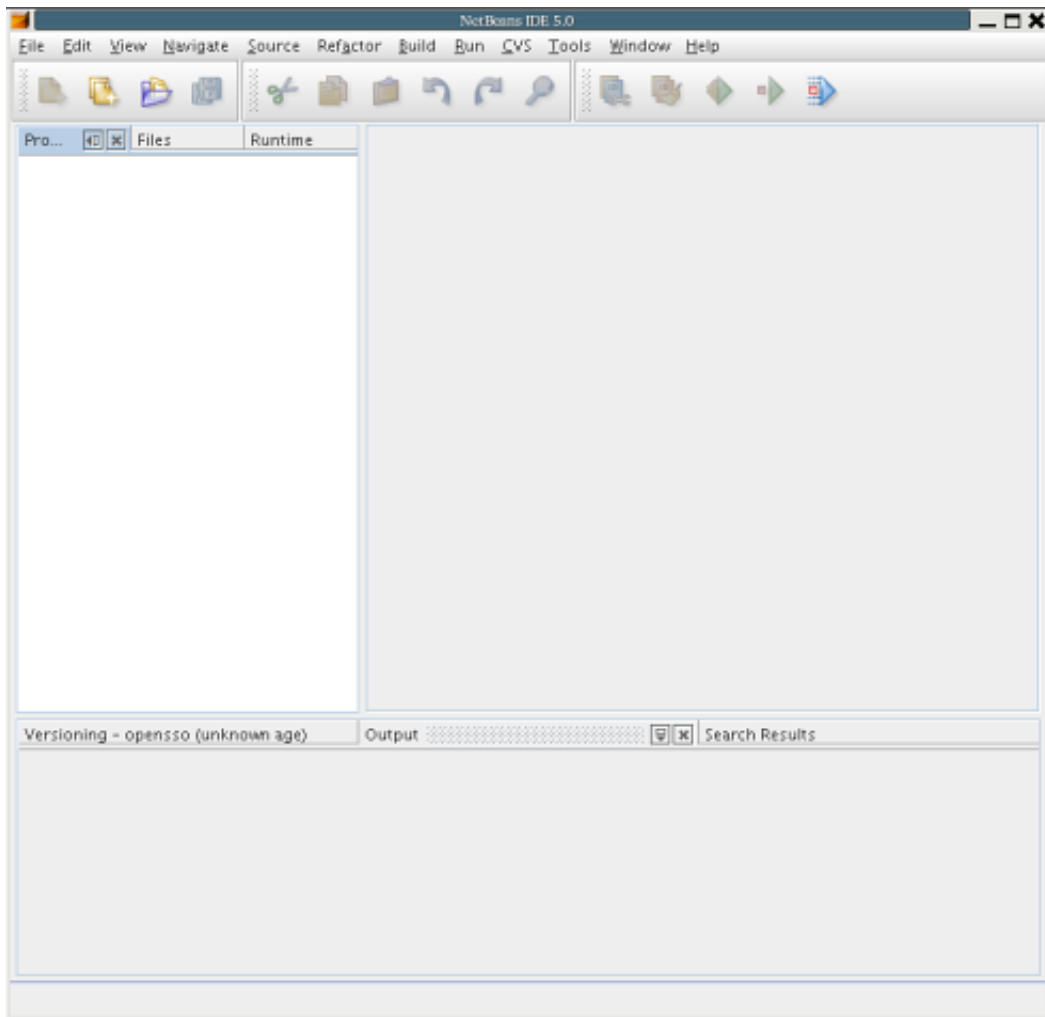


Figure 1: NetBeans

2 Creating Project in NetBean

Click on File Menu, then New Project. Select "Java Project from Existing Ant Script" in the Choose Project Dialog Box; and click on "Next >" button. (Figure 2).

In the Name and Location Dialog Box, enter <your-ws>/opensource/opensso/products/amserver. Then Netbeans will populates the rest of the fields in the dialog box automatically; and click on "Next >" button. (Figure 3)

In the Build and Run Actions Dialog Box, takes the default values; and click on "Next >" button. (Figure 4)

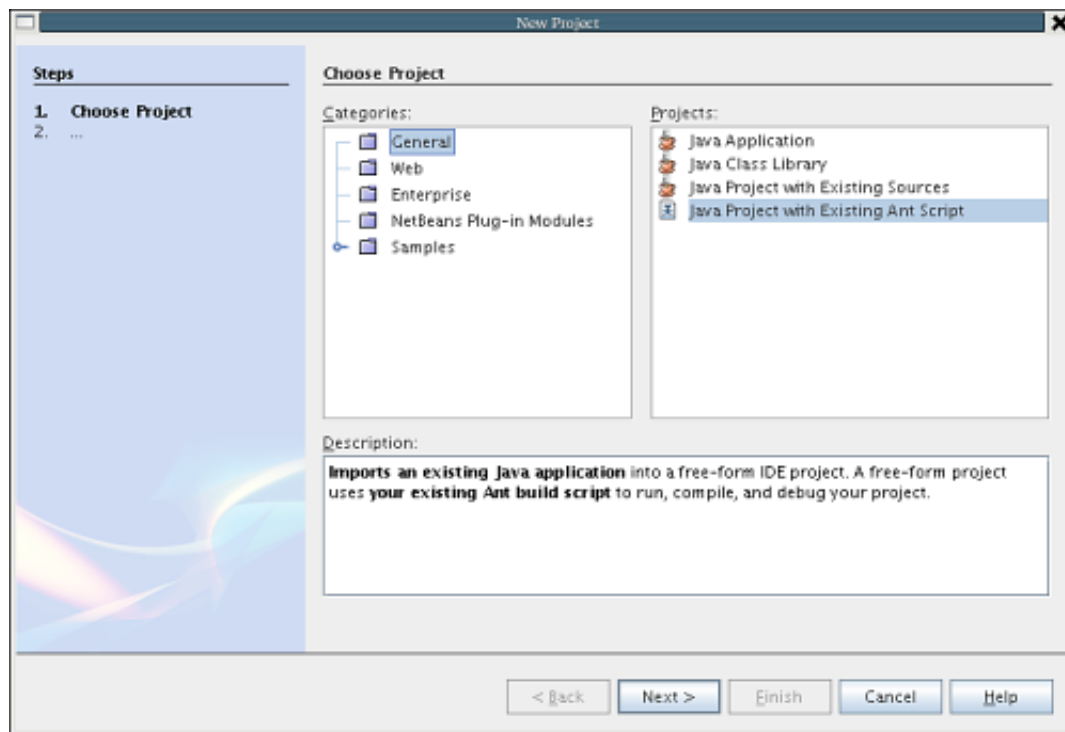


Figure 2: NetBeans: Create Project - Choose Project

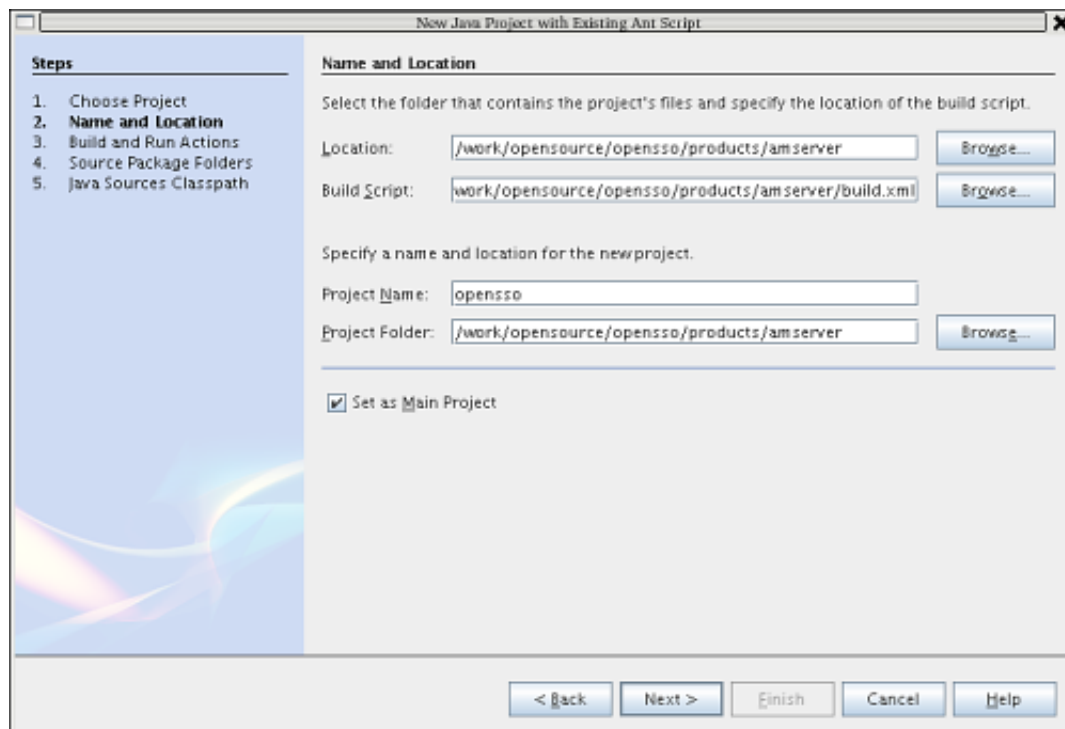


Figure 3: NetBeans: Create Project - Name and Location

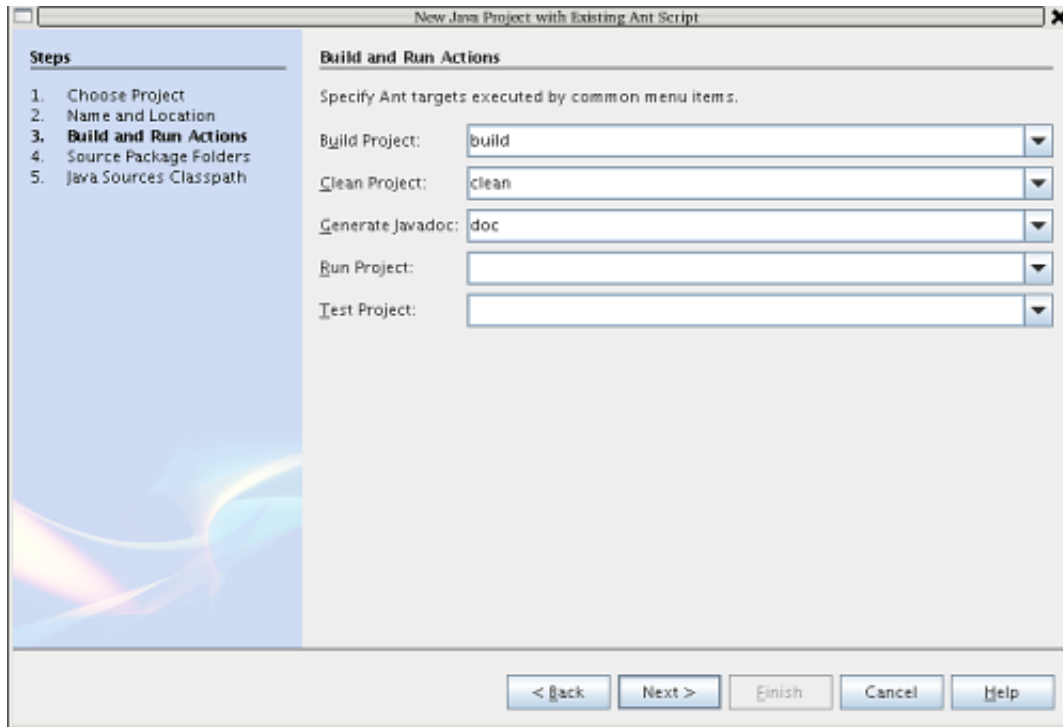


Figure 4: NetBeans: Create Project - Build and Run Actions

In the Source Package Folders Dialog Box,

1. add `<your-ws>/opensource/opensso/products/amserver/source` to the Source Package Folder list box;
2. set Source Level to *JDK 1.5*
3. click on "Next >" button.

(see Figure 5)

In the Java Sources Classpath Dialog Box, add all the *jar* files under `<your-ws>/opensource/opensso/products/amserver` to classpath; and click on "Finish" button. (see Figure 6)

3 Building the Project

At this point, the project is created. We can add *Ant* target to the project. Move the mouse pointer to the *opensso* item under the Project window (see Figure 7); click on the right mouse button; and select Properties menu. The properties dialog will appear (see Figure 8); select the Build and Run Item. Click on the Add button to add new Ant Target. For example, we can add *war* target, see see Figure 9. Click on OK button when we are done. Now, move the mouse pointer to the *opensso* item under the Project window; click on the right mouse button; and we will see "war" item where we can select to execute the Ant *war* target. Select it and see that the project builds and a WAR file is created.

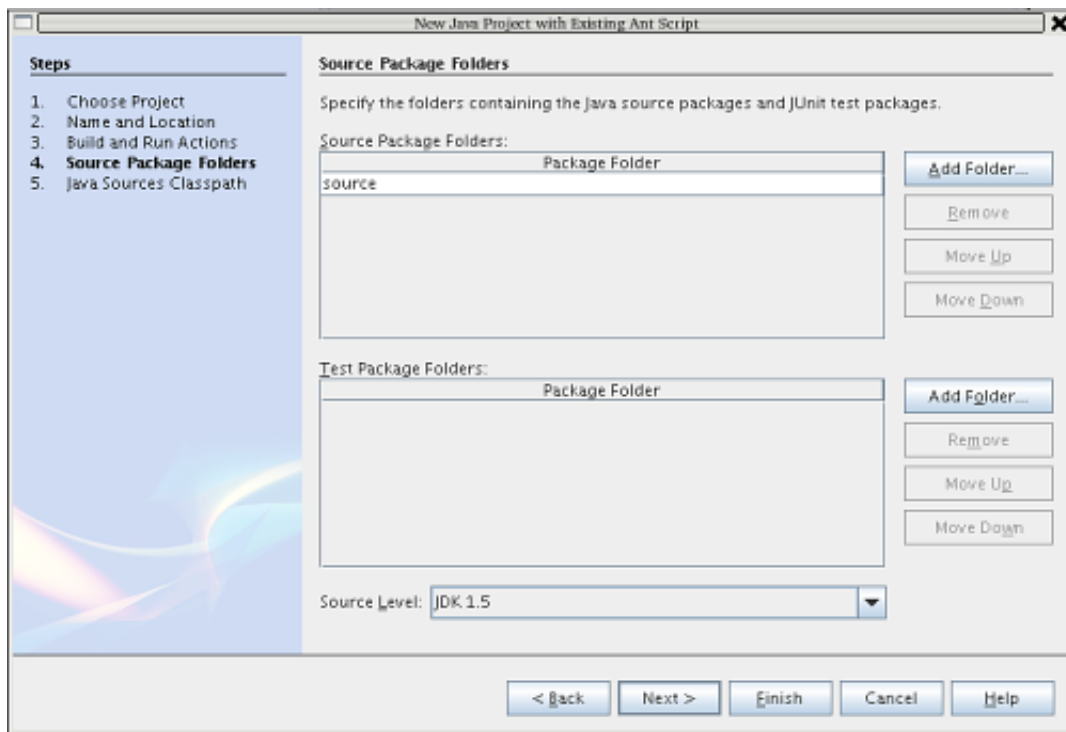


Figure 5: NetBeans: Create Project - Source Package Folders

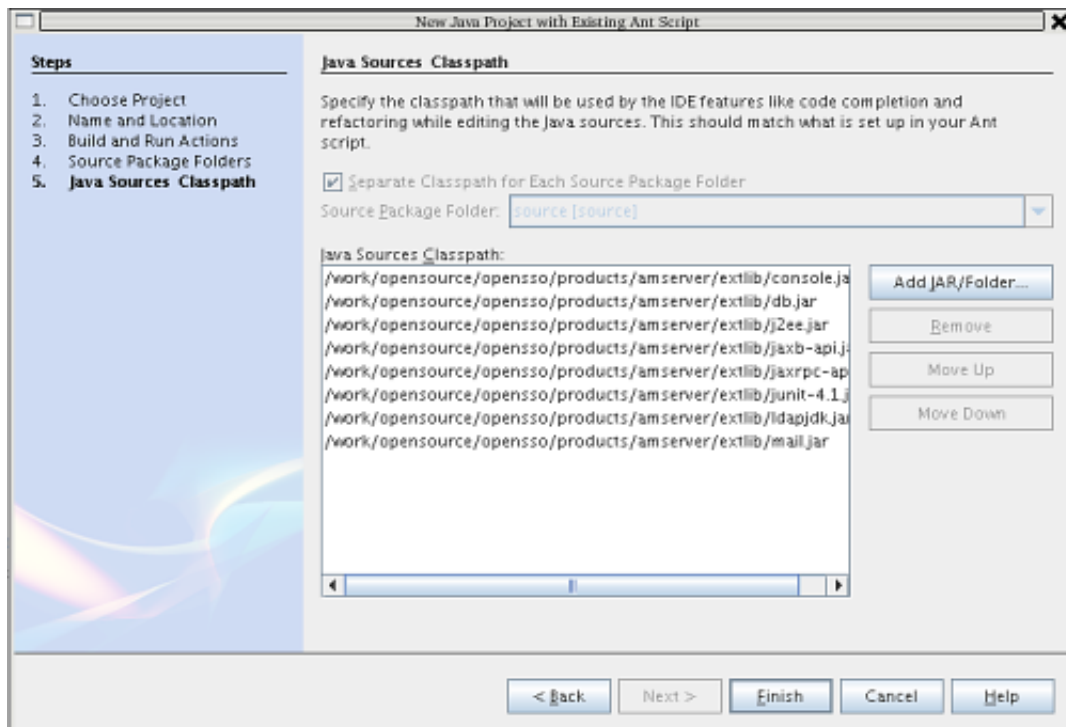


Figure 6: NetBeans: Create Project - Java Source Classpath

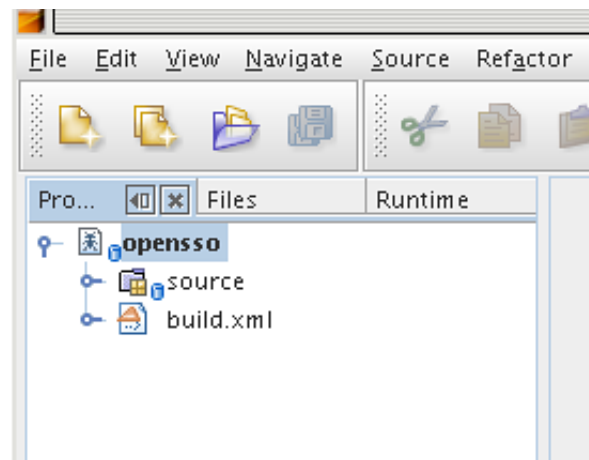


Figure 7: NetBeans: Project - OpenSSO Item

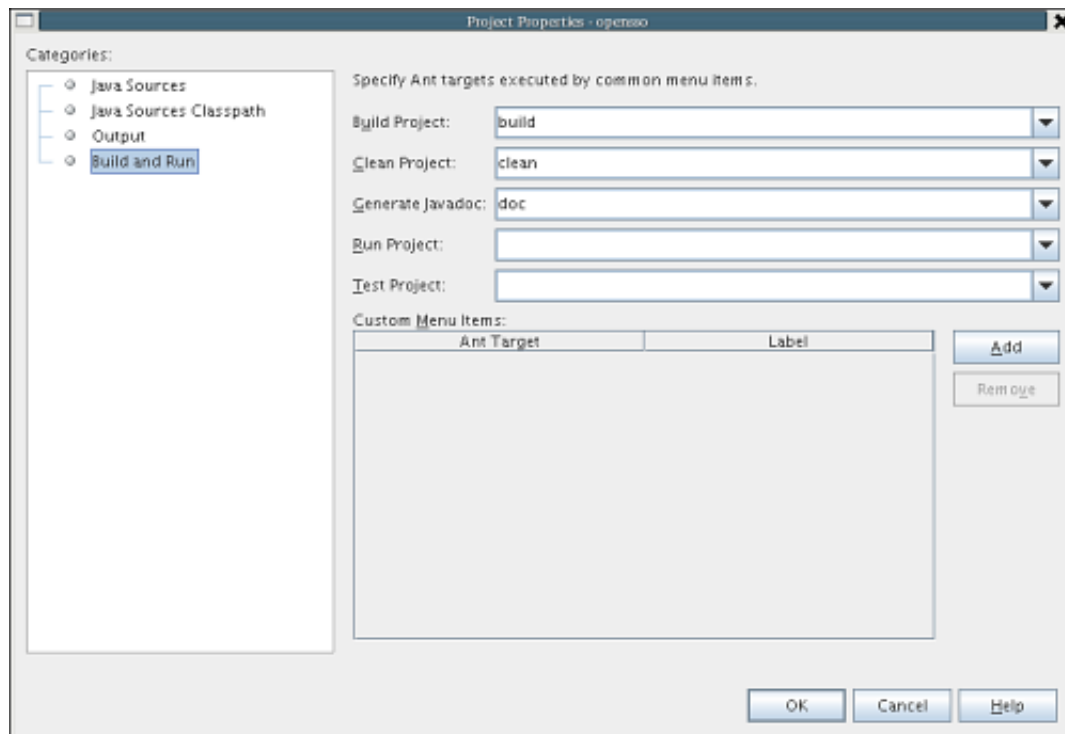


Figure 8: NetBeans: Project - OpenSSO Properties Dialog

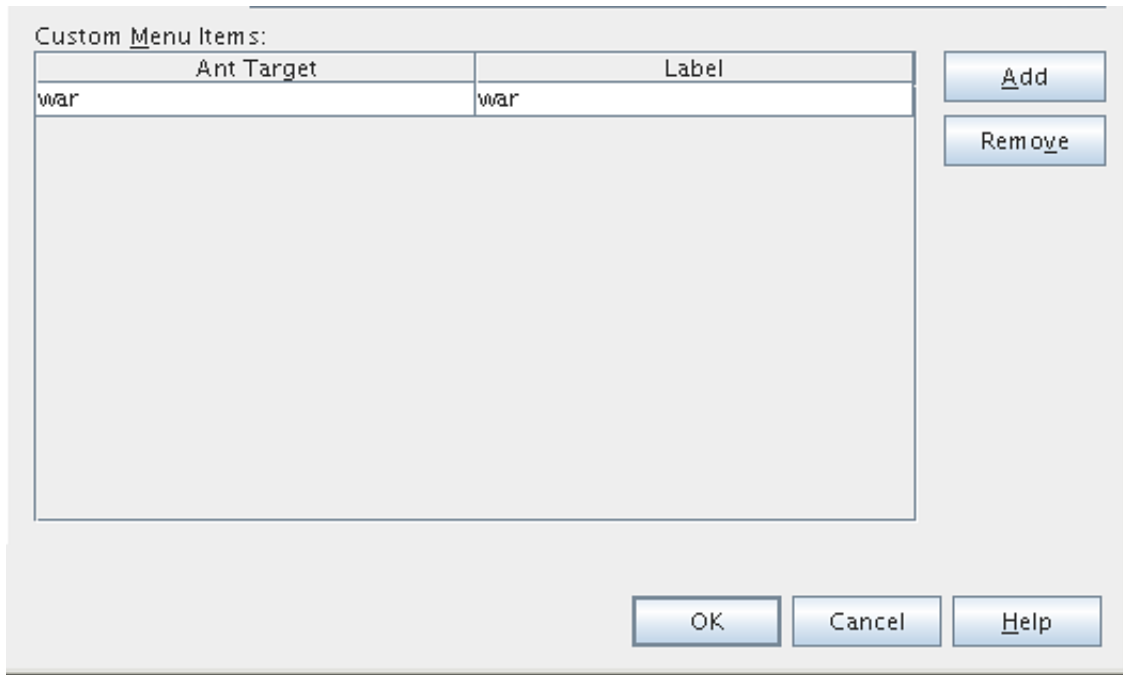


Figure 9: NetBeans: Project - OpenSSO Ant War Target

4 Debugging using *JDWP*

Java Debug Wire Protocol, *JDWP* is one layer within Java Platform Debugger Architecture (*JPDA*) that allows us to do debugging on web based applications.

4.1 Debugging on Tomcat5

Add the following line to `tomcat5.conf` which is usually found under `/usr/share/tomcat5/conf` directory.

```
JAVA_OPTS="-Xdebug -Xrunjdpw:transport=dt_socket,address=1234,server=y,suspend=n"
```

Then attached debugger (see Sub Section 4.3).

4.2 Debugging on Sun Web Server 6.x and newer

Add the following line to `server.xml` to the `<Java ...>`tag.

```
debug="on" debugoptions="-Xdebug
-Xrunjdpw:transport=dt_socket,server=y,suspend=y,address=1234"
```

like this

```
<JAVA javahome=... debug="on" debugoptions="-Xdebug
-Xrunjdpw:transport=dt_socket,server=y,suspend=y,address=1234" ...>
```

Restart the web server and then attached debugger (see Sub Section 4.3).

4.3 Attaching Debugger

In NetBeans, select "Run Menu" and then "Attach Debugger ...". A Dialog will appear. (see Figure 10). Set Debugger as JPDA Debugger; Connector as SocketAttach (Attaches by socket to other VMs); Transport as "dt_socket"; Host as the host name of web server; Port as "1234"; and then Timeout as "5000".

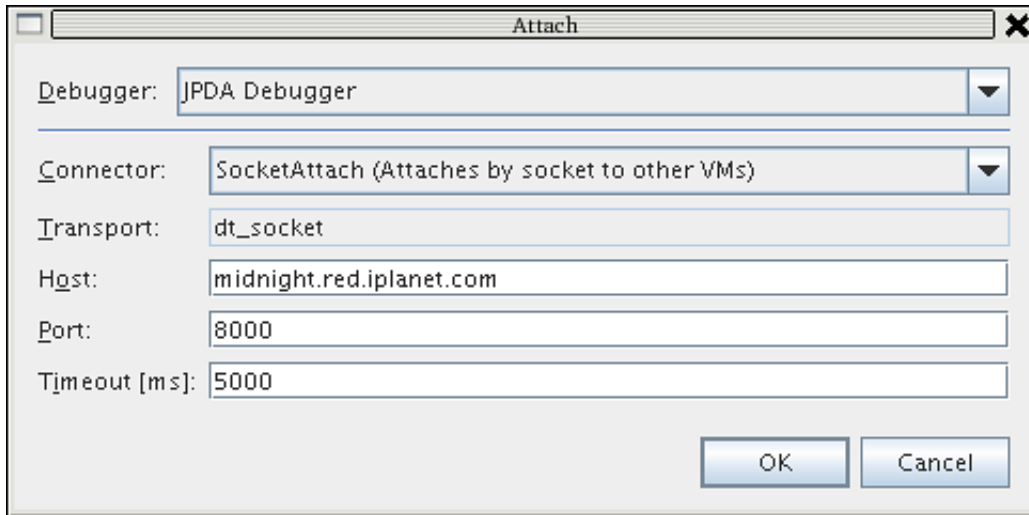


Figure 10: NetBeans: Project - Attaching Debugger

5 Conclusion

We have described how to setup OpenSSO Project in NetBeans; build it; and debug on two web servers. We hope that with this basic information, you can further configure Netbeans to you needs e.g. adding sample source to the project; and building *clientsdk jar*.