

PUBLIC

Custom Joule Skill & Agent in SAP Build **Procurement Risk Analyzer Agent**

Configuration & User Guide

Version: 1.0

Date: 2026-03-11



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**NOTE: If you want a step by step guide with screen shots for execution of the
Joule Skills(Without Agent), you can refer to the Discovery Center mission :
SAP Discovery Center Mission - Build custom Joule skills for SAP and non-
SAP systems using Joule Studio**8

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This document contains 2 sections. Each section covers different information about this template content package.

1. **Overview:** In this section, you will get quick overview of the use case, what are high-level components used and how the template works in nutshell. Prerequisite section provides information of different services of SAP Business Technology Platform that are required to use this template.
2. **Configuration Guide** It contain sections which will guide you to setup your (a) SAP Business Technology Platform Account with destination, user roles etc., (b) Links and steps to set up Joule studio and Joule (c) Import and configure the template using SAP Build Process Automation - Joule studio

Note:

- Learning contents are published only for demo and reference purposes. We do not provide any support to learning / sample content.
- This documentation is not a detailed guide to setup SAP Business Technology Platform services. It assumes that IT admin who is setting the content is skilled with SAP Business Technology Platform environment. **Configuration section must be followed.**
- This template content is to accelerate your solution development. You must modify this template according to your requirements to achieve the desired business goal. To use this template content, you need to have basic knowledge and understanding of SAP Build Process Automation and its capabilities.

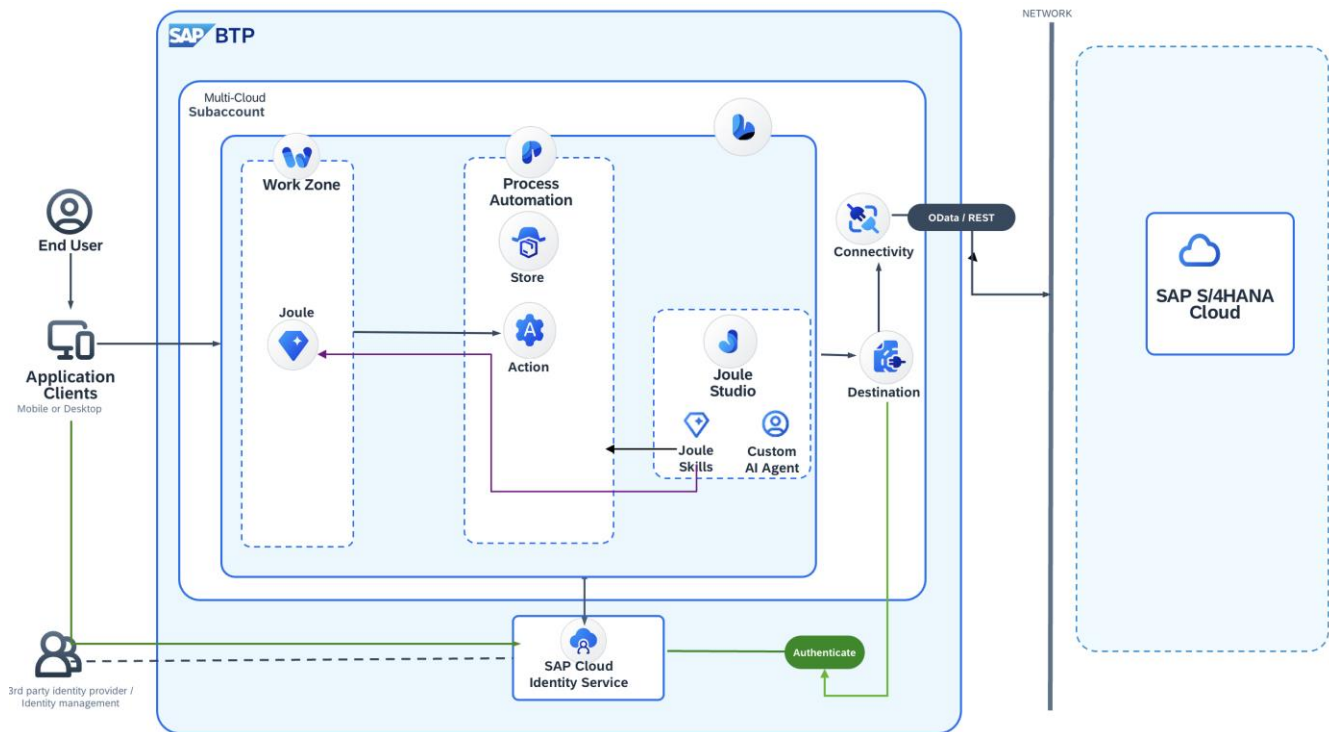
Overview

This document provides technical information about what needs to be configured to make the package **Procurement Risk Analyzer Agent**. The main audience of this document are technical personas like IT Administrators/Developers/Functional experts.

The **Procurement Risk Analyzer Agent** retrieves open purchase order data from the S/4HANA Cloud system and analyzes delivery dates to identify delayed deliveries. It then combines this information with supplier data to determine which suppliers are contributing the most to delivery delays and potential procurement risk.

If you're new to Joule Studio or want to explore how AI agents can augment business workflows, this example provides a practical, ready-to-use scenario.

Solution flow :



The requester, '**Procurement Manager**', asks Joule to identify delayed purchase orders and potential supplier delivery risks. The request is handled by the '**Procurement Risk Analyzer Agent**'. The agent refers to the Joule skills provided as tools to retrieve the necessary procurement data. As designed, the agent first uses the relevant skill to retrieve open purchase order information from the S/4HANA Cloud system.

- The Joule skill designed to retrieve purchase order data, '**GetDelayedPurchaseOrders**', is invoked to obtain delayed purchase order items along with their schedule line delivery dates based on a filter condition.
- The retrieved purchase order schedule line data is then analyzed by the agent to determine whether the **delivery date has passed while the order quantity remains open**. Based on this evaluation, the agent identifies purchase orders with delayed deliveries.
- The agent then groups the delayed purchase orders by **supplier** to determine which suppliers are contributing the most to delivery delays and potential procurement risk. It uses the Joule Skill '**GetSupplierDetails**' to fetch the supplier information.

The results are then summarized by the agent and presented to the requester, highlighting the **suppliers causing the highest delivery risk along with the corresponding delayed purchase orders**.

Prerequisites

For this template to run successfully the following prerequisites are needed.

- Joule Studio in SAP Build
Follow the setup guide [here](#) based on your tenant configuration.
- An S/4HANA Cloud System with the required communication user and communication arrangements

NOTE: If you need additional help with these prerequisites (such as setting up SAP Build Process Automation and SAP Build Work Zone), you can run the Discovery Center mission: [Setup Joule Studio for a BTP Enterprise Account](#).

Configuration Guide

Setup Business Technology Platform Cockpit

Configure SAP Build Process Automation Destination

To access the process automation capability of SAP Build, you can configure the destination. Please create destination as stated below:

Destination Property	Value
Name	sap_process_automation_service
Type	HTTP
URL	<" endpoints"."api">
Client ID	<"uaa"."clientid">
Client Secret	<"uaa"."clientsecret">
Token Service URL	<"uaa"."url">/oauth/token
Proxy Type Internet	Internet
Authentication	OAuth2ClientCredentials

Add the property **sap.processautomation.enabled** as **true** to view the destination in the SAP Build Process Automation tenant. Please refer [help document](#) for more details.

Configure SAP S/4HANA Destination

This content package can be used with SAP S/4HANA Cloud, Public Edition. Destination can be created accordingly.

Destination Property	Value
Name	<Name>
Type	HTTP
URL	<SAP S/4HANA endpoint> Example: https://<s4system-name>-api.xxxxxxxx
Proxy Type Internet	Internet
Authentication	Basic Authentication
Username	<Username> of the SAP S/4HANA Communication User
Password	<Password> of the SAP S/4HANA Communication User

NOTE: Make sure the API used in this template (see the below sections to get the API name) is exposed with the correct communication scenario to the communication user.

Communication scenario:

- SAP_COM_0053 for Purchase Order Integration
- SAP_COM_0008 For Business Partner, Customer and Supplier Integration

User Roles Configuration

To access this template, the users need to have the roles as described [here](#).

The template also uses Actions. hence assign the relevant role collection as mentioned [here](#).

Services used:

There are two Action projects used in this template. They use different APIs/Services.

Action Project Name	Service Used	Purpose
Purchase Order	/sap/opu/odata4/sap/api_purchaseorder_2/srvd_a2x/sap/purchaseorder/0001/PurchaseOrderItem	To retrieve purchase order items from SAP S/4HANA Cloud system
Business Partner	/sap/opu/odata/sap/API_BUSINESS_PARTNER/A_BusinessPartner('{BusinessPartner}')	Retrieves the general data fields of the business partner record by using business partner number from the SAP S/4 HANA Cloud System

Artifacts in the Agent:

Type	Name	Description
Joule Skill	GetSupplierDetails	Skill to fetch Supplier information
Joule Skill	GetDelayedPurchaseOrders	Skill to retrieve Delayed Purchase Orders
Joule Agent	Risk Analyzer Agent	Agent that helps procurement managers identify potential supplier delivery risks by analyzing open purchase orders and their expected delivery dates.

Setup Content Package

Import Custom Joule Agent

All imported custom agents are available in SAP Build Store. To know more about the SAP Build Store visit [SAP Build Process Automation Store](#).

This template can be downloaded from the SAP Build Store:

1. Navigate to the **Store** option in your SAP Build Lobby.
2. Select the **Project Type** filter as “Joule Agent and Skill”
3. In the Search bar type “**Procurement Risk Analyzer Agent**”
4. Select the “Create from Template” button to add the template into your lobby.
5. Once the creation is complete, navigate to the Lobby to find the “**Procurement Risk Analyzer Agent**” project is available for use.

NOTE: If you want a step by step guide with screen shots for execution of the Joule Skills(Without Agent), you can refer to the Discovery Center mission : [SAP Discovery Center Mission - Build custom Joule skills for SAP and non-SAP systems using Joule Studio](#)

Configuration & Modification

Once the Joule Skill & Agent project is added into the lobby, it can be run directly without any modification.

However, if you need to modify Joule skills that are used within the project or you want to modify the agent, with its instructions/additional context or other fields, you can do so.

In order to understand the various capabilities of Joule Studio and work with them please refer to the link: [Create AI Capabilities | SAP Help Portal](#)

Release and Deploy the Project

Once the agent is verified by the user / modified based on user need, it has to be released and deployed into a shared environment.

- Refer to the link below to create/Share an Environment:
[Environments | SAP Help Portal](#)
- Refer to the link below to release a project:
[Release a Project | SAP Help Portal](#)
- Refer to the link below to deploy a project:
[Deploy a Project | SAP Help Portal](#)

Test the Joule Skills And Agent in SAP Build

1. To access your projects, navigate to **Control Tower ->Tenant Configuration->Environments**.
2. Select your environment.
3. After deploying the project, the project should be seen in the Shared Environment.
4. Click on the Tab, '**Joule**'
5. Click on the button '**Launch**'

This will open the Joule launchpad where you can key in the below prompts in order to test the agent.

Prompt	Expected Result
Which suppliers are causing the most delivery delays?	The agent identifies delayed purchase orders, groups them by supplier, and highlights the suppliers contributing the most to delivery delays or procurement risk.
Are there delayed deliveries from a specific supplier?	The agent filters delayed purchase orders for the specified supplier and returns the relevant purchase orders with overdue delivery dates.
Show me purchase orders with delivery risk.	The agent lists purchase orders where the delivery date has passed but the order is not completely delivered, indicating potential delivery risk.

NOTES:

1: In the filter used in the **GetDelayedPurchaseOrders** Joule Skill, make sure the date range is not too large so as not to fetch a huge number of records from the SAP S/4 HANA Cloud system which cause performance issues or the action project to fail.

2: Currently the Agent will be only deployed in the SAP Build environment and hence testing can also be done only in the Build Lobby. If you want to **activate the Joule in other systems** Eg: SAP S/4HANA or SAP Workzone, then click on the **settings** in 'Control Tower->Environments-><Your Shared Environment that was created>->Joule'

Here you must switch the toggle '**on**' for '**Share Environment Capabilities**'.

Control Tower / Environments / Build Demos

Edit Share Delete

Last Updated: Author: Members: Identifier: Description:

Projects Triggers Automation Launchers Agent Management Alert Handlers Variables API Keys Visibility Scenarios Processes and Workflows **Joule**

Joule Digital Assistant Shared Launch Refresh Settings

Environment Capabilities Version

Joule Settings

Selecting this option deploys the environment's capabilities to Joule shared assistant, making them available to users who have "Execute" or "Administrator" rights for this environment.

Share Environment Capabilities

Apply Cancel

Support

If you experience any issues with the product, please raise an incident in the 'BPI-PA' component. Being a sample content, **no support is provided for the content itself.**