

Realtime Replication with ODP

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Public

Agenda



Operational Data Provisioning (ODP) Infrastructure

SLT for Realtime Replication via Operational Data Provisioning - Overview

- Architectural Concept of ODP
- Sizing Considerations

ODP/SLT Scenario for SAP Business Warehouse

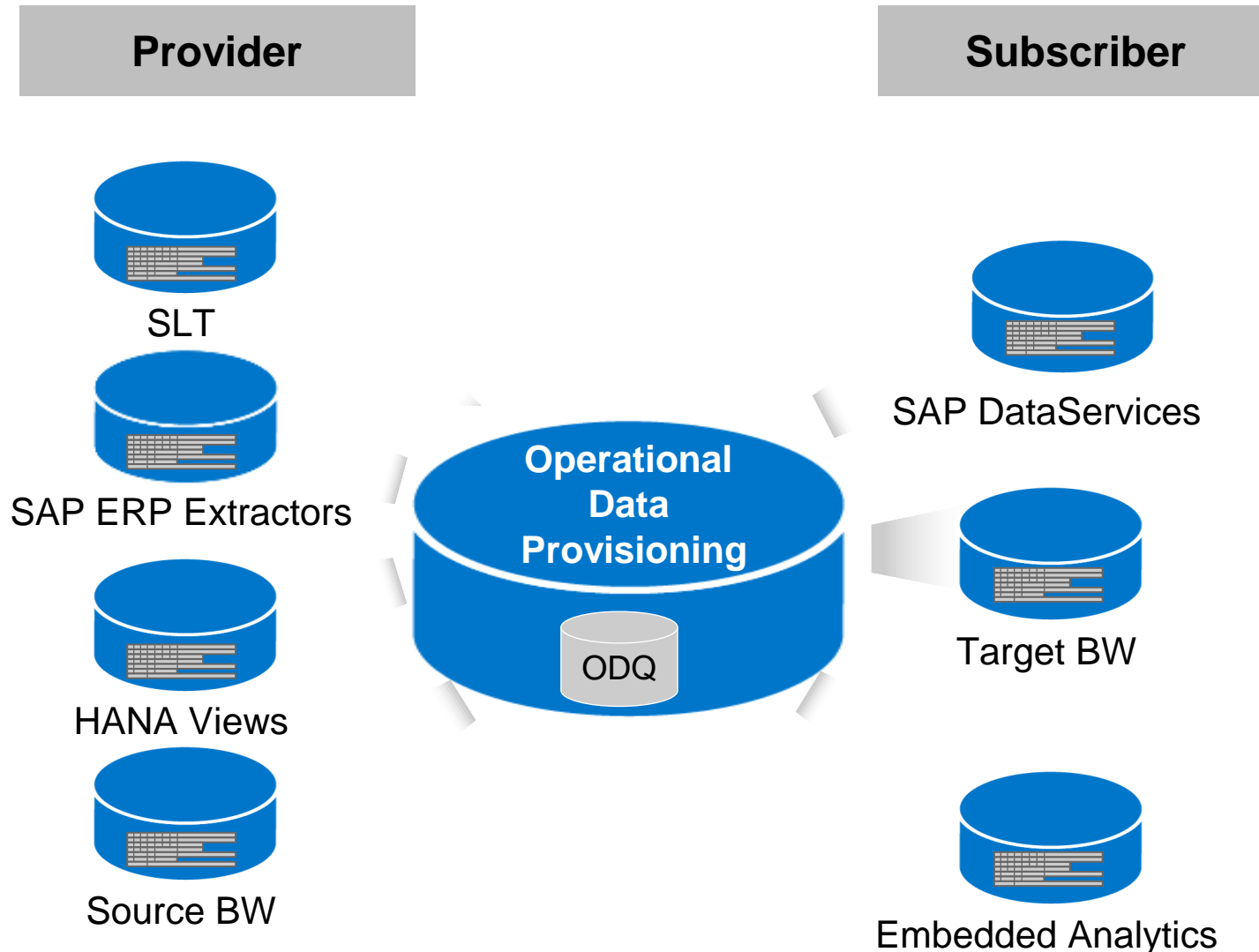
- Architectural Concept: Replication from Source systems to ODQ and subscription from SAP BW
- Technical Setup – Details
- Technical Requirements for ODP/SLT Scenario
- Documentation Links

ODP/SLT Scenario for SAP Data Services

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Pricing of the SAP LT Replication Server

Operational Data Provisioning (ODP) Infrastructure



Unified infrastructure for data provisioning and consumption

- Enables extract once deploy many architectures for sources
- Unified configuration and monitoring for all provider and subscriber types
- Time stamp based recovery mechanism for all provider types with configurable data retention periods
- Highly efficient compression enables data compression rates up to 90% in Operational Delta Queue (ODQ)
- Quality of service: „Exactly Once in Order“ for all providers
- Intelligent parallelization options for subscribers in high volume scenarios

SAP LT Replication Server for Real-time Replication via Operational Data Provisioning - Overview



Scenario

SAP LT Replication Server can act as a provider for the **Operational Data Provisioning** Framework (ODP) and stores data from connected SAP systems in this framework in an **Operational Delta Queue** (ODQ). The ODP framework supports extraction and replication scenarios for various target SAP applications (referred to as 'subscribers'). The subscribers retrieve the data from the delta queue and continue processing the data.

Value Proposition

With the ODP/SAP LT Replication Server scenario (in the following called „**ODP/SLT scenario**“), replicated data (initial loads and delta records) of non-ABAP-based systems and ABAP-based systems (as of 4.6C) are available in real-time in a „central place“ and can be consumed by **multiple subscribers** over the ODP interface. The replication can be started by users of the subscribing SAP application. This is a strategic enhancement of SLT to address the needs of other data consumers and enhance their functionality like CDC for SAP Data Services and replacement of batch cycles for data transfer to SAP BW with realtime replication.

Scope

Starting with DMIS2011 SP6, ODP/SLT can be used for both **ABAP- and non-ABAP source systems**. Simple tables are covered as well as **pool- and cluster tables**. A restriction applies for extractors: only extractors without delta mechanism and complex business logic are covered.

Sizing Considerations for ODP/SLT Scenario



	SMALL	MEDIUM	LARGE
Use Case	A small scenario with <ul style="list-style-type: none"> typically one configuration with approx. up to 50 tables weighted table size category S-M an overall expected throughput of less than 1.000.000 records/hour 	A moderate mid-range scenario with <ul style="list-style-type: none"> Approx ~ 3 different Source Systems (equivalent to 3 LTR Configurations), and/or up to 200 tables in total; weighted table size category M-L an overall expected throughput of less than 10.000.000 records/hour 	A upper mid-range scenario with <ul style="list-style-type: none"> Up to 10 different Source Systems (equivalent to 10 LTR Configurations), and/or up to 500 tables (in total); weighted table size category M-XL an overall expected throughput of up to 50.000.000 records/hour
ODP/SLT System	<ul style="list-style-type: none"> 1 configuration with 2 Data Transfer Jobs Hardware: 2-4 CPU Cores, 8-10 GB Main Memory 	<ul style="list-style-type: none"> 10 Data Transfer Jobs in total (sum of all configurations) Hardware: 4-6 CPU Cores, 10-16 GB Main Memory 	<ul style="list-style-type: none"> 25 Data Transfer Jobs in total (sum of all configurations) Hardware: 8-10 CPU Cores, 16-32 GB Main Memory
	The DB size of the ODP/SLT system depends on the amount of changed data/hour which is stored in the queue, the frequency of data pull from subscribers and the retention period after which queue space is released.		
Source System(s)	<ul style="list-style-type: none"> 1:1 relation to data transfer jobs per source Reserve 2 BTC work processes for ACL (Access plan calculation), ensure 2 free Dialog work processes for data load/replication Additional Hardware required: ~ 1 CPU Core (0.5 CPU per data transfer job, APPL & DB) 	<ul style="list-style-type: none"> 1:1 relation to data transfer jobs per source sum over all source systems: Reserve 2-4 BTC work processes for ACL (Access plan calculation), ensure 10 free Dialog work processes for data load/replication Additional Hardware required: ~ 5 CPU Core in total (0.5 CPU per data transfer job, APPL & DB) 	<ul style="list-style-type: none"> 1:1 relation to data transfer jobs per source sum over all source systems: Reserve 4-8 BTC work processes for ACL (Access plan calculation), ensure in sum 25 free Dialog work processes for data load/replication Additional Hardware required: ~ 12 CPU Core in total (0.5 CPU per data transfer job, APPL & DB)

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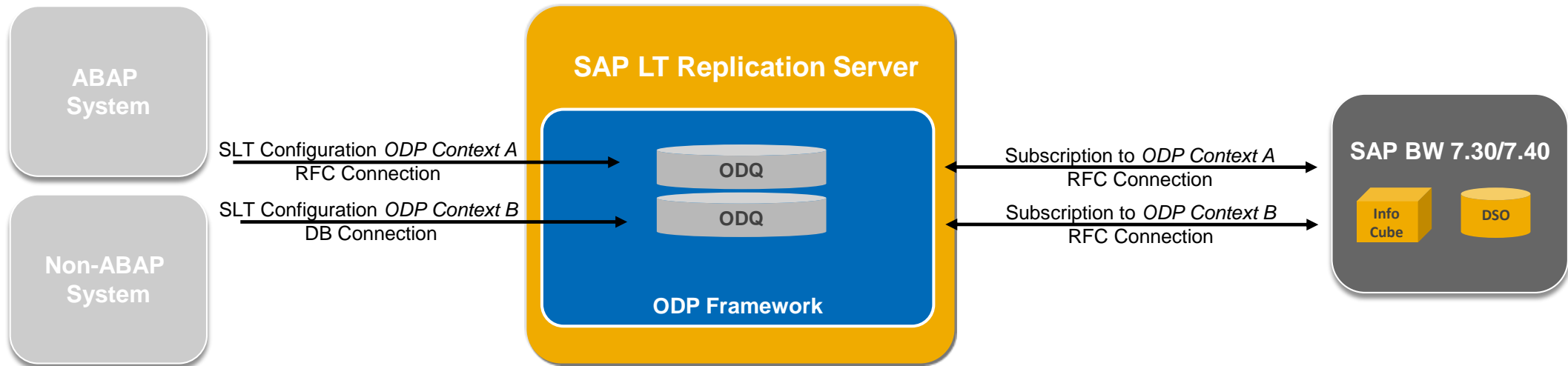
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Pricing of the SAP LT Replication Server

Architectural Concept

Replication from Source systems to ODQ and subscription from SAP BW



Source Systems

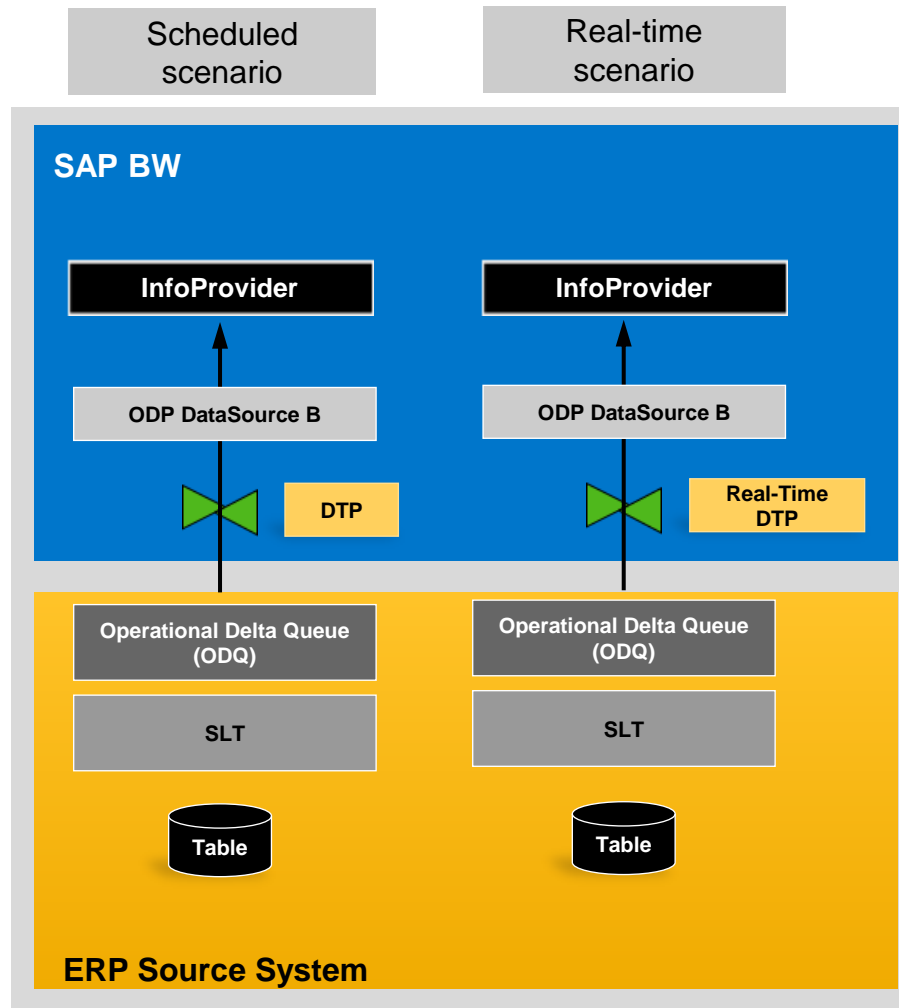
SAP LT Replication Server

Subscriber SAP BW

SAP LT Replication Server can replicate data from ABAP and non-ABAP source systems into the Operational Delta Queue of the SLT system. Thus, SLT itself acts as the target of the SLT configurations. Data gets replicated as soon as a subscriber requests the data from a data source from an ODP Context. Several subscribers can use the same ODQ as source. SAP BW can use this scenario with scheduled data transfer from ODQ as of SAP BW 7.30. A setup for real-time data transfer with Data Transfer Processes (DTP) into BW Data Targets and RDA Daemon is possible with SAP BW 7.40 SP5.

Real-time or scheduled replication to BW with SLT

BW 7.4, SP5 on HANA



New source system type ODP-SLT

- SLT Real-Time push in Operational Delta Queue (ODQ)
- Direct Update to BW InfoProviders
 - Scheduled or real-time daemon
 - Automatic change notification for daemon
- Set up of SLT replication from SAP BW

Benefits

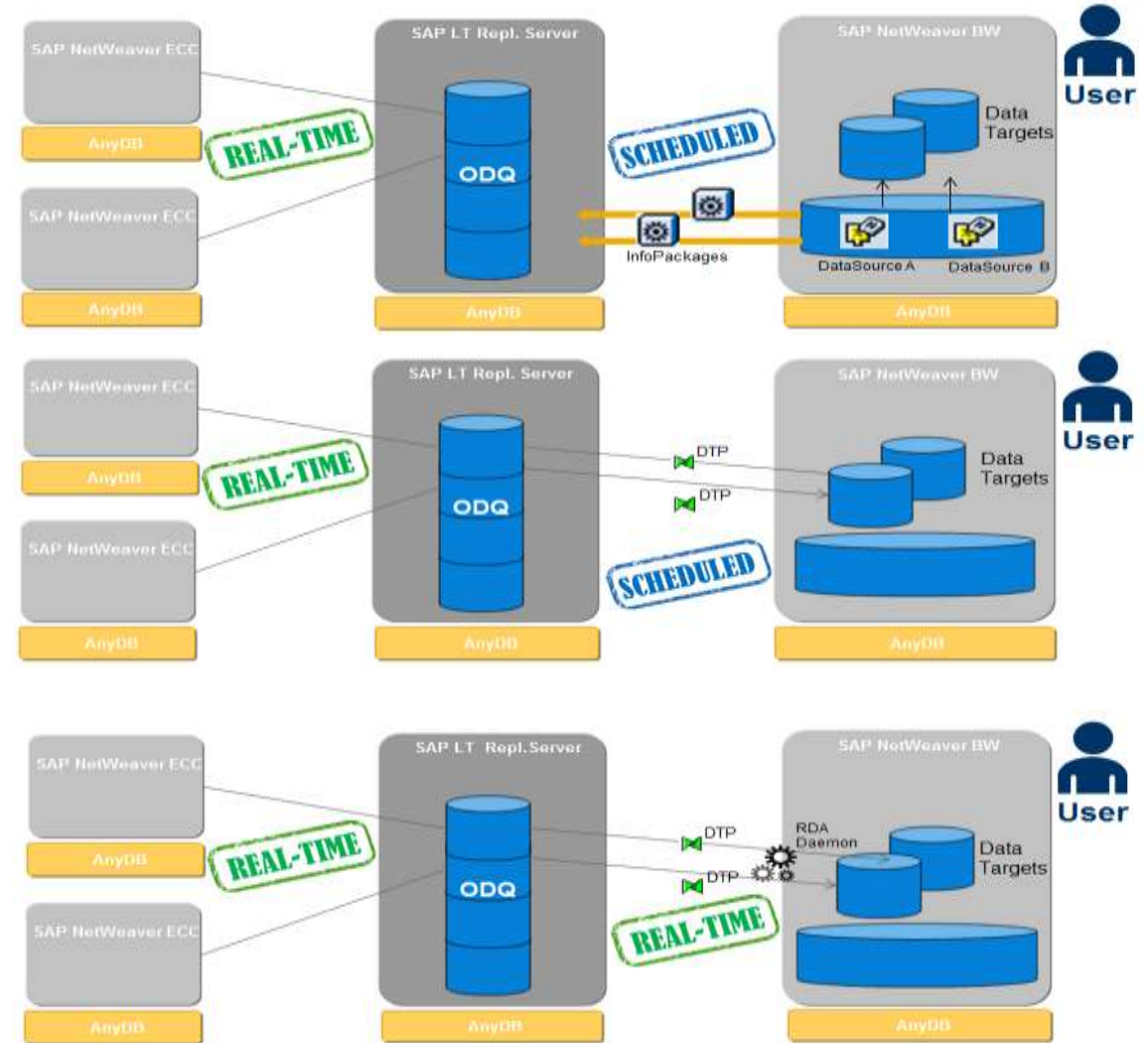
- Simplified data flow
- PSA no longer required
- Flexible recovery options
- Consumption of ODQ by multiple subscribers
- Reduced data latency

ODP/SLT Scenario with Subscriber SAP BW

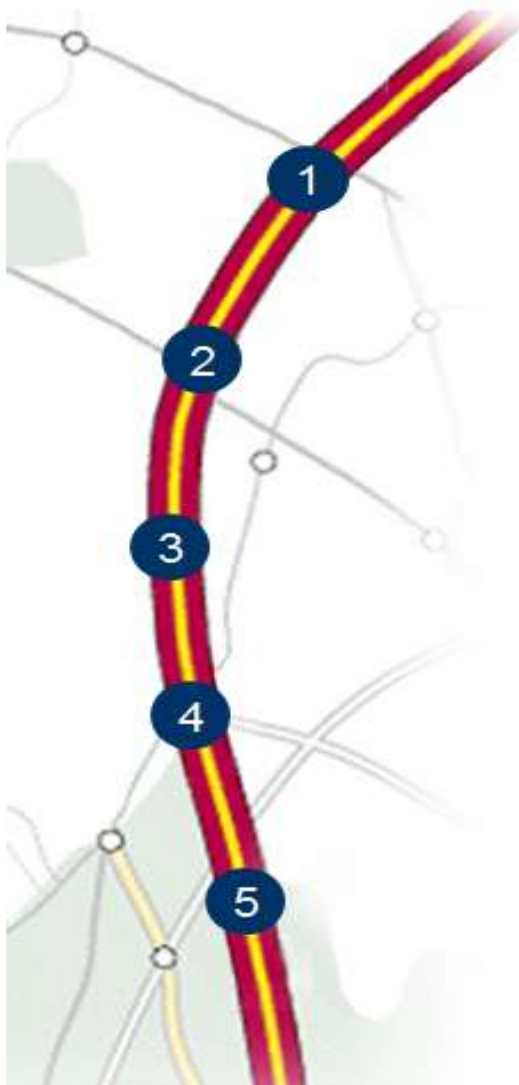
Option 1: Setup with Data Transfer via InfoPackages into BW PSA possible with SAP BW >=7.30

Option 2: Setup with Data Transfer Process into BW Data Targets possible with SAP BW >=7.30 SP8

Option 3: Setup with Data Transfer Process into BW Data Targets and RDA Daemon possible with SAP BW 7.40 SP5



Roadmap of SAP BW Subscription at ODP/SLT



Create a Configuration for a source system as ODP scenario with a queue alias (ODP context)

***SLT system
TA LTR***

Create a source system entry with the same ODP context

***SAP BW system
TA RSA1***

Create and activate a DataSource for the data you want to get from a source system table

***SAP BW system
TA RSA1***

Create and run an InfoPackage to load and replicate the data into PSA or create a DTP and fill a DSO

***SAP BW system
TA RSA1***

Monitor Operational Delta Queues

***SLT system
TA ODQMON***

SAP BW: Setup Steps – Details I-A



Creation of Configuration (connection between SLT system and source system) in TA LTR:

Prerequisites:

User role `SAP_IUUC_REPL_ADMIN` in SLT system

Existing RFC connection between source and SLT system with user role `SAP_IUUC_REPL_REMOTE`

Create Configuration

Configuration Name U72_ODP Description U72_ODP Scenario

1 Specify General Data 2 Specify Source System 3 Specify Target System

Specify the relevant information in order to connect to the target system.

System Data

☒ SAP System ☐ Non-SAP System

RFC Destination: * NONE

Scenario for RFC Communication: * ODQ replication scenario

Queue Alias: * U72_01

Create Configuration

Configuration Name U72_ODP Description U72_ODP Scenario

1 Specify General Data 2 Specify Source System 3 Specify Target Sys

Specify the relevant information in order to connect to the source system.

System Data

☒ SAP System ☐ Non-SAP System

RFC Destination: * U72

Allow Multiple Usage: ☒

Read from Single Client: ☐

Select the RFC Destination for the Source System

The Target System is the SLT system itself, so the RFC Destination can be „NONE“ (or an RFC connection pointing to the same system)

The Scenario is „ODQ replication scenario“

The Queue Alias (6 characters) is the unique ID specifying the ODP Context.

SAP BW: Setup Steps – Details I-B



Activate the ODP-specific BAdI in TA LTRC:

On the Expert Functions tab in the LT Replication Server Cockpit, you have to activate the ODQ BAdI „ODQ_ENH_SLT_REPLICATION“ when you create your first ODQ specific configuration.

You can also check whether the BAdI is already activated.

LT Replication Server - Cockpit - U72_ODP (065)

Administration Data | Processing Steps | Table Overview | Data Transfer Monitor | Application Logs | Load Statistics | Expert Functions

Reset Indicator / Status

- Reset Status for Triggers and Logging Tables
- Reset Status of Tables and Synonyms
- Reset Replication Object Definition
- Reset Runtime Object Flags
- Reset Load and Replication Status

Information and Analyses

- Display Table Information
- Trigger and Logging Tables**
 - View Trigger Source Code
 - View Unprocessed Logging Table Records
 - Count Logging Table Records
- Status and Notification**
 - Settings for Notifications
 - Job Health Check
 - Table Health Check
 - 1:N Replication Health Check
- Display Replication Statistics

Additional Functions

- Logged Replication Data
- Define Connection to Alternative System for Initial Load
- Change Settings for Connection to Target System
- Download Load Statistics to File
- ODQ/ODP specific functions**
 - Delete Loaded Tables from the Configuration for ODQ Scenario
 - Check Whether BAdI Implementation is Active**
 - Activate / Deactivate BAdI Implementation

Purpose

In order to run the ODP/ODQ replication scenario for SAP LT Replication Server, a specific active BAdI implementation is required. The BAdI must be active in order to run the replication scenario. In this step, you can check whether the BAdI is active.

Customizing of BAdI Implementations

Do you want to activate the BAdI implementation
ODQ_ENH_SLT_REPLICATION ODQ_BD_SLT_REPLICATION?

Yes No Cancel

Implementing Class

Interface	Implementing Class	Method	Short description
IF_ODQ_QUEUE_MODEL	CL_ODQ_QUEUE_PROVIDER	IF_ODQ_QUEUE_MODEL~GET_STRUCTDESCR	Structure Description of the Queue
		IF_ODQ_QUEUE_MODEL~OPEN_EXTRACTOR	Extractor for Standard Extraction or
		IF_ODQ_QUEUE_MODEL~OPEN_EXTRACTOR_FOR_DEL	Extractor for Delta Extraction
		IF_ODQ_QUEUE_MODEL~POSTPROCESS_PACKAGE	Process Data Package Before Forward
		IF_ODQ_QUEUE_MODEL~SUPPORTS_EXTRACTION	Supports standard extraction (full on,
		IF_ODQ_QUEUE_MODEL~SUPPORTS_REALTIME	Supports Real-Time Extraction (Delta)
		IF_ODQ_QUEUE_MODEL~GET_KEYDESCR	Key Definition of the Queue
		IF_ODQ_QUEUE_MODEL~GET_UNIVERSE	Dimension Model (universe) of the Q.
		IF_ODQ_QUEUE_MODEL~GET_DESCRIPTION	Description of the Queue Model
		IF_ODQ_QUEUE_MODEL~GET_QUEUE	List of Available Queues
		IF_ODQ_QUEUE_MODEL~QUEUE_EXISTS	Existence Check for a Queue for a S.
		IF_ODQ_QUEUE_MODEL~ADJUST_SUBSCRIPTIONS	Notification after Queue Activation
		IF_ODQ_QUEUE_MODEL~AUTHORIZATION_CHECK	Structure Description of the Queue
		IF_ODQ_QUEUE_MODEL~PREPROCESS_REQUEST	Edit Request Before Extractor Call
		IF_ODQ_QUEUE_MODEL~GET_DELTA_PROPERTIES	Delta Properties of a Queue
		IF_ODQ_QUEUE_MODEL~GET_FIELDINFOS	Additional Field Properties for All Fields
		PARSE_QUEUENAME	

SAP BW: Setup Steps – Details II



Create Source System in SAP BW

In the subscribing BW system, TA RSA1, create a source system entry with connection to the **SLT system** and the **ODP Context** SLT~[Queue Alias] specified in the SLT target system configuration.

Scheduler (Maintain InfoPackage)

Process Chain Maint.

Modeling

- Favorites
- Find
- Data Flows
- InfoProvider
- InfoObjects
- InfoSources
- DataSources
- Source Systems**
- Open Hub Destination
- Planning Sequences
- Process Chains

Administration

Transport Connection

Documents

Source Systems

Source Systems	T..
BW	BW
SAP	SAP
ODP	ODP
CBW (BW 7.3 MSSQL)	CBW
SLT on BZ3 for Alias U72_01	BZ3-I

Select Context (Application to be Extracted)

ODP Context	Long description
ODP_SELF	ODP Introspection
SLT~AODQ_2	
SLT~AODQ_3	
SLT~BWM000	
SLT~LS8_4	
SLT~LS8_5	
SLT~QT6004	
SLT~U72_01	

SAP BW: Setup Steps – Details III



Creation of the DataSource in SAP BW

In the source system view, create and activate a DataSource for the data you want to get from a source system table

SFLIGHT(BZ3-U72_01)

DataSource: SFLIGHT
Source System: BZ3-U72_01 SLT on BZ3 for Alias U72_01
Version: new (Not Saved)
Active Version: Does Not Exist

General Info. Extraction Proposal Fields Preview

Delta Process: Delta Only Via Full Upload (ODS or InfoPackage Selection)
Direct Access: NO DTP Allowed for Direct Access
Real Time: Real-Time Data Acquisition Is Not Supported

Adapter: Extraction from SAP System by Operational Data Provisi... Properties
Operational Data Provider: SFLIGHT
Description: Flight
Data Format: Already Binary
Convers. Lang.: User Master Record

Left pane: DataSources for BZ3-U72_01 SLT on BZ3 for ...
Tree view:
• Unassigned Nodes
• Business Information Warehouse
• Technical Content
• NetWeaver Demo
• SAP Business Planning and Consolidations
• Non-SAP Sources
• Marketplace
• SAP Application Components
• RG Test App Component
• War Room Flat File
• Webservice Source System
• Testing ODP
• SAP Demo
• Data based not on BW HANA Scheme
• d029478
• U72_01_demotables

SAP BW: Setup Steps – Details IV



Get the Data from Source Table via SLT/ODP
Create and run an **InfoPackage** to load and replicate the data from ODQ into PSA
OR create a DTP and upload the data to a DSO (7.30 SP8 or higher).

Scheduler (Maintain InfoPackage)

Process Chain Maint.

Modeling

- Favorites
- Find
- Data Flows
- InfoProvider
- InfoObjects
- InfoSources
- DataSources
- Source Systems
- Open Hub Destination
- Planning Sequences
- Process Chains

Administration

DataSources for BZ3-U72_01 SLT on BZ3 for ...

- Unassigned Nodes
- Business Information Warehouse
- Technical Content
- NetWeaver Demo
- SAP Business Planning and Consolidations
- Non-SAP Sources
- Marketplace
- SAP Application Components
- RG Test App Component
- War Room Flat File
- Webservice Source System
- Testing ODP
- SAP Demo
- Data based not on BW HANA Scheme
- d029478
- U72_01_demotables
 - SFLIGHT
 - upload sflight

InfoPackage: upload sflight(ZPAK_DFE6X91C188PHK69S6E7ZH4P)

DataSource: SFLIGHT(SFLIGHT)

Data Type: Transaction Data

Source System: SLT on BZ3 for Alias U72_01(BZ3-U72_01)

Last Changed by: Date: Time: 00:00:00

Data Selection | Extraction | Processing | Update | Schedule

☒ Start Data Load Immediately
☐ Start Later in Background

Job Name Prefix/Suffix: BI_BTCH

Scheduling Options

Subsequent Process.

☐ Request Batch Process Runs Until All Data Has Been Updated in BW

Start Job(s)

Monitor InfoPackage

Monitor

successful (1)

PSA

07.06.2013

BZ3-U72_01 (SLT on BZ3 for Alias U72_01)

13:27:39 (32 from 32 Records)

Total: All Info Objects processed successfully.

Request successfully loaded to PSA; start further update.

Diagnose: Request successfully loaded to PSA.

Procedure: You can use a data transfer process to distribute data to further data targets.

ODQ Monitoring in ODP/SLT System



The Delta Queue Monitor (TA ODQMON) integrates the display and request management views for the ODP/SLT scenario.

Monitor Delta Queues

Provider: SLT_REPLICATOR Subscriber Type: SAP BW

Queue: Subscriber:

Time Stamp ID: to:

☐ Calculate Data Volume (Extended View)

Request Select: All

Queue	Q	Subscrpts	Requests	Units	Rows	Original Size in
AODQ_1~E070		0	0			
AODQ_1~SBOOK		1	0			
AODQ_1~SDOKPHCL		0	0			
AODQ_1~SFLIGHT		0	0			
AODQ_1~T000		0	0			
AODQ_1~TADIR		0				
AODQ_1~TBTCO		0				
AODQ_1~ZSFLIGHT		0				
AODQ_1~ZSFLIGHTCH		0				
AODQ_1~ZSFLIGHTCH...		0				
AODQ_2~SBOOK		1				
AODQ_2~SCARR		1				
AODQ_2~SFLIGHT		0				
AODQ_2~ZSH_TRANS...						
AODQ_2~ZSH_TRANS...						
AODQ_2~ZSH_TRANS...						
AODQ_3~SBOOK						
AODQ_3~SDOKCLPROP						
LS8BZ3~DMC_STREE						
LS8BZ3~DMC_STRUCT						
LS8BZ3~E070		0				
LS8BZ3~OBJH		0				
LSB_4~SFLIGHT		0				
LSB_1~DMC_ACT_REC		0				
LSB_2~DMC_ACT_REC		0				
LSB_2~SFLIGHT		0				
LSB_3~SBOOK		0				
Q93003~SFLIGHT		1				
U72_01~SFLIGHT		1				

Monitor Delta Queue Requests

Provider: SLT_REPLICATOR Subscriber Type: SAP BW

Queue: U72_01~SFLIGHT Subscriber: WRMLNT777

Time Stamp ID: to:

Request Select: All Max. No. of Matches: 1.000

Composite Request	Composite Reques	Subscription	RT	Units	Rows	Original Size in Bytes	Compressed Size in	Comp. %	Lower Limit for TS	Upper Limit for TS	Extraction	Extraction R
{2013-06-07 13:27}											{2013-06}	

Monitor Delta Queue Data Units

Provider: SLT_REPLICATOR Subscriber Type: SAP BW

Queue: U72_01~SFLIGHT Subscriber: WRMLNT777

Time Stamp ID: {2013-06-07 13:27:41 000001 CET} to: {2013-06-07 13:27:41 000001 CET}

Request Select: Without Subscription (Full) Max. No. of Matches: 1.000

Unique Time Stamp ID (such as TSN)	Transaction ID (TID)	Unit Number	Rows	Original Size in Bytes	Compressed Size in	Comp. %	Extraction Mode	Storage
{2013-06-07 13:27:41 000001 CET}		1	32	3.968	677	82,9	Data Snapshot	ODQDATA_F

Drill-down over Queue and Subscriber to Requests and (data) Units

This table is loaded with a compression rate of 82.9%.

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Public

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ODQ Monitoring in ODP/SLT System



Program Edit Goto System Help

Reorganize Delta Queues

Retention periods for

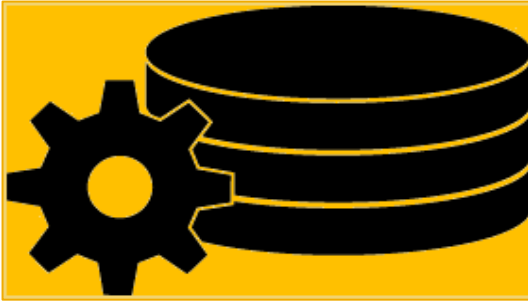
Restore	24	Hours
Data with low relevance	10	Days
Data with average relevance	31	Days

☒ Simulation run

No periodic reorganization run scheduled

Time for recovery after the data has been retrieved by subscriber(s)

Technical Requirements for ODP/SLT Scenario with SAP BW



Source Systems

Installation:

DMIS 2011 SP6 or

- DMIS 2011 SP3/SP4/SP5 + Note 1863476
- DMIS 2010 SP8/SP9 + Note 1863476

Basic Configuration:

- Define RFC user with appropriate authorization
- Optional: define separate table space for logging tables

System Requirements:

- All ABAP-based SAP Systems starting with R/3 4.6C, all supported OS/DB's platforms
- OS/DB restrictions of SAP NetWeaver stack (service.sap.com/pam)
- Non-SAP: all SAP supported DB versions (with respective SAP Kernel installed on LT Replication Server)

SAP LT Replication Server

Installation:

SAP_Basis (min requirement):

730 SP10 or SP5-9 + Note 1817467
731 SP8 or SP3-7 + Note 1817467
740 SP4 or SP0-3 + Note 1817467

• PI_Basis (min requirement):

730 SP10 or SP8-9 + Note 1848320
731 SP9 or SP5-8 + Note 1848320
740 SP4 or SP2-3 + Note 1848320

- Add-on DMIS 2011 SP6

Basic Configuration:

- **SAP:** Define RFC connection to source system

System Requirements:

Sizing of the SLT system depends very much on the amount of data which is stored in ODP and the planned retention periods.

Subscriber SAP BW

Installation:

- PI_Basis:
Recommended version (full functionality):
740 SP5

Limited functionality with:

730 SP10 or SP8-9 + Note 1848320
731 SP9 or SP5-8 + Note 1848320
740 SP4 or SP2-3 + Note 1848320

Documentation Links



Functionality of ODP is documented in the *Online Help* for:

Operational Data Provisioning - Introduction

Monitoring Delta Queues - *including hints for troubleshooting with the Delta Queue Monitor*

Functionality of SAP BW as subscriber at ODP:

Transferring Data from SLT Using Operational Data Provisioning

Transferring Data with SAP LT Replication Server

Central Note 1972175 - Operational Data Provisioning with SAP LT Replication Server DMIS2011 SP6

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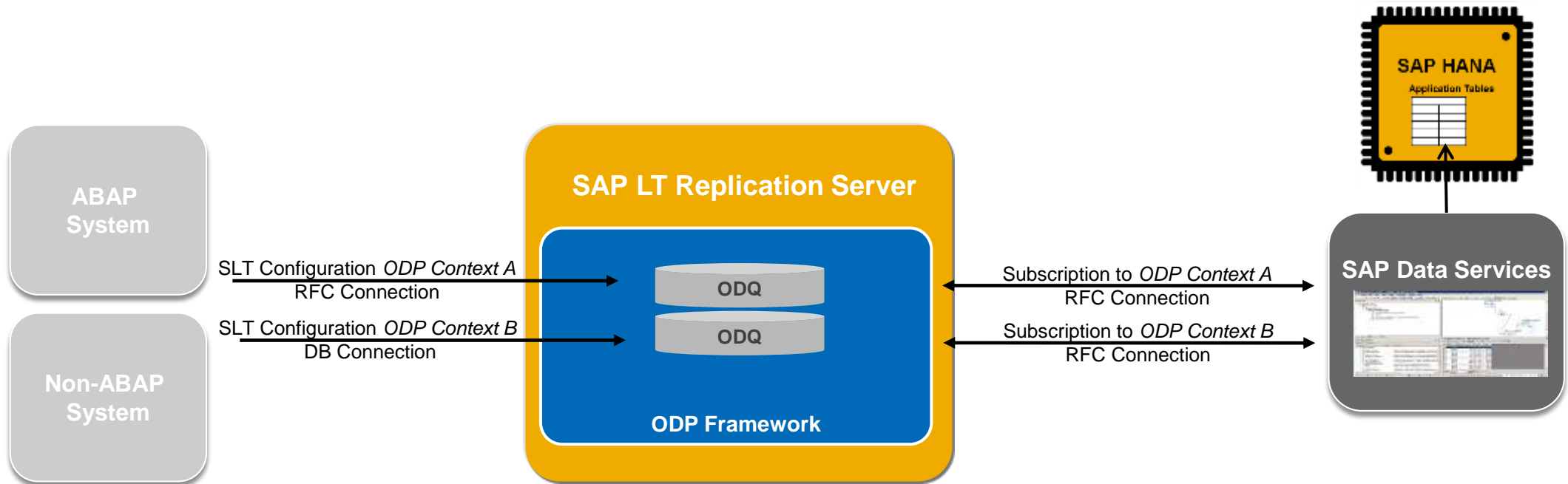
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Replication from Source systems to ODQ and subscription from SAP Data Services



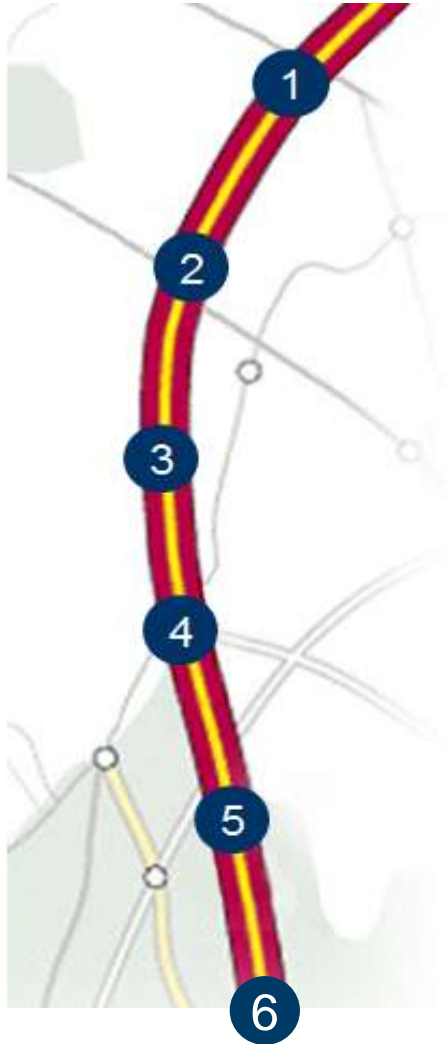
Source Systems

SAP LT Replication Server

Subscriber SAP Data Services

SAP LT Replication Server enhances the established SAP Data Services/ODP scenario (which was implemented for the transfer of source data starting from ECC systems 6.00) with the full SAP system release coverage (4.6 C onwards). As of SAP Data Services 4.2 SP1, the implemented trigger technology of SLT leverages the CDC (Change Data Capturing) scenario of SAP Data Services with real-time data provisioning and delta capabilities for all source tables.

Roadmap of SAP Data Services Subscription at ODP/SLT



Create a Configuration for a source system as ODP scenario with a queue alias (ODP context)

***SLT system
TA LTR***

Select the same ODP context in the SAP DataStore

SAP DS system

Specify tables for replication

SAP DS system

Display the replicated tables in the Object Library

SAP DS system

Monitor the replicated data

***SLT system
ODQMON***

Create Data Flow

SAP DS system

Setup Steps in Detail (1+2)



- 1) Create a Configuration for a source system as ODP scenario with a queue alias (ODP context) in the **SLT system**
- 2) Select the same ODP context in the SAP DataStore definition in the **SAP Data Services Designer**

Configuration Settings

General Data

Configuration Name: ODQ_B23_2_B23_DS_TEST
Description: NEVER STOP THIS REPLICATION!!
Application:
No. of Data Transfer Jobs: 001
Initial Load Jobs: 001

Source System

☒ SAP System ☐ ODP Connection
RFC Connection: NONE
Allow Multiple Usage: ☒
Read from Single Client: ☐

Target System

☒ SAP System ☐ ODP Connection
RFC Connection: NONE
Scenario for RFC communication: ODP replication scenario
Queue alias: DS_TST

Edit Datastore bz3

Datastore name: bz3
Datastore type: SAP Applications
Database server name: ldcibz3.wdf.sap.corp
User name: ds_user
Password:

Advanced <<

Configuration1

General

Overflow file directory
Locale
Language: <default>
Code page: <default>
SAP
ABAP execution option: Execute in background (batch)
Client number: 800
System number: 65
ODP context: SLT~DS_TST
Execute in background (batch): No
Target host: C
Job class: RFC
Data transfer method: SAPDS
RFC destination: \\ldcibz3.wdf.sap.corp\
Working directory on SAP server: C:\ProgramData\SAP BusinessObjects\Data
Generated ABAP directory: 1
Security profile: 10
Routing string: No
Number of connection retries: 1
Interval between retries (sec): 10
Use sapnwrfc.ini: No
Destination name: No
Upload attributes

Setup Steps in Detail (3a)



3) Select tables from the ODP objects list (search functionality)

The screenshot displays the SAP Data Services Designer interface. The top menu bar includes Project, Edit, View, Tools, Window, and Help. The Project Area on the right shows the 'External Metadata' tab selected, with a search bar and a tree view of 'ODP objects' containing 'All' and 'by Application'. The 'Local Object Library' on the left shows a tree view of datastores, with 'bz3' selected and its 'Tables' folder expanded, showing 'T100A(bz3.)'. The 'Search' dialog box is open, showing the search criteria: 'Look in: bz3', 'Object Type: Tables', and 'Name: Contains ZSFLIGHT_00'. The search results table shows one result: 'ZSFLIGHT_00'.

Name	Type	Description
ZSFLIGHT_00		

Setup Steps in Detail (3b)



3) Choose Extractor Mode Changed-Data-Capture (CDC)

External Metadata ☒ Repository Metadata ☐ Search...

Metadata

- ZALERTYPE_TEST - test data replication
- ZALERTYPE_TEST2 - test data replication
- ZARIXBC1
- ZARIXBC2
- ZAUT100A - Message IDs for T100
- ZAUT100A_BW - Message IDs for T100

Importing extractor ZSFLIGHT_01

Name of consumer: SAP

Name of project: ZSFLIGHT_01

Extraction mode:

☐ Query

☒ Changed-data capture (CDC)

Field name	Sign	Comparison	From	To
*				

Import Cancel

- ZSH_TR_BWN_DELTA - Generated Test Data
- ZSH_TR_KIT1 - Generated Test Data
- ZSH_TR_KIT2 - Generated Test Data
- ZSTRING_TEST - t
- ZTAB_INCL_STRU - th include
- ZTAB_INCL_STRU z - test

Setup Steps in Detail (4)



4) Preview the data in the Object Library

SAP Data Services Designer - [ZSFLIGHT_00(DS_SLT.) - Table Metadata]

Project Edit View Tools Window Help

Local Object Library

Repository:

Datasource	Usage	Description
"/ASU/SSMFOLDR_FULL"(DS_...	0	ASU SSM
"/BDL/DEST_FULL"(DS_SLT.)	0	List of RF
"/SAPDMC/LSGPROT_DELTA"...	0	Project: N
"/SAPDMC/LSGPROT_FULL"(D...	0	Project: N
SBOOK_DELTA(DS_SLT.)	1	Single Flig
SBOOK_DELTA2(DS_SLT.)	1	Single Flig
SBOOK_DELTA3(DS_SLT.)	2	Single Flig
SBOOK_FULL(DS_SLT.)	1	Single Flig
T000_DELTA(DS_SLT.)	2	Clients
T000_FULL(DS_SLT.)	1	Clients
T002T_DELTA(DS_SLT.)	1	Language
T005_DELTA(DS_SLT.)	1	Countries
T100A_DELTA(DS_SLT.)	2	Message I
T100A_FULL(DS_SLT.)	1	Message I
ZSFLIGHT_SLT(DS_SLT.)	1	Flight
Tables		
T000(DS_SLT.)	0	Clients
T002T(DS_SLT.)	0	Language
ZSFLIGHT_00(DS_SLT.)	1	Flight
ZSFLIGHT_01(DS_SLT.)	0	Flight

Schema: ZSFLIGHT_00(DS_SLT.)

Field	Type	Description
MANDT	varchar(3)	Flight
CARRID	varchar(3)	Client
CONNID	numeric(4,0)	Flight Connection Num...
FLDATE	date	Flight date
PRICE	decimal(15,2)	Airfare
CURRENCY	varchar(5)	Local currency of airline
PLANETYPE	varchar(10)	Aircraft Type
SEATSMAX	int	Maximum capacity in e...
SEATSOCC	int	Occupied seats in eco...
PAYMENTSUM	decimal(17,2)	Total of current booki...
SEATSMAX_B	int	Maximum capacity in b...
SEATSOCC_B	int	Occupied seats in busi...
SEATSMAX_F	int	Maximum capacity in fi...
SEATSOCC_F	int	Occupied seats in first...

View Data - ZSFLIGHT_00(DS_SLT.)

MANDT	CARRID	CONNID	FLDATE	PRICE	CURRENCY	PLANETYPE	SEATSMAX	SEATSOCC
800	AA	17	2012.12.12	422.94	USD	747-400	385	370
800	AA	17	2013.02.20	422.94	USD	747-400	385	375
800	AA	17	2013.05.01	422.94	USD	747-400	385	366
800	AA	17	2013.07.10	422.94	USD	747-400	385	72
800	AA	17	2013.09.18	422.94	USD	747-400	385	75
800	AA	17	2013.11.27	422.94	USD	747-400	385	5
800	AZ	555	2012.10.03	185.00	EUR	A310-300	280	271
800	AZ	555	2012.12.12	185.00	EUR	A310-300	280	262
800	AZ	555	2013.02.20	185.00	EUR	A310-300	280	271
800	AZ	555	2013.05.01	185.00	EUR	A310-300	280	271
800	AZ	555	2013.07.10	185.00	EUR	A310-300	280	121
800	AZ	555	2013.09.18	185.00	EUR	A310-300	280	80
800	AZ	555	2013.11.27	185.00	EUR	A310-300	280	25
800	AZ	789	2012.10.03	1030.00	EUR	A319	220	214
800	AZ	789	2012.12.12	1030.00	EUR	A319	220	214

Record: 1 of 110

ZSFLIGHT_00(DS_SLT.)

Setup Steps in Detail (5)



- 5) In the Data Queue Monitor, you can display the queue for the table in replication and the contained data.

Monitor Delta Queue Requests

Provider: SLT_REPLICATOR Subscriber Type: SAP Business Objects Data Services
Queue: DS_TST-ZSFLIGHT_00 Subscriber: SAP
Time Stamp ID: to Request Select: All Max. No. of Matches: 1.000

☐ Calculate Data Volume (Extended View)

Composite Request	C	Subscription	RT	Units	Rows	Original Size in Bytes	Compressed Size in	Comp. %	Lower Limit for TSN	Upper Limit for TSN	Extractions Request	E
{2013-12-19 14:36}	✓										{2013-12-19 14:36}	✓
{2013-12-19 14:52}	✓										{2013-12-19 14:52}	✓
{2013-12-19 14:57}	✓										{2013-12-19 14:57}	✓
{2013-12-19 15:18}	✓										{2013-12-19 15:18}	✓
{2013-12-19 15:21}	✓										{2013-12-19 15:21}	✓

Monitor Delta Queue Data Units

Provider: SLT_REPLICATOR Subscriber Type: SAP Business Objects Data Services
Queue: DS_TST-ZSFLIGHT_00 Subscriber: SAP
Time Stamp ID: {2013-12-19 15:21:19 003387 CET} to {2013-12-19 15:21:19 003387 CET} Request Select: Without Subscription (Full) Max. No. of Matches: 1.000

☐ Calculate Data Volume (Extended View)

Unique Time Stamp ID (such as TSN)	Transaction ID (TID)	Unit Number	Rows	Original Size in Bytes	Compressed Size in	Comp. %	Extraction Mode	Storage
{2013-12-19 15:21:19 003387 CET}		1	110	6.600	932	85,9	Data Snapshot (...)	ODQDATA
			110	6.600	932			

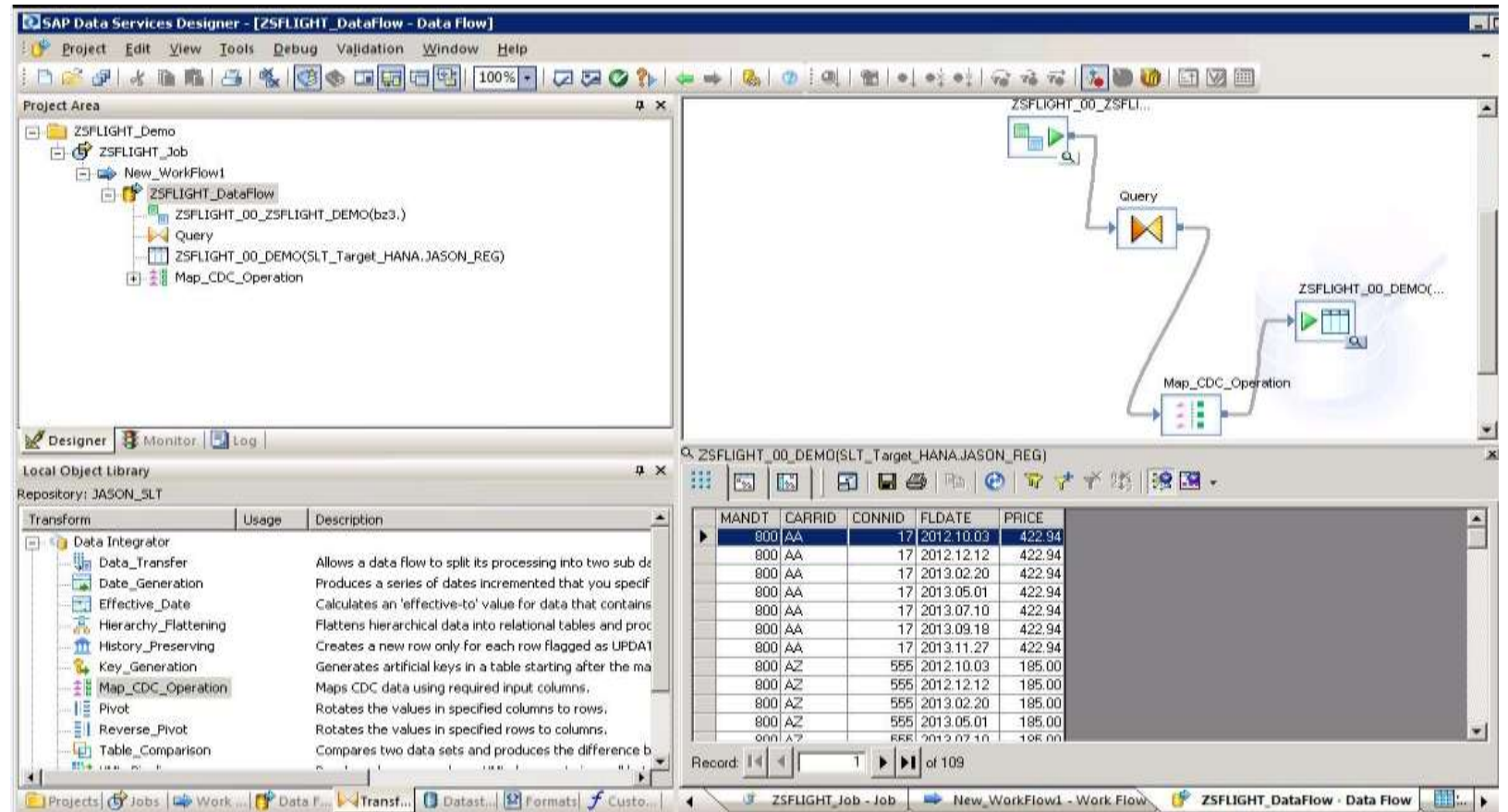
in in in in in in in

B A 1 0 = U 7 3 3 1 31 28 21 21
B A 1 1 = U 7 3 3 1 31 30 21 20
B A 1 2 = U 7 3 3 1 31 31 21 19
B A 1 0 = U 7 3 3 1 31 30 21 20
B A 1 1 = U 7 3 72 31 6 21 4
B A 1 1 = U 7 3 75 31 6 21 4
B A 1 2 = U 7 3 5 1 31 0 21 0

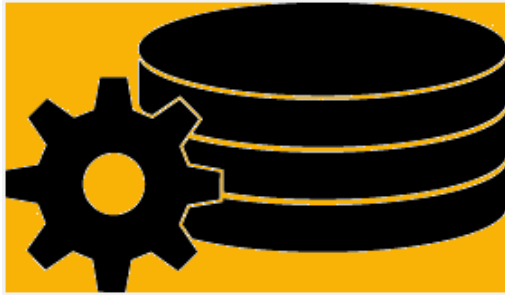
Setup Steps in Detail (6)



- 6) In the SAP Data Services Designer you define the Data Flow from the Data Source (ODP Object) to the Data Target and the CDC transformation rules.



Technical Requirements for ODP/SLT Scenario with SAP Data Services



Source Systems

Installation:

DMIS 2011 SP6 or

- DMIS 2011 SP3/SP4/SP5 + Note 1863476
- DMIS 2010 SP8/SP9 + Note 1863476

Basic Configuration:

- Define RFC user with appropriate authorization
- Optional: define separate table space for logging tables

System Requirements:

- All ABAP-based SAP Systems starting with R/3 4.6C, all supported OS/DB's platforms
- OS/DB restrictions of SAP NetWeaver stack (service.sap.com/pam)
- Non-SAP: all SAP supported DB versions (with respective SAP Kernel installed on LT Replication Server)

SAP LT Replication Server

Installation:

SAP_Basis (min requirement):

730 SP10 or SP5-9 + Note 1817467
731 SP8 or SP3-7 + Note 1817467
740 SP4 or SP0-3 + Note 1817467

PI_Basis (min requirement):

730 SP10 or SP8-9 + Note 1848320
731 SP9 or SP5-8 + Note 1848320
740 SP4 or SP2-3 + Note 1848320

- Add-on DMIS 2011 SP6

Basic Configuration:

- **SAP:** Define RFC connection to source system

System Requirements:

Sizing of the SLT system depends very much on the amount of data which is stored in ODQ and the planned retention periods.

Subscriber SAP Data Services

Installation:

- SAP Data Services 4.2 SP1 or higher

Documentation Links



Functionality of SAP Data Services is documented on the *Online Help* page:

<http://help.sap.com/bods>

and in SCN: <http://scn.sap.com/community/data-services>

For the ODP/SLT scenario with SAP Data Services see the [Release Note for SAP Data Services 4.2 SP1](#)

[Supplement for SAP Guide](#)

Central Note 1972175 - Operational Data Provisioning with SAP LT Replication Server DMIS2011 SP6

SAP Landscape Transformation Replication Server

Product Licensing for ODP/SLT Scenario



Use Case	License Model Coverage	Required SLT-license
Replication via ODP to HANA scenario	HANA Enterprise edition, HANA Insight/enterprise edition, HANA real-time data edition, HANA EDGE edition, HANA Limited Runtime edition for Applications (LREA), HANA Limited Runtime edition for Applications and SAP BW (LREAB)	-
Replication via ODP to anyTarget: <ul style="list-style-type: none">- SAP BW on anyDB via the ODP Framework- SLT Change-Data-Capturing for Data Services to anyTarget	-	Calculation per CPU core: pricing scales with the desired performance for a given data transfer volume and covers all released SLT business scenarios.

New simplified pricing model for SAP LT Replication Server introduced for 2014

Only one single **License Material number: 7016865**

- Can be immediately ordered (via SAP's OnRequest price list) and will be visible on the official SAP price list by end of January 2014.
- required cores can be easily determined by using the [SLT Sizing Guide](#) (both a simple T-Shirt size based sizing as well as more detailed formulas are available to determine the required system resources for the relevant use cases)

SAP Landscape Transformation Replication Server

Software Shipment



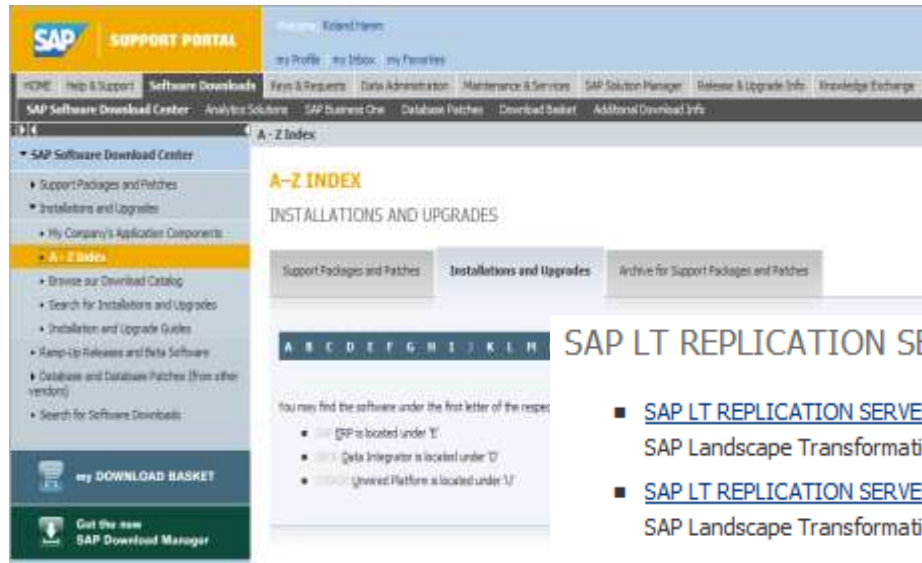
Software Shipment

Software Download Access via the Software Download Center within SAP Service Marketplace (<https://service.sap.com/SWDC>).

Multiple Access paths are available:

- Via SAP HANA Enterprise Edition (→additional Components) path
- Via SAP Landscape Transformation Replication Server → (A-Z Index) directly

→ Correct license material assignment is required for the requesting S-User!



SAP LT REPLICATION SERVER

- [SAP LT REPLICATION SERVER 1.0](#)
SAP Landscape Transformation Replication Server 1.0
- [SAP LT REPLICATION SERVER 2.0](#)
SAP Landscape Transformation Replication Server 2.0



SpeedDemos on both Scenarios available for external Demos



Operational Data Provisioning with SLT for SAP BW

External link: <http://demo.tdc.sap.com/SpeedDemo/d5b12f54ff68858c>



Operational Data Provisioning with SLT for SAP Data Services

External link: <http://demo.tdc.sap.com/SpeedDemo/d77f6f76859880ed>





Thank you

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