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# Oracle GoldenGate on Linux for z

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04/2016

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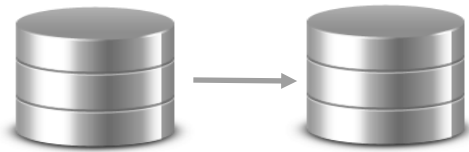
# Agenda

1 Oracle GoldenGate Architecture

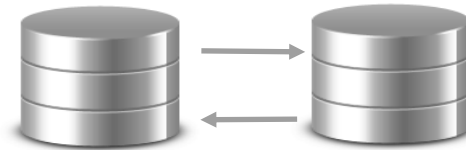
3 GoldenGate Functionalities

# Oracle GoldenGate Flexible Deployment Models

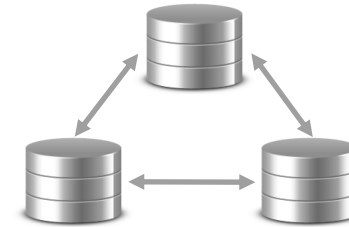
Unidirectional  
Query Offloading  
Zero-Downtime Migration



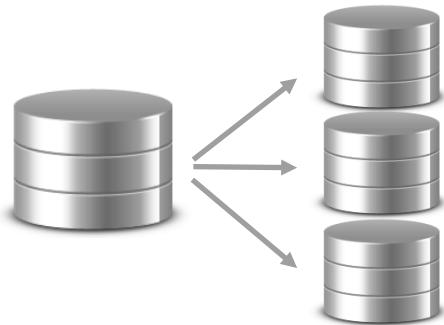
Bi-Directional  
Hot Standby or  
Active-Active for HA



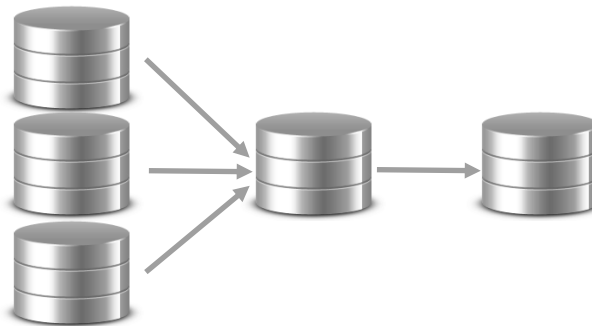
Peer-to-Peer  
Load Balancing  
Multi-Master



Broadcast  
Data Distribution



Integration/Consolidation  
Data Warehouse



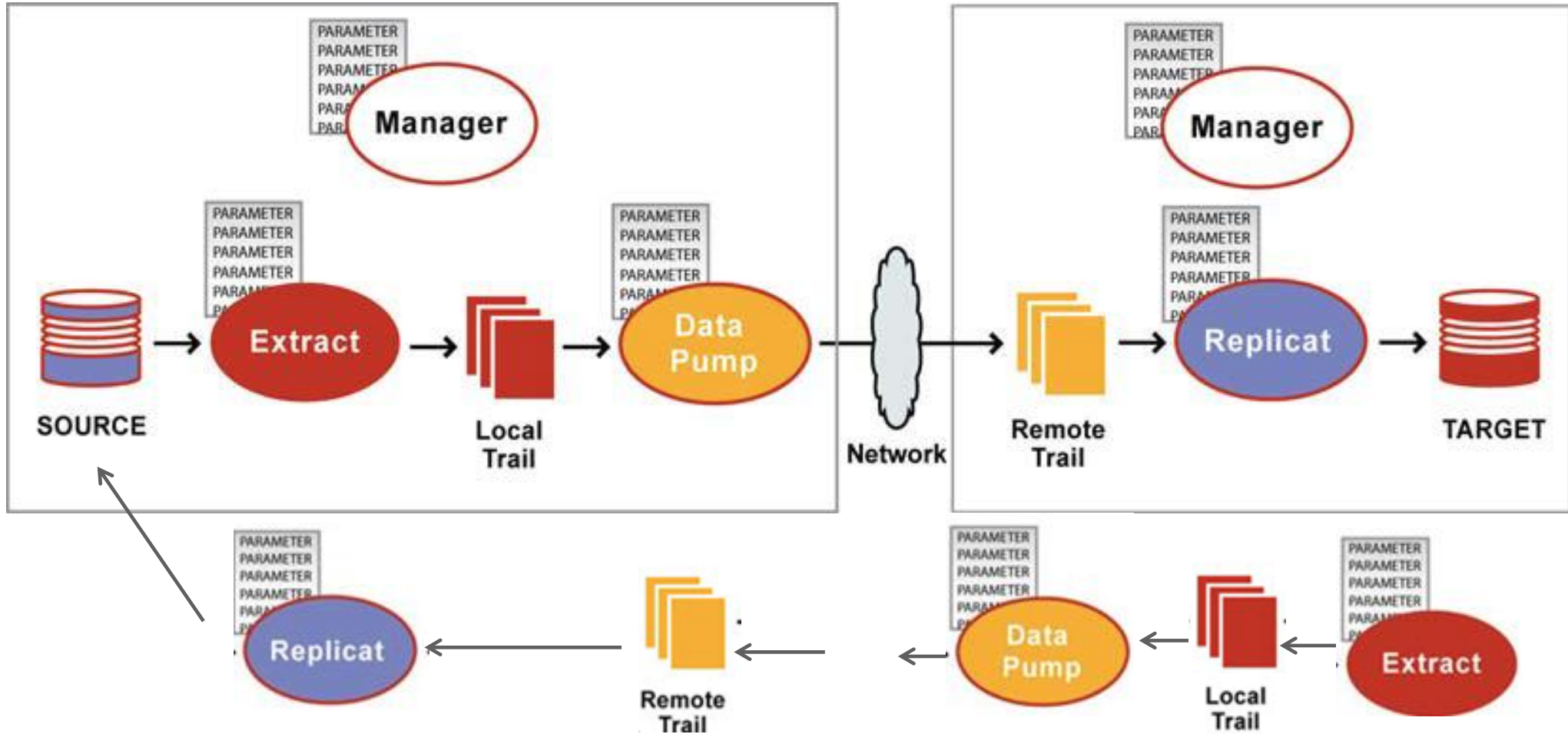
Oracle GoldenGate  
Application Adapters



Oracle GoldenGate  
for Big Data

Not available on Linux for z

# Oracle GoldenGate Architecture



Source: Oracle GoldenGate *Windows and UNIX Administrator's Guide*

# Agenda

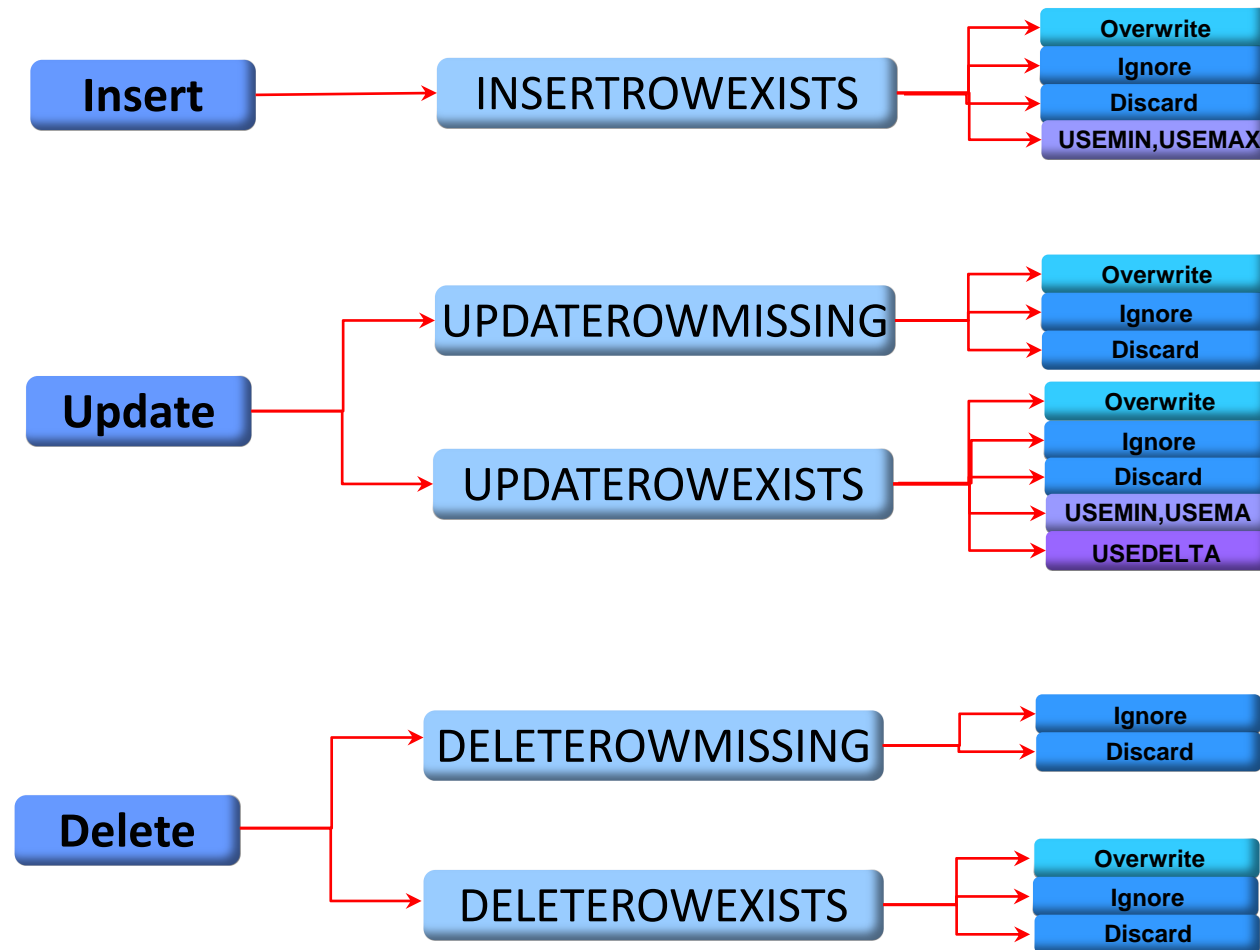
1

Oracle GoldenGate Architecture

2

GoldenGate Functionalities

# Conflict Types and Resolutions

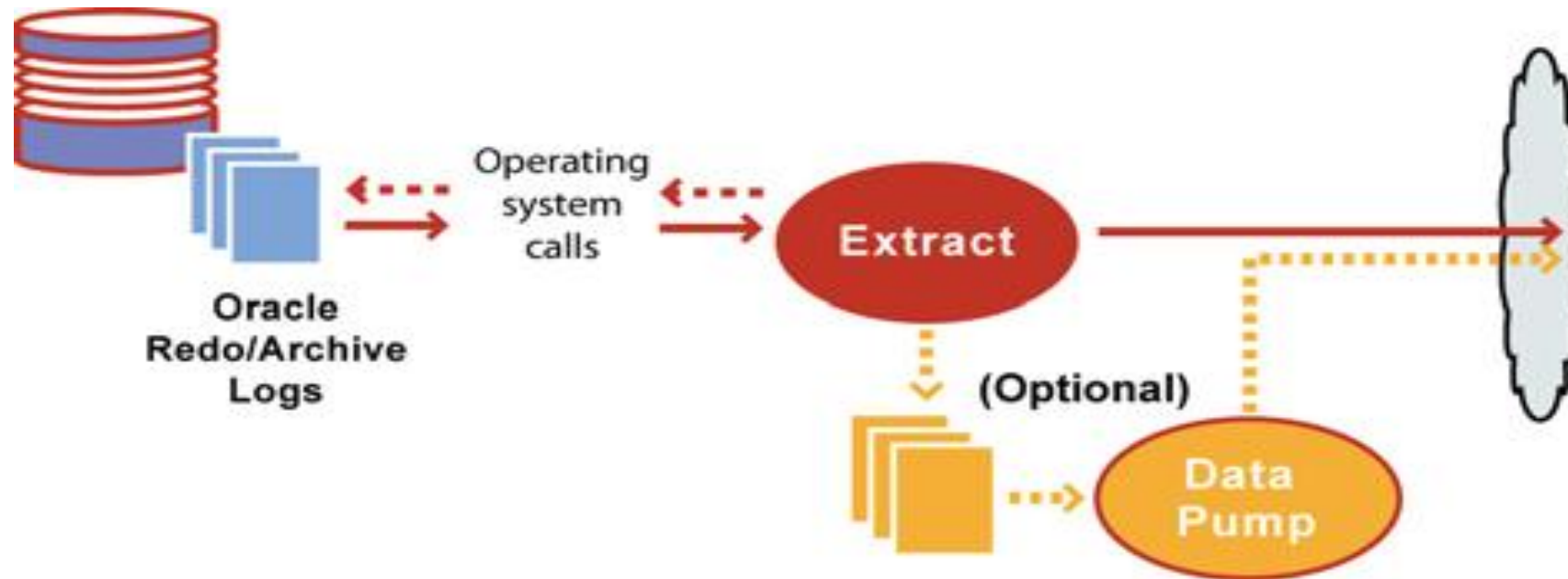




# GoldenGate DDL Replication (Oracle)

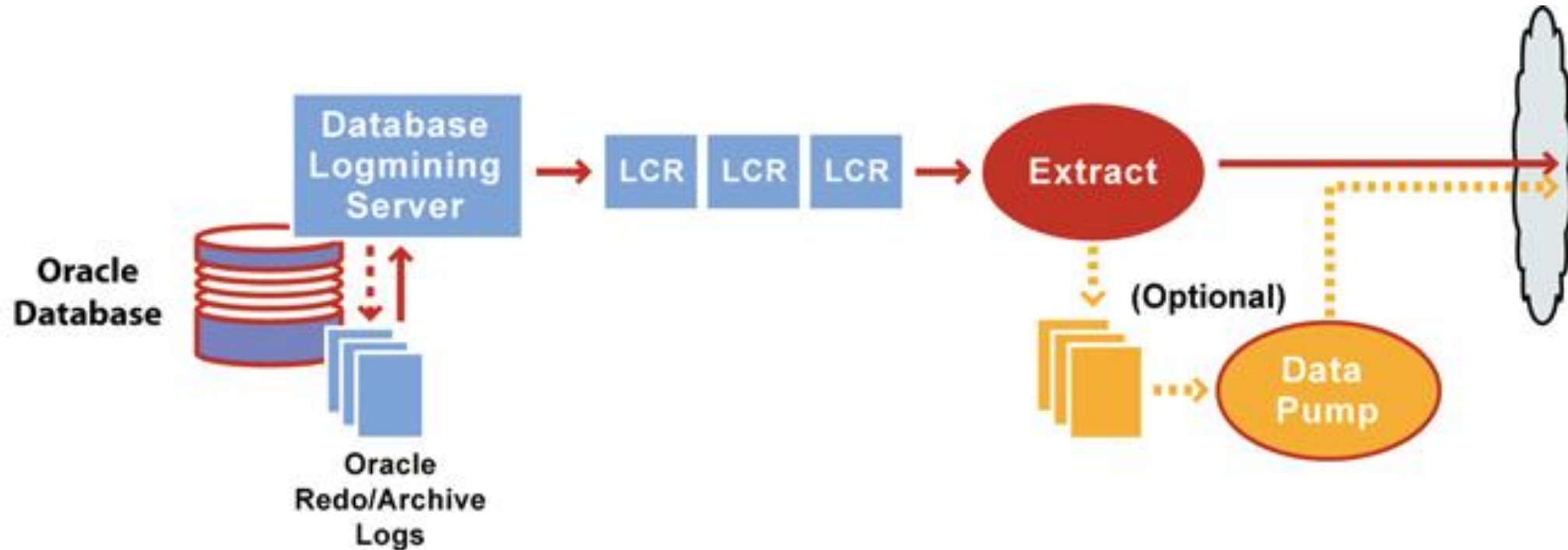
- DDL Replication is trigger based (version < 12)
- GoldenGate version >=12: Implementation without trigger (Database version: >= 11.2.0.4)
- Data model of source and target model has to be identical
- GoldenGate >=12.2
  - DDL replication between “non-like” Oracle schemas  
For example, the target may have more columns than the source, such as a timestamp column.

# Oracle GoldenGate Classic Capture



Source: Oracle GoldenGate *Windows and UNIX Administrator's Guide*

# GoldenGate >=11.2 – Integrated Capture



Integrated Capture: See note 1557031.1 Oracle GoldenGate - Oracle RDBMS Server Recommended Patches

Source: Oracle GoldenGate *Windows and UNIX Administrator's Guide*

# GoldenGate >=11.2

## Classic Capture or Integrated Capture ?

Capture Type	Features
Classic Capture	Most data types supported Restricted support for complex data types GoldenGate Profiling Scripts (Notes 1298562.1 (Database) 1296168.1 (schema))
Integrated Capture	Fully integrated with the database, no additional setup is required to work with Oracle RAC, ASM, and TDE Easier Integration into RAC Integrated Log Management, because of Logminer usage Classic Capture Restrictions abandoned (see next slides) Downstream Capture

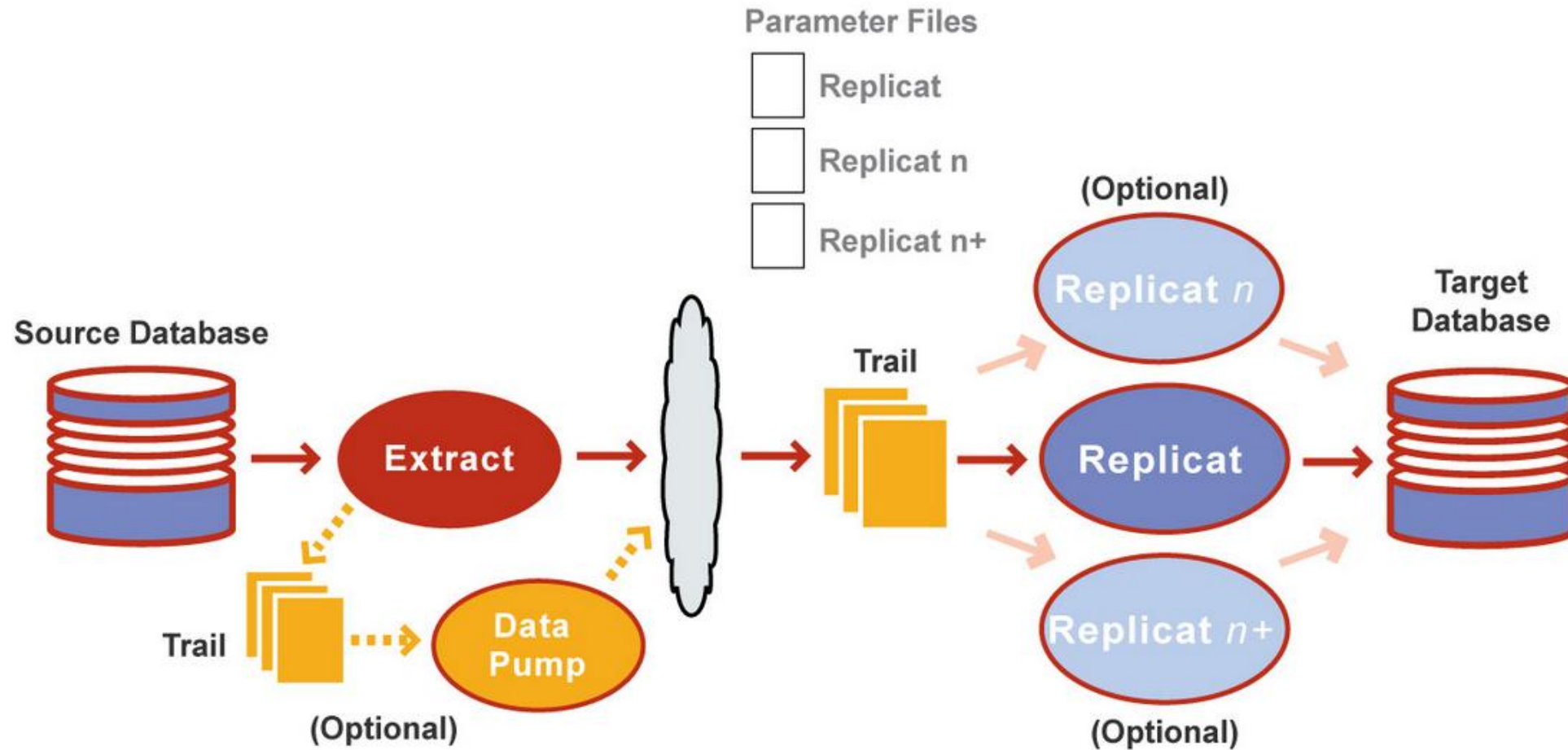
# Oracle GoldenGate - Versions 11.2 and 12.x

## Integrated Capture vs. Classic Capture

Some important Features	Classic Capture	Integrated Capture
Compression (Basic, OLTP, EHCC)	X	✓
XML	Partially	✓
Multithreaded	X	✓
RAC with PDML	With Restrictions	✓
RAC with XA	With Restrictions	✓

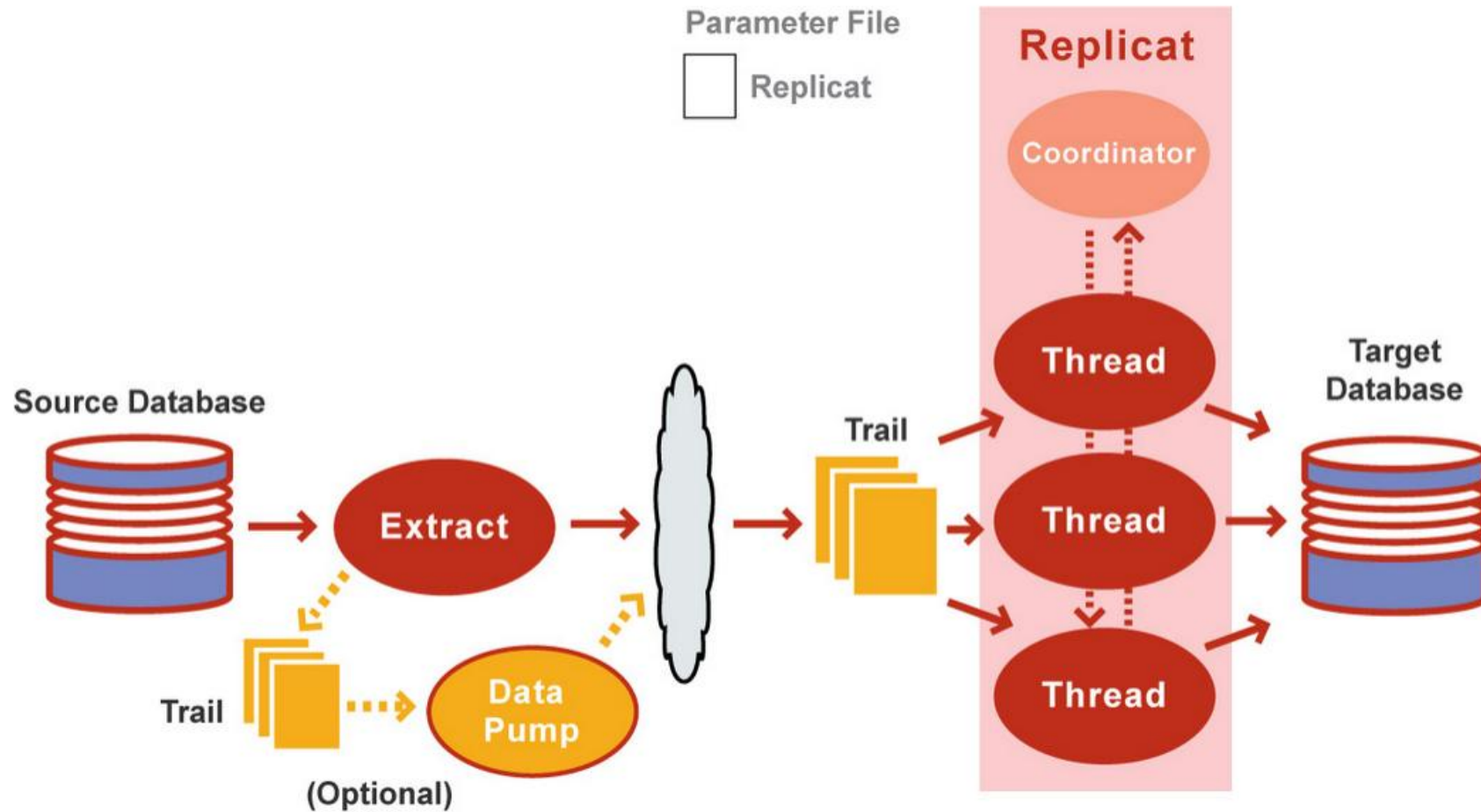
More details: Oracle GoldenGate for Oracle Installation and Setup Guide – Chapter 1.4

# Classic Replicat



Source: GoldenGate Administering Oracle GoldenGate for Windows and UNIX

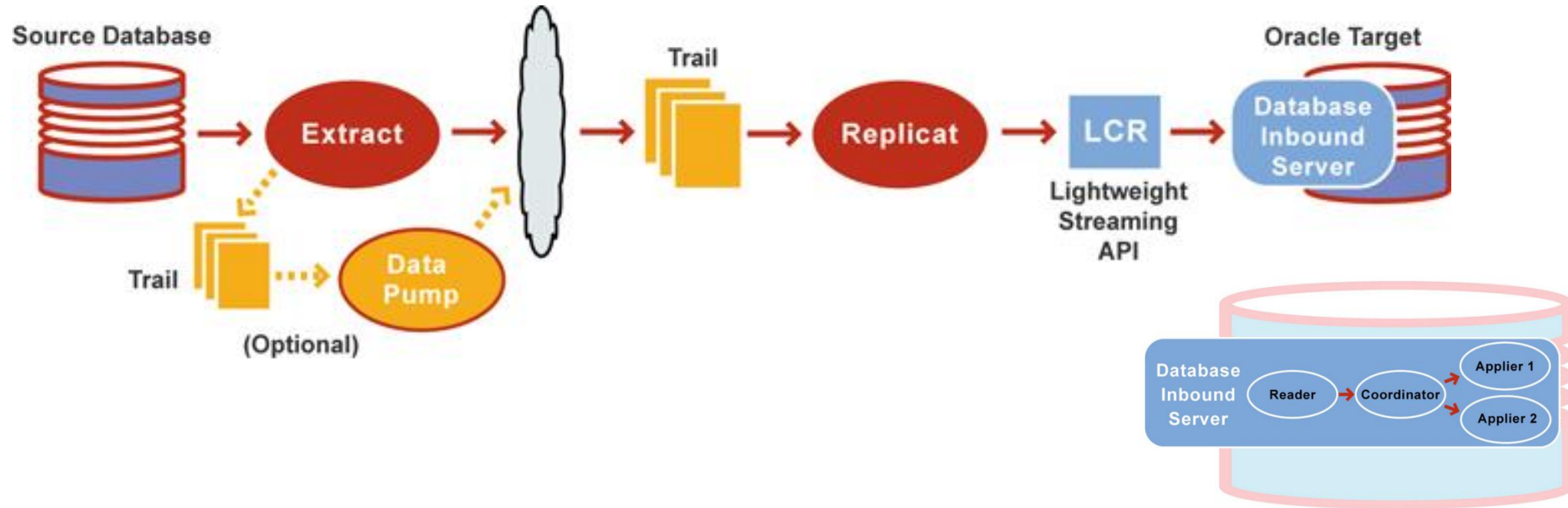
# Coordinated Replicat (Version 12.x)



Source: GoldenGate Administering Oracle GoldenGate for Windows and UNIX

# Integrated Replicat (Version 12.x)

- Integrated Delivery for Oracle target databases only
  - $\geq 12.1.0.1$  and  $11.2.0.4$
- Leverages database parallel apply servers for automatic dependency aware parallel apply

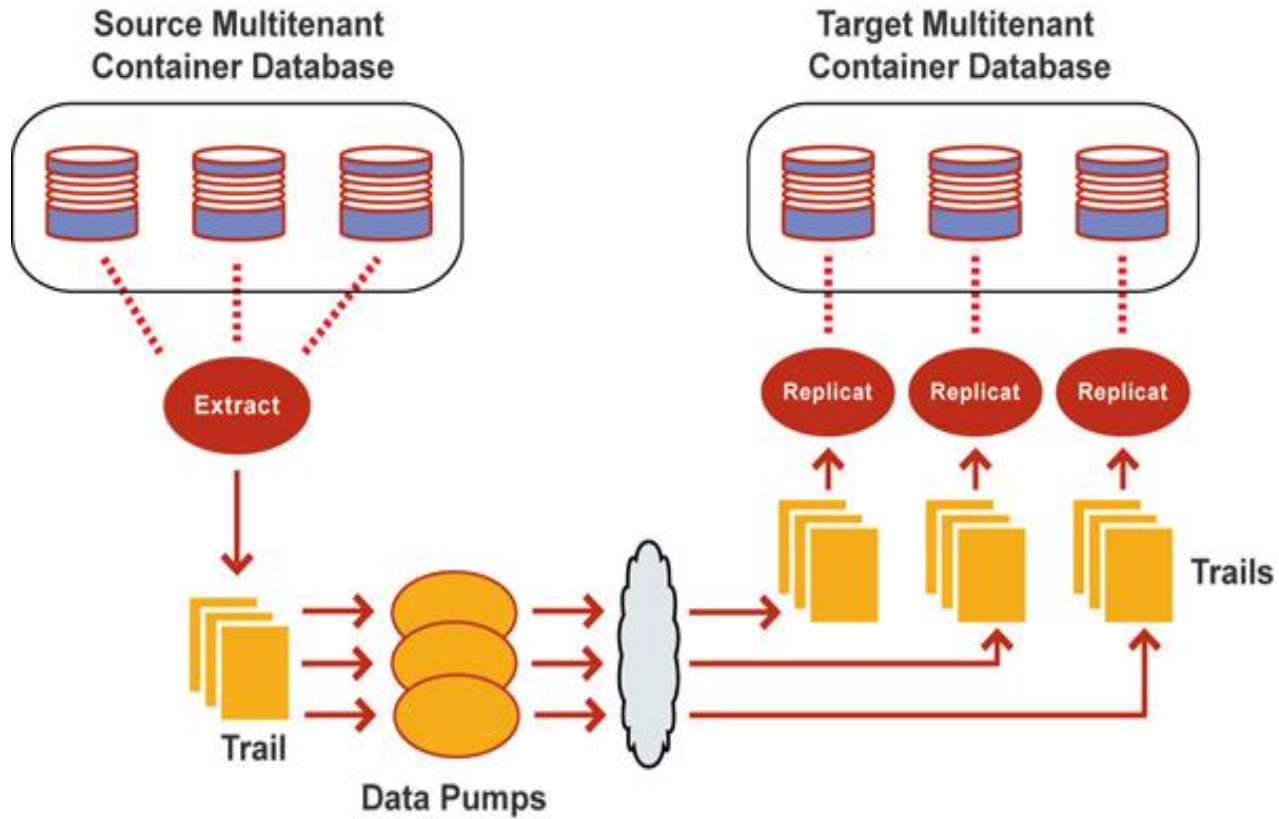


Source: GoldenGate Installing and Configuring Oracle GoldenGate for Oracle Database



# GoldenGate Version 12.x

## Support for Multitenant Databases



# Oracle GoldenGate Downstream Capture (Real time)

## Production database



Log Transport Services

```
ALTER SYSTEM SET LOG_ARCHIVE_DEST_2='SERVICE=CNTR
ASYNC NOREGISTER
VALID_FOR=(ONLINE_LOGFILES,PRIMARY_ROLE)
REOPEN=10 DB_UNIQUE_NAME=CNTR'

ALTER SYSTEM SET
LOG_ARCHIVE_CONFIG='DG_CONFIG=(CNTR,src1)';

ALTER SYSTEM SET LOG_ARCHIVE_DEST_STATE_2=ENABLE;
```

Standby Redo Logs



## Downstream Mining database



```
ALTER SYSTEM SET LOG_ARCHIVE_CONFIG='DG_CONFIG=(src1,CNTR)';

ALTER DATABASE ADD STANDBY LOGFILE  GROUP 4  SIZE 600M;
ALTER DATABASE ADD STANDBY LOGFILE  GROUP 5  SIZE 600M;
ALTER DATABASE ADD STANDBY LOGFILE  GROUP 6  SIZE 600M;

ALTER SYSTEM SET LOG_ARCHIVE_DEST_1='LOCATION=+DATA/CNTR/ARCHIVELOG
VALID_FOR=(ONLINE_LOGFILE,PRIMARY_ROLE)';
ALTER SYSTEM SET LOG_ARCHIVE_DEST_2='LOCATION=+DATA/SRC1/ARCHIVELOG
VALID_FOR=(STANDBY_LOGFILE,ALL_ROLES)';
ALTER SYSTEM SET LOG_ARCHIVE_DEST_STATE_1=ENABLE;
ALTER SYSTEM SET LOG_ARCHIVE_DEST_STATE_2=ENABLE;
```

# Oracle GoldenGate Downstream Capture (Archivelog)

## Production database



Log Transport Services

```
ALTER SYSTEM SET LOG_ARCHIVE_DEST_2='SERVICE=CNTR ASYNC  
NOREGISTER VALID_FOR=(ONLINE_LOGFILES,PRIMARY_ROLE)  
TEMPLATE=/u01/app/oracle/oradata/cntr/log_dest_archive/src_arch  
ive_%t_%s_%r.log DB_UNIQUE_NAME=CNTR,
```

```
ALTER SYSTEM SET  
LOG_ARCHIVE_CONFIG='DG_CONFIG=(CNTR,src1)';
```

```
ALTER SYSTEM SET  
LOG_ARCHIVE_DEST_STATE_2=ENABLE;
```

Archive Log files



## Downstream Mining database



```
ALTER SYSTEM SET  
LOG_ARCHIVE_CONFIG='DG_CONFIG=(src1,CNTR)';
```

# Oracle GoldenGate Downstream Capture

## Things to consider

- On Source: rman deletion policy

For example

```
CONFIGURE ARCHIVELOG DELETION POLICY TO SHIPPED TO ALL STANDBY
```

- Manual deletion of Standby Archive logs on mining DB

Keep Archive Logs for some days – Allows a repositioning of the extract in case of possible failback scenarios

# Integrated Cloud

## Applications & Platform Services

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