How-To Guide: Mass Import Replenishment for RFM Solutions by Prometheus Group

Applies to

Prometheus Group Solutions for MDG RFM

Summary

MDG for RFM include standard implementations of the Mass Import that reads the data from file which captured from other system. The data in the file can be saved to 'Active Area' directly or 'Staging Area' based on the options chosen in the Import Master Data and Mapping Information screen. The standard implementations support Key Mapping and Value Mapping.

This guide describes the necessary configuration steps for implementing Mass Import. This guide explains the Mass Import for Replenishment.

You can perform most configuration tasks in Customizing for Master Data Governance under SAP Reference IMG > Cross Application Components > Processes and Tools for Enterprise Applications > Master Data Governance.

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Introduction

This reference guide helps you understand the Mass Import of Article Master Replenishment data in Prometheus Group Retail and Fashion Management (RFM) S/4HANA on MDG. This guide also provides the background information about the Data Import Framework (DIF) and describes process of using DIF to upload Article data from an xml file.

Target Audience

The target audience for this guide comprises:

- Technology Consultants
- Security Consultants
- System Administrators

Business Scenario Overview

Prometheus Group Retail and Fashion Management (RFM) extension for Master Data Governance (MDG) Retail Article (MDG-RFM) provides business processes to find, create and change Article Master data, and to mark it for deletion. It supports the governance of Article Master data on a central hub and the distribution of Article Master data to connected operational and business intelligence systems.

The processes are workflow-driven and can include several approval and revision phases, including collaboration between all users participating in master data maintenance.

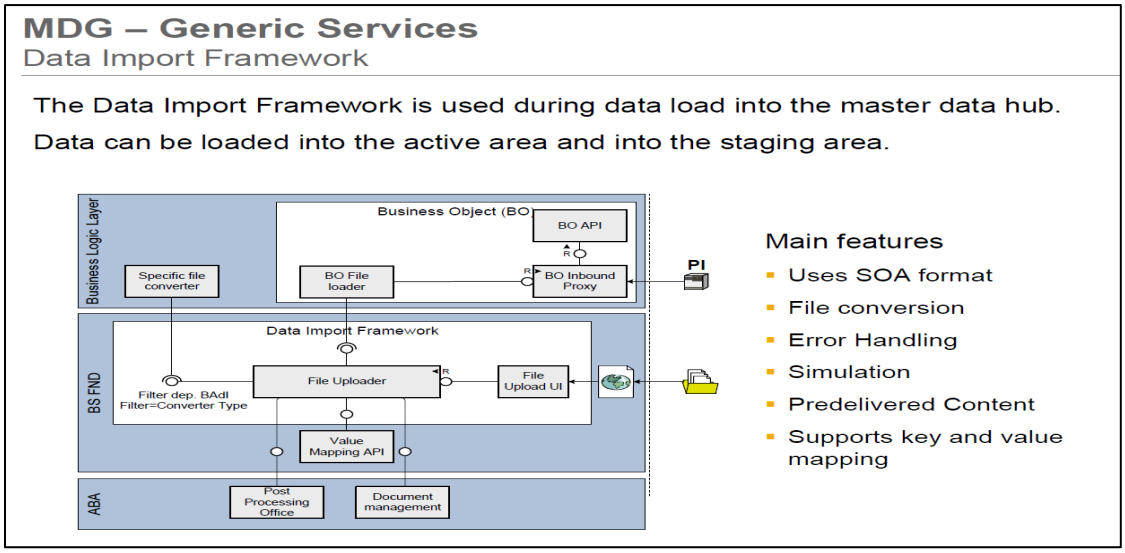
You can use the Import Master Data service to import files containing article and Replenishment to the Master Data Governance (MDG) system. The data from these files can update existing master data records (Active Area records only), or create new ones using the options available in the Import Master Data service.

General Background Information for Data Transfer

Data transfer represents a collection of functions and features that you can use to move master data and map information between the systems and the clients. Examples of the systems include existing ERP systems and your Master Data Governance hub system.

To transfer master data and mapping information, use the following steps:

1. Export the master data and mapping information from the source system to an xml file. This file is saved on your application server.
2. Copy the xml file from the application server of the source system to the application server of your target system.
3. Import the master data and mapping information to the target system using the Data Import Framework (DIF).



Using DIF for Replenishment Data Overview

This section provides the general background information about using the DIF for Article Master Data.

Limitation

It is possible to create Article Master data in the Staging or Active Area. In standard, updating an existing Article Master is currently only possible in the Active Area. However, this was made possible even in Staging Area for Article Master – Replenishment as per the customer requirements

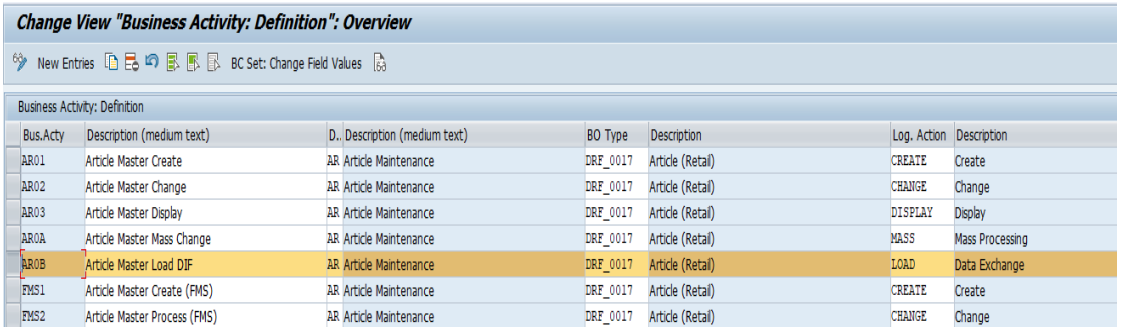
Customizing

Define Object Types

Use the following steps to define Object Types:

1. Go to Master Data Governance > General Settings > Data Transfer > Define Object Type*s* and define the following Object Types.
   - Relationship to Business Object Type/Message Data Type
   - Implementing Classes
   - Additional Selection Fields
   - Sequence of Objects to be processed
   - Business Activity to be used in import

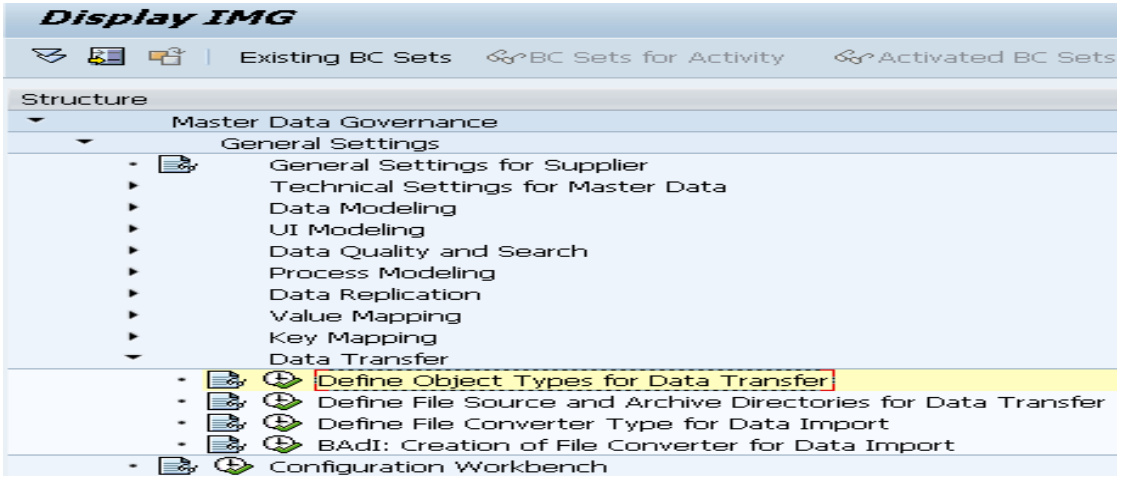
The customizing delivered with the solution enables you to run DIF with the SAP Standard Basic Types for Replenishment (RPLMAS). If you want to use a Custom Basic Type, you need to enhance this customizing activity.



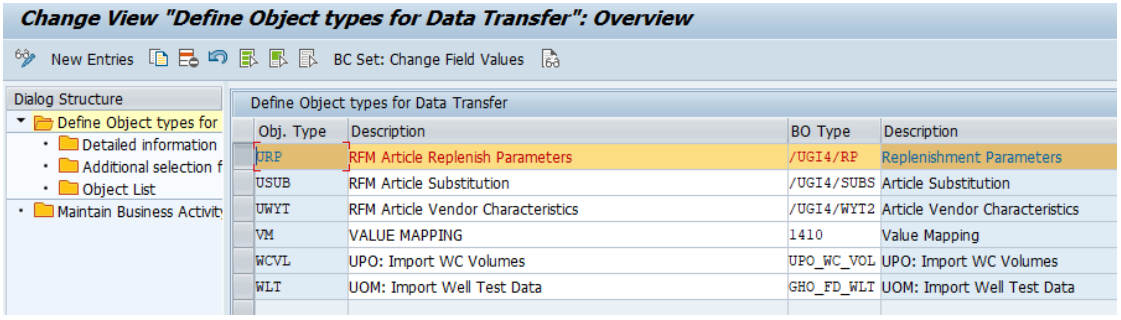
Bus.Acty	Description (medium text)	D..	Description (medium text)	BO Type	Description	Log. Action	Description
AR01	Article Master Create	AR	Article Maintenance	DRF_0017	Article (Retail)	CREATE	Create
AR02	Article Master Change	AR	Article Maintenance	DRF_0017	Article (Retail)	CHANGE	Change
AR03	Article Master Display	AR	Article Maintenance	DRF_0017	Article (Retail)	DISPLAY	Display
AR0A	Article Master Mass Change	AR	Article Maintenance	DRF_0017	Article (Retail)	MASS	Mass Processing
AR0B	Article Master Load DIF	AR	Article Maintenance	DRF_0017	Article (Retail)	LOAD	Data Exchange
FMS1	Article Master Create (FMS)	AR	Article Maintenance	DRF_0017	Article (Retail)	CREATE	Create
FMS2	Article Master Process (FMS)	AR	Article Maintenance	DRF_0017	Article (Retail)	CHANGE	Change

2. In MDGIMG customizing, define new Object Types for Data Transfer.

   Note: In this case, a new Object Type for Retail Article is provided as an example.



   It is assumed that BO Type is defined earlier and assigned the same BO Type to the Retail Article Data Model. BO Type is essentially an alias to main entity in the Data Model.



Obj. Type	Description	BO Type	Description
URP	RFM Article Replenish Parameters	/UGI4/RP	Replenishment Parameters
USUB	RFM Article Substitution	/UGI4/SUBS	Article Substitution
UWYT	RFM Article Vendor Characteristics	/UGI4/WYT2	Article Vendor Characteristics
VM	VALUE MAPPING	1410	Value Mapping
WCVL	UPO: Import WC Volumes	UPO_WC_VOL	UPO: Import WC Volumes
WLT	UOM: Import Well Test Data	GHO_FD_WLT	UOM: Import Well Test Data

3. Specify the Msg. Data Type.

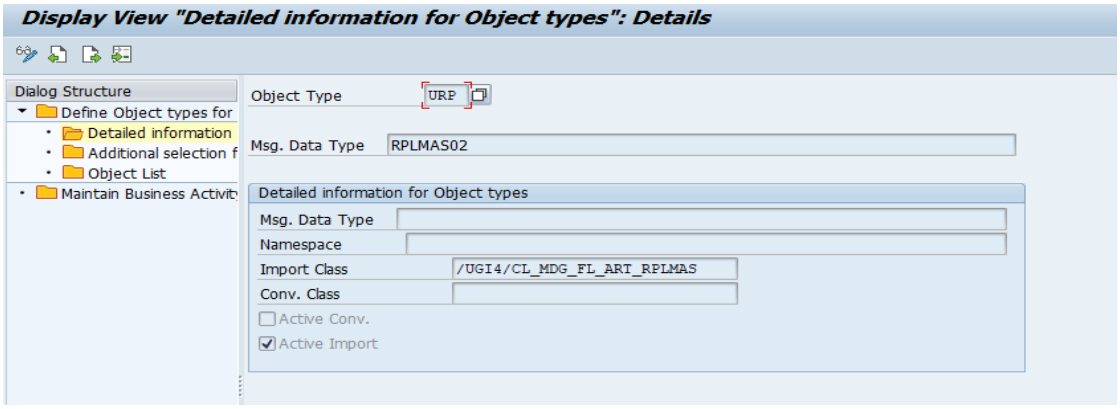
   In Retail Article, it is expected that the RPLMAS02 IDoc is imported.

   User can define different Msg. Data Type and assign a different Import Class.

   The import class is also specified here. The import class is the main “program” that does the importing of the data.

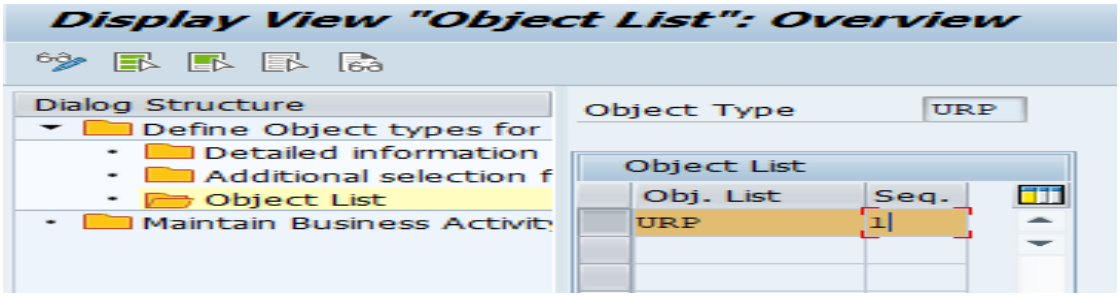
4. Set the “Active Import” checkbox.

   Note: If the “Active Import” checkbox is not checked, the Object type is not displayed in the drop-down list of the import application. You can use the same import class for the different message data types (for example RPLMAS02).



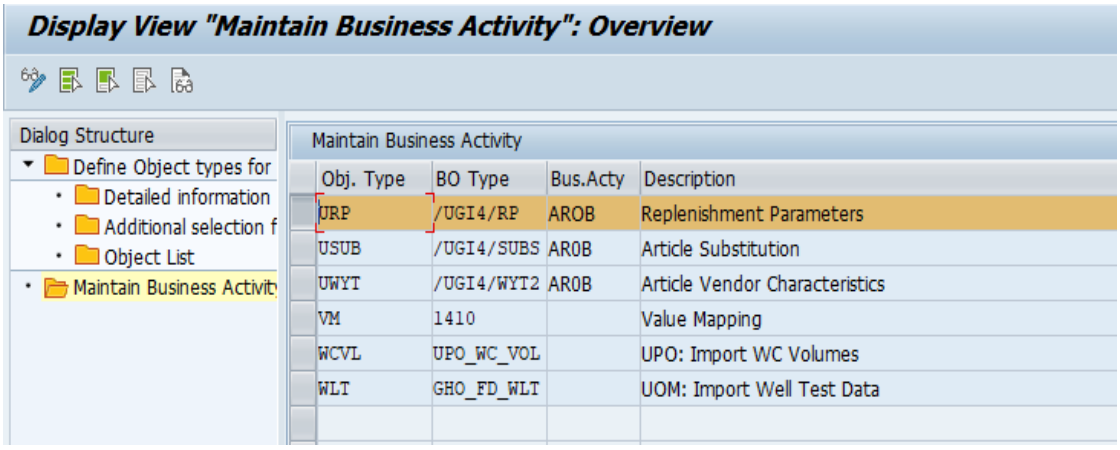
You can maintain several and different objects to an Object Type.

It is mandatory to have the Object Type in the Object List. The sequence column determines position where the objects are appearing in the popup.



The sequence column determines the position where the objects appear in the popup as displayed in the following screen.

5. Maintain the Business Activity for the Object Type. User will assign a Mass Change Business Activity.



File Source and Archive Directories

While setting up the data import, you should define source and archive logical directories in the MDG Data Transfer Customizing Activity Master Data Governance > General Settings > Data Transfer > Define File Source and Archive Directories for Data Transfer.

For more information on logical directories, see the documents for the Customizing Activity Define File

Source and Archive Directories for Data Transfer.

One or more logical source directories can be defined on the application server, where files for the import may be stored. After completion of the import, the system automatically moves the processed files to the defined archive directory for the given Object Type.

To assign directories as source or archives:

1. Initially, the physical directory paths must be created in the file system.
2. The SAP transaction code (t-code) FILE must be used to map them to logical names. You can use these logical names in the above-mentioned Customizing activity.

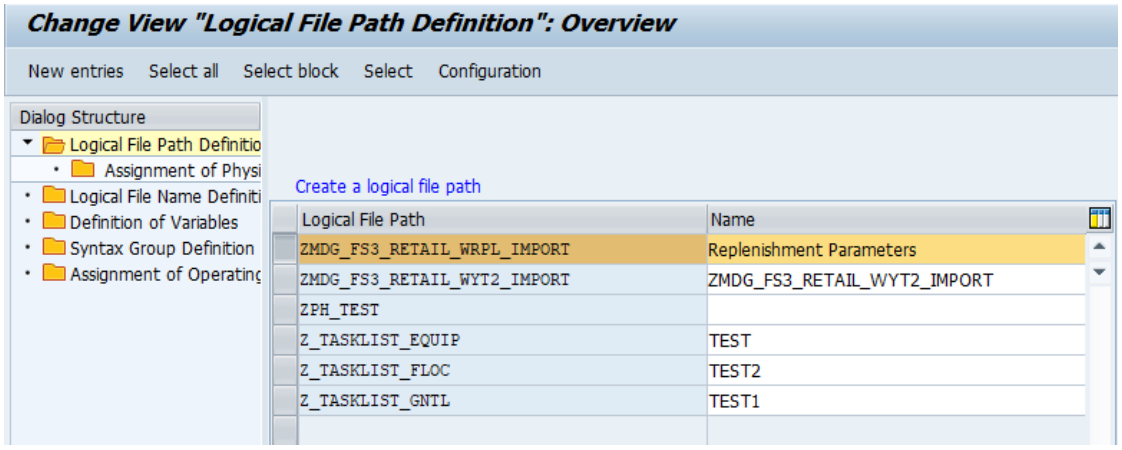
   Consider creating several object-specific logical directories.

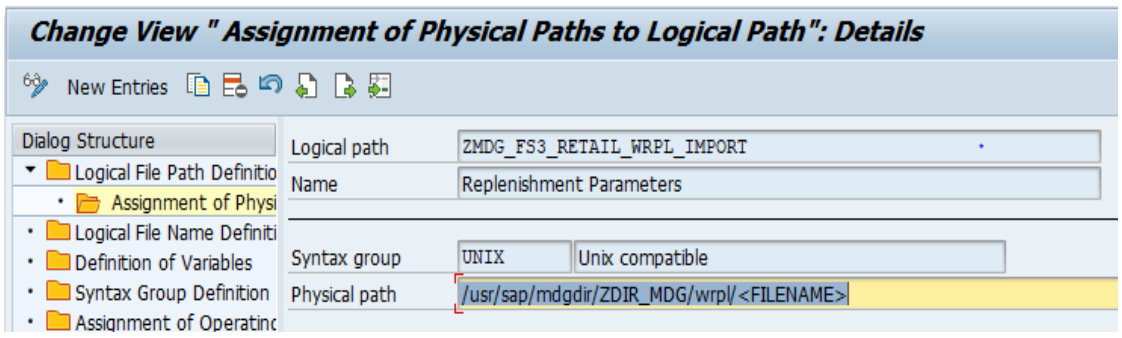
   You can use the SAP t-code CG3Z to upload a file from the local file system to the application server.

Setup FILE Transaction in MDG-RFM

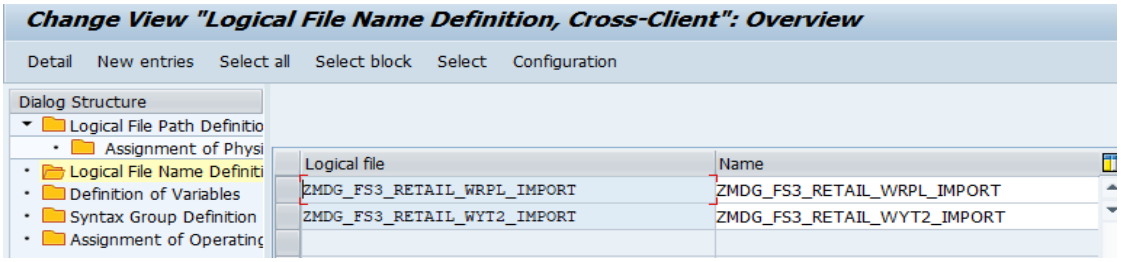
Use the following steps to setup t-code FILE in MDG-RFM:

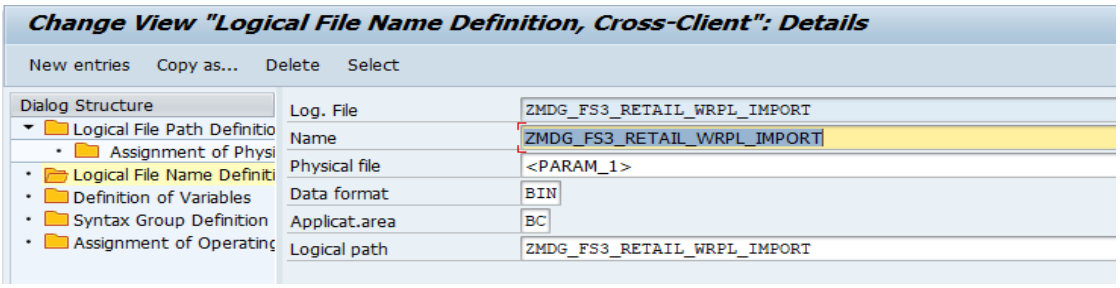
1. Set up two logical paths in transaction file.
   - Path for the import files: ZMDG_FS3_RETAIL_WRPL_IMPORT
   - Path for the archive folder: ZMDG_RETAIL_ARCHIVE





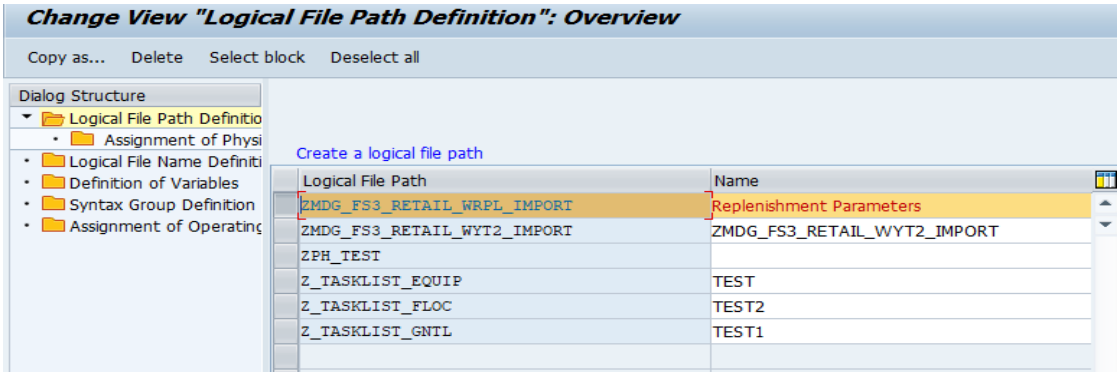
2. Set up the Logical File Name Definition.
   a. Keep <PARAM_1> for the Physical file.
   b. Point the Logical File Name Definition to the Logical Path defined earlier.





Define File Source and Archive Directories for Data Transfer

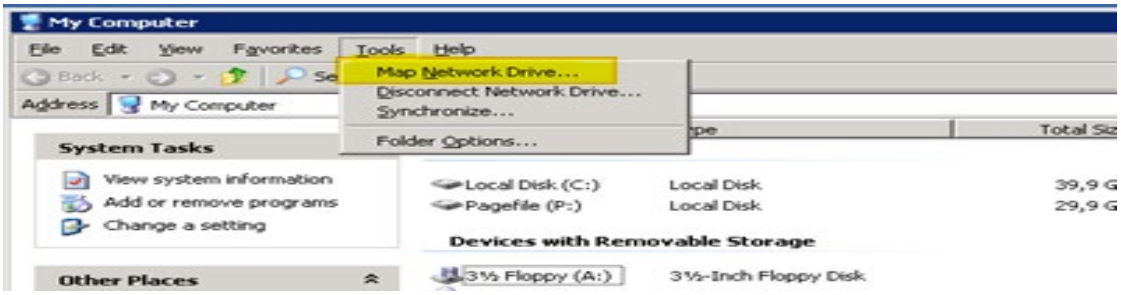
The logical file path that was created in Transaction FILE is used. It is necessary to have an archive path for importing object types.



Set up File Import Folder

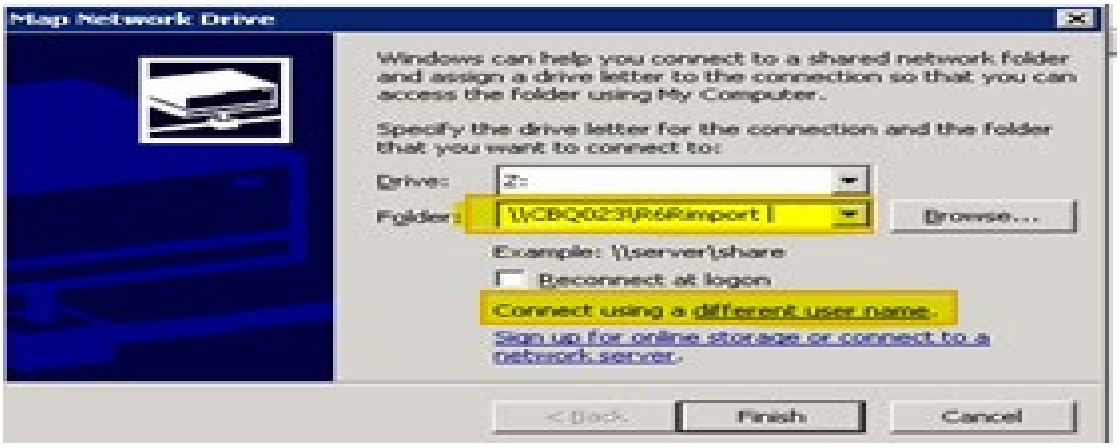
Use the following steps to setup the File Import folder.

1. From toolbar, click Tools > Map Network Drive.

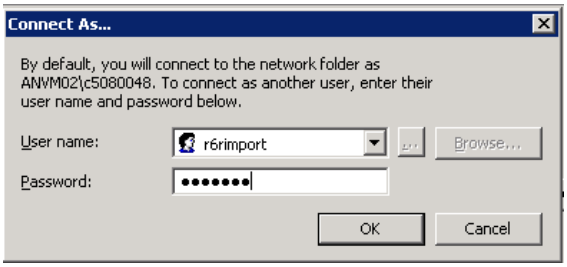


   The system displays the Map Network Driver window.

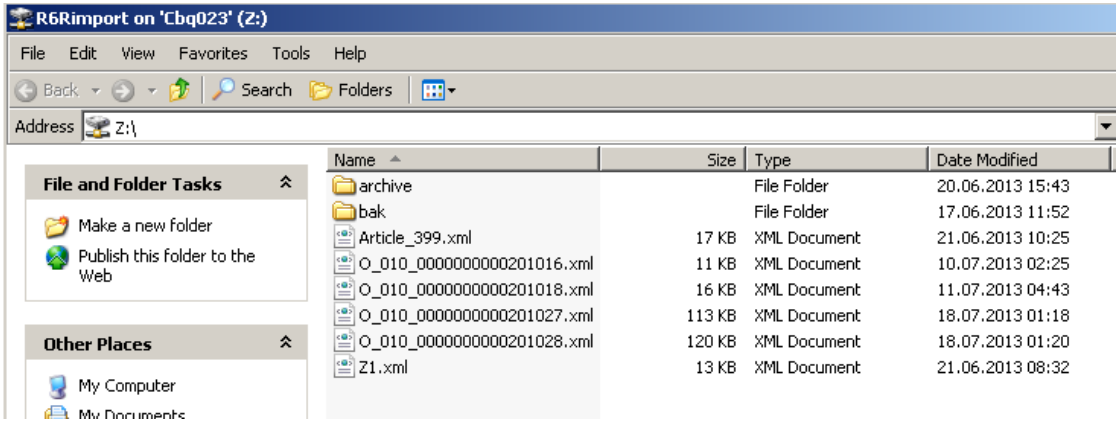
2. Click Folder dropdown list and select the relevant folder.



3. Click Browse. The system displays the Connect As popup.
4. Enter your credential details.



5. Click “OK” button. The import file folder is created. Import xml files are saved in this folder as displayed in the following screen.

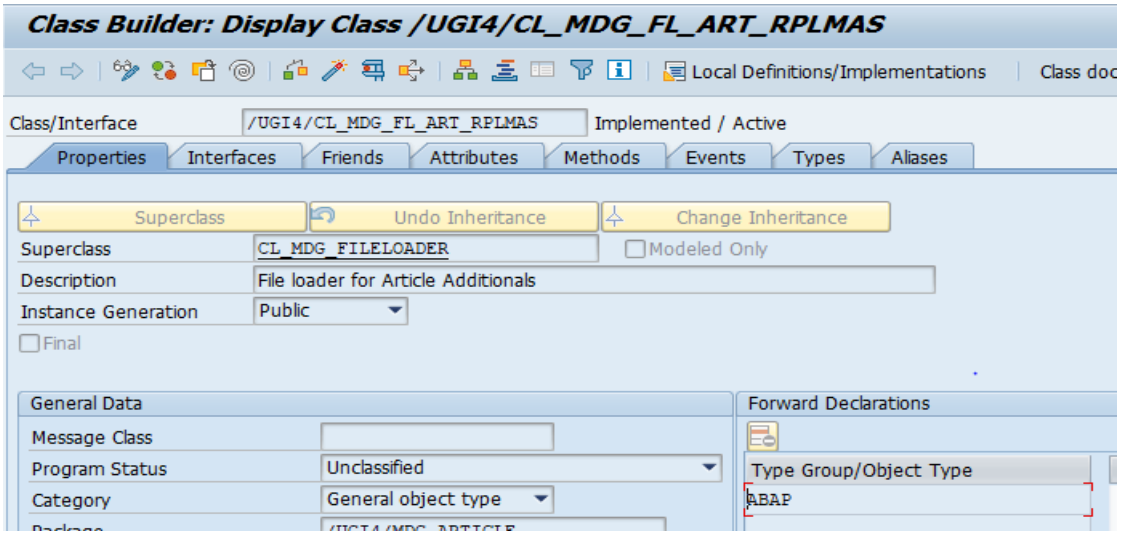


Import xml files are saved into this folder.

Loader Class

Class: /UGI4/CL_MDG_FL_ART_RPLMAS

Note: /UGI4/CL_MDG_FL_ART_RPLMAS was written with reference from CL_MDG_BS_FL_MATERIAL.



The importing class needs to inherit from the superclass CL_MDG_FILELOADER.

Methods of Loader Class

LOAD Method

This is the main method run by the import class to load the IDoc data into staging or Active Area. One IDoc can contain multiple articles.

The following important points of a loader class are listed.

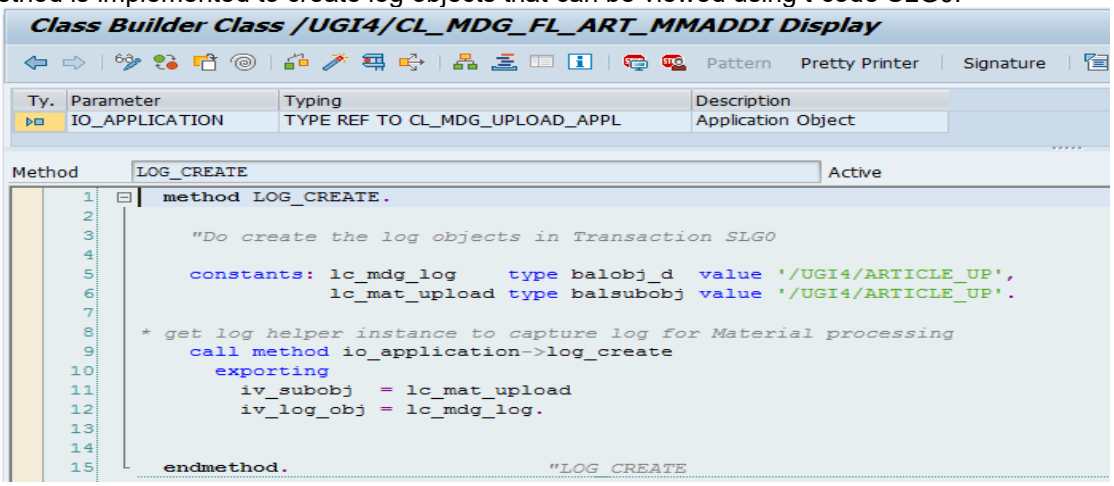
- The DTIMPORT framework setting is read using the method “read_user_settings”.
- One of the import parameters in this method iv_content brings in business data in xml content that is converted into various IDoc segments using method “get_idoc_data” in an external format.
- The external format data from the IDoc segments is segregated into Internal formatted IDoc segments using the methods “convert_idoc_ctrl_records” and “convert_idoc_data_records”.
- The IDoc segments are looped for each control segment record nested looped for data segment records on “Docnum” key.
- Vendor Characteristics are imported to Active Area. If Governance process is chosen, and results in error, then only import to Staging Area is possible.
- It is mandatory to fill the Object keys using method call “fill_objectkeys”.

GET_INBOUND_STRUCTURE

Specific structure “MDG_IDoc_DATA” maintained for IDoc is parsed in this method. This method fetches the inbound structure from the parameter ev_name.

LOG_CREATE

The method is implemented to create log objects that can be viewed using t-code SLG0.



GET_IDoc_DATA

This method is used to convert the xml data to IDoc data.
One of the import parameters “iv_content” in Load method holds business data in xml format which is converted to various IDoc segments using this GET_IDoc_DATA method in an external format (RAW).

SET_PROXY_PERSISTANCE

This method writes Proxy Persistence to global data (1: Staging 2: Active, 3: Active with Err) which is used by standard Governance APIs to process the data.

- If user choose Persistence choice = 1 it writes to staging or if user chooses persistence choice as 3 it writes Active Area with Errors sent to Staging
- Data import for Vendor Characteristics is possible only to Active Area, for example, Proxy persistence equal to 2.

CHECK_EXISTENCE_IN_ACTIVE_AREA

This method checks whether the Article is present in the database (Active Area). This method uses the Function “MARA_SINGLE_READ” to check whether the Article referenced by the Purchase Info Record exists in Active Area.

If it exists in Active Area and if the user has not checked “Overwrite” option in DTIMPORT, the import of the Purchase Info Record will be rejected (Message 013: Article exists in Active Area; overwrite not allowed; article rejected). Otherwise, if the “Overwrite” option is ticked the Article will be overridden.

The caller of this method will then the method call “USMD_MSG_TO_BAPI_MSG” to collect all the messages for Persistence option 3 (write to Active Area)

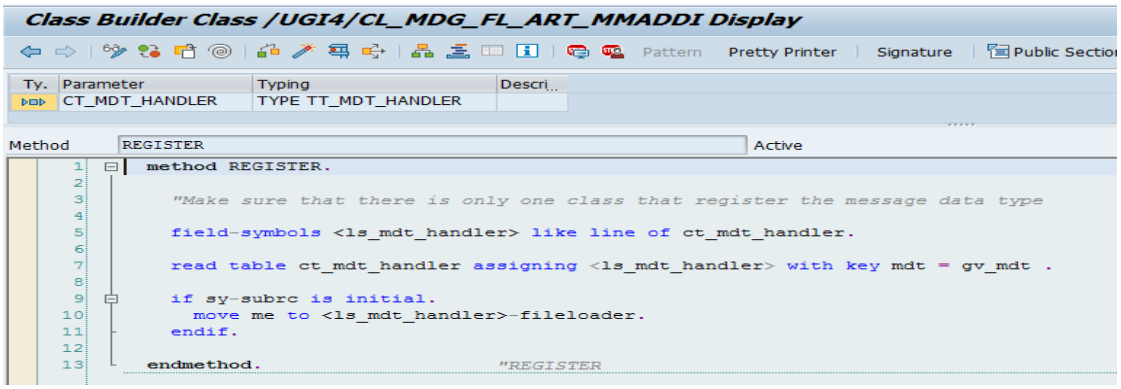
It finally calls the method “SAVE_TO_ACTIVE_AREA” that internally calls the BAPI function and writes directly to Active Area if the persistence value is set as 3.

CHECK_EXISTENCE_IN_STAGING

This method checks If Article is associated with any Change Request, if found it rejects the Article. It uses the method call “cl_usmd_crequest_api=>if_usmd_crequest_api~retrieve_crequest” by exporting entity, key value and data model to import CR data.

Register

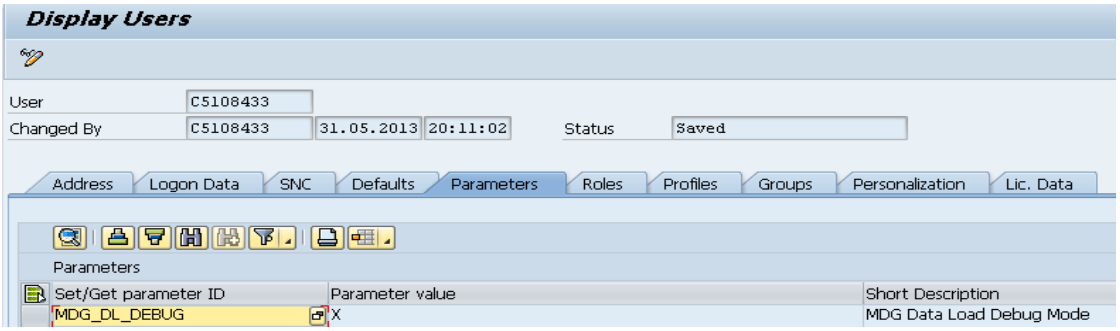
The method REGISTER needs to be re-defined by registering that this class will handle the message type.



Testing Importing Class

Note that if the user uses the front-end Web Dynpro application mdg_bs_file_import to import the files, then a job is scheduled in the background. This hinders the user for debugging the import class.

1. To test the class, set the parameter MDG_DL_DEBUG = X in your user parameters tab.



2. This parameter is read in class CL_MDG_UPLOAD_UI_ASSIST method FILE_UPLOAD. If the parameter is set, then users can put a remote breakpoint in the /UGI4/CL_MDG_FL_ART_SUBSTITUTN class to debug. Web Dynpro Applications

In EhP6, the new Web Dynpro application MDG_BS_FILE_IMPORT (t-code DTIMPORT) is delivered.

The new Web Dynpro applications support:

- One step process
- Aligned look and feel
- Enhanced file handling for import
- Improved mass import capabilities (allows asynchronous, scheduled and parallel processing via Web User Interface)
- Enhanced monitoring

Export File for Article using IDoc

IDoc Name: RPLMAS

To export Article Master data, you need to configure a logical system for xml-IDoc extraction to the application server file system (in each client system). To achieve this, perform the following:

1. Create a Logical System (SALE)
2. Add IDoc type RPLMAS to Distribution Model (BD64)
3. Create an Outbound Partner Profile (WE20)
4. Create a xml-file port for IDoc processing (WE21)
5. Send article data with transaction BD10, including Replenished data.

Import Options

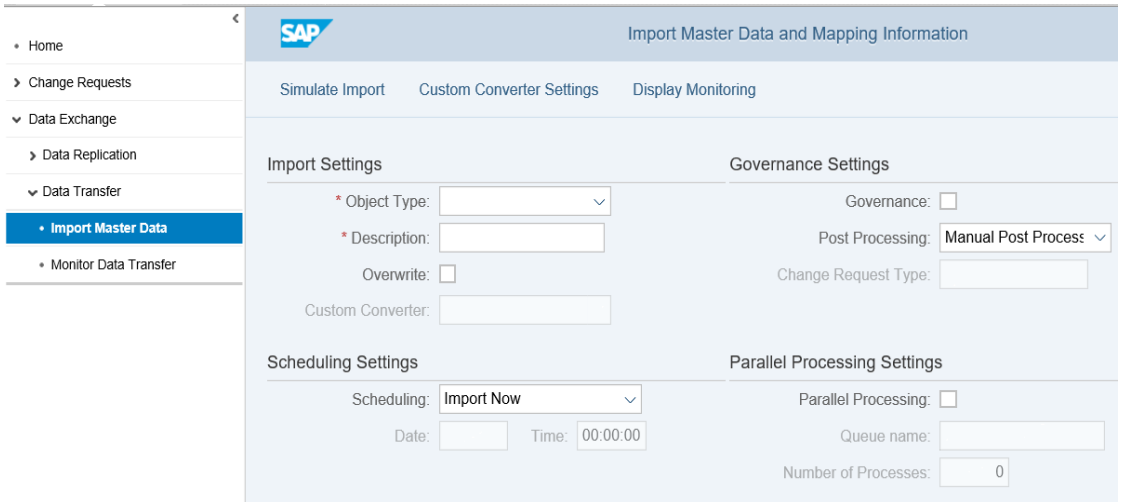
It is possible to perform a data import for one or more Replenishment (RPLMAS) IDoc xml files, with one or more IDocs per xml file, and with each IDoc containing one or more Articles.

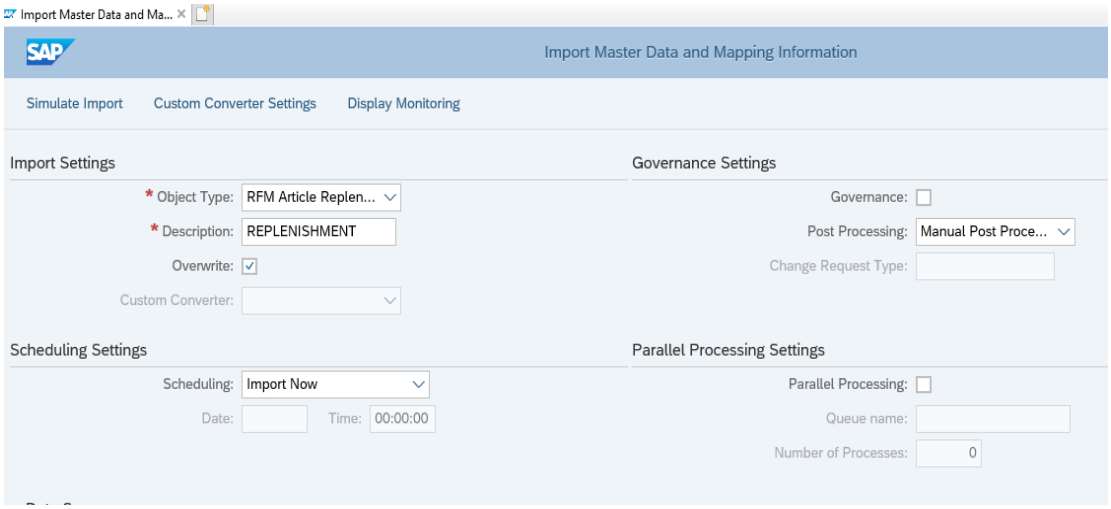
Note:
The class to be assigned to article must have been created in the MDG system before importing the Replenishment data.

Select options on MDG_BS_FILE_IMPORT (DTIMPORT) is available for Import (Create/Change) Article to Active Area with Vendor Characteristics.

Use the following steps to import:

1. Go to NWBC > Click on Master Data Governance for RFM > Data Exchange > Data Transfer > Import Master Data.





Enter the details for the fields as described in the following table:

Field	Description
Object Type	Choose Article AR0B
Description	Description that helps identify import processes in the monitoring / logging
Overwrite	• The overwrite option controls whether existing objects in the target system are overwritten. • It can only be set if the IDoc will be imported to the Active Area. • If you want to overwrite an Article in the Active Area, this indicator must be set. Otherwise, the import to the Active Area for an existing article will fail. If the Overwrite indicator is set, the article in the Active Area will be overwritten. • If the Overwrite indicator is not set and the article is already in the Active Area, the article is rejected during import (and not written to the Staging Area). • Custom Converter User defined conversion. Usually there is no additional transformation needed in this step (if the format is a SAP standard format - either IDoc or SOA based).
Governance	If activated, data is loaded into the Staging Area (a change request will be created).
Post Processing	Post processing for failed objects can be done manually (using “Forward Error Handling” or IDoc Monitoring) or can be supported by a change request process.
Change Request Type	You must select a change request type if “Governance” is set or “Post Processing defined by Change Request” is selected.
Scheduling / Date:	• Scheduling: Indicator to determine if import is done immediately or at a scheduled date. • Date: scheduling date and time
Parallel Processing / Queue Name / Number of Processes	• Parallel Processing: indicator to determine if the import will be done with parallel processes. • Queue Name: qRFC queue name which has been registered in t-code SMQ2 • Number of Processes: The maximum number of parallel processes used.
Data Sources	Selection of source directories for the object types. This can be one or many per object type, and depending on the data transfer customizing, there might be main object types (for example Article) and sub object types (for example additionals, Key Mapping, Value Mapping).
Import, Simulate Import	Starts the import process or a simulated import
Custom Converter Settings	A customer-defined converter can be leveraged by the import process. This converter can be defined and integrated in the Customizing Activity Master Data Governance > General Settings > Data Transfer > Define Filter Converter Type/BAdI: Filter dependent BAdI for file converter.

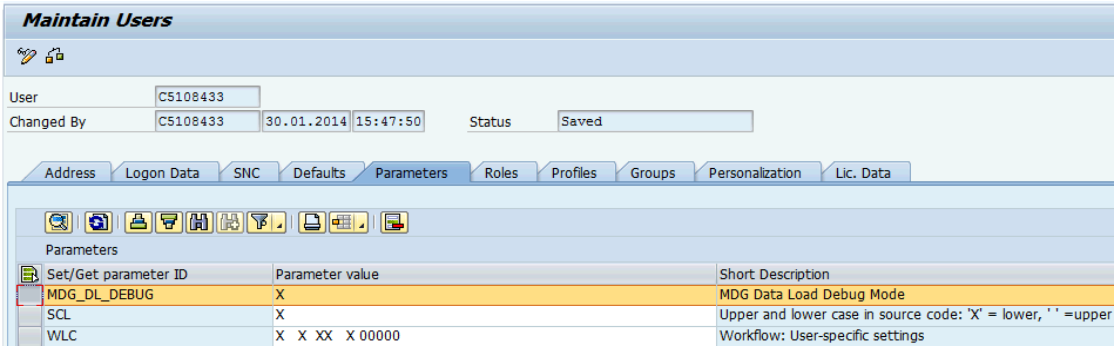
Display Monitoring

After the import has been started, you can navigate directly to the Monitoring. Web Dynpro application: MDG_BS_DL_MONITOR_CONF.

Scheduling File Import for MDG-RFM

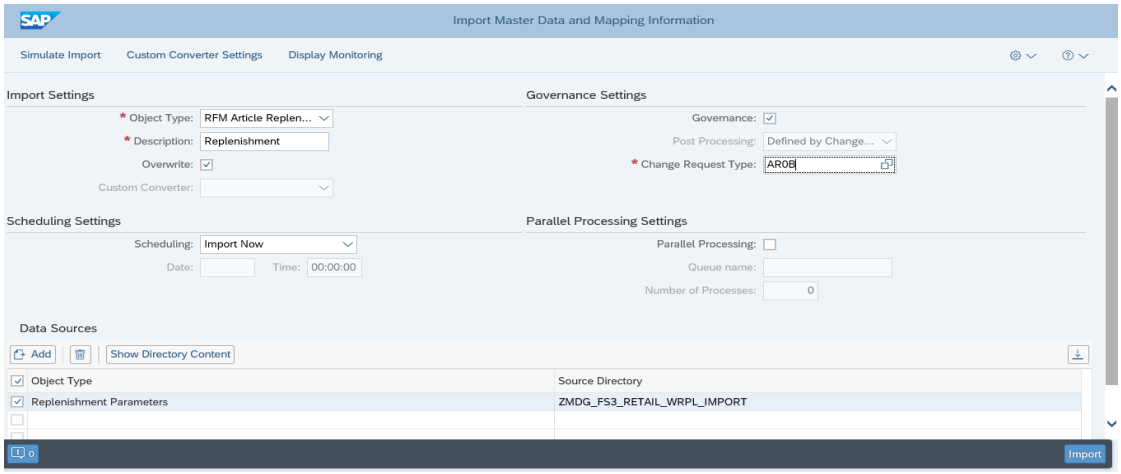
Use the following steps to schedule File Import for MDG-RFM:

1. Ensure that the user does not have the MDG_DL_DEBUG parameter.

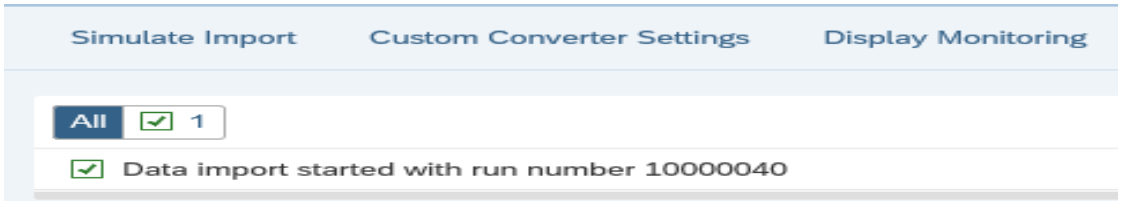


2. Start DTIMPORT and select Scheduling for Future Import (Select a future Time).

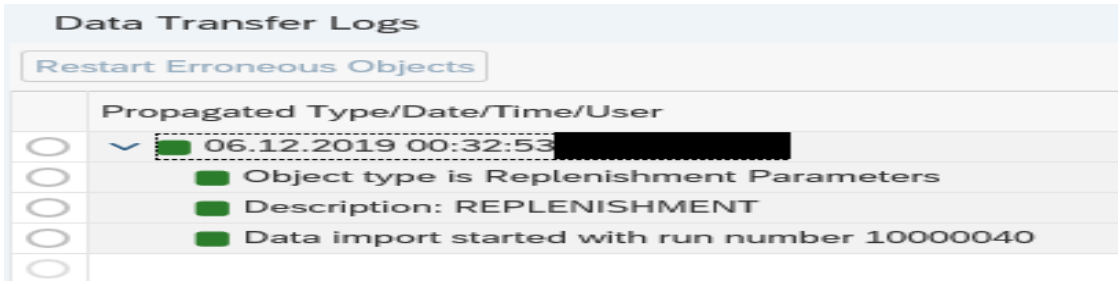
   You need at least one file in the folder before the user can schedule the import (standard MDG behavior).



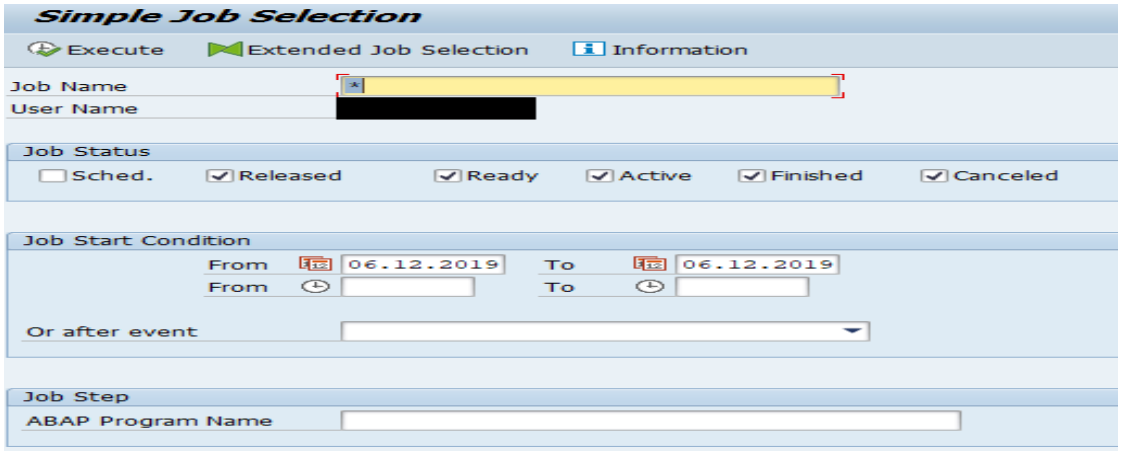
3. Click Import.



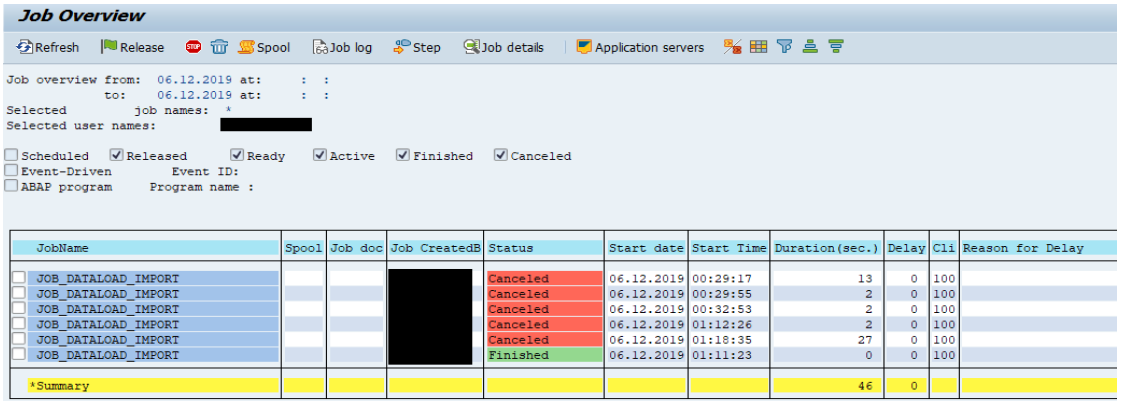
4. Click on Display Monitoring.



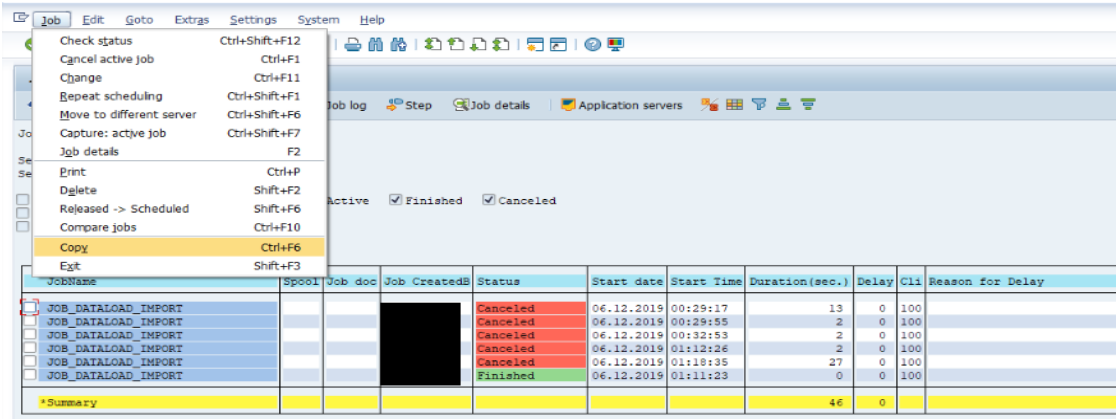
5. Open Change Request – Approve and Activate the CR.
6. Run t-code SM37 and look for the scheduled job that was created from DTIMPORT.

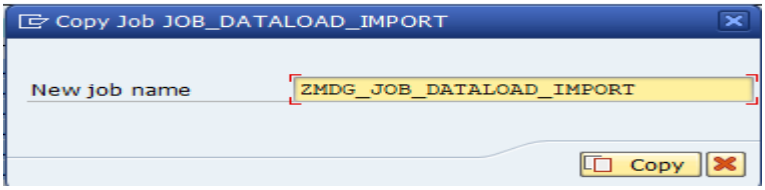


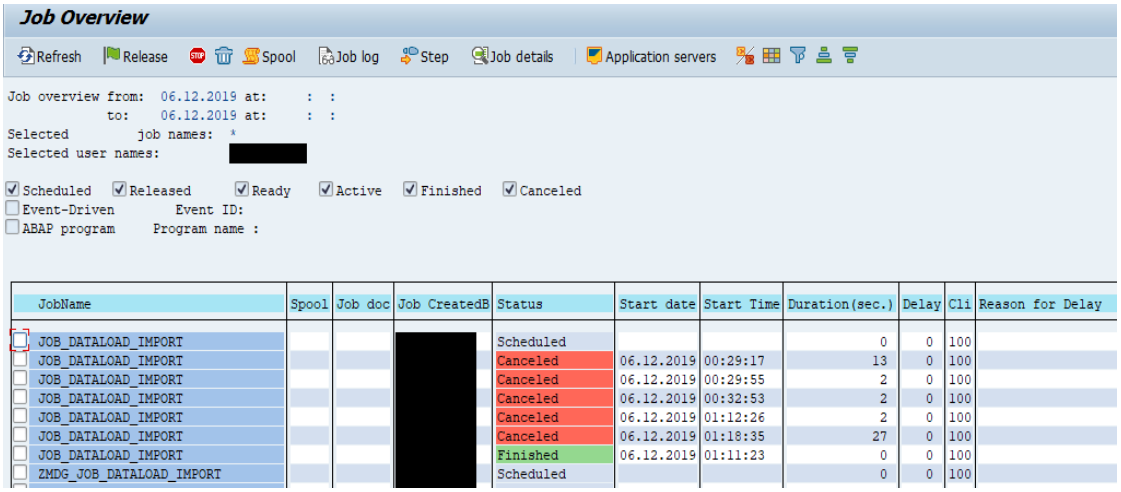
   You can notice a job JOB_DATALOAD_IMPORT released (Status is Finished).



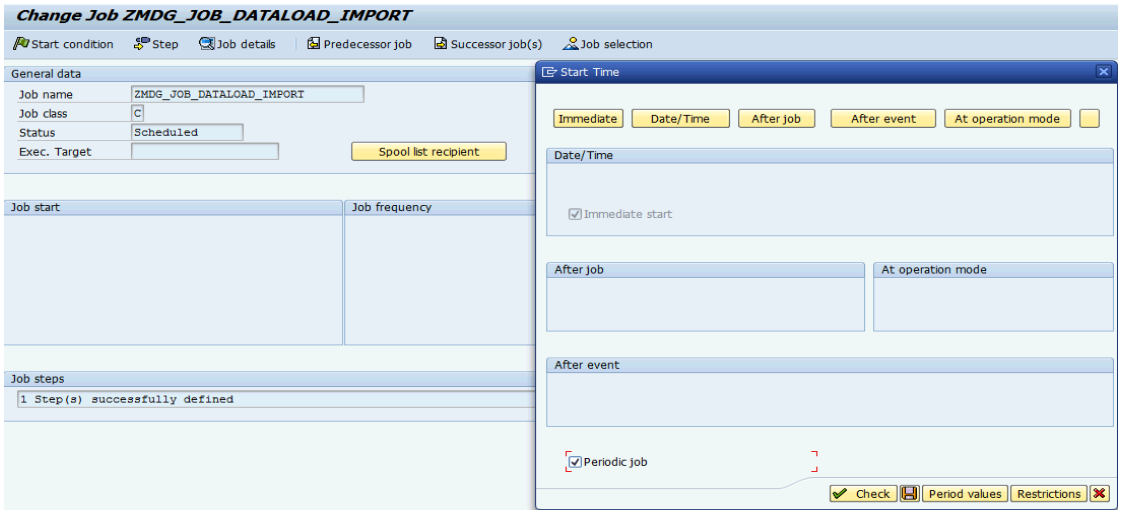
7. Copy the job to a new custom job.



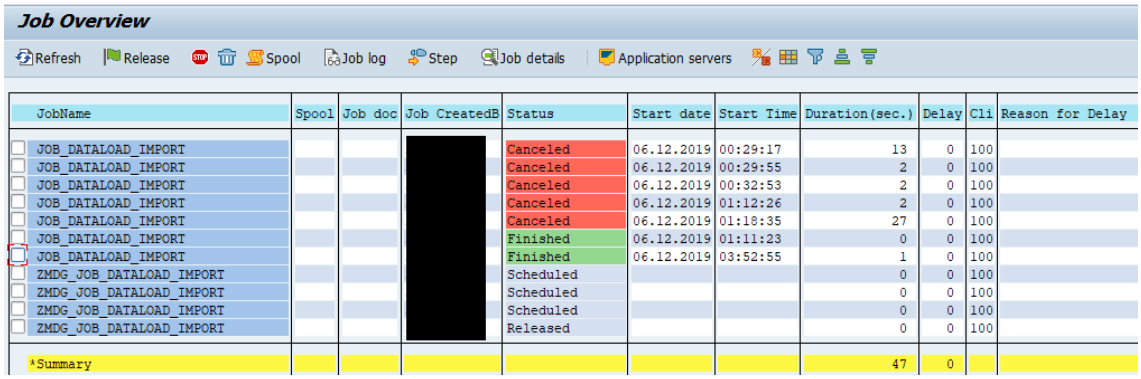




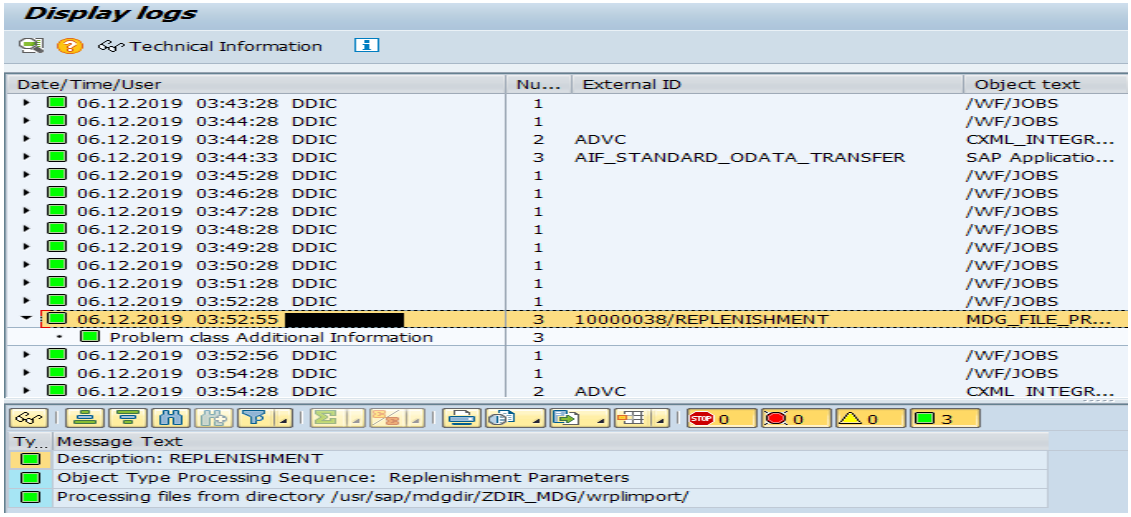
8. After the job is copied, you can set the periodic value.
9. Save and start the job immediately.



You will notice that the job has been released.



10. Run t-code SLG1 for any errors.



Error Handling

It is possible to perform data import for one or more RPLMAS IDoc xml files, with one or more IDocs per xml file, and with each IDoc containing one or more materials.

Scenario	No of xml Files	Import to Active Area	Import to Active Area, with errors sent to Staging Area	Import to Staging Area
1IDoc, 1 article	1 xml	If article has invalid data, import for the IDoc fails,	If article has invalid data, writing to Active Area fails	If one article is rejected while writing

Scenario	No of xml Files	Import to Active Area	Import to Active Area, with errors sent to Staging Area	Import to Staging Area
		with an error message providing what went wrong.	and it is written to the Staging Area. An error message is displayed in log providing information on what went wrong while saving to the Active Area, along with the created change request number. If article is rejected while writing to Staging Area, an error message is displayed providing information on what went wrong.	to the Staging Area, all additional from the whole IDoc xml are rejected (all or nothing) and an error message is displayed providing information on what went wrong. Article import is rejected; Article & is not in Active Area.
1 IDoc and n article	1 xml	If one of the IDoc has individual data (e.g. invalid Season), all the article in IDoc are rejected (all or nothing behavior of /UGI8/MDG_AR_IDoc_INPUT_RPLMAS). For conditions like article already present in Active Area or locked in open CR, specific article objects will be rejected, while other article objects from the IDocs are processed normally.	If one article in IDoc has invalid data (e.g. invalid Season Data), writing to Active Area fails and all article in IDoc are written to the Staging Area. If article is rejected by Staging Area, reject all article from the whole IDoc xml that should have been posted to Staging Area. An error message is placed providing information what went wrong.	
N IDocs and 1 article each	1 xml/ IDoc	Same as row 2 – 1 IDoc n 1 Article	Same as row 2 – 1 IDoc n 1 Material	
N IDoc and 1 article	1 xml for all IDoc	Data import fails for the IDoc containing the erroneous article, with error message providing information on what went wrong. Other IDocs are processed manually.	If one article in IDoc has invalid data (e.g. Season), writing to the Active Area fails and all article in that IDoc are written to the Staging Area. If materials are rejected by the Staging Area, reject all articles from the whole IDoc xml that should have been posted to the Staging Area. An error message is displayed providing information on what went wrong.	
n IDoc and m article each	1 xml for all IDoc	If one article in IDoc has invalid data (e.g Invalid UoM). All article in that IDoc are rejected. (Other IDocs in the same xml without erroneous article will be processed normally). For conditions like article already present in Active Area or locked in other open CR, specific article objects will be rejected while other article objects from IDocs are processed normally.		
n IDocs and m article	1 xml/ IDoc	Same as row 3 – 1 Doc n article		

Glossary

This section provides the list of key terms, abbreviations, and acronyms.

Term/Abbreviations	Description
BOM	Bill of Material
CR	Change Request
DB	Database
EAM	Enterprise Asset Management
GW	Gateway
ICF	Internet Communication Framework
IDoc	Intermediate Document
MRO	Maintenance, Repair, and Overhaul
NW	NetWeaver
OData	Open Data Protocol
RFM	Retail and Fashion Management
t-code	SAP Transaction Code
UI	User Interface