Lab B - Exercise 2: Use Undelivered Queue

Overview

In this exercise, you will use the maxRedelivery property of the queue, as well as the EMS Message Property JMS_TIBCO_PRESERVE_UNDELIVERED to place messages that were not confirmed onto the system queue for undelivered messages. You will also develop a new process to retrieve messages from the undelivered queue, thus removing the fault message handling from the main path of execution.

Steps

1. Set the maxRedelivery property of the queue.

- Log into TIBCO EMS Administration Tool
  - *Applications* > *TIBCO* > *EMS* > ***TIBCO EMS Administration Tool***
  - Press <Enter> twice to log in as the default user **admin**
- Issue the following command:
  `setprop queue queue.sample maxRedelivery=2`

2. Modify the Queue Sender process to send messages without no expiry time.

- Switch to **Design** perspective
- In Project Explorer navigate to *EMS206Project* > *Processes* > *LabB*
- **Copy** and **Paste** the *Queue Sender* into the same folder
  - Rename the copy
    - Name: **`QueueSenderWithPreserveUndelivered`**
- Remove JMSExpiration value from the message header
  - Open *QueueSenderWithPreserveUndelivered* and select **JMSSendMessage**
  - Select *Properties* > *Input*
  - Remove expiration value from the message header
    - Right-click *Activity Input* > ***JMSExpiration*** and select *Remove Mapping*

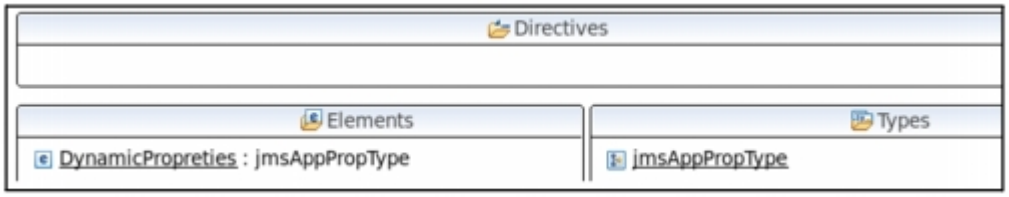
3. Create a new JMS application property.

- In Project Explorer, right-click *EMS206Project* > *Resources* > ***EMS206project***
  - Select *New* > *Other* > *TIBCO Resource* > ***JMS Application Properties***
    - Click **Next**

Tip: There are two folders with similar names - **TIBCO Resource** and **TIBCO Resources** - make sure you select the correct one.

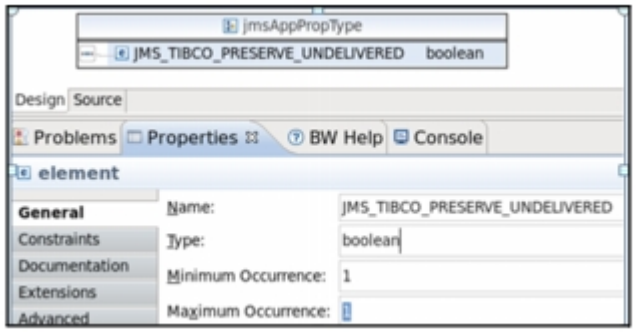
- File name: **`EMS206Properties.xsd`**
- Click **Finish**
- Observe that the file is created in *EMS206Project/Resources/**EMS206project***

- In Project Explorer double-click **EMS206Properties.xsd**
  - Under **Elements** Section, right-click and select *Add Element*
  - In *Properties* view, configure:
    - Name: **`DynamicProperties`**
    - Type: **Browse** (select from dropdown)
      - Types: **jmsAppPropType** (select from the list)
      - Click **OK**
  - Save



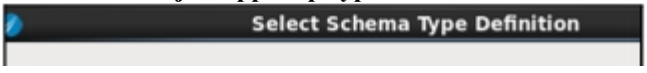
4. Create the schema for your JMS application property.

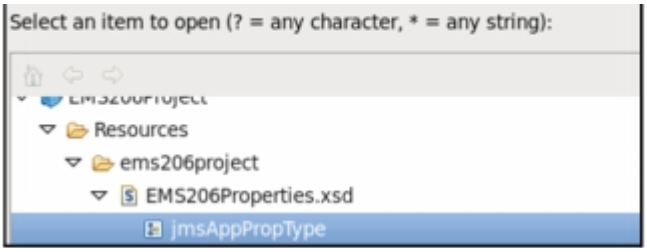
- Under **Types** Section, double-click **jmsAppPropType**
  - Notice you are in the Inline schema view
  - Right-click **jmsAppPropType** and select *Add Element*
  - In *Properties* view configure your new element as follows:
    - Name: **`JMS_TIBCO_PRESERVE_UNDELIVERED`**
    - Type: **boolean** (select from dropdown)
  - **Save**



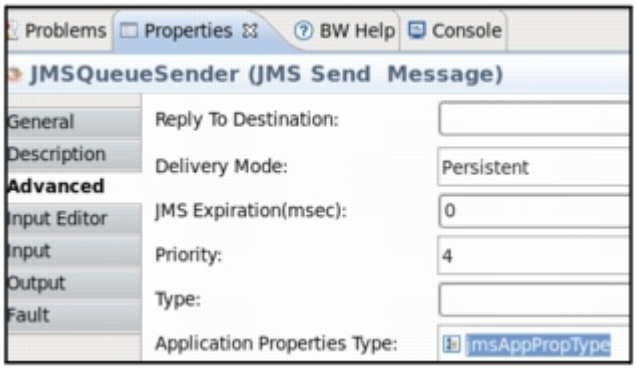
5. Use your JMS application property to set JMS_TIBCO_PRESERVE_UNDELIVERED.

- Select **JMSSendMessage** in the *QueueSenderWithPreserveUndelivered* process diagram
  - Choose *Properties* > *Advanced* tab
    - Application Properties Type: Click icon  to open **Select Schema Type Definition** dialog
      - Browse and select **jmsAppPropType**





- Click **OK**



- Choose *Properties* > *Input*
  - Expand *Activity Input* > *Other Properties*
  - Notice that the property **JMS_TIBCO_PRESERVE_UNDELIVERED** is listed
  - Map its value using the XPath Expression as shown:

- **Save** the project

6. Test the redelivery with conditional confirmation to the queue with maxRedelivery property.

- Configure Components list to include:
  - *QueueSenderwithPreserveUndelivered*
  - *TIBCO-EMS-Explicit-Ack Queue Receiver*
- Launch the debugger
  - The *QueueSenderwithPreserveUndelivered* job executes
  - Notice that the *TIBCO-EMS-Explicit-Ack Queue Receiver* is executed exactly 19 times

7. Review and analyze the results of the test.

- Explore the completed job executions
  - Verify that the *QueueSenderwithPreserveUndelivered* is executed once and sent 10 messages as expected
  - Explore completed jobs for *TIBCO-EMS-Explicit-Ack Queue Receiver*
    - Nine messages were not confirmed, and hence redelivered
  - The only message that is confirmed is the second message
    - Check the Console view to verify that this is the only message logged
    - All other messages are redelivered once before maxRedelivery is reached

Note: The **maxRedelivery** property specifies the number of attempts the server should make to deliver a message sent to a queue. The maxRedelivery was set to 2 - each message is redelivered only once after the first, initial, delivery is not confirmed.

- **Terminate** the debugger
- Verify that the undelivered messages are sent to the system queue
  - From the EMS Administration Tool, execute the following command:
    `show queue $sys.undelivered`
    - There are 9 messages on the queue

8. Create and configure a process to get a message from the undelivered queue.

- Switch to **Design** perspective
- Create a new process in *EMS206Project/Processes/**LabB***
  - Name: **`FetchUndelivered`**
- Add the following activities to the process:
  - **Get JMS Queue Message** from *JMS* palette
  - **Log** from *General Activities* palette
  - **Timer** from *General Activities* palette
- Create transitions

- In the **GetJMSQueueMessage** activity, *Properties* > *General* tab, configure:
  - JMS Connection: Browse and select **EMS206project.JMSConn**
  - Destination: **`$sys.undelivered`**
  - **Save** the project
- Select the **Log** activity, *Properties* >*Input* tab
  - In the Activity Input, create the following XPath expression for the **message**

  - **Save** the project

9. Retrieve a message from the undelivered queue.

- Run the process *FetchUndelivered* in the debugger

Tip: You must first configure the Components list with only the FetchUndelivered.

  - Verify that the process executes immediately
  - Select the *Job Data* tab in the **Log** activity to check the message
- **Terminate** the debugger and switch to **Design** perspective

- Select *File* > ***Close All*** to close all Process Editors