SAP BI/BW LO Extraction

Applies to:
SAP BI/BW. For more information visit the Enterprise Data Warehousing Homepage

Summary
This Article demonstrates the Steps for LO Extraction with different Update Modes

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LO Extraction

Introduction

This article addresses the requirement and significance of LO extraction. This article gives you the steps how to do LO Extraction from R/3 System to BI. This will deal LBWE Activities like how to schedule the jobs in SAP R/3 to fill setup table, also a brief discussion on Update mode and extraction of Logistic data to BI as well.

LBWE Activities

The Logistics Extract Structures Customizing Cockpit (you can directly see it by transaction LBWE) represents the central tool for the administration of extract structures.

Activate the data sources if it is inactive and give a request name to transport to Production system.

Just Click on Inactive under Update
Click on Data Source Name under Datasource to hide/show the extractor fields

Click on Data Source Name under Datasource to hide/show the extractor fields
Click on Job Control under Update schedule the jobs in R/3 that will fetch data from base table to setup table.

- Click on Start Date button to specify time at which job will trigger
- Click on Print Parameter to specify print parameter
- Finally click on Schedule to Schedule the job
Click on Direct Delta under Update mode to set the Update Mode

<table>
<thead>
<tr>
<th>Source data</th>
<th>Structure</th>
<th>DataSource</th>
<th>Update</th>
<th>Update Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistics applications</td>
<td>Job Control</td>
<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
</tr>
<tr>
<td>02 : Purchasing</td>
<td>Job Control</td>
<td>Direct Delta</td>
<td>Job Control</td>
<td>Unserealized V3 Up.</td>
</tr>
<tr>
<td>03 : Inventory Controlling</td>
<td>Job Control</td>
<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
</tr>
<tr>
<td>04 : Shop Floor Control</td>
<td>Job Control</td>
<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
</tr>
<tr>
<td>05 : Quality Management</td>
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<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
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<td>06 : Invoice Verification</td>
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<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
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<tr>
<td>07 : Shipment</td>
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<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
</tr>
<tr>
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<td>Job Control</td>
<td>Direct Delta</td>
<td>Job Control</td>
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<tr>
<td>12 : LE Shipping BW</td>
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<td>Job Control</td>
<td>Direct Delta</td>
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<td>Job Control</td>
<td>Direct Delta</td>
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<tr>
<td>17 : Plant Maintenance BW</td>
<td>Job Control</td>
<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
</tr>
<tr>
<td>18 : Customer Service BW</td>
<td>Job Control</td>
<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
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<tr>
<td>20 : Workflow</td>
<td>Job Control</td>
<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
</tr>
<tr>
<td>03 : External Data (without SAP ref.)</td>
<td>Job Control</td>
<td>Direct Delta</td>
<td>Job Control</td>
<td>Direct Delta</td>
</tr>
</tbody>
</table>

Update Modes
Direct Delta:-
Extraction data is transferred directly to the BW delta queues with each document posting.

Data Flow for LO Extraction with Direct Delta

Benefits :-
- No need schedule at regular interval in order to transfer data into BW
- Serialization of documents is ensured by using the enqueue concept for applications

Limitation:-
- The number of LUWs per data source in the BW delta queues increases significantly because different document changes are not summarized into one LUW in the BW delta queues. Therefore this update method is recommended only for customers with a low occurrence of documents (a maximum of 10000 documents)
- No documents can be posted during delta initialization procedure from the start of the recompilation run in R/3
Queued Delta:-

The extraction data (for the relevant application) is written in an extraction queue (instead of in the update data as in V3) and can be transferred to the BW delta queues by an update collective run.

Data Flow for LO Extraction with Queued Delta

Benefits:-

- Document postings (relevant for the involved application) can be opened again as soon as the execution of the recompilation run (or runs, if several and running in parallel) ends
- Collective run clearly performs better than the serialized V3
- Recommended for customers with a high occurrence of documents
- Event handling is possible here, because a definite end for the collective run is identifiable: in fact, when the collective run for an application ends, an is automatically triggered and, thus, it can be used to start a subsequent job.

Limitations:-

- Need schedule job at regular interval in order to transfer data into BW
Unserialized V3 update:
The extraction data continues to be written to the update tables using a V3 update module and then is read and processed by a collective update run.

Data Flow for LO Extraction with Unserialized V3 Update

Data is read in the update collective run without taking the sequence into account and then transferred to the BW delta queues.
**Setup Tables:**

Access to application tables are not permitted, hence setup tables are there to collect the required data from the application tables.

When a load fails, you can re-run the load to pull the data from setup tables. Data will be there in setup tables. Setup tables are used to Initialize delta loads and for full load. Its part of LO Extraction scenario.

With this option, you avoid pulling from R/3 directly as we need to bring field values from multiple tables. You can see the data in the setup tables. Setup table name will be extract structure name followed by SETUP. Set up table names starts with 'MC' followed by application component '01’/’02’ etc and then last digits of the Data source name and then followed by SETUP. Also we can say the communication structure (R/3 side, you can check it in LBWE also) name followed by 'setup'

example: MC13VD0HDRSETUP

- If you want to check data in set up tables you better look at the transaction NPRT here you can see the table name from which data is picking.
- Setup tables are cluster tables and are used to extract the data from R/3 Tables.(LO Extractors)
- Basically, for entire application like SD-Billing we have got it's own setup Tables...so while filling the set-up tables, we usually fill for the entire application.

Ex: OLI7BW is for filling setup Tables for SD application.
OLI9BW T-code is for Billing Application,

- When u fill the setup Tables, the data from different tables..VBAK, VBAP, VBRK, VBRP...etc will come through communication Structures and saved in Setup Tables...
- The main advantage of having setup Tables is, we can read the data in different levels..Header level as well as Item level.
- when we run init load or Full load in BW, the data will be read from Setup Tables for the first time( Entire data will be read).... and the delta records will be updated to Delta Queue once the v3 job runs... and we can extract the delta records from Delta Queue.
- Once we successfully run the init, we can delete setup Tables.
- Filling up the set up tables depends on the Datasource.
Delete Setup Table (LBWG)

Before filling the setup table we need to delete its content because it may have some garbage value.
- For deletion of setup table, select application component whose setup table need to be deleted

Replicate DS in BI

In BW, Replicate the data source (RSDS) & initialize the infopackage without data transfer:
- Enter Data source name & Source system

- Data source Menu → Replicate Datasource
Create Info package on the data source & initialize it.

**Scheduler (Maintain InfoPackage)**

- **InfoPackage**: OMM_PUR_VE_01(ZPAK_D7HRBERM4AVVM25HFED5546Z)
- **InfoSource**: Vendor evaluation: OMM_PUR_VE_01
- **DataSource**: Vendor evaluation: OMM_PUR_VE_01
- **Data Type**: Transaction Data
- **Source System**: [Link to documentation]
- **Last Changed By**: [User Name]

**Update Mode**
- Full Update
- Initialize Delta Process
  - Initialization with Data Transfer
  - Initialization Without Data Transfer
- Early Delta Initialization

**Data Update Type in the Data Targets**
- Always update data, even if no master data exists for the data
- Do not update data if no master data exists for a characteristic

**Delta Queue**

Check the Data source entry Delta Queue (RSA7)

**BW Delta Queue Maintenance**

<table>
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<tr>
<th>Stat</th>
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<th>BW System</th>
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</tbody>
</table>
Fill Setup table (SBIW) or (OLI*BW)

Once init is completed in BW and delta queue is created in SAP R/3 (RSA7) then do the setup

SBIW Steps:-

Display IMG

T-Codes to Fill setup:-

OLI1BW :- Material Movements
OLI2BW :- Invoice Verification/Revaluation
OLI3BW :- Purchasing Documents
OLI4BW :- Shop Floor Information system
OLI5BW :- Repetitive Manufacturing
OLI6BW :- Quality Management
OLI7BW :- Plant Maintenance
OLI8BW :- Service Management (customer Service)
OLI9BW :- SD Sales Order
OLI8BW :- Deliveries
OLI9BW :- SD Billing Documents
VIFBW :- LES-Shipmen Cost
VTBW :: LES-Transport  
ORISBW :: Retail  
OLIABW :: Agency Business  
OLI6BW :: Invoice Verification  
OLI4KBW :: Kanban  

**Extractor Checker**  
Check the Data in the Data source using RSA3 (Extractor Checker)  
- Enter the **Datasource** Name and Click on **Extraction** button
Info Package (Repairful)

In BW, Run the Info Package as “Repairful request”

Select Check box (Indicate Request as Repair Request)
Click on Start

Finally Data is updated to the corresponding target
Related Content

http://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/d07aa007-84ab-2d10-46ba-a5a2679f0d7b?QuickLink=index&overridelayout=true

LO Extraction - Part 1 SD Overview

For more information visit the Enterprise Data Warehousing Homepage
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