SAP Landscape Transformation Replication Server

Resuming Replication Without Initial Load After System Refresh or OS/DB Migration
Typographic Conventions

<table>
<thead>
<tr>
<th>Type Style</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Textual cross-references to other documents.</td>
</tr>
<tr>
<td>Example</td>
<td>Emphasized words or expressions.</td>
</tr>
<tr>
<td>EXAMPLE</td>
<td>Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.</td>
</tr>
<tr>
<td>Example</td>
<td>Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.</td>
</tr>
<tr>
<td>Example</td>
<td>Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.</td>
</tr>
<tr>
<td>&lt;Example&gt;</td>
<td>Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.</td>
</tr>
<tr>
<td>EXAMPLE</td>
<td>Keys on the keyboard, for example, F2 or ENTER.</td>
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</tbody>
</table>
## Document History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Change</th>
</tr>
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<tr>
<td>1.0</td>
<td>2015-01-28</td>
<td>Initial Version</td>
</tr>
<tr>
<td>1.2</td>
<td>2015-07-09</td>
<td>Ext. for tables in Replication only (no initial load) mode</td>
</tr>
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1 Use Case

You are using SAP LT Replication Server to replicate data from an SAP source system to an SAP HANA database.

Due to one of the following situations, your system landscape will comprise a new source and/or target system:

- You want to refresh your source and target systems by copying systems from your production landscape.
- You want to migrate your source system to another hardware alternative (OS/DB migration).

Afterwards, you want to resume the replication for tables without having to perform an initial load again.

If the data in source system and the data in the target system is in sync for the relevant tables, you can reconnect the systems without having to perform a new initial load. This document describes the required steps to do this.

1.1 Restrictions

The replication can only be resumed for tables that have the status In Replication. Any tables that have the status Initial Load must be stopped and restarted again.

In order to avoid data inconsistencies, you need to ensure that the data for the relevant tables is in sync between the source and target systems. If the source and target systems are part of a system landscape where data is being replicated by SAP LT Replication Server, then you must ensure that all delta data is replicated. In the SAP LT Replication Server system, you can check the status of any unprocessed records by using the expert function View Unprocessed Logging Table Records in the SAP LT Replication Server Cockpit (transaction LTRC).

1.2 Prerequisites

In order to run this process, you must implement SAP Note 2123494.
2 Process

Before you make any changes to the source or target systems, all SAP LT Replication Server configurations that use these systems must be stopped. You can stop the relevant configurations in the SAP LT Replication Server Cockpit (transaction LTRC). On the tab page Administration Data, choose the Deactivate pushbutton.

2.1 Prepare Source System

This section is only relevant if there will be a new source system, as described in chapter 1.

The SAP LT Replication Server (DMIS) software versions can be different in the source system and in the SAP LT Replication Server system. You must ensure that the DMIS support package level in the new source system is supported by the SAP LT Replication Server system. For more information, see the compatibility matrix defined in the relevant SAP Note. You can find the relevant SAP Note by searching for the following short text:

Installation/Upgrade SLT - DMIS 2011 SPx (where x is the relevant support package level).

If the source system was created from another system that was already connected to an SAP LT Replication Server system, there might be some SAP LT Replication Server objects in the source systems that have to be deleted:

- Database triggers
- Logging tables
- 1:N registrations

In order to delete these objects, you will require a user with the role SAP_IUUC_REPL_ADMIN in the source system.

2.1.1 Delete Existing Database Triggers

To display the existing SAP LT Replication Server triggers, call transaction IUUC_REMOTE. On the tab page Display Functions, choose the pushbutton List Triggers. The system displays a screen that contains the following default selection parameters:
List Triggers

Execute the program using the default selection parameters.

The system displays a list of database triggers created by the SAP LT Replication Server. If no tables are listed here, then no additional action is required.

In order to delete the existing triggers, call transaction IUUC_REMOTE. On the tab page Expert Functions, choose the pushbutton Delete Triggers. The system displays a screen that contains default selection parameters. Execute the program using these default selection parameters. Note that the system will display a warning, which you can confirm.

You can check whether the triggers have been deleted by choosing the pushbutton List Triggers again.

⚠️ Caution

Deleting database triggers can result in serious data inconsistencies. Only delete triggers as part of this specific scenario, and not for any other scenario.
2.1.2 Delete Existing Logging Tables

In order to delete any logging tables that might exist, call transaction IUUC_REMOTE. One the tab page Expert Functions, choose the pushbutton Delete Logging Tables. The system displays a screen that contains default selection parameters. Execute the program using these default selection parameters.

![Delete Logging Tables]

2.1.3 Delete Existing 1:N Registrations

If data was previously replicated to multiple target system from the source system, there might be some registration entries that have to be deleted. In order to do this, you need to delete entries from the following tables manually:

- IUUC_1N_CONS_REG
- IUUC_POOL_REGIST
- IUUC_LOG_APPLTAB

Check whether the tables contain entries. If a table contains entries, delete the entries or truncate the table.

2.2 Prepare Target System

This section is only relevant if there will be a new target system, as described in chapter 1.

You must ensure that the HANA revision in the new target system is supported by the SAP LT Replication Server system. For more information, see the compatibility matrix defined in the relevant SAP Note. You can find the relevant SAP Note by searching for the following short text:

Installation/Upgrade SLT - DMIS 2011 SPx (where x is the relevant support package level).
In addition, we recommend updating the SAP HANA client library to the corresponding level in case the new target is installed on a higher level.

If the target system was created from another system that was already connected to an SAP LT Replication Server system, there might be some activities required in the target system:

- Delete exiting public synonyms
- Adapt registration data

### 2.2.1 Delete Existing Public Synonyms

In order to identify the relevant synonyms that have to be deleted, you can execute the following SQL statement in the SAP HANA studio:

```
SELECT SYNONYM_NAME FROM "SYS"."SYNONYMS" WHERE SYNONYM_NAME LIKE '/1CADMC/%' OR SYNONYM_NAME LIKE '/1LT/%'
```

All synonyms that are returned in the result set must be deleted using the following SQL statement. You need to replace `<synonym_name>` with the names of the previous result set.

```
DROP PUBLIC SYNONYM "<synonym_name>"
```

**Caution**

If multiple source systems are connected to the target system, then deleting the synonyms will affect all configurations. You must therefore ensure that the reset steps for the target system are implemented for all configurations (section 2.3.4.2 - Target System).

### 2.2.2 Adjust Registration Data

To enable the data provisioning UI in the SAP HANA studio, every SAP LT Replication Server configuration is registered in the SAP HANA database in table RS_REPLICATION.Components in schema SYS_REPL. If you are using the data provisioning UI in the SAP HANA studio, you need to adjust the registration data in this table. If you are using data provisioning in the SAP LT Replication Server system only, you can skip this step.
In column SID, the system ID of the source system is stored. In column CI_HOST, the host name of the source system is stored. If this data has changed due to the refresh, you need to adjust these values accordingly. To obtain the required information for column CI_HOST, execute the function module RFC_GET_SYSTEM_INFO in the source system by using transaction SE37 (the parameter DESTINATION remains initial). The value is returned in structure RFCSI_EXPORT, in column RFCDEST.

The information for the respective SAP LT Replication Server system is stored in columns SLT_SID and SLT_HOST, and can be adjusted accordingly.

Table RS_REPLICATION_COMPONENT in the SAP HANA studio

2.3 Reconnect SAP LT Replication Server

If the preparatory steps have been completed successfully, the relevant configurations can be connected to the new source and/or target systems. In addition, the replication objects have to be adjusted to the new environment.

2.3.1 Adjust Connection to Source System

If the connection data (for example the server name or user logon data) to the source system has changed, the respective RFC destination must be adjusted. In the SAP LT Replication Server Cockpit (transaction LTRC), you can find the RFC destination name on the Administration Data tab page. You must adjust the setting of the used RFC destination in transaction SM59, as the RFC destination name cannot be changed in an existing configuration.
2.3.2 Adjust Connection to Receiver System

If the host or instance number of the target system has changed, the existing database connections must be adjusted accordingly. You can do this in the SAP LT Replication Server Cockpit (transaction LTRC). On the tab page Expert Functions, choose the expert function Change Settings for Connection to Target System.

![Change Settings for Connection to Target System](image)

2.3.3 Advanced Replication Settings

If the source and/or target system was already connected to an SAP LT Replication server system, there might be some obsolete advanced replication settings. The advanced replication settings (for example table structure deviations) must fit to the settings of the current SAP LT Replication Server system.
2.3.4  Reset Replication Objects

For the new source and/or target system, some actions have to be executed again (depending on which system has been changed). The following steps have to be done for every configuration that is connected to the new source and/or target system.

You can reset the replication object using the expert functions available in the SAP LT Replication Server cockpit (transaction LTRC).

2.3.4.1  Source System

This section is only relevant if there will be a new source system, as described in chapter 1.
If you have completed all the preparatory steps described above, the corresponding status flags for the SAP LT Replication objects have to be reset.

To reset the trigger and logging table status, execute the expert function *Reset Status for Triggers and Logging Tables* in the LT Replication Server cockpit (transaction LTRC). Enter the relevant mass transfer ID, and select all the checkboxes under *Reset Status*. You do not need to enter table names, as the reset has to be executed for all tables.

You can check the results on the tab page *Table Overview*. For all tables, the flag in column *Log. Tab. Created* should be reset, and none of the tables should have status *Activated* in the column *Trigger Status*. 
2.3.4.2 Target System

This section is only relevant if there will be a new target system, as described in chapter 1.

If you have completed the all preparatory steps described above, the corresponding status flags for the SAP LT Replication objects have to be reset.

To reset the synonym status, execute the expert function *Reset Status of Tables and Synonyms* in the LT Replication Server cockpit (transaction LTRC). Enter the relevant mass transfer ID, and select the following checkboxes:

- Reset “In Process” Flag
- Reset “Failed” Flag
- Reset Table/Syn. Receiver

You do not need to enter table names, as the reset has to be executed for all tables.

You can check the results on the tab page *Table Overview*. For all tables, the flag in column *Synonym Receiver* should be reset.
2.3.4.3 General Reset Steps

To ensure that the replication objects are setup correctly, the existing replication objects are deleted so that they will be recreated. You can do this by using the function *Delete Load/Replication Objects* on the tab page *Processing Steps*.

Enter the relevant mass transfer ID, and choose the *Execute* pushbutton. You do not need to enter table names, as the relevant load objects must also be deleted.

On the tab page *Data Transfer Monitor*, you can check the results. All flags (*Defined*, *Generated*, *Calculated*, and *Loaded*) should be reset for all tables. If status flag *Failed* or *In Process* is set for one of the tables, the respective replication object cannot be reset. You need to reset the flags on the tab page *Data Transfer Monitor* manually and execute the function *Delete Load/Replication Objects* again.

All tables that have the status *Replication (Initial Load)* have to be restarted as the initial load cannot be finalized after the new system is connected. The same applies for tables that have the status *In Replication*, but for which data is not in sync between the source and target systems.

You can restart the tables by using the *Data Provisioning* pushbutton in the SAP LT Replication Server Cockpit (transaction LTRC).
The Data Provisioning Screen

Once all steps have been executed, the configuration can be activated again so that all objects that have been deleted or adjusted can be recreated. You can activate the configuration on the Administration Data tab page.

Activating a Configuration

You need to monitor the configuration until all tables have the status In Replication again.

Caution

If some tables were originally added to the configuration for Replication only (no Initial load) please use the Process Steps commands to recreate the corresponding objects manually. Please go to Tab Process Steps, execute steps Create Logging Tables, Create Database Triggers, Create Tables and Synonyms, Define Load / Replication Object consequently. Activate configuration afterwards.

Caution

If the system checks whether the database triggers exist before they have been recreated, then it will block the relevant tables from the replication process.

You can check whether tables are blocked in the SAP LT Replication Server Cockpit (transaction LTRC), in the tab page Data Transfer Monitor (column Blocked Processing Steps).

If tables are blocked, you can resume the replication process by using the expert function Reset Load and Replication Status. Under Reset Blocked Tables, select the Reset Block Data Transfer checkbox.