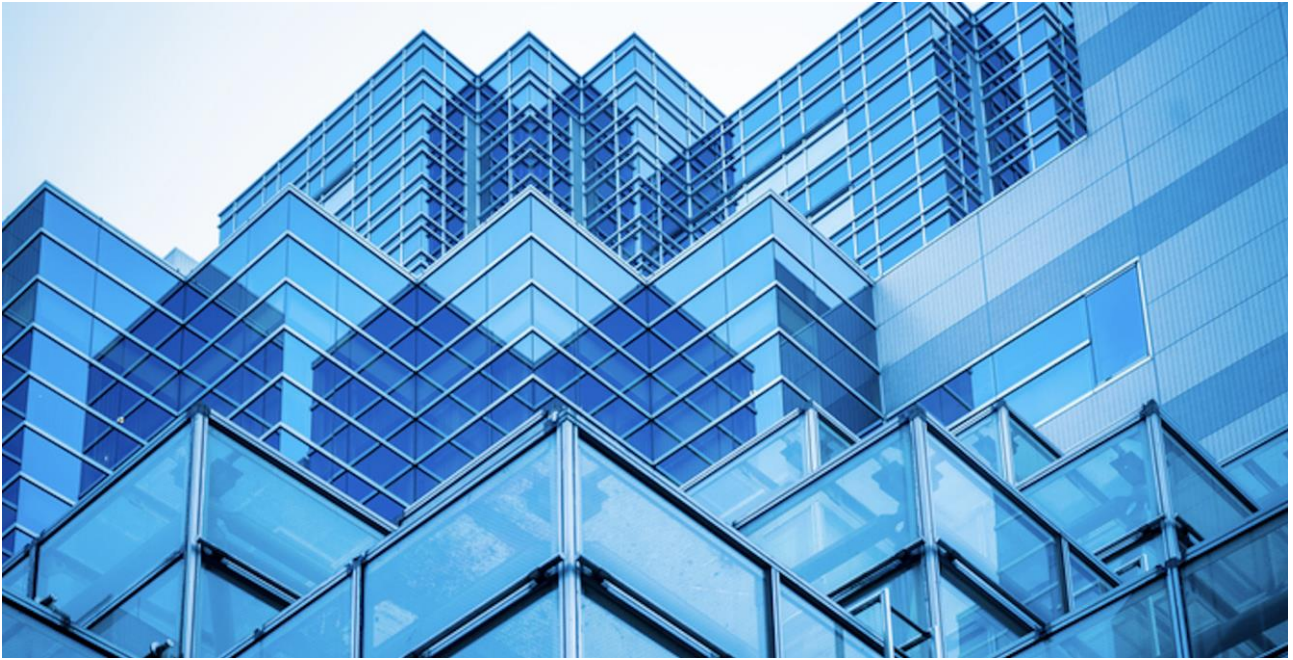




PUBLIC

SAP Build Process Automation

Mass Service Entry Sheet Creation for Purchase Orders Template

Configuration and User Guide

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Change Log

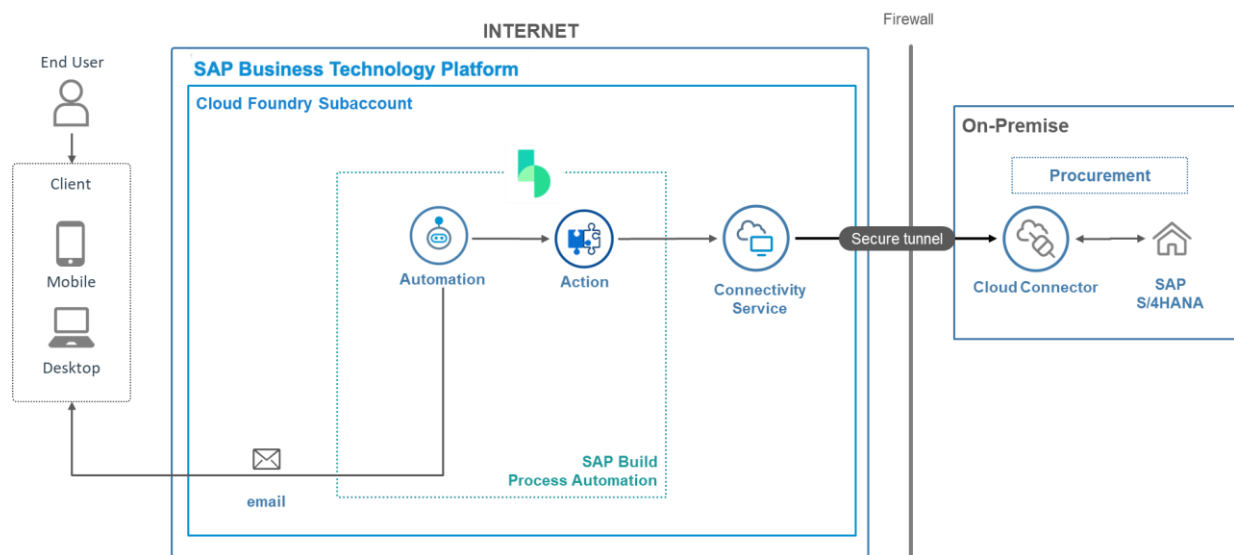
Version	Date	Description
1.0.0	July 29 2023	Document Created

Overview

- This document provides information about setting up the SAP Business Technology Platform account to consume the SAP Build Process Automation **Mass SES Creation for Purchase Orders template**. The main audience of this document are technical IT/system administrators. Automation facilitates to automatically mass generate lean service entry sheets from service purchase orders. It must be able to select the service purchase orders that will be used to generate the service entry sheets, populate the service entry sheets with the data from the service purchase orders and create new service entry sheets and update in the SAP database table. This use case is valid for both S/4 HANA on premise and cloud.

Features

- Automation must be able to automatically mass generate lean service entry sheets from single/multiple service purchase orders.
- The mass generation process Automation must be able to automatically select the service purchase orders that will be used to generate the lean service entry sheets.
- The mass generation process Automation must be able to populate the service entry sheets with the data from the service purchase orders automatically.
- The mass generation process Automation must be able to create new lean service entry sheets in the standard SAP table.



Process Steps

1. Fetch all Service POs based on given conditions from S/4HANA.
2. Validate if SESs are already created for the POs received.
3. Call POST API to create SES in S/4HANA.
4. Create an excel file and log the results of POST API calls in it.
5. Email the Excel Log File to required recipients.

Prerequisites

The following SAP Business Technology Platform services are required to consume the content package Manage Purchase Order Approval and Creation:

- SAP Build Process Automation to orchestrate the process.
- SAP Cloud Identity Services - Identity Authentication (Optional)
- SAP Connectivity service to establish access to SAP S/4HANA

This **Mass SES Creation for Purchase Orders** template is intended to be used for all LoB applications, example, SAP S/4HANA and requires the following services in SAP Business Technology Platform.

Configuration Guide

Mass Service Entry Sheet Creation for Purchase Orders template requires SAP Build Process Automation subscription or CPEA contract. Follow the [setup and configuration section](#).

Setup SAP Business Technology Platform Cockpit

Destination Configuration

- Configure Destination to Connect to S/4HANA

Destination Property	Value
Name	<Name>
Type	HTTP
URL	<URL>
Proxy Type	Internet
Authentication	<Authentication Type>

Note: For SAP S/4HANA Cloud and on-premise, the API should be accessible over internet proxy type, as iRPA Automation does not support on-premise as proxy type as explained in the [SAP Note](#).

Note: Add configurations for the authentication type chosen

Destination Additional Property	Value
HTML5.DynamicDestination	true
sap.applicationdevelopment.actions.enabled	true
sap.processautomation.enabled	true

Note: SSL certificate need to be added for the host name used in the destination

Destination Configuration

Name: *
CU6System

Type:
HTTP

Description:
S/4 Hana System

URL: *
http

Proxy Type:
Internet

Authentication:
BasicAuthentication

User: *

Password:

Additional Properties

New Property

HTML5.Dynam...	true	
sap.application...	true	
sap.processaut...	true	

Save
Cancel

User Roles Configuration

- To access this template, the business user will need these roles:

Role Name	Purpose
Process Automation Developer	To fully use this content package, you need to have an active user entitled to this role to use SAP Build Process Automation

For more information about SAP Build Process Automation roles, see [Authorizations](#)

Setup SAP Build Process Automation Content

Standard automation packages released by SAP will be available at the [SAP Build Store](#)

Set Up Communication

To run this template, you must have a communication user, create communication arrangements between the communication user and the following communication scenarios, and assign those communication arrangements to a communication system.

Steps to Create Communication System and Communication Arrangement are available in below documentation links:

[How to Create Communication Systems | SAP Help Portal](#)

[How to Create a Communication Arrangement | SAP Help Portal](#)

Communication Scenario	Related API
Service Entry Sheet Integration (SAP_COM_0146)	Overview Service Entry Sheet (Lean Services) SAP Business Accelerator Hub
Purchase Order Integration (SAP_COM_0053)	Overview Purchase Order SAP Business Accelerator Hub
An additional communication scenario assigned with custom inbound services	You need to create custom CDS views in your SAP S/4HANA Cloud system, expose them as external APIs, and then create a communication scenario and add these inbound services to this scenario. For details, see next section.

Configure Custom CDS Views and Create Additional Communication Scenario

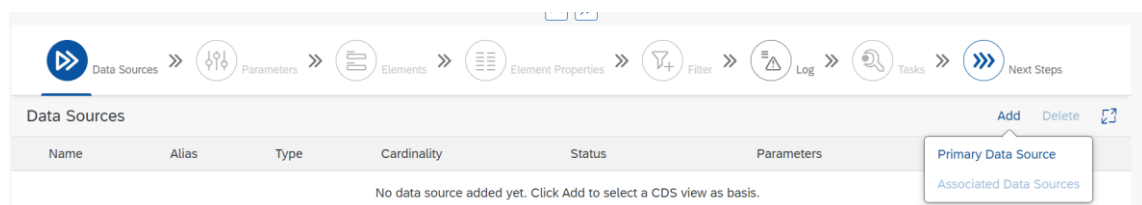
1. Open the **Custom CDS Views** app.



2. Click **Create** and select the scenario **External API**.

Name - **ZZ1_UserEmail**

3. Select your **Primary Data Source – I_CreatedByUser**



Select: Primary Data Source

I_CreatedByUser × Q Show Filter Bar Filters (2)

Data Sources (1) ⚙️ 🔗

	Name	Label	Source Origin	Modeling Data Source	Modeling
	I_CreatedByUser	Interface Layer for user details	ABAP Development Tools	✓	

4. Add Associated Data Source – I_USER

▶️ Data Sources » ⚙️ Parameters » 📋 Elements » 📋 Element Properties » 🔍 Filter » ⚠️ Log » 🔍 Tasks » ▶️▶️ Next Steps

Data Sources (1) Add Delete 🔗

	Name	Alias	Type	Cardinality	Status	Parameters	Join Condition
☐	I_CreatedByUser	I_CreatedByUser	Primary Datasource		Released		

Primary Data Source
Associated Data Sources

Select: Associated Data Source

I_USER × Q Hide Filter Bar Filters (2)

Name: 🔗 Label: 🔗 Source Origin: Modeling Data Source: Modeling Association Target:

Recommended Data Source: Protection: Analytics Data Category: Parameter: Masterdata View:

Text View:

Items (17)

Data Sources (17) ⚙️ 🔗

☐	Name	Label	Source Origin	Modeling Data Source	Modeling
☐	I_SystemUser	System User	ABAP Development Tools		
☒	I_User	User	ABAP Development Tools		

5. Add Join Condition I_User.UserID = I_CreatedByUser.UserName

▶️▶️ Data Sources » ⚙️ Parameters » 📋 Elements » 📋 Element Properties » 🔍 Filter » ⚠️ Log » 🔍 Tasks » ▶️▶️ Next Steps

Data Sources (2) Add Delete 🔗

	Name	Alias	Type	Cardinality	Status	Parameters	Join Condition
☐	I_CreatedByUser	I_CreatedByUser	Primary Datasource		Released		
☐	I_User	I_User	Associated Datasource		Released		🔗

Join Condition

Define Join Conditions

Name: I_User
Type: Associated Datasource
Alias: _I_User
Cardinality: Zero or One [0..1]

Join Conditions (1) AND (All conditions fulfilled) Add Delete

	Data Source Field	Type	Operator	Value Type	Value
☐	UserID	CHAR (12)	Equal	Field	I_CreatedByUs...

6. Go To Elements Tab and add **Elements** – UserID and EmailAddress

Elements (1) Search Add Delete

	Key	Alias	Type	Path	Label	Status
☐	ON	UserName	CHAR (12)	I_CreatedByUser.UserName	User	

Elements

	Alias	Key	Type	Label	Status	Used
☐	AddrCurDefaultEmailAddress		Association [0..1]	Current Default Email Addr...		
☐	AddressID	☒	CHAR (10)	Address Number		
☐	AddressPersonID	☒	CHAR (10)	Person Number		
☐	CommMediumSequenceNumber		NUMC (3)	Sequence Number		
☒	EmailAddress		CHAR (241)	E-Mail Address		
☐	ValidityStartDate		DATS (8)			
☐	ValidityEndDate		DATS (8)			

Selected Items and Conditions (2)

UserID X EmailAddress X

7. Check and Publish

Data Sources (2) Add Delete

	Name	Alias	Type	Cardinality	Status	Parameters	Join Condition
)	I_CreatedByUser	I_CreatedByUser	Primary Datasource		Released		
)	I_User	_I_User	Associated Datasource		Released		

Publish Check Preview Cancel Inventory

- Open the **Communication Scenarios** app and create a new communication scenario.
- Add the inbound services *CustomCDSViewName*_CDS to the communication scenario and publish it:
 - ZZ1_UserEmail_CDS**
- Open the **Communication Arrangements** app and create a communication arrangement based on this newly created custom communication scenario.

11. In the **Communication System** field under **Common Data**, select the communication system that you have created following the **Create Communication System** step mentioned [How to Create Communication Systems | SAP Help Portal](#).
12. Save your entries.

Note: Display Access authorization is required to access 'I_CREATEDBYUSER' CDS

- /ACCGO/CDS

SAP Build Process Automation

Import Content

This template can be downloaded from the Store:

1. Navigate to the Store in your SAP Build Process Automation account.
2. Select the Project Type filter as "Process Automation"
3. In the Search bar type "**Mass Service Entry Sheet Creation from Purchase Order**"
4. Select the "Create from Template" button to add the template into your lobby.
5. After successfully adding the template, navigate back to the lobby to find the "Manage Purchase Order Approval and Creation" project available for use.

Configure Automation

This content can be used without any configuration, if you still wish to update it based on the requirements, follow the below links.

Create and Manage Projects

<https://help.sap.com/docs/build-process-automation/sap-build-process-automation/create-and-manage-projects>

Process Artifacts

<https://help.sap.com/docs/build-process-automation/sap-build-process-automation/process-artifacts>

Automation Artifacts

<https://help.sap.com/docs/build-process-automation/sap-build-process-automation/automation-artifacts>

Manage Existing Artifacts

<https://help.sap.com/docs/build-process-automation/sap-build-process-automation/manage-existing-artifacts>

Create an Automation

<https://help.sap.com/docs/build-process-automation/sap-build-process-automation/create-automation-process-automation>

Release and deploy the process

After configuring your process, it's time to publish, test and run it. To run a process, you must first release and deploy it.

Release - This locks the version of your process, meaning that no further edits can be made to that version. At this stage, the process can't be run and isn't available to participants yet.

To release a version of your process,

- First ensure that the status is listed as 'Editable'.
- Then click 'Release'

The screenshot shows the SAP Build Process Automation interface for a process named 'Mass SES Creation for Purchase Orders'. The status is 'Editable'. In the top right corner, there is a button labeled 'Release' with a downward arrow, which is highlighted with a red box. Below the header, there is a table of artifacts. The table has columns for Name, Description, Type, Last edited, Last edited by, and Created On. The artifacts listed are:

Name	Description	Type	Last edited	Last edited by	Created On
API call for SES Check	No value.	Automation	11 days ago	ankit.cc.kumar@accenture.com	July 28, 2023
API Call to Get the Purchase Order	No value.	Automation	4 days ago	ankit.cc.kumar@accenture.com	July 28, 2023
Create Folder for LogFiles	No value.	Automation	11 days ago	ankit.cc.kumar@accenture.com	July 28, 2023
Creating Error and Success Logs in Log file	No value.	Automation	8 days ago	ankit.cc.kumar@accenture.com	July 28, 2023
Creating Excel Log File	No value.	Automation	11 days ago	ankit.cc.kumar@accenture.com	July 28, 2023
Main Automation	No value.	Automation	7 days ago	ankit.cc.kumar@accenture.com	July 28, 2023
Post call for Single PO SES Creation	No value.	Automation	7 days ago	ankit.cc.kumar@accenture.com	July 28, 2023
Post call for Multiple PO Service Entry Sheet Creation	No value.	Automation	7 days ago	ankit.cc.kumar@accenture.com	July 28, 2023
Sending Email with Log Report	No value.	Automation	8 days ago	ankit.cc.kumar@accenture.com	July 28, 2023

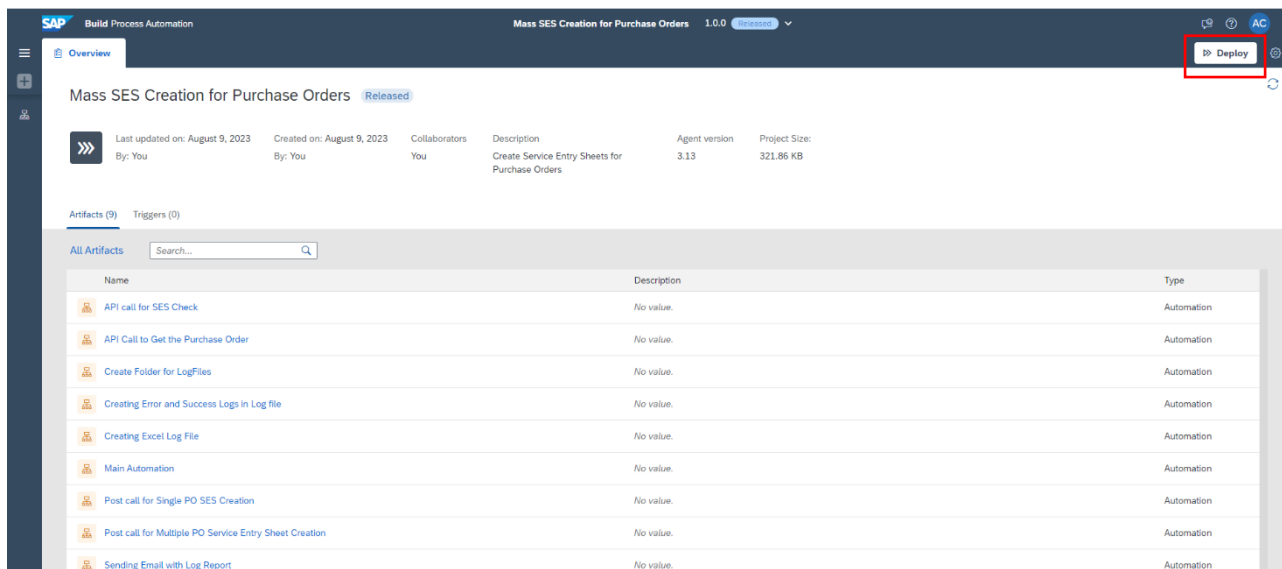
If this is the first time you've released the process, a version labelled 1.0.0 is released. For subsequent releases, you're prompted to select a version type before the process is released.

Deploy – This takes a released version of a process and enables it to be actively run and monitored. A deployed version of this approval process unlocks the request form, allowing participants to submit requests and the approvers to view items in their inbox.

To deploy a released version of your process,

- first ensure that the status is listed as 'Released'.
- Then click "Deploy"

To deploy your project, you will be prompted to provide a Destination as an environment variable. Select the destination from the drop-down. Note: If you do not map your destination environment variable with actual SAP BTP destination during deployment, then the process will enter Erroneous state when it tries to connect to the external system.



For more details about the Destination artefact, please read our [documentation](#).

User Guide

Capabilities

Icon	Type	Name	Description
	Automation	Main Automation	Automation triggered in unattended mode to create the service entry sheet from PO
	Automation	API call for SES Check	Performs if Service Entry Sheet exists for the Purchase Order
	Automation	API Call to Get the Purchase Order	GET list of Purchase Order
	Automation	Create Folder for Log Files	Create folder for storing the log file
	Automation	Creating Error and Success Logs in Log	Create log file entries
	Automation	Creating Excel Log File	Create log file into the respective folder
	Automation	Post call for Single PO SES Creation	POST service call to create service entry sheet in SAP S/4HANA if only Single PO with Single Item is available in System.
	Automation	Post call for Multiple PO Service Entry Sheet Creation	POST service call to create multiple service entry sheets from multiple PO with multiple Items
	Automation	Sending Email with Log Report	Send the log file to the user on email

This content package will enable SAP ERP customers to automate the Mass Service Entry Sheet creation for Purchase Orders with Single or Multiple Purchase Order Items without any Human efforts in SAP S/4HANA

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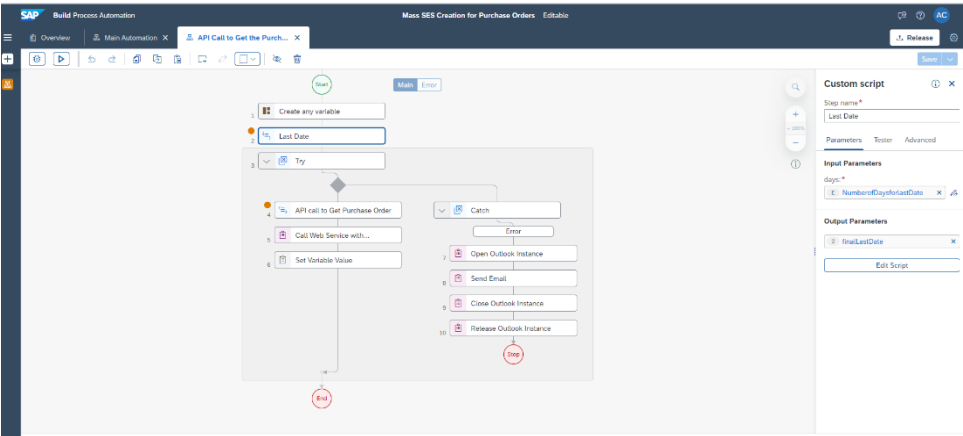
System. The purpose of this technical specification is to outline the process and requirements for the mass creation of Lean Service Entry Sheets in SAP, specifically referencing a purchase order. This specification also includes the necessary table and field mappings within SAP, as well as the latest API to be used for creating Lean Service Entry Sheets.

Note: - This package is built for Unattended automation Scenario which will be scheduled at specific time and perform all the steps required to Create Service Entry Sheets.

Automations

API Call to Get Purchase Orders

This automation is used to get the purchase orders from S4 System based on the days provided by user.



Step 2: last days is used to pick the date from which you want to get the purchase orders.

Step 4: this step contains the API URL to get the purchase Orders.

Step 5: is used to call the URL mentioned in above step.

Note: To GET Purchase Orders Automation will generate the Payload with the required inputs for Post call: -

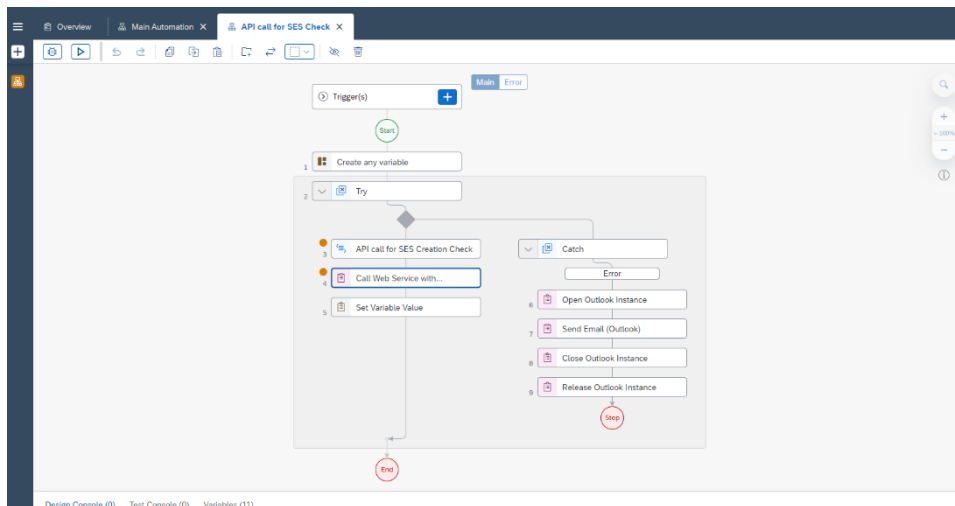
API Attributes	Values
Path	/sap/opu/odata4/sap/api_purchaseorder_2/srvd_a2x/sap/purchaseorder/0001/PurchaseOrderItem?\$expand=_PurchaseOrder(\$select=CreatedByUser),_PurchaseOrderScheduleLineTP(\$select=PerformancePeriodStartDate,PerformancePeriodEndDate)&\$filter=ProductTypeCode eq '2' and IsCompletelyDelivered eq false and PurchasingDocumentDeletionCode eq '' and (_PurchaseOrder/CreationDate ge "+lastDate+" or _PurchaseOrder/LastChangeDateTime ge "+lastDate+"T00:00:00.000Z)&\$select=PurchaseOrder,PurchaseOrderItem,OrderQuantity,PurchaseOrderQuantityUnit,PurchaseOrderItemText,PurchaseOrderItemCategory&\$orderby=_PurchaseOrder/CreatedByUser
HTTP Method	GET
Payload sent	NA



Response	Success (Status = 200): OK
Payload Type	Application/JSON

API Call for SES Check

This automation used to check if SES already exists for purchase order and purchase order item or not



Step 3: this contains API URL to check SES Exist or not.

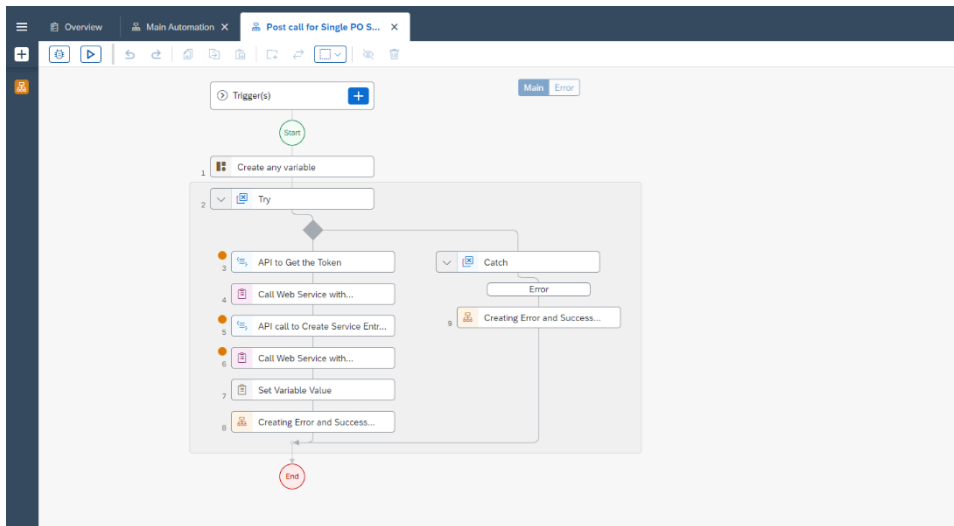
Step 4: here we are calling the API mentioned in above step.

Note: To GET Purchase Orders Automation will generate the Payload with the required inputs for Post call: -

API Attributes	Values
Path	/sap/opu/odata/sap/API_SERVICE_ENTRY_SHEET_SRV/A_ServiceEntrySheetItem?\$filter=PurchaseOrder eq '' + purchaseOrder + '' + " and PurchaseOrderItem eq '' + purchaseOrderItem + ''
HTTP Method	GET
Payload sent	NA
Response	Success (Status = 200): OK
Payload Type	Application/JSON

Post Call for Single PO SES Creation

This automation is used to create the SES if only single PO with single PO Item is available in S4 system.



Step 3: this is used to generate the token for SES creation Post API call.

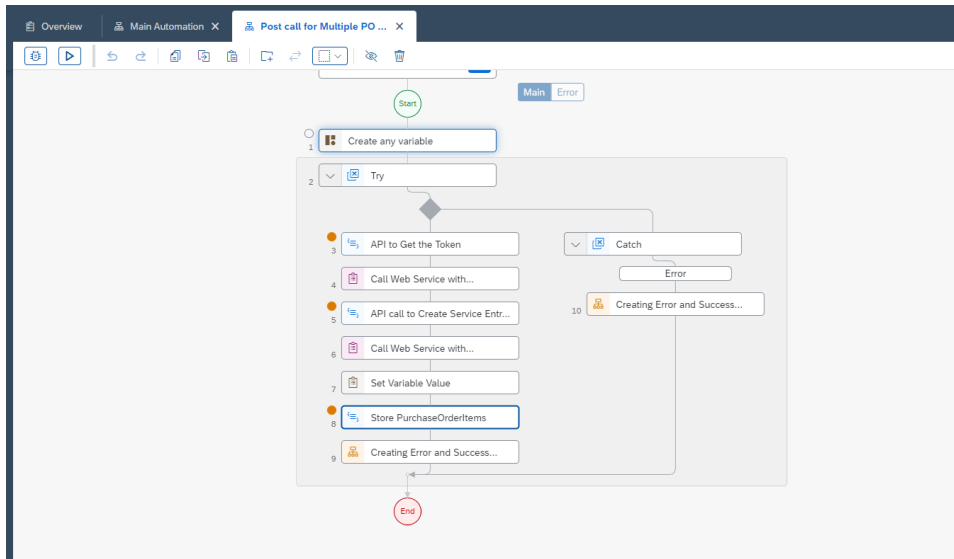
Step 5: here we are having the SES creation API and token which we generated in above step.

Note: To Create SES the Automation will generate the Payload with the required inputs for Post call:

API Attributes	Values
Path	/sap/opu/odata/sap/API_SERVICE_ENTRY_SHEET_SRV/A_ServiceEntrySheet
HTTP Method	POST
Payload sent	<pre>{ "PurchaseOrder": "", "ServiceEntrySheetName": "ABC", "to_ServiceEntrySheetItem": ["ServiceEntrySheetItem": "1", "ConfirmedQuantity": "2", "PurchaseOrder": "423562", "PurchaseOrderItem": "10", "QuantityUnit": "AU", "ServiceEntrySheetItemDesc": " ABCDEFG", "ServicePerformanceDate": "/Date (16209834)/", "ServicePerformanceEndDate": "/Date(16309876)/"] };</pre>
Response	Success (Status = 200): OK
Payload Type	Application/JSON

Post call for Multiple PO Service Entry Sheet Creation

This automation is used to create service entry sheets for multiple PO with multiple PO Items.



Step 3: this is used to generate the token for SES creation Post API call.

Step 5: here we are having the SES creation API and token which we generated in above step.

Step 8: is used to store all PO Items together to pass it in the log report.

Note: To Create SES the Automation will generate the Payload with the required inputs for Post call: -

API Attributes	Values
Path	/sap/opu/odata/sap/API_SERVICE_ENTRY_SHEET_SRV/A_ServiceEntrySheet
HTTP Method	POST
Payload sent	{ "PurchaseOrder": "", "ServiceEntrySheetName": "ABC", "to_ServiceEntrySheetItem": ["ServiceEntrySheetItem": "1", "ConfirmedQuantity": "2", "PurchaseOrder": "423562", "PurchaseOrderItem": "10", "QuantityUnit": "AU", "ServiceEntrySheetItemDesc": " ABCDEFG", "ServicePerformanceDate": "/Date (16209834)/", "ServicePerformanceEndDate": "/Date(16309876)/"

	<pre>] }; </pre>
Response	Success (Status = 200): OK
Payload Type	Application/JSON

Key parameters to execute the Automation: -

The following environment variables must be configured in the project

- AdminEmailId: - Provide the email of admin who will receive all exceptions from the Automation.
- NumberOfDaysforlastDate: - provide the value from how many past days you want Automation to pick the Purchase Orders for Mass SES Creation.
- Destination: - provide the destination which is being setup in BTP subaccount to connect to S4 System
- ConfirmedQuantityForLeanService: - provide the value where Purchase Order Items Category is "A"
- QuantityUnitForLeanService: - provide the value where Purchase Order Items Category is "A"

AdminEmailId:

NumberOfDaysforlastDate:

Destination:

ConfirmQuatityForLeanService:

QuantityUnitForLeanService:

Output Log Report Generated by Automation:

The automation generates the log in the form of an excel file. The format is shown in the screen capture below.

A1										
	A	B	C	D	E	F	G	H	I	J
1	PurchaseOrder	PurchaseOrderItem	SES-Number	StatusLog						
2	4500011844		-	Response code 400 (Bad Request)						
3	4500011846		-	Response code 400 (Bad Request)						
4	4500011856	10 ; 20		402 Service Entry Sheet is Successfully Created						
5	4500011859	30 ; 40 ; 50		403 Service Entry Sheet is Successfully Created						
6	4500011860	10 ; 20 ; 30 ; 40 ; 50		404 Service Entry Sheet is Successfully Created						
7	4500011861		10	405 Service Entry Sheet is Successfully Created						
8	4500011862		10	406 Service Entry Sheet is Successfully Created						
9	4500011863		10	407 Service Entry Sheet is Successfully Created						
10										
11										
12										
13										
14										
15										
16										
17										
18										

Support

There is no support available for template content. If you experience general issues with SAP Build Process Automation, raise an incident via SAP Support Portal on **BPI-PA-BPC** component.

This template can be modified using SAP Process Automation. For example: add business rules to determine the approver based on a certain business logic or add an action to post collected information to backend SAP system. Refer [Help Portal](#) for more details.

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