

SAP BUSINESS TECHNOLOGY PLATFORM | EXTERNAL

Integration Guide

SAP S/4HANA Integration with SAP Build Process Automation for Sales Order

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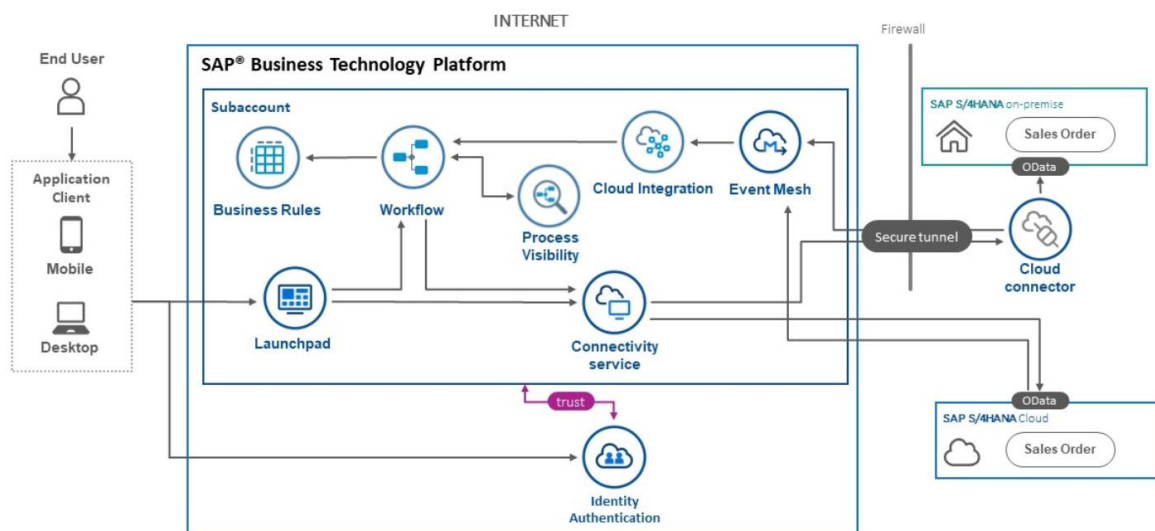
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Overview

This document provides information about configuration steps to setup the integration content to consume the live process content packages **Manage Sales Order**, **Manage Credit Block on Sales Order** and **Manage Delivery and Billing block on Sales Order**. The primary audience of this document is integration administrators and developers.

The Manage Sales Order content package for SAP S/4HANA (on-premise and cloud) enables to automate sales order approvals in a flexible and transparent way. Manage Credit Block on Sales Order content package enables customers to automate the process of releasing the credit block on Sales Order in SAP S/4HANA. Salient features of these content packages are:

- Plug and Play with SAP S/4HANA (on-premise and cloud) without any additional development.
- Pre-configured process steps to create new variants.
- New Process variants can be configured in a low-code, no-code approach.
- Add additional approvers before the releasing or rejecting sales order in SAP S/4HANA.
- Agent/approver determination using Business Rules or external service.
- Flexibility in determining process variants based on business conditions.
- Perform additional business validation of Sales Orders using business rules capability of SAP Build Process Automation or SAP Workflow Management.
- Pre-built integration content to push Sales Order lifecycle events on to Process Visibility Service through the Event Mesh configuration.
- Out-of-the-box visibility into key process performance indicators.



Required SAP Business Technology Platform Services

The workflow content packages **Manage Sales Order** and **Manage Credit Block on Sales Order** is intended to be used for SAP S/4HANA (on-premise and cloud) and requires the following services in SAP BTP:

- SAP Build Process Automation or SAP Workflow Management to orchestrate the process.
- SAP Event Mesh (needed if the SAP S/4HANA business events should automatically trigger the approval process)
- SAP Integration Suite to push Sales Order lifecycle events on to Process Visibility Service. Sales Order lifecycle events are pushed from SAP S/4HANA to Business Technology Platform through the Event Mesh configuration
- 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 Cloud Identity Services - Identity Authentication (optional).
- SAP Business Application Studio to modify/deploy the SAPUI5 applications.
- SAP BTP, Cloud Foundry runtime.

Setup and Configuration

This section will explain how to setup the integration content that is required for the live process content packages for managing Sales Order.

Configure SAP S/4HANA Communication User

In order to call the APIs related to Sales Order (approvals and release credit block), the following communication scenarios shall be enabled for the communication user.

- SAP_COM_0109
Inbound Service: /sap/opu/odata/sap/API_SALES_ORDER_SRV

Enable the following scenarios only if you are using the Manage Credit Block on Sales Order scenario.

- SAP_COM_0325 –
Inbound Service:
/sap/opu/odata/sap/API_SLS_DOC_WITH_CREDIT_BLOCK
- SAP_COM_087
Inbound Services:
/sap/opu/odata/sap/API_DIVISION_SRV
/sap/opu/odata/sap/API_DISTRIBUTIONCHANNEL_SRV
/sap/opu/odata/sap/API_SALESORGANIZATION_SRV
- SAP_COM_0106
Inbound Service:
/sap/opu/odata/sap/API_SLS_DOC_WITH_CREDIT_BLOCK
- SAP_COM_0564
Inbound Service:
/sap/opu/odata/sap/API_SALES_DOCUMENT_REASON_SRV

Configure SAP S/4HANA to push Sales Order Events to SAP Event Mesh

SAP Event Mesh can receive events from SAP S/4HANA (on-premise/cloud). Use the following blogs to perform the necessary configuration.

SAP S/4HANA on-premise

<https://blogs.sap.com/2019/09/16/sap-enterprise-messaging-for-s4hana-on-premises/>

SAP S/4HANA cloud

<https://blogs.sap.com/2020/08/19/sap-s-4hana-cloud-enterprise-event-enablement-whats-new-with-cloud-2008/>

The following business events are required for the Sales Order packages:

1. /sap/s4/beh/salesorder/v1/SalesOrder/Created/v1
2. /sap/s4/beh/salesorder/v1/SalesOrder/Changed/v1
3. /sap/s4/beh/salesorder/v1/SalesOrder/Deleted/v1

Note: At the end of this configuration, you will have the sales order events from SAP S/4HANA (on-premise or cloud) available in the queue created using SAP Event Mesh.

Configure SAP S/4HANA Destination

Configure a HTTP destination to connect with SAP S/4HANA on-premise or SAP S/4HANA Cloud, refer to documentation [here](#) for the same. 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 URL of SAP S/4HANA System>
Additional Properties	sap-client: <client number>

[Optional] Configure Cloud Connector

For SAP S/4HANA on-premise landscape, configure cloud connector to enable secure tunnel to SAP BTP tenant. Please refer the help documentation to [configure Cloud Connector](#).

Import, configure and deploy cloud integration content

This workflow content requires the cloud integration to process the sales order in SAP S/4HANA.

The integration content package **SAP S/4HANA Integration with SAP Build Process Automation for Sales Order** is available in SAP API Business hub to integrate SAP Build Process Automation or SAP Workflow Management with SAP S/4HANA. Integration models use OData APIs to integrate with SAP S/4HANA. The following integration models are available in this package.

1. Push Sales Order Created Event
2. Push Sales Order Changed Event
3. Push Sales Order Deleted Event
4. Get Description Text (only relevant for Manage Delivery and Billing Block on Sales Order package)
5. Remove Delivery and Billing Blocks from Sales Order Header (only relevant for Manage Delivery and Billing Block on Sales Order package)

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 S/4HANA Integration with SAP Build Process Automation for Sales Order**”.
- Click on the package SAP S/4HANA Integration with SAP Build Process Automation for Sales Order .
- Click Copy to import the Integration content package to your workspace.
- Navigate to the *Monitor* view (<https://<integrationtenant>/itspaces/shell/monitoring>) to setup the security materials required for the package.
- Deploy the following credentials using the *Security Material* app.
 - **VISIBILITY** – (OAuth2 Client Credentials) To push sales order events to process visibility capability of SAP Build Process Automation or SAP Workflow Management. ([help documentation to determine the service configuration parameters](#))

- **Workflow** – (OAuth2 Client Credentials) To start the approval workflows in SAP Build Process Automation or SAP Workflow Management ([help documentation to determine the service configuration parameters](#)). Make sure that the workflow service instance was created with the following scopes - WORKFLOW_INSTANCE_GET, WORKFLOW_INSTANCE_START, WORKFLOW_INSTANCE_CANCEL.

Note: While using SAP Build Process Automation the credentials for both visibility and workflow are the same. There shall be only one credentials deployed and used for both the APIs.

- **S4HANA** – (User Credentials) To call the sales order APIs in SAP S/4HANA. Make sure that the user has the relevant communication scenarios as mentioned in section Configure SAP S/4HANA Communication User.

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 Adapter Configuration

- Open the integration model *Push Sales Order Changed Event*.
- Click **Configure** button, choose the appropriate receivers (workflow, process visibility or SAP S/4HANA) and set their respective API endpoint and credential names. Based on the services consumed, the API endpoints will be different.

For SAP Build Process Automation, the workflow APIs could be of format <https://<api-gateway-url>/public/workflow>, while the workflow APIs in SAP workflow management could be of format <https://<api.workflow>/workflow-service>

Similarly, For SAP Build Process Automation, the visibility APIs could be of format <https://<api-gateway-url>/public/visibility/runtime>, while the workflow APIs in SAP workflow management could be of format <http://<bpmpv-runtime-url>/pv-service>

Figure 1: Configure workflow API for SAP Build Process Automation

Configure "Push Sales Order Changed Event"

Receiver More

Connection

Receiver: GET_SAP_WorkflowService

Adapter Type: HTTP

Address: {{workflowManagement_url}}/rest/v1/workflow-instances

workflowManagement_url: https://api.workflow-sap. .hana.ondemand.com/workflow-service

Credential Name: Workflow

Figure 2: Configure workflow API for SAP Workflow Management

Configure "Push Sales Order Changed Event"

Receiver More

Connection

Receiver: SAP_ProcessVisibilityService

Adapter Type: HTTP

Address: {{processVisibility_url}}/rest/v1/data-acquisition/data

processVisibility_url: https://bpmpvruntime.cfapps.sap.hana.ondemand.com/pv-service

Credential Name: VISIBILITY

Figure 3: Configure Visibility API for SAP Workflow Management

Configure "Push Sales Order Changed Event"

Receiver More

Connection

Receiver: SAP_ProcessVisibilityService

Adapter Type: HTTP

Address: {{processVisibility_url}}/rest/v1/data-acquisition/data

processVisibility_url: https://spa-api-gateway. .hana.ondemand.com/public/visibility/runtime

Credential Name: ProcessAutomation

Figure 4: Configure Visibility API for SAP Build Process Automation

Configure "Push Sales Order Changed Event"

The screenshot shows the 'Receiver' tab of a configuration interface. It includes the following fields:

- Receiver: SAP_S4HANA
- Adapter Type: HTTP
- Address: {{s4hana_url}}/sap/opu/odata/sap/API_SALES_ORDER_SRV/A_SalesOrder
- s4hana_url: https://m[redacted]-api.s4hana.ondemand.com
- Credential Name: S4HANA_SAP

Figure 5: Configure API for SAP S/4HANA

- Go to the **More** tab and configure additional parameters:
 - CreditBlockScenario – Set this to **Yes**, if you are going to use the **Manage Credit Block on Sales Order** workflow package. Otherwise, set it to **No**.
 - ManageSalesOrder – Set this to **Yes**, if you are going to use the **Manage Sales Order** workflow package. Otherwise, set it to **No**.
 - BillingBlockScenario – Set this to **Yes**, if you are going to use the **Manage Delivery and Billing block on Sales Order** workflow package and want to have an approval for billing blocks. Otherwise, set it to **No**.
 - DeliveryBlockScenario – Set this to **Yes**, if you are going to use the **Manage Delivery and Billing block on Sales Order** workflow package and want to have an approval for delivery blocks. Otherwise, set it to **No**.
 - SalesOrderApprovalReasons – This parameter is relevant when using Manage Sales Order workflow package to enable external approvals for the Sales Order. Maintain a list of 'comma-separated' Sales Order Approval Reasons as configured in SAP S/4HANA, which requires an approval workflow in SAP BTP.

Configure "Push Sales Order Changed Event"

The screenshot shows the 'More' tab of a configuration interface. It includes the following fields:

- Type: All Parameters
- BillingBlockScenario: Yes
- CreditBlockScenario: Yes
- DeliveryBlockScenario: Yes
- ManageSalesOrder: Yes
- SalesOrderApprovalReasons: ZBTP, ZCLO

- Deploy the integration model.
- Similarly, configure the other relevant integration models in the package and deploy them.