Testing Services Over JMS

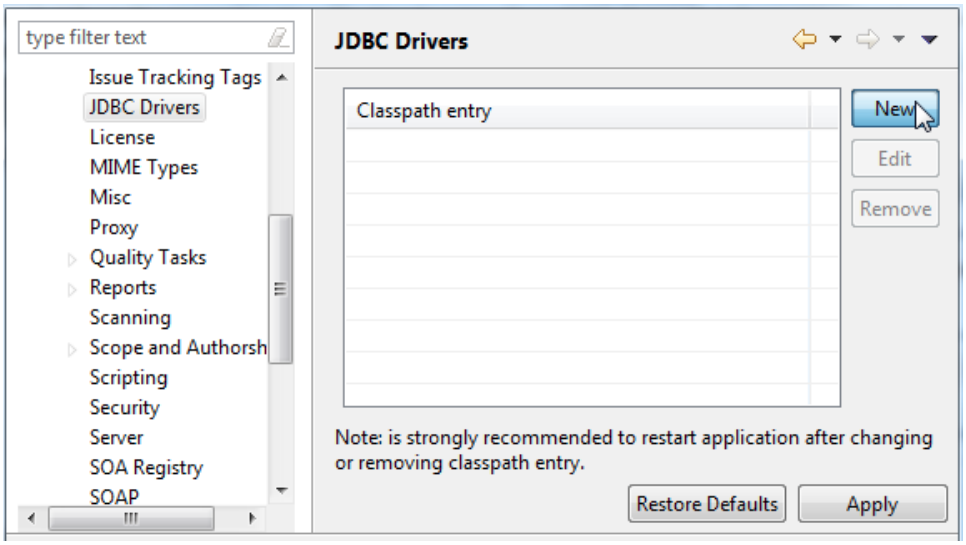
Parasoft's solution provides extensive support for generating and consuming JMS messages, and simulating various patterns-including point-to-point and publish-and-subscribe patterns. This allows for end-to-end testing and validation of messaging systems. These same scenarios can be scaled into load tests.

The exercises in this lesson will use the ParaBank application introduced in Setting Up ParaBank.

Preparation: Running ParaBank

To configure SOAtest for the ParaBank tests:

1. Add the JDBC driver to the SOAtest JDBC Driver preference page as follows:
    a. Choose **Parasoft> Preferences**, then open **Parasoft > JDBC Drivers**.
    b. Click **New**.

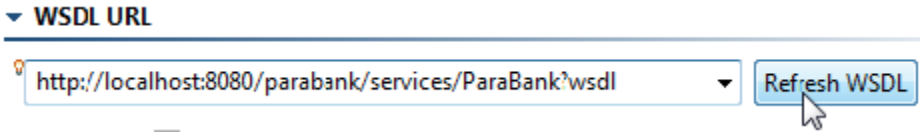


    c. Navigate to your ParaBank workspace, select `{PARABANK}/WebContent/WEB-INF/lib/hsqldb-<version>.jar` and click **Open**.
    d. Click **OK** and apply the changes.
2. Add the ActiveMQ driver to the SOAtest System Properties preference page as follows:
    a. Choose **Parasoft> System Properties** from the main menu
    b. Click **Add JARs**.
    c. Navigate to your ParaBank workspace, select `{PARABANK}/WebContent/WEB-INF/lib/activemq-client-<version>.jar`, then click **Open**.
3. Ensure that the ParaBank Tomcat 8.5 Server is Started and Synchronized.

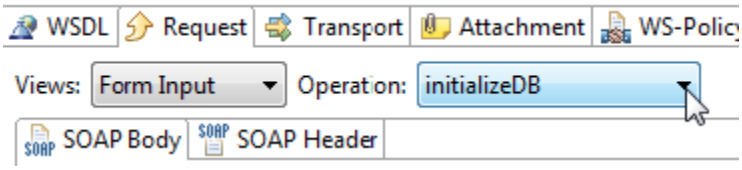
Testing JMS Services

To test JMS services provided by the ParaBank application:

1. Right click the main project you have been using in this tutorial, then choose **Add New > Test (.tst) File**.
2. Enter `LoanProcessor` in the File Name field, then click **Next**.
3. Select **Empty**, then click **Finish**.
4. Right click the **Loan Processor> Test Suite: Test Suite** node, then choose **Add New> Test**.
5. Add a SOAP Client tool as follows:
    a. Right click the **Loan Processor> Test Suite: Test Suite** node, then choose **Add New> Test**.
    b. Select **SOAPClient**, then click **Finish**.
    c. In the SOAP Client editor that opens, rename the SOAP Client to `initializeDB`.
    d. To to the **WSDL** tab and enter `http://localhost:8080/parabank/services/ParaBank?wsdl` into the **WSDLURL** field.
    e. Click **RefreshWSDL** to propagate the WSDL to the other sections of the SOAP Client.



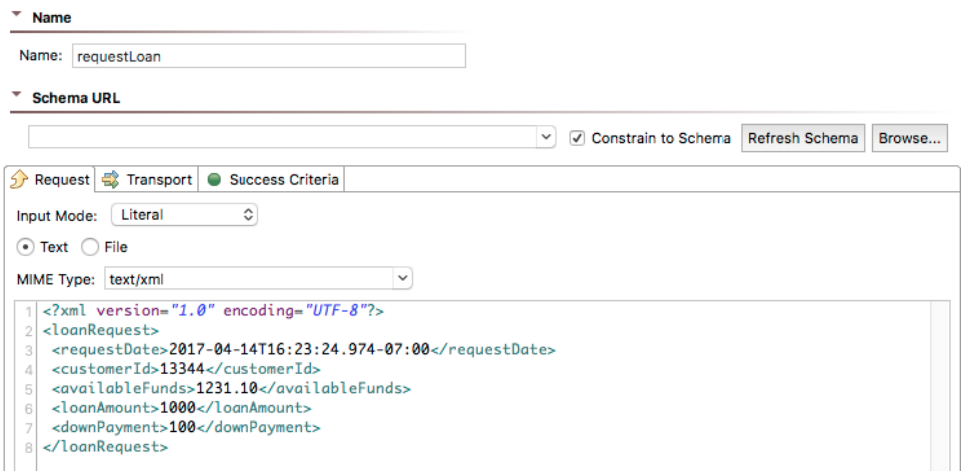
f. Go to the **Request** tab and ensure that **Operation** is set to **initializeDB**. This will reset the ParaBank database for this example.



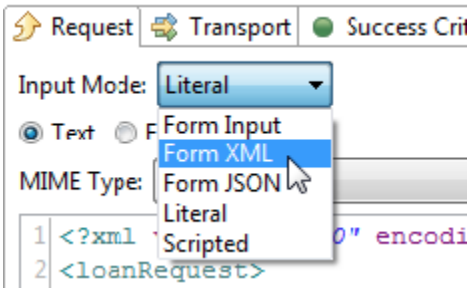
g. Save the initializeDB SOAP Client.

6. Add a Messaging Client tool as follows:
   a. Right click the **Loan Processor> Test Suite: Test Suite** node, then choose **Add New> Test**.
   b. Select **MessagingClient**, then click **Finish**.
   c. In the Messaging Client editor that opens, rename the Messaging Client to `requestLoan`.
   d. Click the **Request** tab and set **InputMode** to **Literal**.
   e. Replace the `<Placeholder/>` element with the following XML:

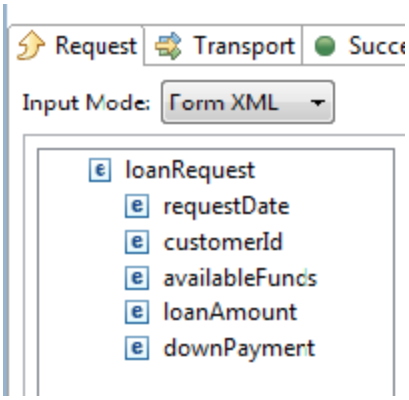
```
<?xml version="1.0" encoding="UTF-8"?>
<loanRequest>
 <requestDate>2017-04-14T16:23:24.974-07:00</requestDate>
 <customerId>13344</customerId>
 <availableFunds>1231.10</availableFunds>
 <loanAmount>1000</loanAmount>
 <downPayment>100</downPayment>
</loanRequest>
```



f. Save the Messaging Client.
g. Switch the **InputMode** to **FormXML**.

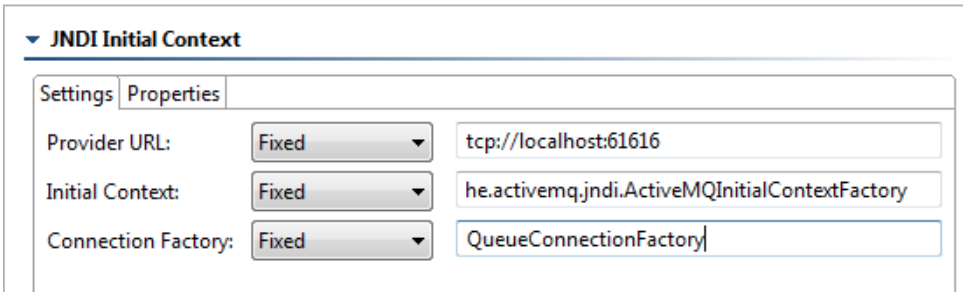


If prompted, click **Yes** to propagate the values. You will see the tree structure of the loanRequest element.

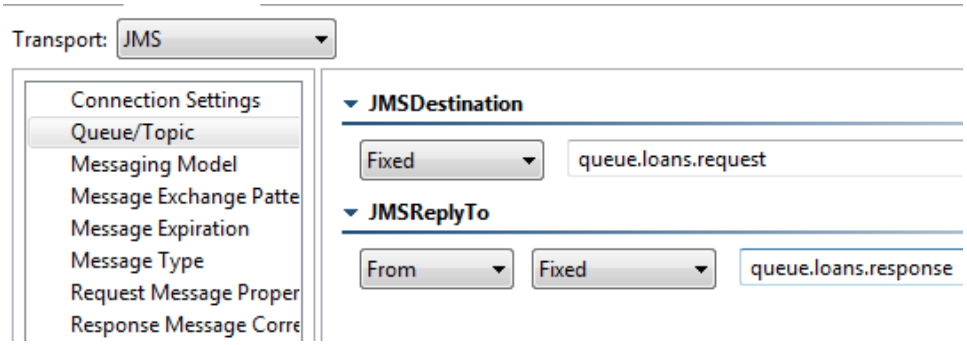


h. Go to the **Transport** tab, set **Transport** to **JMS**, then enter the following:

- **ProviderURL:** tcp://localhost:61616
- **InitialContext:** org.apache.activemq.jndi.ActiveMQInitialContextFactory
- **Connection Factory:** QueueConnectionFactory



i. Select **Queue/Topic** from the left panel, then enter `queue.loans.request` for the **JMSDestination** and `queue.loans.response` for the **JMSReplyTo**.



j. Save the requestLoan Messaging Client.

7. Run the test suite.

8. Expand the **requestLoan** Messaging Client node, double click the Traffic Viewer.

9. Open the Traffic Viewer's **Response** tab and note that the <approved> element returns true.