

Lab C - Exercise 3: Use Message Compression

Overview

In this exercise, you use a JMS Application property resource to add the TIBCO-specific application property `JMS_TIBCO_COMPRESS` to large messages. This boolean property will be set at run time based on the length of the message body, to control if the message will be compressed before being sent to the EMS Server.

Steps

1. Add a new JMS Application Property resource.

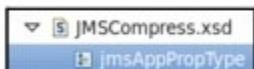
- In Project Explorer, navigate to *EMS206Project > Resources > EMS206project*
 - ◆ Right-click **EMS206project** and choose *New > Other > JMSApplicationProperties*
 - File name: **JMSCompress.xsd**
 - Click **Finish**
 - ◆ In the Project Explorer, navigate to *Resources/EMS206project* folder
 - ◆ Double-click **JMSCompress.xsd**
 - ◆ Under **Elements** section, right-click and Choose *Add Element*
 - ◆ Configure the new element in the *Properties* view
 - Name: **JMSComp**
 - Type: **Browse** (select from dropdown)
 - Types: Select **jmsAppPropType** from the list
 - Click **OK**
 - ◆ Under **Types** section, double-click **jmsAppPropType**
 - Notice you are in the Inline schema view
 - Right-click **jmsAppPropType** and *Add Element*
 - ◆ Click on the element and modify it to **JMS_TIBCO_COMPRESS** of type **boolean**



- ◆ Save the changes

2. Implement conditional message compression based on the message size.

- Modify the *Publisher-Large Message* process
- Open the process diagram and select the **JMS Topic Publisher** activity
 - ◆ Select the *Properties > Advanced* tab
 - Application Properties Type: **JMSCompress.xsd**. **jmsAppPropType** (browse and select)



- Click **OK**
- ◆ Select *Properties* > ***Input*** tab
 - Expand *Activity Input* > ***Other Properties***
- ◆ Create the XPath formula for JMS_TIBCO_COMPRESS:
 - Expand the available *Process Data* on the left until you can select the element **\$ReadFile/fileInfo/size**
 - Drag it to the *ActivityInput* element **OtherProperties/JMS_TIBCO_COMPRESS**
 - Type the condition **> 50000** at the end



- ◆ Save

3. Publish large amount of data with application property JMS_TIBCO_COMPRESS.

- Configure the Components list
 - ◆ *Publisher-LargeMessage*
- Run the application
 - ◆ *Console* view opens automatically
- Wait for the job to finish publishing data
 - ◆ The last message ID is printed to the application log in the *Console* view
- Terminate the application

4. View the effects of compression on use of space in EMS Server.

- Observe volume of pending messages in the topic `topic.sample`
 - ◆ From EMS Administration tool, issue the command
`show topic topic.sample`

```
Subscriptions: 1
Durable Subscriptions: 1
Consumers: 0
Durable Consumers: 0
Pending Msgs: 100, (100 persistent)
Pending Msgs Size: 47.7 MB, (47.7 MB persistent)
```

- Observe the used space in the corresponding file store
 - ◆ Issue the command:

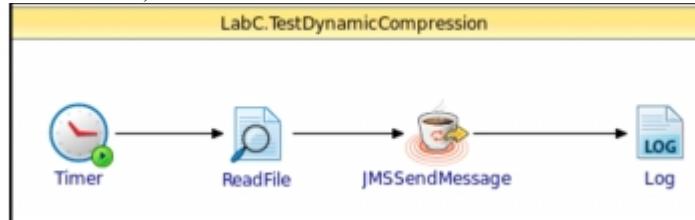
```
show store $sys.nonfailsafe
```

Used Space:	47.8 MB (97.8%)
Fragmentation:	1%
Message Count:	100
Message Size:	47.7 MB

Note: Using JMS_TIBCO_COMPRESS lead to over 50% decrease in the size of the messages written to the file store.

5. Verify that compression is applied dynamically for large files only.

- Create a new process in *EMS206Project/Processes/LabC* folder
 - ◆ Process Name: **TestDynamicCompression**
- Add activities to the process and create transitions as shown below
 - ◆ **Timer** (from *General Activities*)
 - ◆ **Read File** (from *File*)
 - ◆ **JMS Send Message** (from *JMS*)
 - ◆ **Log** (from *General Activities*)



- Configure activities and mappings:
 - ◆ **ReadFile**
 - Select *Properties > General*
 - File Name: `/home/tibco/EMS206Files/1_mb_file.txt`
 - ◆ **JMSSendMessage**
 - Select *Properties > General*
 - Messaging Style: **Topic** (from dropdown)
 - JMS Connection: Browse for **EMS206project.JMSConnWithClientID**
 - Destination: **topic.sample**
 - Select *Properties > Advanced*
 - Application Properties Type: Browse for **JMSCompress.jmsAppPropType**
 - Select *Properties > Input*
 - ActivityInput > Body: **\$ReadFile/fileContent/textContent**
 - ActivityInput > OtherProperties > **JMS_TIBCO_COMPRESS: \$ReadFile fileInfo/size > 50000**
 - ◆ **Log**
 - Select *Properties > Input*
 - ActivityInput > message: **\$ReadFile fileInfo/fileName**
- **Save**

6. Debug *TestDynamicCompression* to identify when the compression is applied.

- Configure the Components list
 - ◆ *TestDynamicCompression*
- Launch the debugger
 - ◆ Wait for the job to finish publishing data
- In *BusinessWorks Jobs* view, select the **JMSSendMessage** activity
 - ◆ Select *Job Data > Input* tab
 - Select *Input Data* tab and expand *OtherProperties*

- Verify that the JMS_TIBCO_COMPRESS property evaluated to **true** at execution time

- Terminate the debugger
 - Modify the file name to be sent
 - ◆ Double-click **ReadFile** Activity in the process diagram
 - ◆ Select *Properties* > **Input**
 - fileName: `/home/tibco/EMS206Files/10_bytes_file.txt`
 - ◆ Save
 - Relaunch the debugger
 - ◆ Verify that the `JMS_TIBCO_COMPRESS` property evaluated to **false** this time
 - **Terminate** the debugger
 - Switch to **Design** perspective
 - Select *File* > **Close All** to close all Process Editors

