

Configuration Guide

SAP ERP Master Data Integration with SAP S/4HANA Cloud

January 2023

English

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):
 - o 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:
 - o 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.

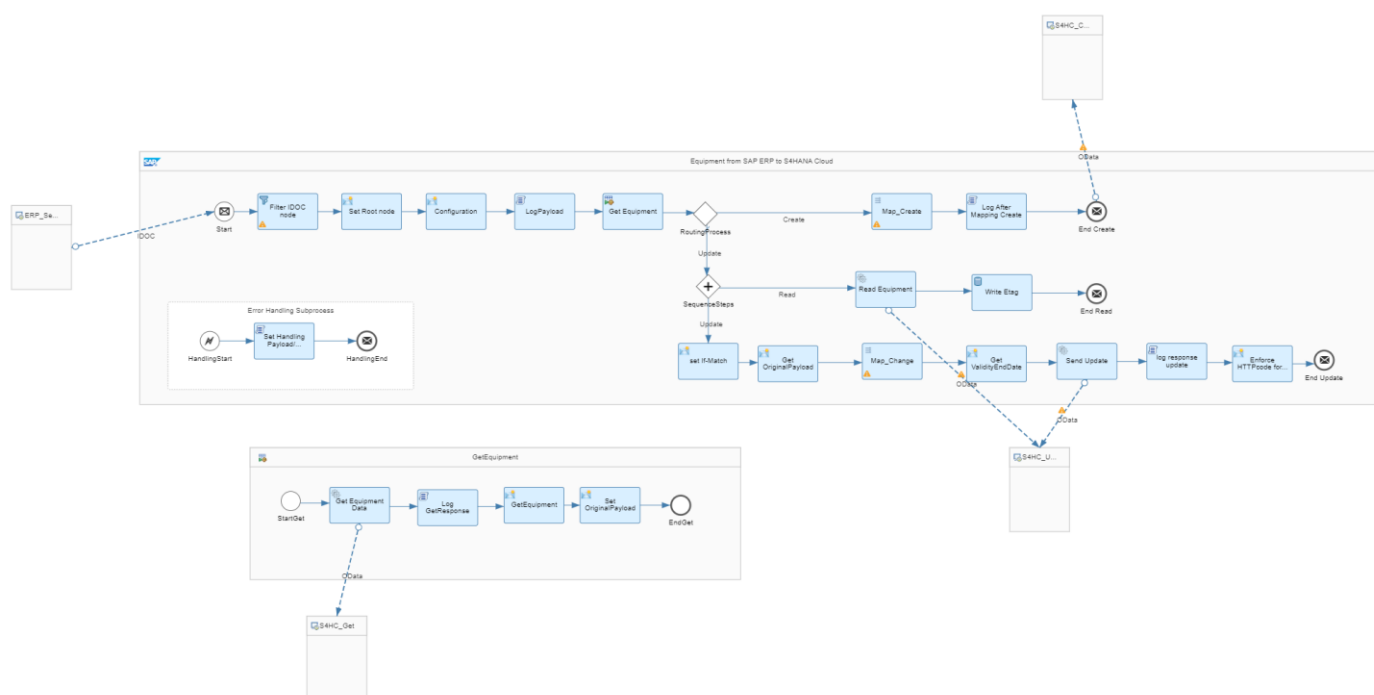
2 Documentation

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

IDOC

Externalize ? _ ↗

General

Connection

Processing

Conditions

Name: IDOC_SND_ERP_Equipment

CHANNEL DETAILS

ADAPTER DETAILS

Direction: Sender

System: ERP_Sender

Description:

Adapter Type: IDOC

Transport Protocol: HTTPS

Message Protocol: IDoc SOAP

IDOC

Externalize ? _ ↗

General

Connection

Processing

Conditions

CONNECTION DETAILS

Address: * /IDOC/EQUIPMENT

Authorization: * User Role

User Role: * ESBMessaging.send

Select

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.

IDOC

Externalize ? _ ↗

General

Connection

Processing

Conditions

PROCESSING DETAILS

Invalid XML Character Handling: Throw Exception

HTTPS

Externalize

General

Connection

Conditions

MAXIMUM MESSAGE SIZE

Body Size (in MB):

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:

OData

Externalize ? _

General

Connection

Processing

Name: OData_RCV_GetS4HC

CHANNEL DETAILS

ADAPTER DETAILS

Direction: Receiver

System: S4HC_Get

Description:

Adapter Type: OData

Transport Protocol: HTTP

Message Protocol: OData V2

OData

Externalize ? _

General

Connection

Processing

CONNECTION DETAILS


Address: * https://mysystemcode.s4hana.ondemand.com/sap/o

Proxy Type: * Internet

Authentication: * Client Certificate

Private Key Alias: sap_cloudintegrationcertificate

CSRF Protected: ☒

Address	Enter the address of the OData service. <i>Note: In this case, it is used the API:</i> <i>https://mysystemcode.s4hana.ondemand.com/sap/opu/odata/sap/API_EQUIPMENT</i>
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.

OData

Externalize ?

General

Connection

Processing

PROCESSING DETAILS

Operation Details: *

Query (GET)

Resource Path: *

Equipment

Select

Query Options:

\$select=Equipment,ValidityEndDate,ValidityEndTime,ValidityStartDate,EquipmentName,EquipmentCategory,TechnicalObject

Type,AuthorizationGroup,GrossWeight,GrossWeightUnit,SizeOrDimensionText,InventoryNumber,OperationStartDate,Acquisi

tionValue,Currency,AcquisitionDate,AssetManufacturerName,ManufacturerPartTypeName,ManufacturerCountry,Constructio

nYear,ConstructionMonth,ManufacturerPartNmbr,ManufacturerSerialNumber,MaintenancePlant,AssetLocation,AssetRoom,P

Preview

Enable Batch Processing:

☐

Custom Query Options:

Content Type:

Atom

Page Size:

10

Process in Pages:

☐

Timeout (in min): *

1

HEADER DETAILS

Request Headers:

*

Response Headers:

*

METADATA DETAILS

Request Headers:

Custom Query Parameters:

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:

OData

Externalize ?

General

Connection

Processing

Name: OData_RCV_CreateS4HC

CHANNEL DETAILS

ADAPTER DETAILS

Direction: Receiver

System: S4HC_Create

Description:

Adapter Type: OData

Transport Protocol: HTTP

Message Protocol: OData V2

OData

Externalize ?

General

Connection

Processing

CONNECTION DETAILS


Address: * https://mysystemcode.s4hana.ondemand.com/sap/o

Proxy Type: * Internet

Authentication: * Client Certificate

Private Key Alias: sap_cloudintegrationcertificate

CSRF Protected: ☒

Address	Enter the address of the OData service. <i>Note: In this case, it is used the API:</i> https://mysystemcode.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.

Custom Query Parameters:

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/368c481cd6954bd5a5d0435479fd4eaf/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:

OData

Externalize ? — ↗

General

Connection

Processing

Name: OData_RCV_ReadS4HC

CHANNEL DETAILS

ADAPTER DETAILS

Direction: Receiver

System: S4HC_Update

Description:

Adapter Type: OData

Transport Protocol: HTTP

Message Protocol: OData V2

OData

Externalize ? — ↗

General

Connection

Processing

CONNECTION DETAILS


Address: * https://mysystemcode.s4hana.ondemand.com/sap/o

Proxy Type: * Internet

Authentication: * Client Certificate

Private Key Alias: sap_cloudintegrationcertificate

CSRF Protected: ☒

Address	Enter the address of the OData service. <i>Note: In this case, it is used the API:</i> <i>https://mysystemcode.s4hana.ondemand.com/sap/opu/odata/sap/API_EQUIPMENT</i>
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.

OData

Externalize ?

General

Connection

Processing

PROCESSING DETAILS

Operation Details: *

Read (GET) v

Resource Path: *

Equipment(Equipment=\${property.EquipmentID},ValidityEndDate=datetime\${property.EndDate})

Select

Query Options:

\$select=Equipment,ValidityEndDate,ValidityEndTime,ValidityStartDate,EquipmentName,EquipmentCategory,TechnicalObject

Type,AuthorizationGroup,GrossWeight,GrossWeightUnit,SizeOrDimensionText,InventoryNumber,OperationStartDate,Acquisi

tionValue,Currency,AcquisitionDate,AssetManufacturerName,ManufacturerPartTypeName,ManufacturerCountry,Constructio

nYear,ConstructionMonth,ManufacturerPartNmbr,ManufacturerSerialNumber,MaintenancePlant,AssetLocation,AssetRoom,P

Preview

Enable Batch Processing:

☐

Custom Query Options:

Content Type:

Atom v

Page Size:

10

Timeout (in min): *

1

HEADER DETAILS

Request Headers:

*

Response Headers:

*

METADATA DETAILS

Request Headers:

*

Custom Query Parameters:

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/368c481cd6954bd0435479fd4eaf/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:

OData

Externalize ? — ↗

General

Connection

Processing

Name: OData_RCV_UpdateS4HC

CHANNEL DETAILS

ADAPTER DETAILS

Direction: Receiver

System: S4HC_Update

Description:

Adapter Type: OData

Transport Protocol: HTTP

Message Protocol: OData V2

OData

Externalize ? — ↗

General

Connection

Processing

CONNECTION DETAILS


Address: * https://mysystemcode.s4hana.ondemand.com/sap/o

Proxy Type: * Internet

Authentication: * Client Certificate

Private Key Alias: sap_cloudintegrationcertificate

CSRF Protected: ☒

Address	Enter the address of the OData service. <i>Note: In this case, it is used the API:</i> https://mysystemcode.s4hana.ondemand.com/sap/o
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.

OData

Externalize ?

General

Connection

Processing

PROCESSING DETAILS

Operation Details: *

Patch (PATCH) ▾

Resource Path: *

Equipment(Equipment=\${property.EquipmentID};ValidityEndDate=datetime'\${property.EndDate}')

Select

Fields:

Equipment,ValidityEndDate,ValidityStartDate,EquipmentName,EquipmentCategory,TechnicalObjectType,AuthorizationGroup,GrossWeight,GrossWeightUnit,SizeOrDimensionText,InventoryNumber,OperationStartDate,AcquisitionValue,Currency,AcquisitionDate,AssetManufacturerName,ManufacturerPartTypeName,ManufacturerCountry,ConstructionYear,ConstructionMonth,ManufacturerPartNmbr,ManufacturerSerialNumber,MaintenancePlant,AssetLocation,AssetRoom,PlantSection,WorkCenter,A

Preview

Enable Batch Processing:

☐

Custom Query Options:

Content Type:

Atom ▾

Content Type Encoding:

UTF-8 ▾

Timeout (in min): *

1

HEADER DETAILS

Request Headers:

*

Response Headers:

*

METADATA DETAILS

Request Headers:

*

Custom Query Parameters:

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

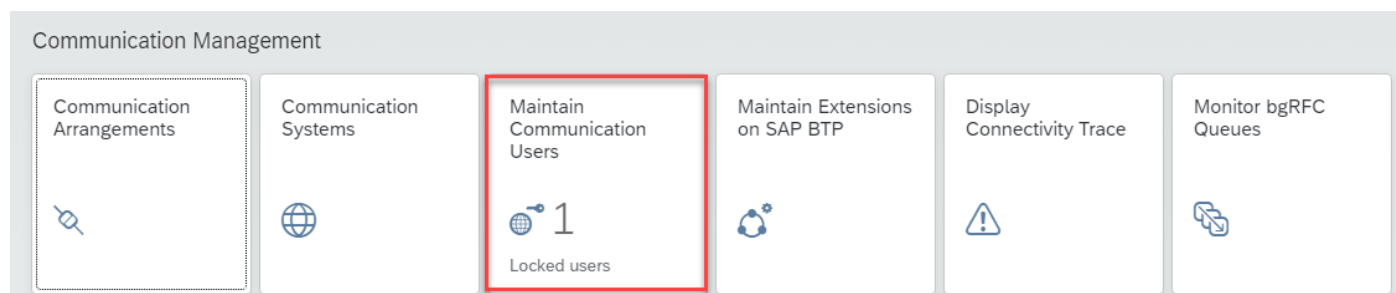
You must create a business role by using the template SAP_BR_ADMINISTRATOR, and assign this to the administrator in the SAP S/4HANA system. For more information, refer to Maintain Business Roles. <https://uacp.hana.ondemand.com/http.svc/rc/PRODUCTION/1a93686c176845f0832a2a73221dd90b/1611%20500/en-US/frameset.htm?8980ad05330b4585ab96a8e09cef4688.html>

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.

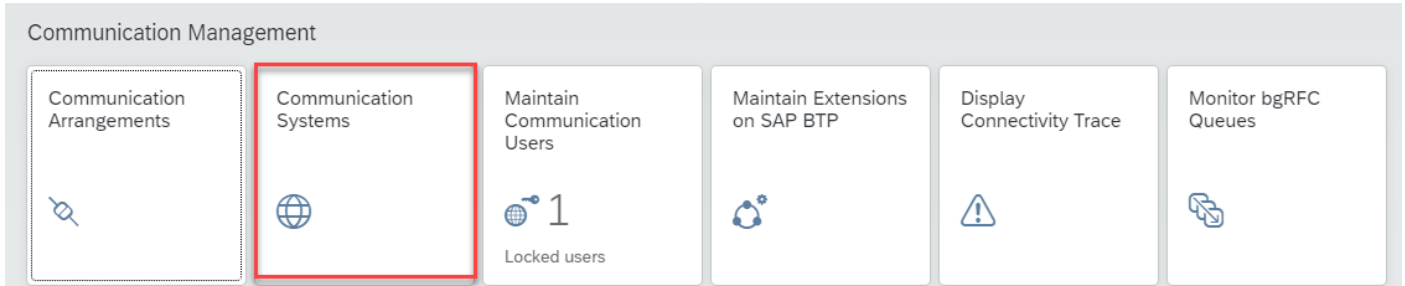
6. Choose Create.

3.7.3. Communication System

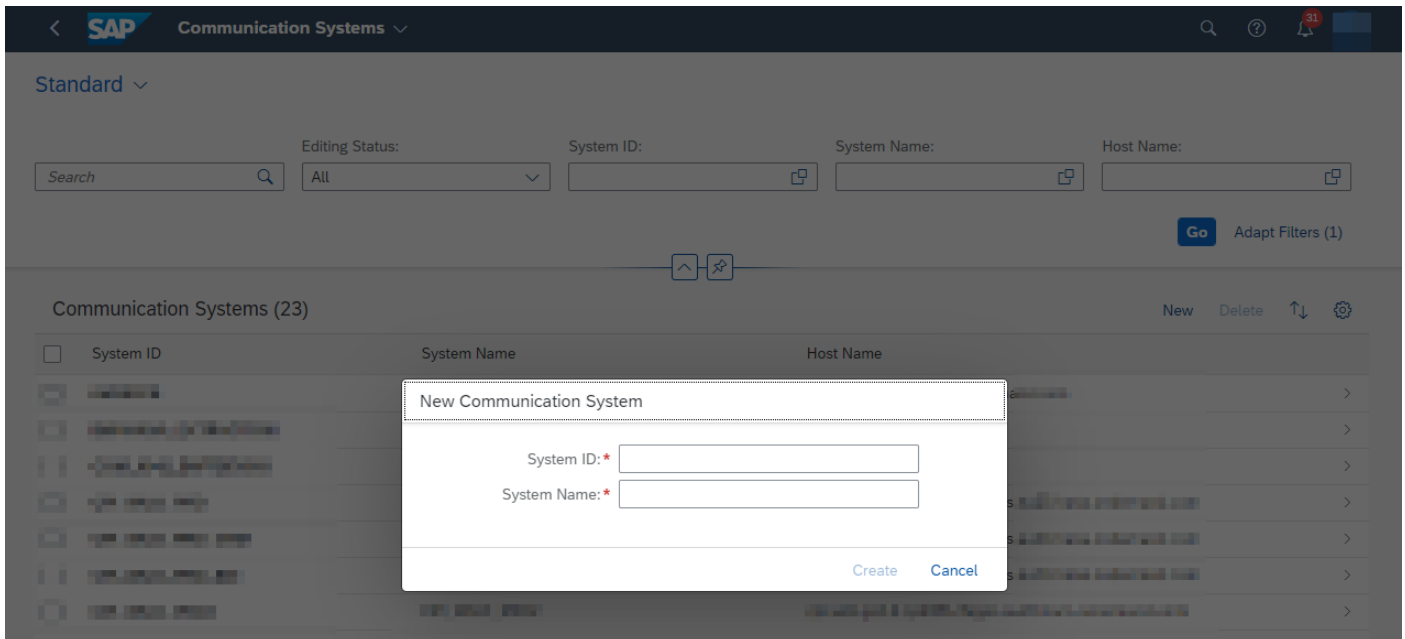
The communication system defined in the SAP S/4HANA system is used as the source or target system.

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.

SAP Communication System

DEMO
DEMO

Changed By: [Hans-Joachim](#) Editing Status: Draft
Changed On: 2024-05-20 10:00

General Users for Inbound Communication Users for Outbound Communication Business Partners Communication Arrangements

General Data

System ID: * DEMO Notes:
System Name: * DEMO

Technical Data

General

Host Name: * UI Host Name:
Logical System: Business System:
Port: 443
Is Hub System: ☐
Inbound Only: ☐

Cloud Connector ☐ OFF

RFC Settings

Client:

OAuth 2.0 Settings

Auth. Endpoint: Audience:
Token Endpoint: 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: Phone Number:
E-Mail:

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		

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.

Users for Inbound Communication

+

Authentication Method	User Name
No data	

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

New Inbound Communication User

User Name: *

Authentication Method: *

+

User Name and Password

SSL Client Certificate

User Name and Password

[Maintain User](#)
[New User](#)
[OK](#)
[Cancel](#)

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

Users for Outbound Communication

+

Authentication Method	User Name / Certificate / Client ID
No data	

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.

Communication Management

Communication Arrangements

Communication Systems

Maintain Communication Users

1

Locked users

Maintain Extensions on SAP BTP

Display Connectivity Trace

Monitor bgRFC Queues

2. Choose New.

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

Configuration Guide

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.