

SAP Business Technology Platform | EXTERNAL

Setup Guide

Manage Invoices without Purchase Order using SAP
Build Process Automation or SAP Workflow
Management

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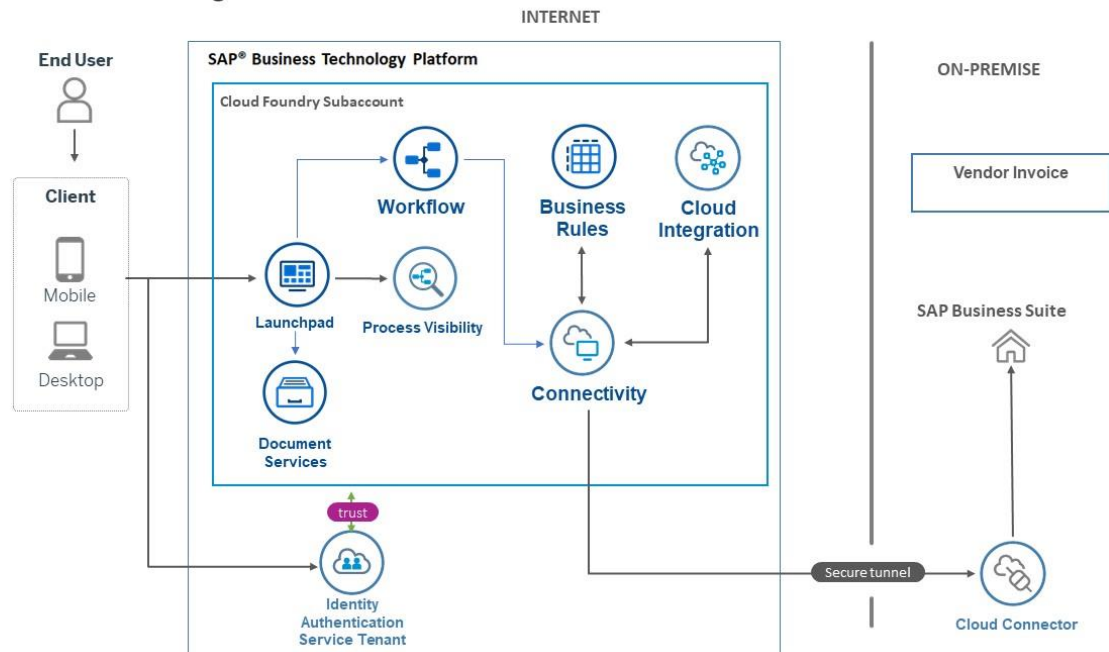
Overview

This document provides information about configuration steps to consume the live process packages **Manage Invoice without Purchase Order**. The main audience of this document are technical IT Administrators and Developers.

This content package enables SAP ERP customers to automate Manage Vendor Invoices without reference to a purchase order using SAP Build Process Automation or SAP Workflow Management without additional development in SAP ERP. Salient features of this content package are

- Plug and Play with SAP ERP without additional development.
- Net new process variants can be configured in a low-code no-code approach.
- Agent determination achieved in any of the following ways - using Business Rules, or SAP ERP, or external systems.
- Validate Line-item attributes using Business Rules.
- Achieve process visibility with key process performance indicators out-of-the-box.
- Determine which process variant to trigger and whom to assign the approval tasks using Business Rules
- Pre-built integration content to call the RFC in SAP ERP from SAP Build Process Automation or SAP Workflow Management.
- Line-Item data validated using Business Rules before approval.
- Approvers are determined using a Business Rule / external system.
- Processor and approvers are notified via email.
- Approvers have two decision options (Approve, Reject), and based on the decision, the next approval step will be created or terminate the approval process.
- After approval, the vendor Invoice will be created automatically in SAP ERP.

SAP ERP – Manage Invoice without Purchase Order



Manage Invoice without Purchase Order application helps customer to post Invoice data into ERP, and check and display an existing invoice. For creation and change of the invoice, customers can enable approval process before updating in SAP ERP. The application provides flexibility in choosing process variants depending on attributes like *Post Invoice*, *Check Invoice*, *Plant*, *Tax Calculation* etc. When a Non-PO vendor invoice is created or changed in the application, pre-configured Process Variants are triggered in SAP Build Process Automation or SAP Workflow Management.

Account executive/Invoice processor, Approvers, Procurement Team are the target users of the user interfaces explained in this document

Required SAP Business Technology Platform Services

The following SAP BTP services are required to consume the content package to Manage Invoices without Purchase Order in SAP ERP 6.0 and above:

- SAP BTP Cloud Foundry Runtime
- SAP Build Process Automation or SAP Workflow Management
- SAP Business Application Studio
- Cloud integration capability within SAP Integration suite
- SAP Launchpad service
- SAP Document Management Service
- SAP Cloud Identity Services - Identity Authentication (optional)
(or equivalent Identity and Authentication service)

Setup and Configuration

Manage Invoices Without Purchase Order content package requires SAP Build Process Automation or SAP Workflow Management subscription or a CPEA contract. Follow the setup and configuration section of SAP Build Process Automation or SAP Workflow Management.

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

Configure SAP Build Process Automation

Follow the setup and configuration section of SAP Build Process Automation:

1. [Subscribe to SAP Build Process Automation \(Standard Plan\)](#)
2. [Configure Destinations for Live Process Projects](#)
 - a. Import Package Destination
 - b. Business Rules Destination to support start and step conditions
3. [Configure SAP Launchpad Service for SAP Build Process Automation](#)

Configure Process Automation Destination

A HTTP destination is required in the BTP subaccount where SAP Build Process Automation is subscribed. Create a destination with name "sap_process_automation_service" 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 | sap_process_automation_service |
| Type | HTTP |
| Proxy Type | Internet |
| Authentication | OAuth2ClientCredentias |
| URL | <"endpoints"."api"> |
| Client ID | <"uaa":"clientis"> |
| Client Secret | <"uaa":"clientsecret"> |
| Token Service URL | <"uaa":"url">/oauth/token |

Note: While creating the service instance for SAP Build Process Automation service, make sure that at least the required scopes are assigned (help documentation to enable technical authentication to [access the SAP Build Process Automation APIs](#)). If the scopes are not assigned, you can also [update the service instance](#) with the required scopes.

Configure OAuth2ClientCredentials SAP Build Process Automation Destination (Service Instance)

Ignore this step if there is already a destination using SAP Build Process Automation service instance created.

Create new destination to call SAP Build Process Automation APIs using a service route from SAP UI5 component. For more details, follow the help document:

<https://help.sap.com/viewer/cca91383641e40ffbe03bdc78f00f681/Cloud/en-US/685f383cebb54c009b2fac633b32c90f.html>.

Destination Configuration

Blank Template Service Instance

Service Instance: * sap_processautomation

Name: * process_atuomation_service_destination

Description: Call SAP Process Automation APIs using a service route

Additional Properties New Property

Next Cancel

Destination Configuration

Name: * process_automation_service_destination

Type: HTTP

Description: Call SAP Process Automation APIs using a s...

URL: * https://sap.com/DUMMY_URL

Proxy Type: Internet

Authentication: OAuth2ClientCredentials

Use mTLS for token retrieval

Client ID: * sb-... i9...

Client Secret: *****

Token Service URL Type: * Dedicated Common

Token Service URL: * https://... ..

Token Service User:

Token Service Password:

Additional Properties

| | | |
|-----------------|------------------------|----|
| endpoints | {*api*:"https://t... | 🗑️ |
| html5-apps-... | {*app_host_id*:"... | 🗑️ |
| saasregistry... | true | 🗑️ |
| sap.cloud.s... | com.sap.spa.process... | 🗑️ |
| sap.cloud.s... | spa | 🗑️ |

Use default JDK truststore

Save Cancel

Configure SAP Workflow Management

Follow the [setup and configuration section](#) of SAP Workflow Management.

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_GET

- WORKFLOW_INSTANCE_START

Configure Workflow Destination

To start the item process variant, you need to maintain a destination for the Workflow with the following parameters:

| | |
|-------------------|---|
| Name | Workflow |
| Type | HTTP |
| Proxy Type | Internet |
| Authentication | OAuth2ClientCredentials |
| URL | https://api.workflow.<region-host>.hana.ondemand.com/rest |
| Client ID | <ClientID> |
| Client Secret | <clientSecret> |
| Token Service URL | <uaa.url>/oauth/token |

Please refer help documentation [how to get URL, ClientID, 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

An HTTP destination is required in the Cloud Foundry account where SAP Workflow Management is subscribed. Configure destination with details as shown below. Please make sure the URL formatted as {rule_runtime_url}/rules-service. Please refer how to [create a HTTP destination](#) and [how to access business rules APIs](#) using OAuth 2.0 Authentication (client credentials)

| | |
|-------------------|----------------------------------|
| Name | BusinessRules |
| 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 |

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 OAuth2ClientCredentials 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.
- Click **Save** button.

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.
- Click **Save** button

Configure Workflow Email Destination

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

Configure Document Management Service Repository

SAP Document Management service, in short Document Management, is the content management solution on the Cloud Foundry environment of SAP Business Technology Platform. For the Non-PO Vendor Invoice live process package, you need to subscribe to 'Document Management, integration option' in order to upload the invoice and other supporting documents for the approval process.

Create and configure root Document Management Service repository by following 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 to be used the destination configuration as described in the next section.

Configure Document Management Destination

Configure a Document Management Service destination with the following parameters.

| | |
|-------------------|--|
| Name | bpmworkflowruntime_attachments |
| Type | HTTP |
| Proxy Type | Internet |
| Authentication | OAuth2ClientCredentials |
| URL | <endpoints.ecmservice.url>/browser/<Repository_ID>/root/ |
| Client ID | <Client ID> |
| Client Secret | <Client Secret> |
| Token Service URL | <uaa.url>/oauth/token |

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](#)).

To make sure that the users can upload and view the document, assign the roles “SDM_Admin” or “SDM_User” to the users.

Configure Integration Destination

A HTTP destination is required in the Cloud Foundry account where SAP Build Process Automation or SAP Workflow Management is subscribed.

| | |
|----------------------------------|--|
| Name | CPI |
| Type | HTTP |
| Proxy Type | Internet |
| Authentication | Basic Authentication OR OAuth2ClientCredentials |
| URL | <runtime.url> |
| Username OR Client ID | |
| Password OR Client Secret | |
| Token Service URL | <oauth.url.for.clientCredentials> |

Refer to this link [how to get your Integration tenant runtime url](#).

If you would like to use OAuthClientCredentials flow, then create an OAuth client in SAP Integration Neo tenant and enter Client ID and Client Secret. Token Service Url is available in your SAP Integration Neo account as showed below.

The screenshot displays the SAP NetWeaver Administration console interface. On the left is a navigation menu with categories: Overview, Applications (Java Applications, HTML5 Applications, HANA XS Applications, Subscriptions), Services, Solutions, SAP HANA / SAP ASE, Connectivity (Destinations, Cloud Connectors), Security (Trust, Authorizations, OAuth), and OAuth (highlighted). The main content area shows the 'Subaccount:' header and 'OAuth Settings' section. Under 'OAuth Settings', there are three tabs: 'Branding', 'Clients', and 'Platform API'. The 'Branding' tab is active, showing options for 'Default Theme' (selected) and 'Custom Theme'. Below this are color pickers for 'Background Color' (#CCCCCC), 'Button Color' (#007CC0), and 'Button Text Color' (FFFFFF), with a 'Save' button. The 'OAuth URLs' section contains fields for 'Authorization Endpoint', 'Token Endpoint' (highlighted with a red box), and 'End User UI'.

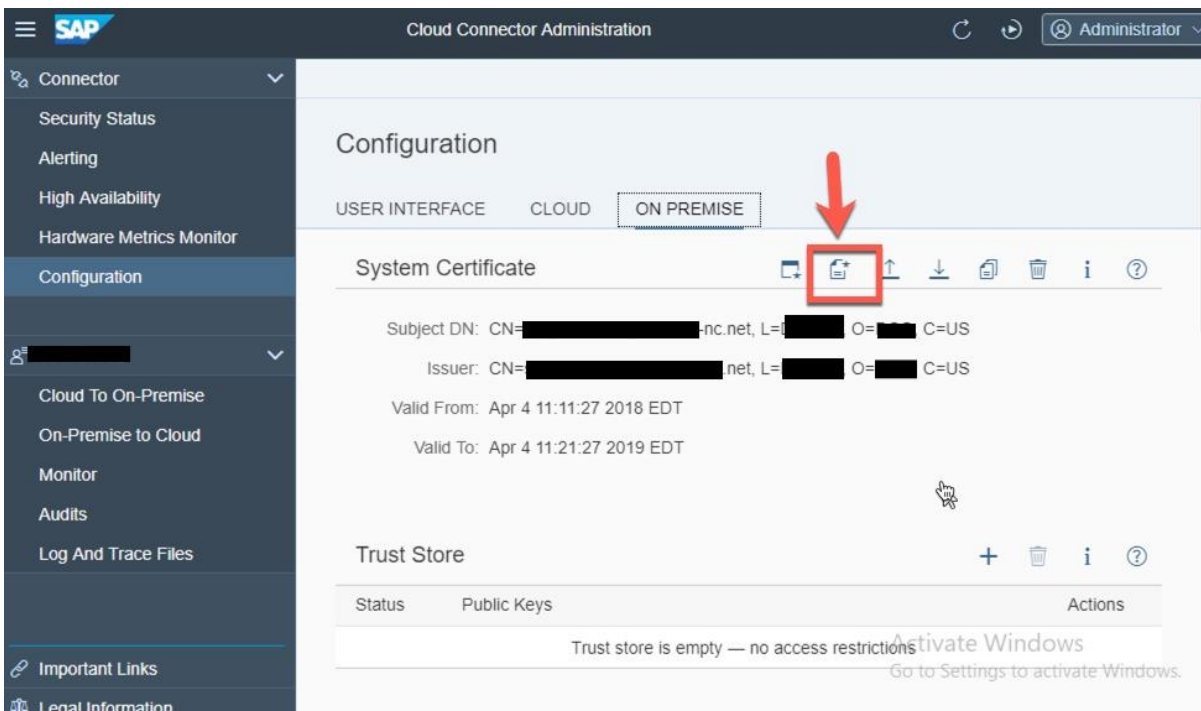
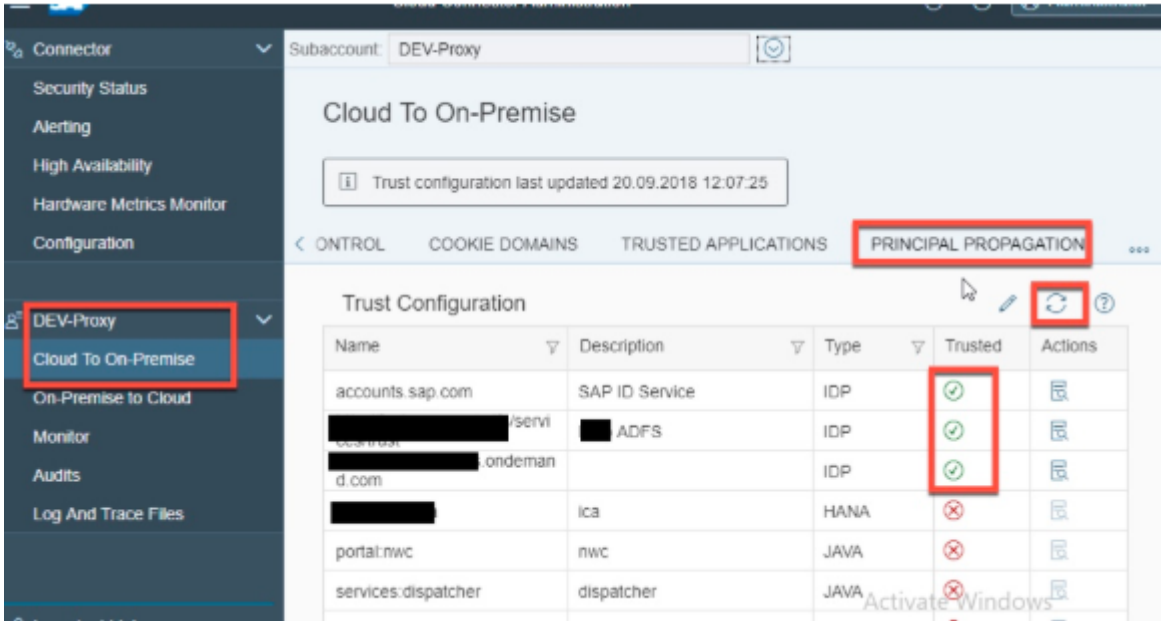
Assign the required [roles](#) to your OAuth client (oauth_client_<client ID>).

Configure SAP ERP Destination

Create an RFC destination with the following properties in the Neo account where SAP Integration service is subscribed. Please refer how to [create an RFC destination for the Neo Environment](#).

| | |
|---------------------|--|
| Name | <ANYNAME> Note: You can name it as you wish but maintain the destination name in the integration flow configuration. |
| Type | RFC |
| Proxy Type | OnPremise |
| User | <ECCUSER> |
| Password | |
| Repository User | |
| Repository Password | |
| Location ID | <uaa.url>/oauth/token |
| Additional Property | Name: jco.client.ashost Value: <abapServerHost> Name: jco.client.client Value: <client id> Name: jco.client.sysnr Value: <systemNumber> |

For implementing Principal propagation customer needs to synchronize the IDP in SAP cloud connector, create the destination of type IDP and import the self-signed CA certificates.



Follow these steps in the SAP ERP (ECC) to enable Principal propagation

1. Import Cloud Connector (SCC) System certificate in STRUSTSSO2 transaction under SSL Server Standard. This established the trust between the backend and SCC
2. Maintain subject, issuer, cert rule parameter details in default profile – RZ10 transaction
3. Create the rule-based mapping using sample X.509 certificate – CERTRULE transaction
4. Restart ICM

Configure Cloud Connector

Configure your SAP Integration Suite account and ERP system in Cloud Connector to enable secure tunnel for RFC calls. Please refer the help documentation to [configure Cloud Connector](#).

Customer needs to expose the Following BAPI's in cloud connector to be able to access the function modules

- BAPI_GL_ACC_GETLIST
- BAPI_COMPANYCODE_GETLIST
- MMPUR_UI_GET_SUPPLIERS
- BAPI_BUSINESSAREA_GETLIST
- BAPI_PROFITCENTER_GETLIST
- BAPI_COSTCENTER_GETLIST
- /SAPNEA/SMAPI_PLANT_GETLIST
- RFC_READ_TABLE
- BPAR_C_FI_TERM_OF_PAYMENT_KEY
- BAPI_CONTROLLINGAREA_FIND
- FI_TAX_SERVICES_CALCULATE
- BAPI_ACC_DOCUMENT_POST
- BAPI_ACC_DOCUMENT_CHECK
- BAPI_VENDOR_GETDETAIL
- BAPI_COMPANYCODE_GETDETAIL
- BAPI_USER_GETLIST
- BAPI_EXCHRATE_GETCURRENTRATES

Import, Configure and Deploy Integration Content

This package utilizes Cloud Integration capability within SAP Integration Suite to provide integration between SAP ERP and SAP Build Process Automation or SAP Workflow Management.

Further details can be found in dedicated integration guide of the integration package “**SAP Build Process Automation Integration with SAP ERP for Invoice**”.

Import, Configure and Deploy SAPUI5 Content

Setup SAPUI5 Application

Import SAPUI5 Content

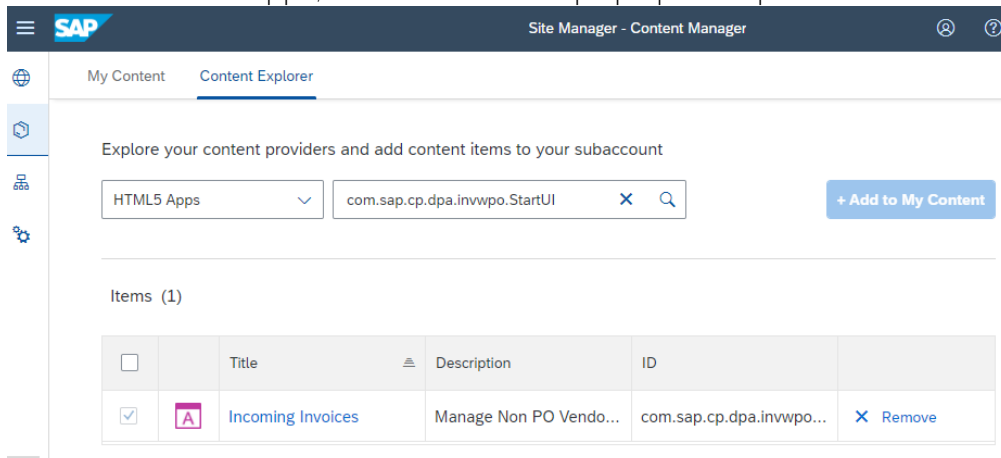
The Manage Invoices without Purchase Order content package requires an SAPUI5 application to manage incoming invoices and for the approval process. The application is attached to the content package and will be deployed when you import the package.

If you wish to make additional changes to the application, you can also download the source code of the SAPUI5 application from the downloaded package (Manage Packages app in case of SAP Workflow Management or Application Development Lobby in case of SAP Build Process Automation). Import the archive into SAP Business Application Studio and make any necessary modifications. Build and deploy the MTA archive, using the space developer credentials.

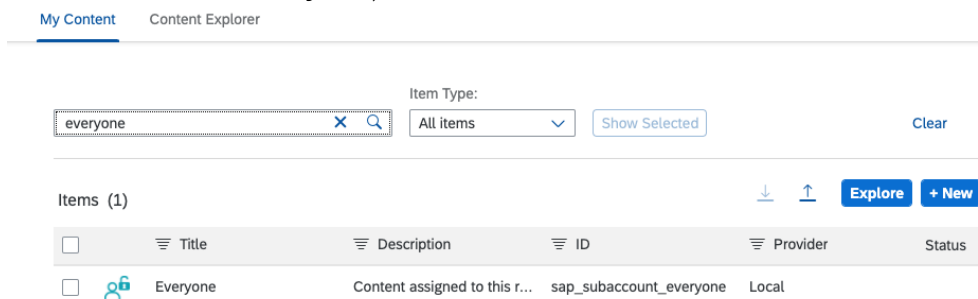
Configure SAP Central Fiori Launchpad Site

Perform the following steps to add the Vendor Onboarding app as a tile in the launchpad site:

- Open SAP Launchpad site manager application.
- Select Content Manager
- Go to Content Explorer tab.
- Under the HTML5 apps, search for 'com.sap.cp.dpa.invwpo.StartUI' Or 'Incoming Invoices'

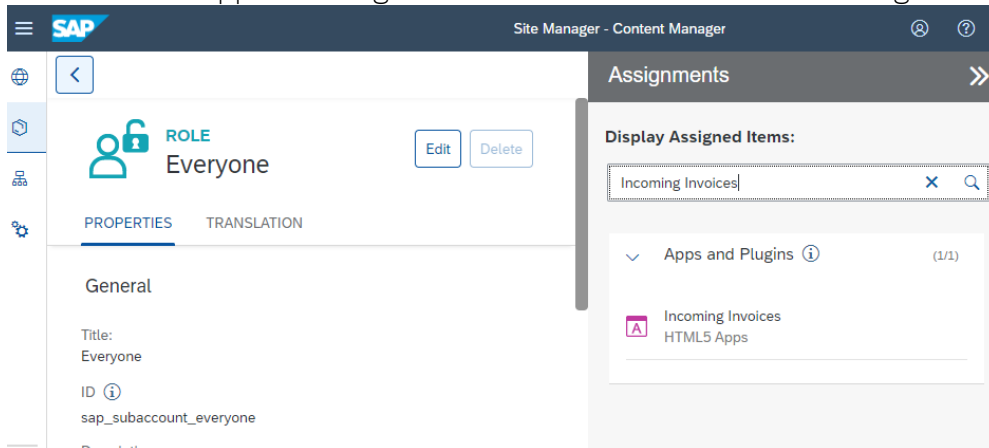


- Select the app from the result and click 'Add to My Content' button to include the UI5 component.
- Go to My Content tab, and search for the role to which you want to add the app (for example, the default role called everyone).



- Click the role from the result table and navigate into it.

- Click the Edit button.
- Search for the app 'Incoming Invoices' and click the + button to assign the app to the role.



- Save the changes to enable the app permission based on user role.
- You can either create a new group and add the Incoming Invoices app to that group or you can add the Incoming Invoices app to an existing group.

Please refer help documentation to know more about [configuring start UI tile on Central Fiori Launchpad](#).

Import, Configure and Deploy Header Workflow

Deploy the Header Workflow

The Header workflow necessary for this content is attached to the package and will be deployed when you import the content package.

If you wish to make additional changes to the application, you can also download the source code of the workflow process from the downloaded package (Manage Packages app in case of SAP Workflow Management or Application Development Lobby in case of SAP Build Process Automation). Import the archive into SAP Business Application Studio and make any necessary modifications. Build and deploy the MTA archive, using the space developer credentials.

Non-PO Vendor Invoice Header Process – This header workflow provides a generic approval process for vendor invoice creation in SAP ERP with invoice validations. Validations of the invoice are done against SAP ERP and by using business rules. The header workflow determines process variants depending on Cost Objects. An Invoice cost object is a combination of invoice's item fields, specifically, a combination of cost center, profit centre, business area and plant.

For vendor invoice creation one header workflow can call multiple process variants for approval process depending on invoice cost objects. If invoice validation fails or approval process is declined or mentioned as not responsible by approver, a rework task will be assigned to the initiator of the Invoice Posting.

Appendix

Determining approvers through External Service

The SAP Build Process Automation or SAP Workflow Management content provides the option to determine approvers based on External Service instead of the Business Rule – Determine Approvers.

To determine approvers through an external service the following steps need to be implemented by the consumer

- Create an integration flow with HTTP Adapter as Sender
- Set the Address for Request Processing as `/wfm/invoicewopo/determineApprovers`

Note: the endpoint is fixed and coupled with the workflow

- Input payload structure

```
{
  "Vocabulary":[
    {
      "InvoiceDetails":{
        "CompanyCode":"","
        "CostCenter":"","
        "ApprovalLevel":"","
        "CurrencyKey":"","
        "PaymentTerms":"","
        "PaymentMethod":"","
        "GLAccount":"","
        "VendorCode":"","
        "ExchangeRate":"","
        "ProfitCenter":"","
        "BusinessArea":"","
        "ThresholdInvoiceAmount":""
      }
    }
  ]
}
```

- Output payload header

Content-Type: application/json

- Output payload

```
{
  "Result":[
    {
      "ApproverDetails":{
        "DueDurationReference":""," //"Task" OR "Workflow"
        "TaskDueDuration":1, //Duration type integer
        "Email":"user@example.com", //EMAIL
        "UnitOfTime":"h", // Can be one of the following – Y/M/D/h/m
        "UserId":""," //UserID
        "IsApprovalRequired":true,
        "UserGroup":""," //GroupID
      }
    }
  ]
}
```