

SAP BUSINESS TECHNOLOGY PLATFORM | EXTERNAL

# Setup Guide

## COLLECTION AUTOMATED REMINDERS

# Table of Contents

Table of Contents .....	2
Overview.....	3
Solution Diagram .....	4
Required SAP BTP Services .....	5
Setup and Configuration .....	6
Configure SAP Workflow Management.....	6
Configure Workflow Email Destination.....	6
Configure Workflow Destination.....	6
Configure Business Rules Destination .....	7
Configure Destination to Enable Start & Step Conditions .....	7
Configure OAuth2 Client Credentials Workflow Destination (Service Instance).....	7
Configure Cloud Integration Destination .....	8
Configure Communication Scenarios in SAP S/4HANA .....	9
Configure APIs in SAP S/4 HANA.....	9
Configure SAP S/4HANA Destination.....	10
Configure Cloud Connector .....	11
Import, Configure and deploy Integration Content .....	11
Import pre-packaged Integration content in SAP Integration Suite .....	12
HTTP/OData Adapter and Timer Configuration .....	14

# Overview

This document provides information about setting up the SAP Business Technology Platform account to consume the workflow content package Collections Automated Reminders. The main audience of this document are technical IT/system administrators.

## Scenario Definition

### 1. Objectives

- Automated workflow to send dunning notice details to different internal teams to ensure timely payment from customer

### 2. Features

- Fetch overdue invoice and customer details from S/4HANA system and derive the approvers based on data fetched.
- Approval flow to different internal teams.
- Update dunning block based on the communication with customer
- Plug and Play with SAP S/4 HANA without additional development.
- Pre-configured process steps to create new variants. New Process variants can be configured in a low-code, no-code approach.
- Agent/approver determination using Business Rules or external service.
- Flexibility in determining process variants based on business conditions.
- Pre-built integration content to call SAP S/4 HANA from SAP Workflow Management
- Out-of-the-box visibility into key process performance indicators.

### 3. Benefits

- This extension will notify relevant teams about the overdue invoices which will help in reducing the total overdue receivable amount.

### 4. Applicable Scenarios

- Dunning & invoice collection

# Solution Diagram

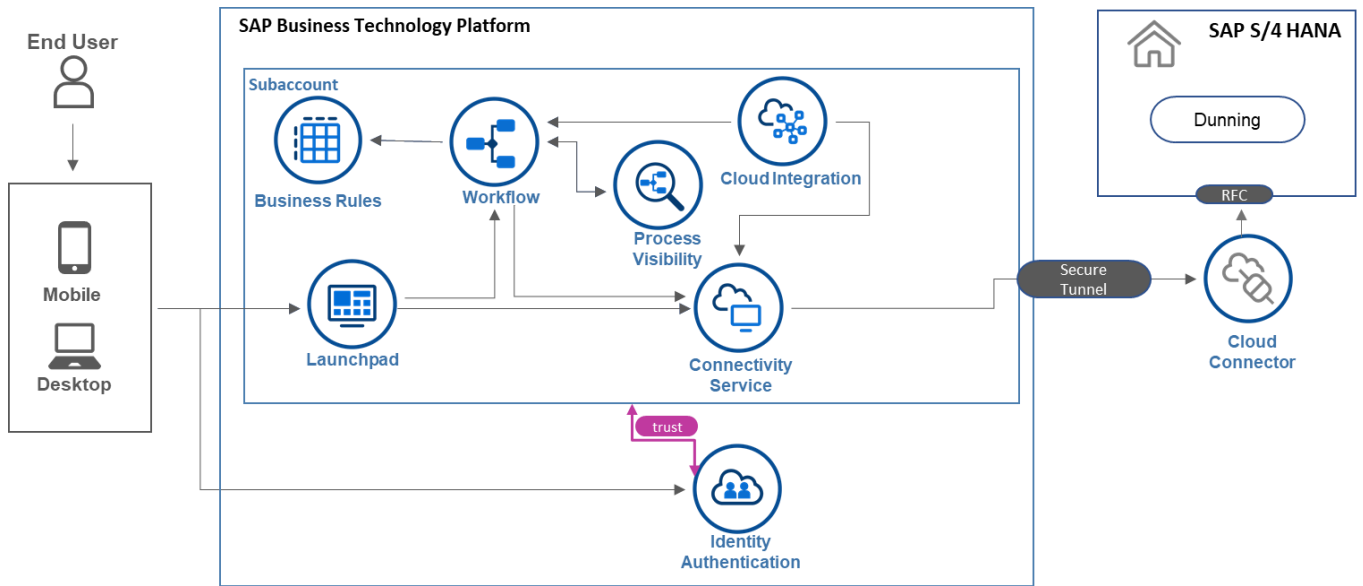


Table 1. Required Services

Service Name	Usage
SAP Launchpad Service	Simplify access to business apps with a role based, personalized launchpad site
SAP Workflow Management	Digitize workflows, manage decisions, and gain end-to-end process visibility
SAP Integration Suite	Develop and manage enterprise-wide integration across heterogeneous landscapes
Identity Authentication	Authentication and single sign-on
SAP Connectivity Service	Establish connections between cloud applications and SAP S/4HANA
SAP Authorization and Trust Management Service	Manage application authorizations and connections to identity providers
SAP BTP Cloud Foundry Runtime	The SAP BTP, Cloud Foundry runtime lets you develop polyglot cloud-native applications and run them on the SAP BTP Cloud Foundry environment
SAP Cloud Connector	Establish secure and reliable connectivity between your cloud applications and SAP S/4HANA running in isolated networks

## Required SAP BTP Services

The workflow content package **collections automated reminders** is intended to be used for finance LOB specific to the invoice collection and dunning processes. It requires the following services in SAP Business Technology Platform.

- SAP Workflow Management to orchestrate the process.
- SAP Integration Suite for data activities with Dunning Notices information.
- SAP Connectivity service (cloud connector) to establish access to SAP S/4HANA on-premise.
- 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.

# Setup and Configuration

## Configure SAP Workflow Management

Collections Automated Reminders 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>

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

## 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 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

## Configure 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](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.

WebIDEEEnabled	true
WebIDESystem	CPI
WebIDEUsage	odata_gen



## Configure Communication Scenarios in SAP S/4HANA

Communication user is not required as there no connection needed with SAP S/4HANA Cloud

## Configure APIs in SAP S/4 HANA

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

### OData Services:

/sap/opu/odata/sap/API\_OPLACCTGDOCITEMCUBE\_SRV

/sap/opu/odata/sap/FAR\_DUNNING\_HISTORY\_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\_OPLACCTGDOCITEMCUBE\_SRV” and click on “Get Services”
5. Select “API\_OPLACCTGDOCITEMCUBE\_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 “FAR\_DUNNING\_HISTORY\_SRV”

### SOAP Service:

/sap/bc/srt/scs/sap/journalentrybulkchangerequest\_

Follow the documentation on how to [Configure Journal Entry Change \(Asynchronous\) SOAP API](#).

Add the CPI iFlow endpoint of “Confirm Dunning Block” (<https://<cpu.runtime.url>/cxf/confirmDunningBlock>) in the outbound confirmation service (Consumer Proxy - JournalEntryBulkChangeConfirmation\_Out) of the above mentioned SOAP API with following settings:

Configuration: Consumer Proxy 'CO\_FINS\_JOURNAL\_ENTRY\_BULK\_CHA', Logical Port ' [REDACTED] '

Save Edit Ping Web Service

Consumer Security **Messaging** Transport Settings Message Attachments Identifiable Business Context Operation S

Reliable Messaging (Asynchr.)

RM Protocol: SAP RM

Message ID (Synchronous)

Message ID Protocol: Suppress ID Transfer

Metering of Service Calls

Data transfer scope: Enhanced Data Transfer

Transfer protocol: Transfer via SOAP header

Consumer Security Messaging **Transport Settings** Message Attachments Identifiable Business Context Operation Settings Administrative Information

URL Access Path

Complete URL  URL components

\* URL: https://[REDACTED].hana.ondemand.com/cxf/confirmDunningBlock

Logon Language: Language of User Context

Proxy

Name of Proxy Host: [REDACTED]

Port Number of Proxy Host: [REDACTED]

User Name for Proxy Access: [REDACTED]

Password of Proxy User: [REDACTED]

Transport Binding

Make Local Call: No Call in Local System

\* Transport Binding Type: SOAP 1.1

Maximum Wait for WS Consumer: 0

Optimized XML Transfer: None

Compress HTTP Message: Inactive

Compress Response: True

## Configure SAP S/4HANA Destination

Configure a HTTP destination to connect with SAP S/4HANA, refer to documentation [here](#) for the same. The below is a destination configuration for *SAP S/4HANA*.

Name	S4HANA
Type	HTTP
Proxy Type	On-Premise
User	<USER>
Password	<PASSWORD>

Authentication	BasicAuthentication
URL	<OData base URL of SAP S/4HANA cloud> <OData base URL of SAP S/4HANA>
Additional Properties	sap-client: <client number>

The below is a destination configuration for for *SAP S/4HANA Cloud*.

Name	S4HANA
Type	HTTP
Proxy Type	Internet
User	<COMMUNICATION_USER>
Password	<COMMUNICATION_PASSWORD>
Authentication	BasicAuthentication
URL	<OData base URL of SAP S/4HANA cloud>
Additional Properties	sap-client: <client 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/FAR_DUNNING_HISTORY_SRV	HTTPS	ABAP System
/sap/opu/odata/API_OPLACCTGDOCITEMCUBE_SRV	HTTPS	ABAP System
/sap/bc/srt/xip/sap/JournalEntryBulkChangeRequest_In	HTTPS	ABAP System

## Import, Configure and deploy Integration Content

The following integration models are available in this package.

1. Check Invoice Payment
2. Confirm Dunning Block
3. Create Workflow Instances for Dunning Notices

## 4. Post Dunning Block Reason



SAP Workflow Management Integration with SAP S/4HANA – Automated Collections Reminder /  
SAP Workflow Management Integration with SAP S/4HANA – Automated Collections Reminder

This package contains Integration Flows to read dunning notices and check invoice payment status from SAP S/4HANA to SAP Workflow Management and also post dunning block from SAP Workflow Management to SAP S/4HANA

Vendor: Accenture    Mode: Editable  
Version: 1.0.0

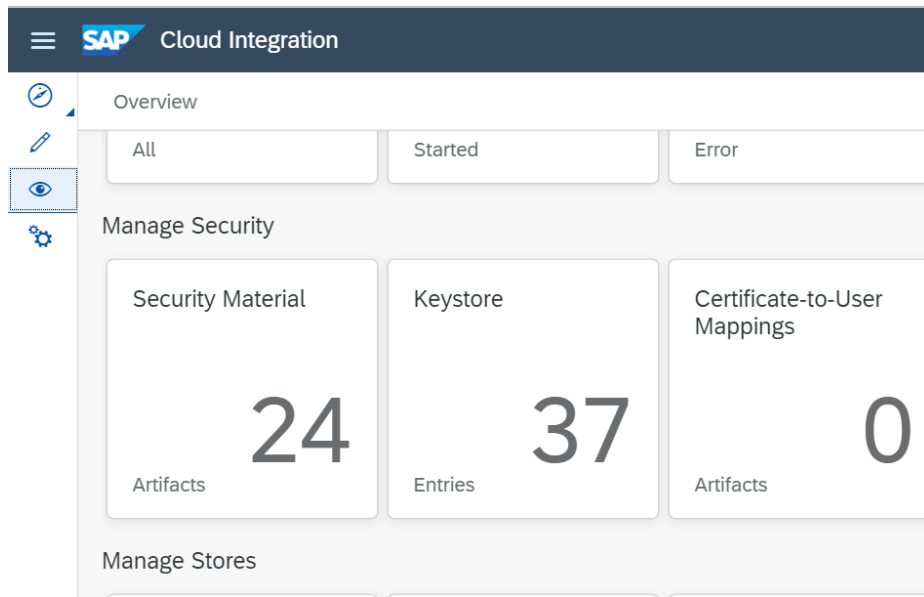
Overview    **Artifacts (4)**    Documents (2)    Tags    Comments

<input type="checkbox"/>	Name	Type	Version
<input type="checkbox"/>	<b>Check Invoice Payment</b> Fetch the invoice payment status from SAP S/4HANA and send message to the workflow instance in SAP Workflow Management. Created	Integration Flow	1.0.0
<input type="checkbox"/>	<b>Confirm Dunning Block</b> Fetch the Dunning Block posting confirmation from SAP S/4 HANA and send it to SAP Workflow Management Created	Integration Flow	1.0.0
<input type="checkbox"/>	<b>Create Workflow Instances for Dunning Notices</b> Fetch dunning notices in SAP S/4HANA and create corresponding workflow instances in SAP Workflow Management Created	Integration Flow	1.0.0
<input type="checkbox"/>	<b>Post Dunning Block Reason</b> Post Invoice Dunning Block Reason in SAP S/4HANA Created	Integration Flow	1.0.0

Import the content 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 – Automated Collections Reminder”.
- Click on the package “SAP S/4HANA Integration with SAP Workflow Management – Automated Collections Reminder”.
- 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)

The screenshot shows the 'Create User Credentials' form. It has the following fields:

- Name: \* S4HANA
- Description: To connect to SAP S/4 HANA
- Type: \* User Credentials (dropdown menu)
- User: \* [Redacted]
- Password: [Redacted]
- Repeat Password: [Redacted]

At the bottom right, there are two buttons: 'Deploy' and 'Cancel'.

- WF\_CR – (OAuth2 Client Credentials)

### Edit OAuth2 Credentials

Name: \*

Grant Type:

Description:

Token Service URL: \*

Client ID: \*

Client Secret: \*

Client Authentication:

Include Scope:

[Deploy](#) [Cancel](#)

Note: The credential names can be different from what is mentioned above. Make sure that you configure the appropriate credential names in the integration flow's HTTP adapter configuration.

## HTTP/OData Adapter and Timer Configuration

- Open the integration model *Create Workflow Instances for Dunning Notices*.
- Click **Configure** button, choose the appropriate receivers (SAP\_Workflow\_Management\_GET, SAP\_Workflow\_Management\_POST and SAP\_S4HANA) and set their respective API endpoint, Proxy Type, Authentication and credential names.

Configure "Create Workflow Instances for Dunning Notices"

Timer   **Receiver**   More

---

**Connection**

Receiver:

Adapter Type:

Address:

Workflow\_API\_URL:

Credential Name:

Configure "Create Workflow Instances for Dunning Notices"

Timer Receiver More

**Connection**

Receiver: SAP\_S4HANA

Adapter Type: HCIOData

Address: {{OData\_URL}}/sap/opu/odata/sap/FAR\_DUNNING\_HISTORY\_SRV

OData\_URL: http://

Proxy Type: On-Premise

Location ID:

Authentication: Basic

Credential Name:

- Go to Timer tab and set the date/time frequency for which the Dunning Notices are to be read by SAP Workflow Management from SAP S/4 HANA system

Configure "Create Workflow Instances for Dunning Notices"

Timer Receiver More

Timer: Start Timer 1 [StartEvent\_546]

Run Once  
 Schedule on Day  
 Schedule to Recur

Schedule to Recur: Daily

On Time  
 Every

Time Zone: ( UTC 5:30 ) India Standard Time(IST)

11:00 AM

1 min Between 00:00 and 01:00

- Go to the More tab and configure additional parameters:
  - Lastruntime – Change the Lastruntime (if needed) to read only the Dunning Notices created after a specific date.
  - SAPClientNo – Enter the SAP Client No. to which OData will connect

Configure "Create Workflow Instances for Dunning Notices"

Timer Receiver More

Type: All Parameters

Lastruntime: 2021-10-27T00:00:00

SAPClientNo:

- Open the integration model *Post Dunning Block Reason*.
- Click **Configure** button, choose the appropriate receivers (SAP\_WorkflowService and SAP\_S4HANA) and set their respective API endpoint and credential names. The API endpoint for SOAP service JournalEntryBulkChangeRequest\_In, it's binding

and the SenderBusinessID of it's Outbound Service (Consumer Proxy) can be obtained from service registry in SOAMANAGER.

API endpoint and Service Binding details can be found by following the below path in SOAMANAGER:

Go to "SOAMANAGER" -> Go to "Service Registry" Tab -> Click on "Published Bindings" -> Search for the Binding Name which was defined during configuration of the SOAP service -> Click on the Binding Name -> The displayed "Access URL" is the required API endpoint (along with Binding Name embedded in the URL)

The "External System ID" created by following the section "Mapping Sender System and Logical Port" in below link is to be used as SenderBusinessID:

[Configuring APIs in SOA Manager - SAP Help Portal](#)

Configure "Post Dunning Block Reason"

Sender Receiver **More**

Receiver: SAP\_S4HANA

Adapter Type: HTTP

**Connection**

Address: {{SOAP\_URL}}/sap/bc/srt/xip/sap/{{SOAP\_SERVICE\_BINDING}}

SOAP\_URL: http://[redacted].com:

SOAP\_SERVICE\_BINDING: journalentrybulkchangerequest\_/[redacted]

Proxy Type: On-Premise

Authentication: Basic

Credential Name: S4HANA

Configure "Post Dunning Block Reason"

Sender Receiver **More**

Type: All Parameters

Datastore name: DunningBlock

SenderBusinessId: [redacted]

- Deploy the integration model.
- Open the integration model **Confirm Dunning Block**



- Click **Configure** button, choose the appropriate sender (SAP\_Workflowservice) and set their respective User Role credentials.

#### Configure "Confirm Dunning Block"

Sender More

Sender: SAP\_Workflowservice

Adapter Type: SOAP

**Connection**

Address: /confirmDunningBlock

User Role: ESBMessaging.send Select

- Save and Deploy the integration model.
- Open the integration model **Check Invoice Payment**
- Click **Configure** button, choose the appropriate receivers (POST\_SAP\_WorkflowService) and set their respective API endpoint and credential names.

#### Configure "Check Invoice Payment"

Timer **Receiver** More

Receiver: POST\_SAP\_WorkflowService

Adapter Type: HTTP

**Connection**

Address: {{Workflow\_API\_URL}}/workflow-service/rest/v1/messages

Workflow\_API\_URL: https://api.workflow-sap.cfapps.eu10.hana.ondemand.com

Proxy Type: Internet

Authentication: OAuth2 Client Credentials

Credential Name: \_\_\_\_\_

- Go to the **More** tab and configure additional parameters:

## Configure "Check Invoice Payment"

Timer   Receiver   **More**

---

Type:  ▼

LastRunDate:

- Save and Deploy the integration model.
- Similarly, configure any additional parameters as required in integration models and deploy them.

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: /getApproversCR

Input from Workflow:

```
{
  "d":
  {
    "Dunning" : $.context.Dunning,
    "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"  
}  
]  
}  
}
```