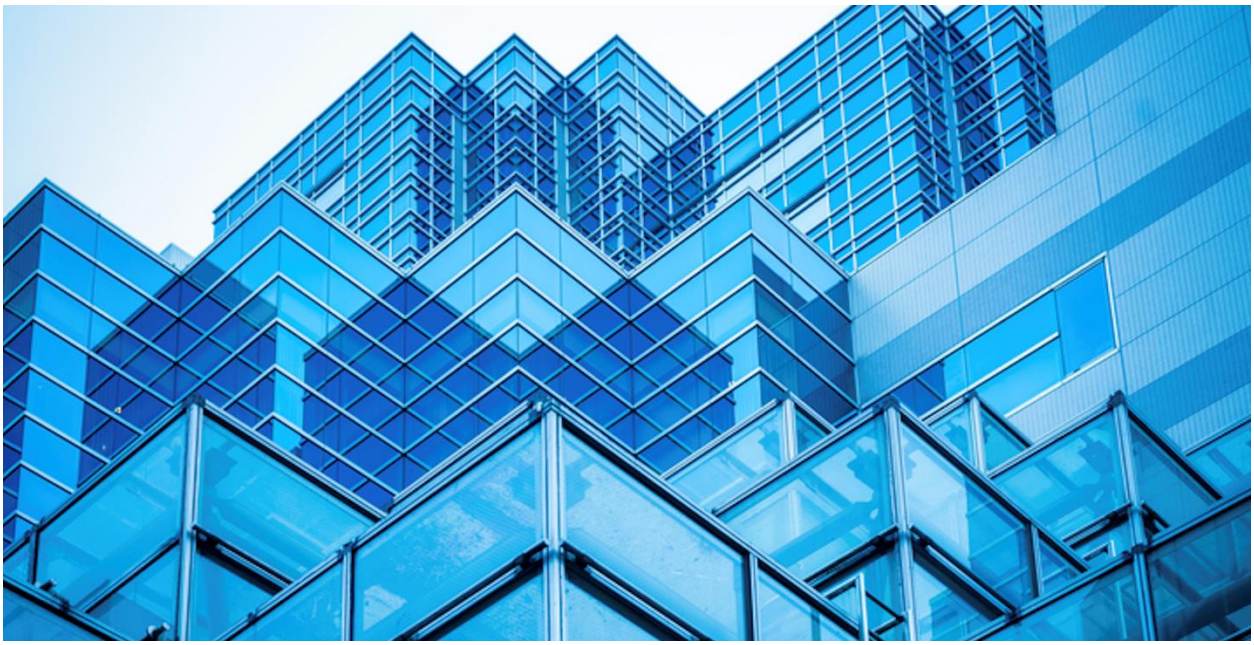


PUBLIC

SAP Build Process Automation

Automated Processing of Physical Inventory Document

Configuration and User Guide

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Change Log

Version	Date	Description
1.0.0	January 17, 2024	Document Created

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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 high-level components are used and how the template works in a 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) SAPUI5 application via SAP Business Application Studio and (c) Import and configure the template using SAP Build Process Automation design studio.

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 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 and its capabilities.

Overview

This document provides information about setting up the SAP Business Technology Platform account to consume the **Automated Processing of Physical Inventory Document** template**.** The main audience of this document are technical IT/system administrators.

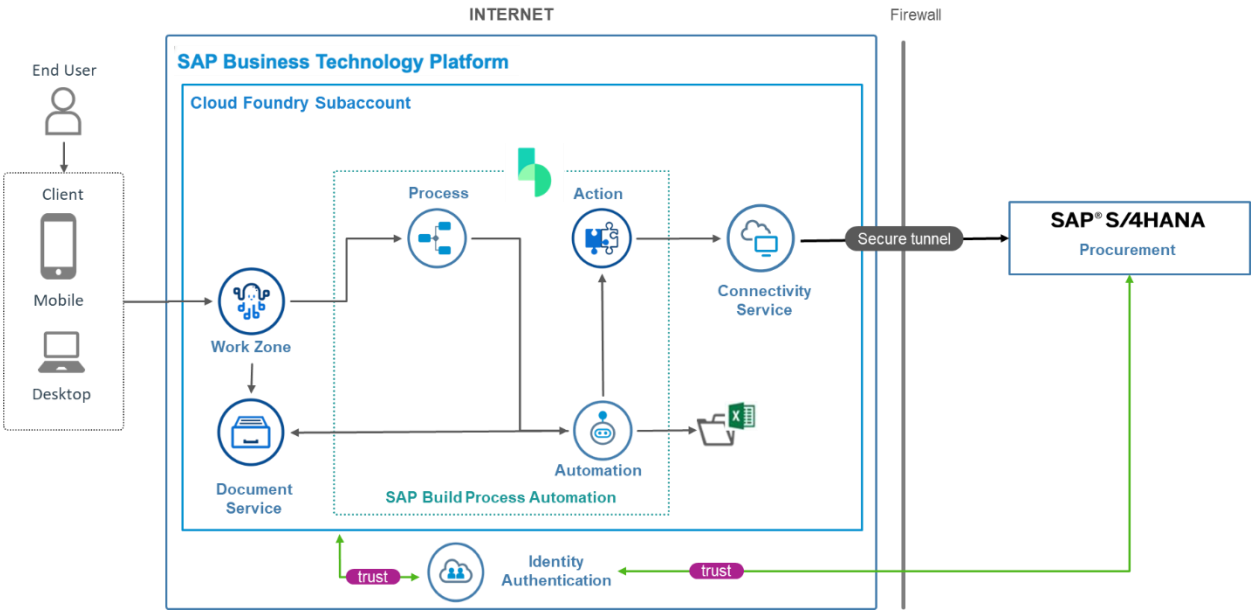
This package facilitates to read the material stock details and create physical inventory documents, add count in physical inventory documents, and post differences for physical inventory documents.

Features:

- This package provides functionality to get material stock details from SAP S/4HANA system based on the selected data in start UI to fill the excel template and send the mail to requestor.
- User can update the required additional data in excel template and uploads in start UI to trigger the process flow.
- Automation read the excel file and creates the physical inventory documents.
- If the physical inventory documents are created, the automation will add the counts in physical inventory documents and post differences for physical inventory documents
- Automation generates the log file after creation, add count and post differences of physical inventory document.
- The requestor will be notified with the generated log file via email.

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Process Flow Diagram



Steps:

1. In Start UI, fill required selection criteria and request for download.
2. Generate excel template with the fetched data from SAP S/4HANA system.
3. Email sent with generated excel file to the requestor.
4. Excel file with additional data will be uploaded in start UI.
5. Automation will run and execute excel file which have been uploaded.
6. Once executed successfully it will email the excel log file to the requestor.

Prerequisites

The following SAP Business Technology Platform services are required to consume the content package Automated Processing of Physical Inventory Document:

- 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.
- SAP Business Technology Platform, Cloud Foundry runtime
- SAP Business Application Studio for SAP UI5 application
- SAP Document Management Service, Integration Option

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Other Prerequisites

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

- SAP Desktop Agent 3.18 or higher
- Outlook mailbox configured on the system where the automations will run to send mails with attachments.

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.
- Input Template and Log Report template is placed as file artefact.
- If those files are not active, the file will not be executed in automation.
- The input excel has 2 sheets ‘Field List’ and ‘Warehouse Stock Report’.
    1. In **Field List sheet**, the field details are updated.
    2. In the **Warehouse Stock Report** sheet, the data will be fetched from the SAP S/4HANA.
- The fetched data will be downloaded and saved in the excel file "**PhysicalInventoryDocuments_<Timestamp>.xlsx**" in the folder path “**Physical Inventory\Downloaded**” which is placed in the path where you have defined in the environment variable (**LocalFolderPath**).
- The Uploaded file in Start UI will be downloaded with the file name of "**PhysicalInventoryDocuments_<Timestamp>.xlsx**" and it will be saved in the folder path “**Physical Inventory Bot\To be Processed**” which is placed in the path you have mentioned in the environment variable (**LocalFolderPath**).
- After execution the file “**PhysicalInventoryDocuments_<Timestamp>.xlsx**" in **To be processed** folder will be moved to the folder path “**Physical Inventory Bot\Processed** which is placed in the path you have mentioned in the environment variable (**LocalFolderPath**).
- The Log template has four sheets ‘Logs’, ‘Create’, ‘Count’ and ‘Post Differences’. It provides success, failure counts and success and error messages.
- After execution the Log report will be generated in the name of "**LogReport_<Timestamp>.xlsx**" and will be saved in the folder path “**Physical Inventory Bot\Log Reports**” which is placed in the path you have mentioned in the environment variable (**LocalFolderPath**) and notifies the requester through email about the completion with the log report attached to it.

Note: Processed folder and Log Reports folder files will not be deleted for reference perspective. Please archive manually whenever required.

Configuration Guide

Automated Processing of Physical Inventory Document template requires SAP Build Process Automation subscription or CPEA contract. Follow the setup and configuration section

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Setup SAP S/4HANA

Configure SAP S/4HANA Destination

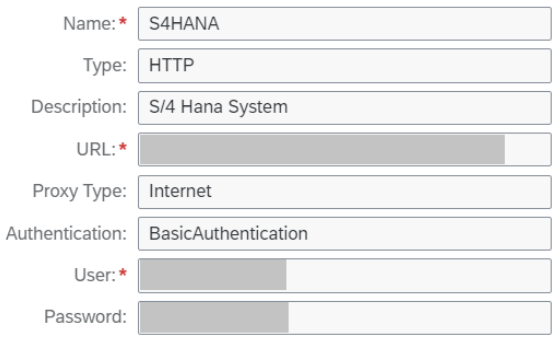
Configure destination to connect to SAP S/4HANA system

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





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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
Physical Inventory Document Integration(SAP_COM_0107)	Overview | Physical Inventory Documents - Read, Create | SAP Business Accelerator Hub
Material Stock Integration(SAP_COM_0164)	Overview | Material Stock - Read | SAP Business Accelerator Hub
Batch Management - Batch OData Inbound Integration(SAP_COM_0337) Excise Tax Integration(SAP_COM_0568)	Overview | Batch Master Record | SAP Business Accelerator Hub
Product Integration(SAP_COM_0009) IC Configure - Variant Configuration Bundle Model Integration(SAP_COM_0932)	Overview | Product | SAP Business Accelerator Hub

Setup Business Technology Platform Cockpit

Configure SAP Document Management Service

In this template, to download the document, which is uploaded in the start UI, you will need SAP Document Management Service or equivalent 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

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- Configuring destination, refer Configure SAP Document Management Service Destination

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

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 applications etc., you need to have this role assigned to the respective user.
Business_Application_Studio_Administrator	Allows administrators to manage (export and delete) user data.
Business_Application_Studio_Developer	Allows developers to load and develop applications using SAP Business Application Studio.

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 “**Automated Processing of Physical Inventory Document**”
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 “**Automated Processing of Physical Inventory Document**” template available for use.

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

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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 be made then follow the reference links below.

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 Datatype

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

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**
- **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 this link.

Release and Deploy the Process

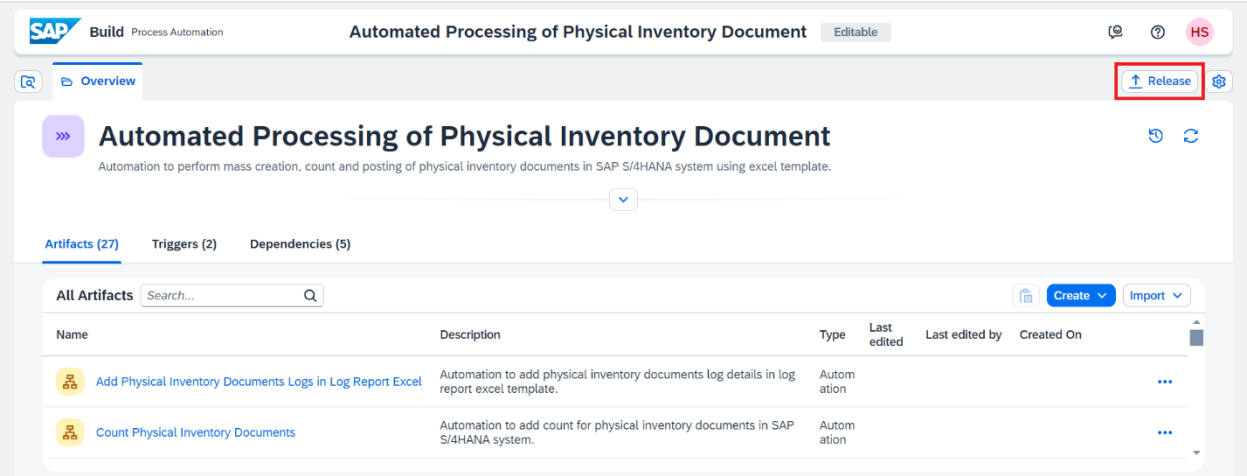
After configuring your process, it's time to publish, test and run it. To run a process, you must first release and deploy it.

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.

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To release a version of your process,

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

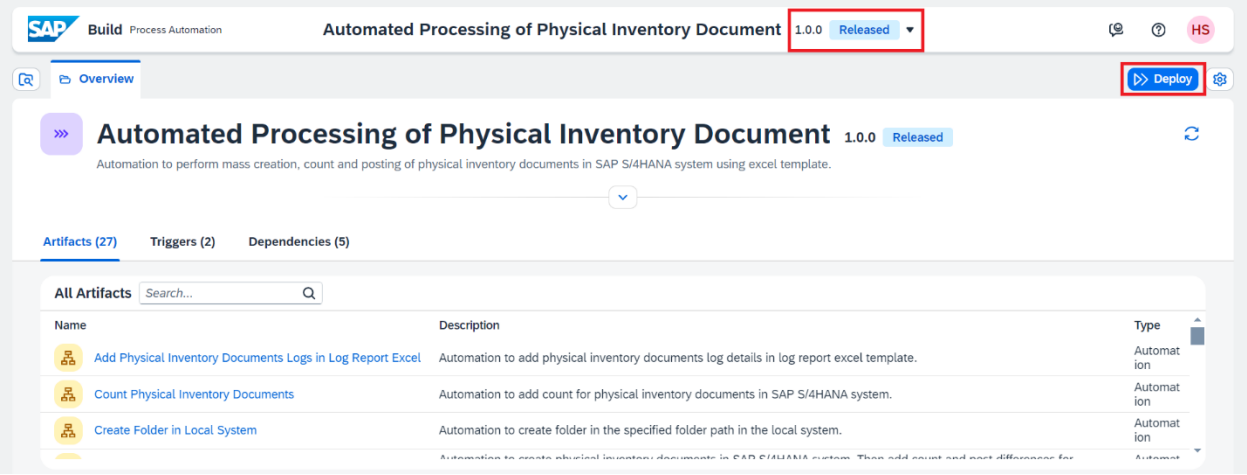


If this is the first time you’ve released the process, a version labelled 1.0.0 is released. For subsequent releases, you’re prompted to select a version type before the process is released.

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.

- **S4HANA_Destination**: Destination for SAP S/4HANA System.

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- **DMS_Destination**: Destination to connect with SAP BTP Document Management service.
- **LocalFolderPath**: Local folder path where downloaded files from SAP BTP Document Management service and log reports needs to be saved.

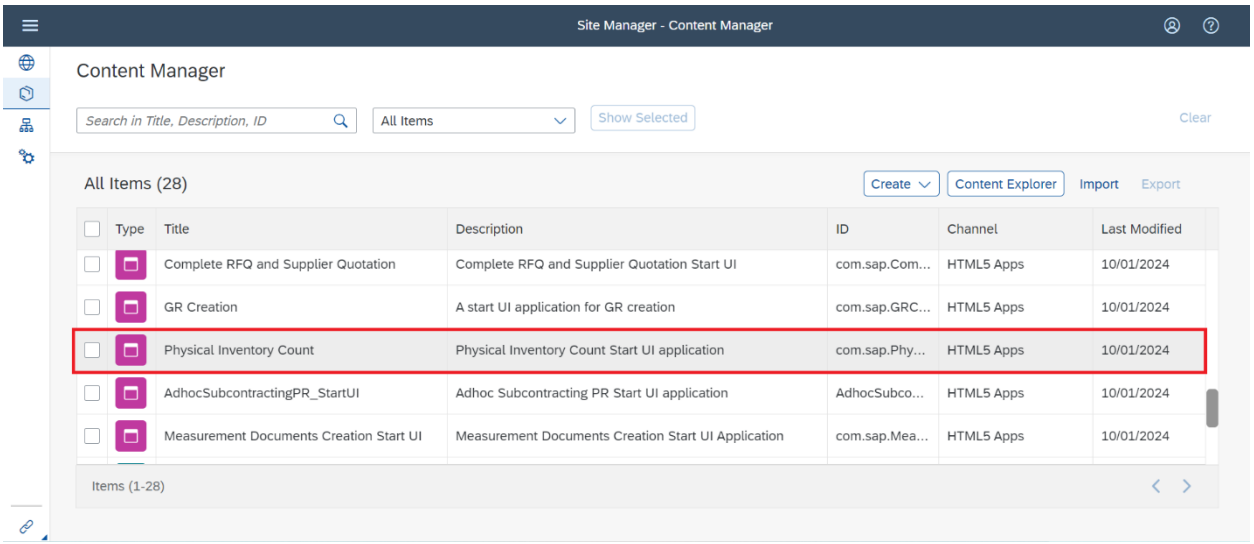
Note: If you do not map your destination environment variable with actual SAP BTP destination during deployment, then the process will enter erroneous state when it tries to connect to the external system.

Configure SAP Build Work Zone

Configure SAP Build Work Zone to access the start UI for this automation. Please refer help documentation Configuring SAP Build Work Zone

Once SAP Build Work zone is configured, perform the following steps to create the tile for the start UI:

1. Open Content Manager and click on the HTML5 Apps
2. Select the Physical Inventory Count Start UI from the list of apps and choose Add.



3. Add the relevant roles to the user. The Physical Inventory Count application start UI will be available to the user as a tile in the launchpad.

SAP Business Application Studio for SAP UI5 Application

Import and deploy SAPUI5 application:

Following steps can be followed to utilize the SAP UI5 application provided with this process package:

- Download the SAPUI5 application file from the imported store project, it will be available under the file section in the package.
- Open Business Application Studio and import the previously downloaded SAPUI5 project.

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- Ensure that you have already created the SBPA instance and the same instance details need to be updated in the mta.yaml file available in the SAP UI5 application project.
- Update your process definition id (Package needs to be deployed) in the Property.json file (property: downloadDefinitionId, uploadDefinitionId) as shown in the following snippets (readDefinitionId, uploadDefinitionId only needs to be updated in start UI application).
- **downloadDefinitionId** process will be used to read and download the data.
- **uploadDefinitionId** process will be used for approval process.



- Build SAPUI5 project using mta.yaml file & the generated project (generated mtar file will be available in the mta_archieves folder) file can be deployed.
- After successful deployment of the project, it can be accessed using SAP standard work zone & user can provide the required details & submit the form for the approval & posting.

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 Physical Inventory Documents Logs in Log Report Excel	Automation to add physical inventory documents log details in log report excel template.
	Automation	Count Physical Inventory Documents	Automation to add count for physical inventory documents in SAP S/4HANA system.
	Automation	Create Folder in Local System	Automation to create folder in the specified folder path in the local system.

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	Automation	Create Physical Inventory Documents	Automation to create physical inventory documents in SAP S/4HANA system. Then add count and post differences for physical inventory documents in SAP S/4HANA system for created documents.
	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 delete the folder and file in document management service.
	Automation	Delete Folder in DMS	Automation to delete the folder in document management service.
	Automation	Download Document from DMS	Automation to download the physical inventory documents input excel from document management service and save it in a predefined folder.
	Automation	Fetch Material Stocks Details	Automation to fetch material stocks details from SAP S/4HANA system.
	Automation	Fetch Physical Inventory Document	Automation to fetch the created physical inventory document details from SAP S/4HANA system.
	Automation	Get Folder Content from DMS	Automation to get the folder content details from document management service.
	Automation	Move Input Excel to Processed Folder	Automation to move input excel from 'To Be Processed' folder to 'Processed' folder.
	Automation	Post Differences for Physical Inventory Documents	Automation to post differences for physical inventory documents in SAP S/4HANA system.
	Automation	Process Physical Inventory Documents	Automation to create physical inventory documents in SAP S/4HANA system and add count, post differences for created physical inventory documents in SAP S/4HANA system. Then generate log report to send to requestor.
	Automation	Read Material Stocks Details and Update Excel	Automation to read material stocks details from SAP S/4HANA system and generate input excel with fetched data and send it to requestor.
	Automation	Read Material Stocks Details from Input Excel	Automation to read material stocks details from input excel.
	Automation	Send Email to Requestor	Automation to send email to requestor with attachment.
	Automation	Update Excel with Fetched Material Stocks	Automation to update the input excel template with data getting from fetch material stocks details automation
	Automation	Validate Input Excel	Automation to check whether the physical inventory input excel is valid.
	Process	Read Input Excel and Process Physical Inventory Documents	Process to read material stocks details from input excel and proceed with the processing of physical inventory documents only if the input excel is valid.
	Process	Read Material Stocks Details	Process to read material stocks details from SAP S/4HANA system based on selected filter criteria and generate excel with fetched data and send it to requestor

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	Data type	DMS Object	Data type for maintaining document management service object details like object id, object name and object type.
	Data type	Read Data	Data type for maintaining the input data received from download form of start UI like email id and folder path.
	Data type	Upload Data	Data type for maintaining the inputs from upload screen UI.
	File	Physical Inventory Documents – Template.xlsx	Excel template to be used by automation and user to fill material stocks details.
	File	Physical Inventory Documents - Log Report.xlsx	Excel template to be used by automation to fill physical inventory documents log details.
	File	PhysicalInventoryCount.tar	Start UI to automate the processing of physical inventory documents.

Actions

Read - Material Stock

This action is responsible to fetch the material stock details from SAP S/4HANA system for the given filter criteria.

Read, Create and Update - Physical Inventory Documents

This action is responsible for creating physical inventory documents, add count to physical inventory documents and post differences for physical inventory documents in SAP S/4HANA system.

Automation

Read Material Stocks Details and Update Excel

Automation to read material stocks details from SAP S/4HANA system and generate input excel with fetched data and send it to requestor.

Download Document from DMS

Automation to download the physical inventory documents input excel from document management service and save it in a predefined folder.

Process Physical Inventory Documents

Automation to create physical inventory documents in SAP S/4HANA system and add count, post differences for created physical inventory documents in SAP S/4HANA system. Then generate log report to send to requestor.

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Count Physical Inventory Documents

Automation to add count for physical inventory documents in SAP S/4HANA system.

API	API Path	Purpose
API_PHYSICAL_INVENTORY_DOC_SRV	/sap/opu/odata/sap/API_PHYSICAL_INVENTORY_DOC_SRV/A_PhysInventoryDocItem(FiscalYear='(FiscalYear)',PhysicalInventoryDocument='(PhysicalInventoryDocument)',PhysicalinventoryDocumentItem='(PhysicallinventoryDocumentItem)')	GET API call to fetch etag
	/sap/opu/odata/sap/API_PHYSICAL_INVENTORY_DOC_SRV/A_PhysinventoryDocItem(FiscalYear='{FiscalYear)',PhysicallnventoryDocument='(PhysicallInventoryDocument)',PhysicalInventoryDocumentItem='(PhysicalInventoryDocumentItem)')	PATCH call to change a specific physical inventory document item

Create Physical Inventory Documents

Automation to create physical inventory documents in SAP S/4HANA system. Then add count and post differences for physical inventory documents in SAP S/4HANA system for created documents.

API	API Path	Purpose
API_PHYSICAL_INVENTORY_DOC_SRV	/sap/opu/odata/sap/API_PHYSICAL_INVENTORY_DOC_SRV/A_PhysInventoryDocHeader	POST API call to create physical inventory document in SAP S/4HANA

Fetch Material Stocks Details

Automation to fetch material stocks details from SAP S/4HANA system.

API	API Path	Purpose
API_MATERIAL_STOCK_SRV	/sap/opu/odata/sap/API_MATERIAL_STOCK_SRV/A_MatlStkInAcctMod?$filter=filterUrl	GET API call to fetch material stock details from SAP S/4HANA

Fetch Physical Inventory Document

Automation to fetch the created physical inventory document details from SAP S/4HANA system.

API	API Path	Purpose
API_PHYSICAL_INVENTORY_DOC_SRV	/sap/opu/odata/sap/API_PHYSICAL_INVENTORY_DOC_SRV/A_PhysInventoryDocHeader	GET API call to read physical inventory document from SAP S/4HANA

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Post Differences for Physical Inventory Documents

Automation to post differences for physical inventory documents in SAP S/4HANA system.

API	API Path	Purpose
API_PHYSICAL_INVENTORY_DOC_SRV	/sap/opu/odata/sap/API_PHYSICAL_INVENTORY_DOC_SRV/A_PhysInventoryDocItem(FiscalYear='(FiscalYear)',PhysicalInventoryDocument='(PhysicalInventoryDocument)',PhysicalinventoryDocumentItem='(PhysicallinventoryDocumentItem)')	GET API call to fetch etag
	/sap/opu/odata/sap/API_PHYSICAL_INVENTORY_DOC_SRV/PostDifferencesOnItem	POST API call to post differences for physical inventory document item

Move Input Excel to Processed Folder

Automation to move input excel from 'To Be Processed' folder to 'Processed' folder.

Delete Folder and File in DMS

Automation to delete the folder and file in document management service.

Process

Read Input Excel and Process Physical Inventory Documents

Process to read material stocks details from input excel and proceed with the processing of physical inventory documents only if the input excel is valid.

Read Material Stocks Details

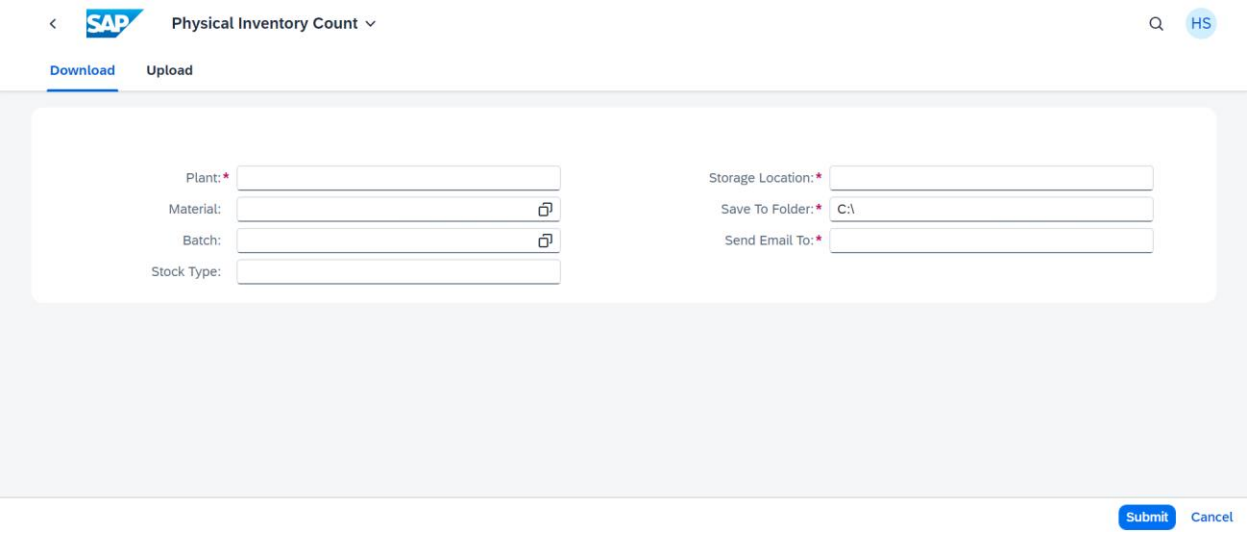
Process to read material stocks details from SAP S/4HANA system based on selected filter criteria and generate excel with fetched data and send it to requestor.

User Interface

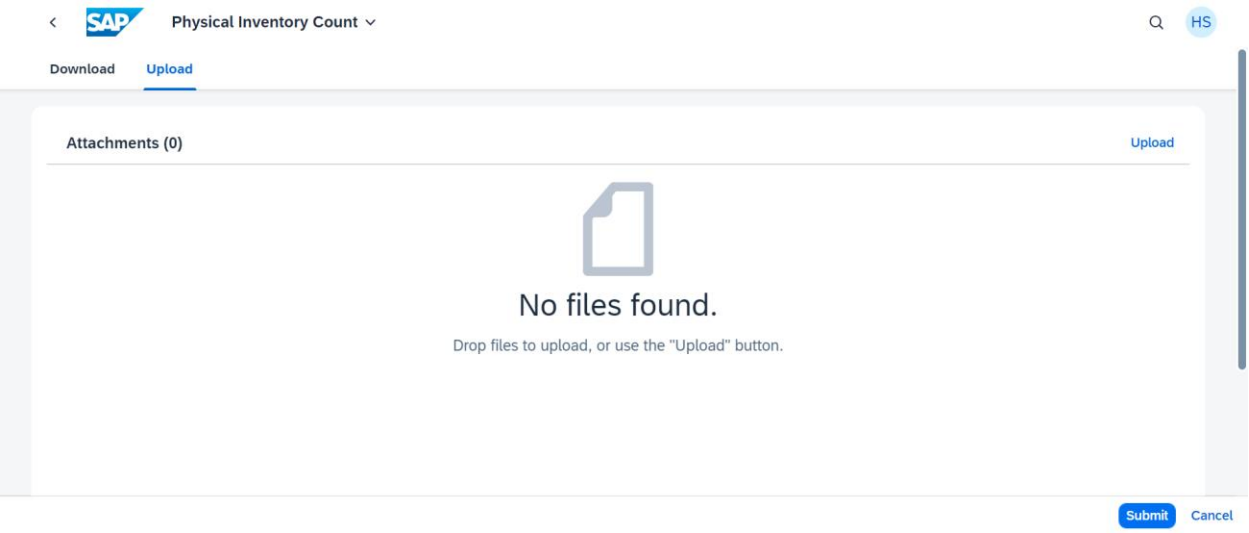
Start UI

- This template uses a Start UI which the user can use to get the material stocks details from SAP S/4HANA.
- Users can select from F4 Help or can enter data manually for filter criteria then click “Submit” button to trigger the process “Read Material Stocks Details” and download it.

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- Users can upload the updated excel template with the additional data then click “Submit” button to trigger the process “Read Input Excel and Process Physical Inventory Documents”.



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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