

Documentation

**Automated Synchronization of
SAP LeanIX Factsheets via SAP In-
tegration Suite for Cloud Integra-
tion Objects**

SAP Integration Package

Version 1.1

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RealCore Group GmbH

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Document History

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1. Overview & Introduction

This integration package enables data synchronization between SAP Cloud Integration Content and SAP LeanIX factsheets by reading specific Cloud Integration objects and transferring them to SAP LeanIX application.

Thanks to the solid SAP Cloud Integration solution significant data will be transmitted seamlessly and secure with the help of a Cloud Integration flow which resorts to newest simulation technology and stable error handling.

By utilizing this solution companies will gain an increased growth of efficiency due to a stable automation process of creating FactSheet resources.

The provided integration flow makes use of a full data load to create SAP LeanIX factsheets for all interfaces simultaneously within a few minutes by calling a GraphQL API which connects to SAP LeanIX.

Additionally, it makes use of filter rules to further inclose to be created sheets if necessary. Already existing FactSheets will be updated with new information while non-existent ones will be created as shell with details as title, system information and a technical description. More detailed FactSheet labels like the name can be maintained individually by filling a predefined Value Mapping. This value mapping is pre-created by a separate optional flow in the package which will be explained in [Chapter 3.6](#).

The following chapters specify on these topics in more detail and guide you through the first initial setup.

IMPORTANT NOTE: Using this content without filters (full load) more than once will cause overwriting existing FactSheets! If you change a FactSheet after the initial load and run a full load again, all changes in the FactSheet will be overwritten by the update.

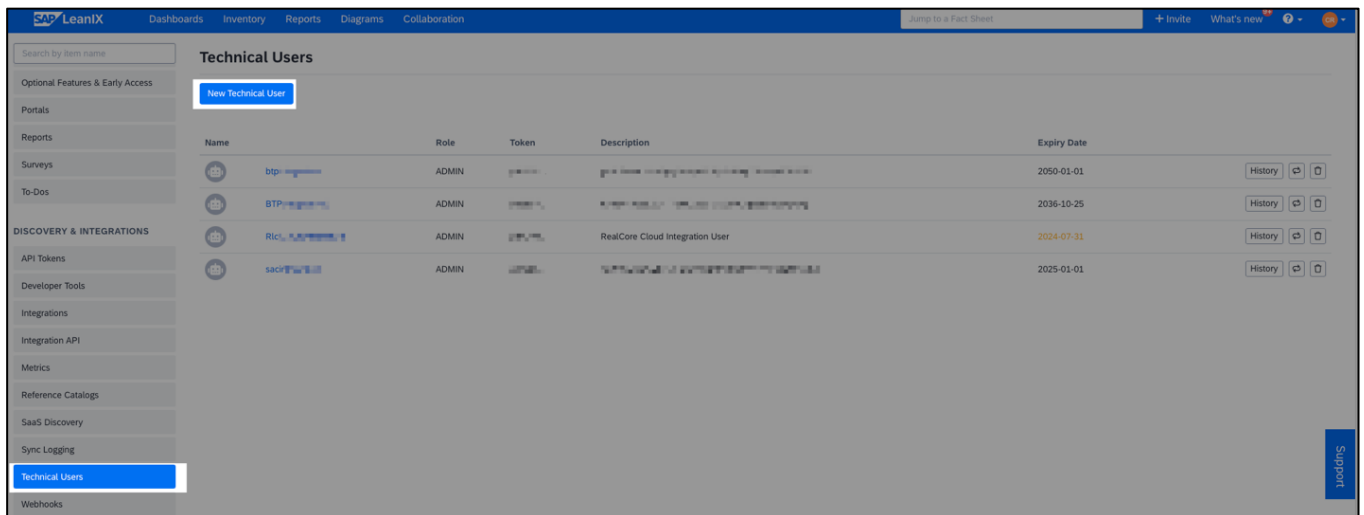
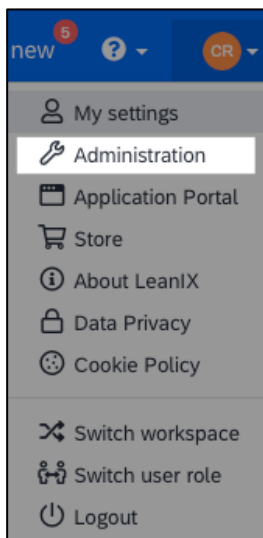
2. Preparations and what you need

This chapter handles the necessary preliminary steps users need to take care of before using the integration flows.

2.1 Authentication Cloud Integration to SAP LeanIX - Activities in SAP LeanIX

To authenticate against SAP LeanIX you first need to create a user in the SAP LeanIX application. SAP LeanIX admins have to follow these steps to do so:

1. On the top right corner click on your user initials and navigate to “**Administration**”
2. The left bar contains several setup possibilities. To create a new technical user, scroll down and choose the option “**Technical Users**”.
3. In this screen you create a new technical user with “**New Technical Users**” and set the username, role and expiry date. Once the new user is saved you will automatically receive the Token which serves as “Secret” in SAP Cloud Integration credentials.



← New Technical User

Username *

Description

Permission Role *

Customer Roles

Access Control Entities

Expiry Date *

2.2 Authentication Cloud Integration to SAP LeanIX - Activities in SAP Cloud Integration

Before you can use the new integration flow a new Security Material from type “OAuth2 Client Credentials” is needed to authenticate to SAP LeanIX application.

In SAP Cloud Integration you must follow these steps:

1. Open SAP Cloud Integration and navigate to “**Monitor->Integrations and APIs->Security Material**”.
2. On the top right corner click on “**Create**” and choose “**OAuth 2 Client Credentials**”
3. Now in the dialog box enter the following details and click on **Deploy**:
 - a. Runtimes: **<Your CI runtime environment>**
 - b. Token Service URL: **[https://<subdomain>.leanix.net/services/mtm/v1/oauth2/to-ken](https://<subdomain>.leanix.net/services/mtm/v1/oauth2/token)**
 - c. Client ID: **apitoken**
 - d. Client Secret: **<Your client secret which has been generated as “token” after the technical user creation in LeanIX>**
 - e. Client Authentication: **Send as Request Header**
 - f. Scope: *****
 - g. Content Type: **application/x-www-form-urlencoded**
4. Enter the credential name in the configurable parameter “LeanIX_OAUTH2_Credentials” and the SAP LeanIX subdomain in the parameter “LeanIX_Subdomain” – (more information [chapter 3.1](#))

Edit OAuth2 Client Credentials

Name: *	<input type="text" value="LeanIX_Interface"/>
Description:	<input type="text" value="Credentials for SAP CI FactSheet creation"/>
Runtimes: *	<input type="text" value="Cloud Integration x"/>
Token Service URL: *	<input type="text" value="https://demo-de.leanix.net/services/mtm/v1/oauth2/t ..."/>
Client ID: *	<input type="text" value="apitoken"/>
Client Secret: *	<input type="text"/>
Client Authentication: *	<input type="text" value="Send as Request Header"/>
Scope:	<input type="text" value="*"/>
Content Type:	<input type="text" value="application/x-www-form-urlencoded"/>
Resource:	<input type="text"/>
Audience:	<input type="text"/>

2.3 Authentication to read SAP Integration Flow objects

To read the interface objects from your own SAP Cloud Integration system an OData call is getting performed in the integration flow.

To authenticate against the OData API a new Security Material is needed that can either contain a S-User or OAuth 2 client credentials. OAuth 2 credentials can be created by your SAP BTP administrator.

To create a new Security Material, please follow these steps:

1. Open SAP Cloud Integration and navigate to “**Monitor->Integrations and APIs->Security Material**”.
2. On the top right corner click on “**Create**” and choose the respective Authentication Method (either “**User Credentials**” if you use a S-User or “**OAuth 2 Client Credentials**” for a proper OAuth authentication)
3. Enter the corresponding information for your SAP Cloud Integration authentication in the dialog box
4. Enter the Credential Name in the configurable parameter “**SAPCI_Credentials**” when configuring your Iflow. Also enter the used auth method in your parameter “**SAPCI_Authentication**” (Value: Basic or OAuth2 client credentials). Finally enter the SAP Cloud Integration hostname in your flow parameter “**SAPCI_Hostname**”. – (more information [chapter 3.1](#))

3. IFlows and Configuration in Cloud Integration

This packages comes with two integration flows:

1. Main Flow “Synchronize SAP LeanIX Factsheets with SAP Cloud Integration IFlow information”
2. Optional Flow “Preload Value Mapping for SAP LeanIX Label with SAP Cloud Integration Details”

This documentation primarily focuses on the Main Flow as the second one is an optional addition which can be used to simplify designing specific FactSheet Labels like the title in the SAP LeanIX factsheets (more details for the value mapping flow can be found in [chapter 3.6](#)).

Note: Both flows are setup as “Run On Deploy” meaning once the integration content gets deployed and activated, the interface processing starts. Whenever the integration content should run it needs to get redeployed in your Cloud Integration system.

3.1 Configuration Parameters

To fully use this flow the following parameters needs to be configured first before Deployment:

Category	Name	Default	Mandatory parameter (X)	Description
Control-ling	Ctrl_Batch_Size	30	X	With this parameter you control how many FactSheet Create/Update Statements are send via one call to SAP LeanIX. This is necessary because creating/updating over 100 FactSheets in single requests would cause a “Too many request” HTTP Exception.
	Ctrl_FactSheet_Subtype			With this parameter you control if the Interface should be created with a specific SubType so you can differentiate from you other Interface FactSheets. This Subtype must exist in SAP LeanIX otherwise SAP LeanIX will throw an exception.
	Ctrl_Simulation	true	X	With “Ctrl_Simulation” = true the flow will only read data, but will not create or update any FactSheets in SAP LeanIX. In the Message Log you will find a summary what the Flow would have created or updated if it wasn’t running in Simulation Mode Valid values: true false
	Ctrl_TraceLevel	info	X	Controls how much Information the Flow will provide in the Message Log. Defined Parameters are: info - Writes only necessary information into the message log

				debug - Write all available information in the message log which might be needed in case of unexpected error and behavior's.
	Filter_Flow			Regex String which is used to control which information the flow is reading from SAP Cloud Integration
	Filter_Package			Regex String which is used to control which information the flow is reading from SAP Cloud Integration
	Filter_Receiver			Regex String which is used to control which information the flow is reading from SAP Cloud Integration
	Filter_Sender			Regex String which is used to control which information the flow is reading from SAP Cloud Integration
	TagName			Use this externalized parameter to set the Tag Name to be added to your FactSheet in LeanIX.
LeanIX Connection	LeanIX_OAUTH2_Credentials (tab receiver: "Credential Name")	LeanIX_Interface	X	Name of the Security Material created for SAP LeanIX Oauth2 Authentication. See chapter 2.2
	LeanIX_Subdomain	demo	X	Subdomain hostname of your SAP LeanIX application. Example URL/Hostname: https://<LeanIX_Subdomain>.leanix.net/
SAP CI Connection	SAPCI_Authentication (tab receiver: "Authentication")	Basic	X	Choose type of authentication to read SAP Cloud Integration objects. Valid values: Basic OAuth2 client credentials
	SAPCI_Credentials (tab receiver: "Credential Name")		X	Name of the Security Material created for calling SAP Cloud Integration API. See chapter 2.3

	SAPCI_Host-name	sand-box.api.sap.com	X	Hostname of your SAP Cloud Integration system
--	-----------------	----------------------	---	---

3.2 Full Load or Filtered Creation Process

By default, with only setting the mandatory parameters marked with X above you will automatically run a full load. This means all the SAP Cloud Integration interfaces are getting collected and the corresponding FactSheets created in one go when deploying the integration flow for the first time.

However, you can also filter for specific integration flows only by making use of the specific optional parameters:

- Filter_Flow
- Filter_Package
- Filter_Receiver
- Filter_Sender

These parameters are based on Regex and can be individually setup. If the parameters are set before Deployment only the flows that are matching are getting transferred to SAP LeanIX.

3.3 Update Existing FactSheets

The SAP Cloud Integration Flow generates FactSheets using the FlowID as the External ID. Since the FlowID is unique in SAP Cloud Integration, this External ID allows the flow to identify and update existing FactSheets rather than creating new ones. If someone removes the External ID from a FactSheet, the flow will not recognize the existing FactSheet and will attempt to create a new one, leading to an error due to the duplicate FactSheet name.

3.4 Simulation Mode

You can choose if you directly want to create the FactSheets in SAP LeanIX or if you first want to test the process of picking up interface data.

If you want to test the flow you need to set the “Ctrl_Simulation” parameter to “true”. In this case the flow will run without transferring the interface data to SAP LeanIX. After the run is finished you will find a log in the monitoring tab of the corresponding message that will provide you details how many interfaces have been collected, how many entries found in a value mapping etc. By default, the simulation parameter is set to true to prevent users from inadvertently creating hundreds of FactSheets they may not want.

Example Logfile “Simulation Output”:

```
=====
                                     Simulation Output
=====
This output serves to determine how the FactSheets would be created in LeanIX. It checks whether the FactSheets already exist and if
LeanIX descriptions for applications or interfaces have been stored in SAP CI.
=====

*** Technical Details from SAP Cloud Integration ***
Sender: [SAPS4HANA]
Receiver: [SAPCloudforCustomer]
Flow: Replicate Contract from SAP Business Suite
Flow ID: com.sap.scenarios.s42c4c.contract.replicate
Package: SAPHybrisCloudforCustomerIntegrationwithSAPS4HANA
Version: 2.2.3
Description: Contract Replication from and to SAP Business Suite

*** Checking if ValueMapping 'Value Mapping LeanIX Label for SAP CI' contains any replacements for technical Names ***
Found no LeanIX Label for SAPS4HANA
Found no LeanIX Label for SAPCloudforCustomer

*** Checking LeanIX if FactSheet already exists or if the Flow needs to create the FactSheet ***
Interface FactSheet doesn't exists and will be created

*** Preview of how the values would be created in LeanIX ***
FactSheet Name:
Replicate Contract from SAP Business Suite to SAPCloudforCustomer

FactSheet Description:
Automatically generated Description by SAP Cloud Integration

Technical Details from SAP Cloud Integration

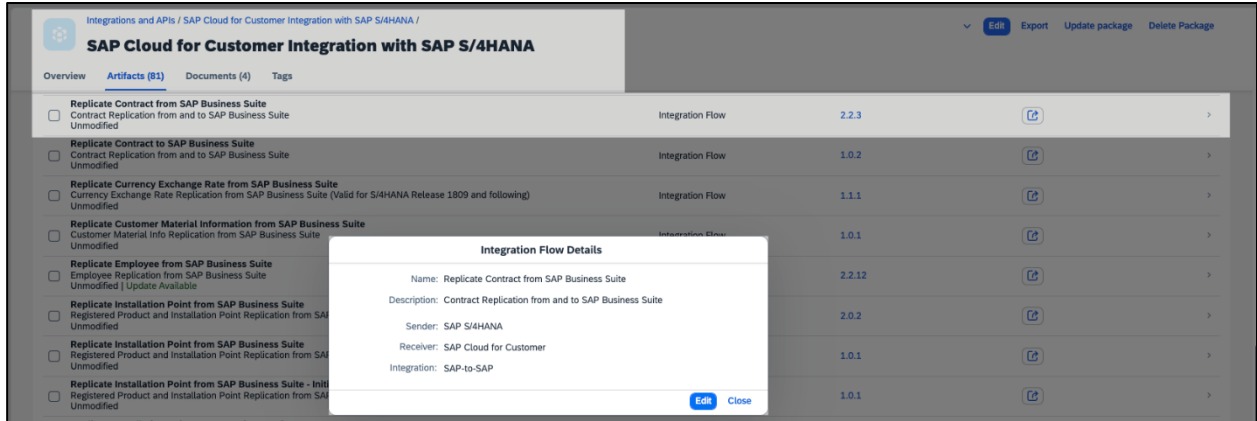
Flow Name: Replicate Contract from SAP Business Suite
Flow Id: com.sap.scenarios.s42c4c.contract.replicate
Sender: SAPS4HANA
Receiver: SAPCloudforCustomer
PackageId: SAPHybrisCloudforCustomerIntegrationwithSAPS4HANA
Version: 2.2.3
Description: Contract Replication from and to SAP Business Suite

ExternalID:
com.sap.scenarios.s42c4c.contract.replicate
```

3.5 Interface Process Visualization

This chapter will show an example of how the interface is creating the SAP LeanIX factsheets visually by default.

In this scenario we want to create a FactSheet only for one single Flow with the name “Replicate Contract from SAP Business Suite” :



By setting the “Filter_Flow” parameter with the specific name of a Flow, such as “Replicate Contract from SAP Business Suite”, this acts as a valid regex formula to process only this specific Flow and create a FactSheet.

You can find the parameter summary in the custom headers of the message, along with some runtime parameters starting with __, which will show you how many flows were found, filtered, and how many FactSheets were created successfully.

Custom Headers (18)	
Name	Value
__Flows after Filter:	1
__Found Flows in filtered Packages:	1991
__Found Packages on SAP CI:	169
__LeanIX Inserted/Updated - Successful	1
__LeanIX not Inserted/Updated - Error	0
__Packages after Filter:	169
Ctrl_Batch_Size	30
Ctrl_FactSheet_Subtype	Not specified
Ctrl_Simulation	false
Ctrl_TraceLevel	info
Filter_Flow	Replicate Contract from SAP Business Suite
Filter_Package	Not specified
Filter_Receiver	Not specified
Filter_Sender	Not specified
LeanIX_OAUTH2_Credentials	LeanIX_Interface
LeanIX_Subdomain	dem#
SAPCI_Credentials	
SAPCI_Hostname	rcg-rc

Attached to the processed message you can find the Flow Log

Attachments				
Name	Type	Modified At	Size	Actions
Flow Log	text/plain	May 27, 2024, 08:42:25	2 KB	↓

Or if you run the Flow with Simulation = true you can find the Simulation Output and all necessary information in the same place for investigating problems:

Attachments				
Name	Type	Modified At	Size	Actions
Simulation Output	text/plain	May 31, 2024, 07:52:42	424 KB	↓

The Flow Log shows which SAP Cloud Integration flows were found and processed, and with which data the FactSheet was created:

```

=====
Flow Log
=====
This output serves to determine how and which FactSheets will be created/updated in LeanIX. It checks whether the FactSheets already exist and if LeanIX descriptions for applications or interfaces have been stored in SAP CI.
=====

*** Technical Details from SAP Cloud Integration ***
Sender: [SAPS4HANA]
Receiver: [SAPCloudforCustomer]
Flow: Replicate Contract from SAP Business Suite
Flow ID: com.sap.scenarios.s42c4c.contract.replicate
Package: SAPHybrisCloudforCustomerIntegrationwithSAPS4HANA
Version: 2.2.3
Description: Contract Replication from and to SAP Business Suite

*** Checking if ValueMapping 'Value Mapping LeanIX Label for SAP CI' contains any replacements for technical Names ***
Found no LeanIX Label for SAPS4HANA
Found no LeanIX Label for SAPCloudforCustomer

*** Checking LeanIX if FactSheet already exists or if the Flow needs to create the FactSheet ***
Interface FactSheet doesn't exists and will be created

*** Preview of how the values would be created in LeanIX ***
FactSheet Name:
Replicate Contract from SAP Business Suite to SAPCloudforCustomer

FactSheet Description:
Automatically generated Description by SAP Cloud Integration

Technical Details from SAP Cloud Integration
Flow Name: Replicate Contract from SAP Business Suite
Flow Id: com.sap.scenarios.s42c4c.contract.replicate
Sender: SAPS4HANA
Receiver: SAPCloudforCustomer
PackageId: SAPHybrisCloudforCustomerIntegrationwithSAPS4HANA
Version: 2.2.3
Description: Contract Replication from and to SAP Business Suite

ExternalID:
com.sap.scenarios.s42c4c.contract.replicate
    
```

In SAP LeanIX you should find the created Factsheet:

The screenshot shows the SAP LeanIX interface. At the top, there is a navigation bar with 'SAP LeanIX' and menu items: Dashboards, Inventory, Reports, Diagrams, Collaboration. The main title is 'Replicate Contract to SAP Business Suite from SAPCloudforCustomer' with a progress indicator '4%'. Below the title, there are buttons for 'Interface' and 'Edit tags'. A description follows: 'FactSheet Description: Automatically generated Description by SAP Cloud Integration Technical Detai... Show more'. A secondary navigation bar includes 'Fact Sheet', 'Subscriptions', 'Comments', 'To-Dos', 'Resources', 'Transformations', 'Metrics', 'Surveys', and 'Last Update (17 days ago)'. A section titled 'Information 14%' is expanded, showing a table with details:

Name & Description	Name:	Replicate Contract to SAP Business Suite from SAPCloudforCustomer
	External ID:	com.sap.scenarios.c4c2s4.contract.replicate.v2
	Description:	FactSheet Description: Automatically generated Description by SAP Cloud Integration Technical Details from SAP Cloud Integration Flow Name: Replicate Contract to SAP Business Suite Flow Id: com.sap.scenarios.c4c2s4.contract.replicate.v2 Sender: SAPCloudforCustomer Receiver: SAPS4HANA PackageId: SAPHybrisCloudforCustomerIntegrationwithSAPS4HANA Version: 1.0.2 Description: Contract Replication from and to SAP Business Suite Show less
	LeanIX v3 ID:	240005131

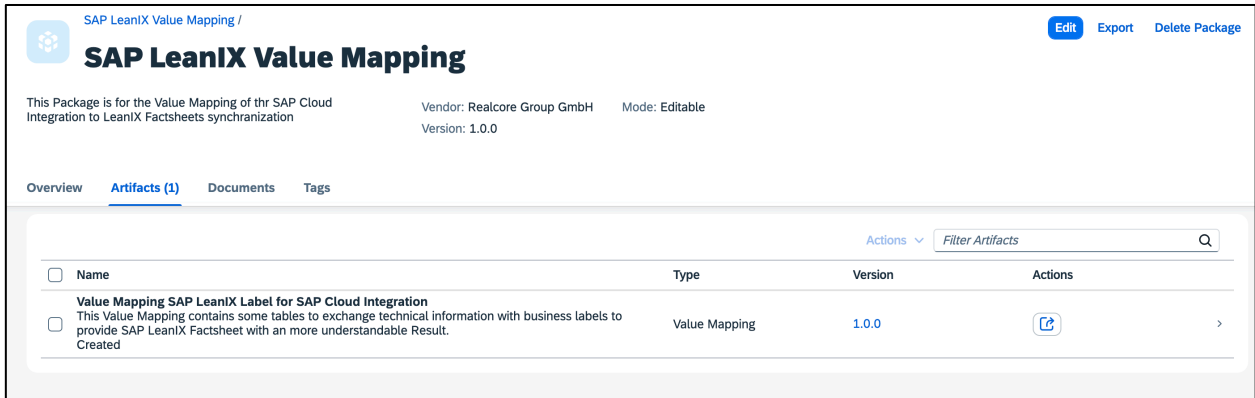
You need to consider the following technical behavior of the Synchronization Flow:

1. Factsheet Name:
 - The Factsheet Name will be built by the following pattern: {Flow Name} from {Sender} to {Receiver}
 - If the Flow Name already contains the text “ from ”, the sender will not be added to the Factsheet Name
 - If the Flow Name already contains the text “ to “, the receiver will not be added to the Factsheet Name
2. Description:
 - The description will be replaced every time the interface runs. So be aware: When you enter your own description, the next run would overwrite your texts!
3. External ID:
 - The Flow ID will be set as External ID because it's unique on your SAP Cloud Integration. And it's needed for the synchronization to determine if the Factsheet needs to be created or if it is already existing and needs to be updated.

3.6 (Optional Feature) Configure SAP LeanIX Labels in Value Mapping for SAP LeanIX

May you are not satisfied with the generated Factsheet Name, because the Flow Name (or Sender and Receiver) is to technical and not understandable for most users and also doesn't represent the interface or the process your company is using it for.

For this occasion, you can control the Factsheet Name creation by configuring the Value Mapping that can be created by running the Optional Feature in [3.7](#). This Chapter is focused on the functionality of the Value Mapping.



The Value Mapping consists of 2 different transformations:

1. For Sender and Receiver:

Agency	Identifier	⇔	Agency	Identifier
SAPCI_Component	Name	⇔	LeanIX_Application	Label

2. For Flow / Interface

Agency	Identifier	⇔	Agency	Identifier
SAPCI_Interface	Name	⇔	LeanIX_Interface	Label

Here an example how this works:

In the current Example the technical names are:

Flow Name: Replicate Contract from SAP Business Suite

Sender: SAPS4HANA

Receiver: SAPCloudforCustomer

In the Value Mapping we define for the Interface the following transformation:

Value Mappings for		Search	Add	Delete All
SAPCI_Interface, Name	⇔	LeanIX_Interface, Label		
Replicate Contract from SAP Business Suite	⇔	Contract Replication		🗑️

And for the Sender and Receiver we define the following transformation:

Value Mappings for		Search	Add	Delete All
SAPCI_Component, Name	⇔	LeanIX_Application, Label		
SAPS4HANA	⇔	SAP S/4 Hana		🗑️
SAPCloudforCustomer	⇔	SAP Customer Cloud		🗑️

Now it's important to deploy the changes and we can re-run the Sync.

The flow now results in the following Factsheet Name:

Contract Replication from SAP S/4 Hana to SAP Customer Cloud 4%

Interface [Edit tags](#)

FactSheet Description: Automatically generated Description by SAP Cloud Integration Technical Detai... [Show more](#)

[Fact Sheet](#) [Subscriptions](#) [Comments](#) [To-Dos](#) [Resources](#) [Transformations](#) [Metrics](#) [Surveys](#) [Last Update \(2 minutes ago\)](#)

Information 14%

Name & Description	Name:	Contract Replication from SAP S/4 Hana to SAP Customer Cloud
	External ID:	com.sap.scenarios.s42c4c.contract.replicate
	Description:	FactSheet Description: Automatically generated Description by SAP Cloud Integration Technical Details from SAP Cloud Integration Flow Name: Replicate Contract from SAP Business Suite Flow Id: com.sap.scenarios.s42c4c.contract.replicate Sender: SAPS4HANA Receiver: SAPCloudforCustomer PackageId: SAPHybrisCloudforCustomerIntegrationwithSAPS4HANA Version: 2.2.3 Description: Contract Replication from and to SAP Business Suite Show less
	LeanIX v3 ID:	240005553

3.7 (Optional Feature) Preload Value Mapping for SAP LeanIX Label

This step will add up to the procedure described above in 3.6 and simplifies the process to create the value mapping.

The second flow provided in the package will search or pre-create the Value mapping in SAP Cloud Integration which can be used to store business labels for SAP LeanIX FactSheet titles.

Running the Flow for the first time, consider that if the Value Mapping ID is non existing in your Cloud Integration, the Value Mapping will be created. How to configure Value Mapping and Package creation is described in 3.7.2. Always consider using the same Value Mapping ID for multiple runs of the Integration Flow to ensure consistency and avoid duplicate mappings.

Two value mappings will be created by this flow, one for all found applications or systems and another one for all found interface names. Based on both, the new title will be written.

The screenshot displays the configuration interface for 'Value Mapping SAP LeanIX Label for SAP Cloud Integration'. It features a 'Bi-Directional Mapping' table with the following structure:

Agency	Identifier	↔	Agency	Identifier
SAPCI_Component	Name	↔	LeanIX_Application	Label
SAPCI_Interface	Name	↔	LeanIX_Interface	Label

Below this, there is a 'Value Mappings' section with a search bar and a table of mappings:

Value Mappings for	↔	LeanIX_Interface, Label
SAPCI_Interface, Name	↔	LeanIX_Interface, Label
Initial	↔	Initial
PR034_IF029_Poll_Folder_by_Fixed_Done_File	↔	...
PRo04_IFXXX_Test_Email_RC	↔	...
PR034_IF002_Timer-Initiated Scenario with External Data Source a...	↔	...
PR034_IF021_MIME_Multipart_Encoder_and_Decoder	↔	...

On the right side, there is a 'Usage' sidebar with the following text:

Usage:
ValueMap (Source agency, Source id)
Example:
ValueMap (SAPCI_Interface, Name,
ValueMap (LeanIX_Interface, Label,

Found interface details will be automatically stored on the left column. The right column will be pre-filled with a placeholder "...". In this case the integration flow realizes that the value is empty and does not change the output title description.

The interface expert can insert detailed names in this placeholder field per interface to transfer this information to the SAP LeanIX application as well. Afterwards, created FactSheets will contain the new title from the maintained values.

3.7.2 Configuration Parameters of Value Mapping Flow

This Integration Flow uses the same features that the main flow is already using (Simulation mode and debug mode), so it comes with nearly the same parameters which are already used in the first flow. To fully use the value mapping precreate flow the following parameters need to be configured first before Deployment:

Category	Name	Default	Mandatory parameter (X)	Description
Controlling	Ctrl_Simulation	true	X	With "isSimulationModeActive" the flow will only read data, but will not create or update any FactSheets in SAP LeanIX. In the Message Log you will find a summary what the

				Flow would have created or updated if it wasn't running in Simulation Mode
	Ctrl_TraceLevel	info	X	<p>Controls how much Information the Flow will provide in the Message Log.</p> <p>Defined Parameters are: info - Writes only necessary information into the message log debug - Write all available information in the message log which might be needed in case of unexpected error and behaviours.</p> <p>Careful: running a full load in debug mode will cause a very big logfile. We recommend to switch it to debug only if you want to check/test a small amount of flows.</p>
	Filter_Flow			Regex String which is used to control which information the flow is reading from SAP Cloud Integration
	Filter_Package			Regex String which is used to control from which Packages the flow is reading information in SAP Cloud Integration
	Filter_Receiver			Regex String which is used to control which information the flow is reading from SAP Cloud Integration
	Filter_Sender			Regex String which is used to control which information the flow is reading from SAP Cloud Integration
SAP Cloud Integration Connection	SAPCI_Authentication (tab receiver: "Authentication")		X	<p>Choose type of authentication to read SAP Cloud Integration objects.</p> <p>Valid values: Basic OAuth2 client credentials</p>
	SAPCI_Credentials (tab receiver: "Credential Name")		X	<p>Name of the Security Material created for calling SAP Cloud Integration API.</p> <p>See chapter 2.3</p>
	SAPCI_Hostname		X	Hostname of your SAP Cloud Integration OData API Url

Value Mapping Creation	Value Mapping - Package ID			Integration Package ID fitting the Naming Policies in the Tenant. Only needed for initial Run.
	Value Mapping - Package Name			Integration Package Name fitting the Naming Policies in the Tenant. Only needed for initial Run.
	Value Mapping ID		X	Value Mapping ID fitting the Naming Policies in the Tenant. This ID is used to find the Value Mapping after it has been created. Wrong ID leads to creation of a new Value Mapping in the Tenant.
	Value Mapping Name			Value Mapping Name fitting the Naming Policies in the Tenant.

3.7.3 Value Mapping Process Visualization

This chapter will show an example of how the Value Mapping entries are created by the Flow “Preload Value Mapping for SAP LeanIX Label with SAP Cloud Integration Details”.

The Value Mapping before the run for applications (Sender/Receiver):

Value Mapping SAP LeanIX Label for SAP Cloud Integration /

Value Mapping SAP LeanIX Label for SAP Cloud Integration

Bi-Directional Mapping Search

Agency	Identifier		Agency	Identifier
SAPCI_Component	Name	↔	LeanIX_Application	Label
SAPCI_Interface	Name	↔	LeanIX_Interface	Label
⋮				

Value Mappings: **Default Values:**

Value Mappings for Search Q

SAPCI_Component, Name	↔	LeanIX_Application, Label	
Initial	↔	Initial	

Usage:
ValueMap (Source agency, Source identifier, Target value);
Example:

The Value Mapping before the run for interfaces (Flows):

Value Mapping SAP LeanIX Label for SAP Cloud Integration /

Value Mapping SAP LeanIX Label for SAP Cloud Integration

Bi-Directional Mapping Search

Agency	Identifier	↔	Agency	Identifier
SAPCI_Component	Name	↔	LeanIX_Application	Label
SAPCI_Interface	Name	↔	LeanIX_Interface	Label

Value Mappings: Default Values:

Value Mappings for Search

SAPCI_Interface, Name	↔	LeanIX_Interface, Label	Usage: ValueMap (Source agency, Source identifier, Target value); Example:
Initial	↔	Initial	

Be aware that a full run could take several minutes because the SAP Cloud Integration API doesn't allow a parallel processing. In our example for inserting 1998 Flows and 81 applications the run took over 10 minutes:

Messages (20) << < 1 > >> | ↻

Artifact Name	Status
Preload Value Mapping for SAP LeanIX Label with SAP Cloud Integration Details Jun 12, 2024, 10:45:46	Completed 12 min 10 sec

You can find the parameter summary in the custom headers of the message, along with some runtime parameters starting with __, which will show you how many flows were found, filtered, and how many Factsheets were created successfully.

Custom Headers (18)	
Name	Value
__Flows after Filter:	2009
__Found Flows in filtered Packages:	2009
__Found Packages on SAP CI:	169
__Interfaces missing in Value Mapping	1940
__Packages after Filter:	169
__Systems missing in Value Mapping	81
__VM Interface Inserts Errors	0
__VM Interface Inserts Successfull	1940
__VM System Inserts Errors	0
__VM System Inserts Successfull	81
Ctrl_Simulation	false
Ctrl_TraceLevel	info
Filter_Flow	Not specified
Filter_Package	Not specified
Filter_Receiver	Not specified
Filter_Sender	Not specified
SAPCI_Credentials	LeanIX_Application
SAPCI_Hostname	rcg-...

Attached to the processed message you find the Flow Log

Attachments				
Name	Type	Modified At	Size	Actions
Flow Log	text/plain	May 31, 2024, 13:04:51	474 KB	↓

The Flow Log shows which SAP Cloud Integration flows were found and processed, and which data was added to the Value Mapping.

```

=====
Flow Log
=====
This output shows which ValueMappings doesn't exist and will be created during this Flow run. The flow is checking against existing ValueMappings but also against ValueMappings that would be created in current flow run
=====
null
=====
Check Flow:
No Value Mapping Entry found for Step 1 - Sender AS2 MDN Flow V2
Check Systems:
No Value Mapping Entry found for SAPCloudPlatformIntegration
No Value Mapping Entry found for ThirdParty
=====
Check Flow:
No Value Mapping Entry found for Step 3 - Receiver Communication Flow V2
Check Systems:
Value Mapping Entry found for SAPCloudPlatformIntegration: will already be created in this flow run
Value Mapping Entry found for ThirdParty: will already be created in this flow run
=====
Check Flow:
No Value Mapping Entry found for Step 1 - Sender Process Direct Communication Flow V2
Check Systems:
Value Mapping Entry found for ThirdParty: will already be created in this flow run
Value Mapping Entry found for SAPCloudPlatformIntegration: will already be created in this flow run
=====
Check Flow:
No Value Mapping Entry found for Step 2 - Interchange Processing Flow V2
Check Systems:
Value Mapping Entry found for SAPCloudPlatformIntegration: will already be created in this flow run
Value Mapping Entry found for SAPCloudPlatformIntegration: will already be created in this flow run
=====
Check Flow:
No Value Mapping Entry found for Step 1b - Write Message to Message queue
Check Systems:
Value Mapping Entry found for ThirdParty: will already be created in this flow run
Value Mapping Entry found for SAPCloudPlatformIntegration: will already be created in this flow run
=====

```

In the Value Mapping you should now find all possible (of the filtered) values for applications and interfaces:

Integrations and APIs / SAP LeanIX Integration with SAP Cloud Integration / Value Mapping SAP LeanIX Label for SAP Cloud Integration /

Value Mapping SAP LeanIX Label for SAP Cloud Integration

Bi-Directional Mapping Search

Agency	Identifier	↔	Agency	Identifier
SAPCI_Component	Name	↔	LeanIX_Application	Label
SAPCI_Interface	Name	↔	LeanIX_Interface	Label

Value Mappings: Default Values:

Value Mappings for Search

SAPCI_Component, Name	↔	LeanIX_Application, Label
Initial	↔	Initial
SAPERP	↔	...
SAPS4HANA	↔	...
ThirdParty	↔	...
SAPCloudPlatformAlertNotification	↔	...

Usage:
ValueMap (Source agency, Sou
Example:
ValueMap (SAPCI_Component,
ValueMap (LeanIX_Application,

4 Error Log and Debug Mode files

Both Integration Flows come with an extensive error handling to provide analytical support in case of issues and errors.

If you want to actively monitor a message transfer you can set the parameter “TraceLevel” to “debug”. The next run will contain comprehensive log files and custom headers in the monitoring area:

Custom Headers (18)	
Name	Value
__Flows after Filter:	55
__Found Flows in filtered Packages:	55
__Found Packages on SAP CI:	169
__LeanIX Inserted/Updated - Successful	45
__LeanIX not Inserted/Updated - Error	0
__Packages after Filter:	2
Ctrl_Batch_Size	10
Ctrl_FactSheet_Subtype	Not specified
Ctrl_Simulation	false
Ctrl_TraceLevel	debug
Filter_Flow	Not specified
Filter_Package	.*Stor.*
Filter_Receiver	Not specified
Filter_Sender	Not specified
LeanIX_OAUTH2_Credentials	LeanIX_Interface
LeanIX_Subdomain	demo-de
SAPCI_Credentials	LeanIX_Application
SAPCI_Hostname	rcg-rcc-dev.it-cpi024.cfapps.eu10-002.hana.ondemand.com

Attachments		
Name	Type	Modified At
__Start Properties	text/plain	Jun 12, 2024, 10:56:21
FactSheetMap	text/plain	Jun 12, 2024, 10:56:24
Flow Log	text/plain	Jun 12, 2024, 10:56:30
LeanIX Mutation Request	text/plain	Jun 12, 2024, 10:56:27
LeanIX Mutation Request	text/plain	Jun 12, 2024, 10:56:26
LeanIX Mutation Request	text/plain	Jun 12, 2024, 10:56:29
LeanIX Mutation Request	text/plain	Jun 12, 2024, 10:56:30
LeanIX Mutation Request	text/plain	Jun 12, 2024, 10:56:28
LeanIX Mutation Request	text/plain	Jun 12, 2024, 10:56:25
LeanIX Mutation Response	text/plain	Jun 12, 2024, 10:56:29
LeanIX Mutation Response	text/plain	Jun 12, 2024, 10:56:30
LeanIX Mutation Response	text/plain	Jun 12, 2024, 10:56:26
LeanIX Mutation Response	text/plain	Jun 12, 2024, 10:56:27
LeanIX Mutation Response	text/plain	Jun 12, 2024, 10:56:28
LeanIX Mutation Response	text/plain	Jun 12, 2024, 10:56:28
LeanIX Query Response	text/plain	Jun 12, 2024, 10:56:24
SAP CI Flows after Filter	text/plain	Jun 12, 2024, 10:56:22
SAP CI Flows before Filter	text/plain	Jun 12, 2024, 10:56:22
SAP CI Packages after Filter	text/plain	Jun 12, 2024, 10:56:22

Custom Headers that start with a double underscore “__” indicate a runtime value like how many Flows or Packages were found in the system.

Custom Headers without this naming convention indicate a parameter that has been configured.

4.1 Expected Errors and Solutions

This chapter contains all issues we have faced during testing and development together with its solution.

4.1.1 Entity may not be null

```
CPI Helper - Content Before Step

1 1
Properties Headers Body Log Info Error

com.google.common.util.concurrent.UncheckedExecutionException: java.lang.IllegalArgumentException: Entity may not be null, cause:
java.lang.IllegalArgumentException: Entity may not be null
```

Reason:

3410728 - java.lang.IllegalArgumentException: Entity may not be null

Within your tenant, you have not correctly maintained the scope in your Oauth Client credentials that are being used in this scenario.

Solution:

Enter * in Scope of the OAUTH2 Security Material

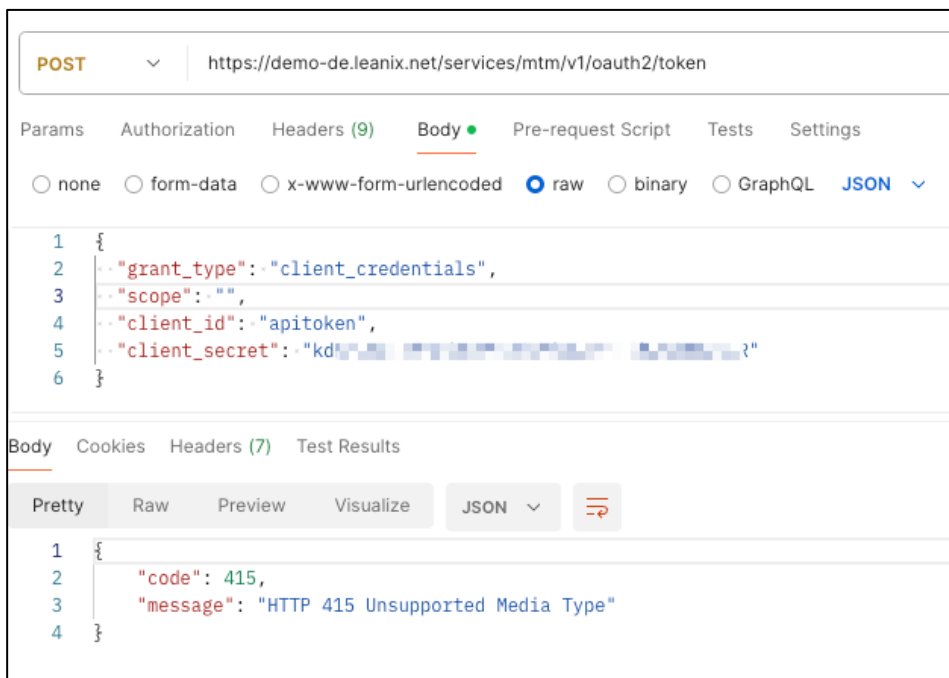
4.1.2 HTTP 415 Unsupported Media Type

```
Properties Headers Body Log Info Error

com.google.common.util.concurrent.UncheckedExecutionException: java.lang.IllegalArgumentException: Status code:415; Reason:
{"code":415,"message":"HTTP 415 Unsupported Media Type"}, cause: java.lang.IllegalArgumentException: Status code:415; Reason:
{"code":415,"message":"HTTP 415 Unsupported Media Type"}
```

Reason:

When in the security material Content Type “application/json” is chosen this error occurs. It happens because the SAP LeanIX Server isn’t supporting this Content Type to Request an OAUTH2 Token. You can simulate this via Postman:



Solution:

Switch to Content Type: **application/x-www-form-urlencoded** in the Security Material and the error shouldn't occur again.

5. Final Words and Feedback

Thanks for reading through this documentation and installing the Integration Content in your SAP Integration Suite. Since this content will evolve in its functionality from time to time we would love to hear from you. Please do not hesitate to give us some feedback whether you like the content or not. In case of missing features we are happy to hear your ideas. We will examine if we can integrate it in the future.