

Exercise 5

Creating a JAX-WS Client using WSDL2Java

Prior Knowledge

Basic understanding of SOAP and WSDL

Objectives

Understand how to create SOAP Web Service Clients in Java

Software Requirements

- Java Development Kit 7
- Tomcat 7.0.69 or later
- Eclipse JEE workbench Luna
- Apache CXF 2.7.18 or later
- Service running from Exercise 4

1. To make a change we are going to use a command-line tool to create a Web Service Client. Later you can also try the wizard in Eclipse.
2. Start up a command-line shell / Terminal
3. I have already setup your environment so you DON'T need to do:

```
export CXF_HOME=~/.servers/apache-cxf-2.7.18  
export PATH=$PATH:~/.servers/apache-cxf-2.7.18/bin
```
4. Create a directory to store your generated code, e.g.

```
mkdir ~/ex5  
cd ~/ex5
```
5. Start up your service implementation in Tomcat or Eclipse (if it isn't already running)

From the directory you want the code in, execute the following command:

```
wSDL2Java -ant -verbose -client -d . -fe jaxws21  
http://localhost:8080/JAXWSSample/services/OrderService  
ImplPort?wsdl
```

Put all on one line!

You should see output like:

```
Loading FrontEnd jaxws21 ...  
Loading DataBinding jaxb ...  
wSDL2Java -ant -verbose -client -d . -fe jaxws21  
http://localhost:8080/JAXWSSample/services/OrderServiceImplPort?wsdl  
wSDL2Java - Apache CXF 2.7.18
```

6. Because we are using JDK 1.8 and the CXF library expects 1.6 or 1.7, we need to do a quick fix. In the same terminal window, type:

```
sed -i 's/1.7/1.8/' build.xml
```

7. Now check it builds. In the directory where the code is generated, there should be an Ant build.xml.
Type **ant** in the command line.

You should see something like:

```
>ant  
Buildfile: /Users/paul/oxsoa/client/build.xml  
  
compile:  
[mkdir] Created dir: /Users/paul/oxsoa/client/build/classes  
[javac] /Users/paul/oxsoa/client/build.xml:110: warning:  
'includeantruntime' was not set, defaulting to  
build.sysclasspath=last; set to false for repeatable builds  
[javac] Compiling 14 source files to
```

```
/Users/paul/oxsoa/client/build/classe
```

```
build:
```

```
BUILD SUCCESSFUL  
Total time: 3 seconds
```

8. Now let's import into Eclipse.

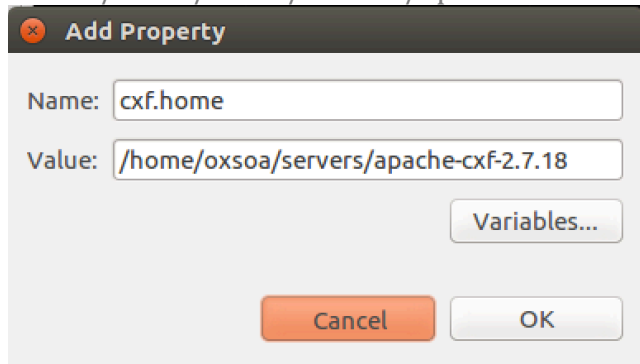
9. Note:

I have already done this, so you don't need to!

Go to Preferences, Ant, Runtime, Properties Tab, Add Property with the values:

Name: cxf.home

Value: /home/oxsoa/servers/apache-cxf-2.7.18



10. Now create a new project using
File->New->Other->Java Project from Existing Ant Build File.

Browse to the build file in your generated code directory.

Give the project a decent name (e.g. **JAXWSClient**)

11. Take a look at the generated code.

12. Find the class named **OrderService_OrderServiceImplPort_Client** and run it. (**Run As->Java Application**).

***Hint:** If you double click on the word Console (or any window title in Eclipse) it maximizes that sub-window. Double click again to return to normal.*



Is the behaviour you are getting expected?

13. Edit the client to create at least one Order and correctly list all the orders.

14. As an extension, get this to run through **mitmdump** so you can see the XML exchange
15. Congratulations. This exercise is done!

16. *Extension*

See if you can get the client to talk via mitmdump and capture the request/response interactions.

17. Before you go, please stop the Tomcat server.