



PUBLIC

SAP Build Process Automation **Mass Change Of Bill Of Materials**

Configuration & User Guide

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Change Log

Version	Date	Description
1.0.0	January 31, 2024	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 a quick overview of the use case, what are high-level components used and how the template works in a nutshell. Prerequisite section provides information of different services of SAP Business Technology Platform that are required to use this template.
2. Configuration Guide: It contains sections which will guide you to setup your
 - (a) SAP Business Technology Platform (BTP) Account with destination.
 - (b) Import and configure the template using SAP Build Process Automation design studio.
3. User Guide: This section provides details about different artifacts that are used in this template like process definition, automations, forms, email notifications etc. to better understand how different capabilities are used in this template.

Note:

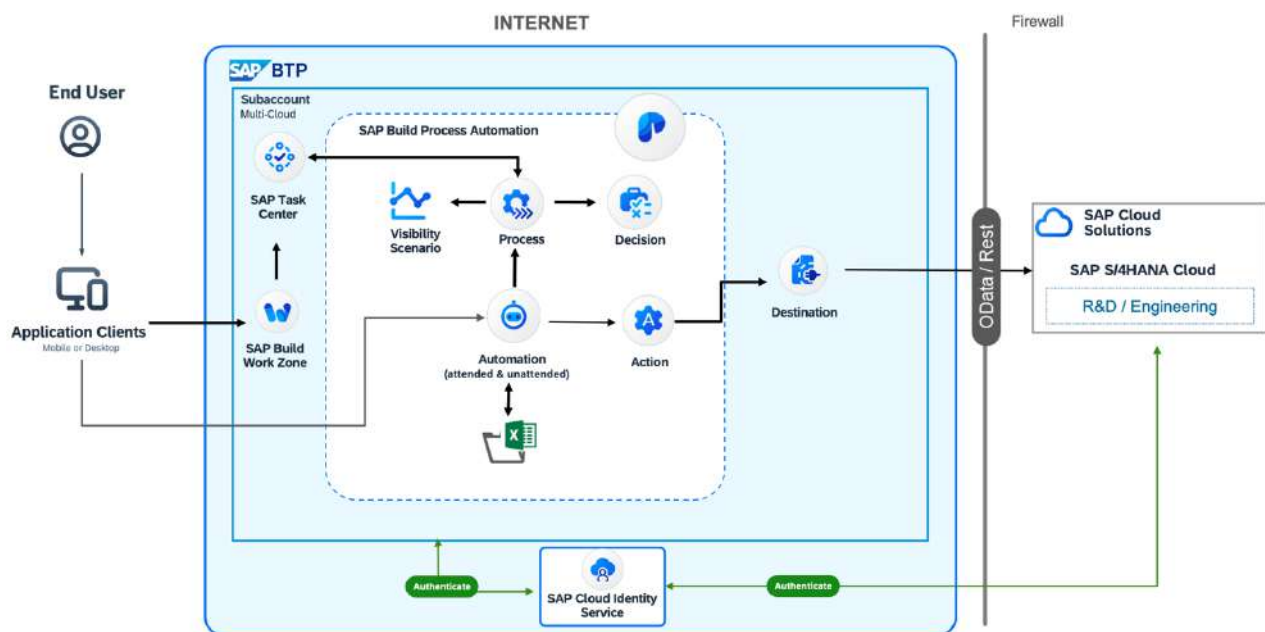
- This documentation is not a detailed guide to set up SAP Business Technology Platform services. It assumes that the IT admin who is setting the content is skilled with the SAP Business Technology Platform environment. The Configuration section must be mandatorily followed to import and configure the 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, SAP Integration Suite, and its capabilities.

Overview

The **"Mass Change Of Bill Of Materials"** process streamlines and automates the process of updating the bill of materials within the SAP S/4HANA system.

The bot seamlessly extracts values from the selection screen file, generates filters to retrieve details from the SAP S/4HANA system, and populates a predefined excel template. After user modifications, the filled template is stored in a designated folder for the bot's retrieval. The bot processes the data, groups it by materials, and initiates an approval process. Upon successful approval, the bill of material details is updated in the SAP S/4HANA system. This end-to-end process significantly reduces manual data entry and lead time, enhances data quality and consistency.

Solution Diagram:



The following steps are included as a part of **Automated Change Of Bill Of Material** template:

- The template uses below API calls:
 - **Bill of Materials API's**
 - **GET Method: /MaterialBOM**
This API is used to get the bill of material in the SAP S/4HANA system.
 - **GET Method: /MaterialBOMItem**
This API is used to get the bill of material item details in the SAP S/4HANA system.
 - **PATCH Method: /MaterialBOM**
This API is used to update material details in the SAP S/4HANA system.
 - **PATCH Method:**
/MaterialBOMItem(BillOfMaterial="",BillOfMaterialCategory="",BillOfMaterialVariant="",BillOfMaterialVersion="",BillOfMaterialItemNodeNumber="",HeaderChangedDocument="",Material="",Plant=")
This API is used to update material item details in the SAP S/4HANA system.

More information can be found in https://api.sap.com/api/sap_bom/overview

1) Scheduled Automation Trigger 1:

- **Start Process: “Fetch Bill Of Materials From SAP S/4HANA”** automation is scheduled to run the process automatically, no actions required from the end user to start the process.
- **Read Operation: “Fetch Bill Of Materials From SAP S/4HANA”** automation reads the selection screen file, generates filters to retrieve details from the SAP S/4HANA system, and populates a predefined excel template data from the selection screen excel which is placed in the designated folder and creates a new input excel file with the bill of material details.
- Email confirmation will be sent to notifier/stakeholder with the process completion status.

2) Scheduled Automation Trigger 2:

- **Start Process: “Initiate Bill Of Materials Approval And Update”** automation is scheduled to run the process automatically, no actions required from the end user to start the process.
- **Update Operation: ‘Initiate Bill Of Materials Approval And Update’** automation reads the input excel file, group based on the material and item, and sends the details to approval. Post approval from the approver, materials details will be updated in the SAP S/4HANA system.
- Email Notification will be sent to notifier/stakeholder upon:
 - Successful execution of automation.
 - Rejection notification

This structured process ensures that the process moves through an efficient and automated workflow. This reduces human errors, increases the data consistencies with overall efficiency and throughput of the SAP S/4HANA bill of material.

Prerequisites

The following SAP Business Technology Platform services are required to consume the content package of “Mass Change Of Bill Of Materials.”

- 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 Edition
- SAP Work Zone, standard or advanced edition for accessing My Inbox and Process Visibility workspaces.

More information about SAP Build Process Automation can be found [here](#).

Other Prerequisites

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

- SAP Desktop Agent 3.22.45 or higher
- Mailbox configured on the system where the automations will run to send mails with attachments.
- Selection screen excel for creating input template for update operation and the input template file required to update material and items details should be placed in the predefined folder. Example structure is shown below.

Note: The excel template files are included in this package and all names are case-sensitive. User must create the folder and place the templates as per the below structure.

Name	Type	Sample Path	Description
<Root Folder >	Folder		Root Path
+BillOfMaterials	Folder	C:\Root\BillOfMaterials	Sub Folder
+--FetchedBillOfMaterials	Folder	C:\Root\BillOfMaterials\FetchedBillOfMaterials	Sub Folder
+--BillOfMaterialLogFiles	Folder	C:\Root\BillOfMaterials\BillOfMaterialLogFiles	Sub Folder
+--Templates	Folder	C:\Root\BillOfMaterials\Templates	Sub Folder
Input Template.xlsx	File	C:\Root\BillOfMaterials\Template\Input Template.xlsx	Blank input file which auto populated materials and items.
BillOfMaterial Log_YYMMDD.xlsx	File	C:\Root\BillOfMaterials\Template\BillOfMaterial Log_YYMMDD.xlsx	Blank fetch operation log file.
Selection Screen.xlsx	File	C:\Root\BillOfMaterials\Template\Selection Screen.xlsx	Blank selection screen file.
+--Processed	Folder	C:\Root\BillOfMaterials\Processed	Folder containing processed files with bill of material details which have been sent for approval during the update operation.
+--ToBeProcessed	Folder	C:\Root\BillOfMaterials\ToBeProcessed	Folder containing files updated by the user which will be picked for the update operation.
+--SelectionScreen	Folder	C:\Root\BillOfMaterials\SelectionScreen	Folder containing populated selection screen files used in fetch operation

Fig Selection Screen Template:

	A	B	C	D
1	Bill Of Materials update Selection Criteria			
2				
3				
4				
5	Selection Screen			
6	Plant *	1710		
7	Bill of Material Item Node Number	1	To	10
8	Bill of Material	00000001	To	00000007
9	Input Template Folder Path*	C:\Root\BillOfMaterials\Template		
10	Send email *	sample@sap.com		
11	Save to Folder *	C:\Root\BillOfMaterials\FetchedBillOfMaterials		
12				
13	Note:			
14	A. For Read: All the fields can be used for Data selections.			
15	B. For Update: Send Email, and Save to Folder will be used			
16	C. * Mandatory fields to be filled in for both read and update			
17				

Fig Input Template:

112								
	A	B	C	D	E	F	G	H
	Bill Of Materials update				INSTRUCTIONS • Cell A1 to A13 and B1 to B13 should not be changed • Column header from D upto G should not be changed • During the update process only while column will be populated with the existing value • Enter the values from row 12 according to the specified data type for the respective fields.			
Field Information	Header (mandatory)				Optional (Editable)		Optional (Editable)	
Key/Mandatory	Read Only	Read Only	Read Only	Read Only	Read Only			
Technical Name	Bill Of Material	Material	Plant	Plant Name	Bill Of Material Category	BOM Header Quantity In Base Unit	BOM Header Base Unit	
Data Type	String	String	String	String	String	String	String	
Info for Records								

- Bot will read the data from the selection screen excel file which is placed in the predefined folder and fetch the details from the SAP S/4HANA system and save it to an excel template in “**FetchedBillOfMaterial**” folder.
- You can decide the root folder where the selection screen excel should be placed and configure the same in the trigger.
- Details that should be updated must be filled in the “**Template**” worksheet of “**FetchedBillOfMaterial**” excel file to update material details in the SAP S/4HANA system.
- All the mandatory fields should be filled in the excel file.
- The notifier email address is fetched from the selection screen file, and it is updated in "Notifier" sheet that is created in the “FetchedBillOfMaterial” excel file.

Note:

- This package is designed only to work with the provided input template file structures. **DO NOT CHANGE** any column properties and structure.
- If any changes are made in the input template structure, related process & automation implementation also need to be updated to handle those changes.

Process Flow

To Fetch Bill Of Material Details From The SAP S/4HANA System For Update:

1) Manual Update:

End user must fill the selection criteria in the selection screen excel template file (which is downloaded from the package and placed in the “**Template**” folder) with the notifier email address and place the filled excel file in the “**SelectionScreen**” folder.

2) Scheduled Automation Trigger 1:

The “**Fetch Bill Of Materials from SAP S/4HANA**” automation is scheduled to automatically run without human intervention.

3) Read The Bill Of Material Details:

The ‘**Fetch Bill Of Materials from SAP S/4HANA**’ automation opens and reads the data from the “Selection Screen” excel file which contains the material and material item details from predefined folder location.

4) Iterating Through List Of Materials:

For each material data, the ‘**Fetch Bill Of Materials from SAP S/4HANA**’ automation initiates another sub-automation named ‘**Fetch Selection Screen Details And Create Report File**’ which performs all the steps required to retrieve the bill of material details from the SAP S/4HANA system and save it into “Input Template” excel file.

5) Saving Processed Input file and Send Mail Notification:

- Once the “Selection Screen” file(s) have been processed from the predefined folder, it is renamed as **<FileName_Processed>** and saved in the same predefined folder.
- Mail notification will be sent to the notifier once the details are collected from the SAP S/4HANA system.

To Update Material And Item Details In The SAP S/4HANA System:

1) Manual Update:

End user must fill all the worksheets in the “Input Template” file(s) which is placed in the “**FetchBillOfMaterial**” folder and move the file(s) to “**ToBeProcessed**” folder which will be used for the update operation.

2) Scheduled Automation Trigger 2:

‘**Initiate Bill Of Materials Approval And Update**’ automation is scheduled to automatically run without human intervention.

3) Read The Material And Item Details:

The ‘**Initiate Bill Of Materials Approval And Update**’ automation opens and reads the data from the “Input Template” excel file which contains bill of material details to initiate the process for updating bill of material details in the SAP S/4HANA.

4) Iterating Through List Of Material Data:

For each group of material details, the ‘**Group Bill Of Materials And Call Approval Process**’ automation initiates a process named “**Update Bill Of Materials Process**” which performs all the steps required to complete update process.

• **Update Bill Of Materials Process:**

- **Determine Approver Needed:** Checks if approval is required for the “Plant”. If the approver is needed, it will determine the approver using a decision table, else update materials details using “**Auto Update Bill Of Materials**” automation.
- **Determine Bill Of Material Update Approver:** Approver is determined using the decision table based on the “Plant”. This information is essential for the next step.
- **Determine Admin:** Admin is determined using the decision table based on the “Plant” to notify if approver is missing. This information is essential for the next step.
- **Send Mail Notification:** Mail notification will be sent to admin with the email address retrieved from the previous step to notify about missing approver and to assign approver.

- **Sending Approval Request Task To Approver:** A form named '**Approval Form - Update Bill of Materials**' is sent to the determined approver from the step. The form includes information about material and material item details.
- **Approver's decision:** If the approver decides to approve the request, "**Update Bill Of Materials**" automation is executed to update material details. If the approver decides to reject the request, "**Generating Log File For Rejected Bill Of Materials**" automation is executed.
- **Email Notification:** Mail notification is sent to the notifier/stakeholders upon completion of the process with the log report attached.

5) Saving Processed Input file and Send Mail Notification

- Once the input file(s) have been processed from the predefined folder, it is moved to the '**Processed**' folder in the same predefined folder and is renamed to '**<Processed_TimeStamp>**'. '**Processed**' folder will be created if not present already.
- Log reports will also be saved under predefined folder. '**LogFiles**' folder will be created if not present already.

This process flow outlines the steps involved in automating the change of bill of materials, including user interaction, data retrieval, approval processes, and notifications.

Configuration Guide

Mass Change Of Bill Of Materials Template requires SAP Build Process Automation subscription. Follow the [setup and configuration section](#).

Setup SAP Business Technology Platform Cockpit

Destination Configuration

Configure SAP S/4HANA Cloud, public edition Destination.

To access the SAP S/4HANA system for read and update operations, an HTTP destination is required in the SAP BTP account where the SAP Build Process Automation is subscribed.

Create a destination with Basic Authentication

Make sure the communication user has the appropriate communication strategy to edit the bill of materials assigned to it in the SAP S/4HANA system.

Destination with Basic Authentication

Name	<Mass Change Of Bill Of Materials>
Type	HTTP
Proxy Type	Internet
Authentication	Basic Authentication
URL	<S/4HANA-API_BILL_OF_MATERIAL_SRV_endpoint> Example: https://<host>:<port>/sap/opu/odata/sap/API_BILL_MATERIALS_SRV/
Username	<username> of the SAP S/4HANA system Communication User

Password	<Password> of the SAP S/4HANA system Communication User
----------	---

Additional Properties to Destination

Additionally, add the following properties in the destination for cloud integration.

sap.applicationdevelopment.actions.enabled	true
sap.processautomation.enabled	true

Setup Communication

To run this template, you must have a communication user, create communication arrangements between the communication user and the following communication scenario, 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.](#)

Communication scenarios to be configured.

Communication Scenario	Related API
Product Lifecycle Management - Master Data Integration (SAP_COM_0105)	Overview Bill of Material SAP Business Accelerator Hub

Configure SAP Build Process Automation Email Destination

Mail notifications are used in this template to send notifications to requestors at various stages of the process. Follow the instructions to set up mail destination in your SAP BTP Account.

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

For more information refer to [Create HTTP Destinations](#)

IMPORTANT NOTE: This template content is to accelerate your solution development. You can modify this template according to your own requirements to achieve your business goals. To use this template content, you need to have basic knowledge and understanding of SAP Build Process Automation and its capabilities.

Setup SAP Build Process Automation Content

Import Content

This template can be downloaded from the Store:

- 1) Navigate to the Store in your SAP Build Process Automation application.
- 2) Select the Project Type filter as "**Process Automation**".
- 3) In the Search bar type "**Mass Change Of Bill Of Materials**"
- 4) Select the "**Create from Template**" button to add the template into your lobby.

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After successfully adding the template, navigate back to the lobby to find the “**Mass Change Of Bill Of Materials**” project available for use.

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

Configure Agent Management Settings

This configuration is required to execute the process with automation. Kindly follow the steps explained [here](#).

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.

Configure Process

There is no configuration needed in the process. But it can be changed based on your requirements of the business.

Configure Forms (Optional)

You can update or extend the forms based on your requirements. To edit the form:

- Double click the form to open the Form Editor
- You can configure existing fields or add new layout or input fields to the form by simply dragging-and-dropping them from the side menu.

Approval Form - Update Bill Of Materials

Approval form for bill of materials and item level update in the SAP S/4HANA system

Important Notes:

- 1) Please do not change any data in editable fields except for the respective approval checkboxes & approver comments. Any other change in data is not supported.
- 2) Material and items are considered as fully approved, only if the approval checkboxes for both material header and all items are checked.
- 3) For Partial Approval, select only those checkboxes of material header or item that are approved and click the 'Approve' button. Material header and item with unchecked checkbox will be considered as rejected.
- 4) On clicking "Reject" button, the material and all items are considered as rejected. Any selected checkboxes will be ignored and the entire material update will be rejected.

Plant

Configure Decision

Below are the decision artifacts in the process:

1. Determine Bill Of Material Update Approver: To determine the approver email address to whom the approval task and notification mails are to be sent.
2. Determine Approval Needed: To determine if the approver is required or not based on plant.
3. Determine Admin: To determine the admin email address to notify about the missing approver.

This decision must be modified for conditions and result values based on your business policies and requirements.

To modify the decision:

- In the process editor, double click to open the decision.

Determine Bills Of Material Update Approver

Inputs/Output Rules Variables

Input Parameters

Name*	Description*	Type*	List
Materials	Material details	Materials	☐

Add Input Parameter

Output Parameter

Name*	Description*	Type*	List
Approver	Approver details	Approver	☐

Add Output Parameter

- Select the rule from the decision diagram.

Determine Bills Of Material Update Approver

Description: Decision to determine the set of approvers who will review and approve the Bills of materials

Inputs/Output Rules Variables

Rules

Name	Type	Execution Order
Determine Approver	Decision Table	1

- Click on “**Determine Approver**” and click on the pencil icon to edit.
- The attributes used in the decision rule can be selected as per requirement.

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

Edit Rule

- Add conditions to determine approver and assign approver email address/group.
- Click on **Save**.

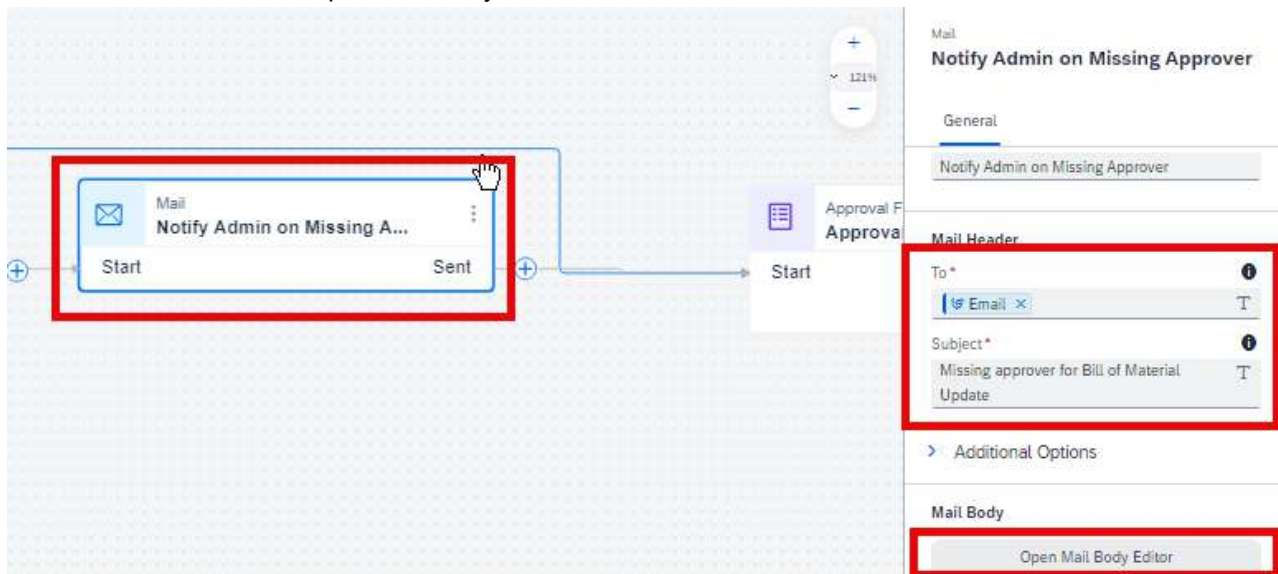
Configure Email

Email notifications are sent to stakeholders after task execution. All the email artifacts in the process have a default template body which can be changed.

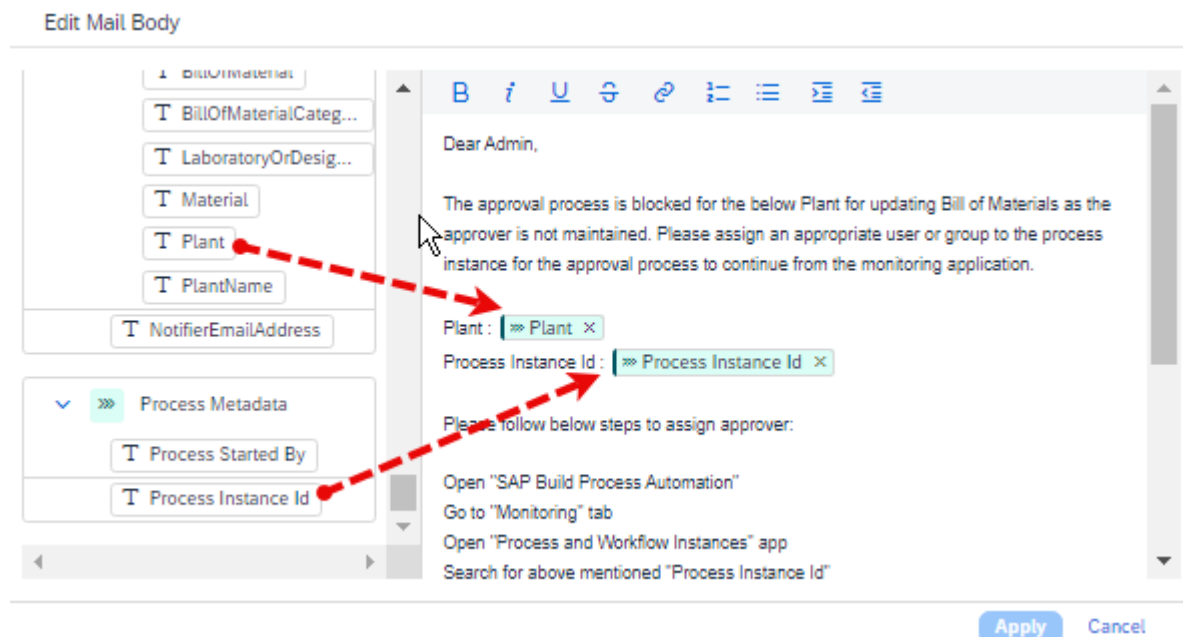
To update the email body content, do the following:

- Select the mail artifact 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 on 'Open Mail Body Editor'.

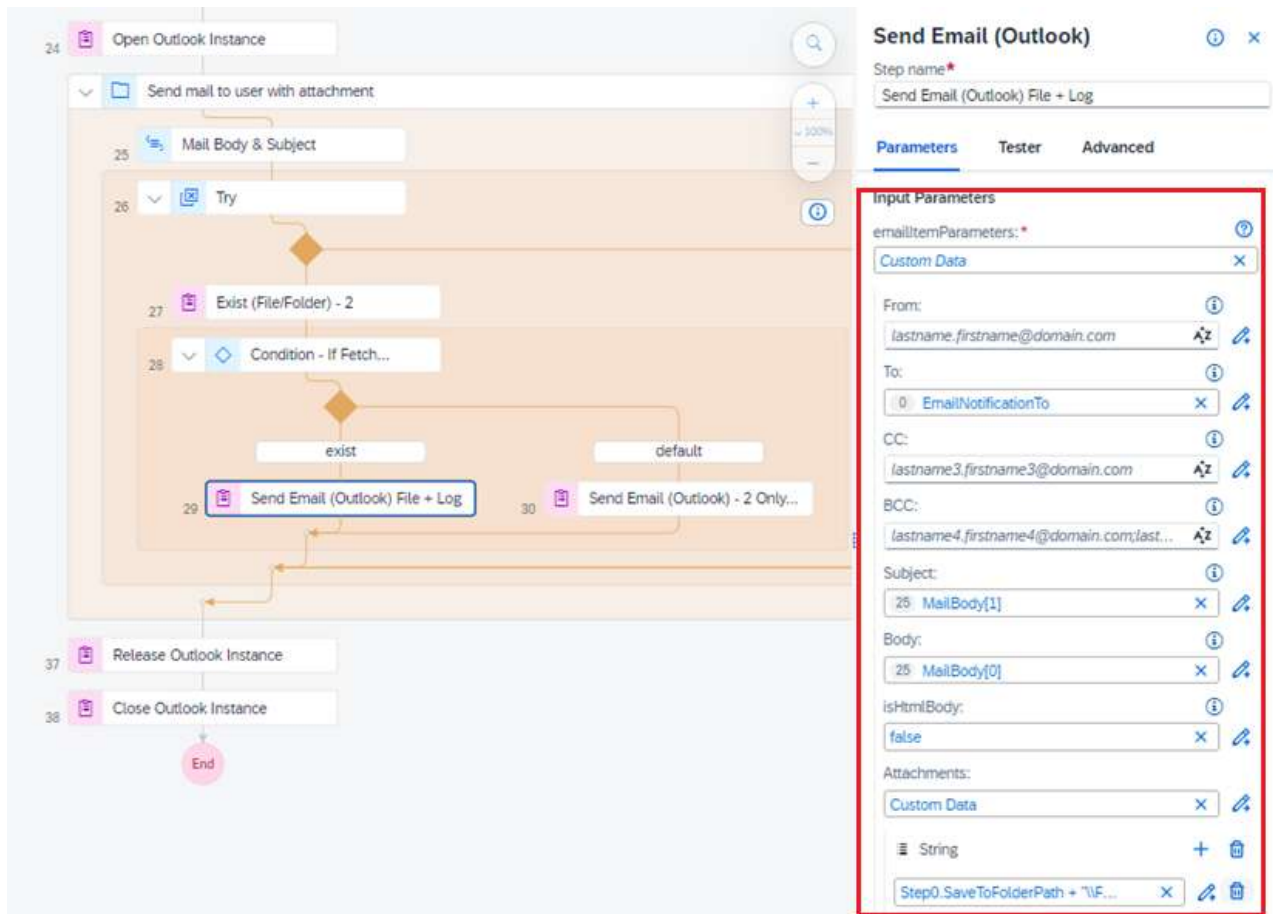


The mail editor allows you to write and adjust text according to your needs. You can also reuse information that has been collected during the process. If you want to use additional process context data, you can simply drag the fields from the left menu to the editor on the right.



There are email notification steps available in the automations as well. These are sent via Microsoft outlook on the computer where the automations run.

The body and subject of the email can be modified accordingly as per your need in custom script.



Configure Visibility Scenario

Visibility scenario is to track processes for bill of material that are submitted for update.

- Approval Visibility Scenario

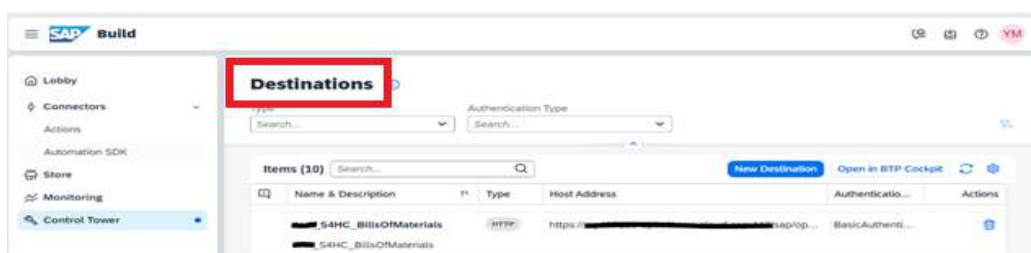
To configure visibility scenario, please follow the [tutorial link](#)

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 in the destination environment variables during deployment.

To configure destination:

- Click on **Control Tower**.
- Select **Destinations** from the right panel.
- Click **New Destination**
- Select the destinations to be added.



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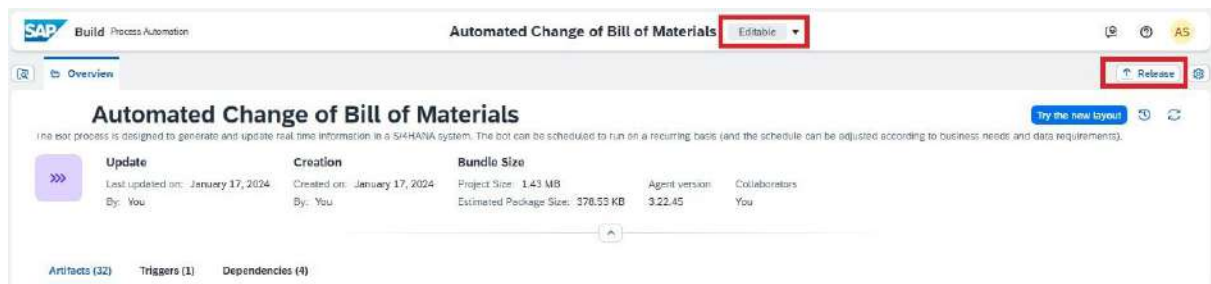
Release and Deploy Process

After configuring your process, it is time to publish, evaluate 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 cannot 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**':

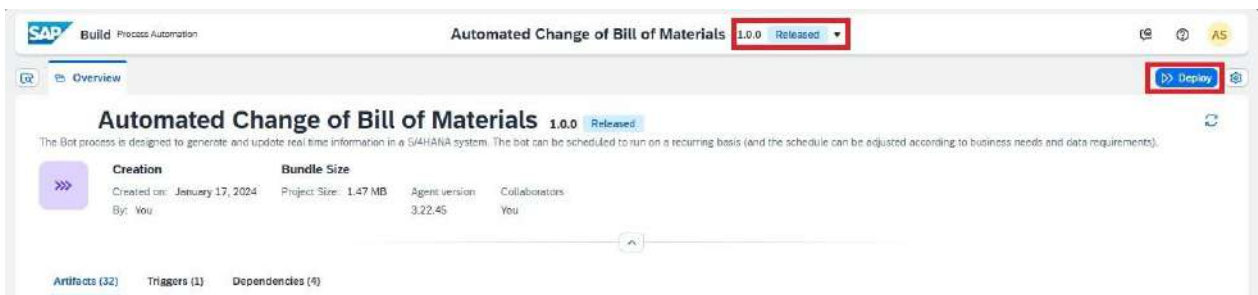


If this is the first time you have released the process, a version labelled 1.0.0 is released. For subsequent releases, you are prompted to select a version type before the process is released.

Deploy – This takes a released version of a process and enables it to be actively run and monitored. A deployed version of this process triggers automation, allowing to update bill of materials with email notification to stakeholders.

To deploy a released version of your process,

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



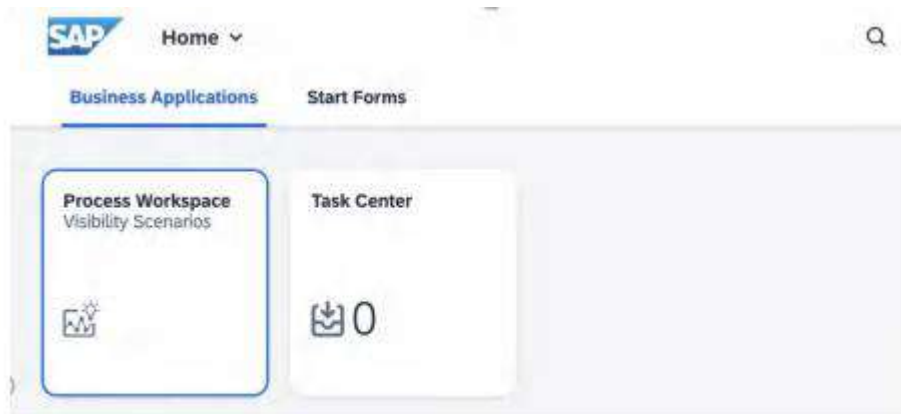
To deploy your project, you will be prompted to provide a destination as an environment variable. Select the destination from the drop-down.

Note: If you do not map your destination environment variable with the actual SAP BTP destination during deployment, then the process will enter an Erroneous state when it tries to connect to the external system. For more details about the Destination artifact, please read our [documentation](#).

Configure SAP Work Zone

Now that the process is released and deployed, you can configure SAP Work Zone standard or advanced edition to give access to your business users to track the process and business KPIs using process visibility workspace.

To configure SAP Work Zone standard edition - add Process Workspace and Task Center tile in SAP Work Zone to access the visibility dashboard. Follow the [tutorial](#) to configure Work Zone with visibility tiles.



User Guide

Capabilities

This template content contains the following key artifacts:
Please refer to [help documentation](#) about these different artifacts.

Icon	Type	Name	Description
	Process	Update Bill Of Materials Process	Process to get the approval and update the bill of material in the SAP S/4HANA system. It assesses whether approval is necessary, if not, details are automatically updated. If approval is required, the process identifies the approver, sends an approval form and upon their approval, updates the details in the SAP S/4HANA system.
	Automation	Fetch Bill Of Materials from SAP S/4HANA	Main automation to retrieve the bill of materials from the SAP S/4HANA system. It collects material and item details using an input selection screen and saves information in an excel file. The automation also notifies a designated notifier upon completion of the data retrieval and storage process.

	Automation	Fetch Selection Screen Details And Create Report File	Sub automation to retrieve details from the SAP S/4HANA system. This process accurately fetches details based on user-provided filters in the selection screen input. Subsequently, it stores the acquired information in an input template file in a user specified folder.
	Automation	Create Log File And Send Notification Mail	Sub automation to move the fetched records file to the user specified file path from the selection screen input. It generates a log file and sends notification to the user.
	Automation	Initiate Bill Of Materials Approval And Update	Main automation to initiate update material and item details in the SAP S/4HANA system. The updated information by user undergoes an approval process.
	Automation	Group Bill Of Materials And Call Approval Process	Sub automation to group materials and items from the input template and to initiate approval and update processes for each of them.
	Automation	Move Processed File And Send Notification Mail	Sub automation to move the update records file from 'ToBeProcessed' to 'Processed' folder, create the log file & send mail.
	Automation	Update Bill Of Materials In SAP S/4HANA	Automation to update bill of material details in the SAP S/4HANA system after approval process.
	Automation	Auto Update Bill Of Materials	Automation to auto update bill of material details in the SAP S/4HANA system without going through approval process.
	Automation	Generating Log file	Automation to generate log report for bill of materials which will show how many records are success or failed and give the detailed information regarding each record.
	Automation	Write Material Log Report	Automation to update the material details in the log report excel file.
	Automation	Write Material Item Log Report	Automation to update the material items details in the log report excel file.
	Automation	Send Mail To Notifier	Automation to send log report mail to notifier.
	Automation	Generate Log File For Rejected Bill Of Materials	Automation to generate log report for the rejected bill of materials.
	Form	Approval Form - Update Bill Of Materials	This form serves as an approval request and is sent to the approvers. It includes bill of materials details. Additionally, it features a section where the approver can choose to

			approve/reject the request and provide the comments for their decisions.
	Decision	Determine Bill Of Material Update Approver	Decision to determine the set of approvers who will review and approve the changes in bill of materials.
	Decision	Determine Approval Needed	Decision to determine if the approval is needed or not for the changes in the bill of materials.
	Decision	Determine Admin	Decision to determine process administrator who will assign approvers when no approver is maintained in determine bill of material approver decision.
	Data type	Admin	Data type to store admin details.
	Data type	Materials	Data type to store the material details retrieved from the input excel file.
	Data type	Material Items	Data type to store the material items details retrieved from the input excel file.
	Data type	Approved Items	Data type for single material item details
	Data type	Approved Material Items	Data type to store the material item details after the approval from the approver.
	Data type	Approved Materials	Data type to store the material details after the approval from the approver.
	Data type	Approver	Data type to store approver details.
	Data type	Single Items	Data type to store a single material item details retrieved from the input excel file.
	Visibility Scenario	Approval Visibility Scenario	Visibility scenario to track processes for bill of material data that are submitted for update.

Forms

Approval Form - Update Bill of Materials

The approval request form seeks approval, providing a reference bill of material details. The approver must take a decision based on the details provided in the form by giving comments for their action.

Approval form for bill of materials and item level update in the SAP S/4HANA system

Important Notes:

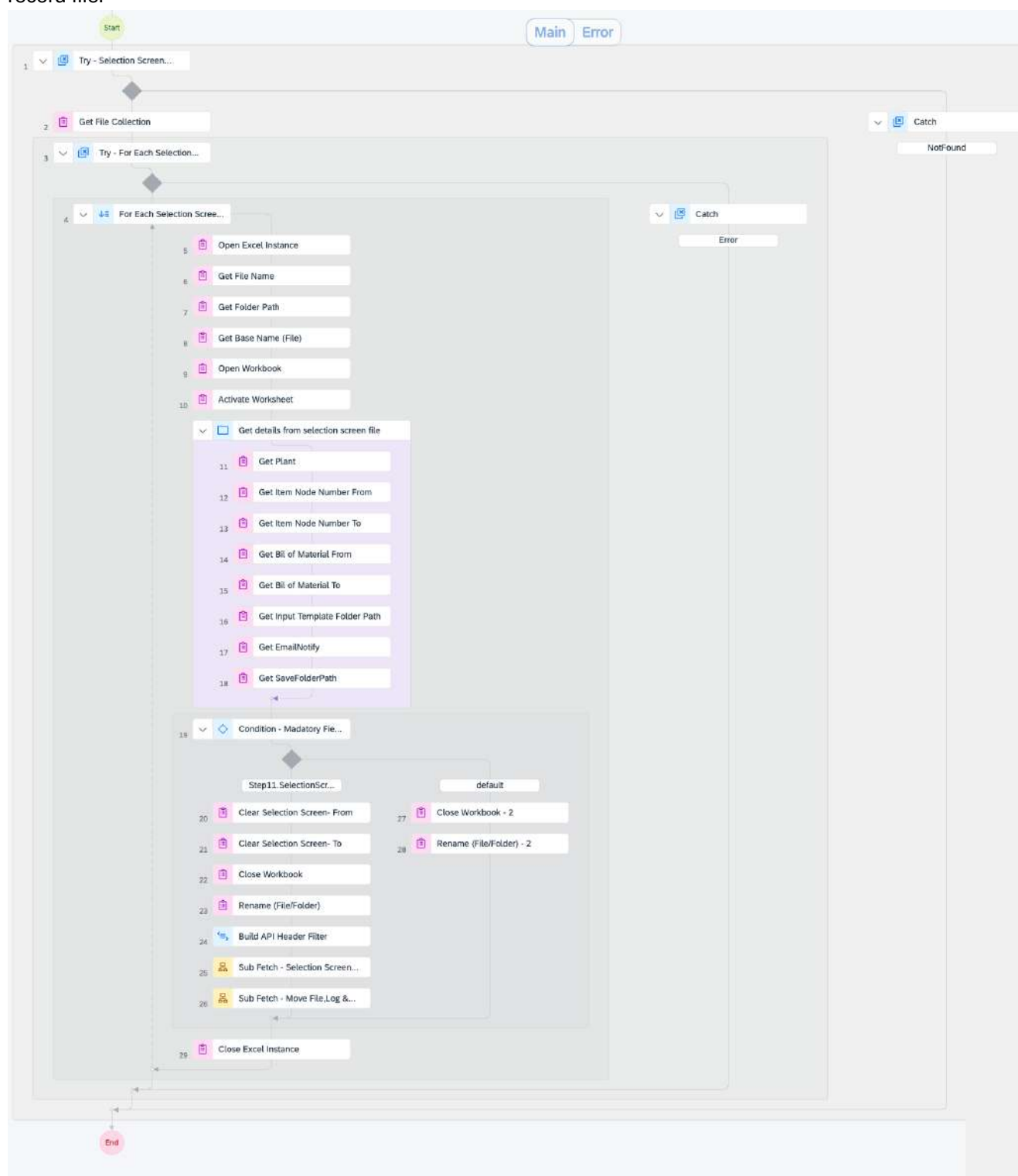
- 1) Please do not change any data in editable fields except for the respective approval checkboxes & approver comments. Any other change in data is not supported.
- 2) Material and items are considered as fully approved, only if the approval checkboxes for both material header and all items are checked.
- 3) For Partial Approval, select only those checkboxes of material header or item that are approved and click the 'Approve' button. Material header and item with unchecked checkbox will be considered as rejected.
- 4) On clicking "Reject" button, the material and all items are considered as rejected. Any selected checkboxes will be ignored and the entire material update will be rejected.

Plant	Prepopulated Field	T		
Plant Name	Prepopulated Field	T		
Material	Prepopulated Field	T		
Bill Of Material	Prepopulated Field	T		
Bill Of Material Category	Prepopulated Field	T		
BOM Header Quantity In Base Unit	Prepopulated Field	T		
BOM Header Base Unit	Prepopulated Field	T		
BOM Header Text	Prepopulated Field	T		
Laboratory Or Design Office	Prepopulated Field	T		
☐ Material Approved				
Material Approver's Comment Enter Text				
Items				
Bill Of Material Component	Bill Of Material Item Node Number	Bill Of Material Item Number	Bill Of Material Item Category	Bill Of Material Item
Enter Text	Enter Text	Enter Text	Enter Text	Enter Text
+ Drag any field or click to add here				
Approve Reject				

Automations

Fetch Bill Of Materials From SAP S/4HANA

Main fetch automation reads the bill of material details from the selection screen excel file, which is placed in a designated folder location. Based on the selection screen input, automation will create a filter to fetch the data from the SAP S/4HANA system. The fetched data will be saved in the provided excel file. After these steps, a log file will be created, and the notifier will receive a mail notification with the log file and fetched record file.



Step 1 to Step 18: Read all the selection screen files and fetch the data.

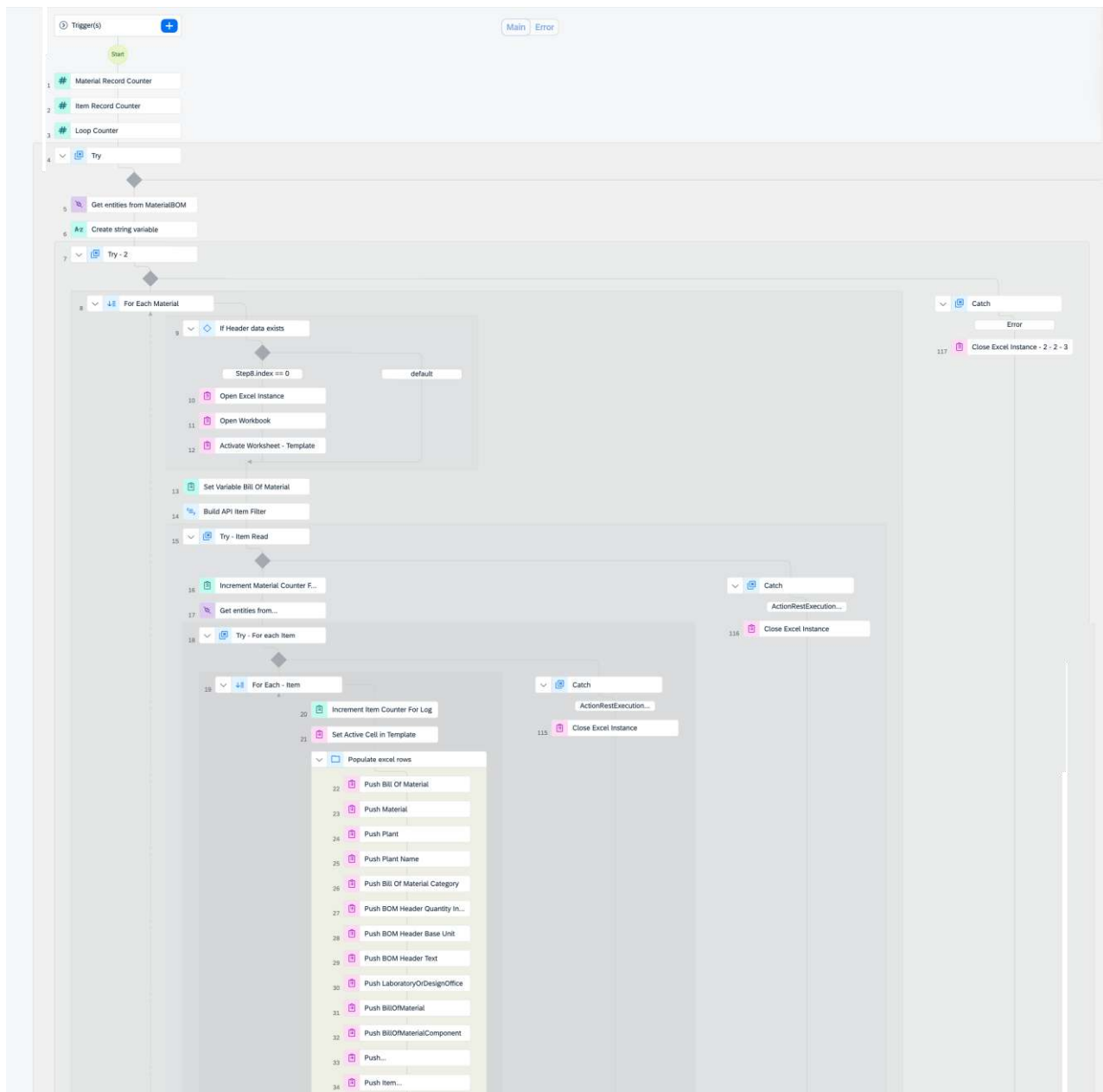
Step 19 to Step 24: Clear the read content from the selection screen file and build filter condition to filter out the data from the SAP S/4HANA system.

Step 25 to Step 26: Trigger the sub-automations "**Fetch Selection Screen Details And Create Report File**" and "**Create Log File And Send Notification Mail**".

Step 27 to Step 29: If any of the mandatory fields are not present in the selection screen file, then close the excel file and add 'MandatoryFieldError' to its name.

Fetch Selection Screen Details And Create Report File

Automation is to retrieve details from the SAP S/4HANA system. This process accurately fetches details based on user-provided filters in the selection screen input. Subsequently, it stores the acquired information in an input template file in a user specified folder.



Step 1 to Step 3: Create number variables to count the fetched details.

Step 4 to Step 7: Fetch the material details from the SAP S/4HANA system.

Step 8 to Step 14: Iterate through each material and build filter to filter out the item details from the SAP S/4HANA system.

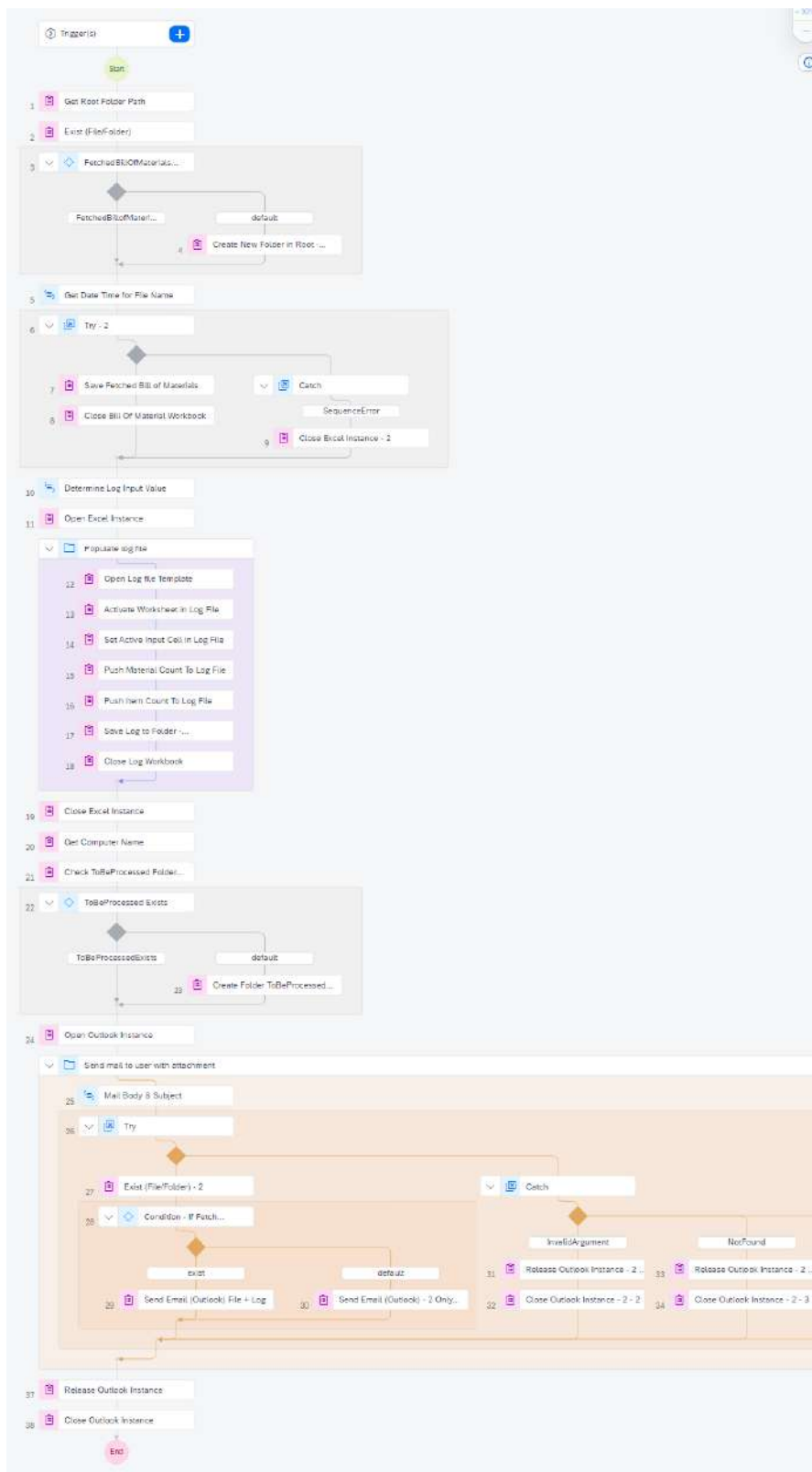
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Step 15 to Step 17: Fetch the material item details from the SAP S/4HANA system.

Step 18 to Step 127: Iterate through each item and push both material and item details and notifier details into the "Input Template.xlsx" file.

Create Log File And Send Notification Mail

Sub automation moves the fetched records file to the user specified file path from the selection screen input. It generates a log file and sends notification to the user.



Step 1 to Step 9: Create the folder to save the excel file and save the excel file in the folder with the current date and time in its name.

Step 10 to Step 19: Prepare an excel file to save the log details of the fetched records.

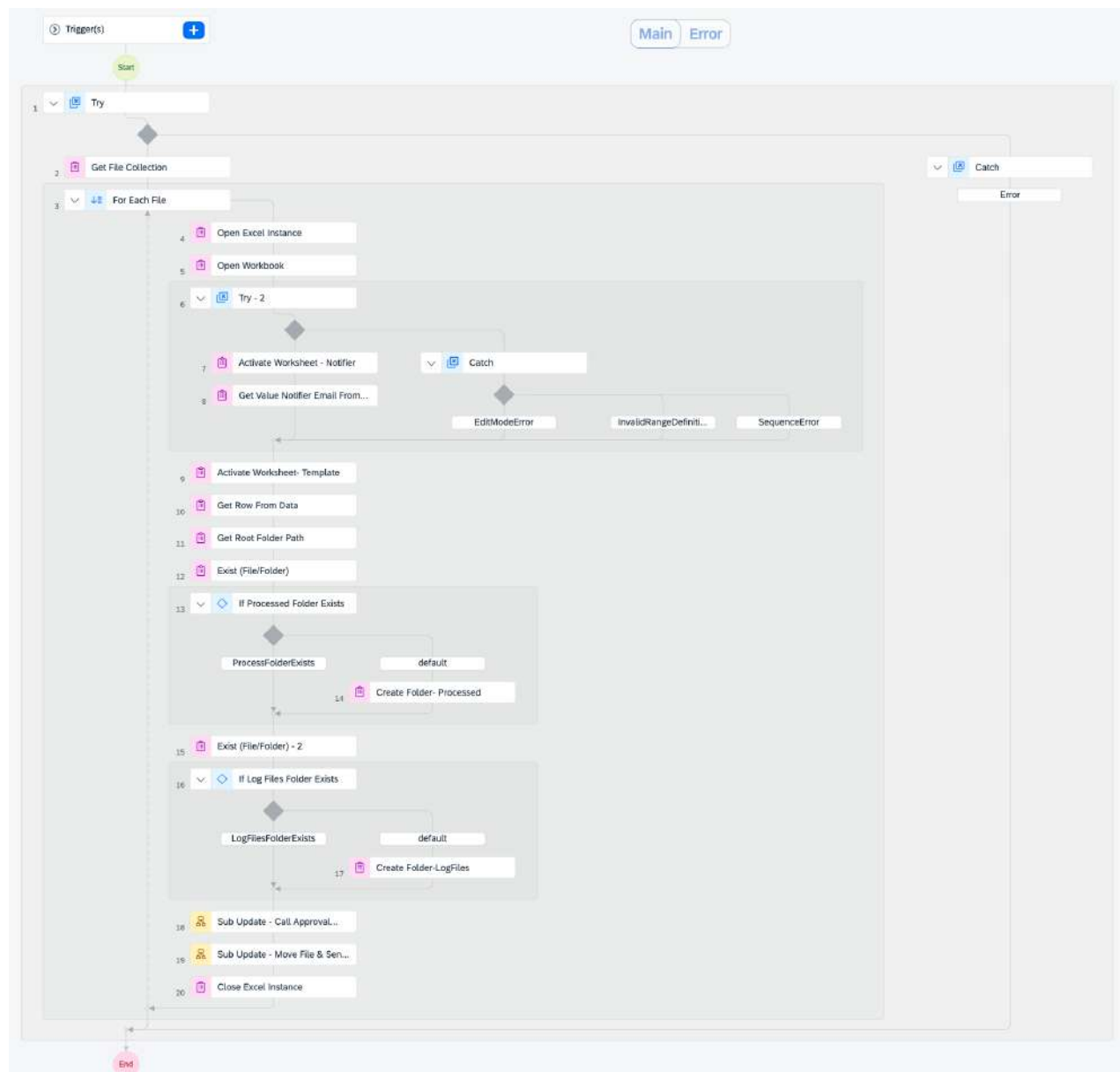
Step 20 to Step 23: Create the "ToBeProcessed" folder if it is not present.

Step 24 to Step 38: Prepare the mail body and subject, attach the excel files created, and send an email to the notifier.

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Initiate Bill Of Materials Approval And Update

Main automation to initiate update material and item details in the SAP S/4HANA system. The updated information undergoes an approval process, and based on the approval outcome, it is updated in the backend. Additionally, the automation notifies the designated notifier when details are sent for the approval process, and it notifies accordingly based on the approval result.



Step 1 to Step 12: Iterate through each file in the "ToBeProcessed" folder and fetch the notifier email address.

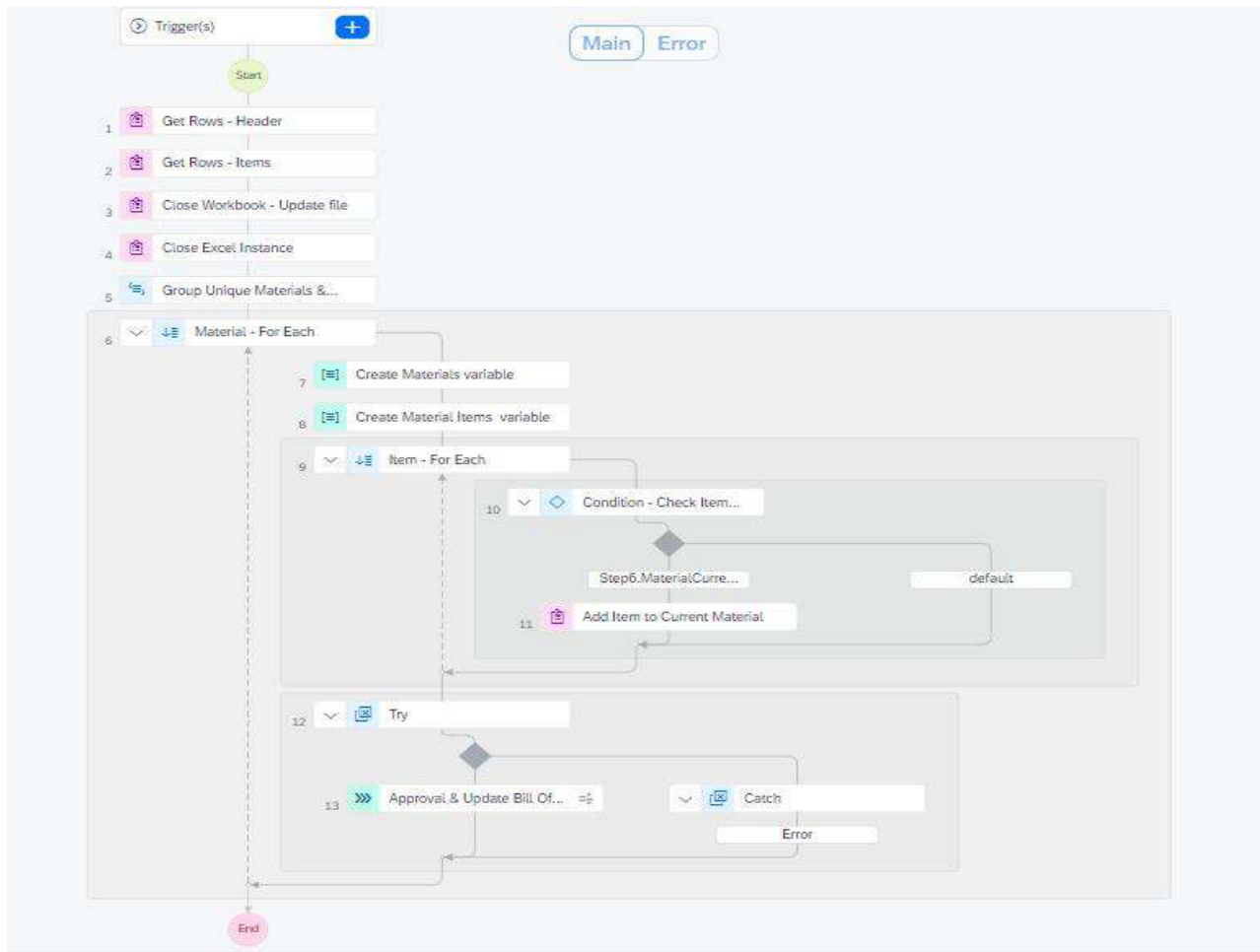
Step 13 to Step 15: Create folders to move the processed files and save the log files if they are not already created.

Step 16 to Step 18: Trigger the sub-automations **"Group Bill Of Materials And Call Approval Process"** and **"Move Processed File And Send Notification Mail"** for each files fetched and close the excel file.

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Group Bill Of Materials And Call Approval Process

Sub automation to group materials and items from the input template and to initiate approval and update processes for each of them.

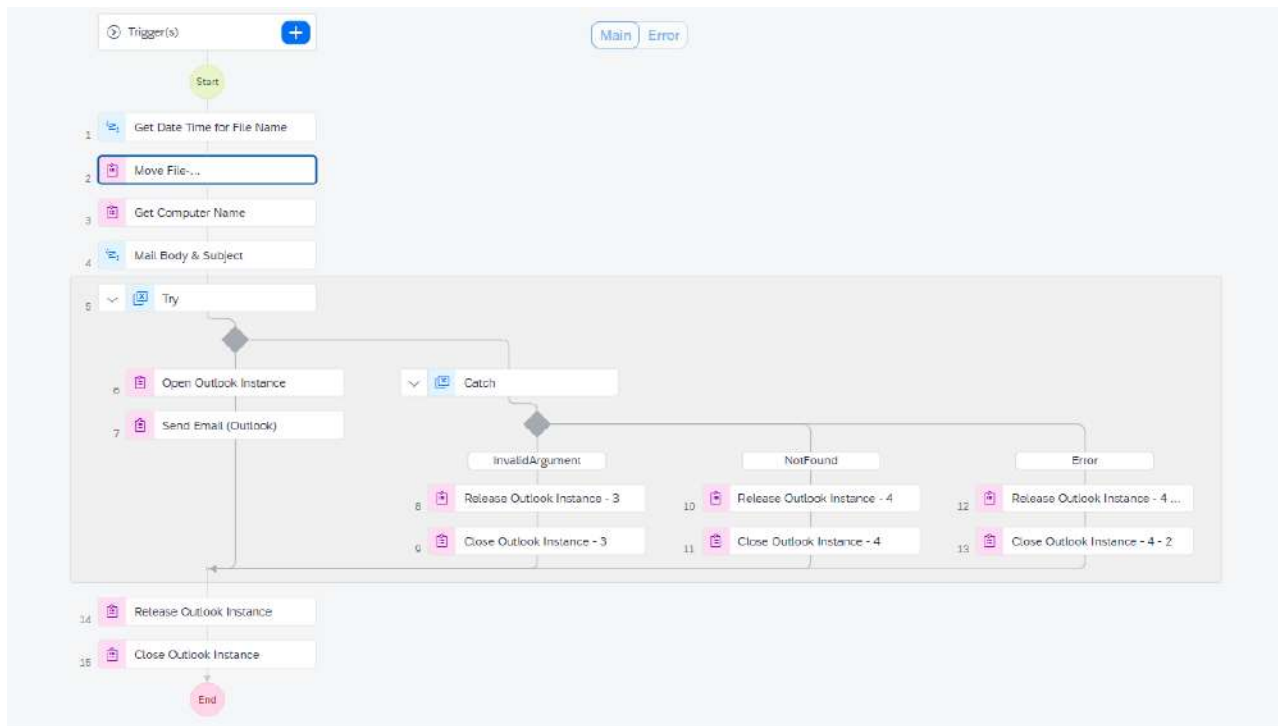


Step 1 to Step 5: Get the material and item details from the excel file and group it based on materials.

Step 6 to Step 13: Iterate through each material and its items and trigger the process **"Update Bill Of Materials Process"**.

Move Processed File And Send Notification Mail

Sub automation to move the update records file from 'ToBeProcessed' to 'Processed' folder, create the log file & send mail.



Step 1 to Step 2: Move the processed excel file into the processed folder.

Step 3 to Step 15: Create the mail body and subject and send an email to the notifier by attaching the processed excel file.

Update Bill Of Materials In SAP S/4HANA

Automation to update bill of materials details in the SAP S/4HANA system. It modifies material and items details based on the approval from the approver.

Step 1 to Step 9: Create an excel file to save the log data and create number variables to count input, success, failure, and rejected counts.

Step 10 to Step 24: Update the material details in the SAP S/4HANA system for the approved materials. Update the log file accordingly based on whether the material is updated, not updated, or rejected.

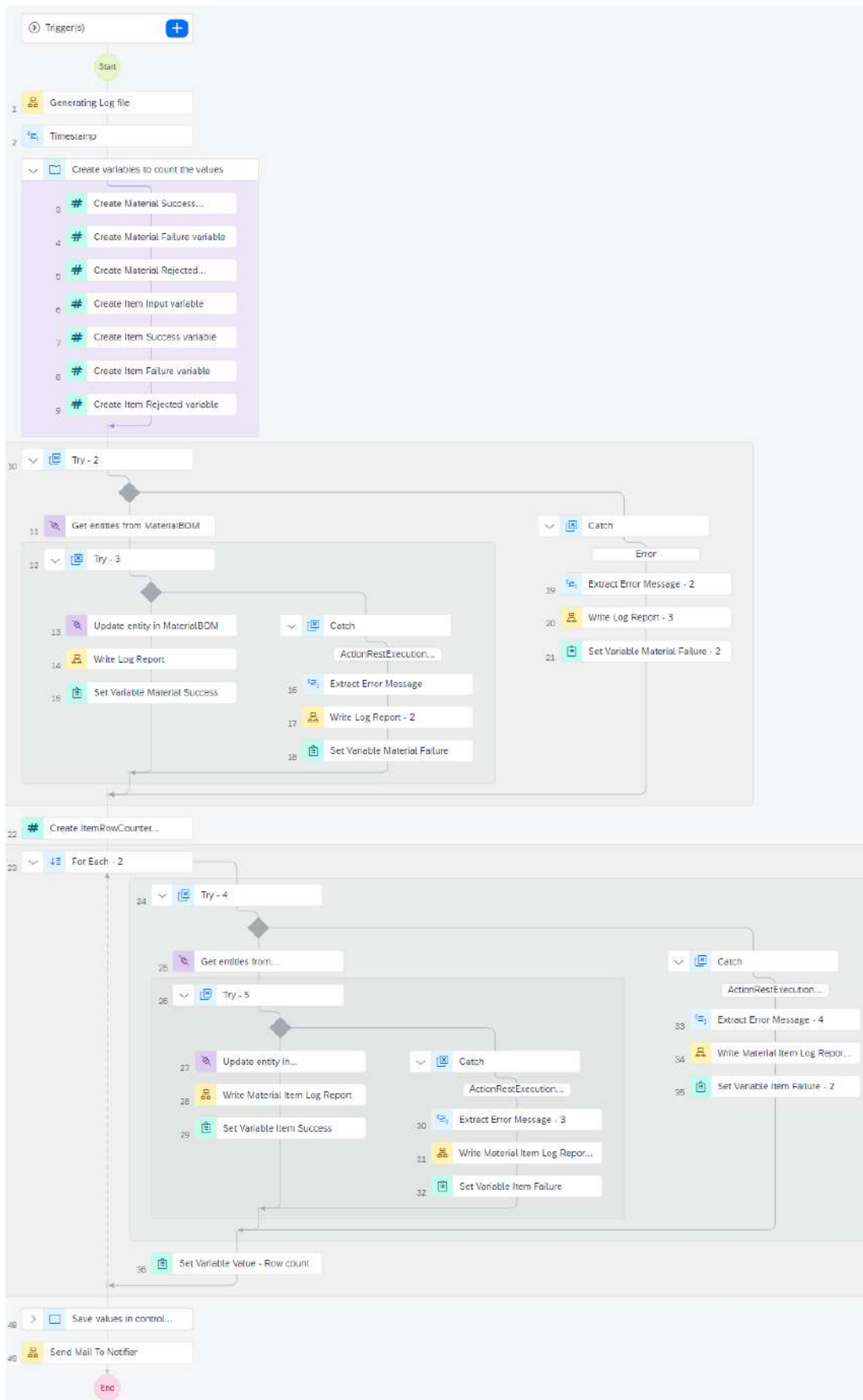
Step 25 to Step 43: Iterate through each material item and update the approved material item details in the SAP S/4HANA system. Update the log file accordingly based on whether the item is updated, not updated, or rejected.

Step 44 to Step 55: Update the log file with all the input, success, failure, and rejected counts of materials and items.

Step 56: Send a notification email to the notifier, attaching the log file.

Auto Update Bill of Materials

Automation to auto update bill of material details in the SAP S/4HANA system. It will automatically update the materials and all item details without any condition.



Step 1 to Step 9: Create an excel file to save the log data and create number variables to count input, success, failure, and rejected counts.

Step 10 to Step 21: Update the material details in the SAP S/4HANA system. Update the log file accordingly based on whether the material is updated or not.

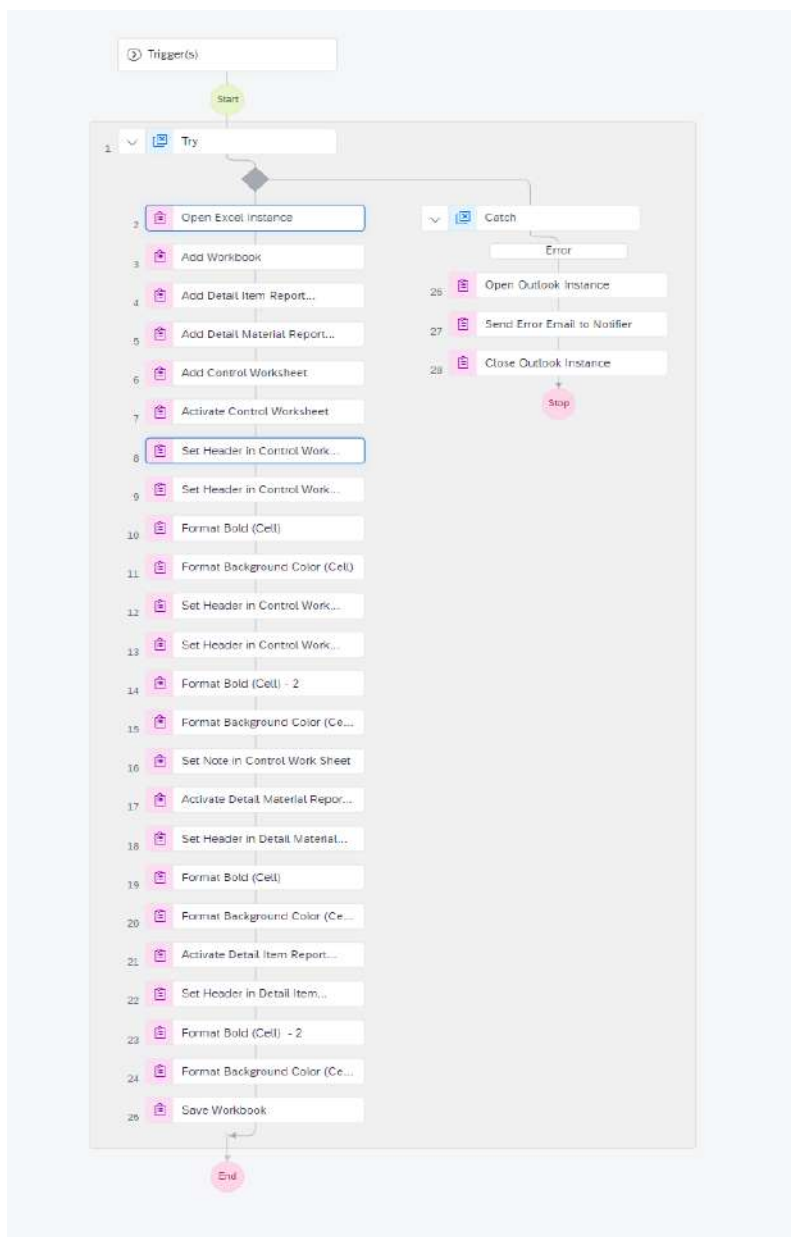
Step 22 to Step 36: Iterate through each material item and update the item details in the SAP S/4HANA system. Update the log file accordingly based on whether the item is updated or not.

Step 37 to Step 48: Update the log file with all the input, success, failure, and rejected counts of material and items.

Step 49: Send a notification email to the notifier, attaching the log file.

Generating Log file

Automation to generate log report for bill of materials which will show how many records are successful or failed and give detailed information regarding each record.



Step 1 to Step 6: Create an excel file and add 3 new worksheets: **"Control"**, **"Detail Material Report"** and **"Detail Item Report"**.

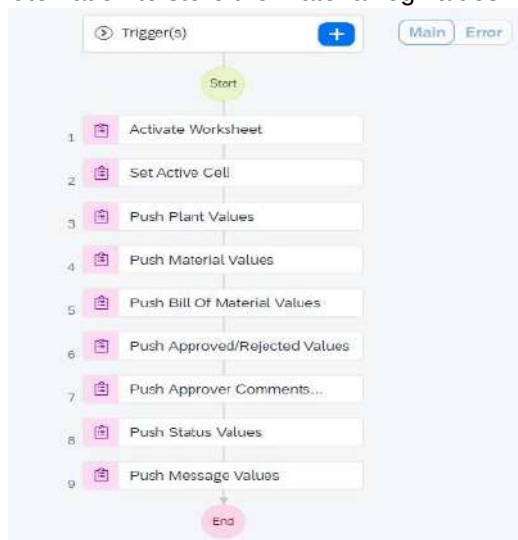
Step 7 to Step 16: Create the fields in the **"Control"** worksheet.

Step 17 to Step 20: Create the fields in the **"Detail Material Report"** worksheet.

Step 21 to Step 25: Create the fields in the **"Detail Item Report"** worksheet and save the workbook.

Write Material Log Report

Automation to store the material log values in report log excel file.

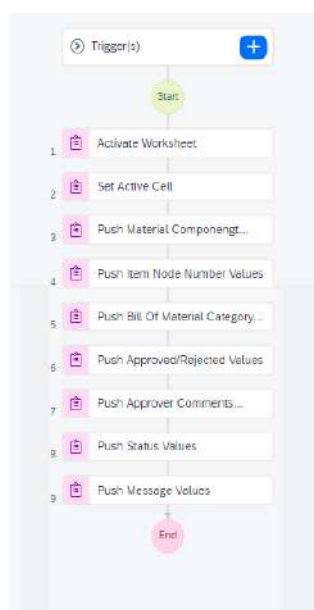


Step 1 to Step 2: Activate **"Detail Material Report"** sheet and set the activate cell.

Step 3 to Step 9: Push the material values into the worksheet.

Write Material Item Log Report

Automation to store the material log values in report log excel file.



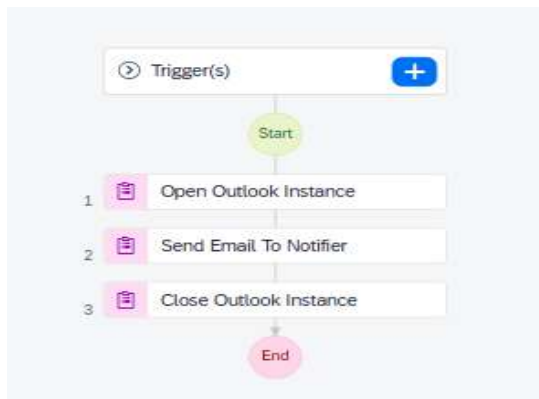
Step 1 to Step 2: Activate **"Detail Item Report"** sheet and set the activate cell.

Step 3 to Step 9: Push the item values into the worksheet.

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Send Mail To Notifier

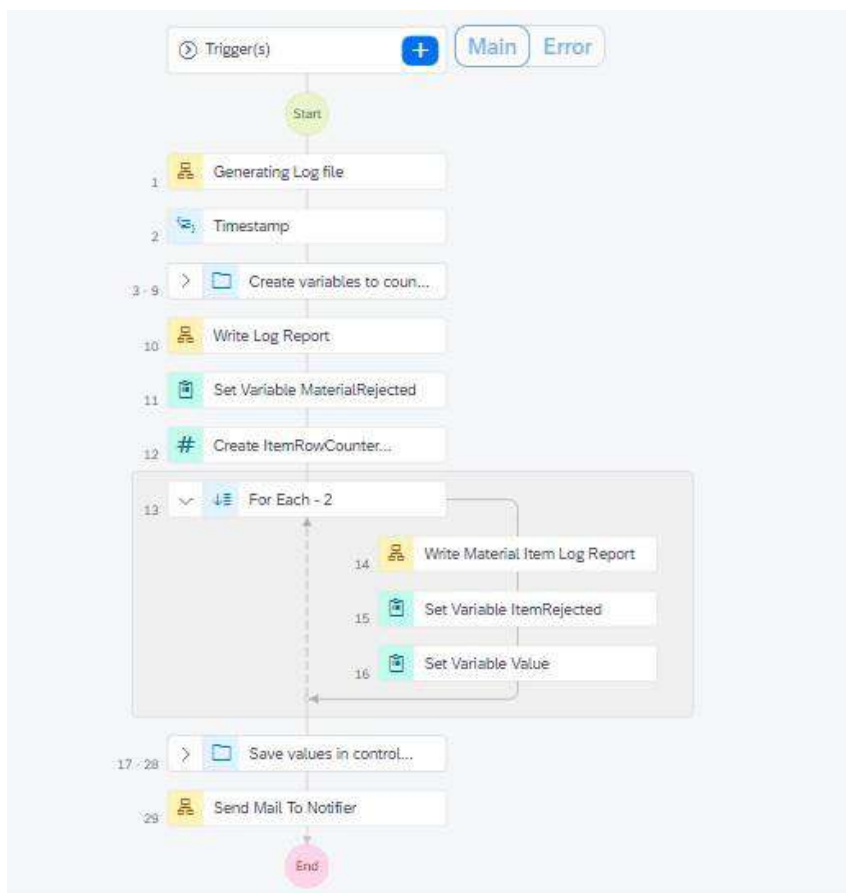
Automation to send log report mail to notifier.



Step 1 to Step 3: Send an email to the notifier, attaching the log file.

Generate Log File For Rejected Bill Of Materials

Automation to generate log report for the rejected bill of materials.



Step 1 to Step 9: Create an excel file to save the log data and create number variables to count input, success, failure, and rejected counts.

Step 10 to Step 11: Update the log file that material is rejected.

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Step 12 to Step 16: Iterate through each material item and update the log file that the material item is rejected.

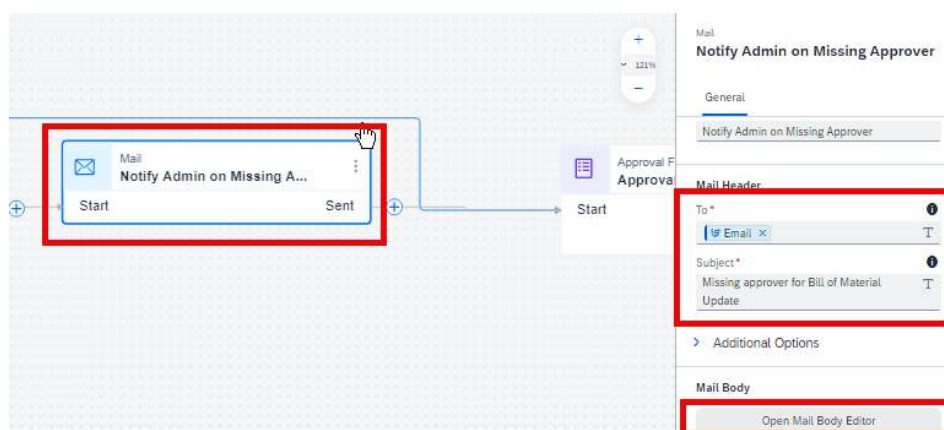
Step 17 to Step 28: Update the log file with all the input, success, failure, and rejected counts of material and items.

Step 29: Send a notification email to the notifier, attaching the log file.

Email Notifications

The process contains an email task,

1. Notify Admin on Missing Approval: To send mail notification to the admin if the process is not able to find the approver.



Schedule an Automation to run in unattended mode.

A scheduled trigger creates jobs that are based on the schedule you define in the trigger. These jobs run fully automatically. The following table provides steps to run the automation in scheduled mode.

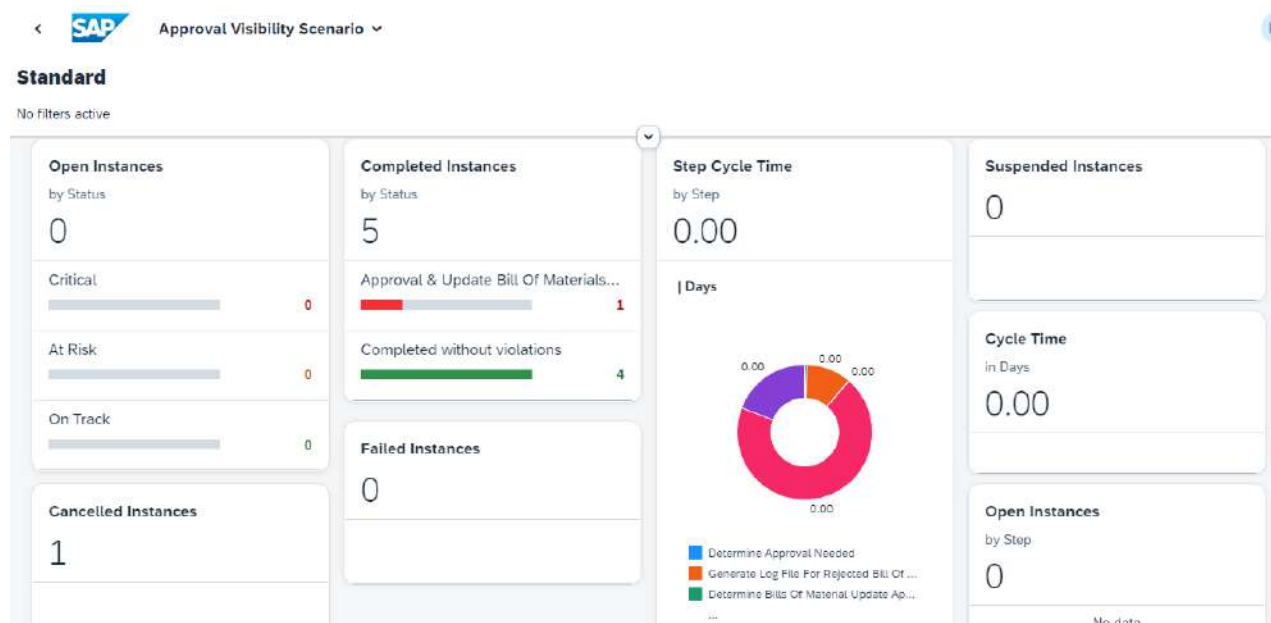
Step	Instruction
Launch Desktop Agent	Launch Desktop Agent. Make sure that the Unattended mode is selected in the Projects tab of the Desktop Agent.
Open SAP Build Process Automation	Perform the following to release and deploy the task automation: • Navigate to the Store and search for the Mass Change Of Bill Of Materials package. • Click Add to add the package to the Lobby. • In the Lobby, click the project to open the Overview page. • Click Release and then click Deploy. For steps to release and deploy a project, see the Managing Existing Projects topic.
Add a Scheduled trigger	Add an unattended trigger to “Fetch Bill Of Materials From SAP S/4HANA” automation with Input parameter folder path where “SelectionScreen” is saved. <i>Ex: C:\Root \ BillOfMaterials \SelectionScreen\Selection Screen.xlsx</i>

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	Add an unattended trigger to “Initiate Bill Of Materials Approval And Update” automation with Input parameter folder path where “ToBeProcessed” is saved. <i>Ex: C:\Root\BillOfMaterials \ToBeProcessed</i> To add an unattended trigger, refer to the Add a Scheduled Trigger topic.
Monitor the Job	Open SAP Build Process Automation and click Monitor > Automation Jobs. You should see your job on the list. If not, adjust the date range on the Jobs page and refresh the page. For more details, refer the Automation Jobs topic.
Check for Report	After your job status is Complete, verify notification emails sent to the respective stakeholders.

Process Visibility Scenario

The visibility scenario is a dashboard which allows business users to track relevant process KPIs and statuses. A default dashboard is provided with this template, and it can be customized by selecting attributes from your process which you want to track in the process dashboard. You can read more [here](#)



Support

There is no support available for the 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 a decision to determine the approver based on a certain business logic or add an action to post collected information to the backend SAP system. Refer [Help Portal](#) for more details.