

Infrastructure at your Service.

GoldenGate-ODI: Boost your Business with Real-Time BI



About me

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Who we are

dbi services

Experts At Your Service

- > 45 specialists in IT infrastructure
- > Certified, experienced, passionate

Based In Switzerland

- > 100% self-financed Swiss company
- > Over CHF 6.3 mio. turnover

Leading In Infrastructure Services

- > More than 120 customers in CH, D, & F
- > Over 40 SLAs dbi FlexService contracted



Agenda

1. Introduction
2. Differences between ETL and E-LT processes
3. The Oracle components
4. Demo
5. Conclusion

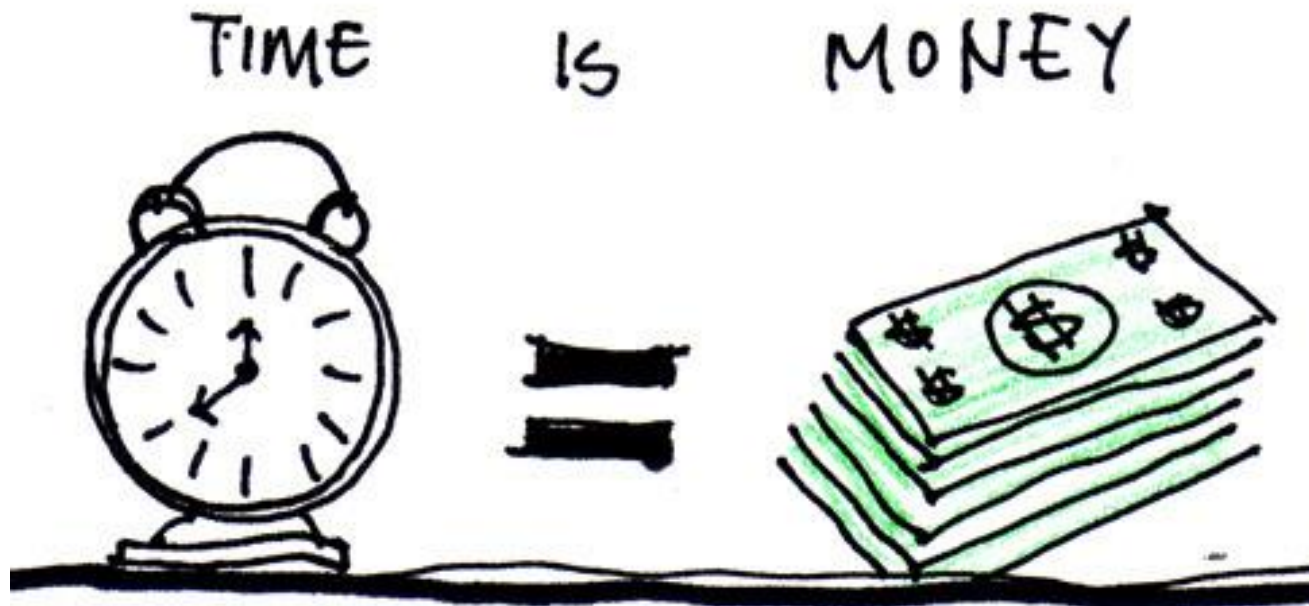
Introduction



> Why is the Real Time Reporting important for Business ?

Introduction

Why RealTime Reporting is important for Business ?



Real-time business intelligence (RTBI) is the process of delivering business intelligence (BI) or information about business operations as they occur. (Wikipedia)

Introduction

Why RealTime Reporting is important for Business ?

A new software association

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GOLDEN GATE



Differences between ETL and E-LT processes

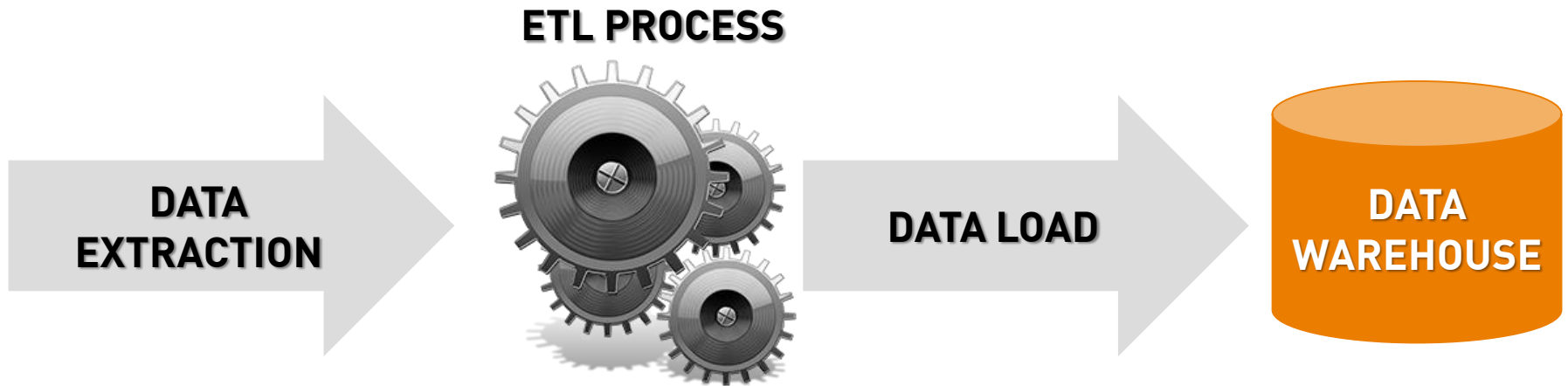


- > The classic ETL process
- > The new E-LT process

Differences between ETL and E-LT processes

The classic ETL process

BI classical Flow



Differences between ETL and E-LT processes

The classic ETL process

BI classical Flow

- > Used an ETL flow
- > Data extraction is scheduled with fix slots
- > Data extraction is made with all the needed data
- > It takes time (Extract – Load - Transform)
- > Gives only a view at D-1

Differences between ETL and E-LT processes

The new E-LT process

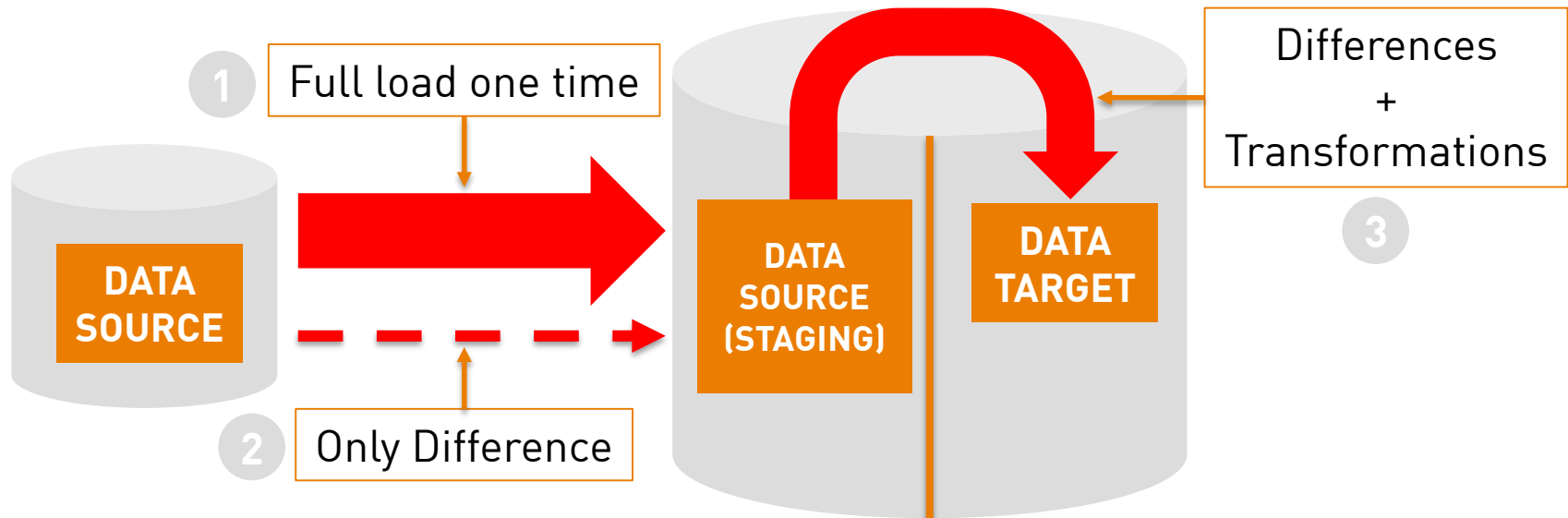
What is an E-LT process ?

- > E-LT process moves the data transformation step to the target database (data warehouse) and changes the order of operations to:
 - > **Extract** the data from the source tables
 - > **Load** the tables into the destination server
 - > **Transform** the data on the target database using native SQL operators

Differences between ETL and E-LT processes

The new E-LT process

BI real-time flow with E-LT process

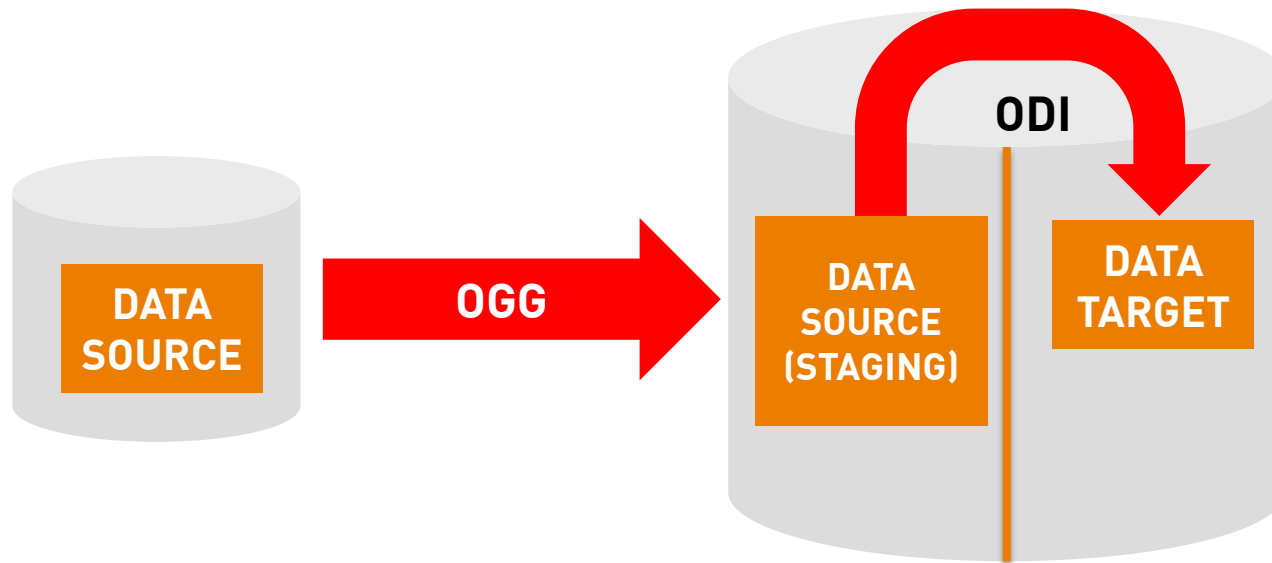


- 1. Extract one time the data source (one shot)**
- 2. After that, extract only the data that have changed**
- 3. Load – Transform direct in the data warehouse**

Differences between ETL and E-LT processes

The new E-LT process

BI real-time flow with the tools



Differences between ETL and E-LT processes

The new E-LT process

Data extraction in a real-time BI flow

- > Using Oracle GoldenGate, the data extraction is done only with the changed / missing data
- > An E-LT (Extract – Load - Transform) process is used
- > The data warehouse is updated in a very short time

The Oracle components



- > Oracle GoldenGate (OGG)
- > Oracle Data Integrator (ODI)

The Oracle components

Oracle GoldenGate (OGG)

Replicate OLTP data to ODS (Operational Data Store)

- > Interim logical area for a Datawarehouse
- > Database designed to integrate data from multiple sources for additional operations on the data
- > Data can be scrubbed, resolved for redundancy and checked for compliance according to the business rules

Datawarehouse/BI (Business Intelligence)

- > Analytical reports on current or historical data
- > Long term reporting or archiving

Near Zero Downtime Migration

- > very minimal application switchover downtime (stop/start)
- > Allow migration with failback capability

The Oracle components

Oracle GoldenGate (OGG)

Heterogeneous database replication

- > From Oracle to MS SqlServer for example
- > Less replication capability as from Oracle to Oracle
 - > Not for all source data types
 - > No DDL
 - > Etc.

Active/Active Replication

- > Long distance between different office
- > Data available on each system locally (High Availability)

Oracle GoldenGate usual implementation

Oracle GoldenGate 12c

Why Oracle GoldenGate 12c?

- > Can replicate data from any database rdbms (**heterogeneous**)
- > **Low impact** on production database
 - > Read transaction directly from memory (Integrated Capture)
 - > Otherwise the reads are done from the redo or archive files only
- > **Real-Time** replication solution
 - > Allows reporting with live data
- > **Supported with other Oracle products**
- > **Fast recovery** with low performance impact (Integrated Replicate)
- > Most of the **object types are supported** (Oracle to Oracle)
- > Possibility to extract from a **Downstream Mining Database**
- > **Allow transformation and filtering**

Oracle GoldenGate usual implementation

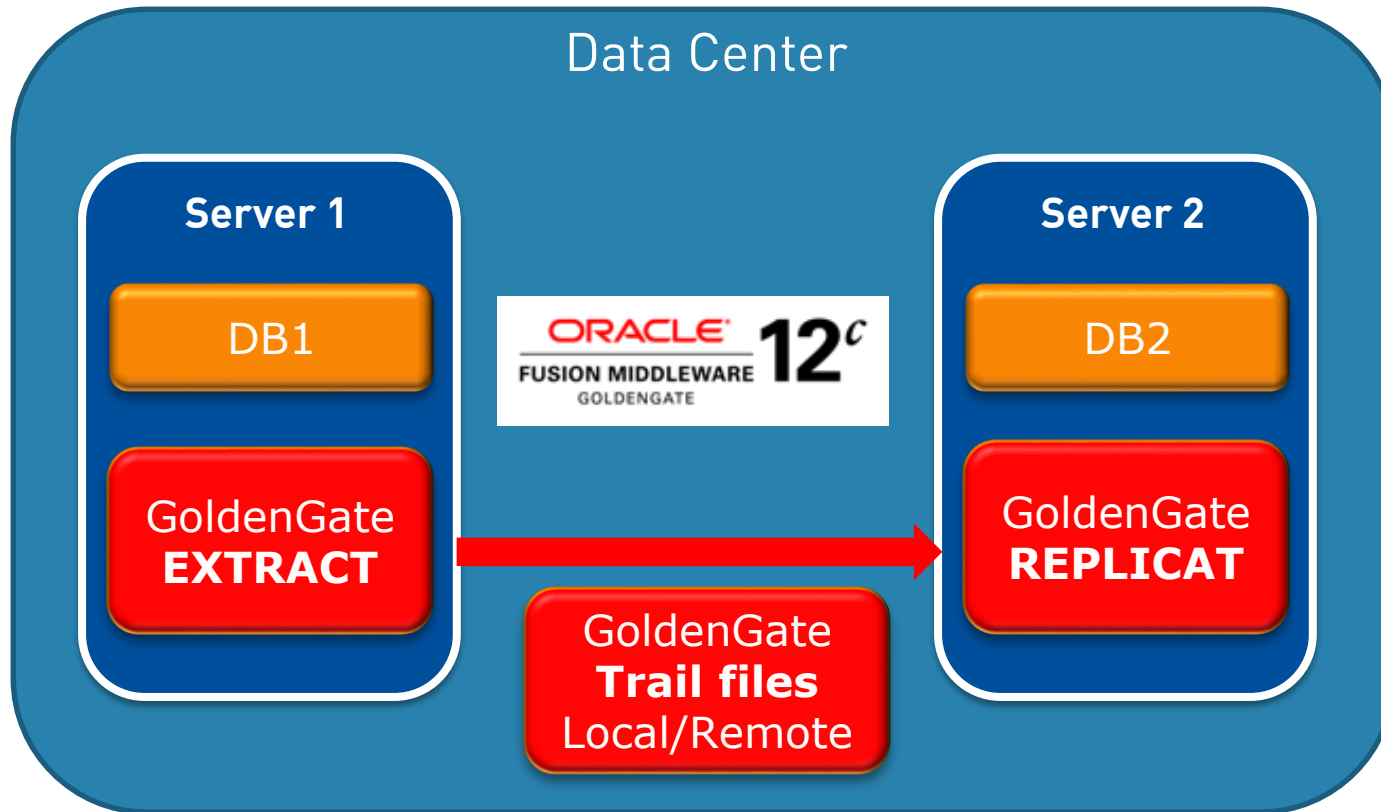
Oracle GoldenGate new features

What's new with Oracle GoldenGate 12.2?

- > **Metadata Encapsulation** (DEFGEN and the parameters SOURCEDEFS/ASSUMETARGETDEFS are no longer needed)
- > **End to End Replication Lag** with new HEARTBEATABLE parameter
- > Integrated capture supported with Oracle Active Data Guard
- > **Oracle GoldenGate Studio (new fmw Java software)**
 - > Start replicating data with minimal effort (GUI)
 - > Access to GoldenGate's advanced replication options
- > **Parameter Simplification** (INFO PARAM, GETPARAMINFO, CHECKPRM)

The Oracle components

Oracle GoldenGate (OGG)



The Oracle components

Oracle GoldenGate (OGG)

EXTRACT example with one additional columns

```
EXTRACT EXT_SH  
USERIDALIAS gg12  
DBOPTIONS ALLOWUNUSEDCOLUMN  
EXTTRAIL /u01/ggtrail/DB1/dirdat/sa  
TABLE SH.*, TOKENS (  
TRANSACTION_DATE = @GETENV ('GGHEADER', 'COMMITTIMESTAMP'));
```

The Oracle components

Oracle GoldenGate (OGG)

REPLICAT example with keeping the deleted rows

```
REPLICAT REP_SH
ASSUMETARGETDEFS
USERIDALIAS gg12
DISCARDFILE /u01/app/goldengate/discard/SH_discard.txt, append,
megabytes 10
ALLOWDUPTARGETMAP

GETINSERTS
GETUPDATES
IGNOREDELETES
MAP SH.*, TARGET SH.* , COLMAP (USEDEFAULTS, transaction_date=
@token ('TRANSACTION_DATE'));

IGNOREINSERTS
IGNOREUPDATES
GETDELETES
UPDATEDELETES
MAP SH.*, TARGET SH.* , COLMAP (USEDEFAULTS, transaction_date=
@token ('TRANSACTION_DATE'), is_deleted = 'Y');
```

The Oracle components

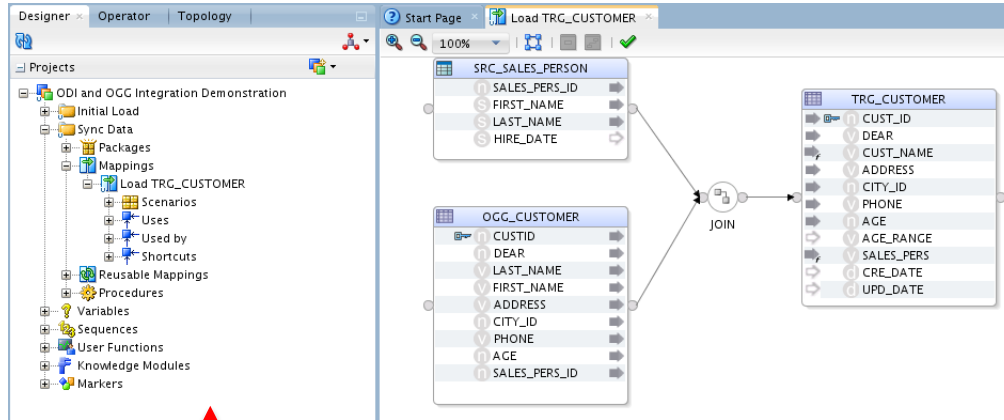
Oracle Data Integrator (ODI)

What is Oracle Data Integrator ?

- > Is the E-TL / EL-T tool from Oracle
- > Can do high-volume, high-performance batch loads
- > Can do trickle-feed integration processes
- > Can be used as SOA (Service Oriented Architecture) data services
- > Can be used with multiple other products (Oracle Warehouse Builder, Oracle GoldenGate, ...)

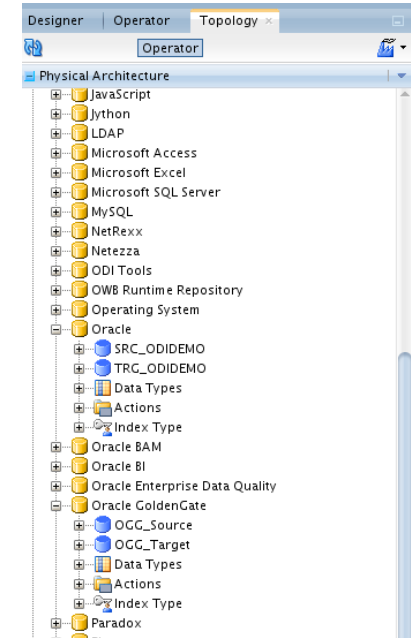
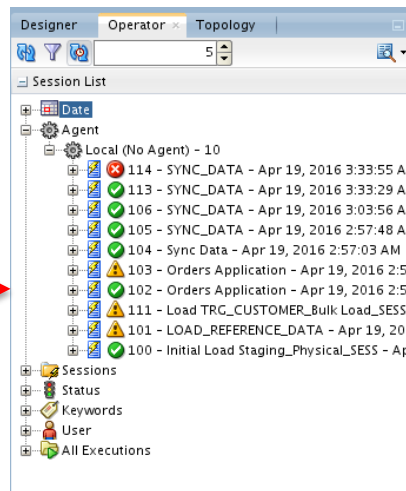
The Oracle components Oracle Data Integrator (ODI)

The multiple interfaces from ODI



Graphical design

Direct check from your
operations



Multiple connections

Demo



Demo

How to replicate changes live in a target table



Demo scenario

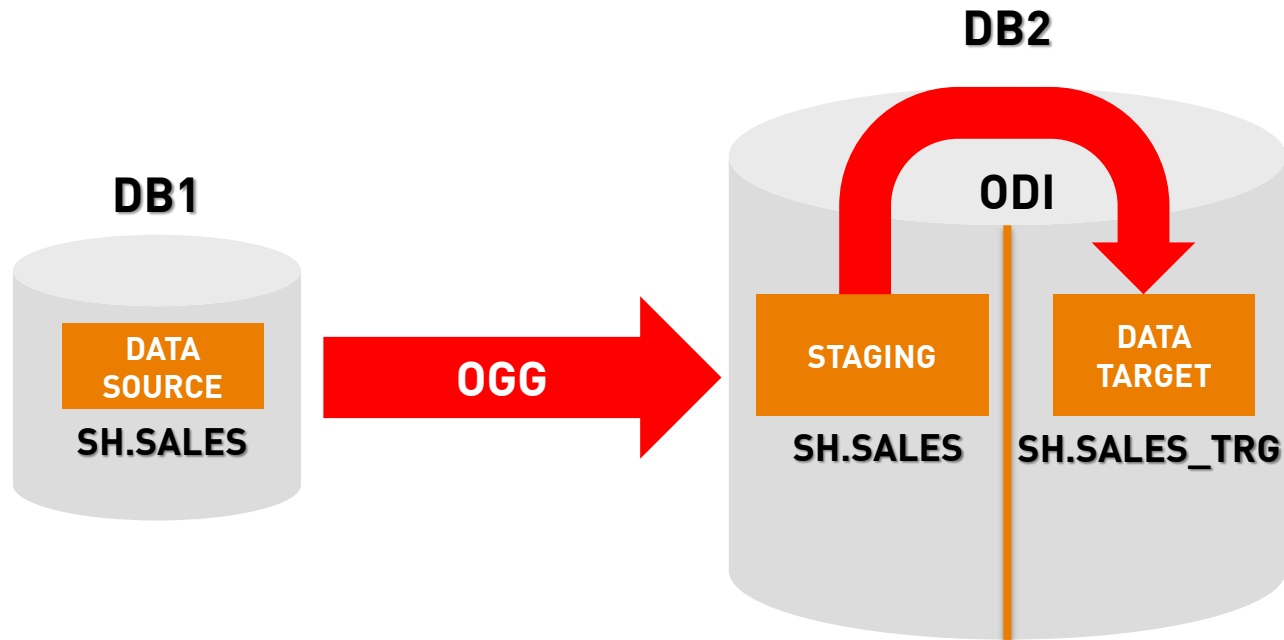
- > In this scenario, we will replicate data from a Source table **(DB1.SH.SALES)** to a Staging table **(DB2.SH.SALES)** using Oracle GoldenGate
- > We will changes data in the Source table **(DB1.SH.SALES)** and the replication of this change will be automatically done in the Target table **(DB2.SH.SALES_TRG)** with some modifications

Demo

How to replicate changes live in a target table



Scenario from the Demo



Conclusion



Conclusion

- > The association OGG - ODI is one of the best for retrieving data in real time
- > Using OGG and / or ODI can allowed you to do some transformations in the Target tables
- > The ODI console is graphical



- > The association OGG – ODI is expensive
- > ODI set-up is complex



Any questions? Please do ask.

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We look forward to working with you!