More About Oracle GoldenGate

by Ahmed Baraka

Introduction to Oracle Data Guard
In this lecture, we are going to talk about the basic concepts of Oracle Data Guard

Objectives
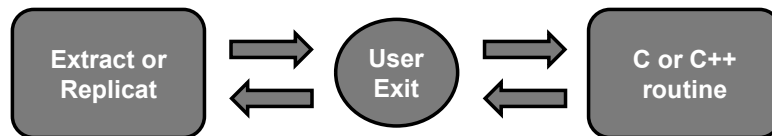
By the end of this lecture, you should be able to:

- Understand the advantages of using User Exits
- Understand the requirement to implement User Exits
- Describe the procedure to build up Oracle GoldenGate Topologies
- Use Oracle GoldenGate to implement a standby database
- Understand in high level how to configure Oracle GoldenGate HA
- Understand the areas to cover for further Oracle GoldenGate Knowledge

About User Exits

- Custom logic written in C or C++ (by a Developer)
- Can be invoked by Extract or Replicat (through the `CUserExit` parameter)
- Are used to Extend Oracle GoldenGate capabilities:
  - arithmetic operations, date conversions, or table lookups
  - call external programs (like email client)
  - implement complex criteria
  - enable Oracle GoldenGate for Flat File

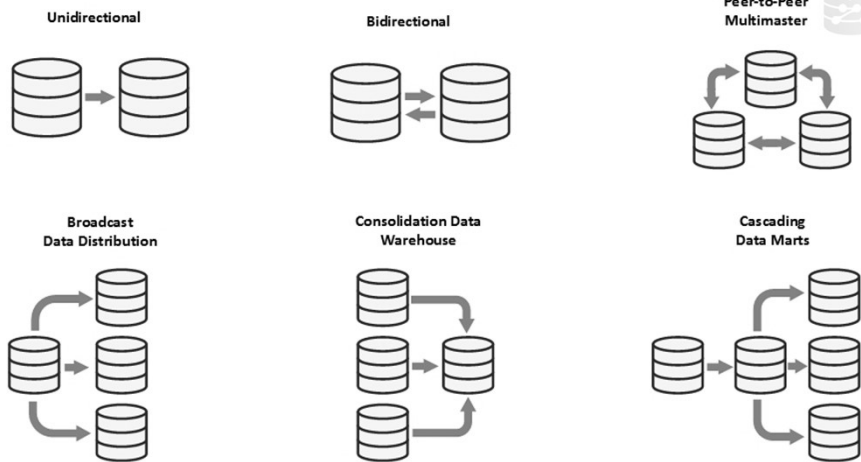# User Exits Processing

Implementing User Exits

- DLL in Windows or shared object in Linux
- Include the `usrdecs.h` file in Oracle GoldenGate directory
- Sample files located in <GG_HOME>/UserExitExamples
- Calling User Exits examples:

```
CUSEREXIT eruserexit.so UserExitExample
```
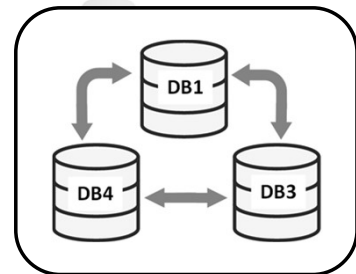
```
CUSEREXIT eruserexit.dll UserExitExample
```
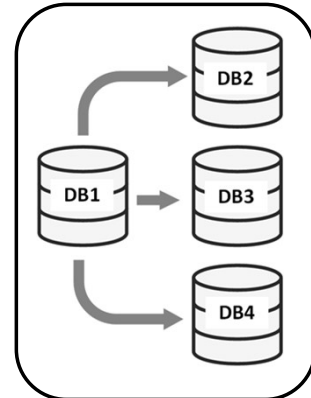
Oracle GoldenGate Topologies

Peer-to-Peer Multimaster

- Active-to-active databases
- Eliminate system performance issues in distance separated applications by allowing transaction load distribution between all the databases in parallel
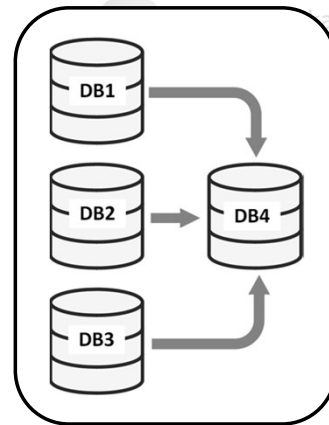- **DB1-*n*:** Extract, Data Pump, Replicat, and CDR

Data Distribution

- One-to-many configuration
- **DB1**: one Extract, multiple Data Pumps
- **DB2-n**: Replicat

Consolidation Data Warehouse

- Many-to-one configuration
- **DB1-3**: Extract, Data Pumps
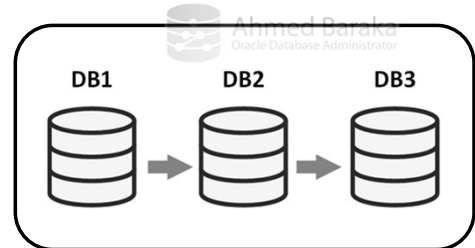- **DB4**: Multiple Replicats,
  CDR may be needed

Cascading Data Marts

- Cascading Reporting Configuration
- **DB1**: Extract and Data Pump
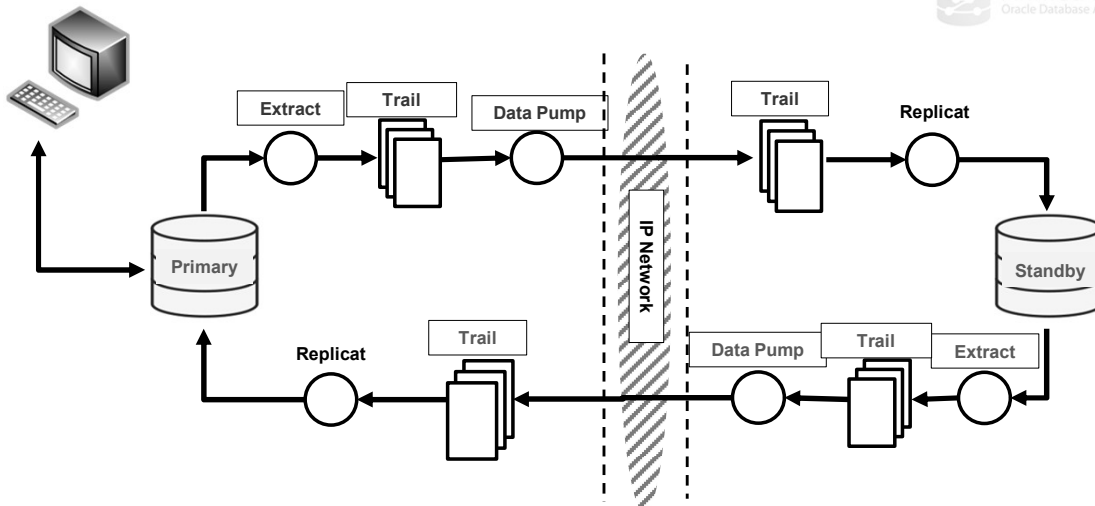- **DB2**: Replicat, Extract and Data Pump

```
IGNOREAPPLOPS
GETREPLICATES
```

- **DB3**: Replicat

Configuring a Standby Database

About Configuring Oracle GoldenGate HA

- Managed by Oracle Clusterware
- Run in Active-passive mode
- Recovery files (checkpoint and trail) are saved in shared storage (ACFS, OCFS2, DBFS)
- Clusterware manages the Manager process through Agent Control (agctl): failover, GG instance manager process, monitor the Extract and Replicat, relocate GG instance.
- Reference: Doc ID 1527310.1

Further Oracle GoldenGate Knowledge

- Oracle GoldenGate for Non-Oracle Databases
- Oracle GoldenGate Management Pack
- Ensuring Data Integrity with Veridata
- Oracle GoldenGate for Big Data
- Oracle GoldenGate for the Cloud
- Oracle GoldenGate Studio

Summary

In this lecture, you should have learnt the following:

- Understand the advantages of using User Exits
- Understand the requirement to implement User Exits
- Describe the procedure to build up Oracle GoldenGate Topologies
- Use Oracle GoldenGate to implement a standby database
- Understand in high level how to configure Oracle GoldenGate HA
- Understand the areas to cover for further Oracle GoldenGate Knowledge

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