

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 (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:
'includetruntime' 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/classes
```

build:

BUILD SUCCESSFUL
Total time: 3 seconds

8. Now let's import into Eclipse.

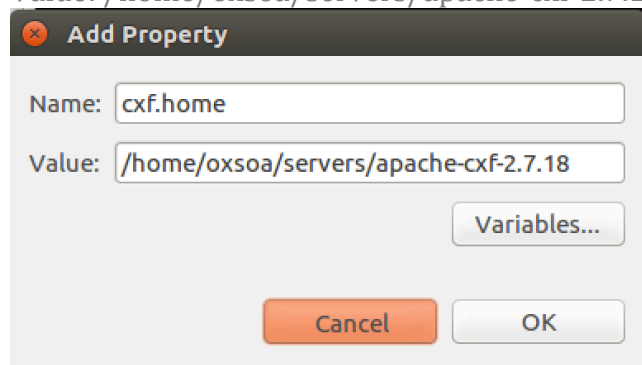
9. Note:

10. 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



11. Now create a new project using

File->New->Other->Java Project from Existing Ant Build File.

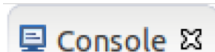
Browse to the build file in your generated code directory.

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

12. Take a look at the generated code.

13. 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?

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

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.