Oracle GoldenGate Architecture

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

Objectives

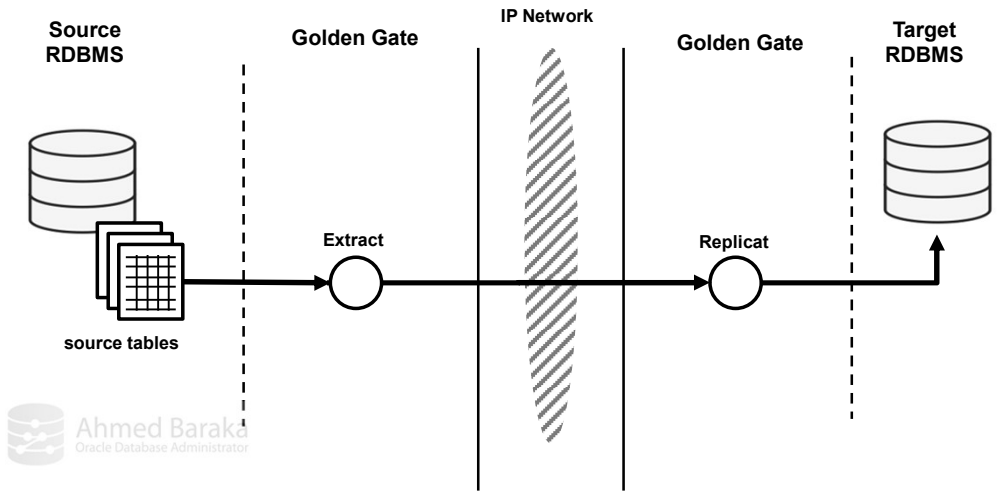
By the end of this lecture, you should be able to:

- List and describe the processes in Oracle GoldGate
- Explain initial load and change synchronization mechanism
- Explain checkpoint mechanism in Oracle GoldenGate
- Describe the CSN
- Describe the purpose of GGSCI

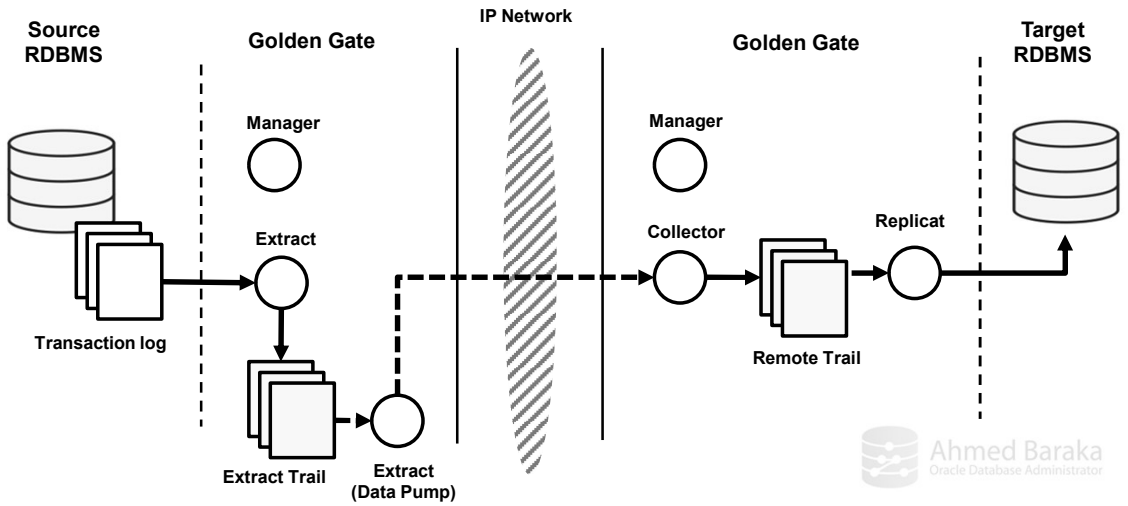
Oracle GoldenGate Components

Component Name	Type	Description
Manager	process	start and stop the other processes
Extract	process	change data capture
Data Pump	process	optional but highly recommended
Collector	process	receives logs from the pump
Replicat	process	apply the changes, also know as Delivery
Extract files or trails	files	file written/read by extract and/or replicat
Checkpoints	data	optional but highly recommended
Wallet	file	optional but highly recommended

GoldenGate Architecture: Initial Load



GoldenGate Architecture: Change Synchronization



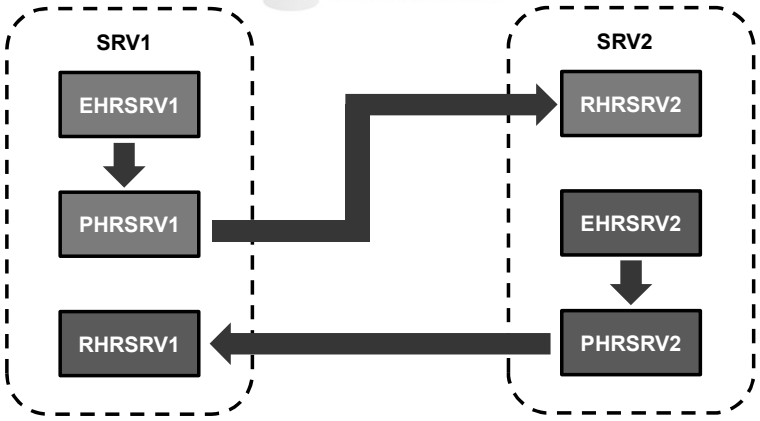
Oracle GoldenGate Process Groups

- A process group consists of the following:
  - Process (either Extract or Replicat)
    - Run in Classic or Integrated mode
  - Parameter file
  - Checkpoint file
  - Any other files associated with the process:
    - Report (*.rpt), Discard (*.dsc), Column Definition (*.def)

Process Group Naming Conventions

- Process Type: Extract (E), initial-load Extract (I), Data Pump (P), or Replicate (R)
- The application: such as (HR), payroll (PRL), sales (SL)..etc
- Host: (DEV), (PROD), (TST), (SRV)

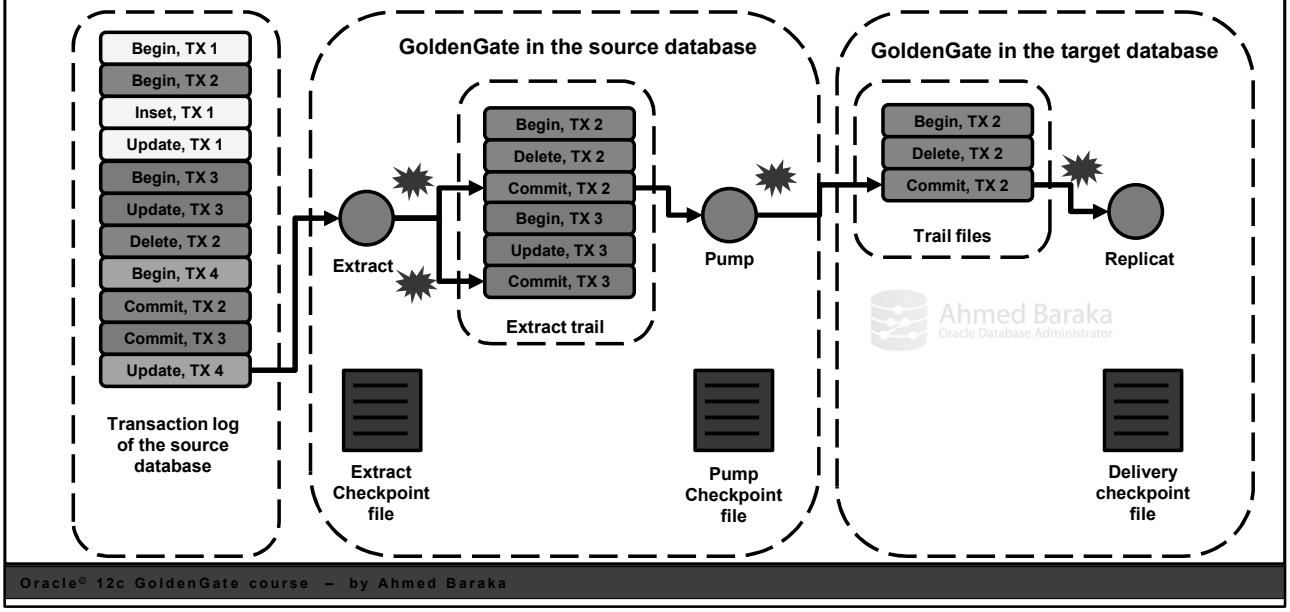
Process-Group Naming Conventions Example



Parameter Files

- Control the functionality of a GoldenGate process
- Parameter File types:
  - GLOBALS file
  - Run-time parameter
- By default saved in `dirprm` directory

GoldenGate Process Checkpoints



Commit Sequence Number (CSN)

- A commit sequence number (CSN) is an identifier that Oracle GoldenGate constructs to identify a source transaction.

Overview of Trails

- Only one Extract process writes to a trail.
- The trail can be read by a Data Pump or a Replicat
- By default stored in ./dirdat
- Extract Trail and Extract Files

About GGSCI

- GoldenGate Software Command Interface (GGSCI)
- Issue commands that configure, control, and monitor Oracle GoldenGate
- Commands can be typed or run from a script
- The script can include OS shell commands

Summary

By the end of this lecture, you should have learned how to:

- List and describe the processes in GoldGate
- Explain initial load and change synchronization mechanism
- Explain GoldenGate process group
- Explain checkpoint mechanism in GoldenGate
- Describe the CSN
- Describe the purpose of GGSCI