Building block Configuration Guide

CUSTOMER

Replay messages from Queues via SAP Event Mesh

December 2023

English

Replay messages from Queues via SAP Event Mesh

Content

1 Prerequisites

The following prerequisites are needed in order to use this content:

- The SAP Event Mesh has already been setup correctly and the SAP Cloud Integration can subscribe to Queues via AMQP Adapter.
- Necessary authorization / authentication requirements between SAP Event Mesh and SAP Cloud Integration are in place.
- Mail Account to send out notifications.

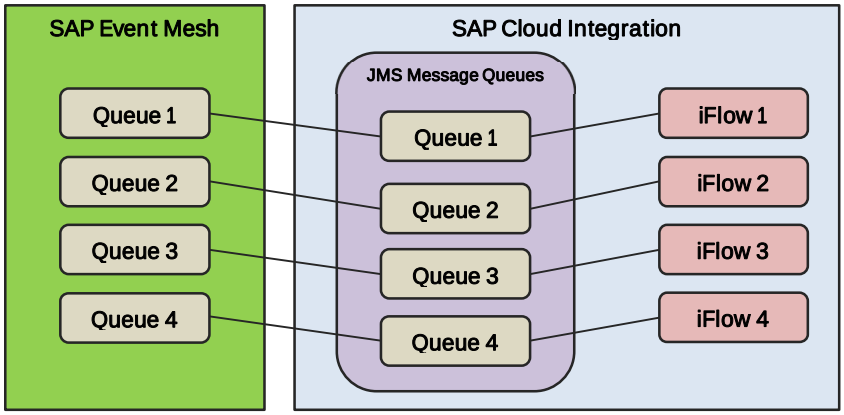
2 Documentation

This document aims to provide technical information and configuration guide for the JMS Router for SAP Event Mesh Messages that was created to address the limited available JMS queues in SAP Cloud Integration for scenarios where each SAP Event Mesh queue corresponds to a separate process/Integration Flow in SAP Cloud Integration.

The JMS Router for SAP Event Mesh Messages aims to solve the limitation of no retry interval configuration in SAP Event Mesh and SAP Cloud Integration AMQP Sender Adapter, which means the messages get retried immediately after processing failed.

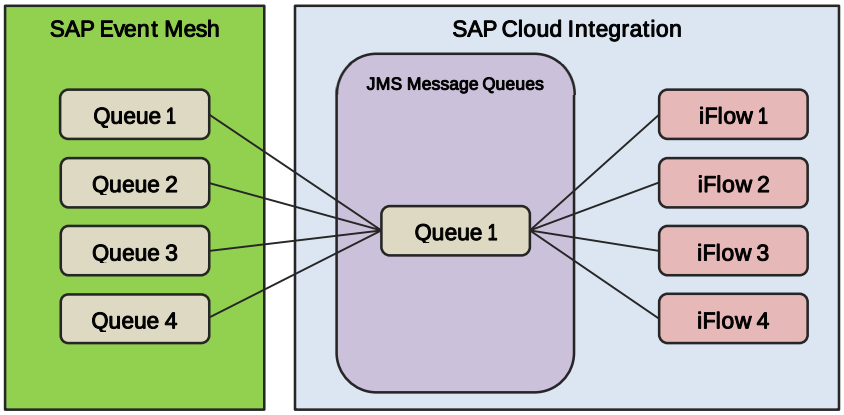
Another way of implementing proper retry functionality with retry interval can be found in this blog.

The main logic is after polling messages from SAP Event Mesh, the interfaces send the message to an internal JMS queue. Putting the message into the SAP Cloud Integration JMS queue is necessary for proper retry functionality. Ideally, each of the SAP Event Mesh queue will have a counterpart JMS queue in SAP Cloud Integration as illustrated below.



This would result into a potential growing number of JMS queues for each additional event handling.

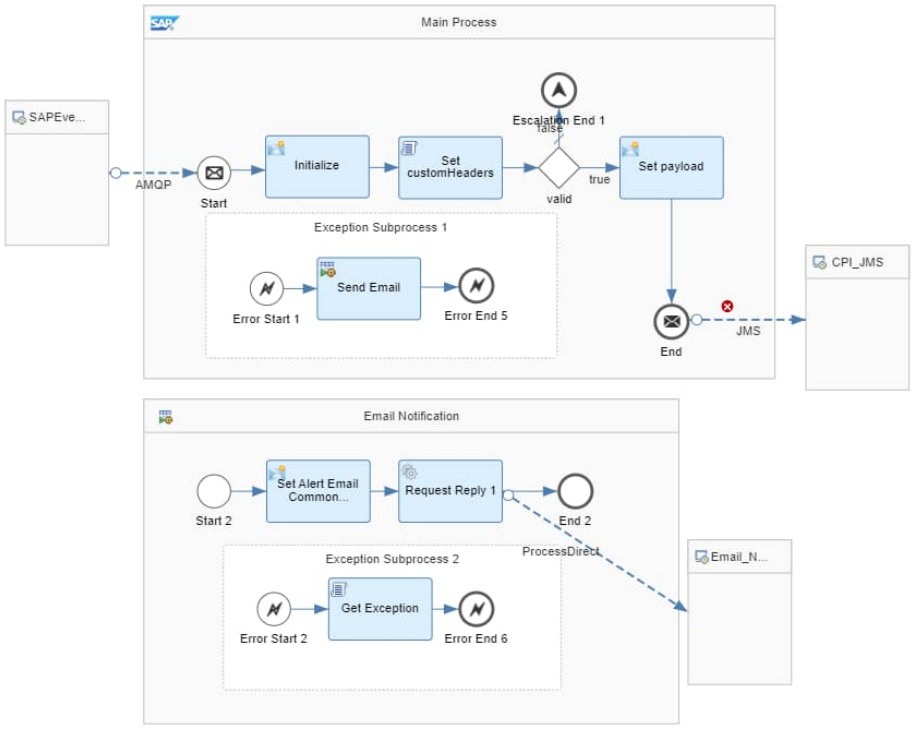
If the message processing sequence is acceptable, several SAP Event Mesh queues could send messages to one JMS queue, in order to reduce the number of JMS queues.



The JMS Router for SAP Event Mesh Messages is created with the goal of keeping the JMS queues used for these SAP Event Mesh interfaces at the minimum while also keeping it scalable in case of additional SAP Event Mesh message handling.

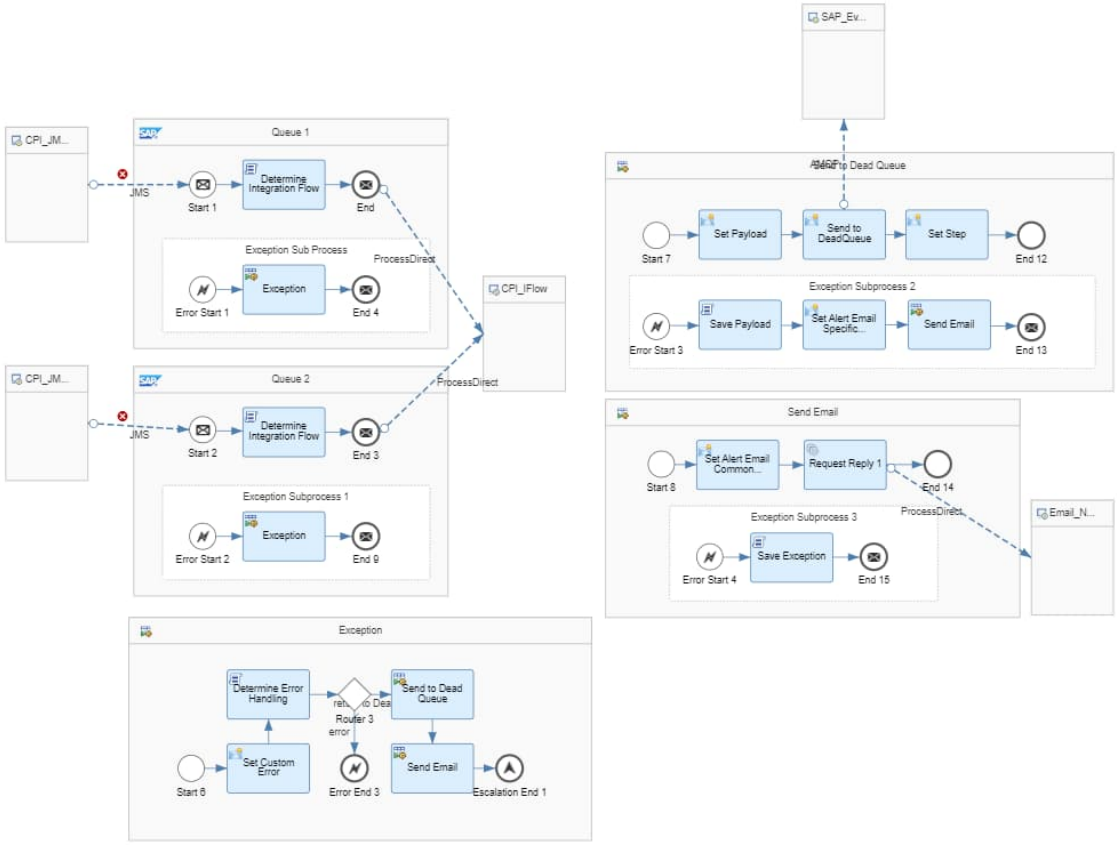
- Constraints and Limitations
  The router Integration Flow is expected to handle a single instance of SAP Event Mesh. Therefore, multiple instances of SAP Event Mesh means multiple copies of the router Integration Flow. This is also for returning the message to SAP Event Mesh dead queue in case of error.

1. Step 1 - Retrieving messages from SAP Event Mesh and send to JMS



This is a sample Integration Flow for retrieving messages from SAP Event Mesh and send to JMS.

2. Step 2 - JMS Router for SAP Event Mesh Messages

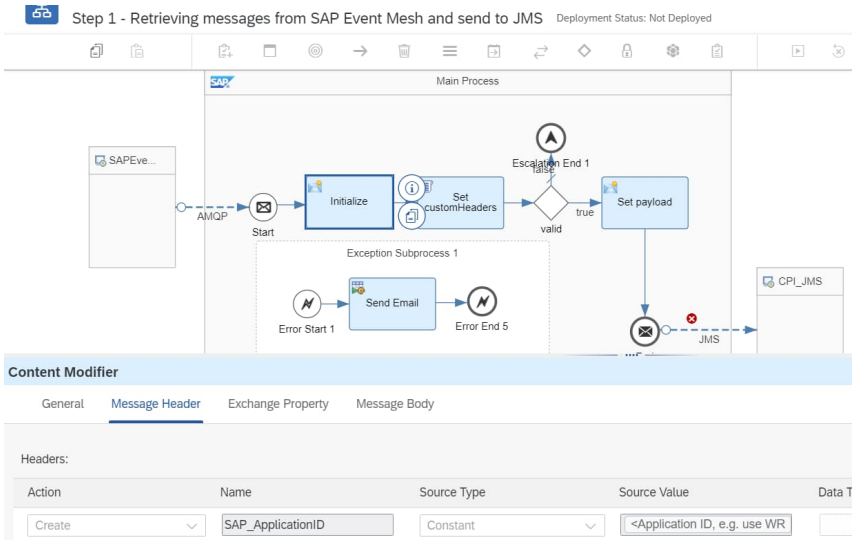


This is the main Integration Flow which routes the messages from JMS Queue.

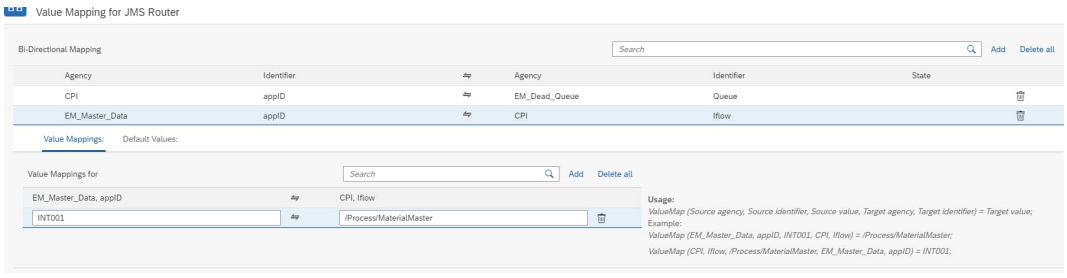
- Queue 1 / Queue 2
  - Two main integration processes for each JMS queue assigned for the SAP Event Mesh instance. Determine Integration Flow endpoint using groovy script and Value Mapping.
- Send to Dead Queue
  - Set payload

- Send message to SAP Event Mesh Dead Queue
    - Failure: save SAP Event Mesh payload as message log attachment and send email
    - Success: proceed to next step

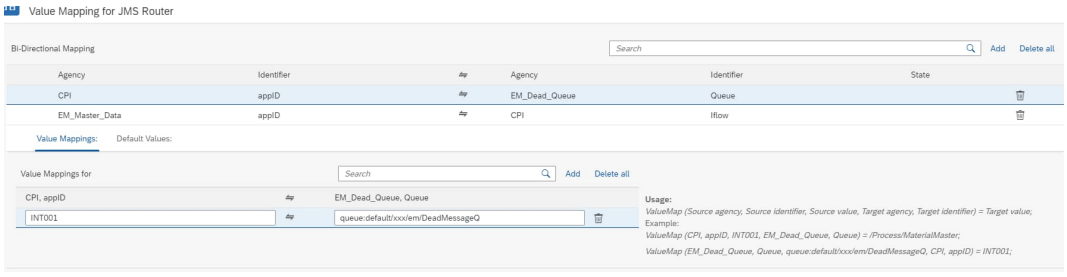
- Exception
    - Determine error handling via groovy script
        - Send to dead queue: Integration Flow endpoint missing or not active
        - Raise error: other errors
- Send Email
    - Send email notification
        - Success: set status as escalated and exit interface
        - Failure: save error as file attachment in processing logs
- Dependencies / Dependent Object / Dependent Configuration
    - Header SAP_ApplicationID must be passed to the JMS queue for routing identification
        - This header value will be used by the router Integration Flow to determine the Integration Flow endpoint. This will also be used in maintaining the Value Mapping.
        - The Integration Flow that is directly listening to the SAP Event Mesh queue must send the header SAP_ApplicationID to the JMS queue.



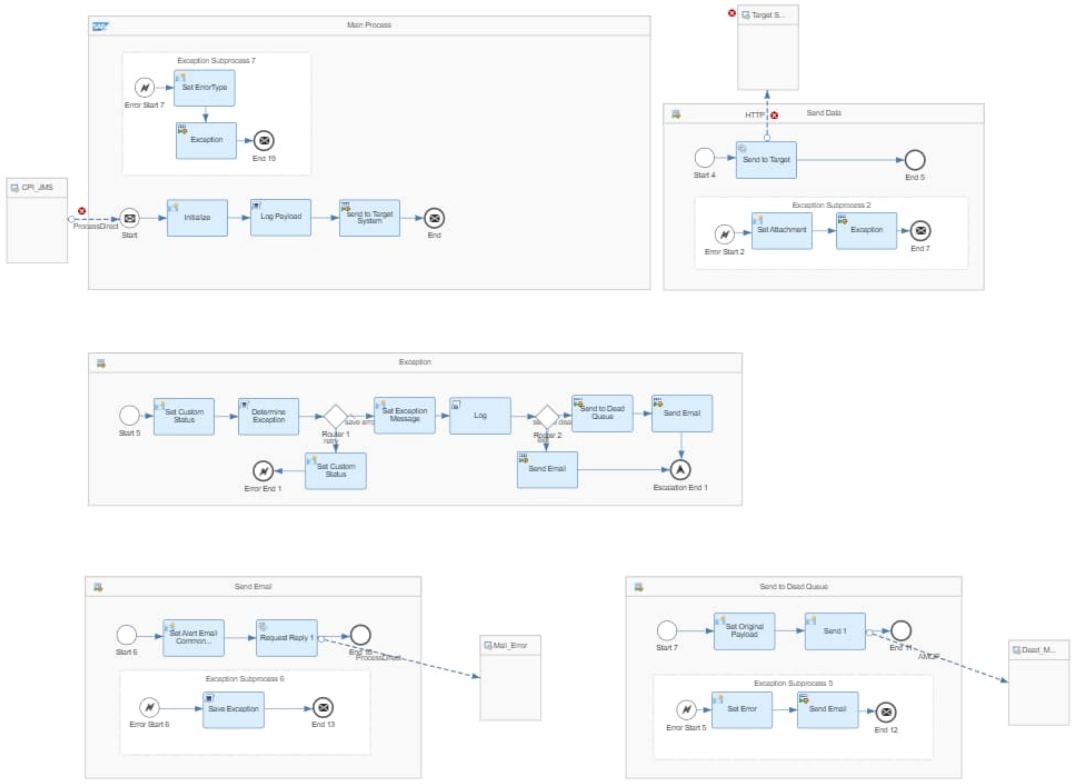
    - Value Mapping object maintenance
        - JMS queue name ; header SAP_ApplicationID <=> SAP Cloud Integration ; destination Integration Flow endpoint. This is used to map messages to processing Integration Flow endpoint.



        - SAP Cloud Integration ; header SAP_ApplicationID <=> DeadQueue identifier ; SAP Event Mesh Dead Queue endpoint. This is used to map messages to SAP Event Mesh Dead Queue.



3. Step 3 - Processing message



This is a sample Integration Flow to process JMS messages which retrieved from SAP Event Mesh.

3 Configuration steps on SAP Cloud Integration

3.1 Configuration of Step 1 - Retrieving messages from SAP Event Mesh and send to JMS

1. Configure Sender Adapter
   Configure the connection to SAP Event Mesh to retrieve messages, please refer to Configure the AMQP Sender Adapter.
   - Sender: SAPEventMesh

2. Configure Receiver Adapter
   Configure the connection to JMS to push messages, please refer to Configure the JMS Receiver Adapter.
   - Receiver: CPI_JMS

   Configure the connection to the Integration Flow of send email:
   - Receiver: Email_Notification
   - Address: Specifies the Process Direct destination to Mail Notification, e.g. /email_notif.

3. Configure Parameter
   - App ID: Application ID, e.g. use WRICEF ID
   - Initial Process Message Type: SAP Event Mesh
   - Initial Process Receiver: CPI
   - Initial Process Sender: Message Sender System, e.g. S4
   - mail_subject: Mail Subject, e.g. Error Notification: Retrieving messages from SAP Event Mesh and send to JMS
   - mail_to: E-mail address that the message is sent to
   - WRICEF ID: WRICEF ID, e.g. INT001

3.2 Configuration of Step 2 - JMS Router for SAP Event Mesh Messages

1. Configure Sender Adapter
   Configure the connection to JMS to retrieve messages, please refer to Configure the JMS Sender Adapter.
   - Sender: CPI_JMS_Queue1
   - Sender: CPI_JMS_Queue2

2. Configure Receiver Adapter
   Configure the connection to SAP Event Mesh to push messages, please refer to Configure the AMQP Receiver Adapter.
   - Receiver: SAP_Event_Mesh_DeadQueue

   Configure the connection to the Integration Flow of send email:
   - Receiver: Email_Notification
     - Address: Specifies the Process Direct destination to Mail Notification, e.g. /email_notif.

3. Configure Parameter
   - Dead Queue ID: Agency Name in Value Mapping to get SAP Event Mesh Dead Queue Name, e.g. EM_Dead_Queue
   - mail_subject: Mail Subject, e.g. Error Notification: Router Message from JMS to Integration Flow
   - mail_to: E-mail address that the message is sent to
   - WRICEF ID: WRICEF ID, e.g. COMMON_ROUTER

3.3 Configuration of Step 3 - Processing message

1. Configure Sender Adapter
   Configure the connection of the Integration Flow for process message:
   - Sender: CPI_JMS
     - Address: Specifies the Process Direct destination to process message.

2. Configure Receiver Adapter
   Configure the connection to SAP Event Mesh to push messages, please refer to Configure the AMQP Receiver Adapter.
   - Receiver: Dead_Msg_Queue

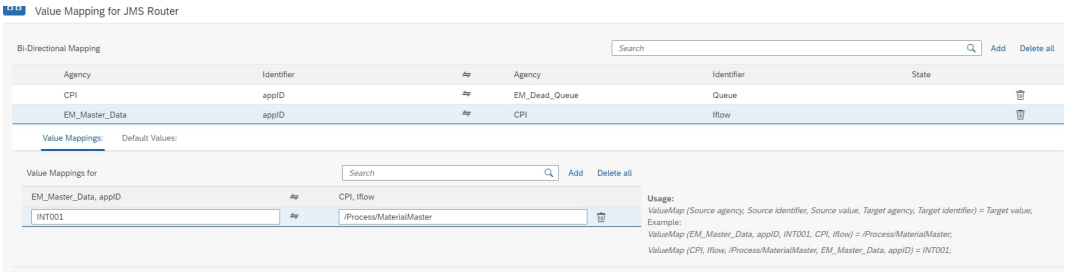
   Configure the connection to the Integration Flow of send email:
   - Receiver: Mail_Error
     - Address: Specifies the Process Direct destination to Mail Notification, e.g. /email_notif.

   Configure the connection to target system to send message, please refer to HTTP Receiver Adapter.
   - Receiver: Target System

3. Configure Parameter
   - App ID: Application ID, e.g. use WRICEF ID
   - mail_subject: Mail Subject, e.g. Error Notification: Processing Message
   - mail_to: E-mail address that the message is sent to
   - Main Process Message Type: JMS
   - Main Process Receiver: Receiver System, e.g. S4
   - Main Process Sender: CPI
   - Retries: specifies how many times messages can retry, e.g. 1
   - Target_System_Address: Target System Address defined in HTTP Receiver Adapter
   - WRICEF ID: WRICEF ID, e.g. INT001

3.4 Configuration of Value Mapping for JMS Router

1. Configure mapping of JMS queue name and destination Integration Flow endpoint.
   JMS queue name ; header SAP_ApplicationID <=> SAP Cloud Integration ; destination Integration Flow endpoint.



2. Configure mapping of messages and SAP Event Mesh Dead Queue.
   SAP Cloud Integration ; header SAP_ApplicationID <=> DeadQueue identifier ; SAP Event Mesh Dead Queue endpoint.