PUBLIC
SAP S/4HANA
2020-09-17

Setting Up *Proposal of Material Group* (2XV)

THE BEST RUN SAP

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1 Purpose

This document describes additional configuration steps that have to be carried out by customers in order to activate the machine learning scenario – Propose Material Group. As these configuration steps are customer-specific, they cannot be delivered by SAP, and must be carried out by the customer.

When a new Purchase Order Item is created, Machine Learning API on SCP would be invoked and Machine Learning algorithms use Purchase order data in the system and send material group proposals to S/4HANA which can be chosen in Purchasing documents.

2 Preparation

2.1 Prerequisites

During the activities described in this guide, you are also required to enter or provide system-specific information. To ensure a smooth and efficient integration to SAP S/4HANA, we recommend that you have the information listed in the following table at hand before starting the integration process:

Required	Information Required
SAP S/4HANA On-Premise system	System details such as System ID, Username, and Password
SCP Leonardo System	System details such as host name, URLs, URIs, User, and Password

Initial settings required to leverage Machine Learning Integration with S/4 in order to use the functionality Proposal of Material Group.

Two major settings are required for this topic:

- Configuration in Settings at SCP
- Configuration in S/4HANA On-Premise edition

3 Configuration in SAP Cloud Platform

3.1 Subscribe to Procurement Assistant Application

Use

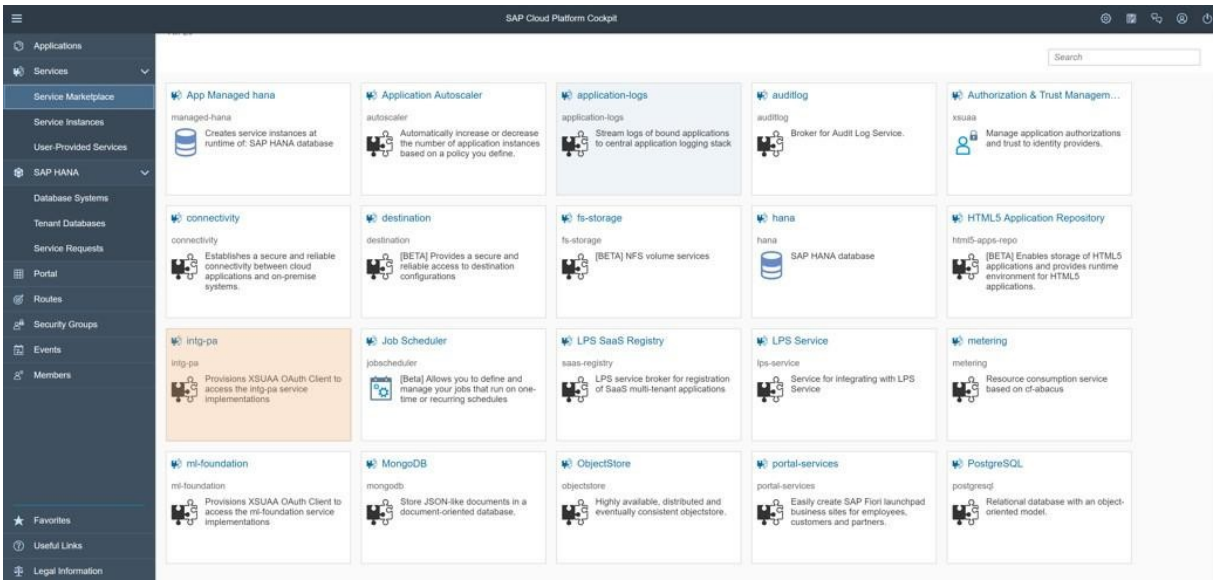
Before you get the OAuth access credentials, the *s4-intelligent-insights-procurement* business service should be enabled as a service in the SCP account of the customer.

Any issue with SCP, please raise ticket to component `CA-ML-PA`.

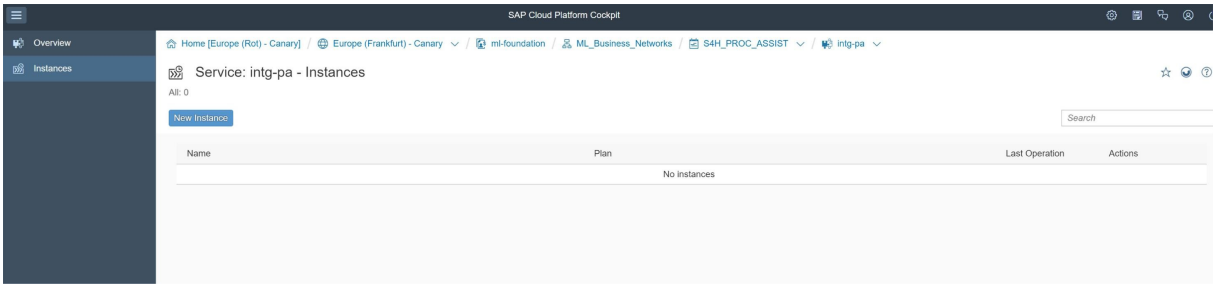
> **i Note**
>
> You can skip this step if instance of service *s4-intelligent-insights-procurement* is already created in SCP.

Procedure

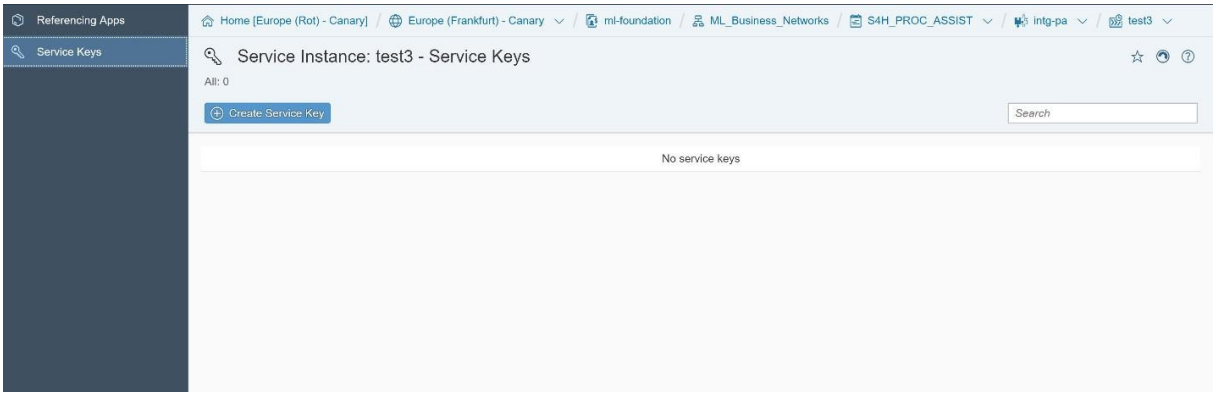
1. Find Procurement Assistant in the SCP marketplace (The current name is intg-pa and will be modified in future).



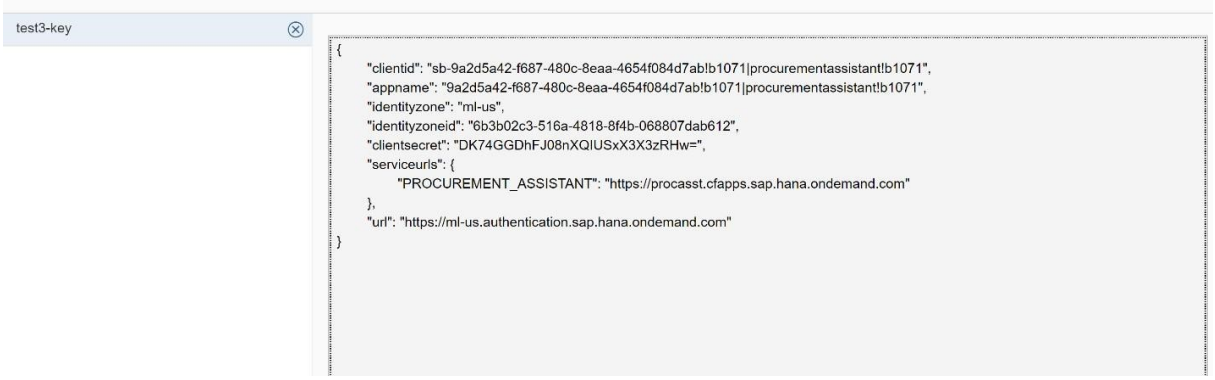
2. Create a new instance of the service. Instance plan must be standard.



3. In the instance page you will see a tab called *Service Keys* on the left. Click on it and then choose *Create Service Key*.



4. When Service Keys are successfully created, you will see something like below.



Example:

Source Code

```
{
"clientid": "sb-f15543bb-8df0-439e-a2c9-fea98f941b5c!b1071|
procurementassistant!b1072",
"appname": "f15543bb-8df0-439e-a2c9-fea98f941b5c!b1071|procurementassistant!
b1072",
"identityzone": "ml-us",
"identityzoneid": "6b3b02w3-516a-4818-8f4b-068807dab612",
"clientsecret": "Jo741XgNdE74H7I9ZVfKETMjIwA=",
"serviceurls": {
"PROCUREMENT_ASSISTANT": "https://procasst.cfapps.sap.hana.ondemand.com"
},
"url": "https://ml-us.authentication.sap.hana.ondemand.com"
}
```

4 Configuration in SAP S/4HANA On-Premise

4.1 Communication Configurations

Purpose

The authentication between SAP S/4HANA On-Premise and the machine learning services for Contract Proposal on SCP can occur through OAuth 2.0 client.

You can perform the following steps to set up the authentication:

- Configure OAuth Client
- Request OAuth 2.0 Access token

Prerequisites

Before doing the configuration in SAP S/4HANA On-Premise, you need to have the following authorizations:

- SM59 (To create a RFC destination)
- OA2C_CONFIG (To configure OAuth 2.0 Client)

> **i** Note
>
> OAuth 2.0 is not applicable for SAP ERP EHP 6 release.

4.1.1 Configure RFC Destination

Use

In the step, you create RFC Destination for HTTP connection to SCP.

> **i Note**
>
> You can skip this step if RFC Destination ML_CAT_MAT_GRP_PROPOSAL is aleady created in the system as part of catalog item proposal use case.

Procedure

1. Log on to the S/4HANA system and execute transaction `SM59`.
2. Choose *Create*.
3. On the *RFC Destination* screen, enter the following entries:

Field Name	Value
RFC Destination	ML_CAT_MAT_GRP_PROPOSAL
Connection Type	G (HTTP Connection to External Server)
Description 1	Catalog Item and Material Group Proposal

4. On the *Technical Settings* tab, enter the following entries:

Field Name	Value
Host	uri (without the prefix "https://") generated in step Subscribe to Procurement Assistant Application [page 5]
Port	443
Path Prefix	/pa

5. On the *Logon and Security* Tab, enter the following entries:

Field Name	Value
SSL	Active
SSL Certificate	ANONYM SSL Client (Anonymous)

6. Choose *Save*.

4.1.2 RFC Destinations for Material Group Proposals

Use

In the step, you configure RFC Destinations for Material Group Proposals.

> **i Note**
>
> You can skip this step if RFC Destination ML_CAT_MAT_GRP_PROPOSAL is aleady configured in the system as part of catalog item proposal use case.

Procedure

1. Log on to the S/4HANA system and execute transaction `SM30`.
2. Enter *Table/View*: **`MMPUR_MLFND_CNF`** and choose *maintain*. Choose *New Entries* and make the following entries.

Outbound Service ID	Active	RFC Destination
Catalog Item and Material Group Proposal	Check	ML_CAT_MAT_GRP_PROPOSAL

3. Choose *Save*.

4.1.3 Activate Machine Learning Scenario in SPRO

Procedure

1. Access the transaction using the following navigation path:

Transaction Code	SPRO
IMG Menu	*Material Management* > *Purchasing* > *Purchase requisition* > *Self-Service Procurement* > *Define Machine Learning Scenarios*

2. On the *Change View "Machine Learning Scenario Configuration": Details* screen, choose *New entries*.
3. Choose Scenario 02 *Propose Material Group*, make the following entries:
   Threshold Hits: Here you specify the number of times a free text must have been used in purchasing documents created in the past before machine learning provides a proposal. For example, if you specify 5 as the threshold for Proposal of Material Group, a material group is proposed only for free texts that have been used at least five times in past purchasing documents.
   Training Data Period – Last: Here you specify the time period (number of past months) to be used as a basis for the machine learning analysis.
   Supplier Ranking Limit: If a free-text item is procured from multiple suppliers, you can specify here that you want a material group to be proposed along with the most commonly used suppliers (for example, top 5 or top 10) of that free-text item.

4.1.4 Create and Configure New OAuth 2.0 Client

We also need to create a new OAuth 2.0 client and configure the authentication URLs.

Prerequisite

Import the trusted root certificate of the OAuth 2.0 token endpoint.

1. Open the url : https://ml-us.authentication.sap.hana.ondemand.com
   Press F12 and choose the *security* tab.
   View Certificate > *Click on details* > *Copy to File* > *Save File*
2. Download the trusted root certificate from the token endpoint.
3. With your browser (for example, Chrome) navigate to the token endpoint. For example, https://ml-us.authentication.sap.hana.ondemand.com/oauth/token
4. Select the trusted root certificate, for example **DigiCert Global Root CA**.
5. Export it into a file.
6. Go to transaction STRUST in S/4HANA system.
7. Choose *SSL client Anonymous*.
8. In the *Certificate* section, choose *Import*.
9. Import the certificate file saved in the first step.
10. The certificate information will be displayed.
11. Choose *Display <-> Change* to switch to change mode.
12. In the *Certificate* section, choose *Add to certificate list*.
13. Choose*Save*.
    - The user should have these authorizations:
      - Admin:
      - S_TCODE:TCODE=OA2C_CONFIG;
      - S_OA2C_ADM:ACTVT=*;
      - S_OA2C_USE:PROFILE=*;ACTVT=*;
      - Users:
      - S_OA2C_USE:PROFILE=*;ACTVT=*;

Procedure

1. Start the transaction OA2C_CONFIG.
2. A new window will open in the default browser.
3. Choose *Create* and a new dialog box will open.
4. Choose the *OAuth 2.0 Client Profile* as **S4ML_FREETEXT** and enter the *Configuration Name* as any.
5. Enter the *oAuth 2.0 Client ID* as provided by the SCP (clientid), for example **sb-forexample**.
6. Choose *OK*.

7. In *Details > Administration* section, make the following entries:

Field	Value
Client Secret	clientsecret generated in stepSubscribe to Procurement Assistant Application [page 5]
Authorization Endpoint	url generated in step Subscribe to Procurement Assistant Application [page 5] plus /oauth/authorize, for example, https://ml-us.authentication.sap.hana.ondemand.com/oauth/authorize
Token Endpoint	url generated in step Subscribe to Procurement Assistant Application [page 5] plus /oauth/token, for example, https://ml-us.authentication.sap.hana.ondemand.com/oauth/token

8. In *Access Settings* section, choose the following entries:

Field	Value
Client Authentication	Basic
Resource Access Authentication	Header field
Selected Grant Type	Client Credentials

9. Save your configuration.

4.2 RFC Destinations for Material Group Proposal

Use

In the step, you configure RFC Destinations for Material Group Proposal.

Procedure

1. Log on to the S/4HANA system and execute transaction `SM30`.
2. Enter the table name **`MMPUR_MLFND_CNF`** and choose *Maintain*.
3. On the *Change View "Procure Machine Learning Configuration": Overview* screen, choose *New Entries* and make the following entries.

Outbound Service ID	Active	RFC Destination
Catalog Item and Material Group Proposal	check	The RFC destination created in the step Configure RFC Destination [page 7]

4. Choose *Save*.

4.3 Schedule Job to Export Purchase Order data to SCP

Use

In the step, you schedule periodic background job for upload of training data for materials without contract.

Procedure

1. Log on to your SAP S/4HANA system Web UI with the user you received.
2. Choose *Schedule Export of Purchase Orders* under *Purchasing Configuration*.
3. Choose *New*.
4. Under *Job Template*, choose *Training data for Free Text*.
5. Set *Start Immediately* in Scheduling Options according to your requirements. You can choose *Define Recurrence Pattern* if you want to schedule Job frequency.
6. Enter Company Code.
7. Enter Plant.
8. Choose *Schedule*.
9. Monitor the background job on the Application Jobs page.

4.4 Schedule Job to Update Training Job's Status

Use

This job/program updates the status of training job executed in S/4HANA to train the model in SCP.

Procedure

1. Start the transaction `SM36`.
2. Enter the *Job Name*, for example **`SAP_MM_REDUCE_FTXT_ML_JOB_STATUS`** and make the following entries:

Field	Value
Job Class	B
Target Server	<Specify the application server on which job needs to be executed >

3. Choose *Step* and make the following entries:

Field	Value
Program	MM_REDUCE_FTXT_ML_JOB_STATUS
Variant	<Enter the variant name. If you have not created variant as per your requirement, then leave it blank.>

4. Choose *Save*.
5. Go back to the job definition screen, choose *Start condition* to enter the start date, end date, frequency and so on. If you do not specify start condition, then job will always remain in scheduled status. A job in scheduled status will never run.
    - Choose *Date/Time* for periodic jobs.
    - Define the start date/time and end date/time. The job will be released only once it meets its scheduled start date/time.
    - Press *Periodic values*.
    - Choose Hourly/Daily/Weekly period to define the frequency of the job as per your requirement.
    - Choose *Save*.
    - Choose *Save*.
6. Choose *Save*.

5 Appendix

5.1 Ticket Component

Enter the ACH component in which the customer should create a ticket in case of issues during configuration.

Implementation Step	Component	Comment

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