

Positioning of CML of SAP's LSA with NLS SAND as Archiving Technology



Applies to

EDW, SAP BIW 3.5, SAP NetWeaver 7.0. For more information, visit the [EDW homepage](#).

Summary

This document may help you in deciding the position of CML (Corporate Memory layer) of SAP's LSA (Layered Scalable Architecture) when NLS – SAND has been used with SAP BW/BI as archiving solution.

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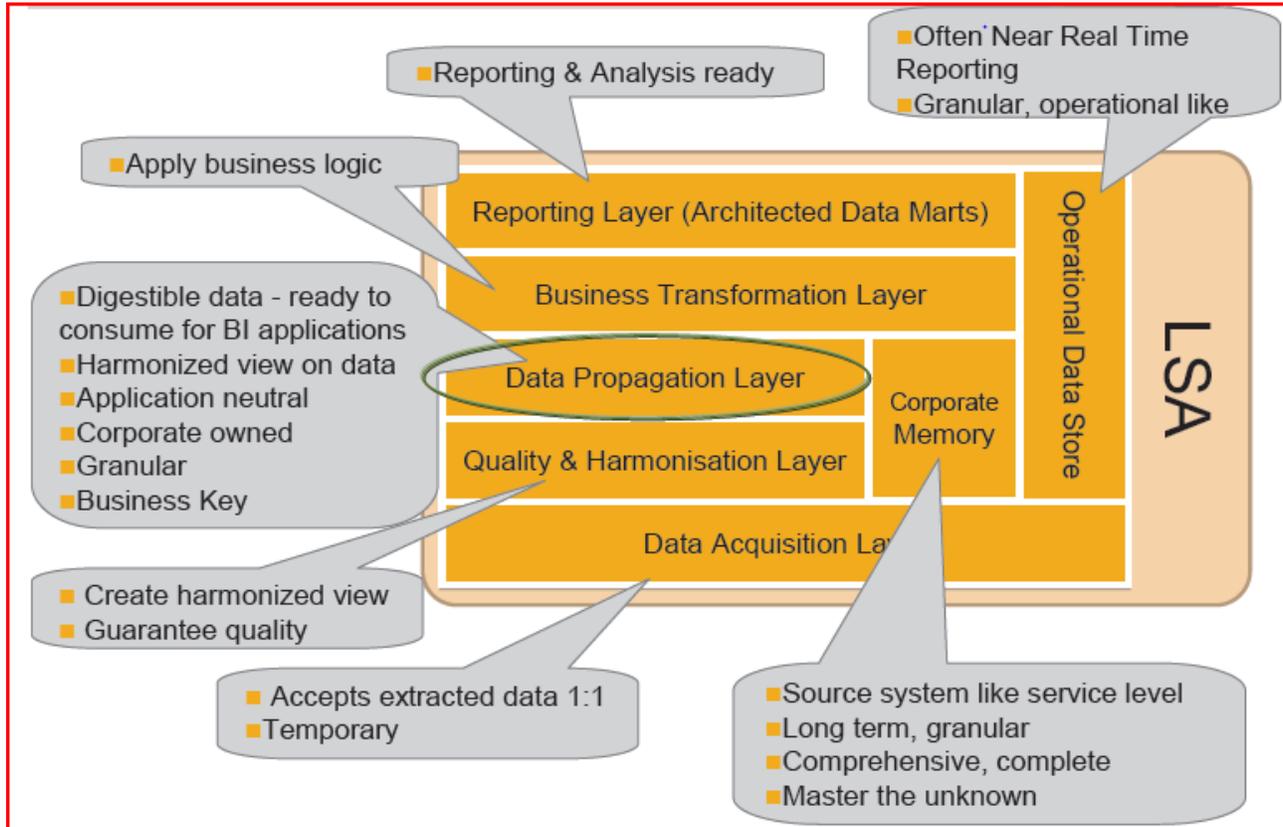
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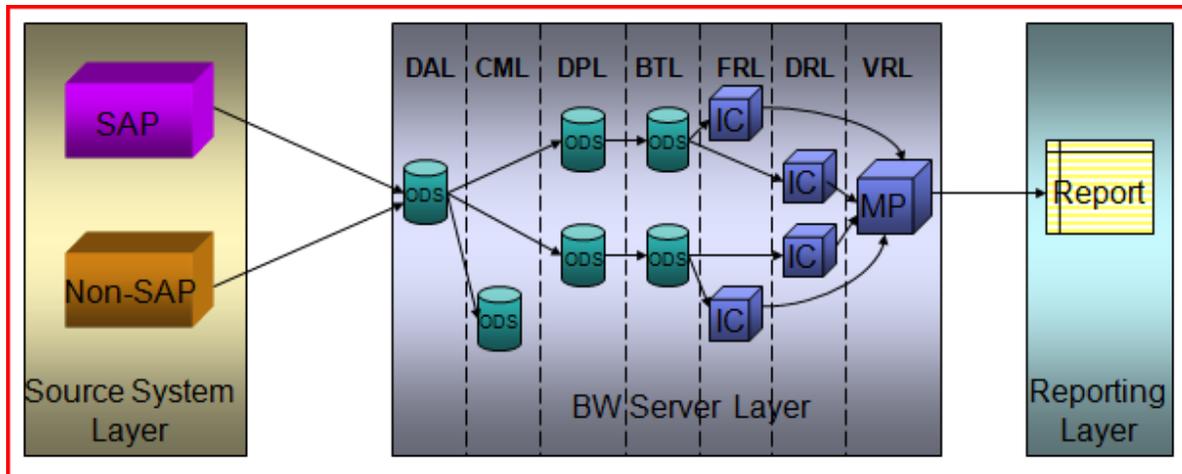
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Introduction

LSA – Layered, Scalable Architecture is a service-level oriented, scalable, best practice BW architectures founded on accepted EDW principles as introduced in Bill Inmon's Corporate Information Factory (CIF). This is an Architecture used for Large BW implementation at enterprise level. This is an SEVEN layered architecture Every layer of this pattern has been designed to serve the particular purpose. This Architecture will help you in boosting the overall performance of the system and making your implementation flexible enough to adapt future enhancements.



The LSA serves as a reference architecture to design transparent, complete, comprehensive customer DWH architectures (Customer LSA). The Customer LSA describes corporate standards to build BI applications in a performant, maintainable, flexible manner.

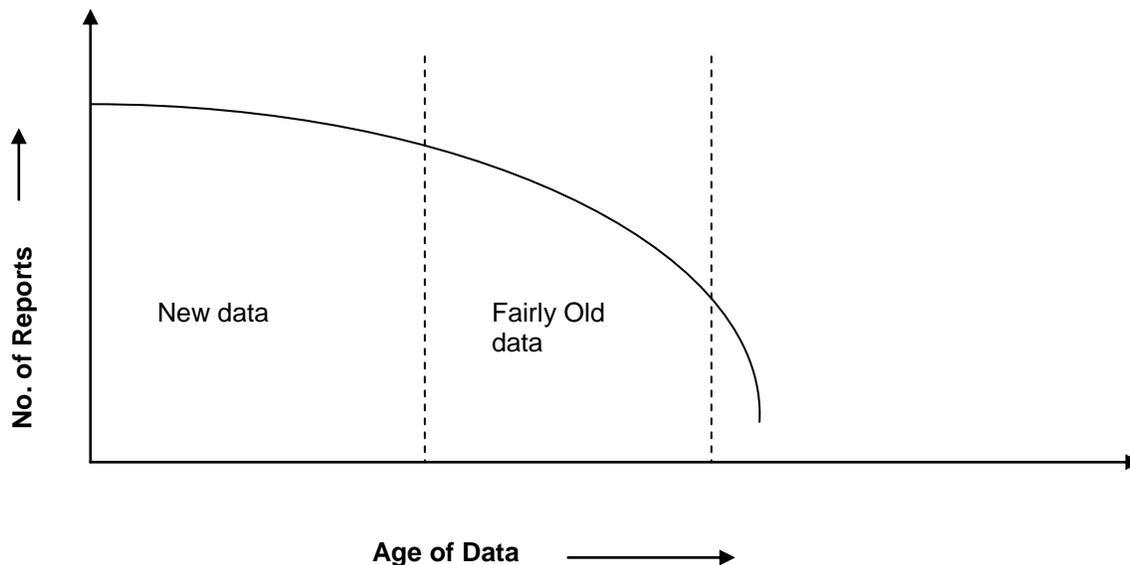


Advantages

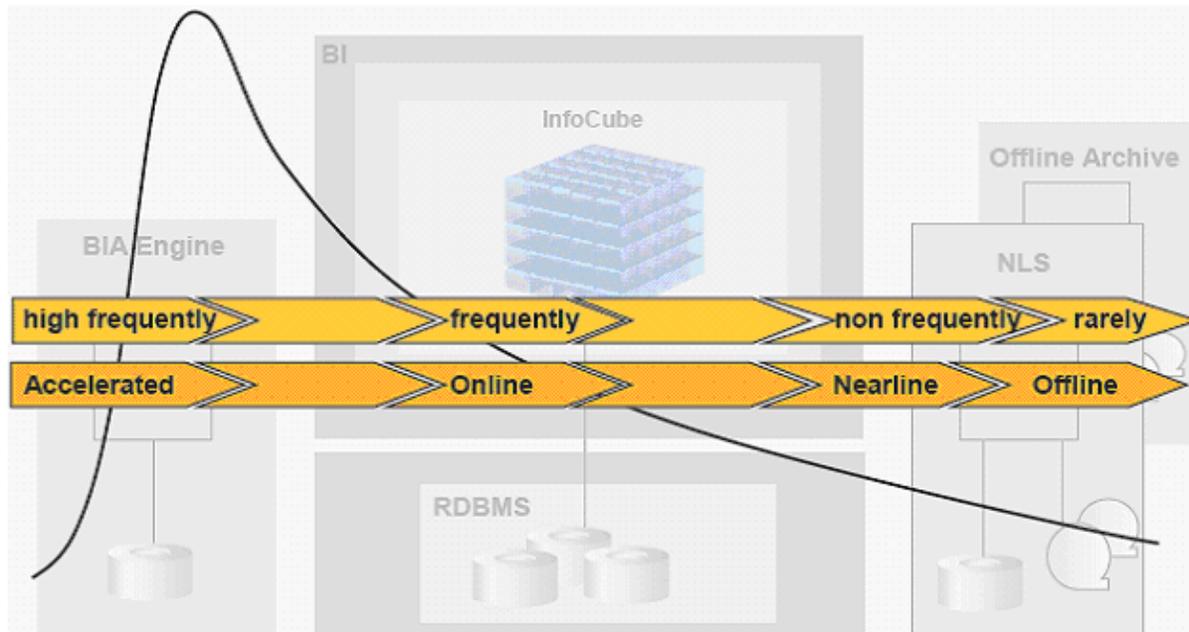
1. Existence of EDW layer allows data marts (DM) to be decoupled from sources.
2. Reduces the need for interdependencies between data marts
3. Reduced long term TCO and time to market of new data mart developments.
4. Improved Scalability
5. Use of EDW layer is aligned with the ownership of data
6. EDW provides the framework that allows the construction of regional/ time zone or country data marts
7. Offers organizational and cost benefits because decentralized approach to data mart construction would be feasible

NLS stands for Near on-line storage (e.g. SAND). This is used for improving the performance of SAP BW/BI system by archiving the fairly old data. In data warehousing world, we design data warehouse for storing historic data for 5-10 years. But it is found that most of reports uses fairly new data for generating output and number of reports become lesser and lesser as data becomes old. So SAP come up with solution called Archiving. In traditional archiving method, we are purging out the old data from data warehouse into flat files or tapes. When we need this old data, we have to load this again from flat files or tapes into SAP system so that it will be available for reporting.

This method works well for new data and very old data, but not for the fairly old data that is required for reporting but not that frequently. If we keep this fairly old data set in data warehouse, it reduces the performance of system. Also query performance goes down as OLAP processor has to process larger chunk of data resides in data warehouse. If we archive this data in external storage device, then we have to load it back to data warehouse again and again which is time consuming and cumbersome process.



Therefore SAND Technologies and SAP come up with New solution using NLS concept. Here we are archiving fairly old data to SAND system. Thus this will reduce the bottleneck of data warehouse and increase its performance. At the same time, if we required this data for reporting then we do not have to reload this data into data warehouse. SAP provides way to access data resides in data warehouse and SAND system seamlessly and this will be transparent to end user.

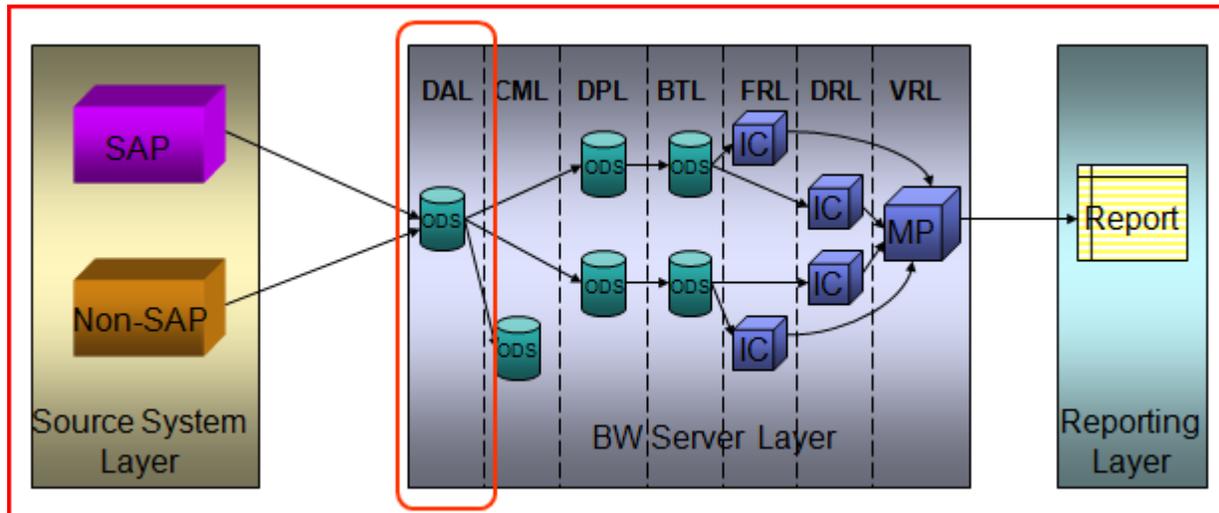


Categorizing Information According to Importance:

	Online Database	Near-Line Storage	Classic Archive
Frequently read / changed data	✓		
Rarely read data	✓	✓	
Very rarely read data	✓	✓	✓

Basics of DAL and CML of LSA

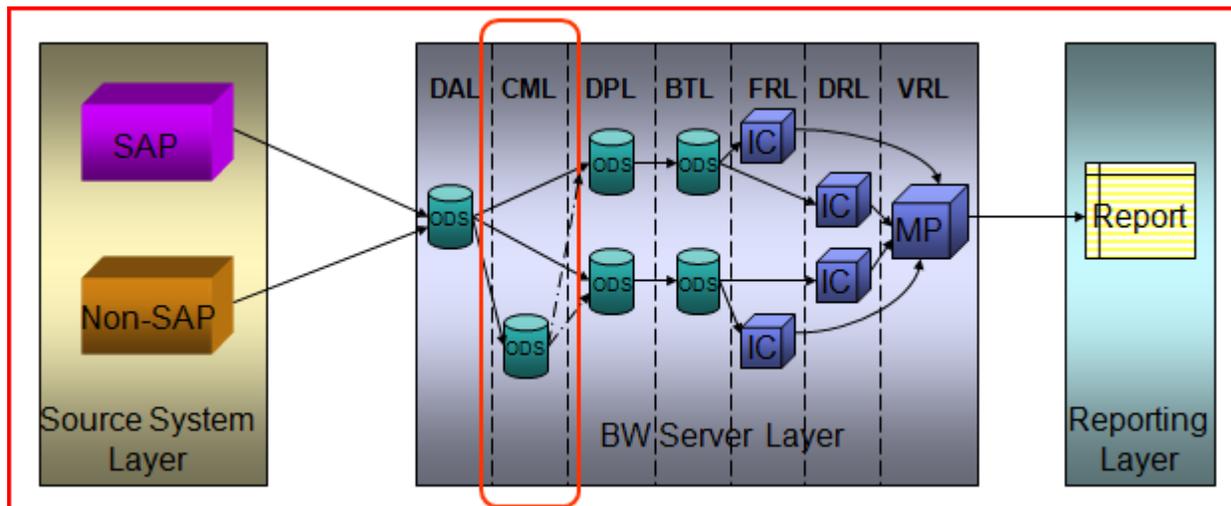
Data Acquisition Layer (DAL)



- This layer is mandatory and is used to pass the information from the source into the data warehouse.
- Data life is 1 day
- Logical Partitioning characteristic value is determined in Transfer rule while loading data to DAL ODS

Corporate Memory Layer (CML)

CML (Corporate Memory Layer) is a layer in LSA used for back-up and recovery. The corporate memory layer is mandatory and supports the build of new applications, rebuild of applications and potential new requirements that are unknown at this stage. It contains complete historical data.

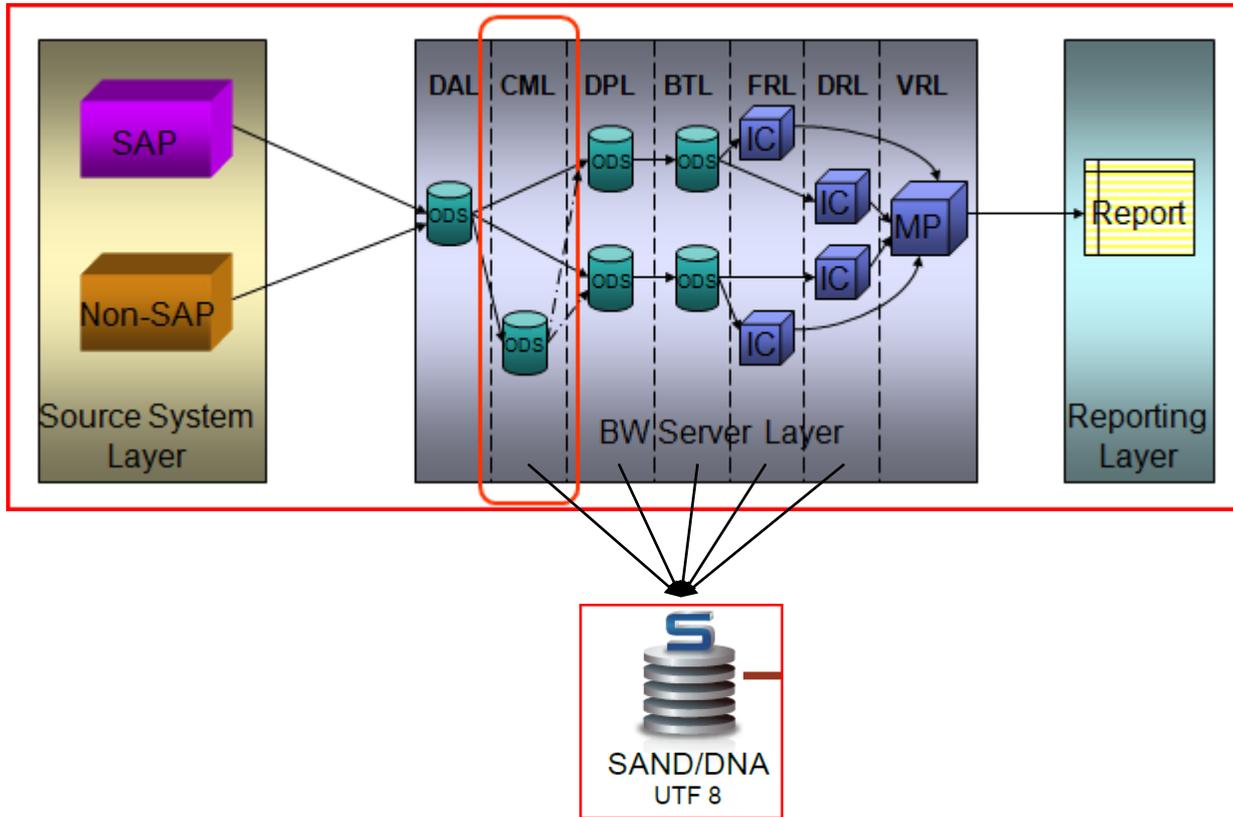


- This layer is mandatory and acts as data backup and recovery solution within BW/BI
- Will get data from DAL as Full load
- Will have connection with DPL for data recovery purpose
- Structure of CML ODS is same as that of DAL ODS

Re-modeling the LSA

In vanilla LSA implementation, we will have all layers implemented in BW box. To reduce cost and to improve the overall system performance, if NLS is implemented. Then we will be archiving data from all layers except DAL and VRL to low cost NLS solution.

Current Architecture



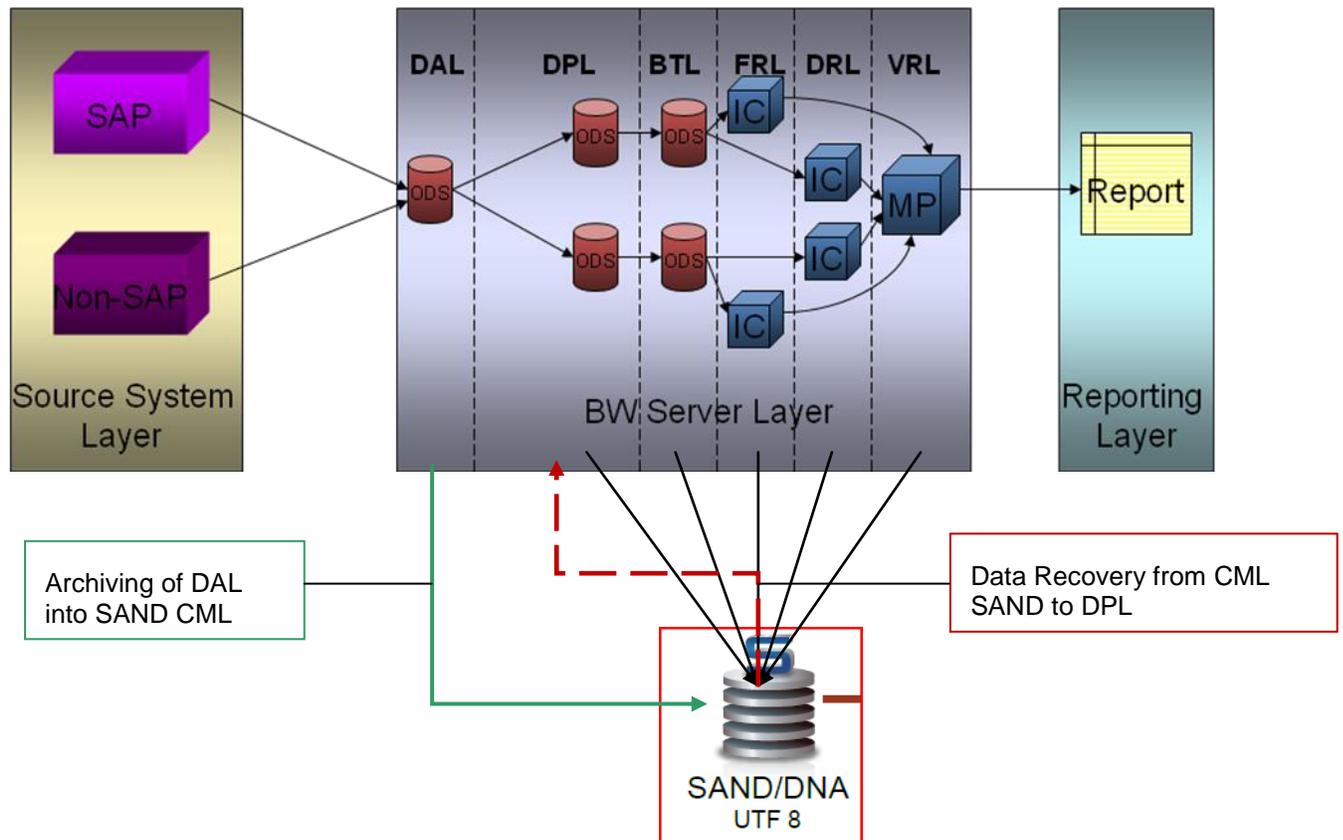
Current Approach:

Holding data for recovery in CML Objects

Deletion of data from DAL once loads are successful

New proposed Approach

Archiving DAL in SAND which will Act as CML.



Advantages

- Development time will be less as no CML objects need to be developed
- Deletion of data from DAL will replace archiving
- No loads to CML objects
- Recovery and back up remain unaffected

Implementation Guide

1. Create DAP for DAL (Data Acquisition Layer)
2. Create secondary index on Archiving parameter for better performance
3. Create transformation between (Data propagation Layer)DPL ODS and (Data Acquisition Layer) DAL ODS
4. Create DTP from (Data Acquisition Layer) DAL to (Data propagation Layer) DPL with below setting {Archive (Full Extraction Only)} (Recovery DTPs)



The screenshot shows a dialog box titled "Extraction From...". It contains four radio button options: "Active Table (With Archive)", "Active Table (Without Archive)", "Archive (Full Extraction Only)", and "Change Log". The "Archive (Full Extraction Only)" option is selected and highlighted with a red rectangular box.

5. After every successful load, archive data to NLS-SAND rather than deleting it
6. Use below setting {Active Table (Without Archive)} while moving data from DAL(Data Acquisition Layer) to DPL(Data propagation Layer), so that data will be picked up only from Active table of (Data Acquisition Layer)DAL ODS



The screenshot shows a dialog box titled "Extraction From...". It contains four radio button options: "Active Table (With Archive)", "Active Table (Without Archive)", "Archive (Full Extraction Only)", and "Change Log". The "Active Table (Without Archive)" option is selected and highlighted with a red rectangular box.

Related Content

[SAP NetWeaver BW Layered, Scalable Architecture \(LSA\) for BI Excellence - Webinar Presentation by Juergen HauptSAP](#)

For more information, visit the [EDW homepage](#)

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