PWS Java sample program

This document will show the user how to consume the PWS wsdl to create Java proxy classes. Sample code for the Authorize transaction will be provided also.

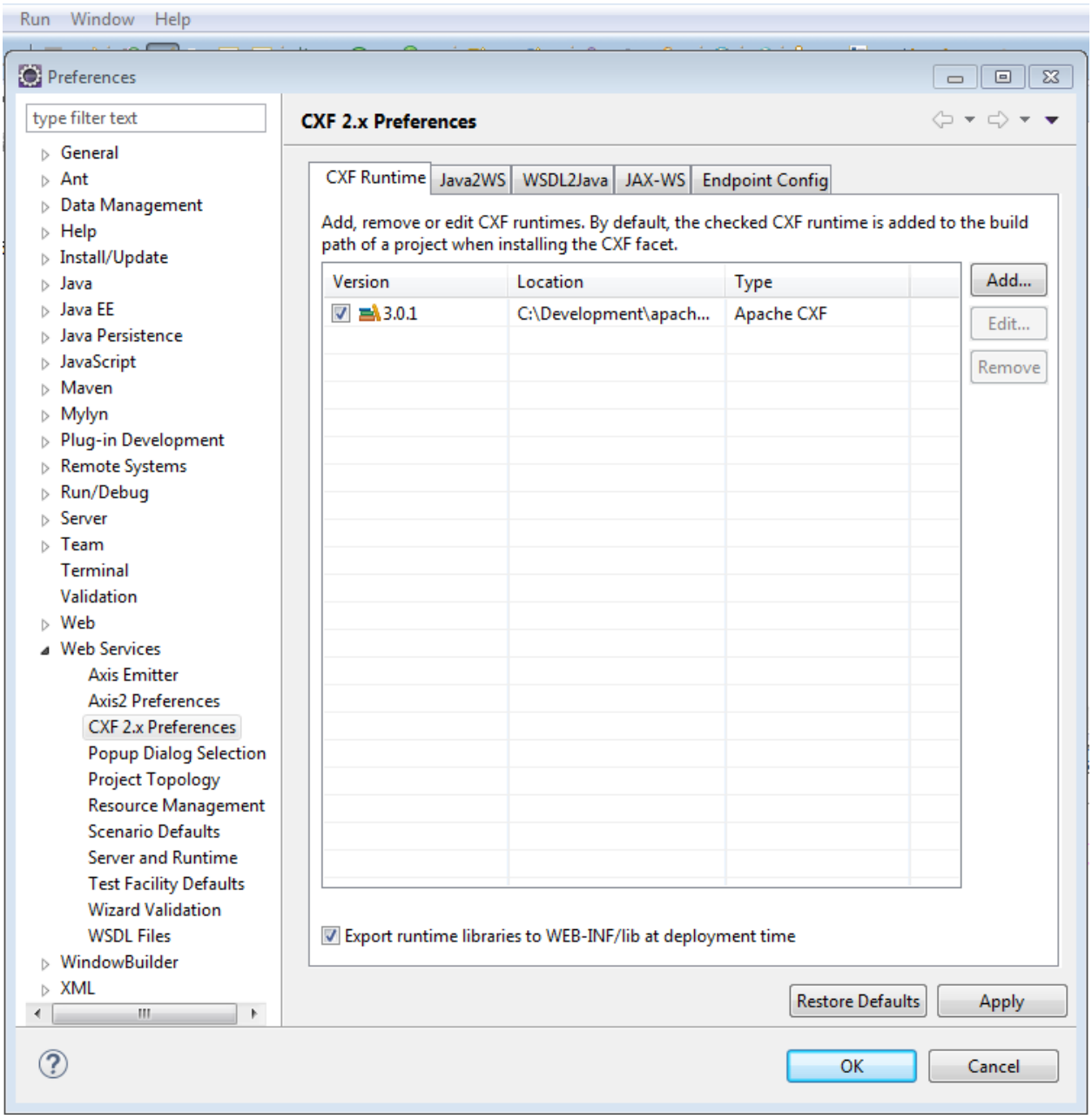
Resources used:

- Eclipse Luna - https://www.eclipse.org/downloads/
- Java 6 - http://www.oracle.com/technetwork/java/javasebusiness/downloads/java-archive-downloads-javase6-419409.html
- Included in Maven POM.xml file:
    - Apache CXF 3.01 – used to consume WSDL and build proxy classes for sending/receiving SOAP messages.
        - http://cxf.apache.org/download.html
    - GSON 2.2.4 – used to convert/revert JSON objects.
        - http://mvnrepository.com/artifact/com.google.code.gson/gson/2.2.4
    - Log4j – used for logging.
        - http://mvnrepository.com/artifact/log4j/log4j

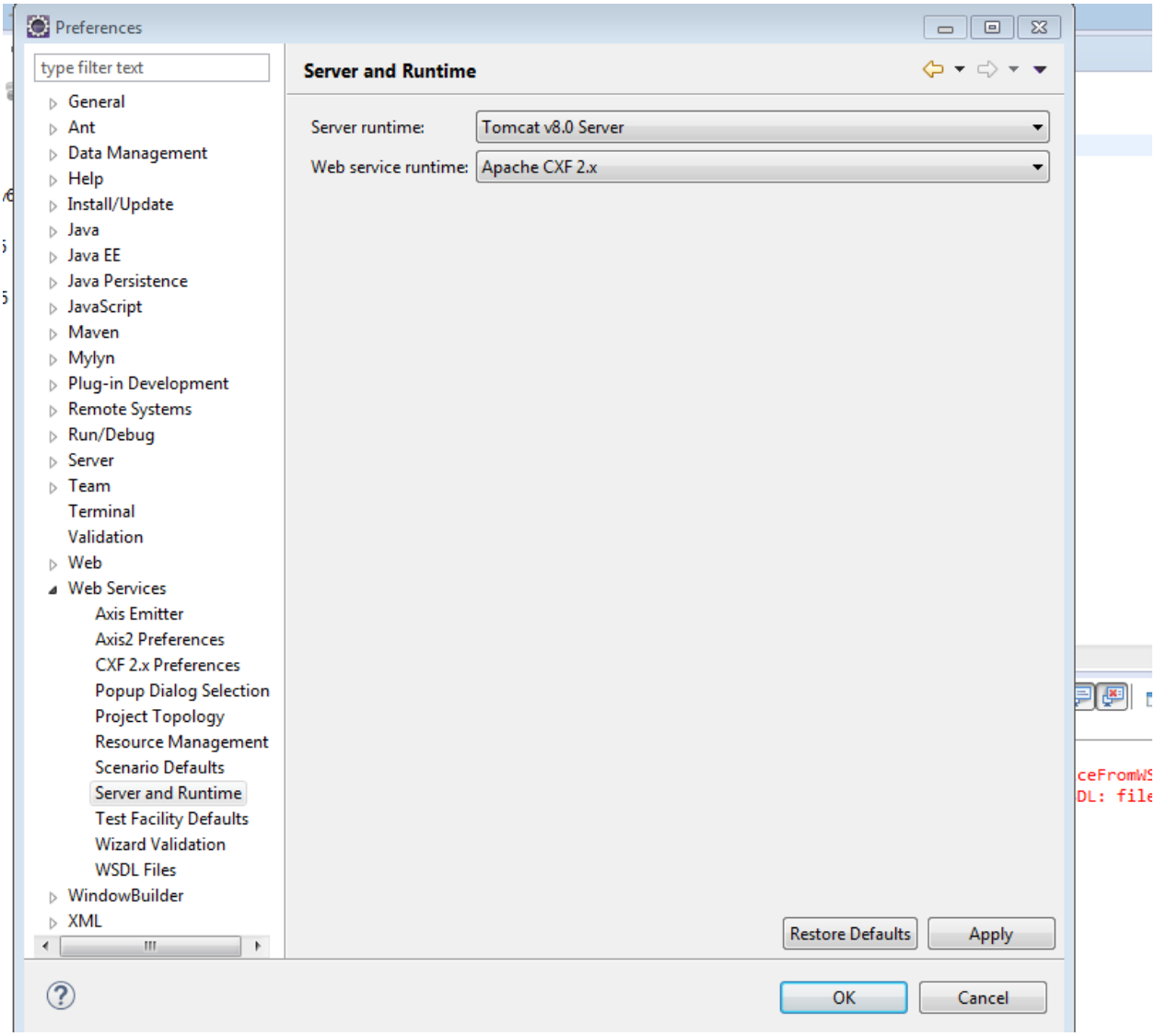
Setting up Apache CXF

NOTE: this is only required if you are going to PWS direct. If going through Apigee, this is not required.

1. Download CXF to your local environment.
2. In Eclipse navigate to Window -> Preferences -> Web Services -> CXF2.x Preferences.
    a. Under the CXF Runtime tab, add the location of the CXF folder.



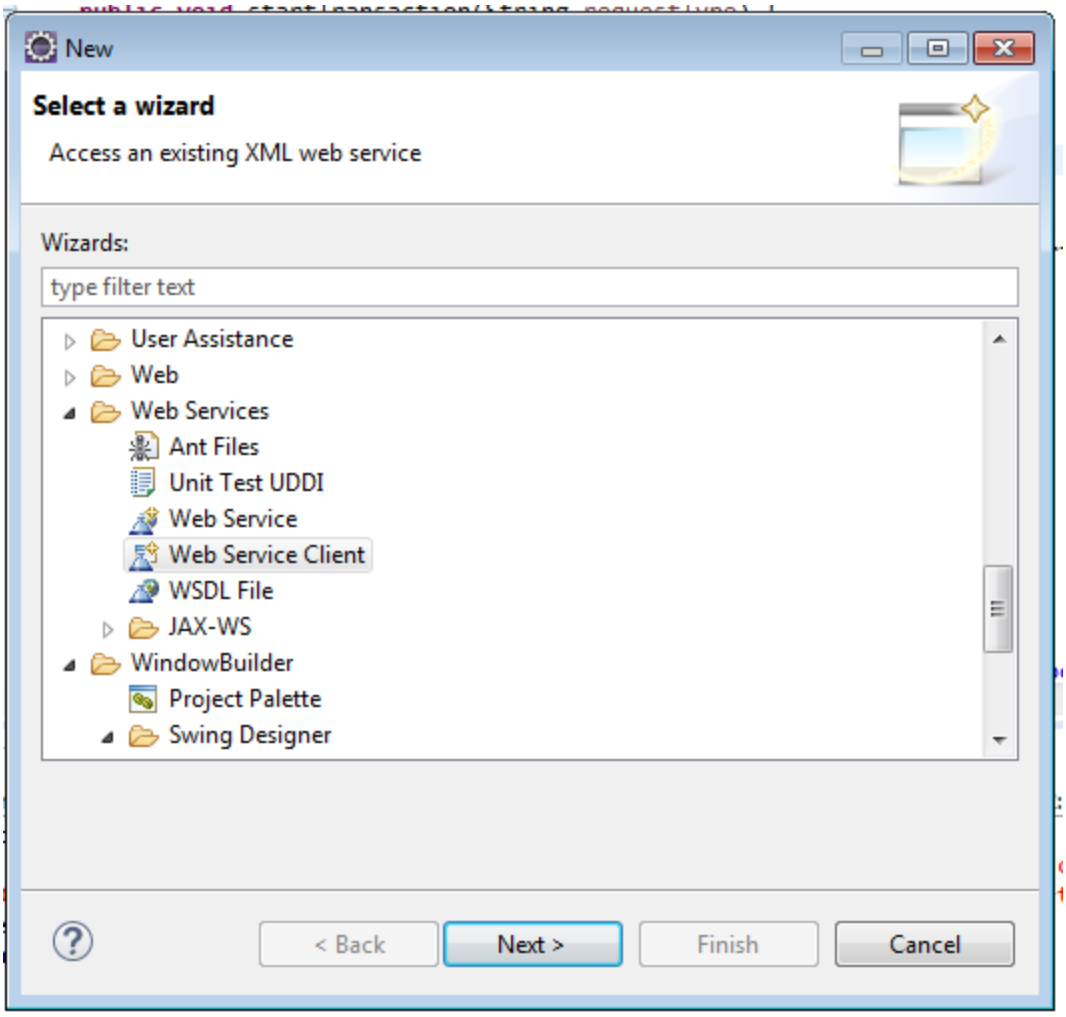
b. In the same location, navigate to Server and Runtime (Window -> Preferences -> Web Services -> Server and Runtime. Choose your server and then set the Web Service Runtime environment to Apache CXF 2.x.



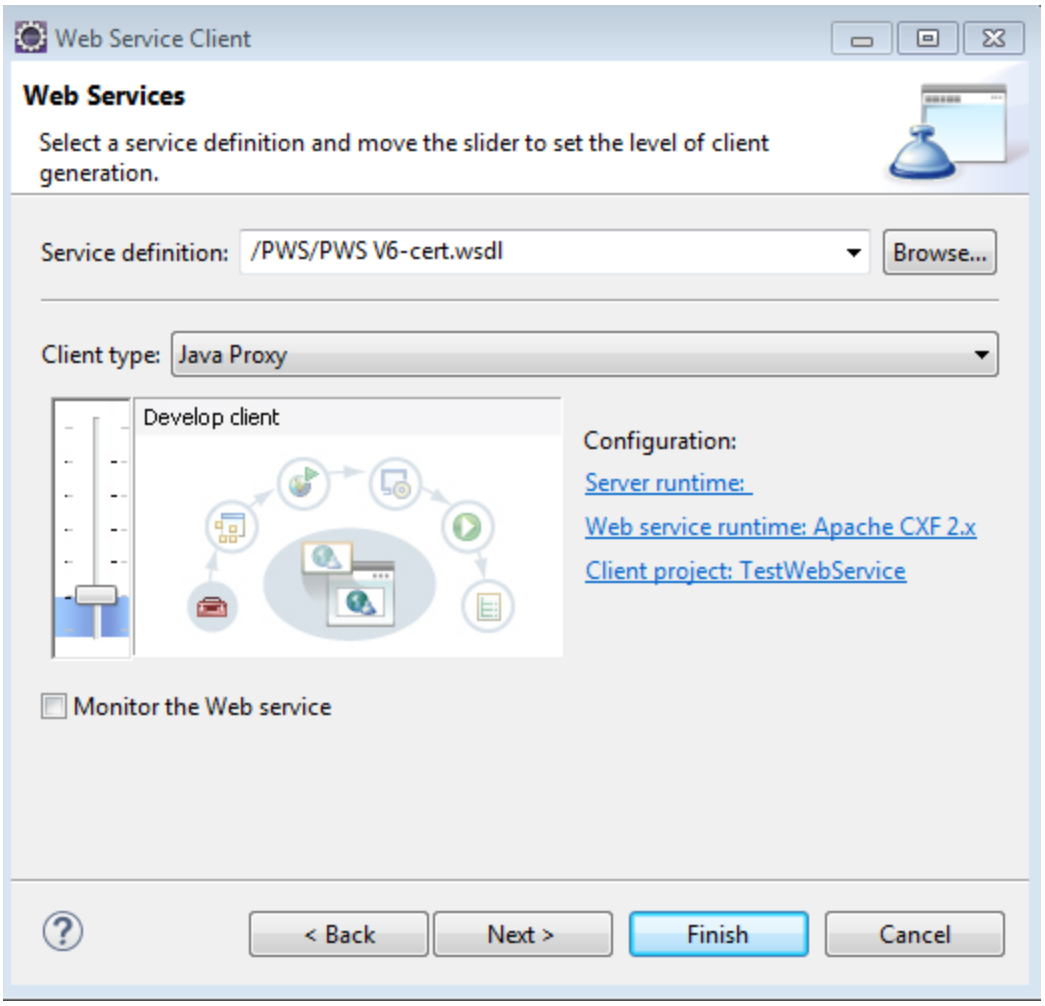
c. Now you are ready to create your web service client.

Create JAX-WS web service client using Apache CXF

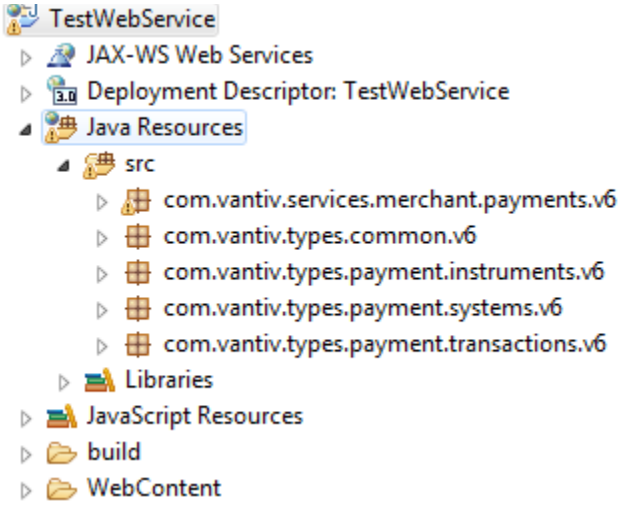
1. Create a new Dynamic Web Project within eclipse.
2. Right click on your project, New -> Other -> Web Services -> Web Service Client



3. In Service definition, browse to your WSDL file. (Must be in your workspace)
    a. Set the slider to “Develop Client”
    b. Make sure Web Service Runtime is set to Apache CXF 2.x



4. Make sure the proxies were created under Java Resources -> src in the project navigator.



5. That's it, you've now consumed the WSDL and are ready to start using the PWS api.

Sample code initializing the client

1. Sample code initializing the client.

```
/*
	 * Sets up and initializes the client.
	 */
	public void setup() {
		System.out.println("Setting up client...");

		// Workaround for sslSocketFactory error
		// Security.setProperty("ssl.SocketFactory.provider",
		// "com.ibm.jsse2.SSLSocketFactoryImpl");
		// Security.setProperty("ssl.ServerSocketFactory.provider",
		// "com.ibm.jsse2.SSLServerSocketFactoryImpl");

		// Create a URL from the file path location of the wsdl
		URL url = null;
		try {
			url = new File(wsdlLocation).toURI().toURL();
		} catch (MalformedURLException e) {
			e.printStackTrace();
		}

		// create service
		PaymentPortTypeService service = new PaymentPortTypeService(url);


		/*
		 * Handlers are used to set the security headers on the SOAP envelope.
		 * This is essential for setting the username and password. As PWS does
		 * a credential check on the header.
		 */
		PaymentsHandlerResolver handlerResolver = new PaymentsHandlerResolver(
				user, pass);
		service.setHandlerResolver(handlerResolver);

		// create client
		client = service.getPaymentPortTypeSoap11();

		System.out.println("Done");
	}
```

2. You will need the handlers to set the username/password within the header unless you prefer to use a different way. The two handlers needed are provided below.

```
import java.util.Set;

import javax.xml.namespace.QName;
import javax.xml.soap.SOAPElement;
import javax.xml.soap.SOAPEnvelope;
import javax.xml.soap.SOAPHeader;
import javax.xml.ws.handler.MessageContext;
import javax.xml.ws.handler.soap.SOAPHandler;
import javax.xml.ws.handler.soap.SOAPMessageContext;

/**
 */
public class WsseHeaderHandler implements SOAPHandler<SOAPMessageContext> {

    public static final String WSSE_SECEXT_XSD_URL = "http://docs.oasis-
    open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd";
    public static final String WSSE_UTIL_XSD_URL = "http://docs.oasis-
    open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd";
    public static final String WSSE_PASSWORD_XSD_URL = "http://docs.oasis-
    open.org/wss/2004/01/oasis-200401-wss-username-token-profile-1.0#PasswordText";

    private String username;
    private String password;


    public WsseHeaderHandler(String username, String password) {
        this.username = username;
        this.password = password;
    }

    public boolean handleMessage(SOAPMessageContext smc) {

        Boolean outboundProperty = (Boolean)
       mc.get(MessageContext.MESSAGE_OUTBOUND_PROPERTY);

        if (outboundProperty.booleanValue()) {

            try {
                SOAPEnvelope envelope = smc.getMessage().getSOAPPart().getEnvelope();
                          SOAPHeader header = envelope.getHeader();
                          if (header == null)
                                 header = envelope.addHeader();

                SOAPElement security =
                header.addChildElement("Security", "wsse", WSSE_SECEXT_XSD_URL);

                SOAPElement usernameToken =
                security.addChildElement("UsernameToken", "wsse");
                usernameToken.addAttribute(new QName("xmlns:wsu"),WSSE_UTIL_XSD_URL);

                SOAPElement usernameElement =
                        usernameToken.addChildElement("Username", "wsse");
                          // System.out.println("setting username to " + username );
                usernameElement.addTextNode(username);
```

```
                SOAPElement passwordElement =
                        usernameToken.addChildElement("Password", "wsse");
                passwordElement.setAttribute("Type", WSSE_PASSWORD_XSD_URL);
                //System.out.printf("setting password to %s%n", password);
                passwordElement.addTextNode(password);
            } catch (Exception e) {
                e.printStackTrace();
            }

        }

        return outboundProperty;
    }

       public Set getHeaders() {
              // throw new UnsupportedOperationException("Not supported yet.");
              return null;
       }

       public boolean handleFault(SOAPMessageContext context) {
              // throw new UnsupportedOperationException("Not supported yet.");
              return true;
       }

       public void close(MessageContext context) {
              // throw new UnsupportedOperationException("Not supported yet.");
       }
}
```

```
import java.util.ArrayList;
import java.util.List;

import javax.xml.ws.handler.Handler;
import javax.xml.ws.handler.HandlerResolver;
import javax.xml.ws.handler.PortInfo;
import javax.xml.ws.handler.soap.SOAPHandler;
import javax.xml.ws.handler.soap.SOAPMessageContext;

/**
*/
public class PaymentsHandlerResolver implements HandlerResolver {

    private final List<Handler> handlerChain = new ArrayList<Handler>();

    public PaymentsHandlerResolver(String username, String password) {
       WsseHeaderHandler loginHeaderHandler = new WsseHeaderHandler(username,
       password);
         handlerChain.add(loginHeaderHandler);
    }

    public void addMessageHandler( SOAPHandler<SOAPMessageContext> handler )
```

```
    {
        handlerChain.add(handler);
    }

    public List<Handler> getHandlerChain(PortInfo portInfo) {
        return handlerChain;
    }
}
```

3. To test the client connection, you can use a simple echo test:

```
public boolean invokeEchoTest() {
            System.out.println("Validating connection with echo test...");
            boolean b = false;
            EchoRequest echo = new EchoRequest();
            Date d = new Date();
            String test = "This is my echo test: " + d.getTime();
            echo.setTest(test);

            // This command can be used to see the raw xml request.
            // com.sun.xml.internal.ws.transport.http.client.HttpTransportPipe.dump
            // = true;
            EchoResponse resp = new EchoResponse();

            try {

                  resp = client.echo(echo);
            } catch (Exception e) {
                  e.printStackTrace();
            }

            // System.out.println(resp.getResponse());

            if (resp.getResponse().equals(test)) {
                  System.out.println("Echo test successful");
                  b = true;
            } else
                  System.out.println("Echo test did not return the expected
            value");

            return b;
      }
```

4. To send an authorize request, you must create an AuthorizeRequest object:
    a. In this method, I use a variable globals, which is another class that contains all the values.

```
public AuthorizeRequest createAuthorizeRequest() {
	auth.setDraftLocatorId(globals.getDraftLocatorId());
	auth.setMerchantRefId(globals.getMerchantRefId());

	// auth.setNetworkResponseCode(globals.getNetworkResponseCode());
	auth.setPurchaseOrder(globals.getPurchaseOrder());
	auth.setReferenceNumber(globals.getReferenceNumber());
	auth.setReportGroup(globals.getReportGroup());
	auth.setSystemTraceId(globals.getSystemTraceId());

	auth.setBillPaymentPayee(globals.getBillPaymentPayeeType());

	auth.setCredit(globals.getCreditInstument());

	// auth.setGift(value);
	// auth.setIncrementalAuthorization(value);
	auth.setMerchant(globals.getMerchant());
	auth.setPaymentType(PaymentType.fromValue(globals.getPaymentType()));
	if (globals.isTaxPresent())
		auth.setTax(globals.getTax());
	// auth.setTokenRequested(value);
	auth.setTransactionAmount(globals.getTransactionAmountType());
	auth.setTransactionTimestamp(util.stringToXMLGregorian(globals
			.getTransactionTimestamp()));
	auth.setTransactionType(TransactionTypeType.fromValue(globals
			.getTransactionType()));

	return auth;
}
```

b. Call the client.authorize(AuthorizeRequest) method to send the authorize message.

```
public void invokeAuthorize(PaymentPortType client) {

	AuthorizeResponse resp = new AuthorizeResponse();
	// com.sun.xml.internal.ws.transport.http.client.HttpTransportPipe.dump
	// = true;
	try {
		resp = client.authorize(auth);
	} catch (ServerFault e) {
		System.out.println("Server Fault: " +
		e.getFaultInfo().getMessage());
	} catch (RequestValidationFault e) {
		System.out.println("Validation Fault: "+
		e.getFaultInfo().getMessage());
	}
	System.out.println(resp.getTransactionStatus());
}
```