

SAP BUSINESS TECHNOLOGY PLATFORM | EXTERNAL

# Setup Guide

## Capital Expenditure Approval Process

# Table of Contents

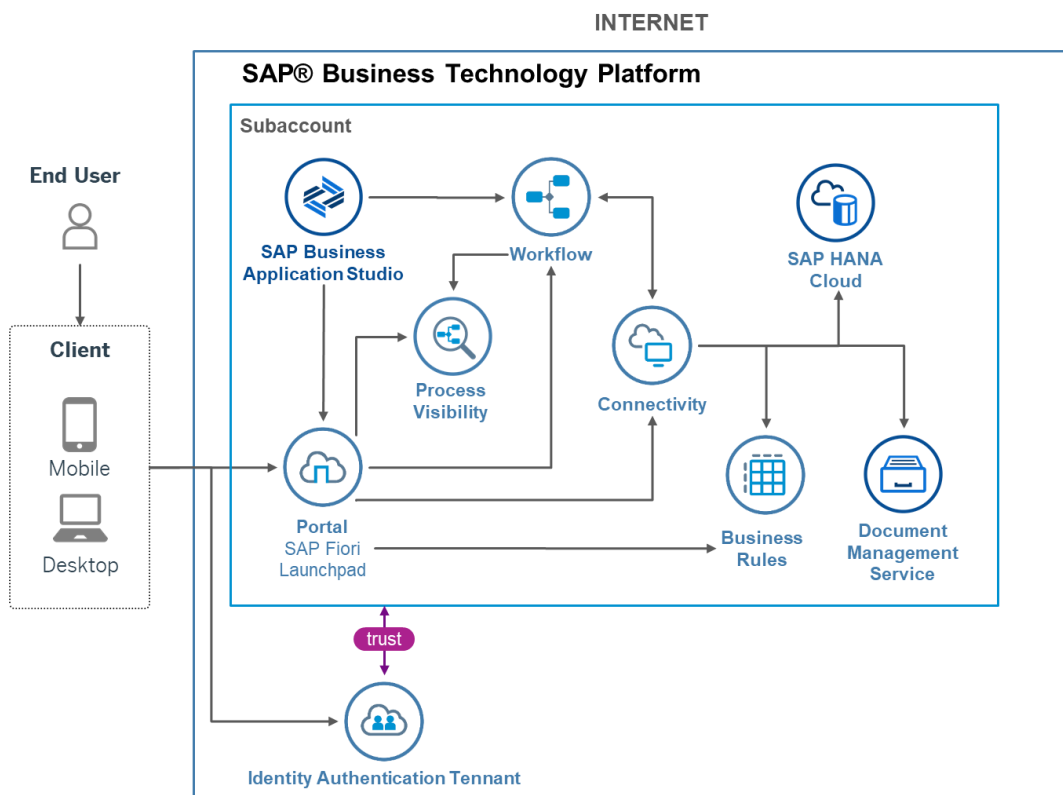
Table of Contents.....	2
Overview.....	3
Required SAP Business Technology Platform Services.....	5
Setup and Configuration.....	6
Configure Workflow Email Destination.....	6
Configure OAuth2ClientCredentials Workflow Destination.....	6
Configure OAuth2UserTokenExchange Workflow Destination.....	6
Configure Business Rules Destination.....	7
Configure Document Management Service Repository.....	8
Configure Document Management Service Destination.....	9
Create SAP HANA Cloud instance.....	9
Deploy Visibility Action Workflow module.....	9
Deploy Custom UI5 uis, Fiori Launch Pad and Cloud Application Programming modules.....	10
Add Workflow start UI in Fiori Launchpad Site.....	10
Manage Investment Details Master Data.....	12
How to start the Process Variant.....	14
Use Start UI provided with the content package.....	14
Create and use your own Start UI.....	14
Determine Workflow Definition Id.....	14
Define Start Payload (Initial Context).....	14
Create you own Start UI.....	16
Start the workflow.....	16

# Overview

This document provides information about what needs to be configured to make the Live Process content package Capital Expenditure Approval (CAPEX) Process run. The main audience of this document are IT administrators, consultants and developers. The document describes what needs to be done to make the solution run.

The live process content package enables customers to accelerate the digitalization of their capital investment approval process in a transparent way and provide flexibility to meet business requirements. It includes processes, decisions and visibility scenario content enabling customers to flexibly configure process variants in a low-code to no-code approach.

## Capital Expenditure Approval Process



The CAPEX process enables customers to automate capital expenditure request approvals and provide automation across all steps. A request is created by the user and depending on the amount of investment and other related attributes, number of approval steps are determined. The following steps are included as a part of this CAPEX process:

- Business user creates a Capital Expenditure Approval Process request
- Approvers are determined using decisions
- Approvers are notified via email
- Approvers have three decision options (Approve, Reject, Request Rework), and based on the decision, the next approval step will be created or requested for a rework or the approval request will be terminated.

- Acceptance from all Approvers will send a notification to the requestor and complete the process.

# Required SAP Business Technology Platform Services

The following SAP Business Technology Platform Services are required to consume the content package **Capital Expenditure Approval Process**:

- SAP BTP Cloud Foundry Runtime
- SAP Business Application Studio / Web IDE
- SAP Workflow management
- SAP Cloud Portal Service / SAP Launchpad Service
- SAP Document Management Service, Integration option
- SAP HANA Cloud
- SAP Identity Authentication Service (optional)

# Setup and Configuration

Capital Expenditure Approval Process content package requires SAP Workflow Management subscription or a CPEA contract. Follow [Initial Setup](#) guide to configure SAP Workflow Management.

Please [create a service instance of workflow](#) and name it as **Workflow**;

## Configure Workflow Email Destination

Configure workflow email destination. For more information on configuring destination, see [configure workflow email destination](#).

## Configure OAuth2ClientCredentials Workflow Destination

Configure a destination with the following parameters:

Name	Workflow
Type	HTTP
Proxy Type	Internet
Authentication	OAuth2ClientCredentials
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: system

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 Business Rules Destination

Configure a Business Rules destination with the following parameters:

Name	BusinessRules
Type	HTTP
Proxy Type	Internet
Authentication	OAuth2ClientCredentias
Client ID	
Client Secret	
URL	{rule_runtime_url}/rules-service
Token Service URL	<"uaa":"url">/oauth/token

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 access business rules APIs](#) using OAuth 2.0 Authentication (client credentials)

## Configure OAuth2ClientCredentias Business Rules Destination (Service Instance)

Create new Destination to call Business Rules Service APIs using a Service route from SAP UI5 Component.

- Click New Destination.
- Select **Service Instance** as Destination Configuration.
- Select Service Instance as BusinessRules.
- Enter Name as BusinessRules\_CFLP and click Next button.

Destination Configuration Blank Template Service Instance

Service Instance: \*

Name: \*

Description:

- Click **Save** button.

Destination Configuration

Name: \*

Type:

Description:

URL: \*

Proxy Type:

Authentication:

Client ID: \*

Client Secret:

Token Service URL: \*

Token Service User:

Token Service Password:

Additional Properties

endpoints	{"rule_repository_url":...	<input type="button" value=""/>
html5-apps-r...	{"app_host_id":"cbd0c...	<input type="button" value=""/>
saasregistrye...	true	<input type="button" value=""/>
sap.cloud.se...	com.sap.bpm.rule	<input type="button" value=""/>

Use default JDK truststore

## Configure OAuth2ClientCredentials Workflow Destination (Service Instance)

Create new Destination to call Workflow Service APIs using a Service route from SAP UI5 Component.

- Click New Destination.
- Select **Service Instance** as Destination Configuration.
- Select Service Instance as Workflow.
- Enter Name as Workflow\_CFLP and click Next button.

## Configure Document Management Service Repository

To create and configure root Document Management Service repository please follow the steps described in [Initial Setup for Document Management, Integration Option](#) and [Connect to Document Management, Repository Option Using API](#) (incl. Prerequisites).



Save generated Repository ID from the response.

## Configure Document Management Service Destination

Configure a Document Management Service destination with the following parameters:

Name	bpmworkflowruntime_attachments
Type	HTTP
Proxy Type	Internet
Authentication	OAuth2UserTokenExchange
URL	<"endpoints":"ecmservice":"url">/browser/<Repository_ID>/root/
Token Service URL	<"uaa":"url">/oauth/token
Token Service URL Type	Dedicated

Populate Client ID and Client Secret with the values from the Service Key created on the previous step (see [Create Service Keys Using the Cockpit](#)).

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

Make sure that the users which are going to use the application have "SDM\_Admin" or "SDM\_User" roles assigned to them.

## Create SAP HANA Cloud instance

Refer to the guide for [Creating SAP HANA Cloud Instances](#).

## Deploy Visibility Action Workflow module

Use Public [SAP github](#) to download the project. Extract the following projects under the [VisibilityActionWorkflow](#) folder. Please follow [readme.md](#) file in SAP git hub.

This project contains workflows as Process Visibility actions such as system action triggering automatic notifications when a process is failed, suspended, critical or at risk and user action to enable Process Administrators to restart a capital expenditure approval request.

# Deploy Custom UI5 uis, Fiori Launch Pad and Cloud Application Programming modules

Import the project zip file from [SAP samples git hub](#).

Use Public [SAP github](#) to download the project. Extract the following projects under the [User Interface](#) folder. Please follow [readme.md](#) file in SAP git hub.

This project contains custom HTML5 applications as well as Fiori Launch Pad modules and Cloud Application Programming model modules, which are required for capital expenditure request creation and approval process.

Access your SAP BTP Cockpit and assign **CapexDataModelViewer** and **CapexDataModelAdmin** roles to the relevant users to enable them to manage / view data in HANA.

Please note that during deployment of the project the following resources will be processed:

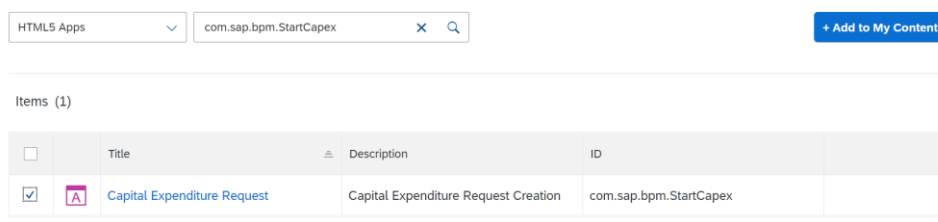
- Destination service with the name **Destination** (will be created, if not existent);
- Workflow Management service with the name **WorkflowMgmt** (will be created, if not existent);
- Process Visibility service with the name **ProcessVisibility** (will be created, if not existent);
- Workflow service with the name **Workflow** (you should have created the service instance with this name);
- Business Rules service with the name **BusinessRules** (will be created, if not existent);

If you have previously created these service instances with the different names and would like to reuse them in this project, please modify mta.yaml file accordingly.


## Add Workflow start UI in Fiori Launchpad Site

- Open SAP Launchpad site manager application.
- Select **Content Manager** and **Content Explorer**.
- Search com.sap.bpm.StartCapex and select SAP UI5 component.
- Click Add to My Content button to include the UI5 component.

Explore your content providers and add content items to your subaccount

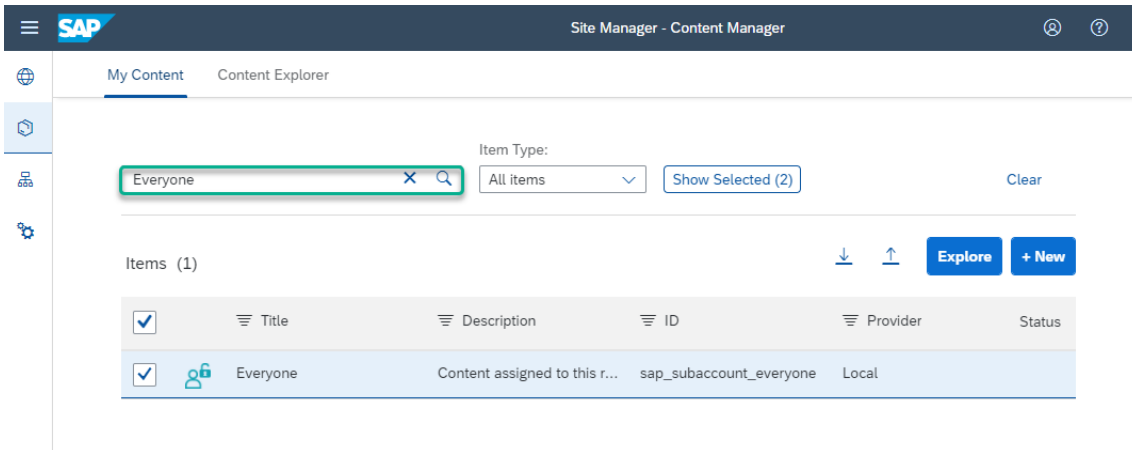


The screenshot shows the SAP Content Explorer interface. At the top, there is a search bar with 'HTML5 Apps' selected in the dropdown and 'com.sap.bpm.StartCapex' entered in the search field. A blue '+ Add to My Content' button is visible to the right of the search bar. Below the search bar, the text 'Items (1)' is displayed. A table with one row shows the search results:

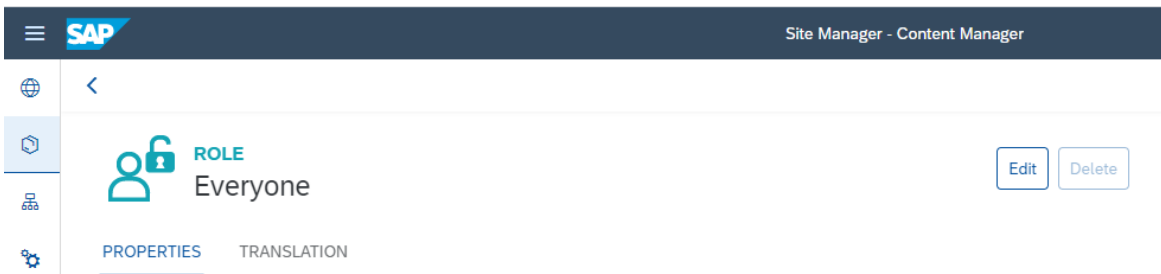
<input type="checkbox"/>	Title	Description	ID
<input checked="" type="checkbox"/>	 Capital Expenditure Request	Capital Expenditure Request Creation	com.sap.bpm.StartCapex

- Select **My Content** tab and Search **Everyone**.

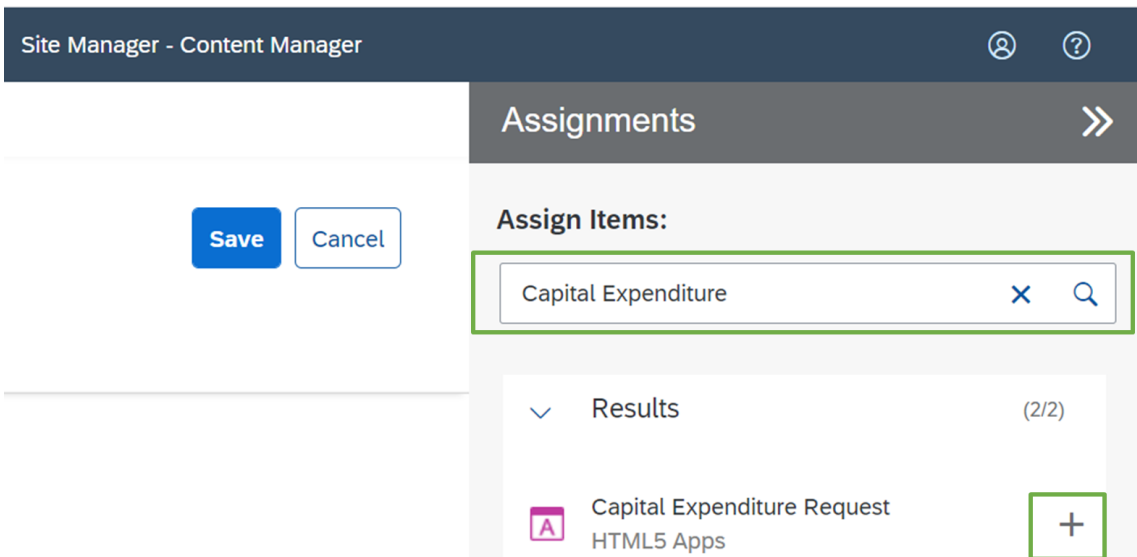
- Click **Everyone** from the result and navigate to the details.



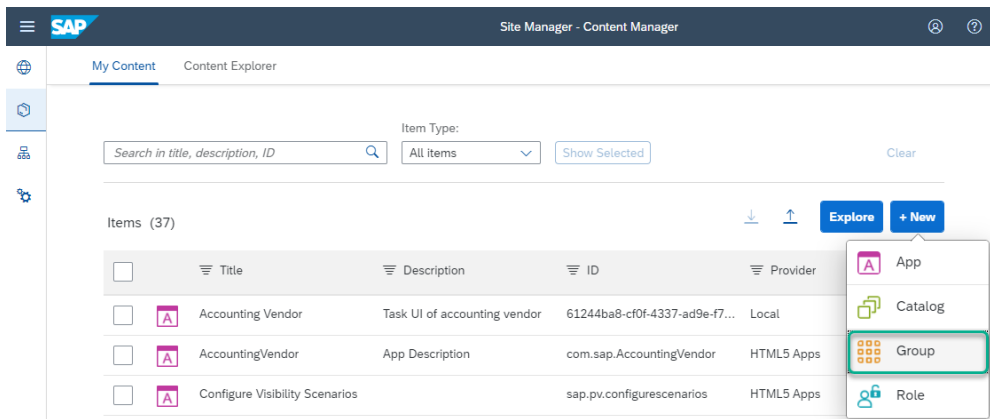
- Click Edit button to enable all users to access the new Start UI tile.



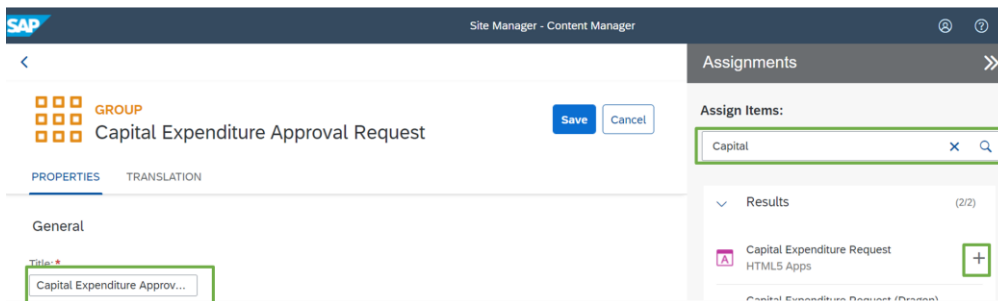
- Search for Capital Expenditure and select Capital Expenditure Request.
- Click the + button and Save the changes.



- Click **New** button and Select **Group** to create a new group.



- Add a **Title** for eg: Capital Expenditure Approval Request under **PROPERTIES**.
- Search Document and Select Document Centric Approval Request.
- Click **+** button and **Save** button.

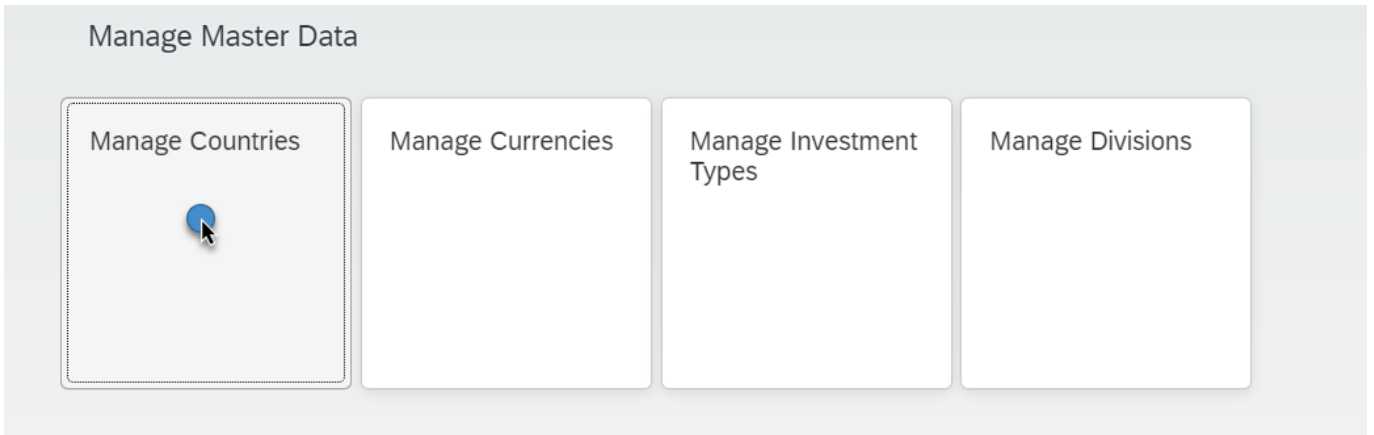


## Manage Investment Details Master Data

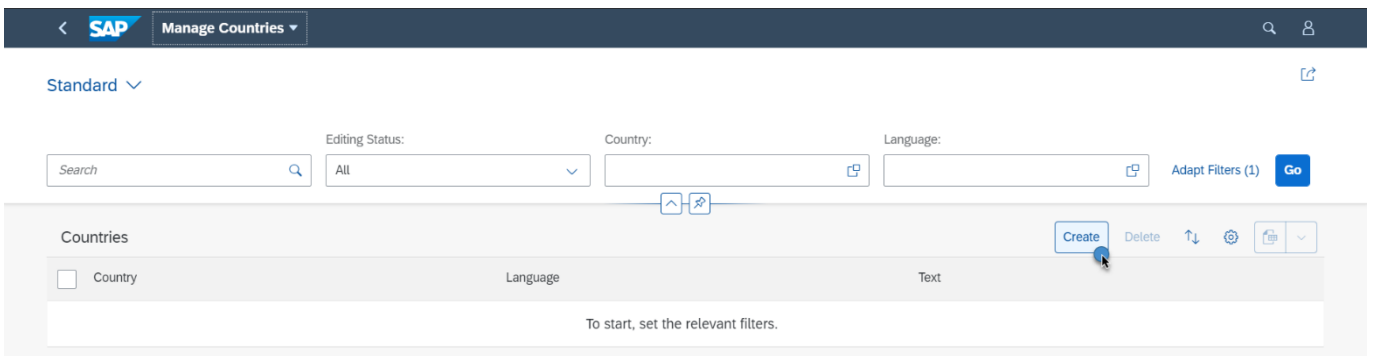
You can manage investment details master data by utilizing SAP UI5 applications that were deployed in the previous step. The url to access the deployed Fiori Launch Pad is available under Applications in your cloud foundry space. These applications enable you to:

1. Manage Countries;
2. Manage Currencies;
3. Manage Investment Types;
4. Manage Divisions (Business Units).

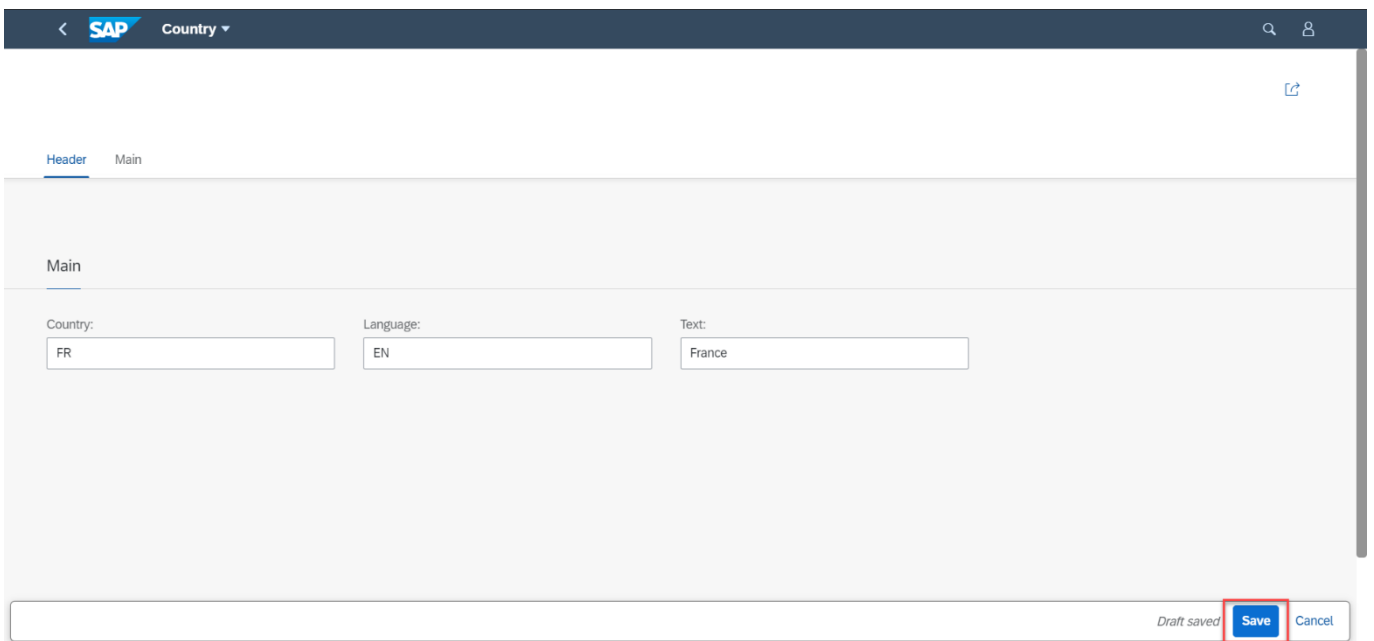
For this, access the FLP and select one of the tiles in "Manage Master Data" section.



After the application has opened, click on "Create" button.



Populate fields with the relevant data and select "Save"



You can also edit or delete records of the table.

# How to start the Process Variant

An activated CAPEX process variant can be used to create a new CAPEX request. It is possible to start a new CAPEX request using a deployed SAP UI5 application or from a remote application using Workflow APIs. This content package provides SAP UI5 based CAPEX start UI application enable business users to create new CAPEX approval requests.

## Use Start UI provided with the content package

Refer to End User Guide on how to start the workflow (Using the Capital Expenditure Approval workflow > Creating Capital Expenditure Request).

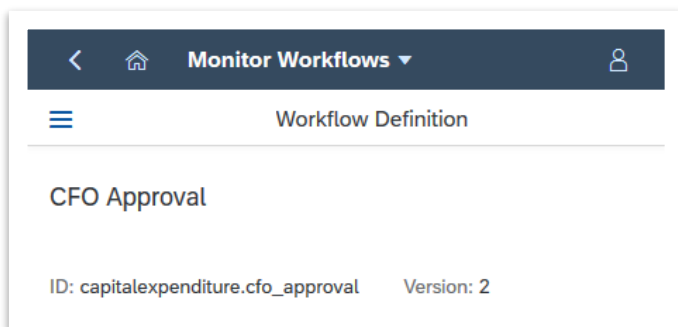
## Create and use your own Start UI

To start the workflow for a given variant, three steps are necessary:

- Determine Workflow Definition Id;
- Define Start Payload (Initial Context);
- Create your own Start UI;
- Start the workflow by calling API from your application.

### Determine Workflow Definition Id

This can also be seen in the “Monitor Workflows – Workflow Definitions” application:



### Define Start Payload (Initial Context)

The predefined Custom UIs and Business Rules in this package expect a specific workflow context. This context is given to the workflow instance upon starting. Following is the format defined for the Capital Expenditure Approval Process, along with example values:

```
{  
  "RequestId": "IAP-2020-173",  
  "Title": "App Creation",  
  "Requester": {
```

```

    "FirstName": "John",
    "LastName": "Doe",
    "Email": "John.Doe@example.com",
    "UserId": "jdoe",
    "Comments": "Please Approve"
  },
  "Investment": {
    "TotalCost": 50000,
    "Type": "Software",
    "TypeCode": "SW",
    "CAPEX": 40000,
    "OPEX": 2000,
    "Currency": "EUR",
    "CurrencyCode": "EUR",
    "ROI": 15,
    "IRR": 5,
    "Country": "Germany",
    "CountryCode": "DE",
    "BusinessUnit": "Business Process Management",
    "BusinessUnitCode": "BPM",
    "Description": "Provide a fresh experience for our customers by providing new apps for our services"
  },
  "Sustainability": {
    "EnergyEfficiency": 10,
    "CO2Efficiency": 20,
    "EnergyCostSavings": 15,
    "WaterSavings": 10
  },
  "Attachments": [
    {
      "objectId": "peTEKH-XYNIauSJR9BDIktM1xthdXbAC2e25qJe7uCo",
      "name": "Picture.jpg"
    },
    {
      "objectId": "G-j2YIgoHzQ2ZxQ2bQ5V50sh6-KYmnFYvG9NfD0r2XI",
      "name": "Document.docx"
    }
  ],
  "isTesting": false
}

```

Table 1 shows the technical description of the fields (see also [Error! Reference source not found.](#) for a business description)

*Table 1. Special Start Payload fields*

FIELD	COMMENT
RequestId	This should be unique for each workflow instance.

Title	The title is shown in User Tasks and Email notifications.
Requester.Email	This email address is used for sending notifications to the requester.
Requester.UserId	The user Id of the requester.
Investment.* Sustainability.*	Investment and sustainability related data.
Attachments*	Contains unique ID and full name of the document.. When starting the workflow from API ,set value as [].
isTesting	If this is 'true' on workflow start, the testing mode is activated. This results in approval notifications and tasks being send to the process initiator instead of the approver as defined in the Business Rule. Ensure that it is 'false' for productive systems.

## Create you own Start UI

Refer to [how to create a Start UI](#).

## Start the workflow

Call the API endpoint from your application. See the [API Reference](#) for "Workflow Instances" – "Start a new Instance" by issuing a REST POST call to the `/v1/workflow-instances` endpoint.