How-To Guide: Data Replication Framework (DRF) Customer Configuration

Applies to

Utopia Retail and Fashion Workstudio

Summary

In RFW, the replication of Article from MDG Hub to connected client systems can be scheduled, triggered and monitored using the Data Replication Framework (DRF) in connect with ALE.

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Introduction

In RFW, the replication of Article from MDG Hub to connected client systems can be scheduled, triggered and monitored using the Data Replication Framework (DRF) in connect with ALE.

This document describes the essential activities that needs be performed to replicate an Article from one client/system to another client/system using ALE IDoc communication.

Prerequisites

Before the following set of activities are performed, the following prerequisites should be completed and verified:

1. Verifying the RFW Business Configuration Set Activation

   The Business Configuration Set activation step mentioned in the configuration guide for RFW titled as “UGI_RFW_1.0_ConfigurationGuide”, should have been completed.

   This activation step brings in the prerequisite data required to carry out the following set of activities for DRF Replication.

2. Verifying Logical Systems

   Both sending and receiving client/system should be defined as Logical Systems and they need to be assigned to the relevant clients. This can be verified as following.

   Run transaction SALE and choose Basic Settings > Logical Systems > Define Logical System

   To verify both the clients/systems are assigned to the relevant clients,

   Run transaction SALE and choose Basic Settings > Logical Systems > Assign Logical System to Client

3. Verifying the RFC Connections

   Run transaction SALE and choose Communication > Create RFC Connections. The target partner system/client should be defined here as an ABAP connection with a connection type 3 and with the same name as the target logical system. A connection test also needs to be performed.

   Define an ALE tRFC port using transaction code (t-code) WE21. Use the RFC created in the earlier step to define this tRFC port.

Create and Distribute IDoc Distribution Model in SALE

To create and distribute IDoc Distribution Model in SALE, use the following steps:

- Create and Maintain Distribution Model in Sending Client/System
- Generate Partner Profiles in sending System/Client
- Distribute Model View to Receiving System/Client
- Generate Partner Profiles in Receiving System/Client
- Change the Partner Profile Inbound Parameter in Receiving Client/System

Create and Maintain Distribution Model in Sending Client/System

Use the following steps to create and maintain the distribution model in sending client/system:

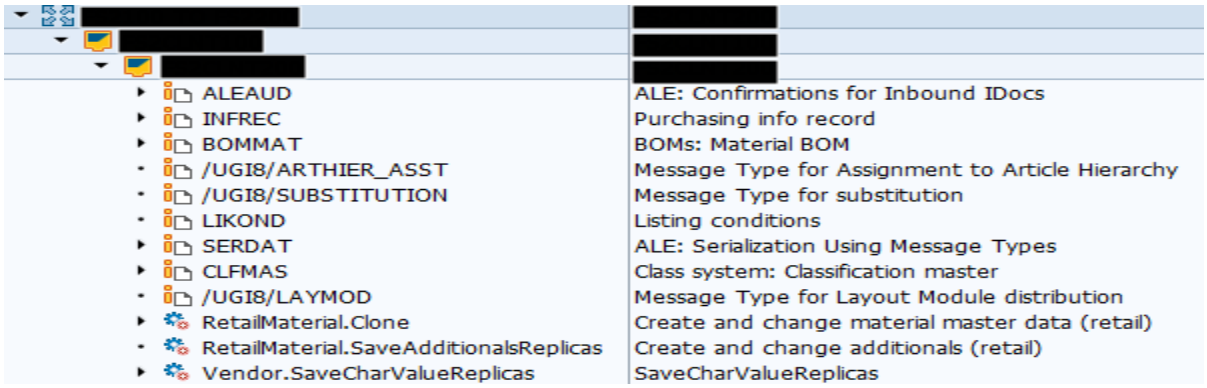
1. Run transaction SALE and choose Modelling and Implementing Business Processes > Maintain Distribution Model and Distribute Views.

   Alternatively, you can run the t-code BD64.
2. Switch to Change mode and click on “Create Model View” button.
3. Enter short text and technical name.
4. Save the Model View.
5. Select the Model View created above and click on the “Add Message Type” or “Add BAPI” button based on the message type.
6. For Message Type, enter the logical system name for the sending and receiving client/system and the Message Type.
7. For BAPI, enter the logical system name for the sending and receiving client/system, Object name/Interface and the Method.
8. Click on “Continue” button.
9. Repeat this for the following list of message types and BAPIs.

Type	Message Type	Object/Interface	Method
Message Type	INFREC		
Message Type	BOMMAT		
Message Type	/UGI8/ARTHIER_ASST		
Message Type	/UGI8/SUBSTITUTION		
Message Type	LIKOND		
Message Type	SERDAT		
Message Type	CLFMAS		
Message Type	/UGI8/LAYMOD		
BAPI		RetailMaterial	Clone
BAPI		RetailMaterial	SaveAdditionalsReplicas
BAPI		Vendor	SaveCharValueReplicas

10. Click on the “Save” button.

An example of the Model View is displayed in the following screen.



Generate Partner Profiles in sending System/Client

Use the following steps to generate partner profiles in sending system/client:

1. Run transaction SALE and choose Modelling and Implementing Business Processes > Partner Profiles > Generate Partner Profiles.

   Alternatively, you can run the t-code BD82.
2. Enter the created Model View and in the Partner System field enter the logical system name of the receiving client/system.
3. For the authorized users, enter the ALE-User (the default value is ALEREMOTE) and for the remaining fields enter the following and execute.

Type Field	Value
Version	3
Pack Size	100
Output Mode	Pass IDoc immediately
Inb. Parameters: Processing	Trigger Immediately

4. To verify the Partner Profiles generated, run the t-code WE20 and from the Partner Profiles menu and select the Partner Type LS and then select the logical system of the receiving client/system.

   In the detail screen, under the Outbound parmtrs., the following message types should appear along with the respective Basic types.

Message type	Basic type
ARTMAS	ARTMAS09
INFREC	INFREC02
MMADDI	MMADDI01
BOMMAT	BOMMAT05
VCHARVAL	VCHARVAL01
SERDAT	SERDAT01
/UGI8/ARTHIER_ASST	/UGI8/ARTHIER_ASST_01
/UGI8/SUBSTITUTION	/UGI8/SUBSTITUTION_01
LIKOND	LIKOND01
CLFMAS	CLFMAS02
/UGI8/LAYMOD	/UGI8/LAYMOD_01

Note

If there is any issue in generating the Partner Profile through BD82, then manually add the Partner Profiles through t-code WE20.

Distribute Model View to Receiving System/Client

Use the following steps to distribute the model view to receiving system/client:

1. Run t-code SALE and select the Modelling and Implementing Business Processes > Maintain Distribution Model and Distribute Views.

   Alternatively, run the t-code BD64.
2. Select the created Model View and from the menu choose Edit > Model View > Distribute.

3. In the popup, verify that correct receiving client/system is selected and choose Enter.
4. In the receiving client/system, run t-code BD64 and verify that the Model View is created.

Generate Partner Profiles in Receiving System/Client

Note

The following Business Configuration Sets should have been activated as documented in the RFW Configuration Guide with title “UGI_RFW_1.0_ConfigurationGuide”.

- /UGIRMP/DM_MASS_DRF_100
- /UGIRMP/DM_MASS_STRUC_100
- /UGIRMP/DM_MASS_CRTYPE_100
- /UGIRMP/DM_MASS_OTC_100
- /UGIRMP/DM_MASS_SCOPE_100
- /UGIRMP/DM_MASS_SCHEMA_100

Use the following steps to generate partner profiles in receiving system/client:

1. Run transaction SALE and choose Modelling and Implementing Business Processes > Partner Profiles > Generate Partner Profiles.

   Alternatively, run the t-code BD82.
2. Enter the created Model View and in the Partner System field enter the logical system name of the sending client/system.
3. For the authorized users, enter the ALE-User, and for the remaining fields enter the following and execute.

   The default value is ALEREMOTE for ALE-User.

Field	Value
Version	3
Pack Size	100
Output Mode	Pass IDoc immediately
Inb. Parameters: Processing	Trigger by background program

4. To verity the Partner Profiles generated, run the t-code WE20 and from the Partner Profiles menu, select the Partner Type LS and then select the logical system of the sending client/system.
5. In the detail screen, under the Inbound parmtrs. the following Message type should appear along with the respective Process Code.

Message type	Process Code
ARTMAS	/UGI8/ARTMAS
INFREC	INFR
MMADDI	/UGI8/ADDI
BOMMAT	BOMM
SERDAT	SERD
VCHARVAL	BAPI
/UGI8/ARTHIER_ASST	/UGI8/ARTHIER_01
/UGI8/SUBSTITUTION	/UGI8/SUBS
LIKOND	LIKO
/UGI8/LAYMOD	/UGI8/LAYMOD
CLFMAS	CLFM

Note

You can manually add the Message Type to the Partner Profiles through t-code WE20.

Change the Partner Profile Inbound Parameter in Receiving Client/System

Use the following steps to change the partner profile system/client:

1. Run t-code WE20 and choose Partner Type LS > click on the Logical System name of the sending client/system.
2. In the detail screen, under the Inbound parmtrs. select the Message Type SERDAT and click on DetailsScreenInboundParameter button.
3. In the section Processing by Function Module, click on the “Trigger Immediately” radio button.
4. Click on “Save” button to save the changes.

Define DRF Replication Model in Sending Client/System

To define a DRF Replication Model in sending client/system, use the following steps:

- Create a New Replication Model
- Assign Outbound Implementation
- Assign Target Systems for Replication Model and Outbound Implementation
- Verify the Outbound Parameter in the Outbound Implementation
- Assign Outbound Parameter to Replication Model and Outbound Implementation
- Activate the Replication Model

Create a New Replication Model

Use the following steps to create a new Replication model:

1. Run t-code MDGIMG and select General Settings > Data Replication > Define Custom Settings for Data Replication > Define Replication Models.
2. Click on the “New Entries” button and enter the name for the Replication Model and its description.

3. Enter the Log Days as per the requirement.
   Log Days implies to the days after which the application log for data replication can be deleted.
4. Enter the Data Model as AR and save the Replication Model.

Replication Model	Description	Log Days	Data Model
<ZDEMO_REPL>	<Demo replication model>	<90>	AR

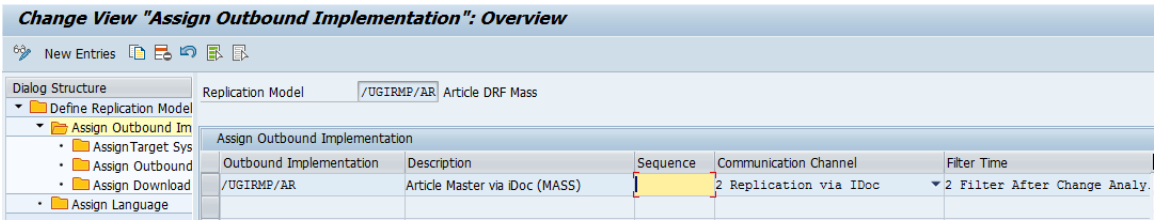
Assign Outbound Implementation

Use the following steps to assign an outbound implementation:

1. Run t-code MDGIMG and select General Settings > Data Replication > Define Custom Settings for Data Replication > Define Replication Models.
2. Select the created Replication Model and click on the Assign Outbound Implementation folder.
3. Enter field values as in the following table and save the Replication Model.

Outbound Implementation	Sequence	Communication Channel	Filter Time
/UGIRMP/AR	1	2 (Replication via IDoc)	2 (Filter After Change Analysis)

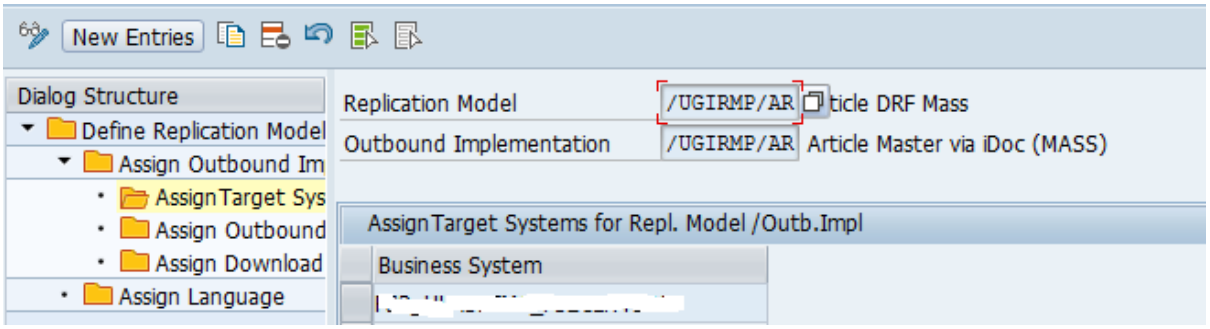
A sample screen is displayed with an example:



Assign Target Systems for Replication Model and Outbound Implementation

Use the following steps to assign target systems for Replication Model and Outbound Implementation:

1. Run t-code MDGIMG and choose General Settings > Data Replication > Define Custom Settings for Data Replication > Define Replication Models.
2. Select the created Replication Model and click on the folder Assign Outbound Implementation.
3. Select the assigned Outbound Implementation and click on the folder Assign Target Systems for Repl. Model/Outb.Impl.
4. Enter the Business System name of the receiving client/system. This Business System should have already been created in the sending client/system.
   A sample screen is displayed with an example:



Verify the Outbound Parameter in the Outbound Implementation

Use the following steps to verify the outbound parameter in the Outbound Implementation:

1. Run t-code MDGIMG and select General Settings > Data Replication > Enhance Default Settings for Outbound Implementations > Define Outbound Implementations.
2. Select the Outbound Implementation /UGIRMP/AR and click on the Assign Outbound Parameter folder.
3. If the Outbound Parameter PACK_SIZE_BULK exists, proceed with the next step as described in Assign Outbound Parameter to Replication Model and Outbound Implementation.
4. If the Outbound Parameter PACK_SIZE_BULK does not exist, then click on “New Entries” button and enter the following field values.

Outbound Parameter	Mandatory
PACK_SIZE_BULK	X

5. Click on “Save” button to save the changes.

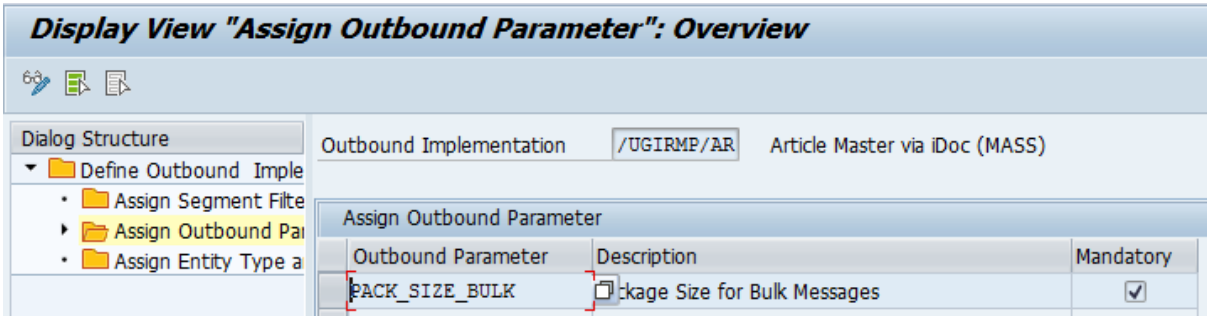
Assign Outbound Parameter to Replication Model and Outbound Implementation

Use the following steps to assign an outbound parameter to Replication Model and Outbound Implementation:

1. Run transaction MDGIMG and select General Settings > Data Replication > Define Custom Settings for Data Replication > Define Replication Models.
2. Select the created Replication Model and click on the Assign Outbound Implementation folder.
3. Select the assigned Outbound Implementation and click on the Assign Outbound Parameter folder.
4. Enter the parameter value for the mandatory Outbound Parameter PACK_SIZE_BULK as displayed in the following table:

Outbound Parameter	Description	Mandatory	Parameter Value	Value Description
PACK_SIZE_BULK	Package Size for Bulk Messages	X	<100>	<Distribute 100 at a time>

A sample screen is displayed with an example:



Activate the Replication Model

Use the following steps to activate the replication model:

1. Run t-code MDGIMG and select General Settings > Data Replication > Define Custom Settings for Data Replication > Define Replication Models.
2. Select the created Replication Model and click on the Activate button.

Note

Refer to the successful activation of Replication Model in the log.

Configure Serialization Group in Receiving Client/System

The following steps are followed to complete the IDoc Serialization group configuration:

- Need for the IDoc Serialization
- Define Serialization Group
- Define Inbound Processing of Serialization Group
- Create a Variant for the Program RBDSER04
- Schedule the Program to Process the Inbound IDocs of Serialization Group

Need for the IDoc Serialization

Due to data intensity, article master data replication involves multiple IDoc message types like ARTMAS, BOMMAT, and INFREC etc.

The following list of message types for the different type of data area that are supported in the Article Master data replication as part of RFW.

Master data area	IDOC Message type	IDOC Basic type
Article master	ARTMAS	ARTMAS09
Purchase info record	INFREC	INFREC02
Vendor characteristics	VCHARVAL	VCHARVAL01
Component	BOMMAT	BOMMAT05
Additionals	MMADDI	MMADDI01
Article hierarchy	/UGI8/ARTHIER_ASST	/UGI8/ARTHIER_ASST_01
Substitutions	/UGI8/SUBSTITUTION	/UGI8/SUBSTITUTION_01
Listing Conditions	LIKOND	LIKOND01
Serialization	SERDAT	SERDAT01
Classification master	CLFMAS	CLFMAS02
Layout Module	/UGI8/LAYMOD	/UGI8/LAYMOD_01

When a single Article is replicated, there can be a maximum of 7 different outbound IDocs are being distributed from the MDG system to a target system. In the target client/system, when these inbound IDocs are received, they are all processed in parallel independent of each other.

This could potentially result in the locking issue of the Article Master by one IDoc and other IDocs, may end with errors.

To overcome this issue, ARTMAS IDOC Serialization group should be configured in the receiving client/system with all these message types along with the sequences.

Define Serialization Group

Use the following steps to define serialization group:

1. Run t-code SALE and select Modelling and Implementing Business Processes > Master Data Distribution > Serialization for Sending and Receiving Data > Serialization Using Message Types > Define Serialization Groups.
2. Select the Serialization Group GRP_ARTMAS > click on Assignment of logical messages to serial. Group folder.
3. Maintain the Seq. number for the Message Type as in the following if not maintained.

Message Type	Seq. number
ARTMAS	1
INFREC	3
BOMMAT	6
MMADDI	7
/UGI8/ARTHIER_ASST	12
/UGI8/SUBSTITUTION	13
/UGI8/LAYMOD	10
CLFMAS	11
LIKOND	2

Note

The message type ARTMAS should have the sequence number 1. Remaining message types mentioned above shall be in any order as they are all independent.

Define Inbound Processing of Serialization Group

Use the following steps to define the inbound processing of serialization group:

1. Run t-code SALE and choose Modelling and Implementing Business Processes > Master Data Distribution > Serialization for Sending and Receiving Data > Serialization Using Message Types > Define Inbound Processing.
2. Click on “New Entries” button and maintain the following entries.

Group	Message Type	Sending system	Obj/Proc	P (Parallel processing)
GRP_ARTMAS	ARTMAS	<LS name of sending client/system	1	X
GRP_ARTMAS	INFREC	<LS name of sending client/system	1	X
GRP_ARTMAS	BOMMAT	<LS name of sending client/system	1	X
GRP_ARTMAS	MMADDI	<LS name of sending client/system	1	X
GRP_ARTMAS	/UGI8/ARTHIER_ASST	<LS name of sending client/system	1	X
GRP_ARTMAS	/UGI8/SUBSTITUTION	<LS name of sending client/system	1	X
GRP_ARTMAS	/UGI8/LAYMOD	<LS name of sending client/system	1	X
GRP_ARTMAS	CLFMAS	<LS name of sending client/system	1	X
GRP_ARTMAS	LIKOND	<LS name of sending client/system	1	X

Note

LS = Logical System

3. Click on “Save” button to save the changes.

Create a Variant for the Program RBDSER04

Use the following steps to create a variant for the program RBDSER04:

1. Run t-code SE38 and enter the Program RBDSER04 > click on “Execute” button.
2. Enter the Serialization Group as GRP_ARTMAS > Enter the Logical Sending System as the logical name of the sending client/system.
3. Enter the values for the fields IDoc Created on and IDoc Created at as per the business requirement.

   Alternatively, you can also assign dynamic values for field IDoc Created on using variables in the variant attributes in the next screen.
4. Click on “Save” button > Variant Attributes screen is displayed > Enter the field values as in the following table.

Variant Name	Description
<GRP_ARTMAS_001>	<Process Inbound IDOCs sender xxxxxxx>

5. Click on “Save” button to save the variant.

Note

For more information on creating variants, refer the help document:

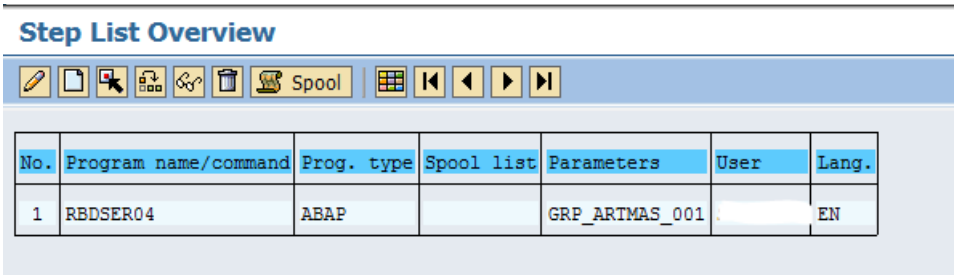
https://help.sap.com/saphelp_nw70/helpdata/EN/c0/980389e58611d194cc00a0c94260a5/content.

Schedule the Program to Process the Inbound IDocs of Serialization Group

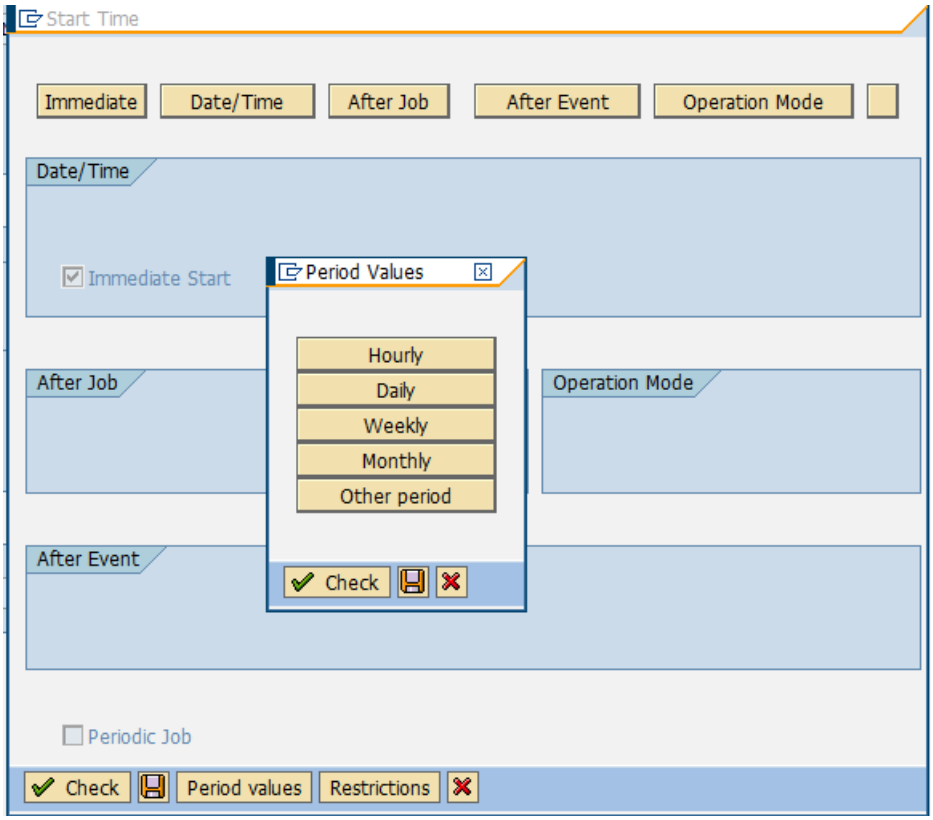
Use the following steps to schedule the program to process the inbound IDocs of Serialization group:

1. Schedule a background job to execute the program RBDSER04 on a specific interval as per the business requirement.
2. The program updates IDocs of a serialization group according to a defined updating sequence. The program selects IDocs options with the status 64 (IDoc ready to be passed to application) in accordance to the selection options and passes those to the application for further processing.
3. Follow the steps to schedule the background job.
4. Run t-code SM36 > enter the Job Name as <RUN_RBDSER04_IDOCS_FROM_xxx> > click on “Step” button.
5. Under the section ABAP program, enter the Name as RBDSER04 > Select the created Variant > GRP_ARTMAS_001 > click on “Save” button.

   The list is displayed in the following screen.



6. Click on “Back” button and click on “Start condition” button.
7. In the popup screen as displayed, click on the “Immediate button” > Select the checkbox Periodic Job > Click on “Period values” button.



8. In the popup screen displayed, maintain the intervals as per the business requirement > click on “Save” button.
9. Click on “Save” button in the Start Time popup screen.
10. Click on the “Save” button in the main overview page.
11. Run t-code SM37 and verify that the background job has been scheduled.

Note

For more in information about scheduling a background job, refer the help document:

https://help.sap.com/saphelp_nw70/helpdata/EN/c4/3a7f87505211d189550000e829fbbd/frameset.htm