

CONFIGURING, DEPLOYING AND MONITORING WEBUI BASED SCENARIO USING SAP CLOUD PLATFORM INTEGRATION

Exercise07: SAP Cloud Platform Integration Components Used:

- SOAP Sender Adapter
- Data Store
- Groovy Script
- Integration process with Transaction Handling

INTEGRATION SCENARIO

Retail customer has an offline warehouse data which need to be persisted to multiple data stores enabled with transaction management

Use Case:

This Integration flow basically showcases simple scenario with 3 use cases:

1. Transaction handling enabled, Script doesn't throw exception:

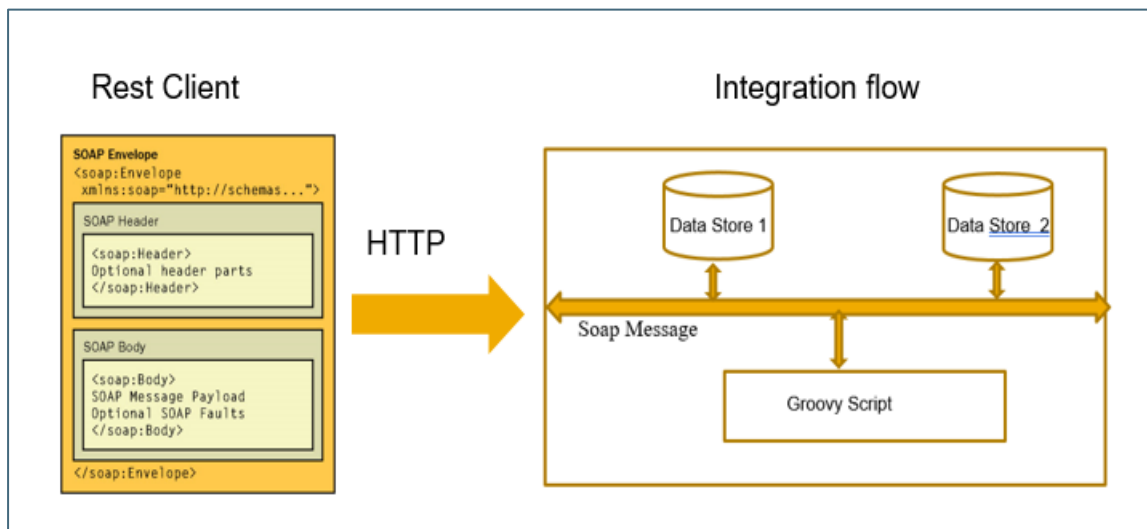
When user sends soap message, it will write to first data store, then since script don't throws exception, it will also be written to the second data store.

2. Transaction handling enabled, Script throws exception:

When user sends soap message, it will write to first data store, then since script throws the exception, it will not be written to the second data store and it will be rolled back from the first data store due to entire transaction getting rolled back.

3. Transaction handling not enabled, Script throws exception:

When user sends soap message, it will write to first data store, then since script throws the exception, it will not be written to the second data store.

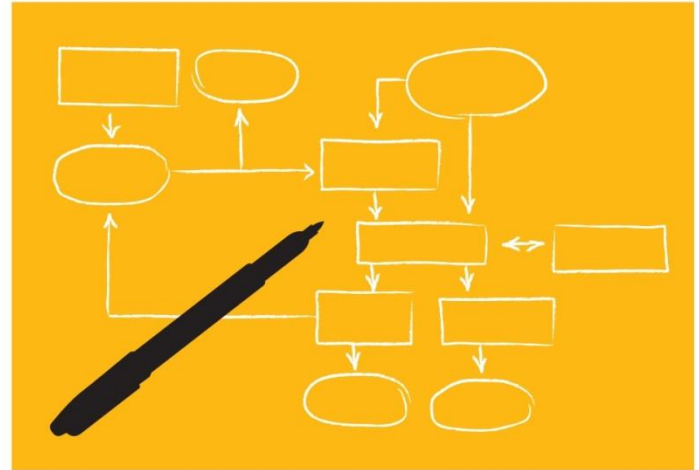


Welcome to the Integration Flow challenge!

In this exercise, your aim is to create an integration flow that solves a challenge (*described in the Integration scenario*).

And when you work your way through the exercise, our aim is that you learn:

1. How to access and work with the Cloud Platform Integration Web tooling
2. How to speed up your integration project by leveraging reference integration flows
3. How to customize a reference integration flow by configuring its connectivity and flow steps
4. Basic monitoring of an integration flow
5. Using Open-source tools to test your integration flow



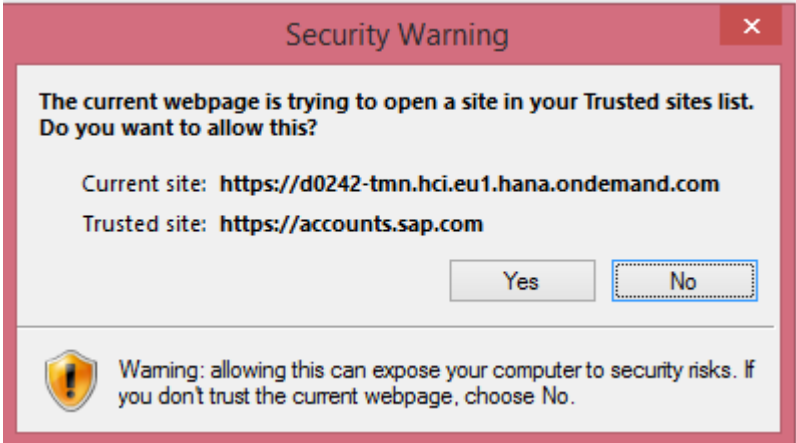
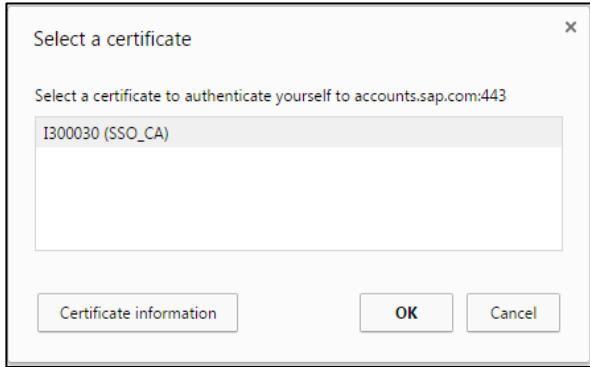
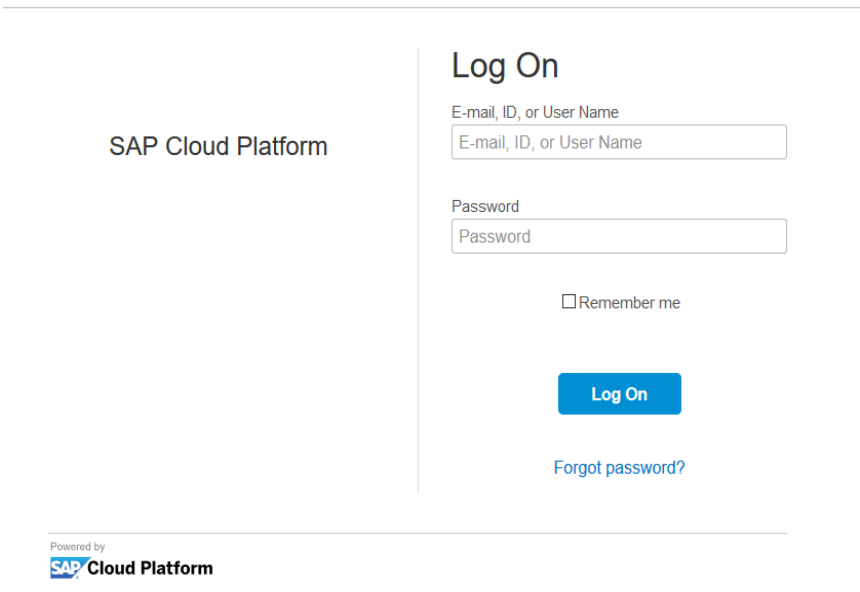
Exercise Files

Exercise Files are provided by the session moderator. Download and Extract them into one of your local folders for use later in your exercises and setup:

Note

1. In the exercise, we have used the notation XX to refer to the content created by you or your group uniquely. The session moderator shall assist you with assigning you/group the unique ID that you can use to replace XX.
2. In the exercise, we have used **d0242/d0243** as the example tenants. The final tenant details shall be provided by the session moderator.
3. Please note that colours and other visual appearance might differ slightly from the screenshot screens, as the CPI editor might have received feature upgrades since production of this content.

EXERCISE 07

Explanation	Screenshot
<p>Follow these steps for integration flow creation in Web UI.</p>	
<p>1) Access the Web application using Google Chrome (or IE10 Browser)</p> <ol style="list-style-type: none"> Open Google Chrome Copy the application URL or The URL that you can use will be assigned to you by the instructor. You will get a security warning if you want to open this site in your trusted sites list. <p>Accept it with 'Yes'.</p>	 <p>A security warning dialog box titled "Security Warning" with a red border and a close button (X) in the top right corner. The main text reads: "The current webpage is trying to open a site in your Trusted sites list. Do you want to allow this?". Below this, it shows "Current site: https://d0242-tmn.hci.eu1.hana.ondemand.com" and "Trusted site: https://accounts.sap.com". At the bottom right are "Yes" and "No" buttons, with "No" being highlighted with a dashed border. At the bottom left is a warning icon (exclamation mark in a shield) and text: "Warning: allowing this can expose your computer to security risks. If you don't trust the current webpage, choose No."</p>
<p>2) If you get displayed your Certificate List, click on 'Cancel'</p>	 <p>A dialog box titled "Select a certificate" with a close button (X) in the top right corner. The text inside says: "Select a certificate to authenticate yourself to accounts.sap.com:443". Below this is a list box containing "I300030 (SSO_CA)". At the bottom are three buttons: "Certificate information", "OK", and "Cancel".</p>
<p>3) You will now see the log-on screen for the SAP ID Service/SAP Cloud Platform. Enter the following credentials:</p> <p><i>User:</i> <Provided by instructor> <i>Password:</i> <Provided by instructor></p>	 <p>The SAP Cloud Platform log-on screen. On the left, it says "SAP Cloud Platform". On the right, under the heading "Log On", there are two input fields: "E-mail, ID, or User Name" and "Password". Below these is a checkbox labeled "Remember me". A blue "Log On" button is positioned below the checkbox. At the bottom right, there is a link that says "Forgot password?". At the very bottom, it says "Powered by SAP Cloud Platform" with the SAP logo.</p>

- 4) Now you will have access to the Web application. Familiarize yourself with the environment and choose the “Design” area. Here, you will create an Integration Package to store your iFlows for different Exercises

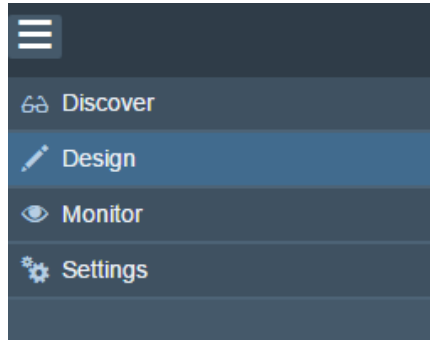
Click on **Create**

Enter Details

- a) **Name:** Cloud Platform, Integration Service Workshop (Exercises) Group_XX

NOTE: Replace XX with the group number provided by the instructor

- b) **Short Description:** EKT Cloud Platform, Integration Service
- c) **Version:** 1.0.0
- d) **Vendor:** SAP



Design / Create Import

Design

Design / New Package /

Cloud Platform, Integration Service Workshop (Exercises) Group_00

Header Overview Artifacts Documents Tags

*Name:

*Technical Name: ⓘ

*Short Description:

Version:

Vendor:

- 5) Click on Save

SAP Cloud Platform Integration Data Services ⓘ ⚙

Design / Cloud Platform, Integration Service Workshop (Exercises) Group_00 / Save Cancel Delete Package

Cloud Platform, Integration Service Workshop (Exercises) Group_00

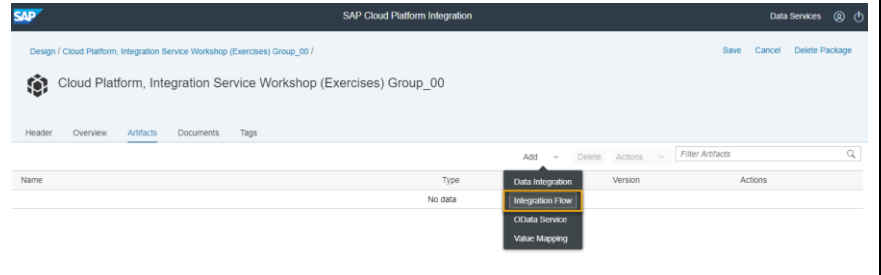
- 6) Navigate to **Artifacts** Tab

Design / Cloud Platform, Integration Service Workshop (Exercises) Group_00 /

Cloud Platform, Integration Service Workshop (Exercises) Group_00

Header Overview Artifacts Documents Tags

7) Click on **Add-> Integration Flow**



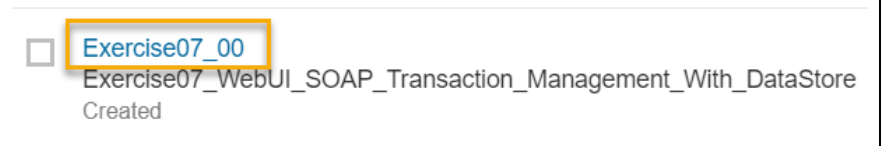
8) Select **Create** and enter the following details:

- a. Name: **Exercise07_XX**
- b. Description: **Exercise07_WebUI_SOAP_Transaction_Management_With_DataStore**
- c. Sender: **SOAP**
- d. Click on **OK**

Note: Please remember to save after every action

The screenshot shows the 'Add integration flow artifact' form. It has two radio buttons: 'Create' (selected) and 'Upload'. Below them are input fields for '*Name:' (containing 'Exercise07_00', highlighted with a yellow box) and '*ID:' (containing 'Exercise07_00'). A 'Product Profile' dropdown is set to 'SAP Cloud Platform Integration'. Below that is a large text area for 'Description:' containing 'Exercise07_WebUI_SOAP_Transaction_Management_With_DataStore' (highlighted with a yellow box). At the bottom, there are input fields for 'Sender:' (containing 'SOAP', highlighted with a yellow box) and 'Receiver:' (containing '<Receiver>'). At the bottom right, there are 'OK' (highlighted with a yellow box) and 'Cancel' buttons. Below the form, there's a 'Data Services' section with 'Save' (highlighted with a yellow box), 'Cancel', and 'Delete Package' buttons.

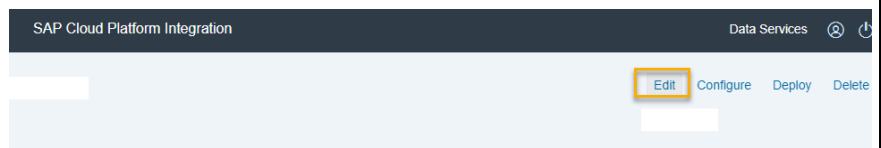
9) Click on **Exercise07_XX**



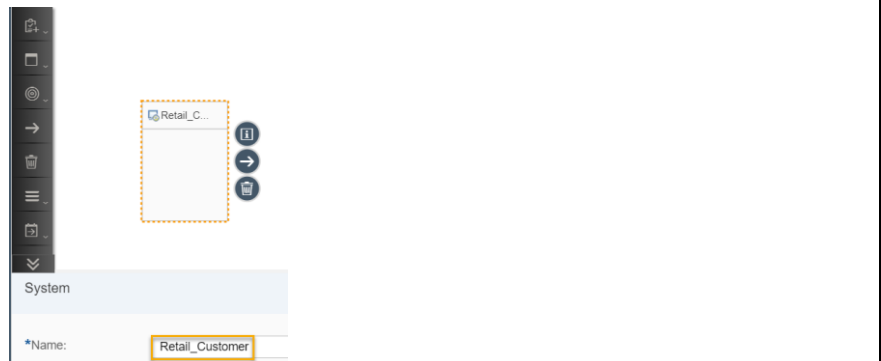
Define and edit integration flow


Follow steps to edit the integration flow

10) Click on **Edit** button on the upper corner on right hand side.



11) Click on Sender system and set Name as **Retail_Customer**



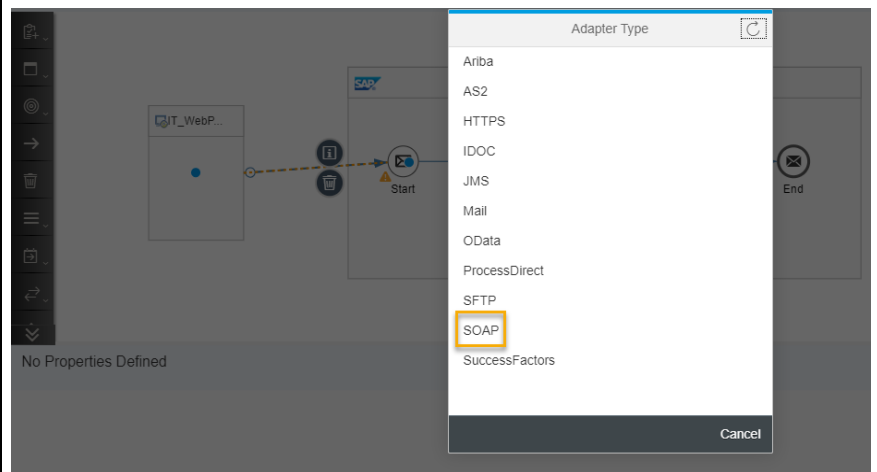
12) Click on Receiver system and click the **Delete** icon  to delete the system.



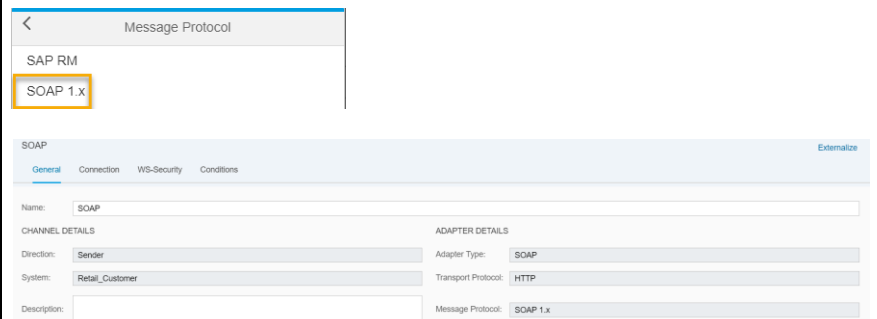
13) Click on **Retail_Customer** sender system, select **Connector** and drag it to **Start** message step. This would open the sender adapter list.



Select **SOAP** adapter



Select **SOAP 1.x** as Message protocol



14) Switch to **Connection** tab, enter the following details:

- a. Address: **/Exercise07_XX**
(make sure this address is unique on tenant)

Keep rest of the parameters as it is and Save

SOAP

General

Connection

WS-Security

Conditions

CONNECTION DETAILS

*Address:

/Exercise07_00

Service Definition:

Manual

Message Exchange Pattern:

Request-Reply

Authorization:

User Role

*User Role:

ESBMessaging.send

15) From the palette, select **Persistence -> Data Store Operations -> Write** and drop it on the connection between **Start** message and **End** message in the Integration flow.

Provide the following properties:

- a. Data Store Name:
DataStore1_XX

Keep rest of the parameters as it is and Save

The screenshot displays the SAP Integration Suite configuration interface. On the left, the 'DataStoreOperations' palette is visible, with 'Data Store Operations' selected. Below it, 'Persist' and 'Write Variables' are listed. On the right, the 'Write Operation' configuration panel is shown, with 'Write' selected. Below this, the 'Integration Process' diagram is visible, showing a flow from 'Start' to 'End' with a 'Write' operation in the middle. The 'Write' operation is highlighted with a yellow box. Below the diagram, the 'Write' configuration panel is shown, with 'DataStore1_00' entered in the 'Data Store Name' field. Other fields include 'Visibility' (Integration Flow), 'Entry ID' (empty), 'Retention Threshold for Alerting (in d)' (2), 'Expiration Period (in d)' (90), and checkboxes for 'Encrypt Stored Message' (checked) and 'Overwrite Existing Message' (unchecked).

DataStoreOperations
Performs operations with data store

- Data Store Operations
- Persist
- Write Variables

Write Operation
Performs write operation with data store

- Write
- Get
- Select
- Delete

Integration Process

SOAP Start Write End

Write

*Data Store Name: DataStore1_00

Visibility: Integration Flow

Entry ID:


*Retention Threshold for Alerting (in d): 2

*Expiration Period (in d): 90

☒ Encrypt Stored Message

☐ Overwrite Existing Message

16) A groovy script is needed to throw an exception. This is used to demonstrate the transaction management capability. Add the groovy script after **Write** data store flow step and **End** message in the integration flow:

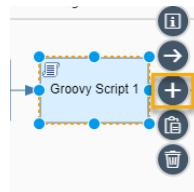
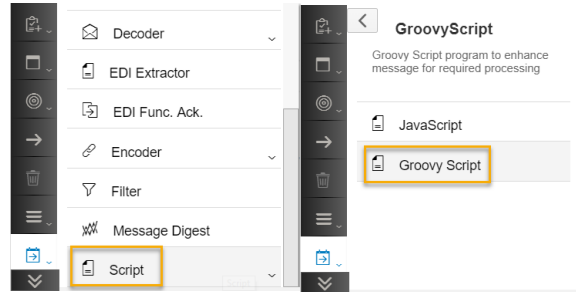
- From the palette, select **Message Transformers -> Script -> Groovy Script** and drop it on the connection between **Write** data store flow step and **End** message in the integration flow.
- Click on **Create** icon 
- Replace the script default code with the following code:

```
import
com.sap.gateway.ip.core.customdev.util.Message;
import java.util.HashMap;

def Message processData(Message message)
{
    //throw new Exception("Exception for JDBC flow");
    return message;
}
```

- Click on **OK**

Save

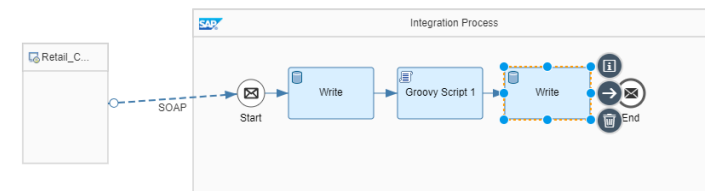
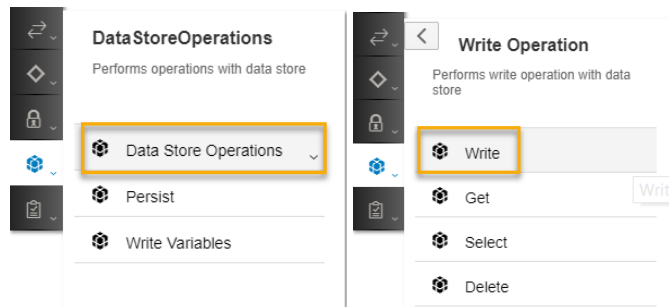


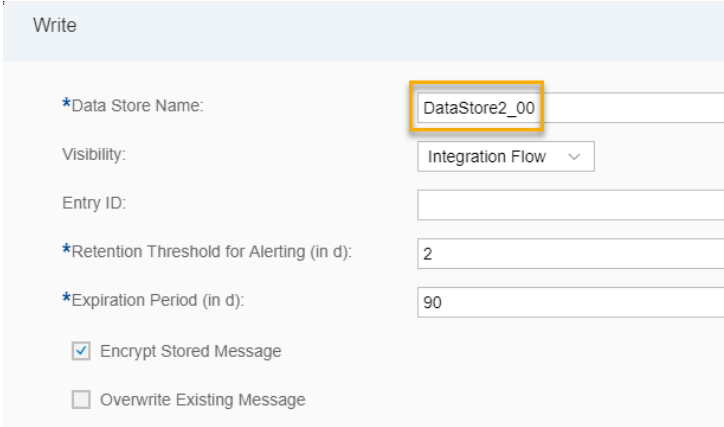
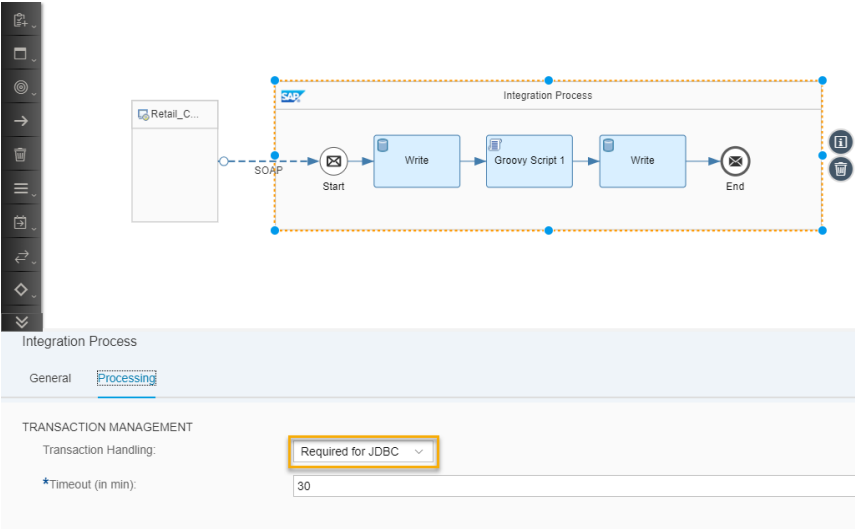
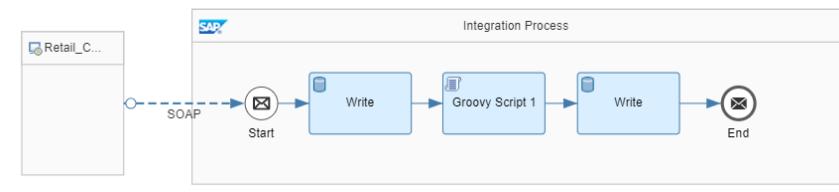
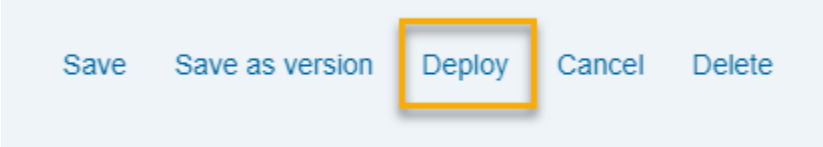
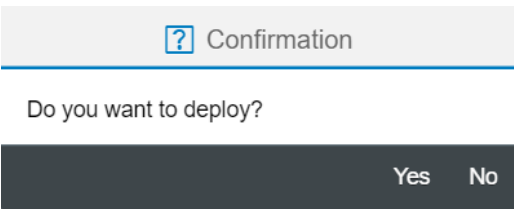
17) From the palette, select **Persistence -> Data Store Operations -> Write** and drop it on the connection between **Groovy Script** message and **End** message in the Integration flow.

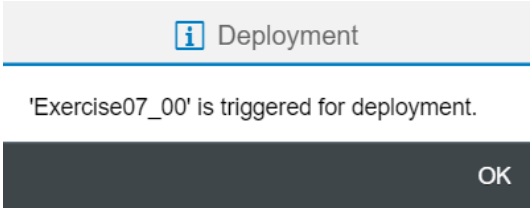
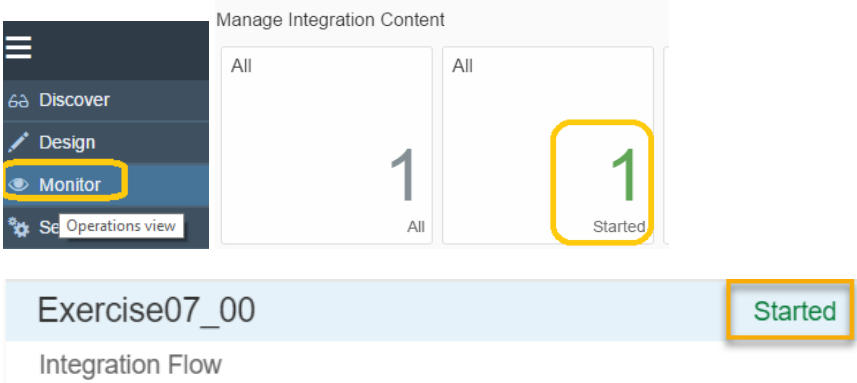
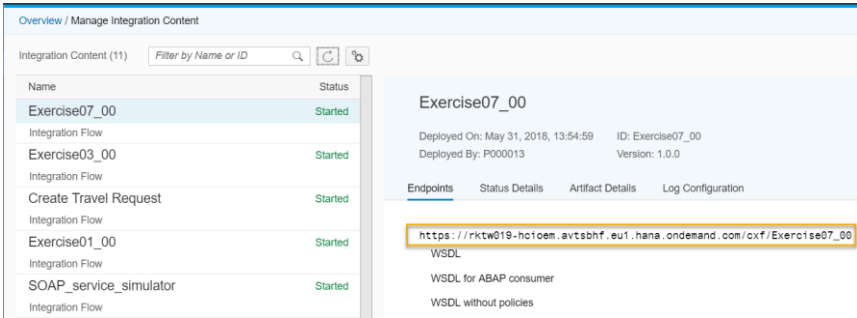
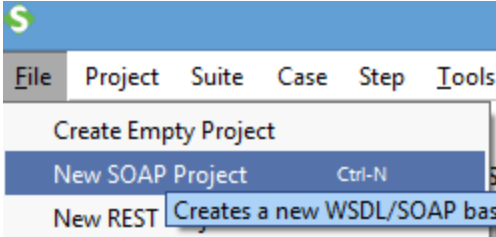
Provide the following properties:

- Data Store Name:
DataStore2_XX

Keep rest of the parameters as it is and Save



	
<p>18) Now click on the Integration Process, go to the Processing tab in the properties sheet. Set the Transaction Handling drop box to Required for JDBC.</p> <p>Click on Save to save the changes</p>	
<p>19) Your integration flow should look like this.</p>	
<p>Deploy Integration Project on tenant:</p>	<p>Follow this step to deploy Integration Project on tenant.</p>
<p>20) Press Deploy in the Integration Flow Task Bar.</p>	
<p>21) You will receive a confirmation. Click on Yes.</p> <p>Once the deployment is completed successfully you will receive a 2nd notification.</p>	

	 <p>Deployment</p> <p>'Exercise07_00' is triggered for deployment.</p> <p>OK</p>																						
<p>22) Verify if the deployment is successful:</p> <p>In the first level Menu Bar switch to Section Monitor and then click on All in Manage Integration Content.</p> <p>You should see an entry with your integration flow.</p> <p>Check the 'status'. It should be in status Started.</p>	 <p>Manage Integration Content</p> <p>Discover Design Monitor Operations view</p> <p>All All</p> <p>1 All 1 Started</p> <p>Exercise07_00</p> <p>Integration Flow</p> <p>Started</p>																						
Execute end to end scenario:	<p>Follow steps to execute end to end scenario.</p> <p>You need to configure and run the scenario end to end using SOAP UI which has been installed and configured as a pre-requisite of this training.</p>																						
<p>23) Before we test the interface using SOAP UI, we need the End Point URL of the deployed integration flow.</p>																							
<p>24) Select your deployed artifact. On the right side, endpoint details are available</p> <p>Copy the endpoint URL</p>	 <p>Overview / Manage Integration Content</p> <p>Integration Content (11) Filter by Name or ID</p> <table border="1"> <thead> <tr> <th>Name</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>Exercise07_00</td> <td>Started</td> </tr> <tr> <td>Integration Flow</td> <td></td> </tr> <tr> <td>Exercise03_00</td> <td>Started</td> </tr> <tr> <td>Integration Flow</td> <td></td> </tr> <tr> <td>Create Travel Request</td> <td>Started</td> </tr> <tr> <td>Integration Flow</td> <td></td> </tr> <tr> <td>Exercise01_00</td> <td>Started</td> </tr> <tr> <td>Integration Flow</td> <td></td> </tr> <tr> <td>SOAP_service_simulator</td> <td>Started</td> </tr> <tr> <td>Integration Flow</td> <td></td> </tr> </tbody> </table> <p>Exercise07_00</p> <p>Deployed On: May 31, 2018, 13:54:59 ID: Exercise07_00</p> <p>Deployed By: P000013 Version: 1.0.0</p> <p>Endpoints Status Details Artifact Details Log Configuration</p> <p>https://rktw019-ncioem.avtsbhf.eu1.hana.ondemand.com/oxf/Exercise07_00</p> <p>WSDL</p> <p>WSDL for ABAP consumer</p> <p>WSDL without policies</p>	Name	Status	Exercise07_00	Started	Integration Flow		Exercise03_00	Started	Integration Flow		Create Travel Request	Started	Integration Flow		Exercise01_00	Started	Integration Flow		SOAP_service_simulator	Started	Integration Flow	
Name	Status																						
Exercise07_00	Started																						
Integration Flow																							
Exercise03_00	Started																						
Integration Flow																							
Create Travel Request	Started																						
Integration Flow																							
Exercise01_00	Started																						
Integration Flow																							
SOAP_service_simulator	Started																						
Integration Flow																							
<p>25) Open SOAP UI and create a new SOAP Project.</p>	 <p>File Project Suite Case Step Tools</p> <p>Create Empty Project</p> <p>New SOAP Project Ctrl-N</p> <p>New REST Creates a new WSDL/SOAP bas</p>																						

26) In the opened window:

- Enter **Exercise07_XX** as Project Name
- In Initial WSDL copy the WSDL link from the same place from where you copied the endpoint URL in step 24
- Provide your CPI tenant username and password

The screenshot shows two overlapping dialog boxes in the SAP Integration Suite interface. The top dialog is 'New SOAP Project', which has a 'Project Name' field containing 'Exercise07_00' and an 'Initial WSDL' field containing 'https://rktw019-tmn.avt.eu1.hana.ondemand.com/Operations'. Below these are checkboxes for 'Create Requests' (checked), 'Create TestSuite' (unchecked), and 'Relative Paths' (unchecked). The bottom dialog is 'Basic Authentication', showing 'Info: Authentication required for [rktw019-tmn.avt.eu1.hana.ondemand.com:443]', a 'Username' field with 'T000013', and a 'Password' field with masked characters. Both dialogs have 'OK' and 'Cancel' buttons.

27) Navigate to the WSDL binding and maintain the following information in the **Service Endpoints** Tab

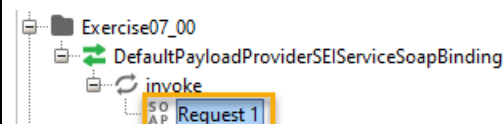
Endpoint:
<Deployed Integration Content Endpoint as described in step 24>


User:
<your CPI tenant login User provided by the Instructor>

Password:
<your CPI tenant login password provided by the Instructor>

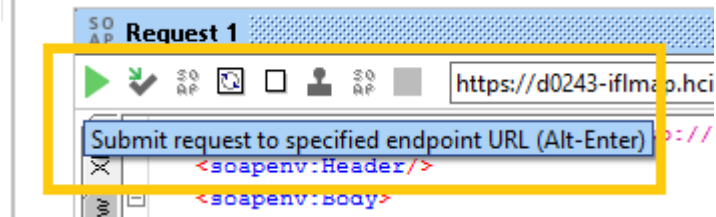
The screenshot shows the configuration window for 'DefaultPayloadProviderSEIServiceSoapBinding'. The 'Service Endpoints' tab is selected. It features a table with columns: Endpoint, Username, Password, Domain, WSS-Type, WSS-Ti..., Outgoin..., Incomin..., and Mode. The 'Endpoint' column contains the value 'https://host:port/path'. The 'Username' and 'Password' columns are highlighted with orange boxes. The 'Mode' column shows 'COMPLE...'. Above the table is an 'Assign' button.

28) Double click the XML Request to open it

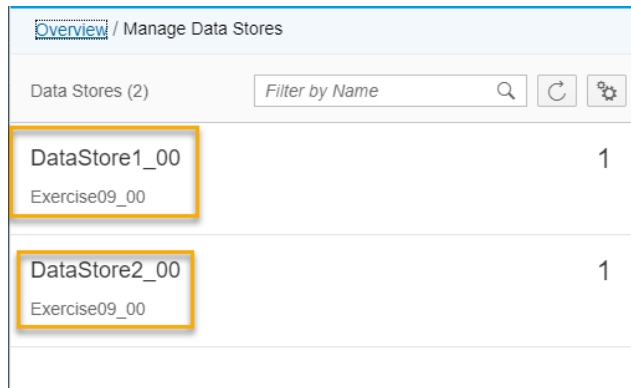


29) And click on icon  to send request to the server.

You should get response 200 OK

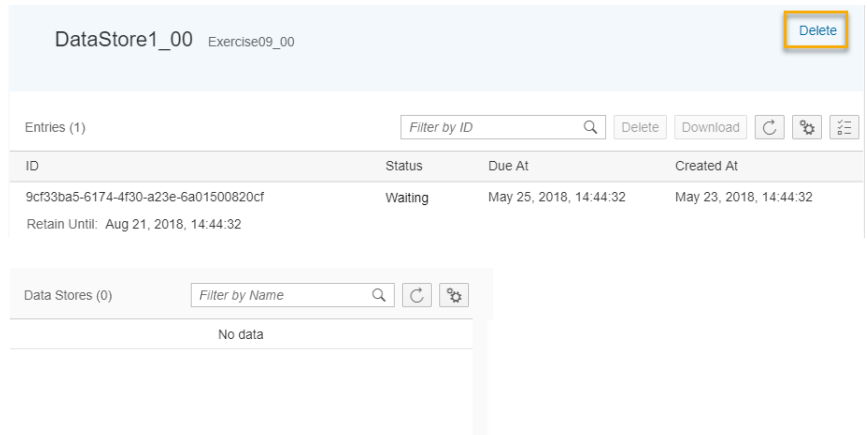


30) Now go to the **Operations View** → **Manage Stores** → **Data Stores**. You can see 2 new data stores are created and each has one entry



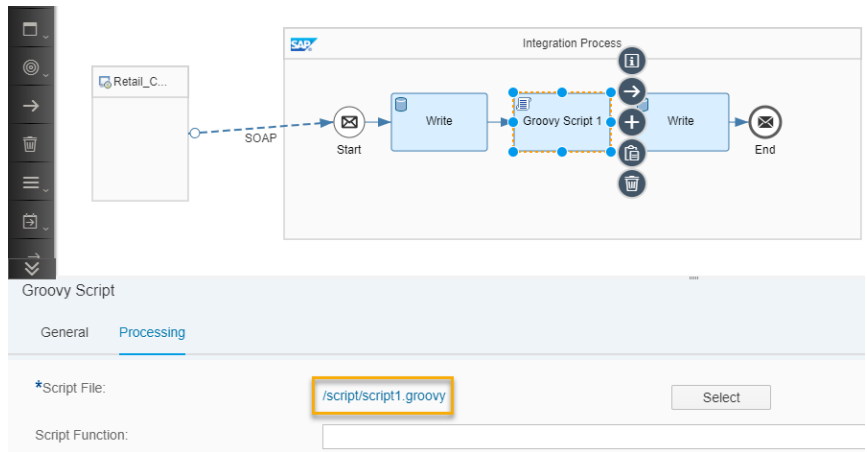
31) Now delete both the data stores from the system. In order to do so, delete all the entries from it. Click **Delete** on the top right corner.


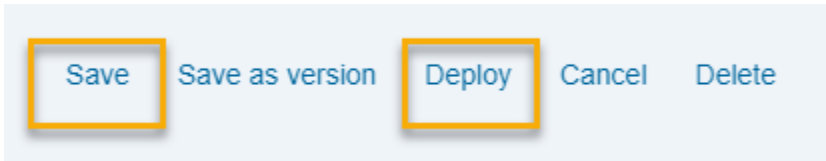
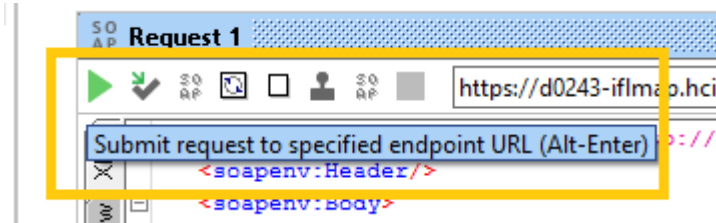
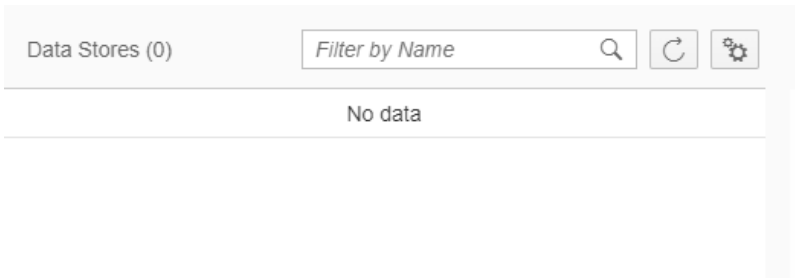
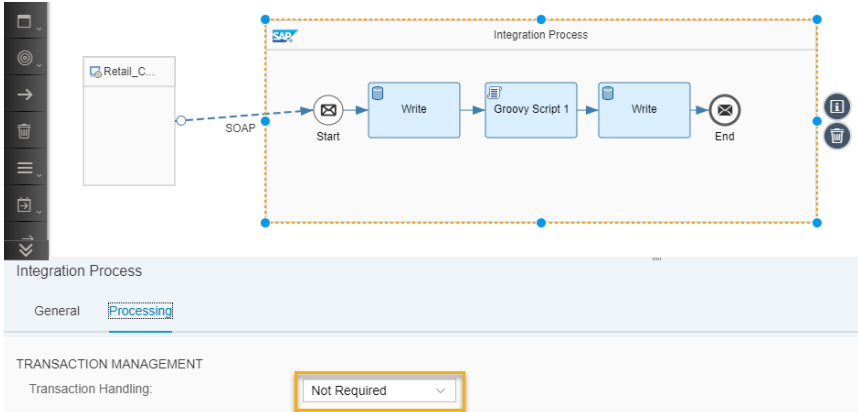

After deleting both, you should not see any data stores listed.



32) Now go back to the integration flow and **uncomment** the statement that throws an exception in the script process step.

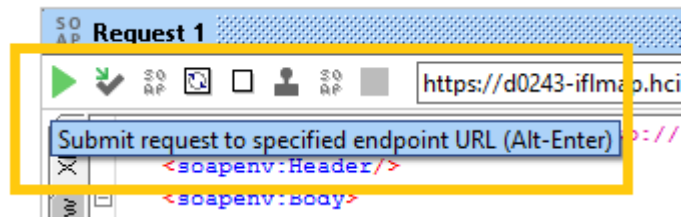
This is for use case no. 2



	 <pre> script1.groovy 1 import com.sap.gateway.ip.core.customdev.util.Message; 2 import java.util.HashMap; 3 4 def Message processData(Message message) 5 { 6 throw new Exception("Exception for JDBC flow"); 7 return message; 8 } </pre>
<p>33) Save and Deploy your integration flow by using the corresponding operations from the top right corner of your screen.</p>	
<p>34) Once the integration flow is started repeat step 28.</p> <p>You should get response 500 Internal Server Error as integration flow is throwing the exception</p>	
<p>35) Now go to the Operations View → Manage Stores → Data Stores.</p> <p>As you can see, there are no entries. Since transaction handling is enabled and the exception was triggered after the first write, it was rolled back. The control anyway did not reach the second write.</p>	
<p>36) Now go back to the integration flow. Click on the Integration Process, go to the Processing tab in the property sheet.</p> <p>Set the value of Transaction Handling to Not Required.</p> <p>This is for use case no. 3</p>	
<p>37) Save and Deploy your integration flow by using the corresponding operations from the top right corner of your screen.</p>	

38) Once the integration flow is started repeat step 28.

You should get response 500 Internal Server Error as integration flow is throwing the exception



39) Now go to the **Operations View** → **Manage Stores** → **Data Stores**.

As you can see, only one data store gets populated i.e **DataStore1_XX**. Since transaction handling is disabled, each data store operation was committed immediately. Since the exception occurred after the first write and transaction handling was disabled, the first write was not rolled back.

Data Stores (1)		Filter by Name		
DataStore1_00	Exercise09_00			1