Installation and Configuration Guide
for SAP Sustainability Footprint Management Integration
Accelerator V2

Table of Contents

PURPOSE OF THIS DOCUMENT

This document provides details of the installation and configuration steps for the Integration accelerator consulting package for SFM for **Corporate and Products** integration into ECC 6 EhP7. This document is not a replacement for standard SFM product scope. For detailed product information, please refer to the standard help document of SAP Sustainability Footprint Management.

If you are interested in the details of scope of the Integration Accelerator package, please refer to the Detailed Scope Document which comes with this package.

This document offers configuration steps and information on loading the data for **Corporate and Products** option available in SFM.

HIGH LEVEL SCOPE AND APPROACH

The SAP Sustainability Footprint Management Integration Accelerator aims to speed-up the implementation of SAP SFM with ECC 6.0 EhP7.

The offering provides an ABAP based integration package, which comes with prebuilt integration content, which can be deployed to act as a fast-starting point for customers to integrate their SFM solution to their backend SAP system. The integration content helps in selecting, extracting and pushing the relevant data from the backend tables into the cloud based SFM solution for **Corporate and Products** via the SFM push API interfaces.

This document describes the steps involved in installing and configuring the SFM Integration Accelerator Package for **Corporate and Products**.

TECHNICAL PREREQUISITE FOR INSTALLING THE PACAKGE
The below technical software component is the minimum version prerequisite for successfully installing and using the accelerator package

SAP ERP	ECC 6.0 EHP 7 SP16 (03/2018)
SAP_BASIS	740 Package Level 0019

USER ASSISTANCE - SAP Sustainability Footprint Management
For any technical assistance for SFM Integration Package, you can create support tickets accessing SAP ONE Support Launchpad using Ticket Component: SV-COE-VPT-PFM.

For the user assistance for SAP Sustainability Footprint Management, see Application Help for Corporate and Products.

SAP Sustainability Footprint Management provides a public API for data replication. To be able to push data from your system you need to configure the inventory scope in SAP Sustainability Footprint Management – Corporate and Product. Please refer to this link in order to configure the inventory scope.

Note:

To get started with SAP Sustainability Footprint Management use the standard procedures for the SAP BTP, Cloud Foundry environment. For an overview of the required steps, see [Getting Started in the Cloud Foundry Environment](#).

The following prerequisites must be fulfilled:

- An SAP BTP account

- Members are added to the SAP BTP account

- An SAP BTP Cloud Foundry subaccount is created and enabled

Subscribing to Services

Subscribe to the following services in the SAP BTP cockpit.

- SAP Sustainability Footprint Management

For more detailed instructions, see [SFM Initial Setup](#) and [Subscribe to Multitenant Applications Using the Cockpit](#).

UPGRADING FROM V1 TO V2

This section is relevant for users upgrading from V1 to V2, as several changes have been introduced regarding the handling of various entities. Below is a detailed overview:

1. Production Document Entity

- **Changes**:
    - The Production Document entity has been removed from the Service Group `ORG` ("Organization data" report).
    - A new Service Group `PROD_DOC` has been introduced in V2 specifically for Production Documents.
- **Impact**:
    - In V1, the replication of Production Documents was included within the Organization data report.
    - In V2, Production Document replication is now managed through a dedicated replication report.

2. Cost Center Entity

- **Changes**:
    - The Cost Center entity has been removed from the Service Group `ORG` ("Organization data" report).
    - A new Service Group `COST_CNTR` has been introduced in V2 specifically for Cost Center.
- **Impact**:
    - In V1, the replication of Cost Center data was included within the Organization data report.

o   In V2, Cost Center replication is managed through a separate replication report.

3. Project Entity

- **Changes**:
  - o The Project entity has been removed from the Service Group `ORG` ("Organization data" report).
  - o A new Service Group `PROJECT` has been introduced in V2 specifically for Project.
- **Impact**:
  - o In V1, Project replication was included within the Organization data report.
  - o In V2, Project replication is now managed through a dedicated replication report.

4. New Entities for Currency Conversion

- **Overview**:
  - o V2 introduces new entities for Currency Conversion:
    - Exchange Rate Data
    - Exchange Rate Factors
    - Exchange Rate Quotation
    - Exchange Rate Type
- **New Report**:
  - o A report `/VPCOE/SFM_CURRENCY_CONVERSION` has been introduced to handle these entities, offering a comprehensive solution for Currency Conversion replication.

5. Generate Fiscal Period Report

- **Purpose**:
  - o To enable replication of transactional data based on fiscal periods, quarters, or years using the integration accelerator, users must execute the `/VPCOE/SFM_GENERATE_FISCAL_PRD` report.
- **Details**:
  - o The report populates fiscal year variant data in VPCOE tables (e.g., Calendar Date, Fiscal Year, Fiscal Period, Fiscal Quarter, Start/End Dates).
  - o The data is used exclusively for integration accelerator logic and has no other system impact.
- **Limitations**:
  - o Special periods are not supported by integration accelerator V2, as they are not covered in SFM. For more details, refer to the [Master Data Entities documentation](#).
- **Prerequisite**:
  - o This report must be executed for both calendar-based and fiscal period-based replication.

6. New entities for Periodicity replication

- **Purpose**:

  To enable the replication of new entities for periodicity feature:

  - o **Period Variant**
  - o **Fiscal Period**
  - o **Ledger**

- **Prerequisite**:

    Before executing this report, user must generate the fiscal periods data to be used in accelerator logic.

    For more details please have a look at the [Loading periodicity data.](#)

7. Periodic Data Report

- **Enhancements**:
    - A periodicity feature has been added to align with SFM capabilities.
    - A new field 'Period' has been added to select the required period to replicate the data
    - The report now allows replication of transactional data based on the periodicity selected in the SFM inventory scope.
- **Details**:
    - For monthly replication, there are no changes.
    - For yearly, quarterly, or other fiscal periods:
        - A new input field has been added for users to select the desired period.
        - The start and end dates of the selected period are automatically calculated, ensuring accurate selection of relevant material documents.

        For more details on the report, please see [Loading Periodic documents.](#)

Recommendations

Please ensure that your configurations and replication processes are updated to align with these changes. Review all relevant documentation and reports to verify compliance with the new V2 functionalities.

Additional Scope with Version 2.1

Key Highlights:

- **New Entities Added to Support Transportation Management in SFM:**
    - Business Partner (BP) Entity
    - Custom Temperature Condition Entity
    - Temperature Condition Entity (for handling the mapping to SFM temperature codes)
- **Enhancements to Existing Entities:**
    - Product Entity extended with Custom Temperature Condition ID
    - Plant Entity extended with Address Details

Recommendations:

- Ensure that **BP master data, temperature conditions, and plant address data** are fully maintained in the backend system before replication.
- Update existing replication jobs and configurations to include the new entities and attributes where relevant.
- Maintain mapping of custom temperature condition codes to SFM temperature codes to avoid inconsistencies during replication. This step is optional as it can be done using available upload file on SFM.

- Decide if geolocation data (latitude and longitude) needs to be replicated from ECC system as well or let SFM calculate it based on address details

Additional Scope with Version 2.2

Key Highlights:

• Enhancements to Periodic Data Replication:

   o **Customer-Level Granularity for Transactional Data**
The goods movement entities:

- *Goods Issue to Customer*
- *Customer Return*

now support optional **Customer ID level granularity**.

If Customer ID is available in the goods movement reference and passed to SFM, aggregation will be performed at Customer level as well.

Note: No additional selection parameter has been introduced in the Periodic Data report for Customer ID.

• Enhancements to Business Partner Entity:

   o **Customer Support Added to Business Partner Replication**
The Business Partner report now supports replication of Customers (Role: FLCU01)

Customer replication is handled exclusively via the Business Partner report.
No separate Customer report or API has been introduced.

Note: Customer ID as a selection filter is not introduced in the report.

• Address Data Retrieval Enhancement (CVI & Non-CVI Support):

   o **Fallback Logic for Supplier and Customer Address Data**

To ensure compatibility across:

- ECC systems with CVI implemented
- ECC systems without CVI or not fully rolled out
- S/4HANA systems

a fallback logic has been introduced for reading address data.

Address determination sequence:

1. Read from BP address table (BUT021_FS)
2. If no BP address found:
   - For Suppliers → read from LFA1
   - For Customers → read from KNA1

Outcome:
Supplier and Customer address data is correctly determined regardless of CVI implementation status.

Recommendations:

• If transport footprint calculation is required, ensure that Business Partner data for both Suppliers and Customers is maintained correctly in the backend system.

• Ensure that Customer references in goods movement documents are properly maintained to enable Customer-level aggregation in SFM.

INSTALLATION OF TRANSPORT REQUESTS ON SYSTEM

Prerequisites:
Authorizations for the following transactions:

- CG3Z in client 000 or any other needed client to upload transport files (or authorization to execute Function Module ARCHIVFILE_CLIENT_TO_SERVER)
- STMS to import transport files

As a first step, the provided packages have to be imported into your ECC or S/4 HANA system. Follow the below steps to import the necessary SFM integration accelerator packages.

Copy provided files

For installing SFM development integration package on the backend ECC or S/4 HANA system it is necessary to copy the provided files on the system on which SAP is installed. (e.g. TR files: *K900446.BP7 & R900446.BP7*). Copy all the files provided.

Please read the file ReadMe.txt shared together with the TRs files, explaining the TRs shared and sequence to be installed in more particular way.
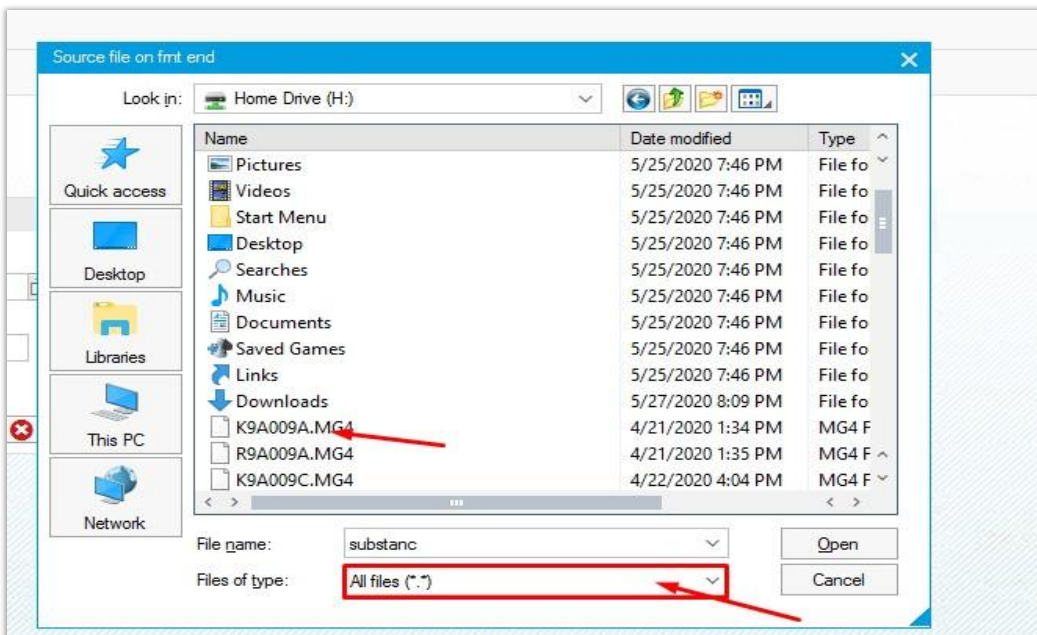
Note: the screenshots for uploading and installing the TRs are using sample TRs and are for your reference only

Upload Transport Files

In your system open necessary client and upload transport files on system server.
Open transaction '*CG3Z*' (If transaction doesn't exist on the system see next step).
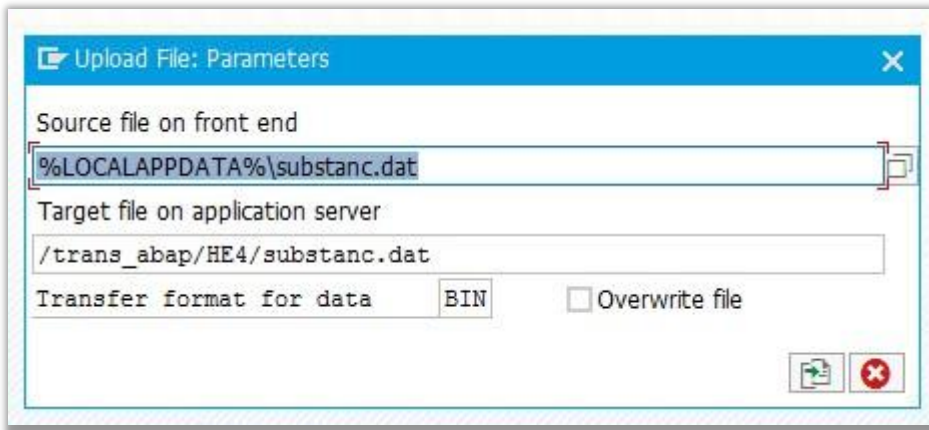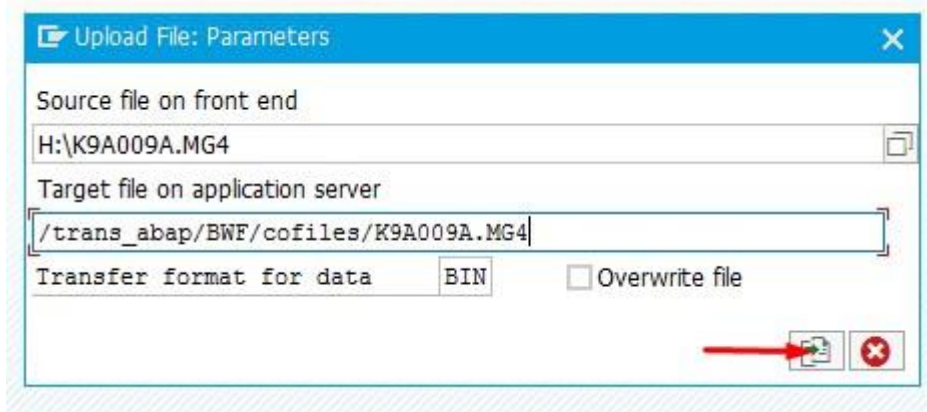
Choose transport files:

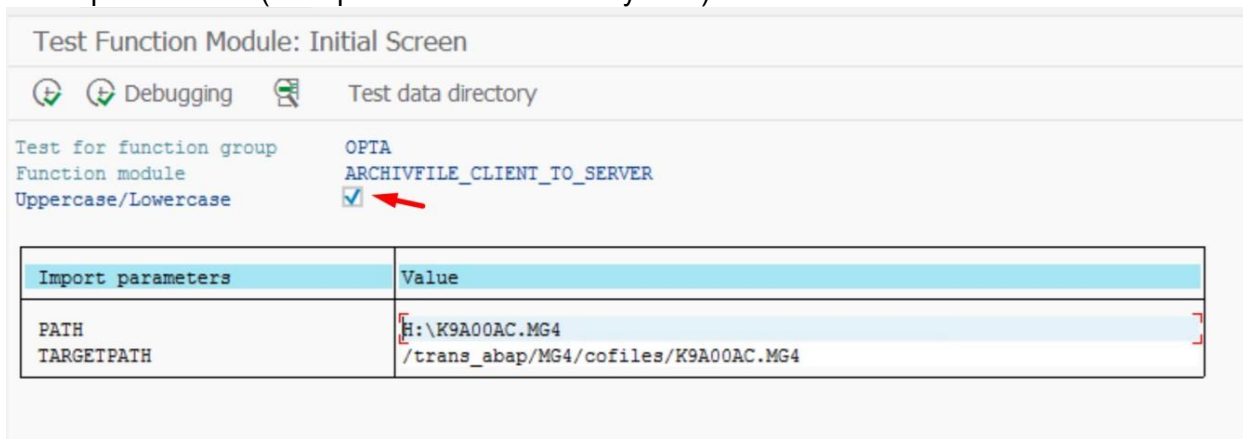Pay attention on files of type: All files.

Enter details on source file and target file on application server:
    1. /trans_abap/{system}/cofiles/{name transport file} (for file having
    first later 'K')
    2. /trans_abap/{system}/data/{name transport file} (for file having
    first later 'R')

    Note: For information on path configured on application server, use transaction
    'AL11'.

Press upload button (Ex. upload cofile on BWF system).

If '*CG3Z*' transaction doesn't exist on system, please follow below steps:

- Use Function Group: **OPTA**, function module: **ARCHIVFILE_CLIENT_TO_SERVER (execute FM using transaction code SE37)**
  Add the path where source files will be saved and also the server path (target file on application server). Use Uppercase/Lowercase flag.
- Enter details on source file and target file on application server:
  1. /trans_abap/{system}/cofiles/{name transport file} (for the file having first later 'K')
  2. /trans_abap/{system}/data/{name transport file} (for the file having first later 'R')
- Execute above steps for all provided transport files, for both, general objects and for SFM objects.

 Note: For information on path configured on your application server, use transaction 'AL11'.

Install Transport Requests
Please follow below steps to install all transport requests provided.

Note: Please note the order to install the transport requests (check also the ReadMe.txt file shared to you together with TRs, for any particular cases):
  1. TR for General Objects (mandatory pre-requisite for all other packages) and SFM Objects
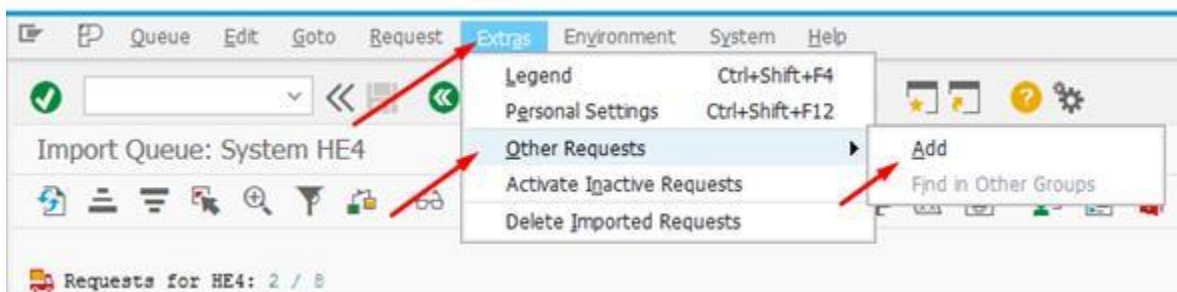 2. TR for SFM improvements and fixes, if any

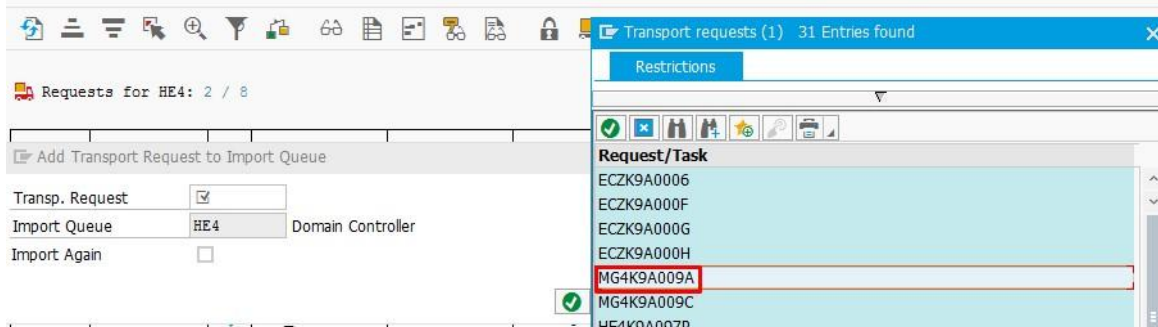1. Open transaction '*STMS*'. Click '**Import Overview** (F5)'
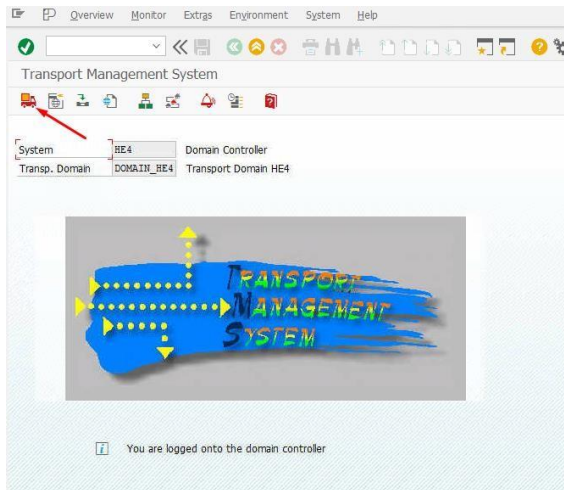
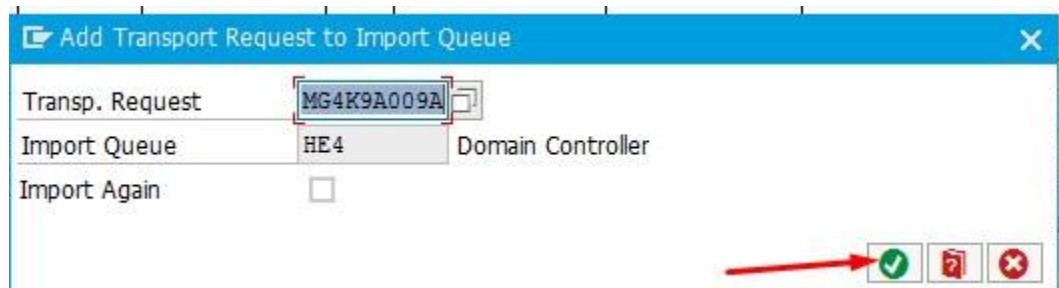2. Double-click on the entry with the name of your system:
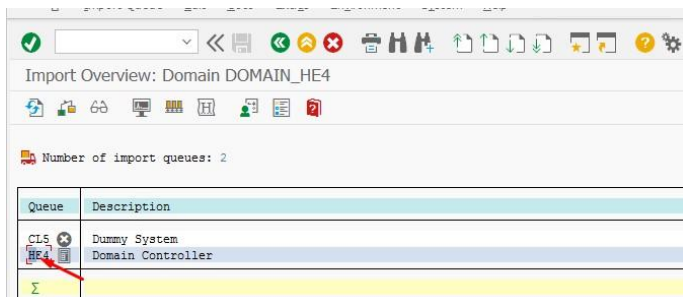
3. Add new transport request on the queue:

4. Choose necessary transport request (since 'K9A009A.MG4' file has been uploaded, 'MG4K9A009A' entry should be selected):
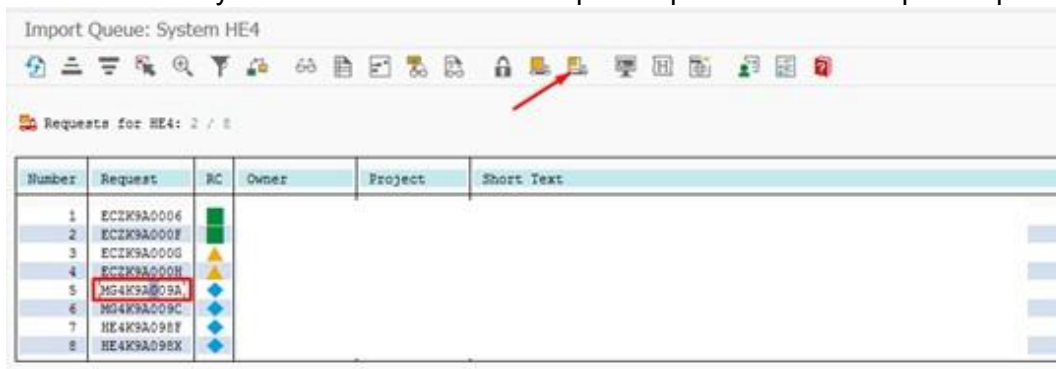
5. Choose the entry with the name of the transport request and click 'Import request':
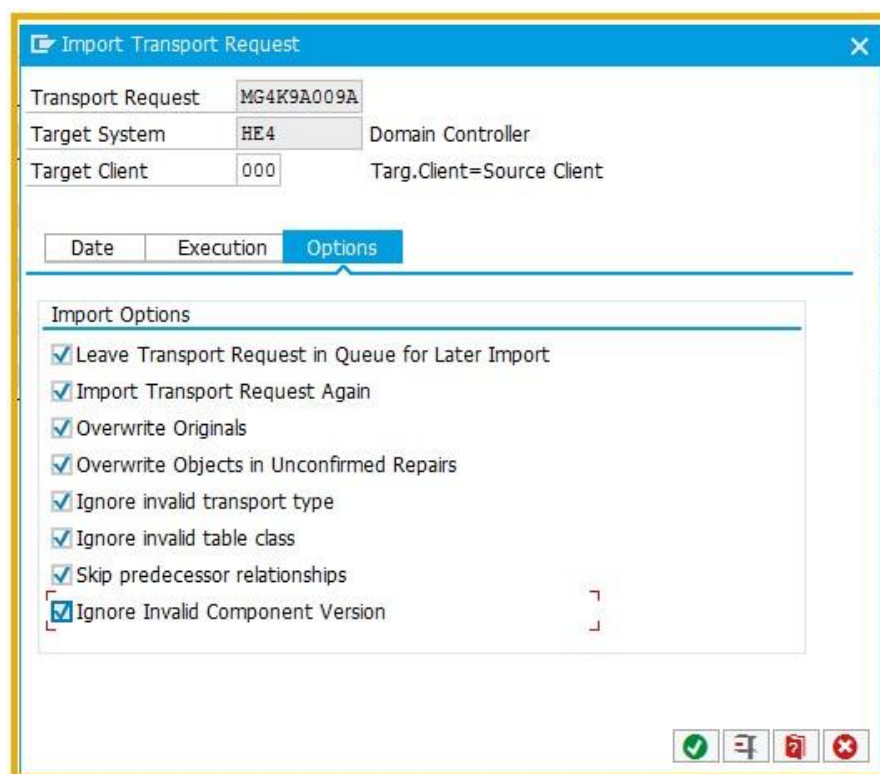
6. Enter target client and select all check boxes and press Continue. On the next screen click 'Yes':

PACKAGE CONTENT OVERVIEW

The packages contain the relevant code to select the required data from database and pushing them to the SFM endpoints.

The content of the packages contains integration reports covering:

Organizational Data

- o Company
- o Plant
- o Valuation Area
- o Controlling Area
- o Activity
- o Resource

Configuration Data

- o Unit of Measure*
- o Unit of Measure Dimension
- o Country
- o Region
- o Product Group
- o Product Type
- o Currency

Production Document data

Project data

Cost Center data

Currency Conversion

- o Exchange Rate Data
- o Exchange Rate Factors
- o Exchange Rate Quotation
- o Exchange Rate Type

Supplier data

Business Partner data

Product data

Custom temperature conditions

Temperature conditions mapping (optional report)

Periodicity data

- o Period Variant
- o Fiscal period **
- o Ledger

Transactional Data
- o Goods receipts from Supplier
- o Goods return to Supplier
- o Goods Receipt without Reference
- o Goods Issue without Reference
- o Goods Issue to Production
- o Goods Receipt from Production
- o Goods Issue for Customer
- o Customer return
- o Goods Transfer
- o Goods Issue for Cost Center
- o Goods Return from Cost Center

- o Goods Issue for Project
- o Goods Return from Project
- o Internal Service Confirmation
- o Opening Stock

*Please note that Integration accelerator is covering SAP Managed scenario only. It means, all unit of measures defined in table T006 are sent to SFM. Also, origin code 'SAP' it is used for any related entities having unit of measure data. For custom Unit of Measure, it is customer responsibility to upload custom unit of measures using specific template available at SFM and to specify the origin code for all related entities.

**Special periods are not replicated/supported in SFM. More details Master Data Entities | SAP Help Portal

Packages hierarchy and structures:

- */VPCOE/CLOUD_INTEGRATION* is the base package containing following sub-packages:
  - o */VPCOE/COMMON_INTEGRATION* containing common integration objects
  - o */VPCOE/SFM_INTEGRATION* containing *ERP* specific integration objects/reports for SFM Corporate and Product applications.

RFC CONNECTIONS

Once you have followed the above steps to import and install the transport packages, the next step is to configure the connectivity between the backend system and the SFM tenant.

Prerequisites

- ▪ Authorizations for the following transactions:
  - o SM59 to create an RFC destination
- ▪ Credentials of the SAP BTP tenant of the SAP Sustainability Footprint Management API:
  - o clientid
  - o clientsecret
  - o token endpoint URL
  - o landscape
- ▪ Establish the SSL connection to SAP BTP

  Follow this link to establish connection: Establish the SSL Connection to SAP BTP - SAP Help Portal

  Follow the instruction in note for downloading and importing BTP certificates: 2853519 - How to download the SSL certificate of SAP BTP - SAP for Me

The integration package invokes the SFM APIs via HTTP connection from the backend system. To support this, several RFC connections has to be created on the backend system.

Note: For SFM Integration package there is no need to configure OAuth Client 2.0

The following RFC destinations of type 3 – ABAP Connection has to be created in the backend system. (Transaction code '*SM59*')

RFC Connections for SFM ERP reports:

To create a new RFC destination, carry out the following steps:

1. Open transaction `SM59`

2. Choose *Create*.

3. Enter name `VPCOE_PFM_GENERIC` for the RFC destination.

4. Select connection type G (HTTP Connection to External Server).

5. On the **Technical Settings** tab, enter the following data:

    1. **Target Host**: `server endpoint URL`
       `(<tenant_name>.<landscape>.footprint.sustainability.cloud.sap)`

       Ex: *mysfmtenant.eu20.footprint.sustainability.cloud.sap*

    2. **Port**: `443`

6. On the **Logon & Security** tab

    1. Set **Do not use a user**.

    2. Set **SSL to Active**.

RFC Destination VPCOE_PFM_GENERIC

Connection Test

RFC Destination   VPCOE_PFM_GENERIC
Connection Type   G   HTTP Connection to External Serv   Description
Description
Description 1
Description 2
Description 3

Administration   Technical Settings   Logon & Security   Special Options

Logon Procedure
Logon with User
◉ Do Not Use a User
○ Basic Authentication
    User
    PW Status   is initial

Logon with Ticket
◉ Do Not Send Logon Ticket
○ Send Logon Ticket Without Ref. to a Target System
○ Send Assertion Ticket for Dedicated Target System
    System ID   Client

Security Options
Status of Secure Protocol
SSL   ○ Inactive   ◉ Active
SSL Certificate   DFAULT SSL Client (Standard)   ⌄ Cert. List

Authorization for Destination

7. On the **Special Option** tab

1. Set **HTTP Version to 1.1**.

RFC Destination VPCOE_PFM_GENERIC

Connection Test

RFC Destination   VPCOE_PFM_GENERIC
Connection Type   G   HTTP Connection to External Serv   Description
Description
Description 1
Description 2
Description 3

Administration   Technical Settings   Logon & Security   Special Options

Timeout
◉ ICM Default Timeout
○ No Timeout
○ Specify Timeout   0   Timeout in Seconds (1 to 9999999)

HTTP Setting
Status of HTTP Version
HTTP Version   ○ HTTP 1.0   ◉ HTTP 1.1
Compression Status
Compression   ◉ Inactive
                         ○ Active (Depends on MIME Type)
                         ○ Active (Whole Document)

Status of Compressed Response
Compressed Response   ◉ Yes   ○ No

HTTP Cookies
Type of Cookies Acceptance
Accept Cookies   ◉ No
                         ○ Yes (All)
                         ○ Input Prompt
                         ○ Trigger Event

Create another RFC destination for OAuth token following below steps:

1. Open transaction `SM59`

2. Choose *Create*.

3. Enter name `VPCOE_PFM_OAUTH` for the RFC destination.

4. Select connection type G (HTTP Connection to External Server).

5. On the **Technical Settings** tab, enter the following data:

    1. **Target Host**: `authentication endpoint (`
       `<tenant_name>.authentication.<landscape>.hana.ondemand.com)`

       Ex: *mysfmtenant.authentication.eu20.hana.ondemand.com*

    2. **Path prefix**: `/oauth/token`

    3. **Port**: `443`

6. On the **Logon & Security** tab

    1. Set **Basic Authentication**

    2. Enter **username** and **password**

    3. Set **SSL to Active**.

7. On the **Special Option** tab

    1. Set **HTTP Version to 1.1**.

8. Save

Note: The token URL, user and the password (clientid and clientsecret) to be used can be found in the SAP Business Transformation Platform Cockpit, as described here.

Also, when you test the RFC connection VPCOE_PFM_OAUTH, please ignore the error message '{"error":"invalid_request","error_description":"Missing grant type"}' as grant type is handled by the SFM Integration accelerator package itself.

ADD SETTINGS FOR EACH SERVICES

Once you have setup the RFC connections following the above steps, then the next step to be done is to add the required configuration settings to the services.

Open transaction 'SM34'. Enter /VPCOE/RDP_SRV view cluster and click on 'Maintain' button. Select API type: SFM

On Service Group, click on necessary Service Group:
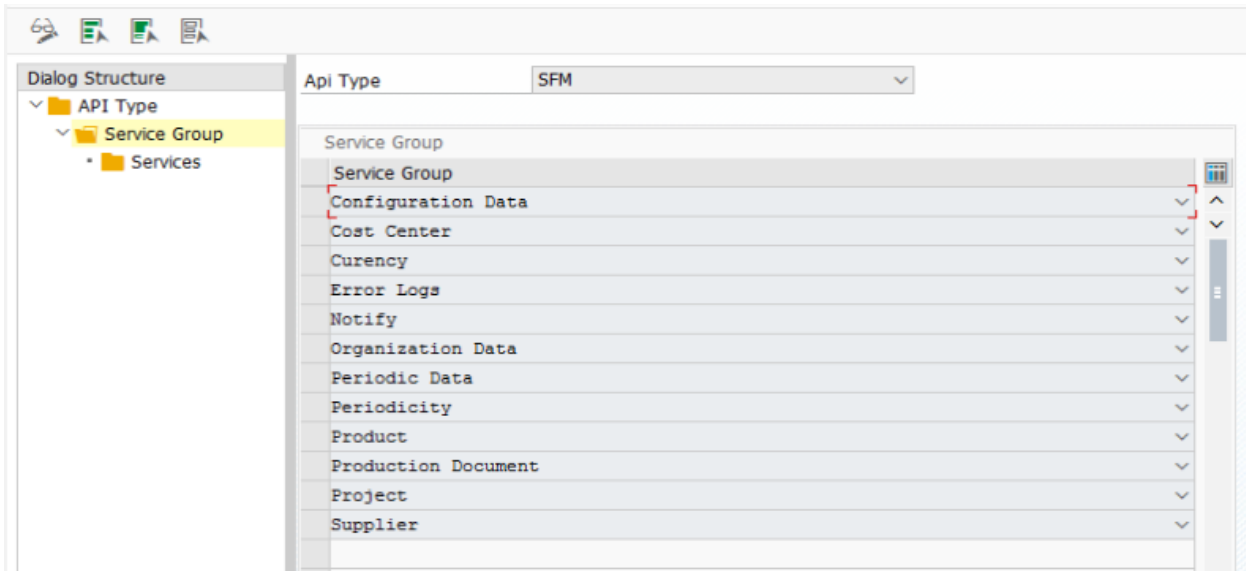
Add Path Prefix and Package Size for each service and save. The maximum package size to be used is 1000 for each of the SFM services:
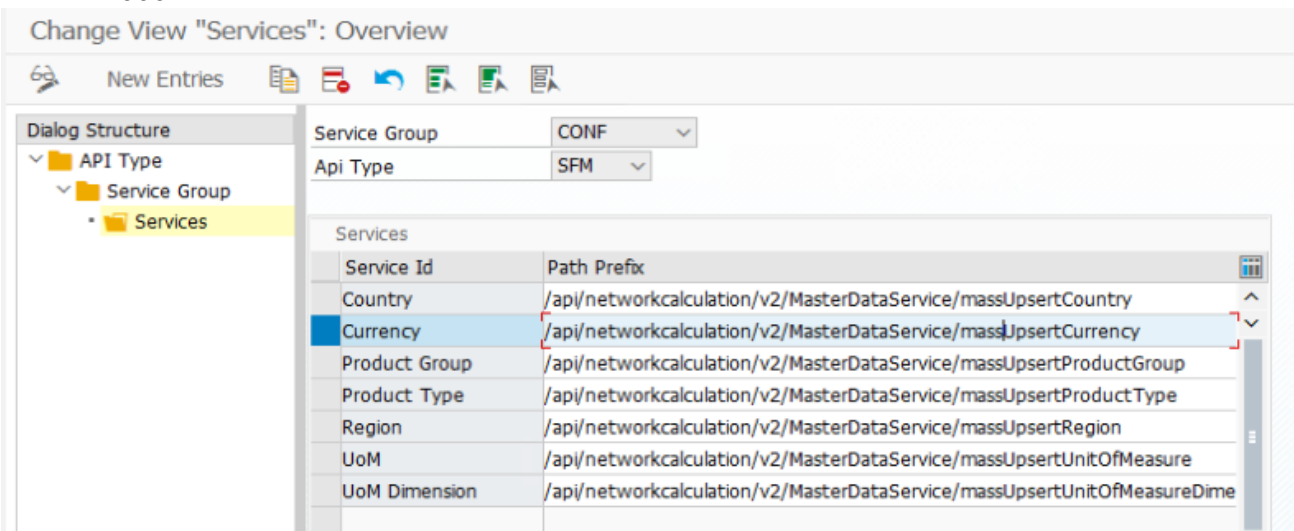
Note: WPCount represent the number of Work Processes to be used in parallel when data are sent to SFM for a specific service. WPCount is not used for all the services except Periodic Data replication (e.g. Material Documents) service, where the recommended WPCount to be set is 5.

Path prefix list for SFM API:

Configuration Data	
Country	/api/networkcalculation/v2/MasterDataService/massUpsertCountry
Product Group	/api/networkcalculation/v2/MasterDataService/massUpsertProductGroup
Product Type	/api/networkcalculation/v2/MasterDataService/massUpsertProductType
Region	/api/networkcalculation/v2/MasterDataService/massUpsertRegion
UoM	/api/networkcalculation/v2/MasterDataService/massUpsertUnitOfMeasure
UoM Dimension	/api/networkcalculation/v2/MasterDataService/massUpsertUnitOfMeasureDimension
Currency	api/networkcalculation/v2/MasterDataService/massUpsertCurrency
Organization Data	
Activity	/api/networkcalculation/v2/MasterDataService/massUpsertActivity
Company	/api/networkcalculation/v2/MasterDataService/massUpsertCompany
Controlling Area	/api/networkcalculation/v2/MasterDataService/massUpsertControllingArea
Cost Center	/api/networkcalculation/v2/MasterDataService/massUpsertCostCenter
Plant	/api/networkcalculation/v2/MasterDataService/massUpsertPlant
Production Document	/api/networkcalculation/v2/MasterDataService/massUpsertProductionDocument
Resource	/api/networkcalculation/v2/MasterDataService/massUpsertResource
Valuation Area	/api/networkcalculation/v2/MasterDataService/massUpsertValuationArea
Project	
Project	/api/networkcalculation/v2/MasterDataService/massUpsertProject
Product	
Product	/api/networkcalculation/v2/MasterDataService/massUpsertProduct
Supplier	
Supplier	/api/networkcalculation/v2/MasterDataService/massUpsertSupplier
Periodicity	
Fiscal Period	/api/networkcalculation/v2/MasterDataService/massUpsertFiscalPeriod
Ledger	/api/networkcalculation/v2/MasterDataService/massUpsertLedger
Period Variant	/api/networkcalculation/v2/MasterDataService/massUpsertPeriodVariant
Currency	
Exchange Rate Data	/api/networkcalculation/v2/MasterDataService/massUpsertCurrencyExchangeRateData
Exchange Rate Factors	/api/networkcalculation/v2/MasterDataService/massUpsertCurrencyExchangeRateFactor
Exchange Rate Quotation	/api/networkcalculation/v2/MasterDataService/massUpsertCurrencyExchangeRateQuotation
Exchange Rate Type	/api/networkcalculation/v2/MasterDataService/massUpsertCurrencyExchangeRateType
Exchange Rate Data	/api/networkcalculation/v2/MasterDataService/massUpsertCurrencyExchangeRateData
Periodic Data	
Customer Return	/api/networkcalculation/v2/PeriodicDataService/massInsertCustomerReturn
Goods Transfer	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsTransfer
Internal Service Confirmation	/api/networkcalculation/v2/PeriodicDataService/massInsertInternalServiceConfirmation
Issue for Cost Center	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsIssueForCostCenter
Issue for Customer	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsIssueForCustomer
Issue for Production	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsIssueForProduction

Issue for Project	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsIssueForProject
Issue without Reference	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsIssueWithoutReference
Opening Stock	/api/networkcalculation/v2/PeriodicDataService/massInsertOpeningStock
Receipt from Production	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsReceiptFromProduction
Receipt from Supplier	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsReceiptFromSupplier
Receipt without Reference	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsReceiptWithoutReference
Return from Cost Center	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsReturnFromCostCenter
Return from Project	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsReturnFromProject
Return to Supplier	/api/networkcalculation/v2/PeriodicDataService/massInsertGoodsReturnToSupplier
Error Logs	
Master Error Logs	/api/networkcalculation/v2/MasterDataService/massInsertReplicationLog
Periodic Error Logs	/api/networkcalculation/v2/PeriodicDataService/massInsertReplicationLog
SFM Notification services ('Notify' Service Group)	
Data Type Code	/api/networkcalculation/v2/MasterDataService/MasterDataTypeCode
Notify End	/api/networkcalculation/v2/MasterDataService/notifyOfEndOfReplication
Notify Start	/api/networkcalculation/v2/MasterDataService/notifyOfStartOfReplication
Partial Notify Start	/api/networkcalculation/v2/PeriodicDataService/notifyOfPartialRestartOfReplication
Periodic Notify End	/api/networkcalculation/v2/PeriodicDataService/notifyOfEndOfReplication
Periodic Notify Start	/api/networkcalculation/v2/PeriodicDataService/notifyOfStartOfReplication
Runid Scope	/api/networkcalculation/v2/PeriodicDataService/PeriodicDataReplication?$filter
Scope	/api/networkcalculation/v2/PeriodicDataService/FootprintInventoryScope

CREATE AND ACTIVATE CHANGE POINTERS

Through Change Pointer's mechanism if any master data field value is changed in SAP like Material master, Vendor master etc. through standard t-code like MM01, MM02, VA01, VA02, the corresponding records will be created in change pointers tables (BDCP, BDCPS).

SFM Integration package installation does not create the change pointers automatically. Change pointers needs to be created and activated manually.

Services using change pointers mechanism:

- Product

- Supplier

By default, SFM Integration reports are using specific change pointers listed below. These separate message types below need to be created and it's not recommended to re-use existing message types used in other processes also:

- /VPCOE/PRODUCT
- /VPCOE/SUPPLIER

Also please make sure the minimum change items described below are assigned to the corresponding message types.

Follow the steps below to create the change pointers/ message types for each of the services and activate them:

1. Create message type (tcode WE81)

Message Type	Short Text
/VPCOE/PRODUCT	Product
/VPCOE/SUPPLIER	Supplier

2. Assign change items to message type (tcode BD52)
   Assign the tables and the corresponding fields to each message type.
   Following are the minimum items to be assigned for each message type, but you can add other fields, based on your needs:

Message type:	Object	Table name	Filed name
/VPCOE/PRODUCT	MATERIAL	DMAKT	MAKTX
	MATERIAL	DMARM	KEY
	MATERIAL	MARA	KEY
	MATERIAL	MARA	LVORM
/VPCOE/SUPPLIER	KRED	LFA1	KEY
	KRED	LFA1	LOEVM
	KRED	LFA1	NAME1
	KRED	LFA1	NODEL
	KRED	LFB1	KEY

3. Activate change pointers generally (tcode BD61)

4. Activate change pointers corresponding to fields in message types (tcode BD50).
   Set Active flag for each of the message type created and save it.
5. Also check if the data elements of all the required fields has 'change Document' field checked (Below screen shot for Material Number)

ADD MAXIMUM LIMIT ON DATA REPLICATION

User can specify within the parameter /VPCOE/MAX_LINES maximum value of records to be selected for each variant for periodical data report. Each customer needs to decide the maximum value based on their system parameters. If no value is provided or the parameter is not maintained in the system, integration accelerator will limit the replication up to 1.000.000 records per variant at a time.

Open transaction '*stvarv*'. Create new entry and add the name of parameter and value:
Name: /VPCOE/MAX_LINES

SFM INTEGRATION REPORTS AND AUTHORIZATIONS

Once you have done all the above steps successfully, your SFM integration accelerator is ready to use.

Report list included in the integration accelerator package:

Development Package	Report Name	Transaction Code
/VPCOE/SFM_INTEGRATION	/VPCOE/SFM_CONFIGURATION_DATA	/VPCOE/SFM_CONFDATA
	/VPCOE/SFM_ORGANIZATION_DATA	/VPCOE/SFM_ORGDATA
	/VPCOE/SFM_COST_CENTER	/VPCOE/SFM_COST_CNTR
	/VPCOE/SFM_PROJECT	/VPCOE/SFM_PROJECT
	/VPCOE/SFM_CURRENCY_CONVERSION	/VPCOE/SFM_CURR_RATE
	/VPCOE/SFM_PRODUCTION_DOC	/VPCOE/SFM_PROD_DOC
	/VPCOE/SFM_PERIODICITY_DATA	/VPCOE/SFM_PERIODCTY
	/VPCOE/SFM_GENERATE_FISCAL_PRD	/VPCOE/SFM_GEN_FP
	/VPCOE/SFM_PRODUCT	/VPCOE/SFM_PRODUCT
	/VPCOE/SFM_SUPPLIER	/VPCOE/SFM_SUPPLIER
	/VPCOE/SFM_PERIODIC_DOC	/VPCOE/SFM_PER_DATA
	/VPCOE/TO_SFM	/VPCOE/SFM
	/VPCOE/REPROCESS_FAILED_DATA	/VPCOE/REPROCESSFAIL
	/VPCOE/SFM_END_NOTIFY	/VPCOE/ENDNOTIFY

Transaction code /VPCOE/SFM has been created to run the general report /VPCOE/TO_SFM.

If it's necessary, please create your own custom role with following authorizations and assign it to specific users to allow them to execute the transaction.

Authorizations needed to execute SFM accelerator transaction codes:

Object	Field 1	Value 1	Field 2	Value 2	Field 3	Value 3
S_TCODE	TCD	/VPCOE/SFM				
S_TCODE	TCD	/VPCOE/REPROCESSFAIL				
S_TCODE	TCD	/VPCOE/ENDNOTIFY				
S_TCODE	TCD	/VPCOE/SFM_CONFDATA				
S_TCODE	TCD	/VPCOE/SFM_ORGDATA				
S_TCODE	TCD	/VPCOE/SFM_PER_DATA				
S_TCODE	TCD	/VPCOE/SFM_PRODUCT				
S_TCODE	TCD	/VPCOE/SFM_SUPPLIER				
S_TCODE	TCD	/VPCOE/SFM_PROJECT				
S_TCODE	TCD	/VPCOE/SFM_COST_CENTER				
S_TCODE	TCD	/VPCOE/SFM_CURRENCY_CONVERSION				

Object	Field 1	Value 1
S_TCODE	TCD	/VPCOE/SFM_PRODUCTION_DOC
S_TCODE	TCD	/VPCOE/SFM_PERIODICITY_DATA
S_TCODE	TCD	/VPCOE/SFM_GENERATE_FISCAL_PRD

Authorization needed to execute /VPCOE/SFM transaction code:

Object	Field 1	Value 1	Field 2	Value 2	Field 3	Value 3
S_TCODE	TCD	/VPCOE/SFM				
S_GUI	ACTVT	61				
S_ALV_LAYO	ACTVT	23				
K_KEKO	KLVAR	*	BUKRS	*	ACTVT	3
W_BETR_USR	WERKS		ACTVT	F4		
M_BEST_EKO	ACTVT	03	EKORG	*		
M_MSEG_WMB	ACTVT	3	WERKS	*		
M_MATE_MAT	ACTVT	F4	BEGRU			
M_MATE_MAR	ACTVT	F4	BEGRU			
M_MATE_WGR	ACTVT	F4	BEGRU			
M_MATE_WRK	ACTVT	03	WERKS	*		

Authorization needed to execute /VPCOE/REPROCESSFAIL transaction code:

Object	Field 1	Value 1	Field 2	Value 2	Field 3	Value 3
S_TCODE	TCD	/VPCOE/REPROCESSFAIL				
S_GUI	ACTVT	61				
S_ALV_LAYO	ACTVT	23				
K_KEKO	KLVAR	*	BUKRS	*	ACTVT	3
W_BETR_USR	WERKS		ACTVT	F4		
M_MSEG_WMB	ACTVT	3	WERKS	*		
M_MATE_MAT	ACTVT	F4	BEGRU			
M_MATE_MAR	ACTVT	F4	BEGRU			
M_MATE_WGR	ACTVT	F4	BEGRU			
M_MATE_WRK	ACTVT	03	WERKS	*		

Please note that exact authorization setup can vary from customer to customer, and security team can determine and setup the roles with all authorizations required.

REPLICATE DATA TO SFM – Corporate and Products

The reports will extract needed data from your system, pack the data in the required format, and send them to SFM to be able to calculate your products footprint using Corporate and Product applications.

SFM Integration interfaces will support two scenarios to load the data (excepting organization and configuration data which only supports Initial load):

- **Initial Load** – In this case, all the objects selected based on filters criteria will be sent to SFM
- **Delta Load** – In this case, all changed (new, changed) business object instances from the last load will be sent to SFM.

Please note that the same replication report cannot be executed in parallel multiple times in both foreground or background mode.

The below steps describe how you can use the integration accelerator to load data into the SFM.

SFM ERP Integration reports

Each report in the package, for each service id, can be executed individually using transaction code SE38 or in background mode, in your preferred order.

Also, one general report is available, '/VPCOE/TO_SFM' which helps you to load the data to SFM for all services available from one single place. Transaction code /VPCOE/SFM has been created to execute /VPCOE/TO_SFM report.

General approach for loading the data

Master Data

- **Start and End Notification**:
  - When initiating a new master data replication, SFM must be notified of the start for a specific data type code.
  - Upon completion of the master data replication for that data type code in the backend system, SFM must be notified of the end of the replication.
  - Specific messages related to these actions can be viewed in the application logs.

Periodic Data Replication ID

- **Replication Initialization**:
  - When starting a new transactional data replication, SFM must be notified about the initiation of a periodic replication for a specific inventory scope and period defined in SFM.
  - A unique `ReplicationId` (GUID) is generated on SFM to track the status of each individual replication.
- **Replication Completion**:
  - After data replication is completed in the backend system, SFM must be notified to mark the replication as successfully completed.
  - Specific messages confirming this status can be viewed in the application logs.

Types of Data Loads

Initial Load (Full Upload)

- All objects selected based on filter criteria are sent to SFM.

Delta Load Flag

- Available only for master data reports.
- When selected, reports extract delta data using change pointers.

Single Entity Reload

- **Unsupported for Periodic Data**:
  - o Delta load is not available for periodic data replication.
  - o If replication errors (e.g., caused by business data issues) are corrected in the backend system, replication for a specific single entity can be restarted.
- **Process**:
  - o During a restart, data for the specific inventory scope and period is deleted entirely from SFM and reloaded.

Reprocess Failed Payloads

- For technical errors during replication (e.g., temporary connection loss), failed payloads are saved for reprocessing.
- Use the report `/VPCOE/REPROCESS_FAILED_DATA` to replicate failed payloads again.

Display Data Flag

- Allows users to preview data that will be sent to SFM based on selection parameters.
- Data is displayed on-screen but not sent to SFM.
- Results are shown after report execution.

Execution Modes

- **Background and Foreground**:
  - o Reports can be executed in both modes.
  - o Application logs are generated in both cases and can be reviewed using transaction code `SLG1`.
  - o In foreground mode, displayed data is limited to 50,000 records.

Master Data Reports Without Delta Load

- **Reports**:
  - o `/VPCOE/SFM_CONFIGURATION_DATA`
  - o `/VPCOE/SFM_ORGANIZATION_DATA`
  - o `/VPCOE/SFM_COST_CENTER`
  - o `/VPCOE/SFM_CURRENCY_CONVERSION`
  - o `/VPCOE/SFM_PERIODICITY_DATA`
  - o `/VPCOE/SFM_PRODUCTION_DOC`
  - o `/VPCOE/SFM_PROJECT`
- **Behavior**:
 - o These reports lack delta load functionality.

o   If data selected and sent via these reports changes over time, the replication to SFM must be executed again as an initial load. The Creation Date/Changed date selection parameter may be used to select date-dependent data for replication.

Master Data Reports Using Delta Load (Change Pointers)

- **Reports**:
  - o   `/VPCOE/SFM_PRODUCT`
  - o   `/VPCOE/SFM_SUPPLIER`
- **Functionality**:
  - o   These reports select all new or changed objects since the last replication using change pointers.

Instructions for Running Reports

1. Open transaction code `/VPCOE/SFM`.
2. Select the necessary Service ID.
3. Execute the report.
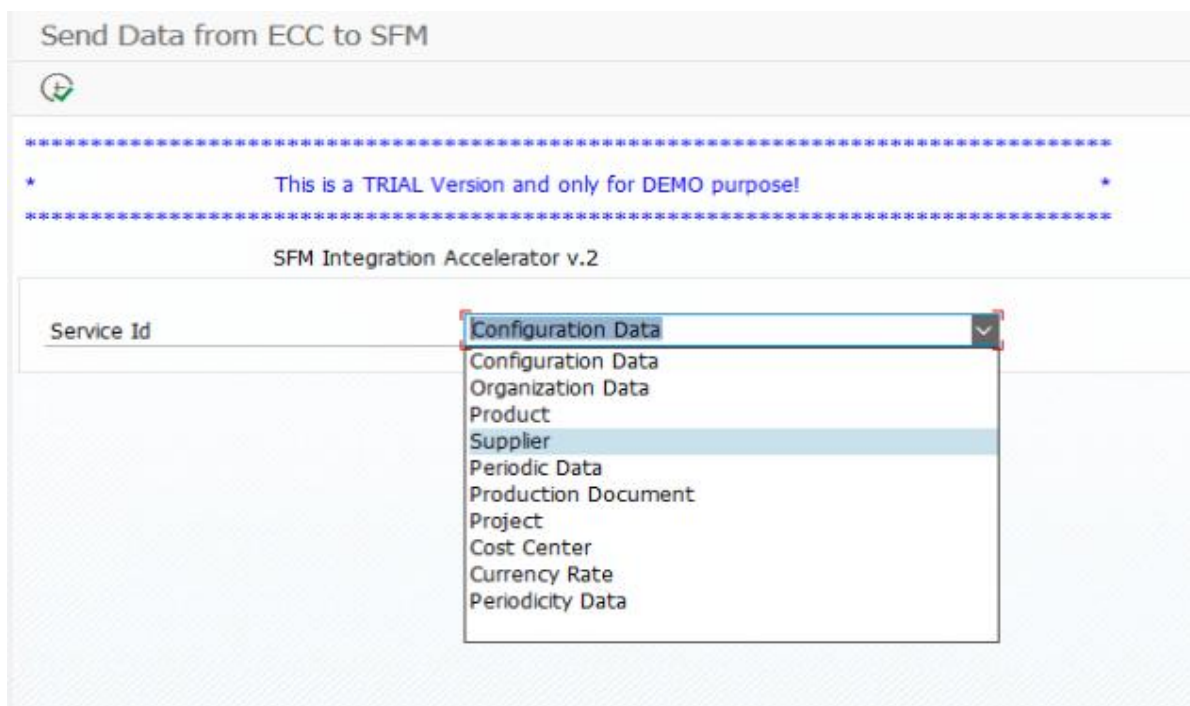
Additionally, you can execute the reports using available transaction codes or by running them in transaction code `SA38` with the report names.

Loading Configuration data

Access the Report

Open transaction code `/VPCOE/SFM` and select the service **'Configuration'**.
Alternatively, you can run transaction code `/VPCOE/SFM_CONFDATA` or execute the report `/VPCOE/SFM_CONFIGURATION_DATA`.

Execution Notes

Executing the Configuration report allows you to load specific configuration data related to the following entities:

- Unit of Measure
- Unit of Measure Dimension
- Country
- Region
- Product Type
- Product Group
- Currency

Note:

- You can select all services or only the required ones to send or resend data to SFM.
- For **Unit of Measure**, only the **SAP Managed** scenario is supported. This requires the following configurations in SFM:
  - **Solution code** should be set to 'S/4 Private Cloud (S4-ECC)'.
  - The checkbox **'Import UoM code'** must be selected.
- If the **'Import UoM code'** checkbox is not selected in SFM, you cannot send Unit of Measure data using the Configuration report.
- Uploading custom Unit of Measure data in SFM must be done using templates available in SFM, and it is the customer's responsibility.

Loading Currency Conversion

Access the Report

Open transaction code `/VPCOE/SFM` and select the service **'Currency Conversion'**. Alternatively, you can run transaction code `/VPCOE/SFM_CURR_RATE` or execute the report `/VPCOE/SFM_CURRENCY_CONVERSION`.

Execution Notes

Executing the Currency Conversion report allows you to load specific currency conversion data related to the following entities:

- Exchange Rate Types
- Exchange Rates
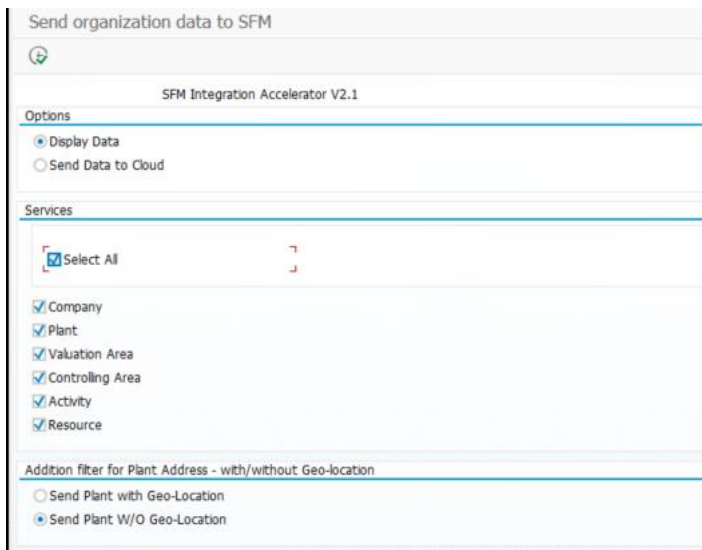- Exchange Rate Factors
- Exchange Rate Quotations

Note:

- You can select all services or only the required ones to send or resend data to SFM.
- Only Exchange Rate Type **'M'** is selected and replicated to SFM.

For additional details, refer to the **Master Data Consistency** section in the Master Data Consistency | SAP Help Portal.

Loading Organization data

Access the report

Open transaction code `/VPCOE/SFM` and select the service **'Organization data'**.
Alternatively, you can run transaction code `/VPCOE/SFM_ORGDATA` or execute the report
`/VPCOE/SFM_ORGANIZATION_DATA`.

Execution Notes

Executing the Organization Data report allows you to load specific organization data related to the following entities:

- Valuation Area
- Company Code
- Plant
- Controlling Area
- Activity
- Resource

Note:

- You can select all services or only the required ones to send data to SFM.
- For Plant entity, additional selection section is added to handle geolocation replication

  Geolocation Handling

  A dedicated section is provided for **Geolocation Handling**:

  - **Send Plant w/o Geolocation (Default):** *Let SFM calculate geolocation* – If latitude and longitude are not sent for Plant addresses, SFM will calculate them based on the Plant's Country and Postal Code.

  - **Send Plant with Geolocation:** *Send geolocation from ECC* – Allows sending Latitude and Longitude values directly from ECC if maintained. User can add own logic/external services in badi implementation to calculate the latitude and longitude, if needed

Loading Production document data

Access the report

Open transaction code `/VPCOE/SFM` and select the service **'Production Document'**. Alternatively, you can run transaction code `/VPCOE/SFM_PROD_DOC` or execute the report `/VPCOE/SFM_PRODUCTION_DOC`.

Notes:

- The Production Document report does not support Initial Load or Delta Load capabilities.
- Use the Creation Date selection parameter to select date-dependent data for replication.

Loading Cost Center data

Access the report

Open transaction code VPCOE/SFM and select service 'Production Document' (alternatively you can run the tcode /VPCOE/SFM_COST_CNTR or report /VPCOE/SFM_COST_CENTER

Notes:

- The Cost Center replication report does not support Initial Load or Delta Load capabilities.
- Use the 'Created On' selection parameter to select date-dependent data for replication.

Loading Project data

Access the report

Open transaction code VPCOE/SFM and select service 'Production Document' (alternatively you can run the tcode /VPCOE/SFM_PROJECT or report /VPCOE/SFM_PROJECT):

Notes:

- The Project replication report does not support Initial Load or Delta Load capabilities.
- Use the 'Created On' / 'Last Changed On' selection parameter to select date-dependent data for replication.

Loading Product data

Access the report

Open transaction code VPCOE/SFM and select service 'Product' (alternatively you can run the tcode /VPCOE/SFM_PRODUCT or report /VPCOE/SFM_PRODUCT):

Initial load approach:

- all the products selected based on filters criteria will be sent to SFM (will be selected raw materials and purchased products also)

Delta load approach:

- Delta Load functionality is based on the Change pointers (it means created / changed data will be selected based on the change pointers mentioned on the screen, and using the Last change date filters)

Loading Supplier data

Access the report

Alternatively, you can run transaction code `/VPCOE/SFM_SUPPLIER` or execute the report `/VPCOE/SFM_SUPPLIER`.

Execution notes

Data Load Approaches:

- **Initial Load**:
  - o   All suppliers selected based on filter criteria will be sent to SFM.
- **Delta Load**:
  - o   Delta Load functionality leverages **Change Pointers**.
  - o   Created or changed data will be selected based on the **Change Pointers** and the **Last Change Date** filters provided on the screen.

Loading Business Partner data

Access the Report

- Open transaction code /VPCOE/SFM and select service **'Business Partner'**.

- Alternatively, you can run the transaction code /VPCOE/SFM_BP or execute the report /VPCOE/SFM_BUSINESS_PARTNER.

Selection Parameters

The BP replication report provides the following selection parameters:

- **Business Partner**: Range of BP IDs to replicate.

- **Business Partner Role**: Allows filtering by BP roles (please note only the following roles are relevant for SFM, therefore users should select only these relevant roles to be replicated):

    o **RCFVEN** – Service Provider

    o **FLVN01** – Supplier

    o **CRM010** – Carrier

- **Country / Region**: Filter BPs by address location.

- **Created by / Changes at**: Filter BPs based on creation or change date/time.

- **Address Type Handling for Suppliers**:

    o By default, the **XXDEFAULT** address type is selected (standard address).

    o Users can add additional address types (beside standard one) to replicate by specifying them in the Address Type filter field.

    o All selected addresses valid at the time of execution will be replicated to SFM

Geolocation Handling

A dedicated section is provided for **Geolocation Handling**:

- **Option 1 (Default):** *Let SFM calculate geolocation* – If latitude and longitude are not sent, SFM will calculate them based on the BP's Country and Postal Code (both mandatory on SFM in this case to avoid data inconsistency).

- **Option 2:** *Send geolocation from ECC* – Allows sending Latitude and Longitude values directly from ECC if maintained. User can add own logic/external services in badi implementation to calculate the latitude and longitude, if needed

Address Handling

Business partner addresses are imported only if the business partner ID is associated to a supplier ID.

- For BPs with **CRM010 (Carrier)** or **RCFVEN (Service Provider)** role:

    o Address data is not selected and not sent to SFM (and will not be saved in SFM even if sent).

- For BPs with **FLVN01 (Supplier)** role:

    o The standard address (XXDEFAULT) is automatically included.

    o Users can specify additional address types to replicate by using the Address Type filter.

    o Addresses are time-dependent: only the valid address for the replication date will be selected.

Execution Notes

- **Maximum recommended package size:** 5000 records per payload.

- Supplier replication using the existing Supplier report remains available and is **not replaced** by this BP report.

- If **CVI (Customer-Vendor Integration)** is not implemented in ECC, Supplier Identifier in the BP payload will remain empty.

- Only the supported roles (RCFVEN, FLVN01, CRM010) will be replicated, and only relevant sub-nodes (e.g., Supplier Identifier and Roles) will be included in the payload.

Loading Custom temperature conditions data

Access the Report

- Open transaction code /VPCOE/SFM and select service **'Custom Temperature Condition'**.

- Alternatively, you can run the transaction code /VPCOE/SFM_CUST_TEMP or execute the report /VPCOE/SFM_CUSTOM_TEMP_COND.

Selection Parameters

- **Temperature Condition:** Allows filtering specific custom temperature conditions by identifier (values come from ERP Table **T143**).

- Option to **Display Data** or **Send Data to Cloud**.

Functionality

- This report replicates **Custom Temperature Conditions** maintained in ERP to SFM, including identifier and description fields.

- These values are referenced by products in ERP via field **MARA-TEMPB**.

- If no value is found in ERP for a product, the default value SAP_CTC is used in SFM.

- The replicated data provides the base for mapping against SFM Temperature Conditions (TEC, AMB) for transportation planning.

Loading Mapping for Temperature Conditions

Access the Report

- Open transaction code /VPCOE/SFM and select service **'Temperature Condition'**.

- Alternatively, you can run the transaction code /VPCOE/SFM_TEMP_COND or execute the report /VPCOE/SFM_TEMPERATURE_COND.

Selection Parameters

- **Temperature Condition:** Select custom temperature condition identifiers to be mapped to SFM temperature condition codes.

Functionality

- This report allows customers to replicate **mapping between Custom Temperature Condition Identifiers** from ERP and **Temperature Condition Codes** in SFM (e.g., TEC, AMB).

- Mapping is defined in table /**VPCOE/TEMP_COND** using tcode SM30

- Every time when a new custom temperature condition code is replicated to SFM, the table will be updated with new values. Mappings need to be maintained for new values added.

- Defined Mapping is replicated to SFM via the massUpsertTemperatureCondition API. With every run of the report, the entire table is replicated and mapping in SFM is overwritten.

- This mapping avoids manual Excel uploads in SFM but remains optional. Customers may still maintain mappings manually in SFM via excel upload, if preferred.

Execution Notes

- Use these reports to ensure that product-level temperature requirements are correctly mapped for transportation planning in SFM.

- Run the **Custom Temperature Condition** report first to replicate available ERP values, then, optional, use the **Temperature Condition** mapping report to link them with SFM temperature codes.

- Ensure that all relevant codes exist in SFM before mapping.

- Please note that only entries having mapping maintained will be replicated to SFM

Generating the Fiscal Period dependent data

The fiscal period generation report calculates all the dependent data required to send fiscal period details to SFM, such as start and end dates for specific fiscal periods. You must execute this report for each fiscal period used in the **SFM Inventory Scope** to ensure data replication.

Execute the report /VPCOE/SFM_GENERATE_FISCAL_PRD or execute /VPCOE/SFM_GEN_FP.

Execute the report **/VPCOE/SFM_GENERATE_FISCAL_PRD** directly or use the corresponding transaction code.

Functionality:

- The report populates fiscal year variant data into the VPCOE tables, including:
  - **Calendar Date**
  - **Fiscal Year**
  - **Fiscal Period**
  - **Fiscal Quarter**
  - **Start/End Dates**
- The generated data has no functional impact on the system. It is solely used for the **Integration Accelerator logic** to calculate periods and dates for replication purposes.

Limitations:

- Special periods are **not covered** by Integration Accelerator V2, as they are not supported by SFM.
- For additional details, refer to the Master Data Entities | SAP Help Portal section on the SAP Help Portal.

Notes:

- This report must also be executed for **calendar-based replication** as a prerequisite.

Loading Periodicity data

Prerequisites:

Before replicating periodic data to SFM, the report for generating period dates **must be executed**. For detailed instructions, refer to the section 'Generating the Fiscal Period dependent data' .

- **Access the Report**:
  - Open transaction code **/VPCOE/SFM** and select the service **'Periodicity Data'**.
  - Alternatively, you can run the transaction code **/VPCOE/SFM_PERIODCTY** or execute the report **/VPCOE/SFM_PERIODICITY_DATA**.
- **Functionality**:
  - The report is selecting relevant data for **Period Variant**, **Fiscal Period** and **Ledger**
  - Users can restrict the data selected for replication based on the **fiscal year variant**.
  - All data selected using the defined selection parameters will be sent to **SFM**

Important note:

When loading periodicity data to SFM, the **Period** identifier is sent in a specific format following specific patterns. These patterns ensure accurate identification of the period in master data.

The supported periodicity codes and their respective patterns are detailed below:

Periodicity Code	Period Identifier Attribute Value
M	YYYY0MM (e.g., 2023004)
Q	YYYYQ (e.g., 20231 or 20232)
Y	YYYY (e.g., 2023)
FP	YYYY0MM
FQ	YYYYQ
FY	YYYY

Loading Periodic documents

Access the Report:

- Open transaction code **`/VPCOE/SFM`** and select service **'Periodic Data'**.
- Alternatively, you can run the transaction code **`/VPCOE/SFM_PER_DATA`** or execute the report **`/VPCOE/SFM_PERIODIC_DOC`**.

Selection Criteria:

- All goods movements based on the provided selection criteria will be selected.
- Data extraction is only possible if the **MM period** is closed for the specified **Company Code**.

- The **Period Selection** field in the report uses a pattern derived from the Periodicity replication and which is also defined in **inventory scope** defined in SFM. Below are the accepted patterns based on periodicity code:

Periodicity Code	Period Selection Input	Pattern
M (Monthly)	Year + Month	YYYY0MM
Q (Quarterly)	Year + Dropdown (1 to 4)	YYYYQ
Y (Yearly)	Year	YYYY
FP (Fiscal Period)	Fiscal Period from inventory scope	YYYY0MM
FQ (Fiscal Quarter)	Fiscal Quarter from inventory scope	YYYYQ
FY (Fiscal Year)	Fiscal Year from inventory scope	YYYY

Notes:

- The **Period Selection** field automatically reads the **Period ID** from the inventory scope defined in SFM.
- Ensure that the input in the **Period Selection** field matches the periodicity and follows the expected pattern to avoid errors during data replication.

Send Periodic Data to SFM

```
****************************************************************************
*               This is a TRIAL Version and only for DEMO purpose!        *
****************************************************************************
                    SFM Integration Accelerator v.2
```

Inventory Scope list from SFM

Select Inventory Scope	test K4 - 0F
Select Period	2024

Select upload type for transational data
- ◉ Full Upload
- ○ Retry Single Entity Upload

Options
- ◉ Display Data
- ○ Send Data to Cloud

Business Activity Metric Data

Company Code	STBL	to	
Plant	B275	to	
Material Document Year	2024		
Material Document Month	0		
Material		to	
Material Type		to	
Material Group		to	
Last changed on		to	
Posting Date		to	

Variants
- ☑ Receipt from Supplier
- ☑ Return to Supplier
- ☑ Receipt without Reference
- ☑ Issue without Reference
- ☑ Issue for Production
- ☑ Receipt from Production
- ☑ Issue for Customer
- ☑ Customer Return
- ☑ Goods Transfer
- ☑ Issue for Cost Center
- ☑ Return from Cost Center
- ☑ Issue for Project
- ☑ Return from Project
- ☑ Internal Service Confirmation
- ☑ Opening Stock

Data Groups Extracted:

Group 1: Goods Receipt from suppliers
Only direct inflows with relation to a supplier will be extracted (all goods receipts with suppliers' reference, but without manufacturing order reference and not from a stock transfer will be extracted).

Group 2: Return to suppliers

Only direct outflows with relation to a supplier will be extracted (all goods issue with supplier reference, but without manufacturing order reference and not from a stock transfer).

Group 3: Receipt without reference
Only direct inflows without any relation will be extracted (all goods receipts without supplier, customer, manufacturing order, cost center or WBS Element reference and not from a stock transfer).

Group 4: Issue without reference
Only direct inflows without any relation will be extracted (all goods issues without supplier, customer, manufacturing order, cost center or WBS Element reference and not from a stock transfer).

Group 5: Issue for production
All goods issues with no supplier and customer reference, but with manufacturing order reference and not from a stock transfer will be extracted.

Group 6: Receipt from production
All goods receipt with no supplier and customer reference, but with manufacturing order reference and not from a stock transfer will be extracted.

Group 7: Issue for customer
All goods issues with a customer reference and not from a stock transfer will be extracted.

Group 8: Customer return
All goods receipt with a customer reference and not from a stock transfer will be extracted.

Group 9: Goods Transfer
All goods receipts and goods issue from stock transfers of other plants will be extracted.

Group 10: Issue for Cost Center
All goods issues with a cost center reference and not from a stock transfer will be extracted.

Group 11: Return from Cost Center
All goods receipt with a cost center reference and not from a stock transfer will be extracted.

Group 12: Issue for Project
All goods issues with a Project reference and not from a stock transfer will be extracted.

Group 13: Return from Project
All goods issues with a WBSElement reference and not from a stock transfer will be extracted.

Group 14: Internal Service confirmations
All internal service confirmation documents will be extracted.

Group 15: Opening Stocks
 All financial quantities of your inventory at the beginning of selected period will be extracted.

- Stock data is extracted for the beginning of the selected period (e.g., if replicating for Jan 2023, the extractor queries Dec 31, 2022).
- Standard report **MB5B** is used for stock extraction.
- Performance optimizations for MB5B report can be implemented via SAP notes:
    - **2459529**: MB5B performance optimization during storage location stock selection.
    - **1516684**: Enhancing MSEG with MKPF fields for performance optimization.
    - Adding Material Type filter will reduce the overall time for executing the report and will reduce the short dump risk when calling MB5B report for large data set.

For any performance optimization, you should consider adding as much filters as possible.

Execution Modes:

- **Full Upload**:
  - Extracts all data based on filters for the selected inventory scope.
  - Requires the MM period to be closed for the specified **Company Code**.
  - **Company Code** and **Plant** default to values defined in the inventory scope on SFM.
  - Users must specify the required period to load data.
- **Single Entity Upload**:
  - Allows replication for one specific entity within a selected inventory scope and period.
  - Predefines certain filter criteria, such as **Material Document Year** and **Month**, based on the selected inventory scope and period.

Notes:

- Goods movement data is not restricted by stock type.
- Only the following production document categories are extracted:
  - **10**: PP Production Order
  - **40**: Process Order
  - **05**: Production Cost Collector
- The goods movement entities below support optional Customer ID level granularity:
  - Goods Issue to Customer
  - Customer Return

  Customer ID is derived automatically from the goods movement reference (if available).

Replication Restart:

- In case of an emergency correction after a full upload, replication can be restarted for a specific inventory scope and period.
- Due to restrictions on SFM, only one entity can be resent at a time.
- Data can only be resent for periods with the status:
  - **'Canceled'**
  - **'Completed Successfully'**
  - **'Completed with Inconsistencies'**
- Replication cannot be restarted for periods marked **'In Progress'** until the process is complete. If the replication process is stuck to In Progress due to technical errors during replication, this can be ended using report here.

Resending failed payloads

During data replication, if payloads fail due to technical reasons (e.g., network issues), they are recorded for potential resending.

1. If data is missing from the records, resending the payloads alone is insufficient.
   - Correct the data and use the **Single Entity Upload** option to reselect and resend the updated data.
2. Access the Reprocess Failed Data Report:

- Run the report `/VPCOE/REPROCESS_FAILED_DATA` with **API type SFM** via tcode **SE38** or use transaction code `/VPCOE/REPROCESSFAIL`.

There are two options, for resending master data or for resending periodical data.

Resend Master data

All failed payloads / packages are saved using combination of Session Ids and Session items to be uniquely identified. For each session Id multiple session items can be created.

You have to select specific request(s) from the list and click on 'Repeat request' button to resend a request. If the request is sent successfully, it will be deleted form the list.

Session Id	Session Item	Api_type	Service Id	Service Gro...	Json	Lines Count	Created	Create...	Failed	Repeated	Status	Reason
0050568B2...	1	PFM	Company C...	ORG	{"source":"...	68	17.05.20...	22:41:...	X	. .X	405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:42:...	X	. .X	400	Bad Request
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:42:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:42:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:42:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"	1.000	17.05.20...	22:42:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"	558	17.05.20...	22:42:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Valuation A...	ORG	{"source":"...	9	17.05.20...	22:42:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Company C...	ORG	{"source":"...	68	17.05.20...	22:45:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:45:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:45:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:45:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:45:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:45:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:45:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	558	17.05.20...	22:45:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Valuation A...	ORG	{"source":"...	9	17.05.20...	22:45:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:47:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:47:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:47:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:47:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:47:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:47:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	1.000	17.05.20...	22:47:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Plant	ORG	{"source":"...	558	17.05.20...	22:47:...	X		405	Method Not Allowed
0050568B2...	1	PFM	Company C...	ORG	{"source":"...	68	17.05.20...	22:47:...	X		405	Method Not Allowed
0050568B2...	6	PFM	Plant	ORG	{"source":"...	1.000	07.06.20...	13:12:...	X		400	Bad Request
0050568B2...	7	PFM	Plant	ORG	{"source":"...	1.000	07.06.20...	13:12:...	X		400	Bad Request

Resend Periodical data

Selecting periodic data option, you will be able to resend entire set of data for a specific Data Type code. It means the replication will be restarted for that specific Inventory scope and period for the for which the data on the payload(s) selected belongs to.

RePlace Failed Payloads

RePrcess Failed Payloads

⟳

```
****************************************************************************
*                This is a TRIAL Version and only for DEMO purpose!        *
****************************************************************************
```

Selection Options

○ Master Data

◉ Periodic Data

Date Restrictions

Created Date [   ]   to   [   ]   ⤵

Variants

☑ Receipt from Supplier
☑ Return to Supplier
☑ Receipt without Reference
☑ Issue without Reference
☑ Issue for Production
☑ Receipt from Production
☑ Issue for Customer
☑ Customer Return
☑ Goods Transfer
☑ Issue for Cost Center
☑ Return from Cost Center
☑ Issue for Project
☑ Return from Project
☑ Internal Service Confirmation
☑ Opening Stock

RePrcess Failed Payloads

Run ID	Session Id	Session Item	Service Id	Service Code	Created	Created Time	Failed	Repeated	Status	Reason
41e345a9-81b5-4b7d-a...	005056B07...	1	Receipt wit...	GoodsReceiptWithoutReference	15.06.20...	17:01:51	X	15.06.20...	405	Method No...
41e345a9-81b5-4b7d-a...	005056B07...	1	Receipt wit...	GoodsReceiptWithoutReference	15.06.20...	17:03:15	X	15.06.20...	405	Method No...
41e345a9-81b5-4b7d-a...	005056B07...	1	Receipt wit...	GoodsReceiptWithoutReference	15.06.20...	17:04:44			0	
c89ada1e-9def-4980-a5...	005056B07...	1	Receipt Fro...	GoodsReceiptFromSupplier	17.07.20...	14:31:58	X	17.07.20...	400	Bad Request
c89ada1e-9def-4980-a5...	005056B07...	2	Receipt Fro...	GoodsReceiptFromSupplier	17.07.20...	14:54:37	X	17.07.20...	400	Bad Request

Please note that for Periodic data, the entire payload is not saved but only the selection criteria for selecting the data is saved. Therefore, the button 'Display Request' will display the selection criteria and not the payload itself.

Handling Short Dumps or Hard Stops in Data Replication (Ending InProgress blocked replications)

If a short dump or hard stop occurs during data replication, the process on SFM may not end properly. In such cases, the replication status in SFM may remain blocked as **"In Progress"**, preventing further actions like resending or deleting the replication for the same entity.

To address this, use the report `/VPCOE/SFM_END_NOTIFY` (or transaction code `/VPCOE/ENDNOTIFY`) to reset the replication status:

1. **Purpose**:
   - The report sets the status of an **"In Progress"** replication to **"Completed"** without replicating any data.
   - This action enables users to either:
     - Resend data using the **Single Entity Upload** option for the same inventory scope and period.
     - Delete the replication on SFM and then resend the entire set of data.
2. **Steps**:
   - Run `/VPCOE/SFM_END_NOTIFY` or **tcode** `/VPCOE/ENDNOTIFY`.
   - Select the relevant replication to update its status.
   - Confirm the action to change the status from **"In Progress"** to **"Completed."**

Important Considerations

- **User Responsibility**:
  - Full accountability rests with users executing the report.
  - Understand that this action ends the replication process for the selected scope and period.
- **Caution**:
  - Misuse or unintended execution of this report can terminate active replications.
  - Use this report **only** when replication is halted due to short dump errors, and the status needs resetting for reprocessing.
- **Recovery**:
  - Once the status is reset to **"Completed"**, users can resend data:
    - Either partially using the **Single Entity Upload** option.
    - Or fully by deleting the replication on SFM and resending all data.

Recommendation

- Utilize this report strictly in cases of replication process has been halted due to technical errors (e.g., short dumps) and whenever the status needs to be reset to allow for reprocessing
- Ensure proper understanding of the impact and plan the subsequent replication steps carefully.

Enhancements

For customer-specific enhancements in the **SFM Integration Scenario**, the **BAdI** `/VPCOE/ADJUST_DATA_RETRIEVAL` must be implemented. This allows customers to adapt data retrieval, mapping, and replication processes to meet specific requirements.

Key Features of the BAdI `/VPCOE/ADJUST_DATA_RETRIEVAL`

The BAdI can be used for:

1. **Adapting Source Data**:
   - Read data from alternative source objects.
2. **Mapping Adjustments**:
   - Customize mappings of data attributes to interface attributes.
   - Mapping of values that need to be replicated.
3. **Adding Custom Attributes**:
   - Extend the standard data model by adding specific fields.

BAdI Methods Overview

1. `SKIP_SELECTION`:
   - Allows skipping the default VPCOE data selection.
   - Set parameter `CV_SKIP` to `TRUE` to skip predefined selection logic.
   - Use this method when you want to fully replace data selection with custom logic.
2. `ADJUST_DATA_RETRIEVAL`:
   - Use this method to implement custom logic for data selection.
   - Adjust or overwrite raw data retrieved from the source before mapping.
3. `ADJUST_MAPPING`:
   - Change or overwrite mappings from the data source to the JSON structure.
   - Supports modifications for root nodes and subnodes.
4. `ADJUST_TEXT_MAPPING`:
   - Similar to `ADJUST_MAPPING`, but applies specifically to **"TEXT"** subnodes of JSON payload.
5. `ADJUST_JSON`:
   - Modify the JSON data directly to meet customer-specific requirements.

Badi Implementation details

1. **Skip Default Selection**:
   - Set `CV_SKIP = TRUE` in the `SKIP_SELECTION` method to bypass the standard selection logic.
   - Implement custom data selection in the `ADJUST_DATA_RETRIEVAL` method.
2. **Adjust Mapping**:
   - Use the `ADJUST_MAPPING` method to modify mappings from the raw data source to the JSON structure.
3. **Custom JSON Adjustments**:
   - Directly manipulate the JSON structure in the `ADJUST_JSON` method.
4. **Refer to Sample Implementation**:

- o The package includes a sample implementation:
  /VPCOE/CL_ADJUST_API_SFM_EXMPL, which can be used as a base template.
5. **Explore Interface Details**:
   - o Interface: **/VPCOE/IF_ADJ_DATA_RETRIEVAL**.
   - o Review in Class Builder (SE24) for detailed method definitions.
6. **BAdI Configuration**:
   - o Check standard settings, including filters and usage options, in the Enhancement Spot Element Definitions tab in **transaction SE18**.
7. **Refer to Documentation**:
   - o SAP Help documentation provides further details on filters, usage, and specific methods.

   - o
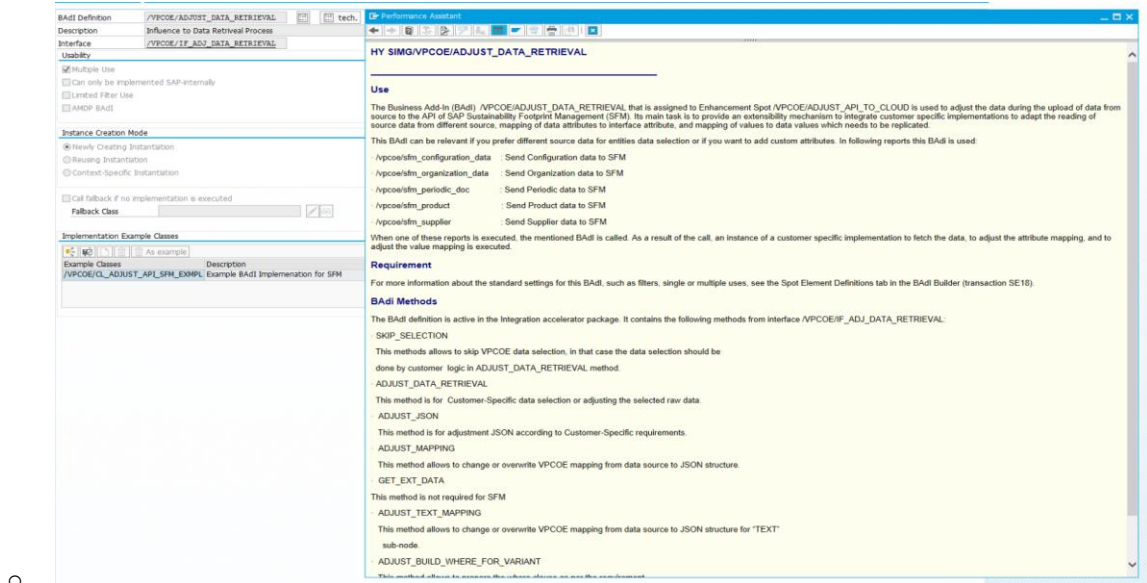
VERIFYING EXECUTION RESULTS

Verify Foreground Execution Results

When executing the reports in foreground mode (e.g., using transaction code **SE38**), the replication results are displayed directly on the screen for review:

```
Send Periodic Data to SFM

Send Periodic Data to SFM
_____

******************** PERIODIC -Opening Stock  ********************

Notify sent to start the data replication

*

Start to process 'Receipt from Supplier'

Number of records as per selected scope - 2

Number of entries send successfully - 2 entries

Notify sent to end the data replication

*

Start to process 'Return to Supplier'

Number of records as per selected scope - 1

Number of entries send successfully - 1 entries

Notify sent to end the data replication

*

Start to process 'Issue without Reference'

Issue without Reference has no data!

Notify sent to end the data replication

*
```

Verify Background Execution Results

when the reports are executed in **background mode**, every operation (e.g., payload/package sent) is logged for traceability. These logs can be analyzed using **SLG1**, with the log object **'/VPCOE/RDP'**.

Steps to Verify Background Execution Results:

1. **Access the Log Viewer:**
   Open the **SLG1** transaction.
2. **Filter Logs by Object and Subobject:**
   o **Object:** Enter **'/VPCOE/RDP'**.
   o **Subobject:** Specify the required Service ID or use wildcard **'*'** to view all related logs.

3. **Execute and Review:**
   Run the log viewer to display the results. Analyze the entries for details about the replication process, including:
   - o Success or failure of individual packages.
   - o Timestamps for each operation.
   - o Errors or warnings encountered during replication.

KNOWN TECHNICAL ISSUES AND TROUBLESHOOTING

Technical Issue/ restriction	Solution	Valid from / to SAP Software Components
Errors when installing the general object CR, due to missed objects in standard code (ex. MEINS_D being not available in the system)	SAP Note 2526405 - /UI2/CL_JSON Corrections released in 2018 should be implemented	SAP_UI 750/751/752 UI_700 200