SAP BUSINESS TECHNOLOGY PLATFORM | EXTERNAL

Setup Guide
Fixed Asset Write-Off Approval using SAP Workflow Management

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Overview

This document provides information about setting up the SAP Business Technology Platform account to consume the workflow content package Fixed Asset Write-Off Approval. The main audience of this document are technical IT/system administrators.

The Fixed Asset Write-Off Approval content package for SAP S/4HANA automates the approval process required when fixed assets are written off in an organization. An asset write off can happen due to various reasons like scrapping, intercompany transactions, retirement etc. In SAP, each of the asset write off scenario is posted against its specific type. The workflow bridges the gap between standard SAP S/4HANA process of asset write off with approval from the relevant cost center owner. In this workflow, a requestor can raise an asset write off choosing the relevant assets and trigger a workflow for approval. After appropriate user action, the posting is done on SAP S/4HANA

Salient features of this content package are:

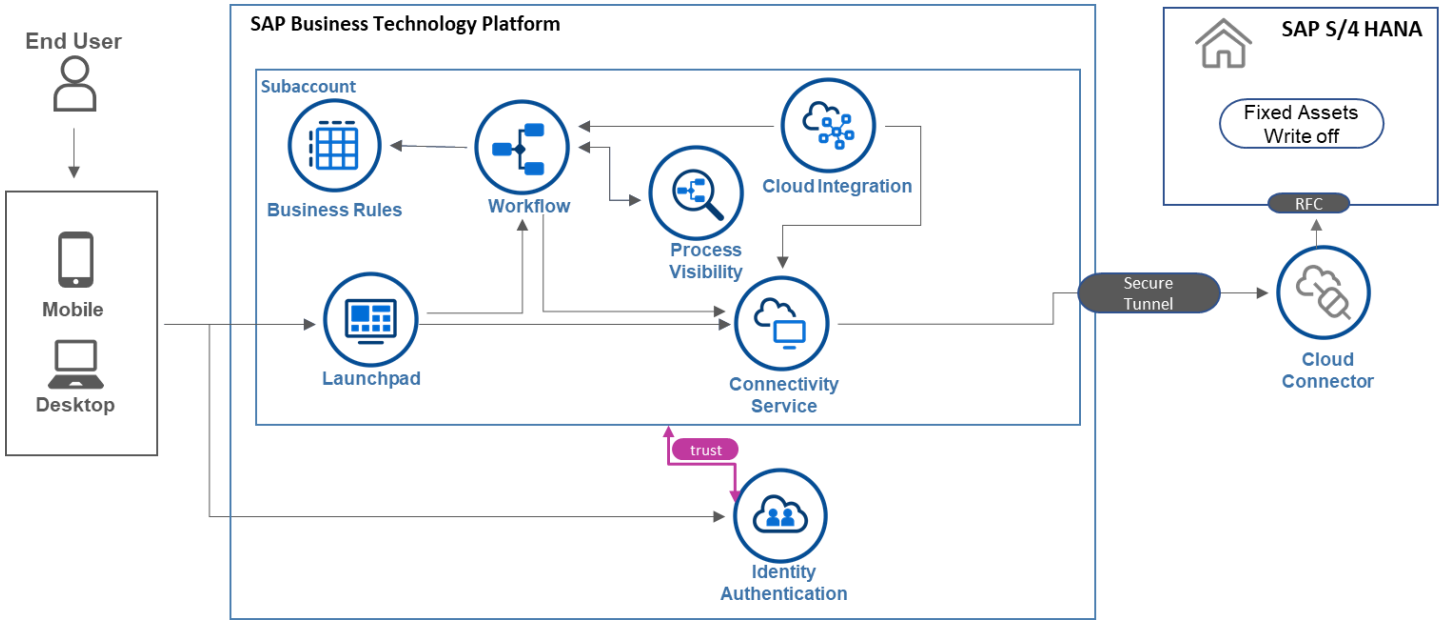
- Plug and Play with SAP S/4HANA without any additional development.
- Process steps delivered to approve a write off on organization assets
- Automatic email notification to parties involved.
- Business Rules provides flexibility in determining approver determination strategy and approvers
- New variant of the process can be created using the pre-delivered process steps in a no-code / low-code approach
- Out-of-the-box visibility into key process performance indicators of the workflow

Required SAP Business Technology Platform Services

The workflow content package Fixed Asset Write-Off Approval is intended to be used for SAP S/4HANA and requires the following services in SAP BTP:

- SAP Workflow Management to orchestrate the process.
- SAP Integration Suite for data activities with Fixed Asset Information.
- SAP Connectivity service (cloud connector) to establish access to SAP S/4HANA.
- SAP Launchpad service to access the apps that are involved in the process.
- SAP Business Application Studio to modify/deploy the SAPUI5 applications.
- SAP BTP, Cloud Foundry runtime.

The solution flow for this content package is:



Setup and Configuration

Configure SAP Workflow Management

Fixed Asset Write-Off Approval content package requires SAP Workflow Management subscription or a CPEA contract. Follow the setup and configuration section of SAP Workflow Management.

https://help.sap.com/viewer/6f55baaf330443bd8132d071581bbae6/Cloud/en-US/d7910e2bf7f64afc9d0eb21b0cc9e84d.html

Configure Workflow Email Destination

Configure workflow email destination to automatically send email notification to the involved parties. For more information on configuring the destination, see configure workflow email destination

Configure OAuth2ClientCredentials Workflow Destination

A HTTP destination is required in the BTP subaccount where SAP Workflow Management is subscribed. Create a destination with name "Workflow" with the following configuration, if it doesn't exist already. Please refer how to create a HTTP destination OAuth 2.0 Authentication (client credentials).

Name	Workflow
Type	HTTP
Proxy Type	Internet
Authentication	OAuth2ClientCredentials
URL	<rest_api_url>
Client ID	<client ID>
Client Secret	<client secret>
Token Service URL	<uaa.url>/oauth/token

Note: While creating the service instance for Workflow service, make sure that at least the following scopes are assigned (help documentation to enable technical authentication to access the workflow APIs). If the scopes are not assigned, you can also update the service instance with the following scopes.

- WORKFLOW_INSTANCE_START
- WORKFLOW_INSTANCE_UPDATE_CONTEXT
- WORKFLOW_INSTANCE_GET
- MESSAGE_SEND

Please refer help documentation how to get URL, Client ID , Client Secret and Token Service URL.

For more information refer to how to create a HTTP destination and how to use Workflow APIs.

Configure OAuth2UserTokenExchange Workflow Destination

Configure a destination with the following parameters:

Name	WorkflowActions
Type	HTTP
Proxy Type	Internet
Authentication	OAuth2UserTokenExchange
URL	https://api.workflow.<region-host>.hana.ondemand.com/workflow-service/rest
Client ID	
Client Secret	
Token Service URL	<"uaa":"url">/oauth/token
Additional Properties:	Name: bpmprocessvisibility.triggerWorkflow Value: user

Please refer help documentation how to get URL, Client ID , Client Secret and Token Service URL . For more information refer to how to create a HTTP destination and how to use Workflow APIs

Configure OAuth2ClientCredentials Business Rules Destination

A HTTP destination is required in the Cloud Foundry account where SAP Workflow Management is subscribed. Create a destination with name "BUSINESS_RULES" with the following configuration, if it doesn't exist already. Please refer how to create a HTTP destination and how to access business rules APIs using OAuth 2.0 Authentication (client credentials)

Name	BUSINESS_RULES
Type	HTTP
Proxy Type	Internet
Authentication	OAuth2ClientCredentials
URL	<rule_runtime_url>/rules-service
Client ID	<client ID>

Client Secret	<client secret>
Token Service URL	<uaa.url>/oauth/token

Configure Destination to Enable Start & Step Conditions

To enable the usage of start conditions and step conditions on a process variant, create a destination for business rules with the configuration as mentioned in the following help document:

https://help.sap.com/viewer/6f55baaf330443bd8132d071581bbae6/Cloud/en-US/543b5dbd77d940b4b1f972298b559911.html?q=WM_BUSINESSRULES

Configure OAuth2 Client Credentials Workflow Destination (Service Instance)

Similarly, create new Destination to call Workflow Service APIs using a Service route from SAP UI5 Component. For more details, follow the official help document:
https://help.sap.com/viewer/cca91383641e40ffbe03bdc78f00f681/Cloud/en-US/685f383cebb54c009b2fac633b32c90f.html

Configure Cloud Integration Destination

To call an integration flow, a HTTP destination is required in the SAP BTP tenant where the SAP Workflow Management is subscribed. Create a destination called CPI with either Basic Authentication or OAuth2ClientCredentials.

Destination with Basic Authentication

Name	CPI
Type	HTTP
Proxy Type	Internet
Authentication	Basic Authentication
URL	<runtime.url>
Username	<user>
Password	<password>

Destination with OAuth2ClientCredentials Authentication

Name	CPI
Type	HTTP
Proxy Type	Internet
Authentication	OAuth2ClientCredentials
URL	<runtime.url>
Client Id	<client ID>
Client Secret	<client secret>
Token Service URL	<oauth.url.for.clientCredentials>

Additional Properties to Destination

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

WebIDEEnabled	True
WebIDESystem	CPI
WebIDEUsage	odata_gen

Configure SAP S/4HANA Destination

Configure S/4 HANA destination to connect with SAP S/4HANA.

Note: This destination is required by SAP Workflow Management as well as Cloud Platform

Integration.

Name	S4HANA
Type	HTTP
Proxy Type	On-Premise
User	<SAP S/4HANA_ USER>
Password	<SAP S/4HANA_PASSWORD>
Authentication	BasicAuthentication
URL	<OData base URL of SAP S/4HANA>
Additional Properties	sap-client: <client number>

Configure APIs in SAP S/4HANA

Following APIs are needed to be configured in SAP S/4HANA to use the content package.

OData Services:

/sap/opu/odata/sap/API_COMPANYCODE_SRV

/sap/opu/odata/sap/API_COSTCENTER_SRV

Steps to Register OData Services in SAP Gateway

1. Go to t-code "/IWFND/MAINT_SERVICE"
2. Click on "Add Service"
3. Select the required System Alias (Select LOCAL as system alias in case of Embedded Deployment of Gateway)
4. Enter Technical Service Name as "API_COMPANYCODE_SRV" and click on "Get Services"
5. Select "API_COMPANYCODE_SRV" and click on "Add Selected Services"
6. Enter the required package and click on OK
7. Repeat steps 1 to 6 for Technical Service "API_COSTCENTER_SRV"

Create and Configure the Core Data Services to populate the Value Helps

The Custom Task UIs based on SAP UI5 uses a couple of backend services to populate the value helps for Asset Transaction Types and Depreciation Areas information.

Asset Transaction Type Value Help URL –

{S4HANA_Dest}/sap/opu/odata/sap/ZZ1_ASSETTRANSACTIONTYPE_CDS/ZZ1_AssetTransactionType

Depreciation Area Value Help URL –

{S4HANA_Dest}/sap/opu/odata/sap/ZZ1_DEPRAREAFORLEDGERVH_CDS/ZZ1_DeprAreaForLedgerVH

Create the necessary Custom CDS Views in your SAP S/4HANA system to use the Live Process Package. Refer to the Appendix for more details

Configure RFC Destination

Configure a RFC destination to connect with SAP S/4HANA on-premise. Below is a destination configuration for SAP S/4HANA.

Note: This destination is required by Cloud Platform Integration.

Name	<RFC_DESTINATION_NAME>
Type	RFC
Proxy Type	OnPremise
User	<SAP S/4HANA_USER>
Password	<SAP S/4HANA_PASSWORD>
Repository User	<SAP S/4HANA_USER>
Repository Password	<SAP S/4HANA_PASSWORD>

Additional Properties	jco.client.ashost: <host>
Additional Properties	jco.client.client:<client number>
Additional Properties	jco.client.lang: <language>
Additional Properties	jco.client.sysnr:<system number >

Configure Cloud Connector

For SAP S/4HANA landscape, configure cloud connector to enable secure tunnel to SAP BTP tenant. Please refer the help documentation to configure Cloud Connector.

Services/Resources that need to be exposed from SAP S/4HANA using Cloud Connector

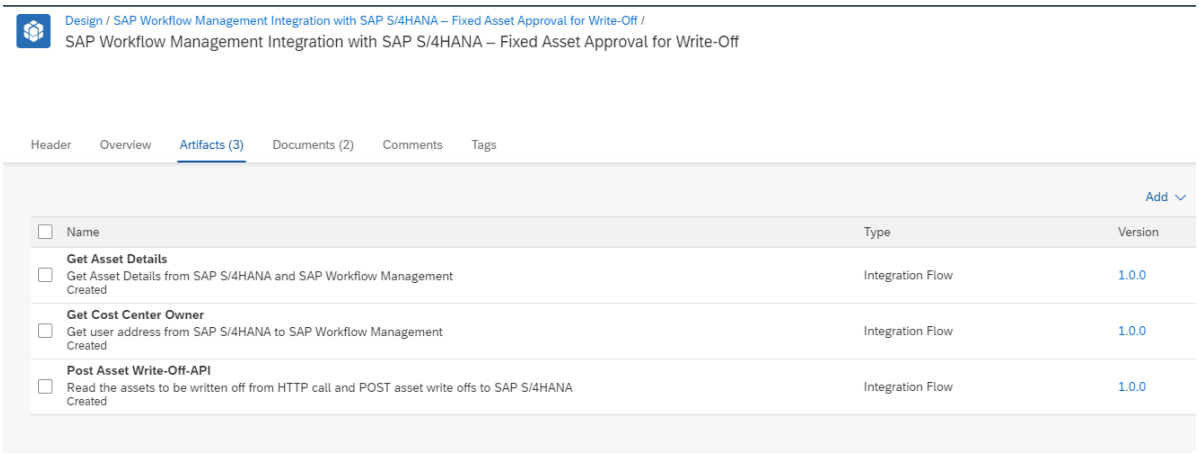
Resources	Protocol	Backend-Type
/sap/opu/odata/sap/API_COMPANYCODE_SRV	HTTPS	ABAP System
/sap/opu/odata/sap/API_COSTCENTER_SRV	HTTPS	ABAP System
/sap/opu/odata/sap/ZZ1_ASSETTRANSACTIONTYPE_CDS	HTTPS	ABAP System
/sap/opu/odata/sap/ZZ1_DEPRAREAFORLEDGERVH_CDS	HTTPS	ABAP System
BAPI_ASSET_RETIREMENT_POST	RFC	ABAP System
BAPI_ASSET_REVALUATION_POST	RFC	ABAP System
BAPI_ASSET_VALUE_ADJUST_POST	RFC	ABAP System
BAPI_FIXEDASSET_GETLIST	RFC	ABAP System
BAPI_USER_GET_DETAIL	RFC	ABAP System
BAPI_TRANSACTION_COMMIT	RFC	ABAP System

BAPI_TRANSACTION_ROLLBACK	RFC	ABAP System

Import, configure and deploy cloud integration content

This workflow content requires the cloud integration to process the – Fixed Asset Approval for Write-Offs in SAP S/4HANA. The integration content package SAP Workflow Management Integration with SAP S/4HANA – Fixed Asset Approval for Write-Off is available in SAP API Business hub to integrate SAP Workflow Management with SAP S/4HANA. Integration models use RFC to integrate with SAP S/4HANA. The following integration models are available in this package.

1. Get Asset Details
2. Get Cost Center Owner
3. Post Asset Write-Off API



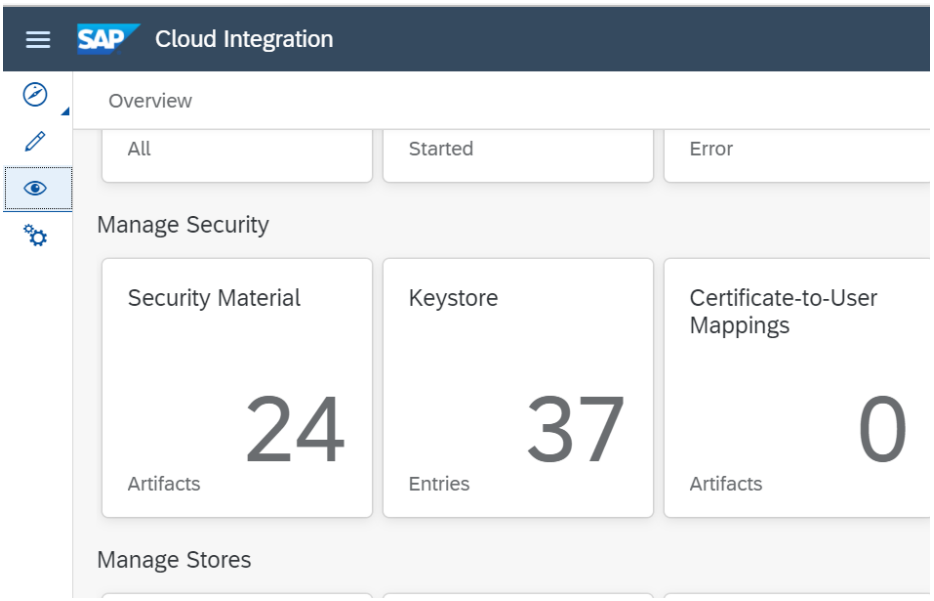
Import the integration package to your SAP Cloud Integration tenant. To be able to import and deploy integration flows, you need the role AuthGroup. IntegrationDeveloper (in Neo environment) or PI_Integration_Developer (in cloud foundry environment) assigned in your tenant.

Import pre-packaged Integration content in SAP Integration Suite

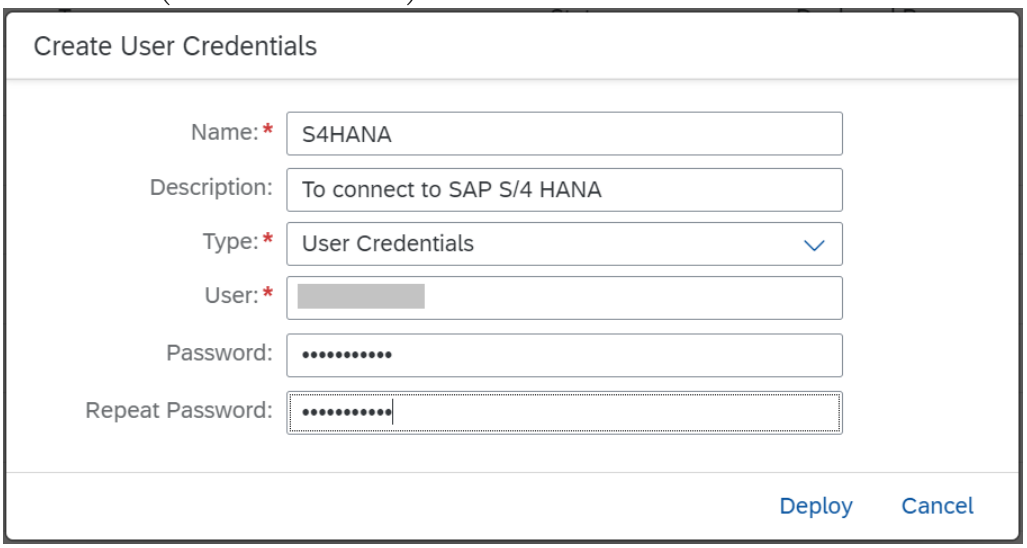
- Access your SAP Integration Suite tenant management node (https://<integrationtenant> /itspaces).
- View all pre-packaged integration flow under Discover->Integration. (https://<integrationtenant>/itspaces/shell/discover)
- Search content package "SAP Workflow Management Integration with SAP S/4HANA – Fixed Asset Approval for Write-Off".
- Click on the package SAP Workflow Management Integration with SAP S/4HANA – Fixed Asset Approval for Write-Off.
- Click Copy to import the Integration content package to your workspace.

- Navigate to the *Monitor* view (https://your.integration.tenant/itspaces/shell/monitoring) to setup the security materials required for the package.

- Deploy the following credentials using the Security Material app.
  In Integration Suite, open Operations view, then click on Security Material to create and deploy security materials.



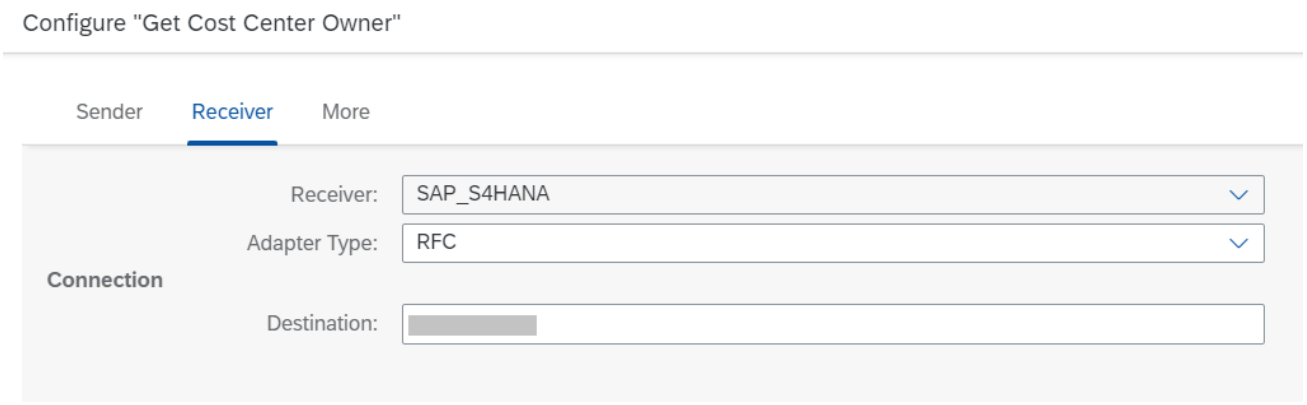
  - S4HANA – (User Credentials)

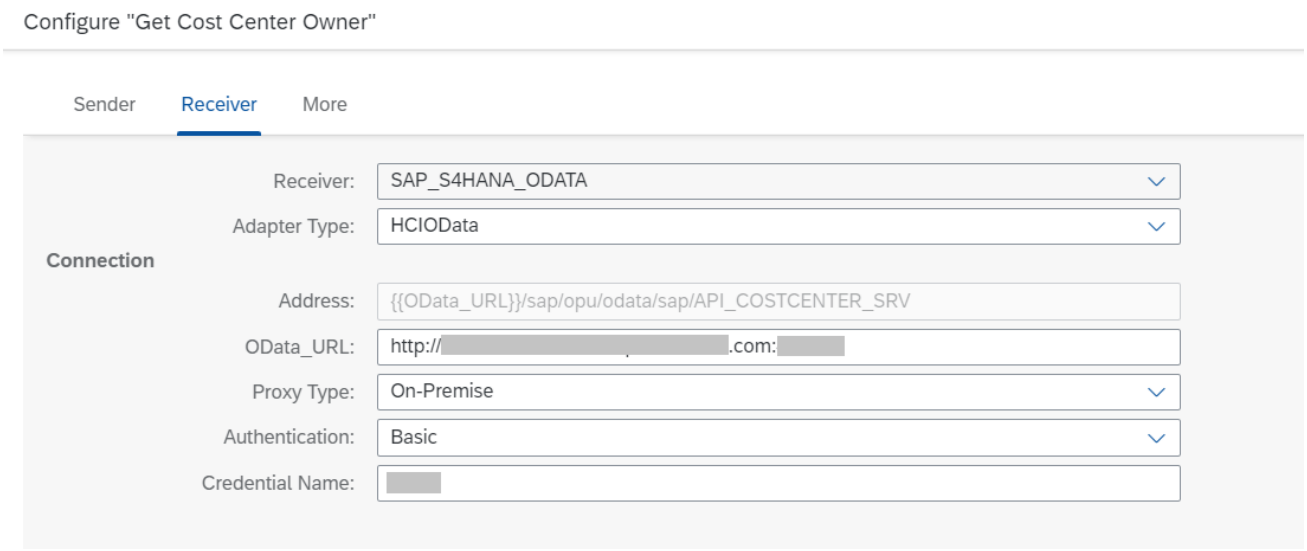


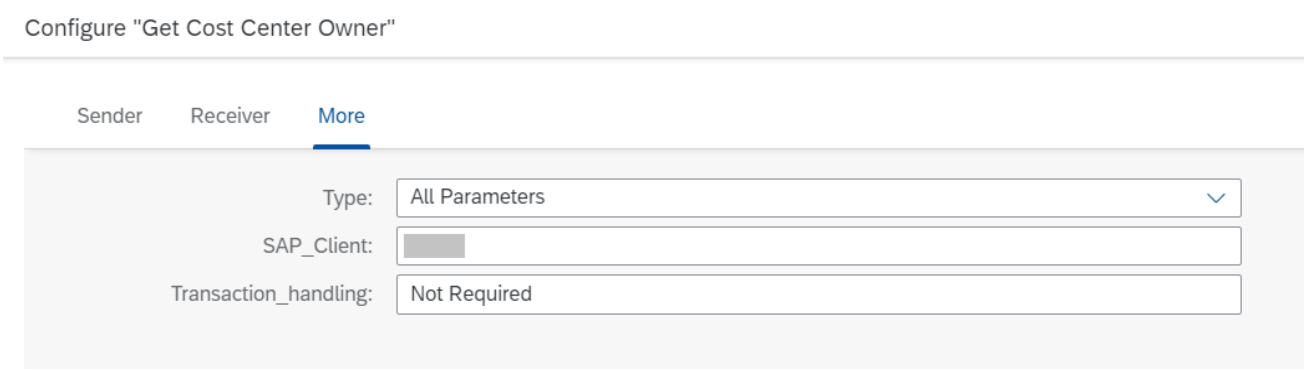
RFC and OData Adapter Configuration

- Open the integration model *Get Cost Center Owner.*

- Click Configure button, choose receiver (SAP_S4HANA) and set their respective endpoint, credential names, destination and SAP Client details.







- Save and Deploy the integration model.
- Maintain the same RFC Adapter settings for both receivers "SAPS4HANA" and "SAP_S4HANA" in *Get Asset Details* integration model and deploy the same.
- Maintain the same RFC Adapter settings for receiver "SAP_S4HANA" in *Post Asset Write-Off-API* integration model and deploy the same.

Note: In case the Approver Determination Strategy is selected as “External Service” in workflow configurations, then a CPI iFlow needs to be implemented with the below mentioned endpoint, input and output details.

Endpoint: /getApproversFA

Input from Workflow:

```
{

   "d":
   {
   "AssetDetails" : $.context.assetDetails,
   "Role" : $.context.role
   }
}
```

Output to Workflow:

```
{
  "d": {
    "approvers": [
      {
        "supervisorEmail": "email@example.com",
        "email": "email@example.com",
        "userGroup": "Approver_GroupId",
        "userId": "Approver_UserId"
      },
      {
        "supervisorEmail": "email1@example.com",
        "email": "email1@example.com",
        "userGroup": "Approver_GroupId1",
        "userId": "Approver_UserId1"
      }
    ]
  }
}
```

Configure SAP Central Fiori Launchpad Site

If you plan to use SAP Launchpad service, then configure SAP Central Fiori Launchpad Site with Workflow Applications using help documentation.

Deploy Custom UI Applications

The project consists of the following:

FAWriteOffStartUI HTML5 module – serves as the Workflow Start User Interface application

for creation of FA Write Off

FAWriteOfftaskUI HTML5 module – serves as the Workflow Task User Interface application for processing FA Write Off requests by Approver.

Please refer help documentation how to configure a Start UI tiles on Central Fiori Launchpad.

Appendix

To get the list of Asset Transaction Types and Depreciation Values from SAP S/4HANA, we are going to create a Custom CDS Views.

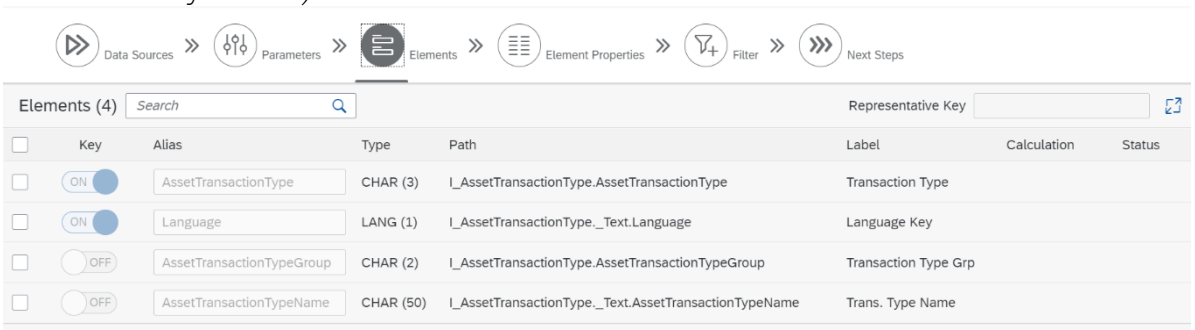
Pre-requisite

You have the necessary tools and rights to create Custom Core Data Service Views. Please refer to the following - SAP HANA Core Data Services (CDS) Reference

Create Custom CDS View for Asset Transaction Type

Procedure

1. Create a Custom CDS View with the Name ZZ1_ASSETTRANSACTIONTYPE ZZ1_AssetTransactionType (CDS Name is case-sensitive) and Label "AssetTransactionType".
2. Select Scenario "External API"
3. Choose Add > Add Primary Data Source.
4. Choose the data source with the name "I_AssetTransactionType".
5. Choose Save Draft.
6. Choose Elements tab.
7. Select the fields as listed in below screenshot (Click on Add -> Elements if the fields are not selected by default)

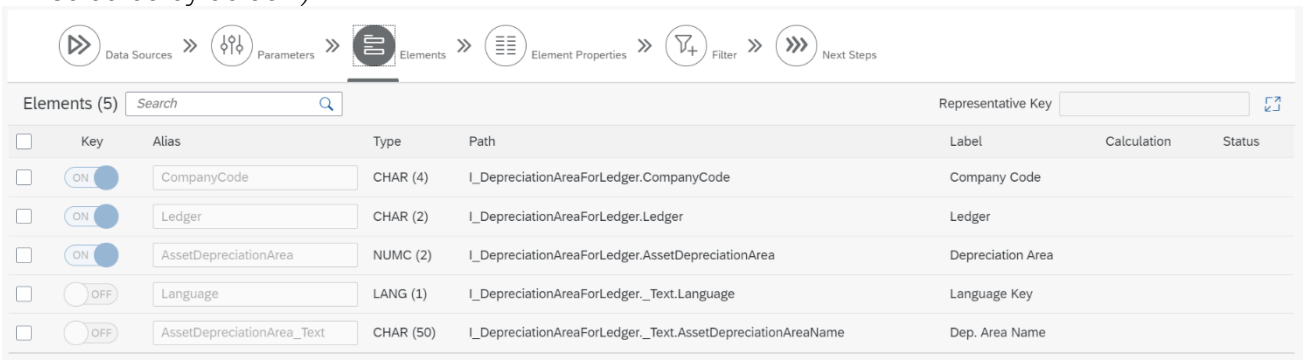


8. Choose Publish.

Create Custom CDS View for Depreciation Areas

Procedure

1. Create a Custom CDS View with the Name ZZ1_DeprAreaForLedgerVH (CDS Name is case-sensitive) and Label “DeprAreaForLedgerVH”.
2. Select Scenario “External API”
3. Choose Add > Add Primary Data Source.
4. Choose the data source with the name “I_DepreciationAreaForLedger”.
5. Choose Save Draft.
6. Choose Elements tab.
7. Select the fields as listed in below screenshot (Click on Add -> Elements if the fields are not selected by default)



8. Choose Publish.

Setup OData services for Custom CDS views

Procedure

1. Login into SAP GUI
2. Go to t-code “/IWFND/MAINT_SERVICE”
3. Click on “Add Service”
4. Select the required System Alias
5. Enter Technical Service Name as “ZZ1_ASSETTRANSACTIONTYPE_CDS” and click on “Get Services”
6. Select “ZZ1_ASSETTRANSACTIONTYPE_CDS” and click on “Add Selected Services”
7. Enter the required package and click on OK
8. Repeat steps 2 to 7 for Technical Service “ZZ1_DEPRAREAFORLEDGERVH_CDS”