

Trigger-Based Data Replication Using SAP Landscape Transformation Replication Server

- For SAP NetWeaver ABAP-based Target Systems



Typographic Conventions

Type Style	Description
<i>Example</i>	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.
Example	Emphasized words or expressions.
EXAMPLE	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.
Example	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.
Example	Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE	Keys on the keyboard, for example, F2 or ENTER.

Document History

Version	Date	Change
1.0	2015-01-21	Initial Version for SAP Landscape Transformation Replication Server DMIS_2011 support package 08.
1.1	2015-07-28	Initial Version for SAP Landscape Transformation Replication Server DMIS_2011 support package 09.
1.2	2015-08-10	Updated with additional information about SAP NetWeaver Business Client.
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1.6	2017-06-14	Revised published version for SAP Landscape Transformation Replication Server DMIS_2011 support package 13.
1.7	2018-01-16	Revised published version for SAP Landscape Transformation Replication Server DMIS_2011 support package 14.
1.8	2019-01-11	Updates to compatibility information section 2.4

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1 Getting Started

1.1 About this Document

Purpose

This guide details the installation and configuration the SAP Landscape Transformation Replication Server in order to facilitate trigger-based replication of data to SAP NetWeaver ABAP-based target systems.

This guide is intended for system administrators and consultants performing and initial install and configuration of SAP LT Replication Server. Proficiency with SAP NetWeaver Basis is required to complete the installation.

This guide will take you through the required steps to:

- Decide on a suitable installation type based on the existing system landscape
- Install the SAP LT Replication Server
- Configure the source data system for RFC access from the SAP LT Replication Server
- Configure your target system for access by SAP LT Replication Server
- Setup the replication using the SAP LT Replication Server Cockpit
- Start replication from the source system to the target system

1.2 Related Information

1.2.1 Planning Information

For more information about planning topics not covered in this guide, see the following content:

Content	Location
Latest versions of installation and upgrade guides	http://service.sap.com/instguides
Sizing, calculation of hardware requirements - such as CPU, disk and memory resource - with the Quick Sizer	http://service.sap.com/quicksizer

Content	Location
tool	
Released platforms and technology-related topics such as maintenance strategies and language support	http://service.sap.com/platforms To access the Platform Availability Matrix directly, enter http://support.sap.com/pam
Network security	http://service.sap.com/securityguide
Performance	http://service.sap.com/performance
Information about Support Package Stacks, latest software versions and patch level requirements	http://support.sap.com/sp-stacks
Information about Unicode technology	http://scn.sap.com/community/internationalization-and-unicode

1.2.2 Further Useful Links

The following table lists further useful links:

Content	Location
Information about creating error messages	http://support.sap.com/incident
SAP Notes search	http://support.sap.com/notes
SAP Software Download Center (software download and ordering of software)	http://support.sap.com/swdc
SAP Online Knowledge Products (OKPs) – role-specific Learning Maps	http://service.sap.com/rkt

1.2.3 Related SAP Landscape Transformation Replication Server Guides

For information about additional SAP Landscape Transformation Replication Server guides and resources, see SAP Note [1605140](#) (the central SAP Note for SLT replication)

1.3 Key Terms

The following table contains key terms related to the SAP LT Replication Server:

Term	Definition
Configuration	The definition of the parameters that the SAP LT Replication Server uses to replicate data from one or more source systems to one or more target systems. The configuration specifies the source system, the target system, and the relevant connections.
Configuration and Monitoring Dashboard	An application that runs on the SAP LT Replication Server that you use to specify configuration information (such as the source and target systems, and relevant connections) so that data can be replicated. You can also use it to monitor the replication status.
Database trigger	A database trigger is procedural code that is automatically executed in response to certain events to a particular database table or view.
Data transfer Job	A job that is used for the data transfer process in the SAP LT Replication Server.
Initial load	A step within the trigger-based replication process that loads data from the source system to target system.
Initial load Job	A job that is used for the initial load process in the SAP LT Replication Server.
Logging table	A table in the source system that records any changes to a table that is being replicated. This ensures that the SAP LT Replication Server can replicate these changes to the target system.
Master job	A job that exists for each configuration that calls the initial load jobs and the data transfer jobs in the SAP LT Replication Server.
Reading type	A technique for reading data from tables in the target system during the initial load process.
SAP LT Replication Server	An SAP application that facilitates the replication of data from one or more source systems to one or more target systems. The source systems can be SAP or non-SAP systems.
Trigger-based replication	A technique for replicating data where an initial load is first performed that loads data from the source to the target system, and a replication phase begins whereby only changes to the source database (recorded by databases triggers) are replicated to the target database, thereby facilitating data replication in real-time.

1.4 Important SAP Notes

You must read the following SAP Notes before you start the installation. These SAP Notes contain the most recent information on the installation, as well as corrections to the installation documentation.

Make sure that you have the up-to-date version of each SAP Note, which you can find on SAP Support Portal at <http://support.sap.com/notes>.

SAP Note Number	Title	Description
2570052	Installation/Upgrade SLT - DMIS 2011 SP14	This SAP Note describes the installation or upgrade of SAP LT Replication Server to the relevant DMIS SP.
19466	Downloading SAP Kernel patches	Downloading a kernel patch in the Software Distribution Center.
517484	Inactive services in the Internet Communication Framework	The Internet Communication Framework Services are inactive when you install the SAP Web Application Server.
1768805	Collective Note - non-SAP Sources	This SAP Note describes important considerations of the connection with non-SAP source systems.
1892481	Conflicting generated objects using DMIS-based Applications	Only relevant if multiple SAP LT Replication Server systems are connected to the same source system, as this situation can result in issues with number ranges in the SAP LT Replication Server systems.

2 Planning

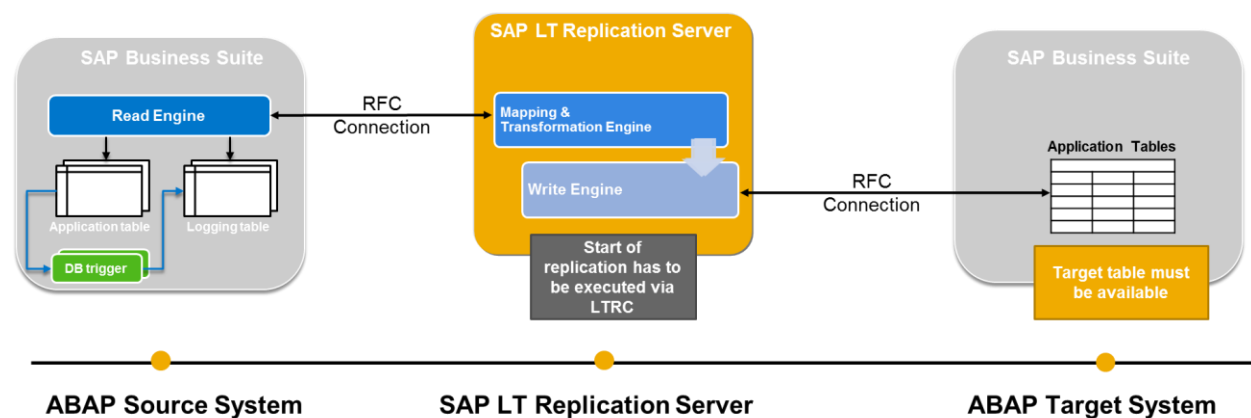
2.1 Introduction

With SAP LT Replication Server, you can synchronize your business data in real time for your SAP Business Suite landscape while keeping data transfer volume to a minimum.

You can easily replace custom-built data synchronization applications with SAP Landscape Transformation Replication Server and benefit from the tight integration with the SAP NetWeaver ABAP Application stack and data model. A growing number of SAP Business Suite scenarios (for example SAP Financial solutions) already use this technology to consolidate data among distributed systems.

Potential use cases for SAP Landscape Transformation Replication Server are:

- You want to synchronize data in between two (or more) SAP ERP systems.
- You want to replace an existing solution that moves data between systems, in order to leverage real-time data replication.
- You want to populate an additional ABAP system with real-time data.



i Note

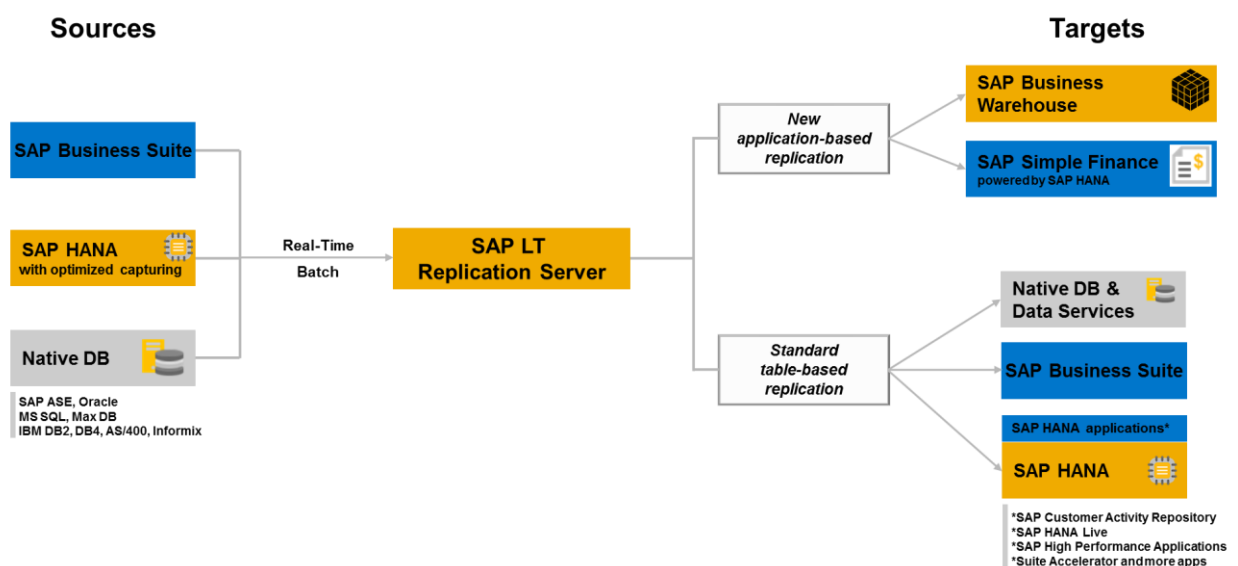
The target tables must already exist; they will not be created automatically by SAP Landscape Transformation Replication Server.

SAP Landscape Transformation Replication Server can replicate all data from one table. You can also replicate the data from the table that is relevant for a specific client. However, if you want to replicate client-specific data to a target client that has a different client number, you need to specify a transformation rule.

The following components are used in the technical system landscape:

- **SAP source system**
The source system tracks database changes by using database triggers. It records information about changes in the logging tables. Read modules (located on the SAP source system) transfer the data from the source system to the SAP LT Replication Server. The relevant data is read from the application tables.
- **Non-SAP source system**
The non-SAP source system tracks database changes by using database triggers. It records information about changes in the logging tables. Read modules (located at the SAP LT Replication Server) transfer the data from the non-SAP source system to the SAP LT Replication Server. The relevant data is read from the application tables.
- **SAP LT Replication Server System**
An SAP system that facilitates the replication of data from one or more source systems to one or more target systems. The source systems can be SAP or non-SAP systems.
- **Target System**
The SAP NetWeaver ABAP-based system. The SAP LT Replication Server and the SAP system communicate by means of RFC connections.

The SAP LT Replication Server can be used to replicate data from SAP sources and non-SAP sources to the target SAP system. For SAP sources, the SAP LT Replication Server can either be installed within an SAP NetWeaver ABAP-based source system, in a separate SAP system, or in a SAP NetWeaver ABAP-based target system,



The relevant information required to create the connection between the source system, the SAP LT Replication Server, and the target system is specified within the SAP LT Replication Server as a configuration. In the SAP LT Replication Server Cockpit (transaction **LTRC**), you can define a new configuration.

We recommend that the SAP LT Replication Server is installed on a separate system, but before you begin the installation, it is important to understand the various system landscape options available.

i Note

If the source system is not an SAP system, the SAP LT Replication Server must be a separate SAP NetWeaver ABAP-based system

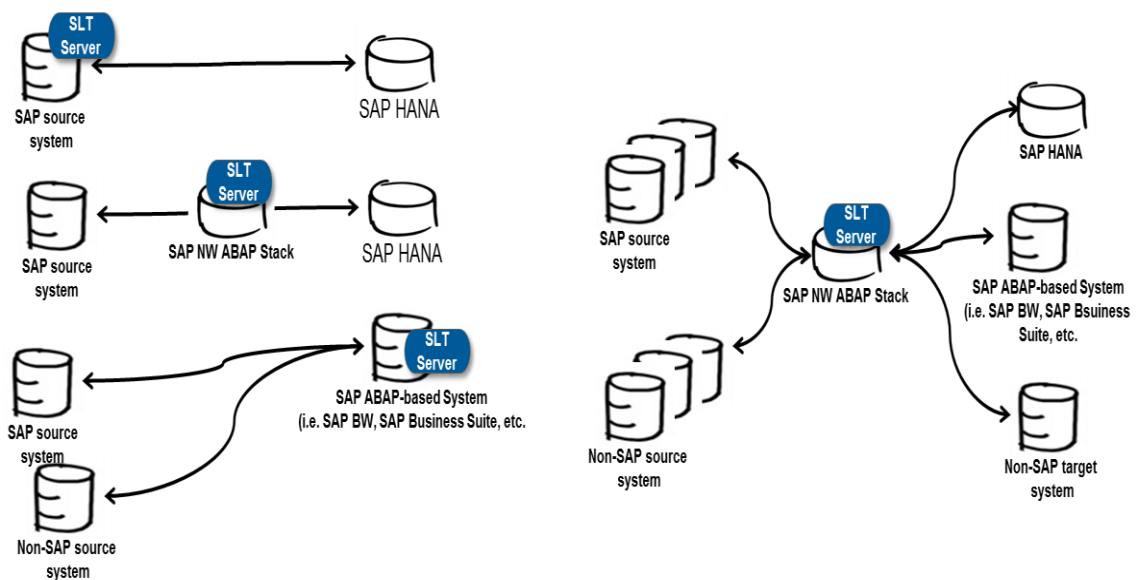
The SAP LT Replication Server uses background processing to replicate data. This can be an important factor in deciding where to install SAP LT Replication Server since background processing uses CPU cycles. If the SAP LT Replication Server is a separate system, this ensures that the background processes do not run on the source system (or on a target system). This option separates not only workload, but also the software maintenance activities (kernel upgrades/patch management and so on) from the source system or target system.

i Note

- SAP source system can be configured as a source to multiple SAP LT Replication Servers
- Each SAP LT Replication Server can be configured to more than one target system (a SAP HANA DB, a SAP System, SAP NetWeaver BW system, or a SAP DataServices system, etc.).
- Replication of non-sap sources require that SAP LT Replication Server is installed on a separate system
- The SAP LT Replication Server system must be a UNICODE system
- Ensure that database performance is good. Poor database performance can result in poor SAP LT Replication Server performance.

2.2 Installation of SAP LT Replication Server on a Separate System

We recommend that the SAP LT Replication Server is installed on a separate system as illustrated below:



Typical system landscape.

Note that the source system could also be a non-SAP system.

If you use a non-SAP source system, ensure that the database of your non-SAP source fulfills all prerequisites for usage with the SAP LT Replication Server. Since a database connection from the SAP LT Replication Server to a non-SAP system is required, the OS/DB restrictions of the underlying SAP NetWeaver (7.02 or higher) apply (see <http://support.sap.com/pam>).

Note that only the read modules are created in the SAP LT Replication Server (for SAP source systems, the read modules are located in the source system only). The connection from the SAP LT Replication Server to the non-SAP source system is established by means of a database connection.

For non-SAP source systems, the customer database license needs to cover a permanent database connection with third party products such as the SAP LT Replication Server.

i Note

Ensure that the Basis release of the SLT system is of the same release (or higher) as the Basis release of any connected SAP system. This ensures that data types can be handled correctly.

i Note

If multiple SAP LT Replication Server systems are connected to the same source system, this can result in issues with number ranges in the SAP LT Replication Server systems. Before any data transfer takes place, we recommend adjusting the number ranges so that the number ranges in the different SAP LT Replication Server systems do not overlap. For more information, see SAP Note [1892481](#).

2.3 Comparison of Different Installation Options

The following table outlines in detail the advantages and disadvantages of the different installation options:

	Separate System	BW System	Source System (if SAP)
Advantages	<ul style="list-style-type: none">• No software maintenance dependencies• Flexibility	<ul style="list-style-type: none">• Simplified landscape and administration• Re-use of existing NW instance	<ul style="list-style-type: none">• Simplified landscape and administration• Re-use of existing SAP ERP instance
Disadvantages	<ul style="list-style-type: none">• Investment and maintenance effort for separate server / NW instance	<ul style="list-style-type: none">• Performance impact• Potential software maintenance dependencies	<ul style="list-style-type: none">• Performance impact• Potential software maintenance dependencies

Experiences show that BW customers using SAP LT Replication Server tend to use a dedicated SAP LT Replication Server for productive use. An SAP LT Replication Server sandbox or quality assurance system is installed sometimes on top of an appropriate SAP source system or on top of an SAP Solution Manager system.

2.4 Compatibility Regarding SP Levels

The table below outlines the compatibility between the different SP levels of the source system, the SAP LT Replication Server, and the target system.

Source System	SAP LT Replication Server	SAP Target System Versions
DMIS 2010 SP10	DMIS 2011 SP14	DMIS 2011 SP11-14
DMIS 2011 SP11-SP14	DMIS 2011 SP14	DMIS 2011 SP11-14

Note that you are only able to use all available SAP LT Replication Server features with the highest SP /SPS level.

3 Source System Preparation and Installation

Note

This chapter is not relevant if your source system is a non-SAP system.

3.1 Preparatory Steps for Source System

Overview

Use this section to check that the source system is suitable for the replication of data using SAP LT Replication Server. Note that the SAP LT Replication Server is shipped in a specific add-on (DMIS_2011* or DMIS_2010*).

If you intend to run SAP LT Replication Server on your source system, the details outlined in chapter 4, SAP LT Replication Server System Preparation and Installation also apply. Note that more than one source systems can participate in a replication project, depending on your business requirements.

Overview of Required Components

- The DMIS Add-on, DMIS_2011 with a minimum support package 10

Note

For SAP R/3 4.6C source systems, or if other DMIS_2010-based applications are in use, it is sufficient to install DMIS_2010 (this add-on contains SAP LT Replication Server 1.0).

System Requirements

The following conditions apply for the source system:

- The system must be of at least SAP Basis release 4.6C

To check whether your system is suitable for the installation of the DMIS add-on, DMIS_2011, proceed as follows:

1. Determine the SAP Basis version of your source system (choose System → Status, and choose the Other Kernel Info pushbutton)
2. SAP Note [1577441](#) and SAP Note [1577503](#) contain information about the installation and upgrade to DMIS 2011. Refer to these SAP Notes in order to determine that your SAP Basis and support package versions are supported.

3.2 Installation Steps for Source System

Use this section to install the required DMIS component in your source system.

Note

If you plan to run the SAP LT Replication Server on the source system, you only have to follow the procedure that is described in chapter 4, SAP LT Replication Server Preparation and Installation.

All required software components are available from the SAP Software Download Center <https://support.sap.com/swdc> and can be installed with the SAP Add-On Installation Tool (SAINT). For more information about SAINT, see <http://help.sap.com/spmanager>.

If your source system is a non-SAP system, you do not have to follow the procedure described below for the source system. The installation of the DMIS add-on is not required (or possible) on non-SAP source systems.

To install the DMIS Add-on, DMIS_2011 with SP10 or higher, proceed as follows:

1. Navigate to the SAP Software Download Center, <https://support.sap.com/swdc>
2. Download the relevant DMIS version from the following path:
Installations and Upgrades → A-Z Index → L → SAP LT Replication Server → SAP LT Replication Server 2.0

Note

If you want to use DMIS_2010, then choose *SAP LT Replication Server 1.0*.

3. Follow the DMIS installation procedure as described in SAP Note [1577441](#). For information, see SAP Note [1972533](#).
4. Download latest available support packages from the following path:
Support Packages and Patches → A-Z Index → L → SAP LT Replication Server → SAP LT Replication Server 2.0
5. Choose *Entry by Component*, and select the relevant product component version.

Note

If you want to use DMIS_2010, then choose *SAP LT Replication Server 1.0*.

4 SAP LT Replication Server System Preparation and Installation

4.1 Preparatory Steps for SAP LT Replication Server System

Use this section to check that the SAP LT Replication Server system is suitable for the replication of data using SAP LT Replication Server. Note that the SAP LT Replication Server is shipped in a specific add-on (DMIS_2011* or DMIS_2010*).

Note

We recommend that the SAP LT Replication Server System is a separate system.

Overview of Required Components

- The DMIS Add-on, DMIS_2011_1_700 (minimum required version).

Note

If other DMIS_2010 based applications (such as TDMS 3.0) are in use in the SAP LT Replication Server system, it is sufficient to install the add-on DMIS_2010_1_700 SP09.

Note

If the SAP LT Replication Server system has multiple application servers, ensure that they all have the appropriate DBSL for the relevant source system database.

System Requirements

The following requirements apply for the SAP LT Replication Server system:

- The system must be an SAP system with minimum SAP NetWeaver release of 7.02 (with at least Basis support package 8) ABAP stack

Note

You can download SAP NetWeaver 7.00 with EHP 2.0 from the SAP Software Download Center at <https://support.sap.com/swdc>. For more information, see the [Master Guide](#) for SAP NetWeaver 7.00.

- File system: 100 GB
- RAM: 16-32 GB
- CPU: 2-4 cores
- Minimum number of background jobs: 10

To check whether your system is suitable for the installation of the DMIS add-on, DMIS_2011, proceed as follows:

1. Determine the SAP Basis version of your SAP LT Replication Server system (choose System → Status, and choose the Other Kernel Info pushbutton)
2. SAP Note [1577441](#) and SAP Note [1577503](#) contain information about the installation and upgrade to DMIS 2011. Refer to these SAP Notes in order to determine that your SAP Basis and support package versions are supported.

Note

For more information about possible DMIS versions, see SAP Note 1691975.

4.2 Installation Steps for SAP LT Replication Server System

Use this section to install the required DMIS component in your SAP LT Replication Server system.

All required software components are available from the SAP Software Download Center <https://support.sap.com/swdc> and can be installed with the SAP Add-On Installation Tool (SAINT). For more information about SAINT, see <http://help.sap.com/spmanager>.

To install the DMIS add-on, DMIS_2011, proceed as follows:

1. Navigate to the SAP Software Download Center, <https://support.sap.com/swdc>
2. Download the relevant DMIS version from the following path:
[Installations and Upgrades](#) → [A-Z Index](#) → [L](#) → [SAP LT Replication Server](#) → [SAP LT Replication Server 2.0](#)

Note

If you want to use DMIS_2010, then choose [SAP LT Replication Server 1.0](#).

3. Follow the DMIS installation procedure as described in SAP Note [1577441](#). For information, see SAP Note [1972533](#).
4. Download latest available support packages from the following path:
[Support Packages and Patches](#) → [A-Z Index](#) → [L](#) → [SAP LT Replication Server](#) → [SAP LT Replication Server 2.0](#)
5. Choose [Entry by Component](#), and select the relevant product component version.

5 SAP NetWeaver ABAP-based Target System Preparation and Installation

5.1 Preparatory Steps for SAP System

Use this section to check that the SAP NetWeaver system is suitable for the replication of data using SAP LT Replication Server.

Overview of Required Components

- The DMIS Add-on, DMIS_2011 with a minimum support package 10.

System Requirements

To check whether your system is suitable for the installation of the DMIS add-on, DMIS_2011, proceed as follows:

1. Determine the SAP Basis version of your source system (choose System → Status, and choose the Other Kernel Info pushbutton)
2. SAP Note [1577441](#) and SAP Note [1577503](#) contain information about the installation and upgrade to DMIS 2011. Refer to these SAP Notes in order to determine that your SAP Basis and support package versions are supported.

5.2 Installation Steps for SAP System

Use this section to install the required DMIS component in your SAP NetWeaver system.

All required software components are available from the SAP Software Download Center <https://support.sap.com/swdc> and can be installed with the SAP Add-On Installation Tool (SAINT). For more information about SAINT, see <http://help.sap.com/spmanager>.

To install the DMIS add-on, DMIS_2011 SP10 or higher, proceed as follows:

1. Navigate to the SAP Software Download Center, <https://support.sap.com/swdc>
2. Download the relevant DMIS version from the following path:

Installations and Upgrades → A-Z Index → L → SAP LT Replication Server → SAP LT Replication Server 2.0

i Follow the DMIS installation procedure as described in SAP Note [1577441](#).

3. Download latest available support packages from the following path:
Support Packages and Patches → A-Z Index → L → SAP LT Replication Server → SAP LT Replication Server 2.0
4. Choose *Entry by Component*, and select the relevant product component version.

6 Post Installation Activities

6.1 Activation of Web Dynpro and Relevant Services

After the installation of SAP LT Replication Server, all required Web Dynpro SAP LT Replication Server services are initially disabled. You must enable these services in order to run the SAP LT Replication Server user interface.

To activate the SAP LT Replication Server services, proceed as follows:

1. Activate Web Dynpro services as described here: [Active Services in SICF](#)
2. Run transaction SICF.
3. In the *Hierarchy Type* field, enter **SERVICE**, and choose *Run*.
4. Expand the node default_host, and navigate to sap → bc → webdynpro → sap
5. Activate the following services:
 - iuuc_replication_config
 - iuuc_repl_mon_powl
 - iuuc_helpcenter
 - iuuc_helpcenter_document
 - iuuc_repl_wdc_config_gaf
 - iuuc_repl_mon_schema_oif
 - /sap/public/bc
 - /sap/public/bc/ur
 - /sap/public/mysso/cntl
 - /sap/bc/webdynpro/sap/iuuc_repl_mon_schema_oif
 - /sap/public/bc/icons
 - /sap/public/bc/icons_rtl
 - /sap/public/bc/webicons
 - /sap/public/bc/pictograms
 - /sap/public/bc/webdynpro
 - /sap/public/bc/webdynpro/adobeChallenge
 - /sap/public/bc/webdynpro/mimes
 - /sap/public/bc/webdynpro/ssr
 - /sap/public/bc/webdynpro/ViewDesigner
 - /sap/bc/nwbc

We also recommend using SSL to protect the network communications. This requires the configuration of the underlying SAP NetWeaver ABAP Server for the HTTPS protocol, and that the security settings are set to 'SSL' for the above listed ICF services.

6.2 User Creation and Connections for SAP Source and Target System

In order to replicate data using the SAP LT Replication Server, you must create an RFC connection to the source system and to the target SAP system or SAP NetWeaver BW system.

In order to do this, the following roles are required:

- SAP_IUUC_REPL_REMOTE

Note

If you use a new client after the DMIS add-on is applied, you must transport the necessary roles from client 000 into your target client.

Note

For more details about the roles and authorization concept of SAP LT Replication Server, see the [Security Guide](#) for SAP LT Replication Server.

Prerequisites

Refer to the SAP user administration guide for RFC user creation.

Generating Role SAP_IUUC_REPL_REMOTE

To generate the roles SAP_IUUC_REPL_REMOTE, proceed as follows:

1. Execute transaction **PFCG**.
2. In the role field, enter the role **SAP_IUUC_REPL_REMOTE**.
3. Choose the [Change Role](#) pushbutton.
4. On the [Authorizations](#) tab page, choose the [Change Authorization Data](#) pushbutton.
5. The system displays the [Change Role: Authorizations](#) screen. Choose the [Generate](#) pushbutton.
6. Return to the [Authorizations](#) tab page; this tab page should now have a green light.
7. In the [User](#) tab page, choose the [User Comparison](#) pushbutton.
8. The system displays the [Compare Role User Master Record](#) screen. Choose the [Complete Comparison](#) pushbutton.

9. The [User](#) tab page should now also have a green light.

Creating Users and RFC Connections

Create the required user and RFC connection as follows:

1. Create a user (of type [Dialog](#) or [System](#)) in your source system, generate and assign the following role to this user:

- o SAP_IUUC_REPL_REMOTE

Note

Do not use user DDIC. The role SAP_IUUC_REPL_REMOTE is not generated by default. You must generate and assign this role to the newly created user

2. Create an RFC connection (type 3 – ABAP) from the SAP LT Replication Server to the source system with the newly created user (if both systems are Unicode, specify the RFC connection as Unicode).

Note

If the source system and the SAP LT Replication Server are the same system, create an RFC connection and do not use the RFC connection NONE.

3. Create a user (of type [Dialog](#) or [System](#)) in your target SAP system, generate and assign the following role to this user:

- o SAP_IUUC_REPL_REMOTE

4. Create an RFC connection (type 3 – ABAP) from the SAP LT Replication Server to the target system with the newly created user

6.3 User Creation for SAP LT Replication Server System

The SAP LT Replication Server is delivered with an own role SAP_IUUC_REPL_ADMIN. To activate the role, follow the procedure described in 6.2

For more details about the roles and authorization concept of SAP LT Replication Server, see the [Security Guide](#) for SAP LT Replication Server.

6.4 User Creation and Connection for non-SAP Source Systems

If you want to replicate data from a non-SAP source system, you have to create a secondary database connection. To establish a secondary database connection from an SAP system to an external database, the connection data and the user data of a user are required. This user must be authorized to establish a connection to the external database. The SAP system connects to a specific schema from the database. To perform the replication and initially load a specific table from a given schema, the database user must have privileges for the following actions:

- Selecting from the table
- Creating a table in the given schema (for creating the logging table)
- Selecting from the logging table
- Deleting the logging table
- Creating database triggers for the table
- Deleting the triggers
- Creating synonyms for the specific table
- Deleting the synonyms

Depending on the specific external database system, the process of granting privileges to a user can vary.

6.5 Separate Tablespace for Logging Tables

It is possible (but not essential) to store the source system replication log tables in a separate table space. The decision to do this is the responsibility of the system administrator. One advantage of having the log tables in their own table space is that you can easily monitor the size of the log tables.

As each database system has its own method of providing this functionality, refer to your database documentation for this procedure.

If you use own data classes and tablespaces, see SAP Note [46272](#).

Chapter 6.5.1 describes how to make your tablespace known to the configuration in the SAP LT Replication Server.

6.6 Accessing the Configuration and Monitoring Dashboard

You use the *Configuration and Monitoring Dashboard* to create configurations, and to view status information for the replication.

You can access the *Configuration and Monitoring Dashboard* by using transaction **LTR**.

 **Note**

In order to ensure compliance with security standards, the Configuration and Monitoring Dashboard (transaction LTR) requires the use of the SAP NetWeaver Business Client 3.5 or 4.0.

The reason for this is that the SAP NetWeaver Business Client supports a logout for all Web Dynpro windows. Web browsers do not support this logout feature. For example if you use a web browser to access the work center, there is no option to logout. Simply closing the web browser window does not log the user out of the system. The session runs on the server until it times out, and this is a potential security risk.

In order to use the SAP NetWeaver Business Client, the relevant user must have the role SAP_IUUC_REPL_NWBC assigned to them.

Note that you can also use the SAP LT Replication Server Cockpit (transaction LTRC) in order to work with configurations.

6.6.1 Creating a Configuration

In the SAP LT Replication Server system, you define a connection between the source system, the SAP LT Replication Server and the target system. You specify this information as a configuration.

To create a configuration, proceed as follows:

Run transaction **LTR**. Choose the **New** pushbutton. Creating a configuration involves the following steps:

Specify General Data

In this step, you specify the following information:

- Configuration Name
 - You must specify a name for the configuration. This name is used for the schema that is created automatically in the target system.
- Description (Optional)
 - You can specify a description for the configuration.
- Authorization Group (Optional)
 - If you have sufficient authorizations, and require specific authorizations for the configuration, you can specify an authorization group here, and use this authorization group in the corresponding authorization object S_DMIS_SLT.

Specify Source System

For SAP source systems, you specify the following information:

- System Data
 - You can use either an SAP system or a non-SAP system as a source system.
- RFC Destination
 - Specify the RFC destination to the source system.

- Allow Multiple Usage
 - Select this checkbox if you want to replicate data from an SAP source system to multiple target systems.
- Read from Single Client
 - Select this checkbox if you only want to replicate data from the client that is specified in the RFC destination.

For non-SAP source systems, you specify the relevant database and connection information.

Specify Target System

For SAP target systems, you specify the following information:

- RFC Destination
 - Specify the RFC destination to the target system.
- Scenario for RFC Communication

Choose the following replication scenario:

 - Standard RFC Scenario:

Note

The target tables must already exist; they will not be created automatically by the SAP Landscape Transformation Replication Server. If the target table does not already exist, it must be created by using the ABAP Workbench in the target system. Note that if you are replicating data to an SAP ABAP target system, then you cannot use SAP Landscape Transformation Replication Server to change the structure of the target tables. However this is possible for other replication scenarios.

Specify Transfer Settings

In this step, you specify the following information:

- Initial Load Mode
 - There are different options (reading types) available for the initial load. These reading types access the data in the source system table in different ways. In order to accelerate the initial load, you can change the data load behavior for the entire configuration. The default setting is *Resource Optimized* (reading type 3 for all tables), but you can accelerate the data load by choosing *Performance Optimized* (reading type 5 for transparent tables, and reading type 4 for cluster tables).

Information about Reading Types:

- Reading Type 3 - DB_SETGET

The reading type DB_SETGET is the default reading type. It uses a function to read the records of the source table ordered by the primary key. This means that no additional index is required as the primary index is used. The function returns a set of table records (the default is 10,000 records).

- Reading Type 4 and 5 - Index Cluster

Data is read from the source table and stored in a cluster-like table (DMC_INDXCL) in the source system. All rows are read from the source table, divided into portions and compressed in a raw format. Because data is extracted to a separate table in the source system, additional temporary tablespace is required for table DMC_INDXCL (approximately 10% of the source table size for transparent tables and between 50% to 75% of the source table size for cluster tables). Reading type 5 is the same as reading type 4, but uses a full table scan to read the data, (the preferred method for reading data from transparent tables).

- Dataclass of Tablespace
 - You can specify a tablespace for the logging tables in the source system.
- No. of Data Transfer Jobs
 - You can specify the number of jobs that are used for the data transfer process in the SAP LT Replication Server. This value specifies the number of data transfer jobs which will run in the SAP LT Replication Server to replicate the tables of the RFC connection to the target system. For more information, see the Application Operations Guide (note that this guide details specifics for SAP LT Replication Server for SAP HANA, but the principles described here with regard to data transfer jobs are valid for the BW context).
- No. of Initial Load Jobs
 - You can specify the number of jobs that are used for the initial load in the SAP LT Replication Server.
- No. of Calculation Jobs
 - For reading types 1 and 3, this is the number of jobs that are used to calculate the data transfer portions that are used for the initial load. For reading types 4 and 5, it is the number of jobs that transfer the portions to table DMC_INDXCL.

- Replication Options

You can choose one of the following replication options:

- Real-time - The trigger-based data replication method that continuously replicates any data changes to the target system.
- Schedule by Interval - You can specify a time and frequency for the replication. For example, every 30 minutes or every 12 hours.
- Schedule by Time - You can specify a specific time for the replication, for example 23:00. The SAP LT Replication Server would then replicate any database changes to the target system every day at 23:00.

Application (Optional)

Depending on your use case, you may be required to specify an application.

Review and Create

In this step, you can review your settings and create the configuration.

Check or Maintain Configuration Scenario Parameter

Check if your scenario is correctly specified as PSA scenario in table IUUC_REPL_CONFIG. If not, enter the value **PSA** for the parameter *trg_scenario* for the configuration (MT_ID). You can do this in transaction [SE16](#).

6.6.2 Additional Information for Non-SAP Source Systems

If you are replicating from a non-SAP source systems, the user you specify needs the authorizations as described in SAP LT Replication Server – Security Guide.

The actual privilege to be granted to the database user depends on the database system (Oracle, DB2, MSSQL and so on). For example, if you want to configure an Oracle database as a non-SAP source system, the following steps apply:

1. Install the Oracle instant client on the SAP LT Replication Server (if your SAP LT Replication Server is not based on Oracle).
2. Install the DBSL database dependent library for the 7.20 Kernel.
3. Create the database connection in table DBCON (by using transaction [SM30](#))
4. Optional: To support with troubleshooting, you can add the database connection in transaction DBACOCKPIT
5. Test the database connection
6. In the SAP LT Replication Server, use transaction [LTRC](#) to complete the configuration for the non-SAP source system.

Constraints

Only tables with a primary key can be replicated.

Note

For important considerations about non-SAP source systems, see SAP Note [1768805](#).

6.6.3 Data Provisioning

You use the SAP LT Replication Server Cockpit (transaction LTRC) to control the replication process for the SAP LT Replication Server.

You can control the replication process as follows:

1. Launch SAP LT Replication Server Cockpit by using transaction LTRC. Choose the [Data Provisioning](#) pushbutton.
2. You can use the following radio buttons to control the replication for the selected source system:
 - [Start Load](#)
Starts and initial load of replication data from the source system. The replication is a onetime event, and after completion, further changes to the source system database will not be replicated.
 - [Start Replication](#)
Starts an initial load procedure and then begins the continuous or scheduled replication procedure.
 - [Stop Load / Replication](#)
Stops any current load or replication processes.
 - [Suspend Replication](#)
Pause a table from a running replication. The trigger will not be deleted from the source system. The delta will still be stored in log tables in the source system.
 - [Resume Replication](#)
Restart replication for a suspended table. Previous suspended replication will be resumed (no new initial load required).

You can access the created data sources and replicated data in the SAP NetWeaver BW system by using transaction RSA1 (Administrator Workbench).

Note

It is only possible to replicate transparent tables. It is not possible to replicate pool tables or cluster tables. For more information, see SAP Note [1908836](#).

6.6.4 Monitoring

You use the SAP LT Replication Server Cockpit (transaction [LTRC](#)) to monitor the replication process for the SAP LT Replication Server. You can use the SAP LT Replication Server Cockpit to get detailed monitoring information for a single configuration. For more information, see the documentation for the SAP LT Replication Server Cockpit (directly accessible from the UI of the SAP LT Replication Server Cockpit).

Note that to view monitoring information for multiple configurations simultaneously, you can use the monitoring transaction LTRO (see section 6.6.5).

6.6.5 Using the Monitoring Transaction LTRO

6.6.5.1 Overview

The monitoring transaction, LTRO, is a tool which runs on the SAP LT Replication Server system and can assist system administrators with obtaining a faster overview about the participating systems and configurations. For example, you can use the monitoring transaction to get information about:

- The number of current running and free batch and dialog processes running on all application servers of the SAP LT Replication Server system
- The availability status for all connected target systems, and the corresponding log entries (warnings and errors)
- The status of multiple configurations (mass transfer IDs) within a single screen

Even though you can use the SAP LT Replication Server Cockpit (transaction LTRC) to view the status of a single configuration, system administrators managing multiple configurations have to switch from configuration to configuration in order to see the relevant status. The benefit of using the monitoring transaction is to have all relevant information in one screen.

6.6.5.2 Overview Tab Page

The [Overview](#) tab page is divided into two sections. The section on the left hand side contains SAP LT Replication Server system-specific information, and the right hand side you can view details about all connected systems.

On the left hand side, under Details, you can view the available application servers for the SAP LT Replication Server system. For each application server, you can view the number of free and available processes, and the maximum runtime (longest running process in seconds) for the processes (in seconds). The number of free process is an indicator for the load on the SAP LT Replication Server system. If a high maximum runtime value occurs, this could indicate an issue with a long running process.

At the top of the tab page, you can view aggregated values for the application servers. This is the total number of free and available processes, and the highest maximum runtime value (the longest running process across all application servers).

On the right hand side, you can view all the target systems that are connected to the SAP LT Replication Server system. For each target system, you can view the target system status (a connection status), as well as the configurations assigned to the target system. Under Target Alerts, the system displays up to 20 database log entries for the last 12 hours. You can customize these settings in table IUUC_RM_PARAMS (field PARAM, value

RCVR_ALERTS_INT for the time period, and value RCVR_ALERTS_NO for the maximum number of database log entries to be displayed).

6.6.5.3 Configuration View Tab Page

In the [Configuration View](#) tab page, you can view the status of the master job, and an overview of all configurations selected when the transaction was executed.

For each configuration, you can view information such as the name, status, technical ID, and so on.

The advantage of this view is that system administrators can see multiple configurations on a single screen without needing to switch from one configuration to another.

You can navigate to the details of an individual configuration by clicking an entry in the [Mass Transfer ID](#) field or by choosing the [Open Tables View](#) pushbutton. To view additional information for the configuration, you can navigate to the [SAP LT Replication Server Cockpit](#) (transaction LTRC) and use the tab pages [Table Overview](#), Data Transfer Monitor, and [Application Logs](#).

7 References

7.1 List of SAP Notes

The following table lists all SAP Notes mentioned in this guide.

SAP Note Number	Title	Description
2570052	Installation/Upgrade SLT - DMIS 2011 SP14	This SAP Note describes the installation or upgrade of SAP LT Replication Server to the relevant DMIS SP.
19466	Downloading SAP Kernel patches	Downloading a kernel patch in the Software Distribution Center.
517484	Inactive services in the Internet Communication Framework	The Internet Communication Framework Services are inactive when you install the SAP Web Application Server.
1768805	Collective Note - non-SAP Sources	This SAP Note describes important considerations of the connection with non-SAP source systems.
1577441	Installation and delta upgrade of DMIS 2011_1	This SAP Note contains information about installing DMIS_2011 and upgrading to DMIS_2011
1577503	Upgrade to DMIS 2011_1 in the System Switch Upgrade	This SAP Note contains information about upgrading to DMIS_2011
1691975	HANA LTR - Clarification on DMIS releases	This SAP Note contains information about DMIS release levels



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