**Exercise 6**

*WS-Security: securing the JAXWS Service and configuring the client to use security*

**Prior Knowledge**

*Exercises 3 and 4 – creating a JAXWS Service and CXF Client.*

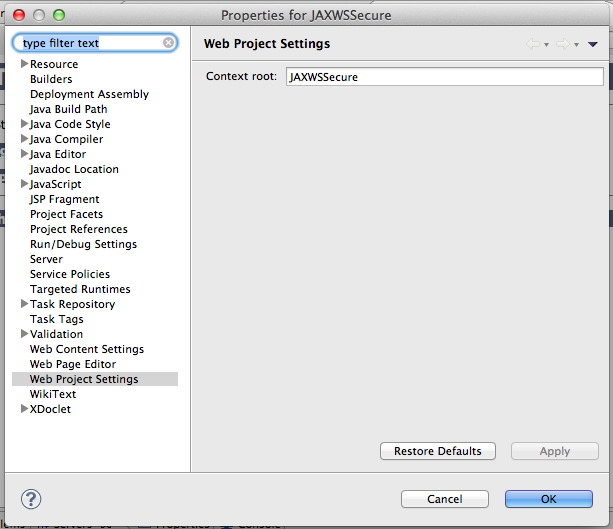
*Lectures on WS-Security*

**Objectives**

*Understand how to authenticate using UsernameToken and Sign/Encrypt a message using X.509 certificates.*

**Software Requirements**

* Java Development Kit 7
* Tomcat 7.0.33 or later
* Eclipse JEE workbench
* Apache CXF 2.7.0 or later
* Service running from Exercise 3, Client from Exercise 4

1. Take a copy in Eclipse of your JAXWSSample service – rename it to **JAXWSSecure**
2. Two things you need to do manually to “really” rename this.
   1. First change the WebContent/WEB-INF/web.xml and edit the <display-name> element to match the project name.
   2. Go to your JAXWSSecure project properties (Right-click and then Properties). Edit the **Web Project Settings** to make sure it has the right **Context Root** of JAXWSSecure. 
3. We are going to start with just authentication using UsernameToken. This is the WS-Security equivalent of HTTP Basic Authentication.
4. Go to the webcontent/orderserviceimpl.wsdl and edit the WSDL to include the following security policy. Put it right at the top of the WSDL inside the main **definition** tag.   
     
   [You can find these snippets online here: http://freo.me/TMH3iq]

<wsp:Policy wsu:Id="UsernameToken" xmlns:wsu=

"http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd"

xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy"

xmlns:sp="http://docs.oasis-open.org/ws-sx/ws-securitypolicy/200702">

<wsp:ExactlyOne>

<wsp:All>

<sp:SupportingTokens>

<wsp:Policy>

<sp:UsernameToken sp:IncludeToken=".../IncludeToken/AlwaysToRecipient"/>

</wsp:Policy>

</sp:SupportingTokens>

</wsp:All>

</wsp:ExactlyOne>

</wsp:Policy>

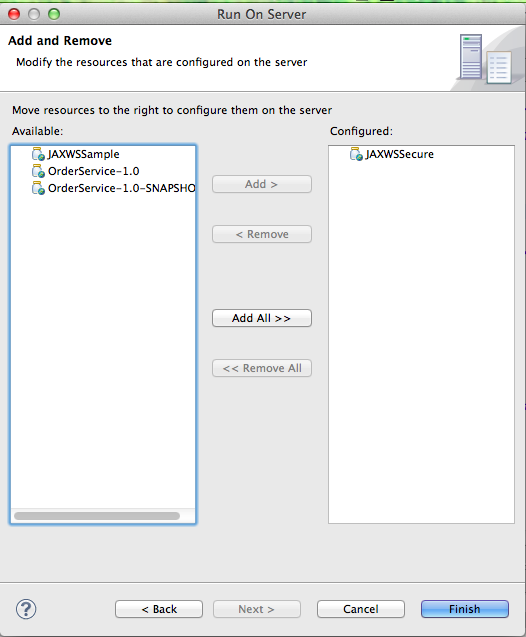
1. Now we need to *apply* this policy to the service. We can do this by attaching this policy into the service in several places. We are going to apply this to the SOAP binding. Find the **binding** element in your WSDL and add the next short snippet so it looks like this:

<wsdl:binding name="OrderServiceImplServiceSoapBinding" type="tns:OrderService">

**<wsp:PolicyReference xmlns:wsp="http://schemas.xmlsoap.org/ws/2004/09/policy"**

**URI="#UsernameToken"/>**

<soap12:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>

1. Run the server in Eclipse to test it is running on the right root. I would recommend removing the other webapps so you just have the JAXWSSecure service running: [Hint.. try remove all.]
2. CXF is smart enough to read and implement this policy. To check this out, create a new client using the command-line/Ant approach (the wizard in Helios Eclipse is a bit out of date and will complain about the policy elements).