



PUBLIC

## SAP Build Process Automation

# **Create Customer Material Info Records** Configuration and User Guide

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## Change Log

Version	Date	Description
1.0.0	December 5, 2023	Document created

This document contains 3 sections. Each section covers different information about this template content package.

**1. Overview:** In this section, you will get quick overview of the use case, what are high-level components used and how the template works in nutshell. Prerequisite section provides information of different services of SAP Business Technology Platform (BTP) that are required to use this template.

**2. Configuration Guide:** It contain sections which will guide you to setup your (a) SAP BTP Account with destination, cloud connector, user roles etc., (b) Import and configure the template using SAP Build Process Automation design studio and (c) SAP Work Zone to access the My Inbox or Task Center and other applications.

**3. User Guide:** This section provides details about different artefacts that are used in this template like process definition, decision diagram, action project details, forms, email notifications etc. to better understand how different capabilities are used in this template.

#### Notes:

- This documentation is not a detailed guide to setup SAP BTP services. It assumes that IT admin who is setting the content is skilled with SAP BTP environment. Configuration section has to be mandatorily followed to import and configure the template.
- This template content is to accelerate your solution development. You must modify this template according to your requirements to achieve the desired business goal. To use this template content, you need to have basic knowledge and understanding of SAP Build Process Automation and its capabilities.

## Overview

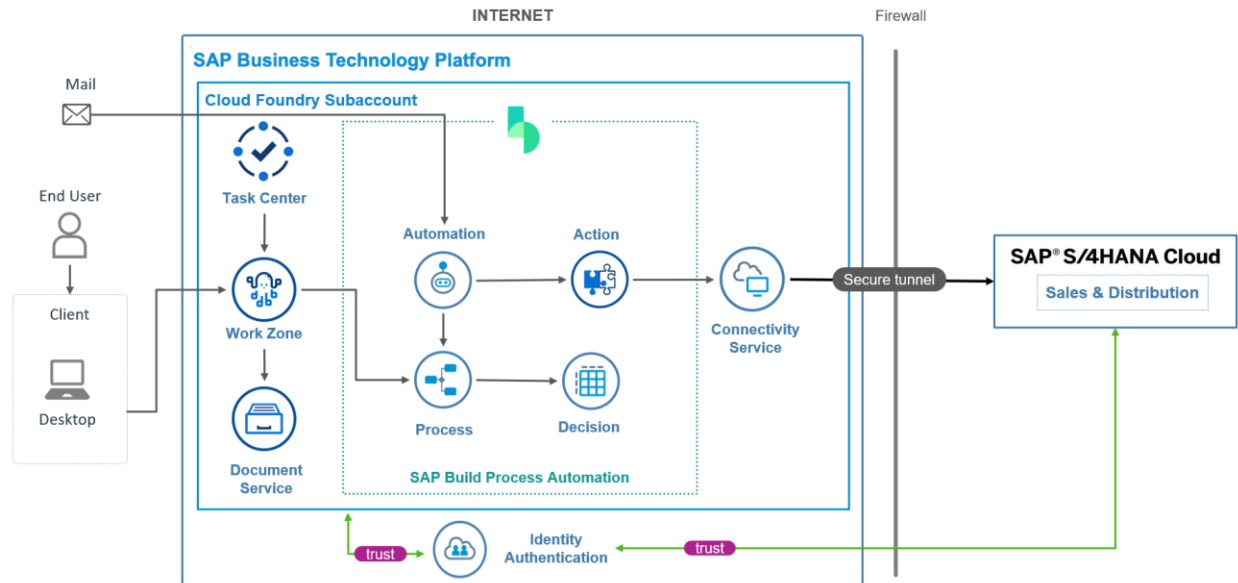
This document provides information about setting up the SAP Business Technology Platform account to consume the SAP Build Process Automation **Create Customer Material Info Records Template**. The main audience of this document are technical IT/system administrators.

Automation facilitates creation of customer material info records.

#### Features:

- This package provides functionality to create customer material info records in SAP S/4HANA.
- This package will automatically get the excel template from outlook email based on email subject and file name or from predefined folder.
- Segregates the excel data based on sales organization and division grouping fields and prepares separate excels.
- It provides the approval flow for the provided customer material details based on the determined approver(s).
- Includes automation to automatically generate the log file once the file is approved and notifies the requester with email with generated log file.

## Process Flow Diagram



### Steps:

1. User fills the create customer material info records template with relevant data.
2. Place the prepared template in predefined folder or send over email.
3. Automation picks the file and performs validation for duplication.
4. Checks if approval needed for excel based on sales organization and division grouping field.
5. Approver is determined from decision table and the approver will receive a task UI for approving the customer material info record creation.
6. Once tasks are approved, customer material info record will be created in SAP S/4HANA system.
7. Send status email with list of new records to stakeholders.

## Prerequisites

The following SAP Business Technology Platform services are required to consume the content package create customer material info records:

- 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 Public Cloud
- SAP Business Technology Platform, Cloud Foundry runtime
- SAP Work Zone, standard or advanced edition for accessing My Inbox and Process Visibility workspaces.
- SAP Document Management Service, Integration Option.

## Other Prerequisites

For this template to run successfully the following other prerequisites are needed

- SAP Desktop Agent 3.17 or higher
- Outlook mailbox configured on the system where the automations will run in order to send mails with attachments.
- Notifier or requestor email id should need to be maintained in **Field List** worksheet inside Customer Material Template.xlsx (This is the input excel template file provided with this package).
- ToBeProcessed and Processed folders needs to be there as subfolders inside outlook inbox folder.

### Note:

- This package is designed only to work with the provided folder structure & input template file structures. DO NOT CHANGE any column properties and structure.
- If any changes done in the input template structure, related process & automation implementation also need to be updated to handle those changes.
- You can decide the folder by the key parameters where the input template should be placed.
  1. **CustomerMaterialBaseFolderPath** - Base folder path for customer material related files.
  2. **DMSFolderPath** - Folder path of DMS where file needs to be stored.
  3. **EmailFolderProcessed**: folder name where processed emails will be moved after execution. This should be created inside Inbox folder in Outlook as subfolder.
  4. **EmailFolderToBeProcessed**: folder name from where emails will be picked for execution. This should be created inside Inbox folder in Outlook as subfolder.
- The input template **Customer Material Template.xlsx** is placed as file artefact and file is active checkbox should be selected.
- If input template file artefact is not active inside the project, it will not be executed in automation.
- The input excel has 2 sheets 'Field List' and 'CMIR'(customer material info record).
  - In **Field List sheet**, the field details are updated.

Sheet Name	Group Name	Field Name (Technical)	Field Description	Importance	Type	Sample Value
<b>Header (mandatory)</b>						
CMIR	Header	Sales Organization	Sales Organization	Mandatory	Text	FOBP
		Distribution Channel	Distribution Channel	Mandatory	Text	10
		Sold-to Party	Customer	Mandatory	Text	BP1001620
		Product	SAP Material Number	Mandatory	Text	FLOG-SP13
		Customer Material	Customer Material	Mandatory	Text	SBPA_CUST_MAT_1
		Customer Material Description	Customer Material Description	Mandatory	Text	SBPA Test Customer Material 1
CMIR	Shipping	Plant	Plant	Optional	Text	FOBP
		Delivery Priority	Delivery Priority	Optional	Text	3
		Minimum Delivery Quantity	Minimum Delivery Quantity	Optional	Text	10

- In CMIR (customer material info record)sheet the data will be fetched from SAP S/4HANA system.

- User fills all mandatory fields which is mentioned in Field List sheet in the excel template **Customer Material Template.xlsx** and sends over an email or place in the predefined folder.
- After POST call, the log report will be generated with the name of "**CustomerMaterialLogReport\_<Timestamp>.xlsx**" and will be saved in the log report folder inside the base folder that you have mentioned in the environment variable (**CustomerMaterialBaseFolderPath**) and notifies the requestor through email about the completion of operation with the attached log report.
- Before approval process the customer material info records are validated for duplicate records and are removed for further processing. These records are placed in excel with the name "**ExistingCustomerMaterialLogReport\_<Timestamp>.xlsx**" and will be saved in the log report folder inside the base folder that you have mentioned in the environment variable (**CustomerMaterialBaseFolderPath**) and notifies the requestor through email about the duplication of records with the attached log report.

## Configuration Guide

**Create Customer Material Info Records** template requires SAP Build Process Automation subscription or CPEA contract. Follow the [setup and configuration section](#)

### Setup SAP S/4HANA

#### Configure SAP S/4HANA Destination

Configure destination to connect to SAP S/4HANA cloud system.

This destination is used to validate and create customer material info records in SAP S/4HANA cloud system.

Destination Property	Value
Name	<Name>
Type	HTTP
URL	<SAP S/4HANA endpoint> Example: https://<s4system-name>-api.xxxxxxxx
Proxy Type	Internet
Authentication	Basic Authentication
Username	<Username> of the SAP S/4HANA Communication User
Password	<Password> of the SAP S/4HANA Communication User

**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 the following additional properties to the destination

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

Name: \* S4HANA

Type: HTTP

Description: S/4 Hana System

URL: \* [Redacted]

Proxy Type: Internet

Authentication: BasicAuthentication

User: \* [Redacted]

Password: [Redacted]

#### Additional Properties

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

## Setup 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](#)

[Configuration and Role Details for accessing "Communication Systems" application.](#)

[Configuration and Role Details for accessing "Communication Arrangements" application.](#)

List of communication scenarios to be configured.

Communication Scenario	Related API
Customer Material Info Record Integration(SAP_COM_0134)	<a href="#">Overview   Customer Material   SAP Business Accelerator Hub</a>

## Setup Business Technology Platform Cockpit

### Configure SAP Document Management Service

In this template, the input template document for create customer material info records and any supporting documents can be uploaded in the approval form which are then made available as attachments for review and approval to the respective participants. To upload the document from the form, you will need SAP document management service or equivalent Content Management Interoperability Services (CMIS) repository and a corresponding destination in SAP BTP to connect to the repository.

- Follow the instructions to configure [SAP Document Management Service for Attachments](#)
- Add service instance and service key (follow [this](#)) and repository (follow [this](#)) to configure the destination
- Configuring destination, refer [Configure SAP Document Management Service Destination](#)

**Note:** The destination needs to be created with `sap_process_automation_document_store` name.

## Configure SAP Build Process Automation Email Destination

Mail notifications are used in this template to send notifications to requestor, approver, and admin during different stages of the process. Follow the instructions to setup mail destination in your SAP BTP account.

Configuring destination, see [Configure a SMTP Mail Destination](#).

- For more information refer to create [HTTP Destinations](#) and [OAuth User Token Exchange Authentication](#).

## User Roles Configuration

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

Role Collection Name	Purpose
Process Automation Developer	Standard business user, can model and publish processes
TaskCenterAdmin	Permission to execute calls to the connector status API and monitor configured destinations and running background jobs.
ProcessAutomationParticipant	To execute (like accessing MyInbox, running the automations, etc.) this content package, you need to have this role assigned to the respective user.
ProcessAutomationAdmin	To perform process admin activities like accessing monitoring application etc., you need to have this role assigned to the respective user.

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

## Setup Build Process Automation Content

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

### 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 “**Create Customer Material Info Records**”

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 “**Create Customer Material Info Records**” template available for use.

**Caution:** Be sure to select the **Project Type** as “**Process Automation**” in the filters.

## Configuration & Modification

Once you have added the content to your lobby, you will find the project in your project list. Adapt the content template based on your requirements, and then release and deploy from the Lobby. In case any enhancement needs to do then follow the below reference links.

### Create an Automation

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

### Create a Business Process

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

### Create a Forms

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

### Create a Decision

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

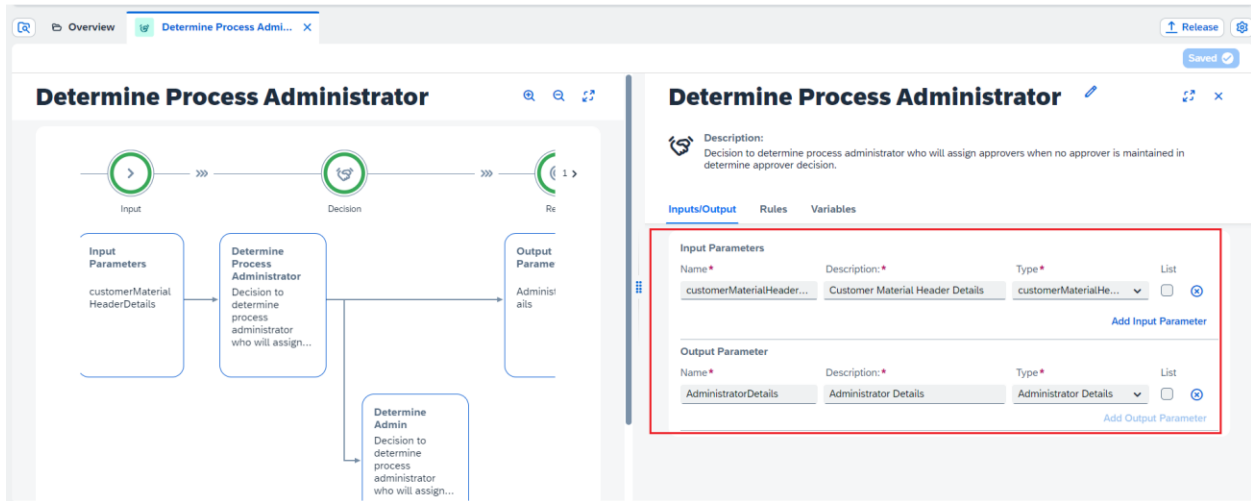
### Create a Datatype

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

## Configure Decisions

We have 3 decisions in this template. We can configure these decisions as per our requirements.

**Determine Process Administrator** - This decision is used to determine process administrator who will assign approvers when no approver is maintained in determine approver decision.



The attributes used in the decision rule can be selected as per requirement.

Edit Rule

1 Rule Details 2 **Configure Conditions** 3 Configure Results 4 Review

### 2. Configure Conditions

Click a vocabulary or its fields to configure the conditions.

**Vocabulary**

Search vocabulary or its fields

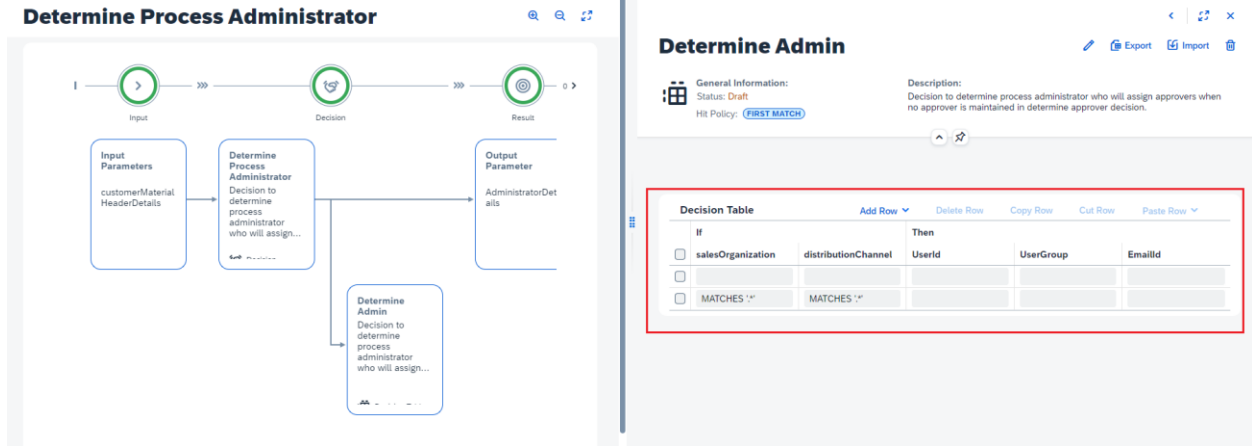
Input / Output

- customerMaterialHeaderDetails
- AdministratorDetails

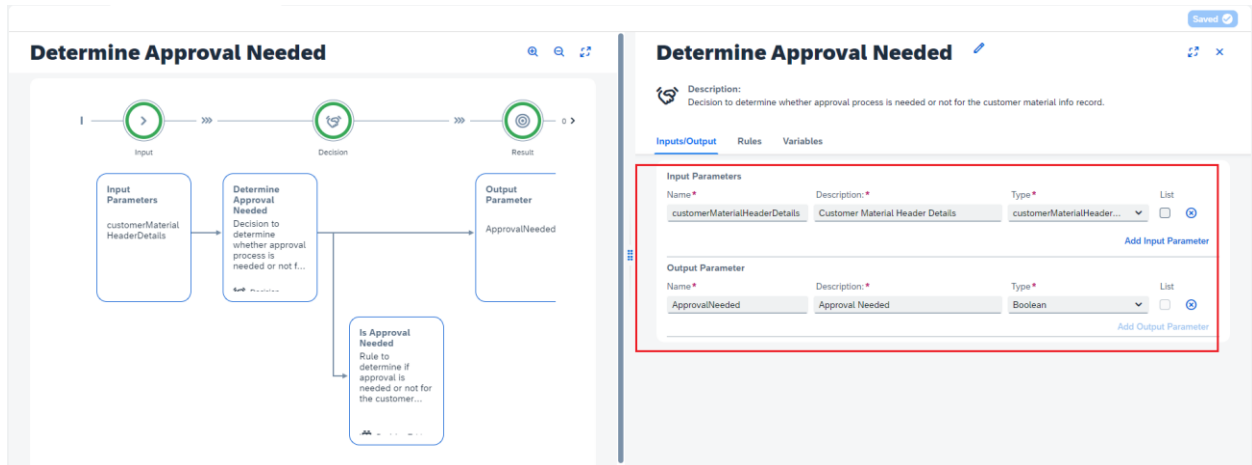
**Condition Details**

Condition Attributes	Label	Operator (Optional)
<input type="checkbox"/> customerMaterialHeaderDetails.salesOrganization	salesOrganization	<input type="text"/>
<input type="checkbox"/> customerMaterialHeaderDetails.distributionChannel	distributionChannel	<input type="text"/>
<input type="checkbox"/> Use vocabulary or Ctrl+Space for expressions		<input type="text"/>

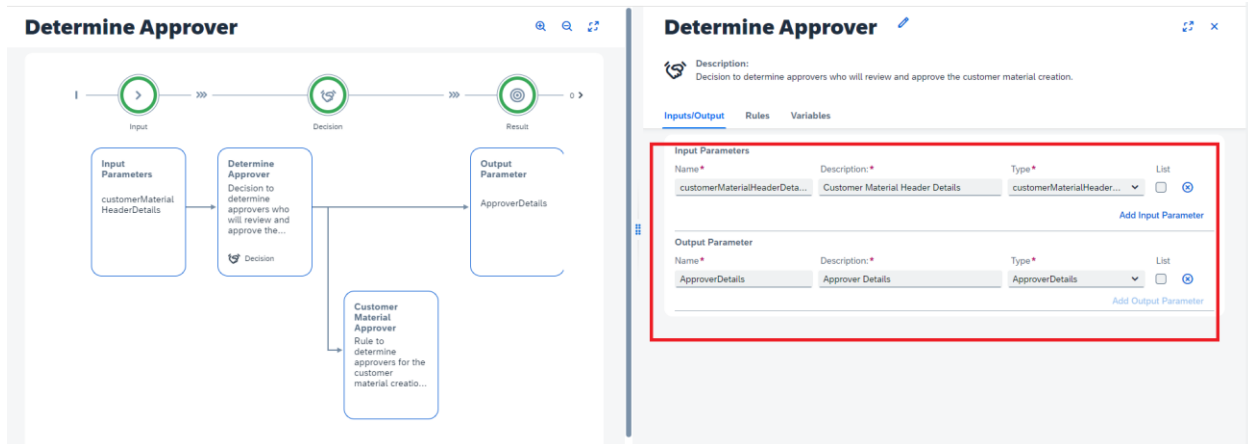
- Edit the rule to add more rows or update existing values.



**Determine Approval Needed** – This decision is used to determine whether the approval is required or not for creation of customer material info records.



**Determine Approver** - This decision is used to determine the approver details like email id and user id and group id for sales organization and division where the approval task will be sent.



## Configure Destination Settings

Actual destinations that are created in SAP BTP cockpit will be required when you deploy the process. This actual destination will be mapped the destination environment variables during deployment.

For this package following destination needs to be configured in the SAP BTP cockpit:

- **S4HANA\_CLOUD**
- **sap\_process\_automation\_document\_store**

**Note:** Above destination names have been configured in BTP but can be named as per the project requirement.

To configure destination,

- Click on **Settings**.
- Select **Destinations** from the left panel.
- Click **New Destination**

Select these destinations to be added (created in the above section). For more information and screen shots, please refer to the below link:

<https://help.sap.com/docs/build-process-automation/sap-build-process-automation/manage-destinations?q=destination%20setting>

## Configure Email

Email notifications are sent to requestor and approver at different places during process and task execution. All the email artefacts in the process have default template body which can be changed.

To update the email body content, do the following:

- Select the mail artefact in the process.
- From the **Settings** in the right-side panel, check the **Mail Header** to confirm the **To** field (or email recipients) and the **Subject**. You can adjust the subject and recipient, if needed.
- You may also add someone in **CC**.
- Click to **'Open Mail Body Editor'**.

The screenshot displays the SAP Business Process Manager (BPM) interface. The main area shows a process flow with three artefacts: a Decision 'Determine Process Adminis...', a Mail 'Notify Admin on Missing A...', and an Approval Form 'Customer Material'. The Mail artefact is selected and highlighted with a blue border. The right-hand panel shows the configuration for this mail artefact, titled 'Notify Admin on Missing Approver'. Under the 'Mail Header' section, the 'To' field is set to 'Emailid' and the 'Subject' is 'Missing Approver for Customer Material for Sales Organization and Distribution Channel'. Below this, there is an 'Open Mail Body Editor' button and a green notification that says 'Mail Body has content. Open the editor to view.'

Dear Admin,

The approval process is blocked for creation of customer materials related to the below sales organization and distribution channel as the approver is not maintained. Please assign an appropriate user or group to the process instance for approval process to continue from the monitoring application.

**Sales Organization:** >>> salesOrganization X

**Distribution Channel:** >>> distributionChannel X

**Process Instance Id:** >>> Process Instance Id X

Please follow below steps to assign approver:

1. Open "SAP Build Process Automation"
2. Go to "Monitoring" tab
3. Open "Process and Workflow Instances" app
4. Search for above mentioned "Process Instance Id"
5. Click on the searched process instance
6. Click on "Additional Options" (denoted by three dots i.e. "...")
7. Click on "Show Tasks"
8. Click on "Assign Processor"

**Apply** Cancel

- The mail editor allows you to write and adjust text according to your needs. You can also reuse information that has been collected during the process. If you want to use additional process context data, you can simply drag the fields from the left menu to the editor on the right.

For more information on email configuration and text, refer to the below link:

<https://help.sap.com/docs/build-process-automation/sap-build-process-automation/add-mail-notifications-to-process?q=email%20body>

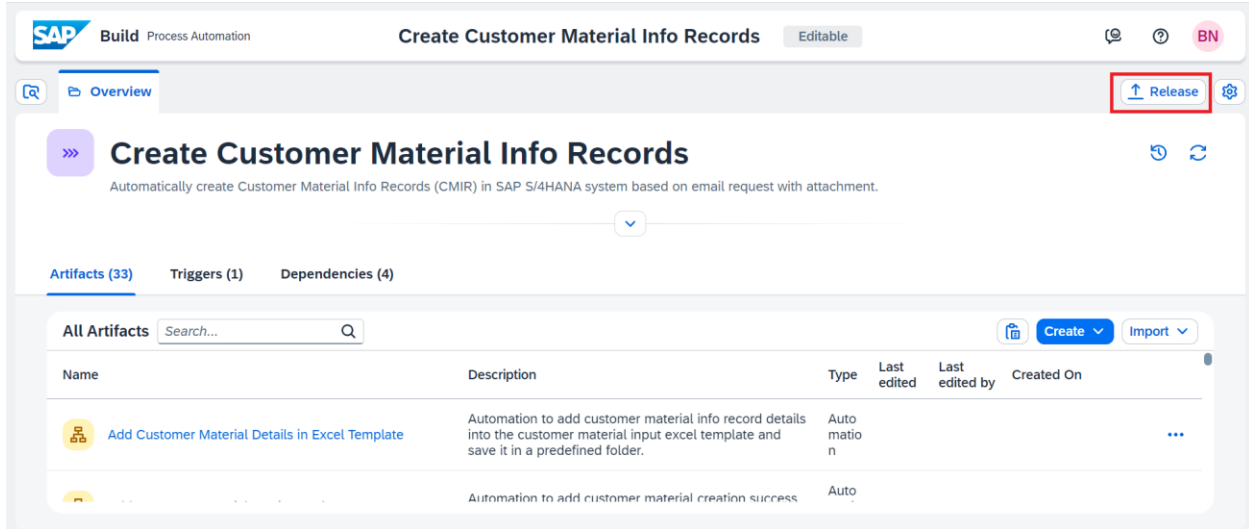
## Release and Deploy the Process

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'.

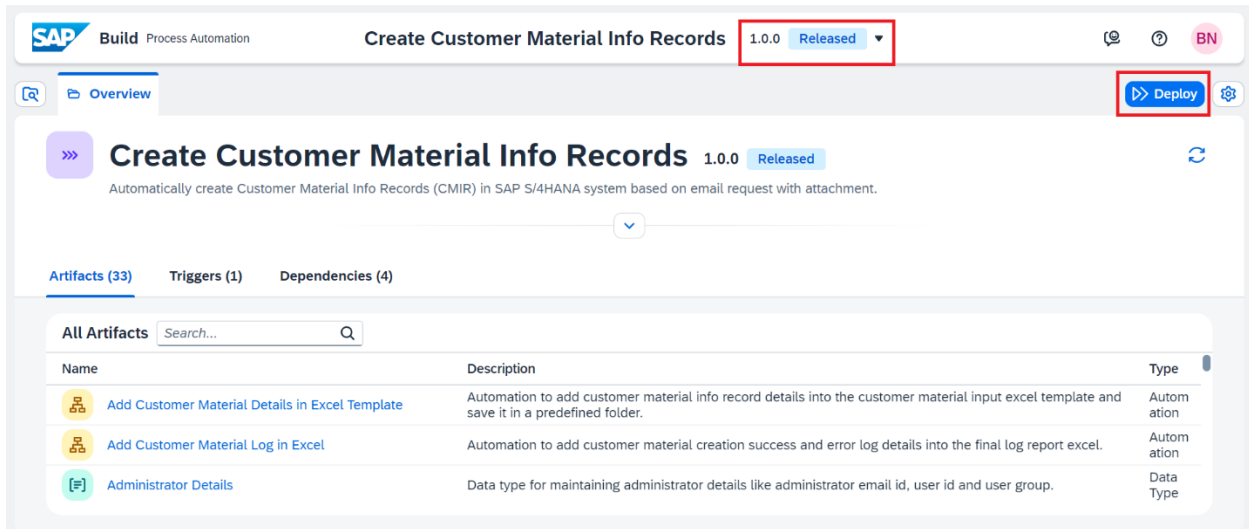


If this is the first time you've released the process, a version labelled 1.0.0 is released. For subsequent releases, you're prompted to select a version type before the process is released.

**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 and fill other environment variables as well.

1. CustomerMaterialBaseFolderPath: Base folder path for customer material related files.

2. DMS\_Destination: Destination for document management service (DMS).
3. DMSFolderPath: Folder path of DMS where file needs to be stored.
4. EmailAttachmentName: Expected file name of customer material template attachment in email (including file extension).
5. EmailFolderProcessed: Email folder for processed mails.
6. EmailFolderToBeProcessed: Email folder for mails to be processed.
7. EmailStartDate: Start date for searching emails.
8. EmailSubject: Subject of the emails having customer material input excel attachment.
9. S4HANA\_Destination: Destination to connect the SAP S/4HANA System.








**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.

## User Guide










### Capabilities

The following are the capabilities of this template:

For detailed information about different artifacts, please refer [help documentation](#).

Icon	Type	Name	Description
	Automation	Add Customer Material Details in Excel Template	Automation to add customer material info record details into the customer material input excel template and save it in a predefined folder.
	Automation	Add Customer Material Log in Excel	Automation to add customer material creation success and error log details into the final log report excel.
	Automation	Automation for Customer Material Validation	Automation to check if the customer material already exists in SAP S/4HANA system and to prepare data for only valid customer materials creation.
	Automation	Automation to Create Customer Material	Automation to read the excel data and create customer material in SAP S/4HANA and send the log report to the requestor.
	Automation	Automation to Post Customer Material	Automation to create customer material info record in SAP S/4HANA system and to add customer material creation log to the log report.
	Automation	Automation to Read Excel and initiate Workflow	Automation read the excel input data from mail and trigger workflow for approval process.
	Automation	Create Excel File and Upload in DMS	Automation to create customer material info record input excel by adding customer material info record details in customer material input excel template and call the automation to upload

			the excel in document management service which is displayed in customer material info record approval form to help the approver to review the customer material details.
	Automation	Create Excel for Log Report	Automation to create final log report excel for creating customer material info records by adding respective worksheets and column headers in excel.
	Automation	Create Folder	Automation to create a new folder only if the folder doesn't already exist in the folder path.
	Automation	Create Folder for DMS	Automation to create folder for document management service which is used to display attachment in approval form
	Automation	Create Log for Existing Customer Materials	Automation to create log report for existing customer material info record and send to the notifier.
	Automation	Delete File in DMS	Automation to delete the files inside a particular folder in document management service.
	Automation	Delete Folder and File in DMS	Automation to get the folder contents from document management service and to delete the folder and file in document management service.
	Automation	Delete Folder in DMS	Automation to delete the folder in document management service.
	Automation	Get Folder Content from DMS	Automation to get the folder content details from document management service.
	Automation	Move Excel to Processed Folder	Automation to move input excel template from to be processed folder to processed folder.
	Automation	Read Excel Data	Automation to read customer material info record data from customer material input excel template
	Automation	Search for Mail in Outlook	Automation to search for customer material creation related mails in outlook mailbox
	Automation	Search mail and move to predefined Folder	Automation to search customer material related email in outlook, if found move the email to predefined to be processed folder.
	Automation	Send Email to Requestor	Automation to send customer material info record input excel or final log report excel to requestor via email.
	Automation	Send Rejection Email to Requestor	Automation to send rejection email to requestor about the rejected customer material info records.
	Automation	Upload Document in DMS	Automation to upload document in document management service
	Decisions	Determine Process Administrator	Decision to determine process administrator who will assign approvers when no approver is maintained in determine approver decision.
	Decisions	Determine Approval Needed	Decision to determine whether approval process is needed or not for customer material info record creation.

	Decisions	Determine Approver	Decision to determine approvers who will review and approve the creation of customer material info record.
	Form	Customer Material Info Record Creation - Approval Form	Approval form to review and take decision on customer material info record creation process.
	Process	Customer Material Approval Process	Process to send approval task to the approver and proceed with customer material info record creation process.
	Data Type	Administrator Details	Data type for maintaining administrator details like administrator email id, user id and user group.
	Data Type	Approver Details	Data type for maintaining approver details like approver email id, user id and user group.
	Data Type	DMS Object	Data type for maintaining document management service object details like object id, name, and object type.
	Data Type	Customer Material	Data type for maintaining customer material info record details
	Data Type	Customer Material Header Details	Data type for customer material header details.
	File	Customer Material Template	Customer material info record template

This content package will enable SAP ERP customers to automate creation of customer material info records in SAP S/4HANA system. The purpose of this technical specification is to outline the process and requirements create customer material info records. This specification also includes the necessary table and field mappings within SAP, as well as the latest API to be used validation and creation of customer materials info records.

## Actions

### Create – Customer Material

This action is responsible for reading and creating customer material info records.

## Automation

### Automation to Post Customer Material:

This automation is used to create customer material info records in SAP S/4HANA system.

API	API Path	Purpose
API_CUSTOMER_MATERIAL_SRV	/sap/opu/odata/sap/API_CUSTOMER_MATERIAL_SRV/A_CustomerMaterial	API call to create customer material info records

### Automation for Customer Material Validation:

This Automation used to check if the customer material already exists in SAP S/4HANA system.

API	API Path	Purpose
API_CUSTOMER_MATERIAL_SRV	/sap/opu/odata/sap/API_CUSTOMER_MATERIAL_SRV/A_CustomerMaterial?\$format=json&\$filter=(Material eq {'Material'} or (MaterialByCustomer eq {'MaterialByCustomer'}))	GET call to validate customer material exists.

### Automation to Read Excel and initiate Workflow:

This Automation read the excel input data from mail and trigger workflow for approval process for creation of customer material info records.

### Create Excel File and Upload in DMS:

This Automation will create the excel file with the customer material info record details then create folder in SAP Document Management Service (DMS) and Upload the file in SAP Document Management Service (DMS).

### Delete Folder and File in DMS:

Automation to delete the folder and file in document management service after the approval process is completed.

### Rejection Email to the Requestor:

Automation to send email with attachment to the requestor when the approval is rejected.

## Process

### Customer Material Approval Process:

This Process will determine the approver, it will notify and send for the approval if the approver is determined, else it will notify and send task for the administrator to assign approver. If the task is approved, it will execute the automation "Automation to Create Customer Material", else it will send the rejection email to the requestor.

# Forms

## Approver Form:

- This approval form will be sent to the approver to review and take decision for customer material info record creation.

Customer Material Info Record Creation - Approval Form

### Review and Approve Attached Excel with Customer Material Info Record

Download the attached excel to review the request to create customer material info record in SAP S/4HANA . Approve or reject the request with appropriate comments.

Sales Organization Prepopulated Field T

Distribution Channel Prepopulated Field T

Customer Material Info Record Details

Uploaded File(s)

Comments \*

Enter Text

+ Drag any field or click to add here

Approve Reject

## 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.

[www.sap.com](http://www.sap.com)