Building block Configuration Guide
Create or Change Equipment from SAP ERP to S4HANA
Cloud September 2022
English

EQUIPMENT

Create or Change Equipment from SAP ERP to S4HANA Cloud

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1 Prerequisites

The Iflow consists in sending an Equipment from SAP ERP (SAP ECC) to S4HANA Cloud.

- Configuration steps in SAP ERP (SAP ECC):
    - Setting up of IDoc Communication for create and update scenario which includes:
        - Define Logical Systems, Assign Logical Systems, Create the RFC Destination, Create Port for IDOC Processing, Maintain ALE Distribution Model, Manually Maintain Partner Profile.
- Configuration steps in SAP S4HANA Cloud:
    - Configuration of Communication Arrangement for Scenario ID SAP_COM_0395 Related OData connection details for create and update scenario which includes:
        - Address, Proxy Type and Authorization.

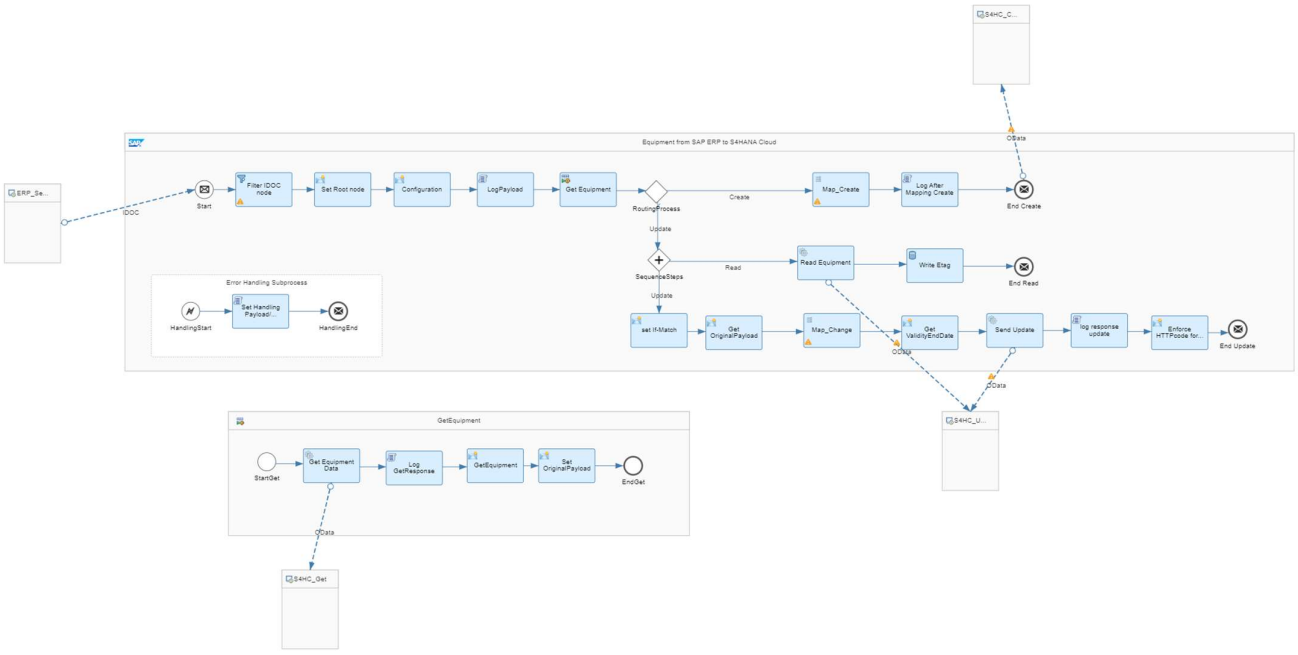
2 Documentation

Regardless of whether the Equipment IDoc defined in SAP ERP is EQUIPMENT_CHANGE02 or EQUIPMENT_CREATE02, the flow will filter by the main IDoc node to process all messages as if they were one.

What will define if the equipment is a creation or a change is a call to the API OData with the equipment number to check if the equipment exists in S/4HANA, if it exists, it follows the change route, if not the creation route.

During the Change Equipment part, it is necessary read the Equipment via OData API to get the eTag value and send during the Patch OData call in sequence. It is also relevant to know that the last content modifier in the change process it was required because the IDoc in SAP ERP does not accept another HTTP Status code unless 200, as the Patch Operation success respond with 207 status code so the IDoc status will get an error in SAP ERP side.

Equipment Creation or Change in S/4HANA Cloud is triggered by OData API call related to communication Scenario SAP_COM_0395 - Asset Management Master Data Integration.



3 Configuration steps on SAP Cloud Integration

To set up the IDOC

Try to define specific section, such as:

- Receiver Configuration
- Sender Configuration
- Cloud Connector Configuration
- Sender System Configuration
- Receiver System Configuration

3.1 Configure Sender IDOC Adapter

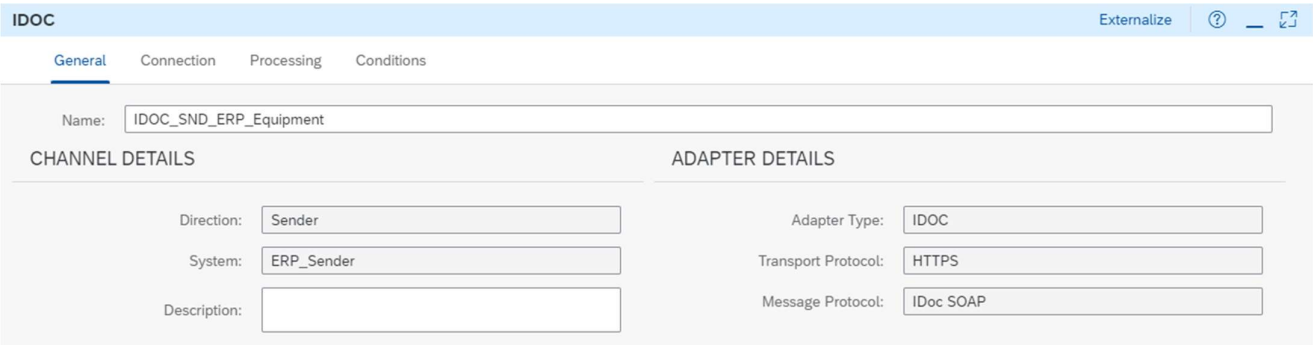


Figure 1 – Sender IDOC Adapter – General/Channel Details.

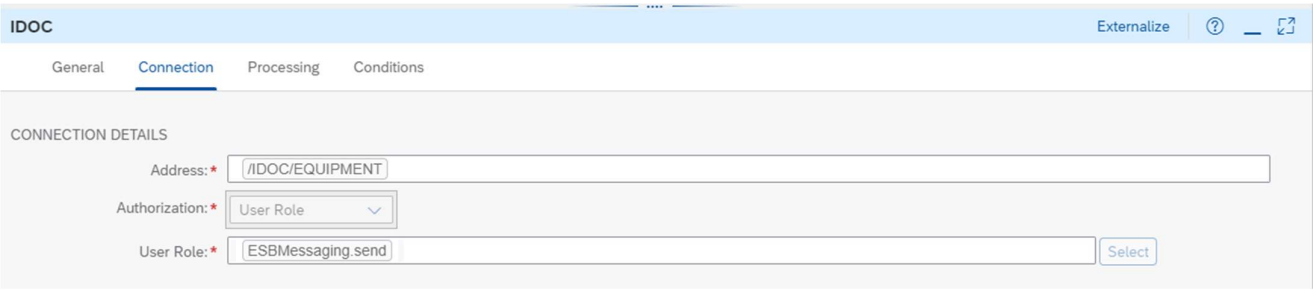


Figure 2 - Sender IDOC Adapter – Connection.

Address	Enter the URL of the SAP ERP system to connect to.
Authorization	Enter the authorization option. In this case, it was used "User Role" type, since this is based on roles defined on the tenant for the user associated with the inbound request.
User Role	Enter the User Role. It is a predefined role provided by SAP which authorizes a sender system to process messages on a tenant.

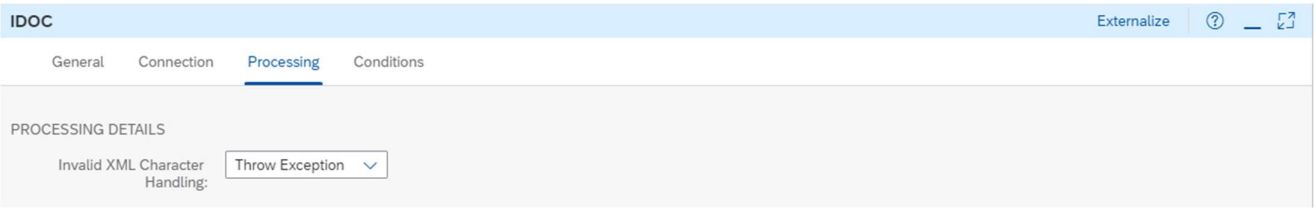


Figure 3 - Sender IDOC Adapter – Request Processing.

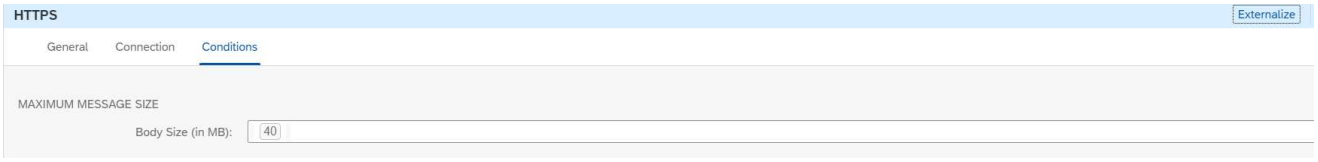


Figure 4 - Sender IDOC Adapter – Conditions/Maximum Message Size.

For further information:

IDOC Adapter:
https://help.sap.com/docs/CLOUD_INTEGRATION/368c481cd6954bdfa5d0435479fd4eaf/6042250661aa437c81dc8b3b4de567c4.html?locale=en-US

3.2 Configure Receiver OData Adapter (GET Equipment)

The receiver OData Adapter for Get Equipment data is described below:

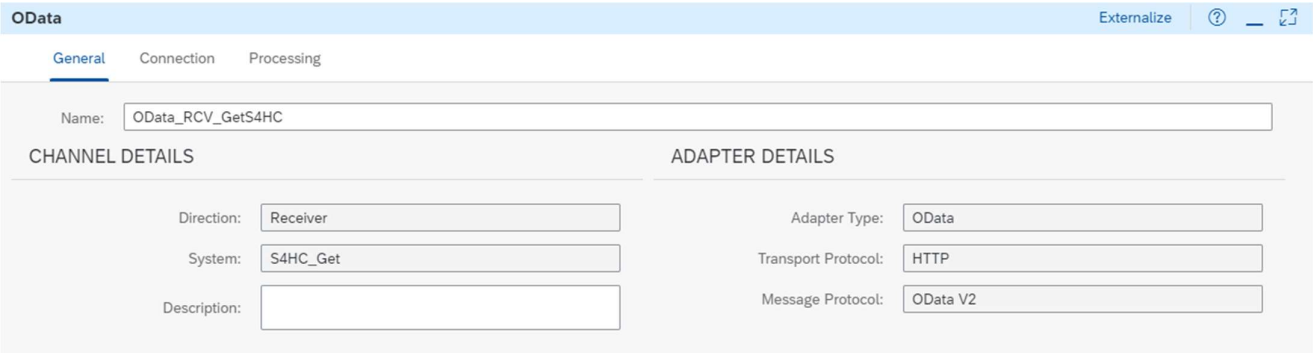


Figure 3 – Receiver OData Adapter (GET Equipment) – General/Channel Details.

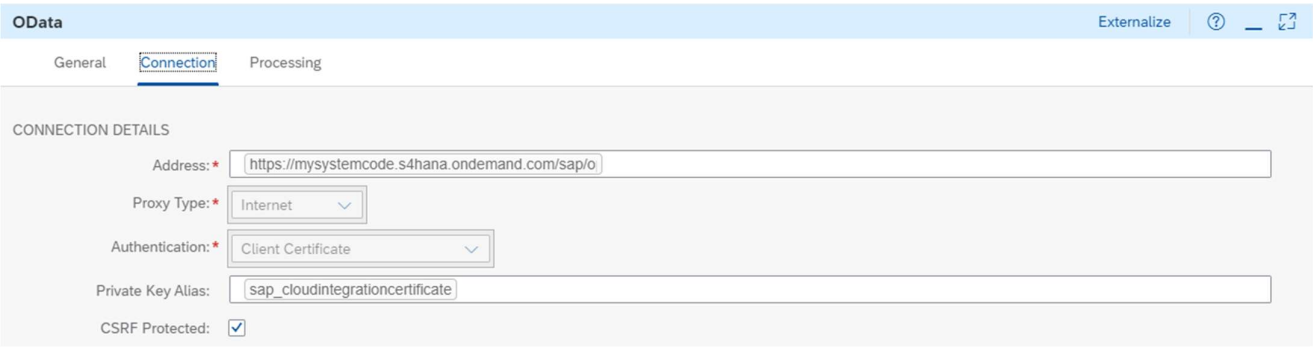


Figure 4 - Receiver OData Adapter (GET Equipment) – Connection/Connection Details.

Address	Enter the address of the OData service. *Note: In this case, it is used the API:* *https://mysystem.api.s4hana.ondemand.com/sap/opu/odata/sap/API_EQUIPMENT*
Proxy Type	The type of proxy you want to use for establishing connection with OData Service. Currently, you can choose between Internet (default) and On-Premise. Define Internet for S/4HANA Cloud. For On-premise systems it is required to define Location ID.
Location ID (Only Proxy Type as On-Premise)	Location ID that you've configured in the cloud connector installed on your system.
Authentication	Enter the authentication method for connecting to the OData service. E.g Basic, client certificate..
Credential Name	Credential name of the credentials that is deployed in Security Material section of (Operations View)
Private Key Alias (Only for Client Certificate Authentication).	Enter the private key alias that enables the system to fetch the private key from keystore for authentication.
CSRF Protected	Check. By default, option.

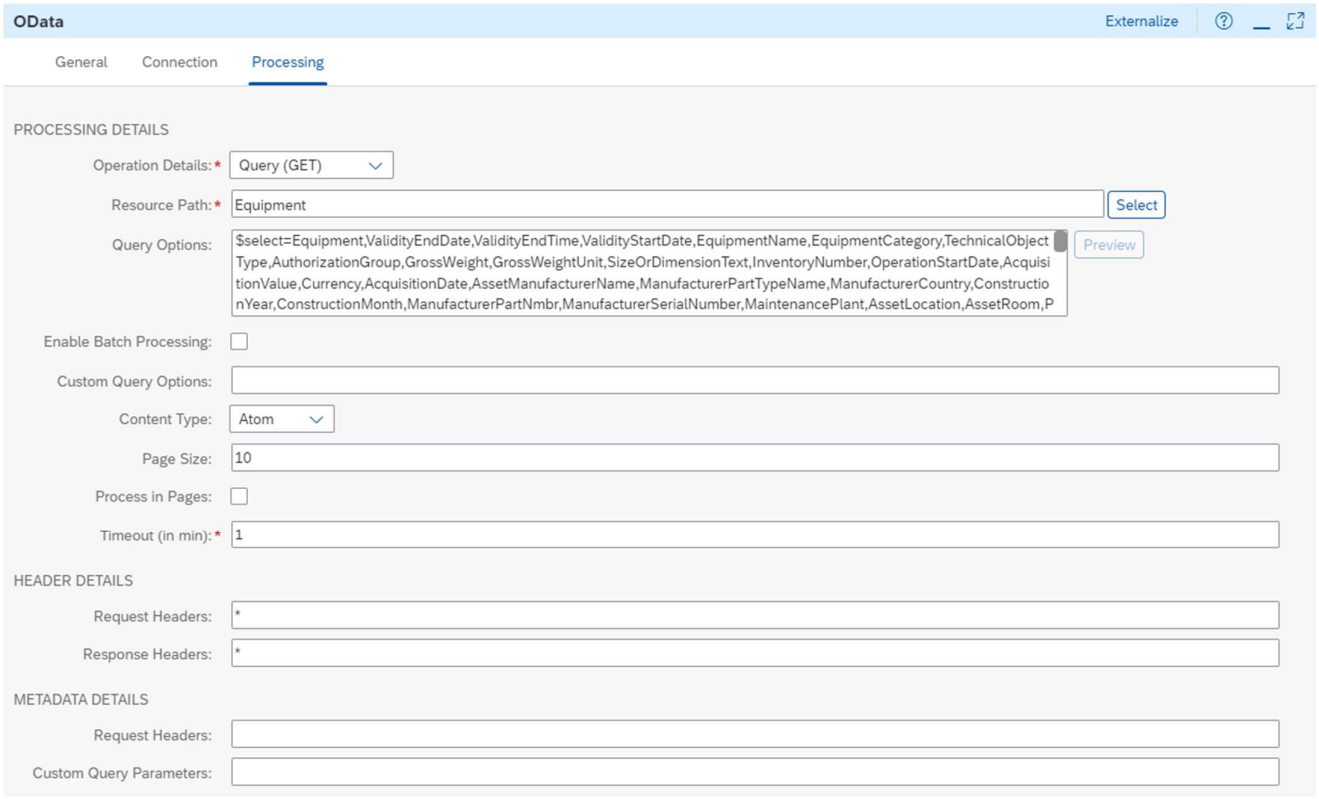


Figure 5 - Receiver OData Adapter (GET Equipment) – Processing/Processing Details.

Operation Details	Enter the operation preferred. For this step please define Query GET.
Resource Path	Select the Model Operation where you can find and select the entity preferred and after the fields for model operation. In this case, define Equipment
Query Options	Select the fields from Resource Path (entity that you're performing the operation on). In this case, consider this select all fields and add this filter: $select=Equipment,ValidityEndDate,ValidityEndTime,ValidityStartDate.....&$filter=Equipment eq '${property.EquipmentID}' and ValidityEndDate le datetime'9999-12-31T00:00:00'

For further information:

ODATA Adapter:
https://help.sap.com/docs/CLOUD_INTEGRATION/368c481cd6954bdfa5d0435479fd4eaf/c5c2e38e0c87472e996dfda04920bfc4.html

API API_EQUIPMENT:

https://api.sap.com/api/API_EQUIPMENT/overview

3.3 Configure Receiver OData Adapter (Create Equipment)

The receiver OData Adapter for Equipment Create is described below:

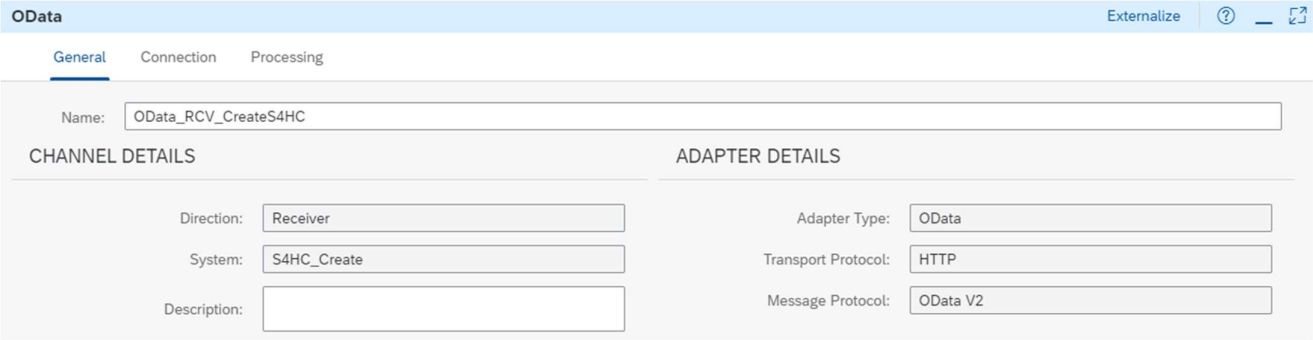


Figure 6 - Receiver OData Adapter (Create Equipment) – General/Channel Details.

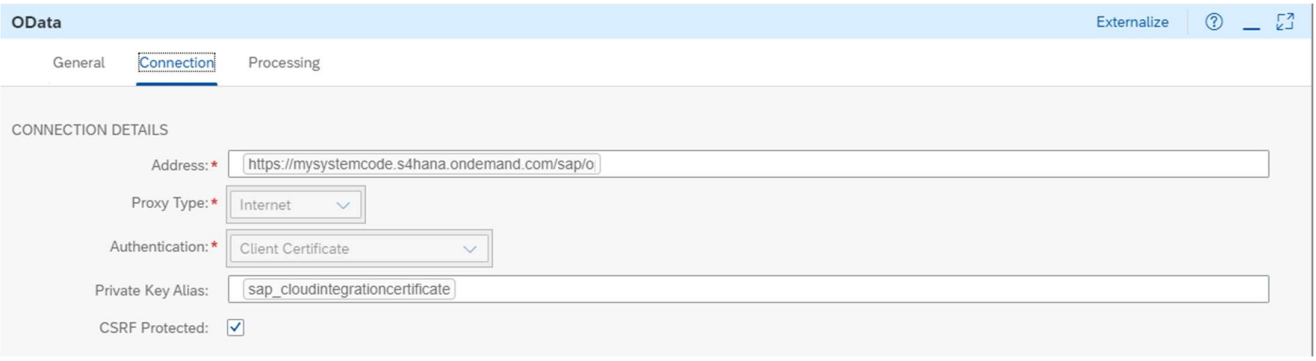


Figure 7 - Receiver OData Adapter (Create Equipment) – Connection/Connection Details.

Address	Enter the address of the OData service. *Note: In this case, it is used the API:* *https://mysystem.api.s4hana.ondemand.com/sap/opu/odata/sap/API_EQUIPMENT*
Proxy Type	The type of proxy you want to use for establishing connection with OData Service. Currently, you can choose between Internet (default) and On-Premise. Define Internet for S/4HANA Cloud. For On-premise systems it is required to define Location ID.
Location ID (Only Proxy Type as On-Premise)	Location ID that you've configured in the cloud connector installed on your system.
Authentication	Enter the authentication method for connecting to the OData service. E.g Basic, client certificate..
Credential Name	Credential name of the credentials that is deployed in Security Material section of (Operations View)
Private Key Alias (Only for Client Certificate Authentication).	Enter the private key alias that enables the system to fetch the private key from keystore for authentication.
CSRF Protected	Check. By default, option.

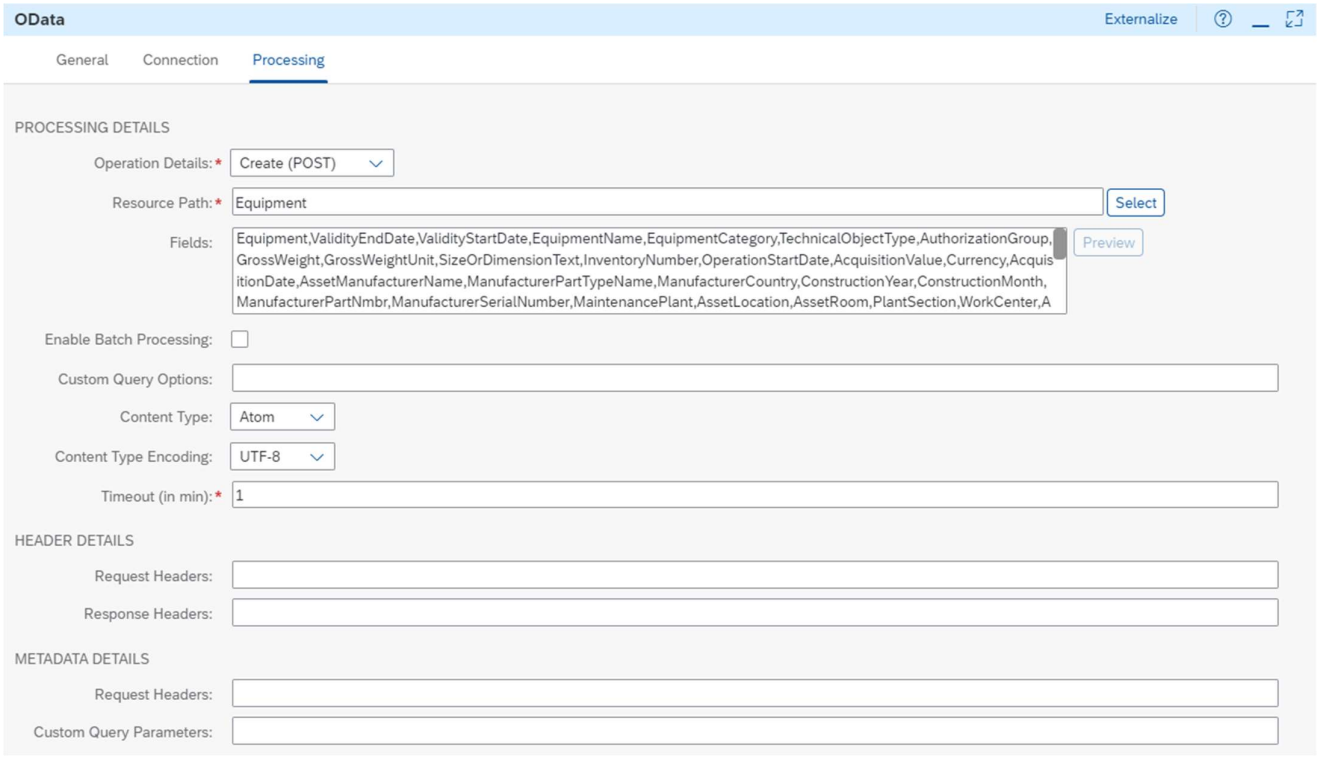


Figure 8 - Receiver OData Adapter (Create Equipment) – Processing/Processing Details.

Operation Details	Enter the operation preferred. For this step, please define Create POST.
Resource Path	Select the Model Operation where you can find and select the entity preferred and after the fields for model operation. In this case, define Equipment
Fields	Select the fields from Resource Path (entity that you're performing the operation on).

For further information:

ODATA Adapter:
https://help.sap.com/docs/CLOUD_INTEGRATION/368c481cd6954bdfa5d0435479fd4eaf/c5c2e38e0c87472e996dfda04920bfc4.html

API API_EQUIPMENT:

https://api.sap.com/api/API_EQUIPMENT/overview

3.4 Configure Receiver OData Adapter (READ Equipment)

The receiver OData Adapter for Equipment Read is described below:

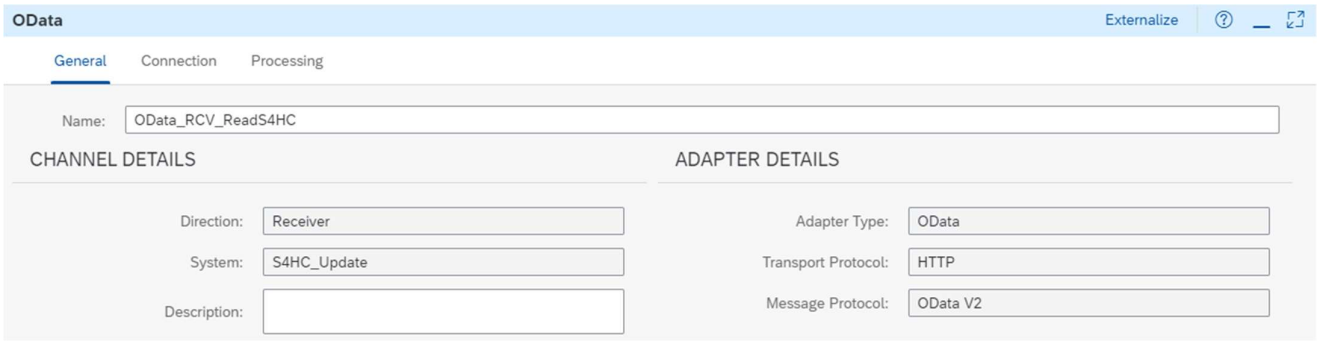


Figure 9 – Receiver OData Adapter (Read Equipment) – General/Channel Details.

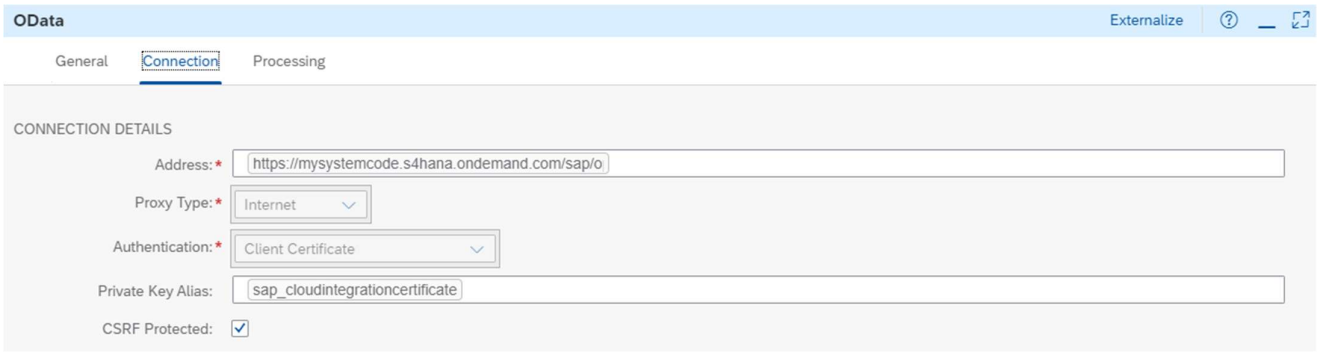


Figure 10 - Receiver OData Adapter (Read Equipment) – Connection/ Connection Details.

Address	Enter the address of the OData service. *Note: In this case, it is used the API:* *https://mysystem.api.s4hana.ondemand.com/sap/opu/odata/sap/API_EQUIPMENT*
Proxy Type	The type of proxy you want to use for establishing connection with OData Service. Currently, you can choose between Internet (default) and On-Premise. Define Internet for S/4HANA Cloud. For On-premise systems it is required to define Location ID.
Location ID (Only Proxy Type as On-Premise)	Location ID that you've configured in the cloud connector installed on your system.
Authentication	Enter the authentication method for connecting to the OData service. E.g Basic, client certificate..
Credential Name	Credential name of the credentials that is deployed in Security Material section of (Operations View)
Private Key Alias (Only for Client Certificate Authentication).	Enter the private key alias that enables the system to fetch the private key from keystore for authentication.
CSRF Protected	Check. By default, option.

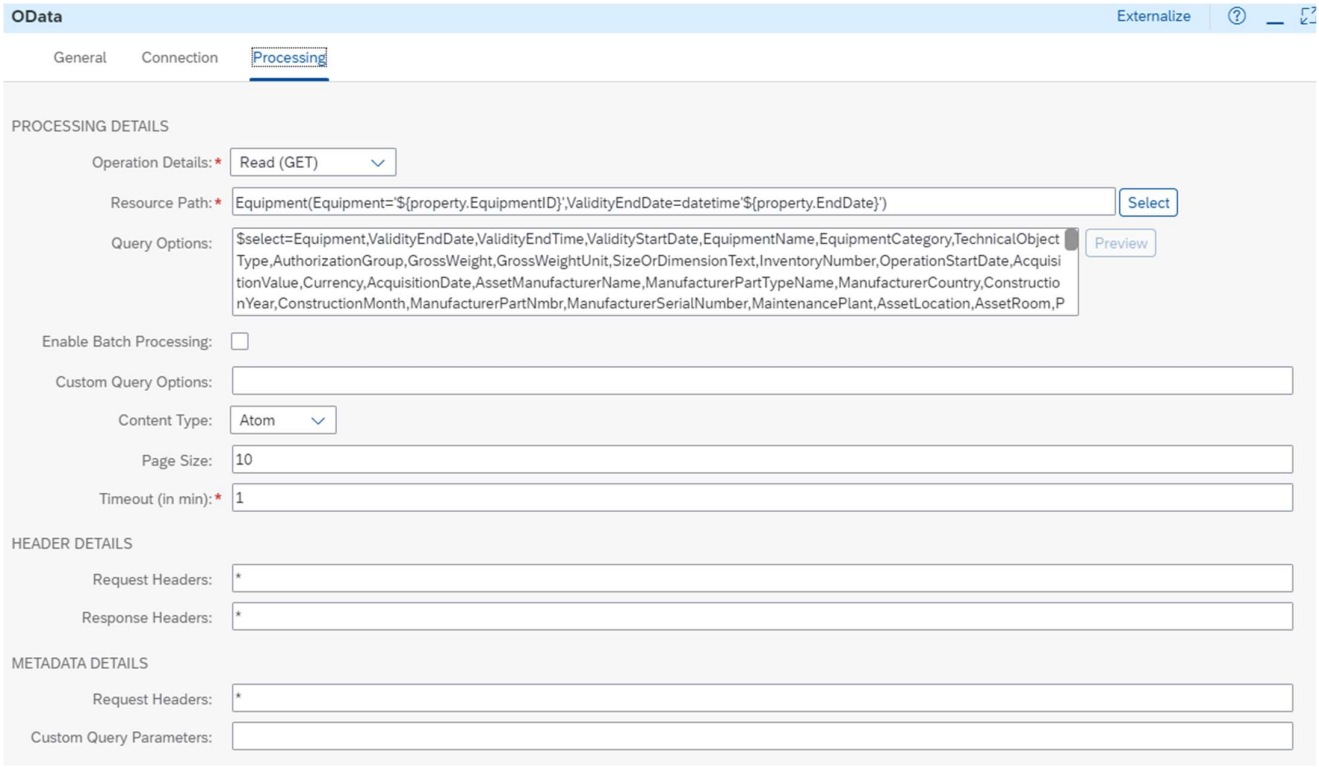


Figure 12 - Receiver OData Adapter (Read Equipment) – Processing/Processing Details.

Operation Details	Enter the operation preferred. For this step, please define Read GET.
Resource Path	Select the Model Operation where you can find and select the entity preferred and after the fields for model operation. In this case, define: Equipment(Equipment='${property.EquipmentID}',ValidityEndDate=datetime'${property.EndDate}')
Fields	Select the fields from Resource Path (entity that you're performing the operation on).

For further information:

ODATA Adapter:
https://help.sap.com/docs/CLOUD_INTEGRATION/368c481cd6954bdfa5d0435479fd4eaf/c5c2e38e0c87472e996dfda04920bfc4.html

API API_EQUIPMENT:

https://api.sap.com/api/API_EQUIPMENT/overview

3.5 Configure Receiver OData Adapter (Update Equipment)

The receiver OData Adapter for Equipment Update is described below:

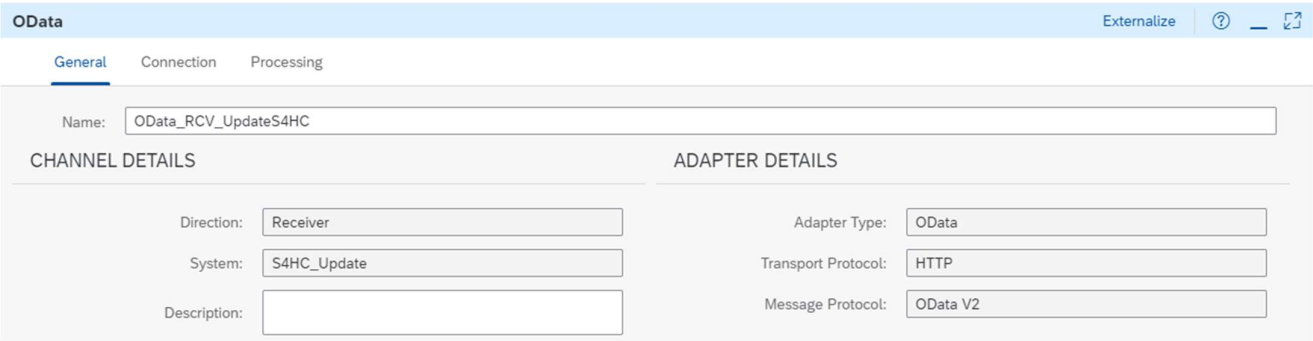


Figure 11 – Receiver OData Adapter (Update Equipment) – General/Channel Details.

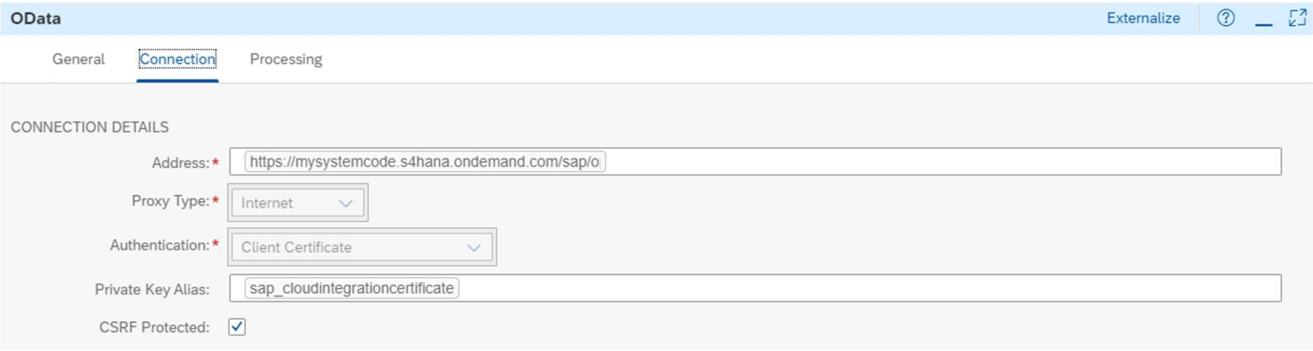


Figure 14- Receiver OData Adapter (Update Equipment) – Connection/ Connection Details.

Address	Enter the address of the OData service. *Note: In this case, it is used the API: https://mysystem.api.s4hana.ondemand.com/sap/opu/odata/sap/API_EQUIPMENT*
Proxy Type	The type of proxy you want to use for establishing connection with OData Service. Currently, you can choose between Internet (default) and On-Premise. Define Internet for S/4HANA Cloud. For On-premise systems it is required to define Location ID.
Location ID (Only Proxy Type as On-Premise)	Location ID that you've configured in the cloud connector installed on your system.
Authentication	Enter the authentication method for connecting to the OData service. E.g Basic, client certificate.
Credential Name	Credential name of the credentials that is deployed in Security Material section of (Operations View)
Private Key Alias (Only for Client Certificate Authentication).	Enter the private key alias that enables the system to fetch the private key from keystore for authentication.
CSRF Protected	Check. By default, option.

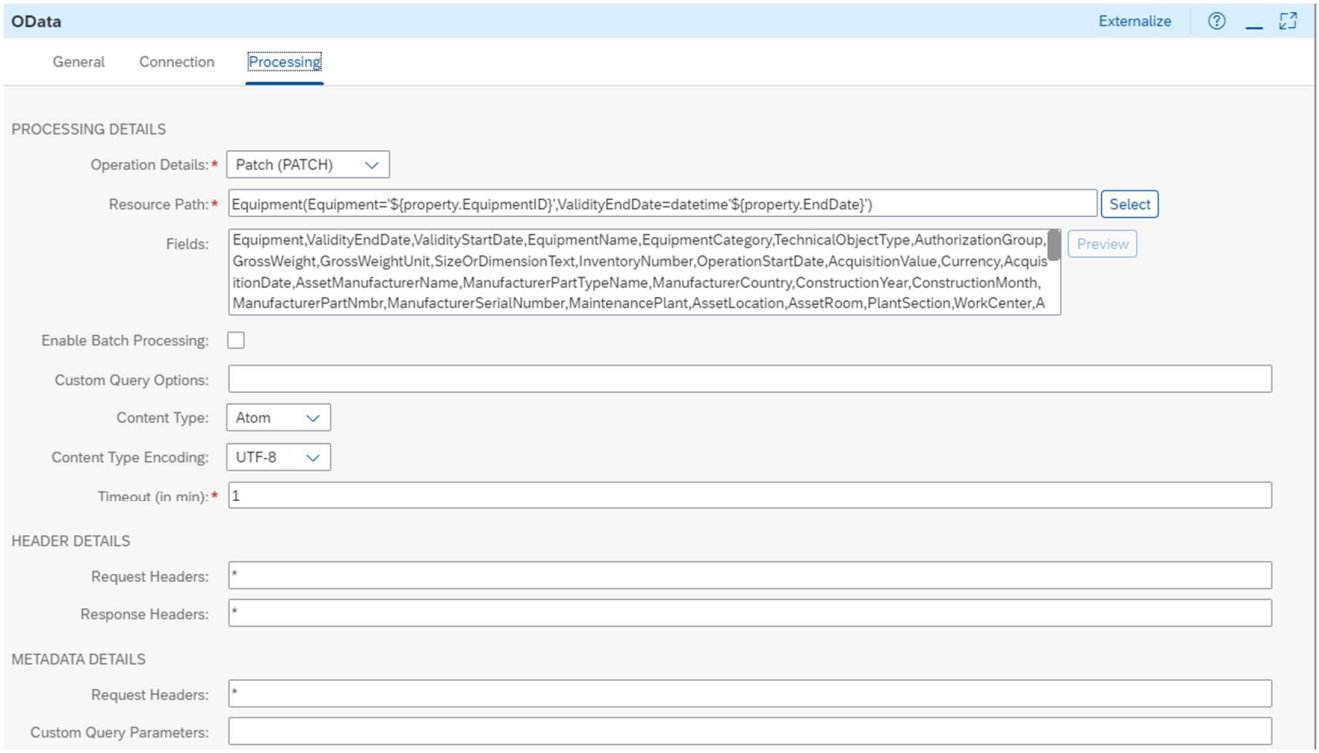


Figure 15 - Receiver OData Adapter (Update Equipment) – Processing/Processing Details.

Operation Details	Enter the operation preferred. For this step, please define Patch PATCH.
Resource Path	Select the Model Operation where you can find and select the entity preferred and after the fields for model operation. In this case, define: Equipment(Equipment='${property.EquipmentID}',ValidityEndDate=datetime'${property.EndDate}')
Fields	Select the fields from Resource Path (entity that you're performing the operation on).

For further information:

ODATA Adapter:
https://help.sap.com/docs/CLOUD_INTEGRATION/368c481cd6954bdfa5d0435479fd4eaf/c5c2e38e0c87472e996dfda04920bfc4.html

API API_EQUIPMENT:

https://api.sap.com/api/API_EQUIPMENT/overview

3.6 Configure Receiver system (SAP S/4HANA Cloud)

This section describes how to set up the communication scenario SAP_COM_0395 for Asset Management Master Data Integration by using the Communication Arrangement tool.

3.7.1. Prerequisites

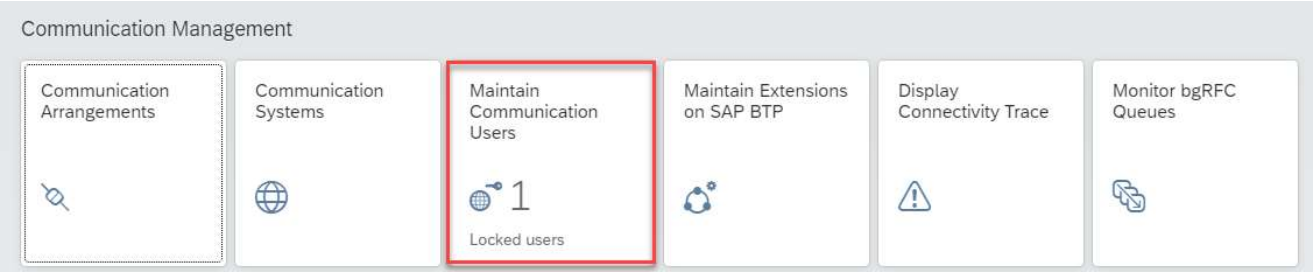
You must create a business role by using the template SAP_BR_ADMINISTRATOR, and assign this to the administrator in the SAP S/4HANA system. For more information, refer to Maintain Business Roles.https://uacp.hana.ondemand.com/http.svc/rc/PRODUCTION/1a93686c176845f0832a2a73221dd90b/1611%20500/en-US/frameset.htm?8980ad05330b4585ab96a8e09cef4688.html

3.7.2. Communication User

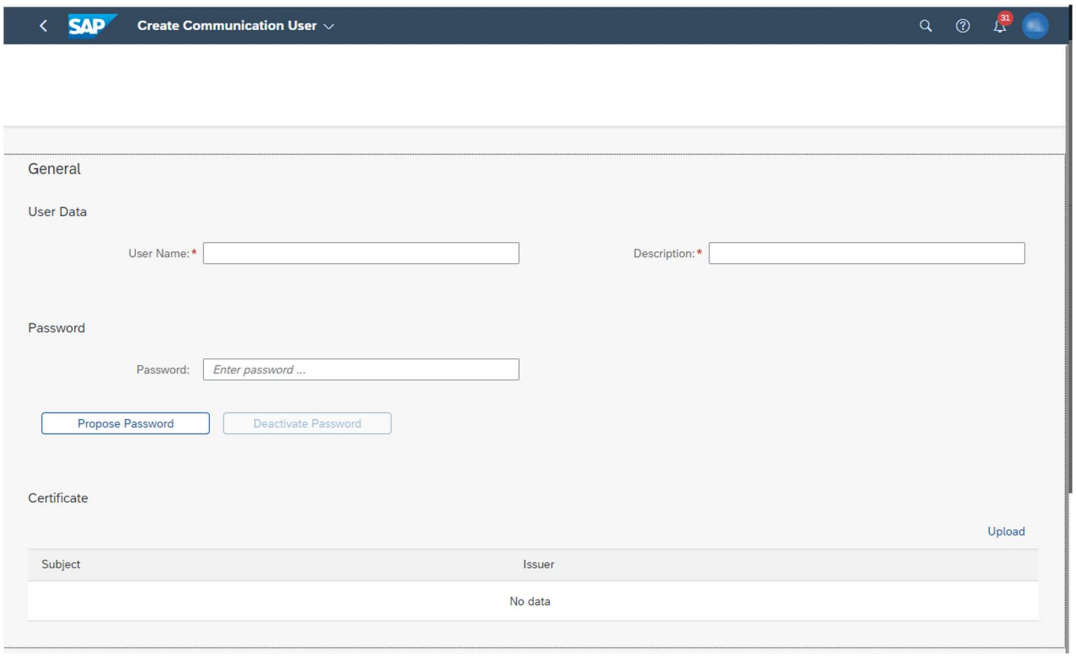
The communication user defined in the SAP S/4HANA system is used for inbound communication and for processing messages in the system.

Procedure

1. Access the SAP S/4HANA system and log on as an Administrator.
2. Choose the Maintain Communication Users tile under Communication Management.



3. Choose New.



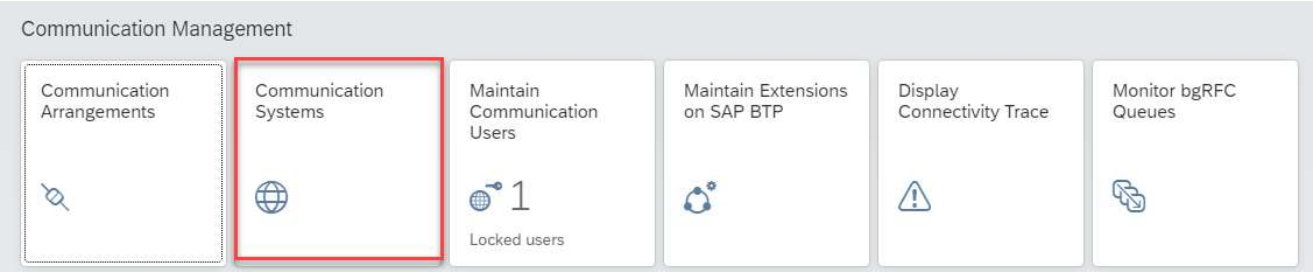
4. Enter the User Name and Description.
5. Enter a password. You can also upload an SSL client certificate.
6. Choose Create.

3.7.3. Communication System

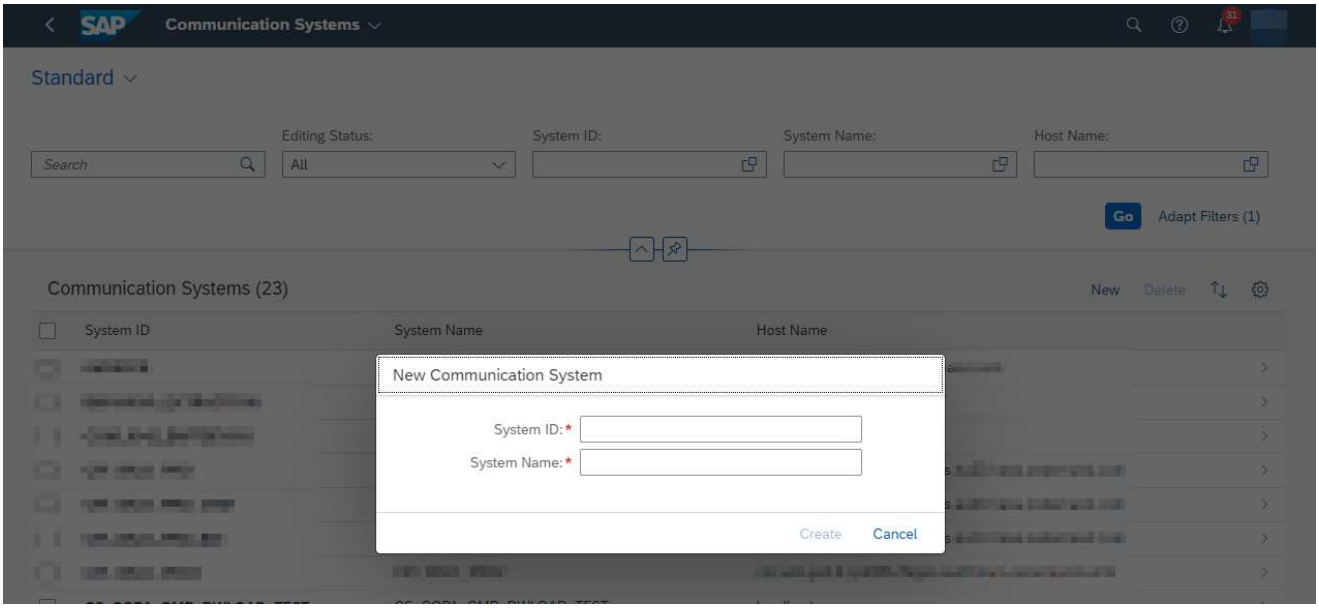
The communication system defined in the SAP S/4HANA system is used as the source or target system.

Procedure

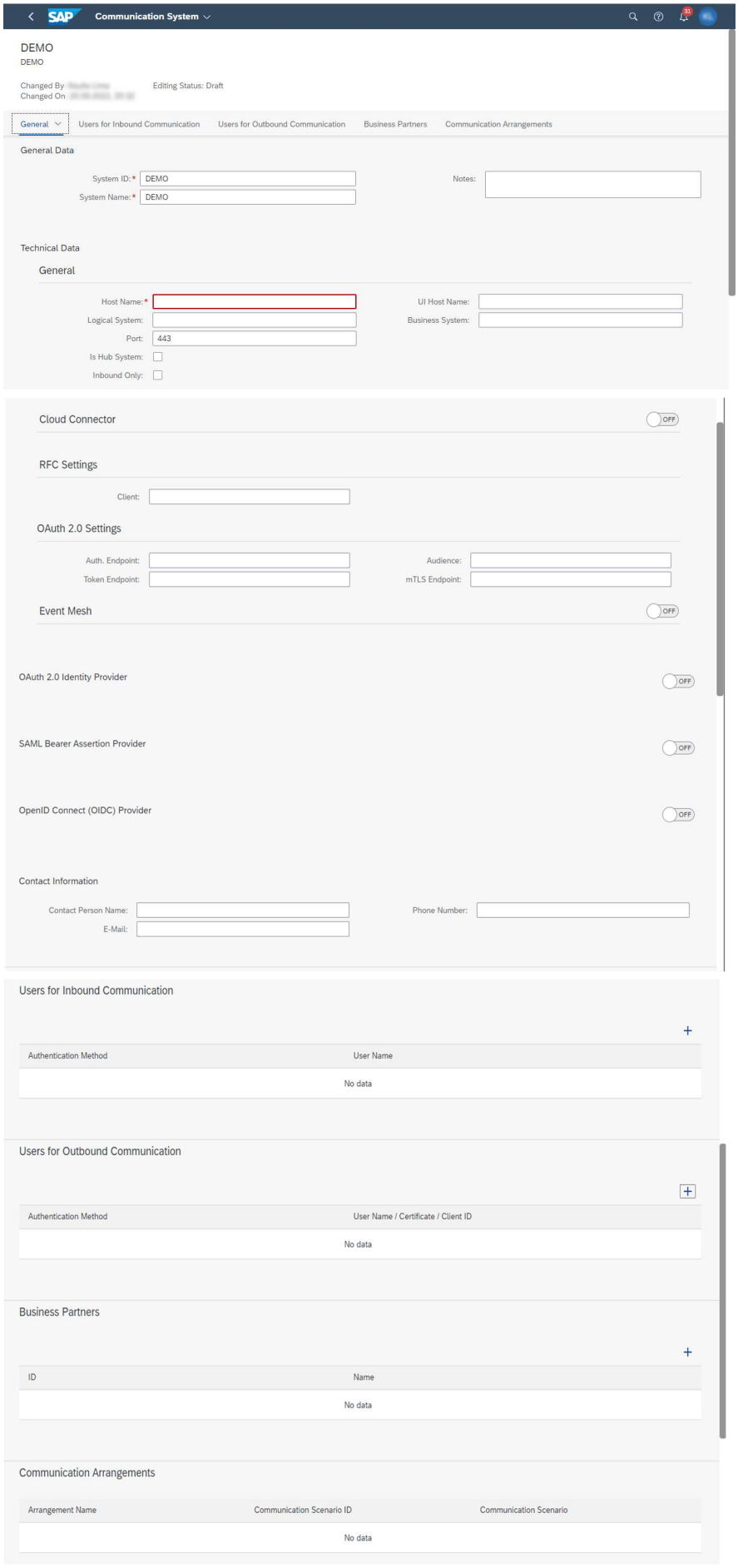
1. Access the SAP S/4HANA system and log on as an Administrator.
2. Choose Communication Systems tile under Communication Management.



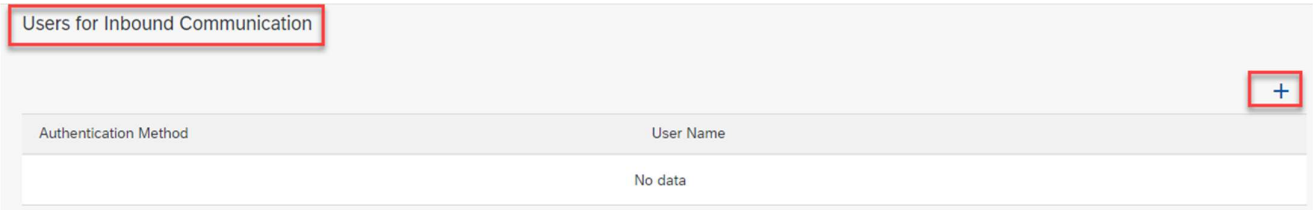
3. In the next window, choose New. The following screen appears.



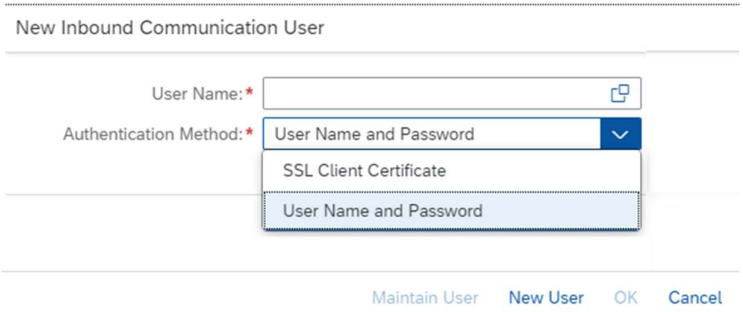
4. Enter the System ID. Optionally, you can enter the ID to recognize the integration system, which is connected with the SAP S/4HANA system.
5. Enter a descriptive name in the System Name field.
6. Choose Create.


Communication System
DEMO
DEMO
Changed By
Changed On
Editing Status: Draft
General
Users for Inbound Communication
Users for Outbound Communication
Business Partners
Communication Arrangements
General Data
System ID:*
DEMO
System Name:*
DEMO
Notes:
Technical Data
General
Host Name:*
Logical System:
Port:
443
Is Hub System:
Inbound Only:
UI Host Name:
Business System:
Cloud Connector
OFF
RFC Settings
Client:
OAuth 2.0 Settings
Auth. Endpoint:
Token Endpoint:
Audience:
mTLS Endpoint:
Event Mesh
OFF
OAuth 2.0 Identity Provider
OFF
SAML Bearer Assertion Provider
OFF
OpenID Connect (OIDC) Provider
OFF
Contact Information
Contact Person Name:
E-Mail:
Phone Number:
Users for Inbound Communication
Authentication Method
User Name
No data
Users for Outbound Communication
Authentication Method
User Name / Certificate / Client ID
No data
Business Partners
ID
Name
No data
Communication Arrangements
Arrangement Name
Communication Scenario ID
Communication Scenario
No data

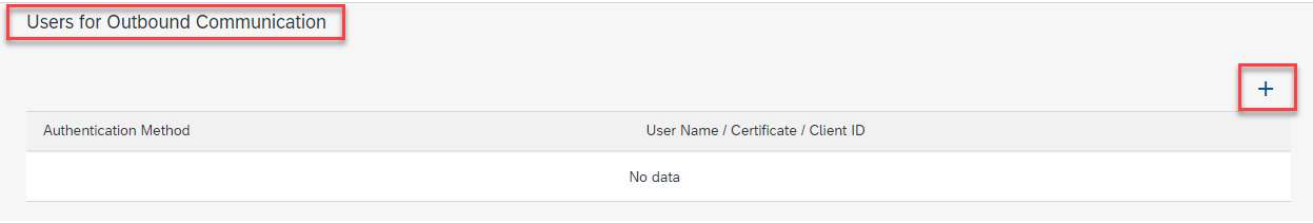
7. In the Host Name field, enter the SAP Runtime URL without HTTPS://
8. Enter the Log System ID as the SAP tenant ID.
9. Enter the Business System ID as the SAP tenant ID.
10. Under User for Inbound Communication, choose Add.



11. Choose an Authentication Method as per your requirements and specify a relevant user name. Choose OK.



12. User for Outbound communication, choose the user name and Authentication Method as per your requirements.



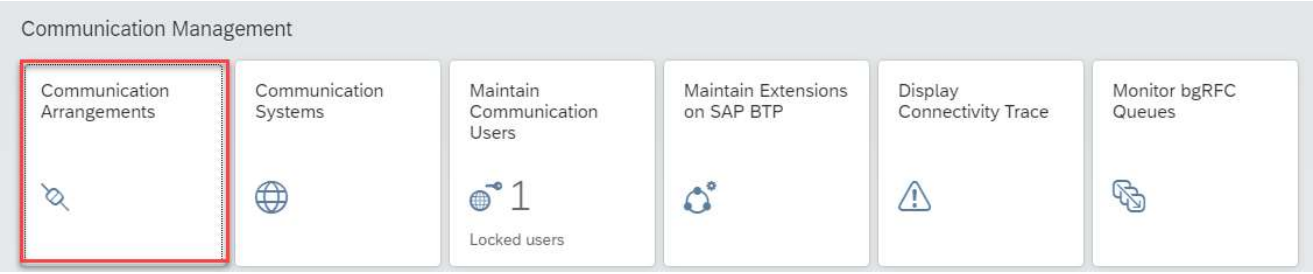
13. Choose Create.
14. Choose Save.

3.7.4. Communication Arrangement

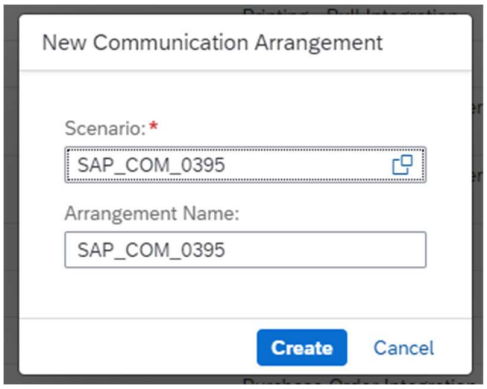
The Communication Arrangements defined in S/4HANA systems enables key users to create and edit communication arrangements that your company has set up with a communication partner.

Procedure

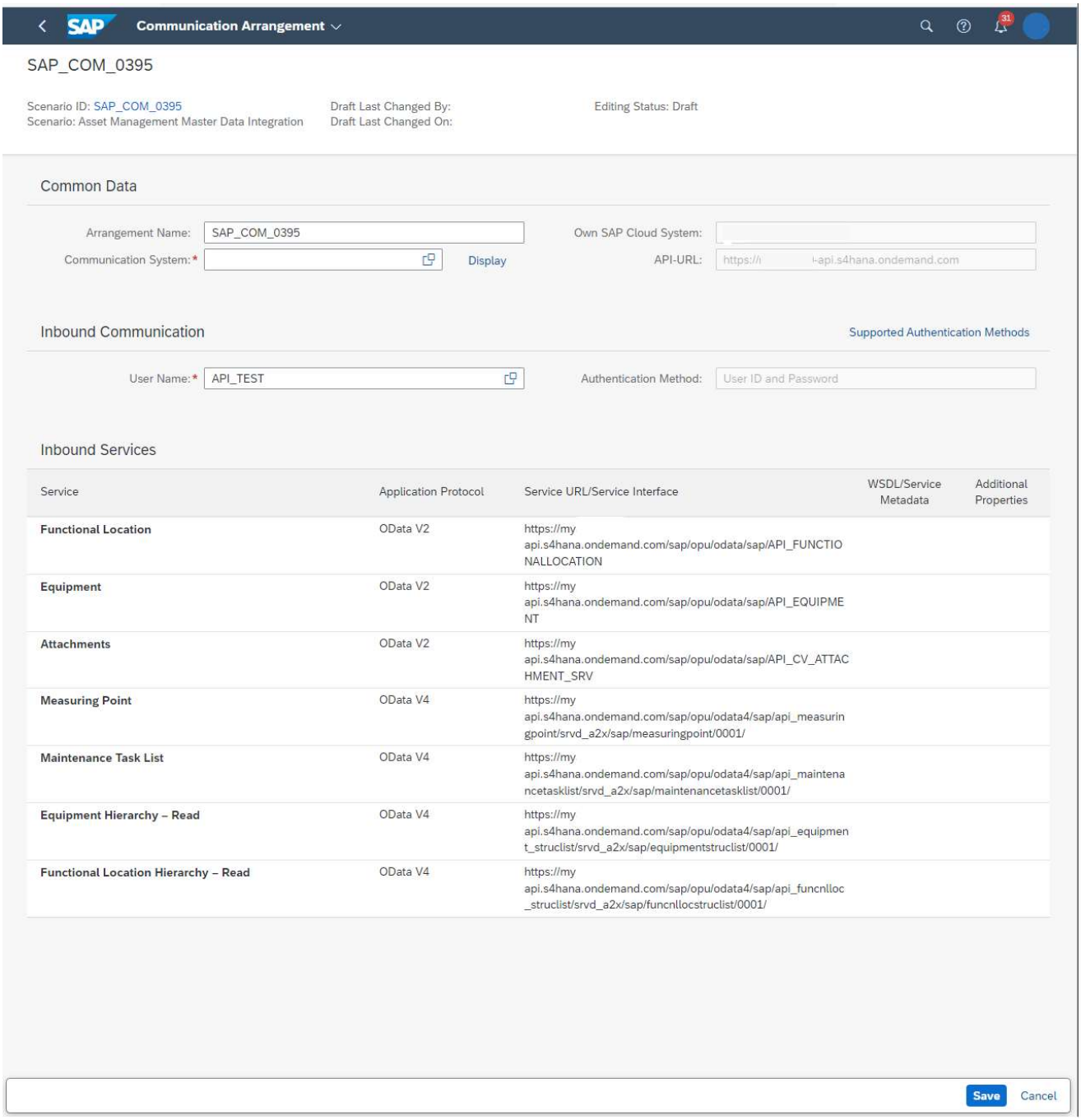
1. Access the SAP S/4HANA system and log on as an Administrator and open the app Communication Arrangements.



2. Choose New.



3. Choose the scenario SAP_COM_0395 from the value help
4. Enter an Arrangement Name.
5. Choose Create.



6. Choose Communication System ID from the value help.
7. Under Inbound Communication, choose User Name using value help. By default, the user, which is associated with Communication System will be shown in the value help. Choose the same.
8. Choose Save.