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Introduction to Oracle Data Guard 11g/12c

Let’s Get Started!

Objectives

After completing this webinar, you will be able to:

- Describe the basic components of Oracle Data Guard
- Explain the differences between physical and logical standby databases
- Explain the benefits of implementing Oracle Data Guard

Oracle Dataguard Course Contents

- Introduction To Oracle Data Guard
- Getting Started With Data Guard
- Creating A Physical Standby Database
- Creating A Logical Standby Database
- Creating A Standby Database With Recovery Manager
- Data Guard Protection Modes
- Redo Transport Services
- Apply Services
- Role Transitions
- Managing Physical And Snapshot Standby Databases
- Using RMAN To Back Up And Restore Files
- Data Guard Scenarios
- Data Guard And Oracle Real Application Clusters

Benefits of Implementing Oracle Data Guard

Oracle Data Guard provides the following benefits:

- Continuous service during disasters or crippling data failures
- Complete data protection against corruption and data loss
- Elimination of idle standby systems
- Flexible configuration of your system to meet requirements for business protection and recovery
- Centralized management

Types of Standby Databases

Physical standby database

- Identical to the primary database on a block-for-block basis
- Synchronized with the primary database through application of redo data received from the primary database
- Can be used concurrently for data protection and reporting

Logical standby database

- Shares the same schema definition
- Synchronized with the primary database by transforming the data in the redo received from the primary database into SQL statements and then executing the SQL statements
- Can be used concurrently for data protection, reporting, and database upgrades

Types of Standby Databases

Snapshot standby database

- Fully updatable standby database
- Created by converting a physical standby database
- Local updates are discarded when a snapshot standby database is converted back into a physical standby database.
- Can be used for testing

ORACLE DATABASE 11g

12c ORACLE DATABASE

Types of Data Guard Services

Data Guard provides three types of services:

- Redo transport services
- Apply services
  - Redo Apply
  - SQL Apply
- Role management services

Role Transitions: Switchover and Failover

Oracle Data Guard supports two role-transition operations:

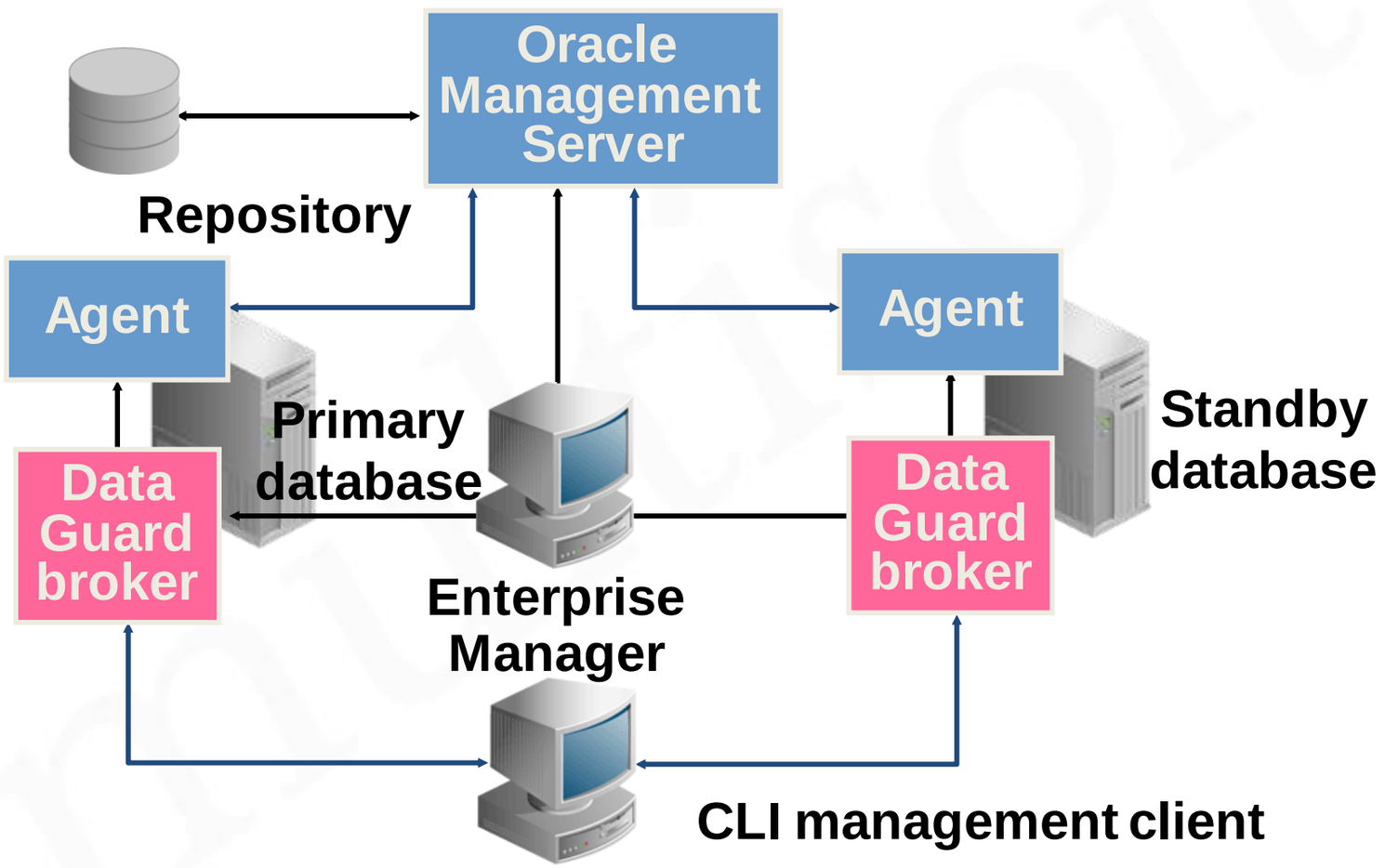
Switchover

- Planned role reversal
- Used for OS or hardware maintenance

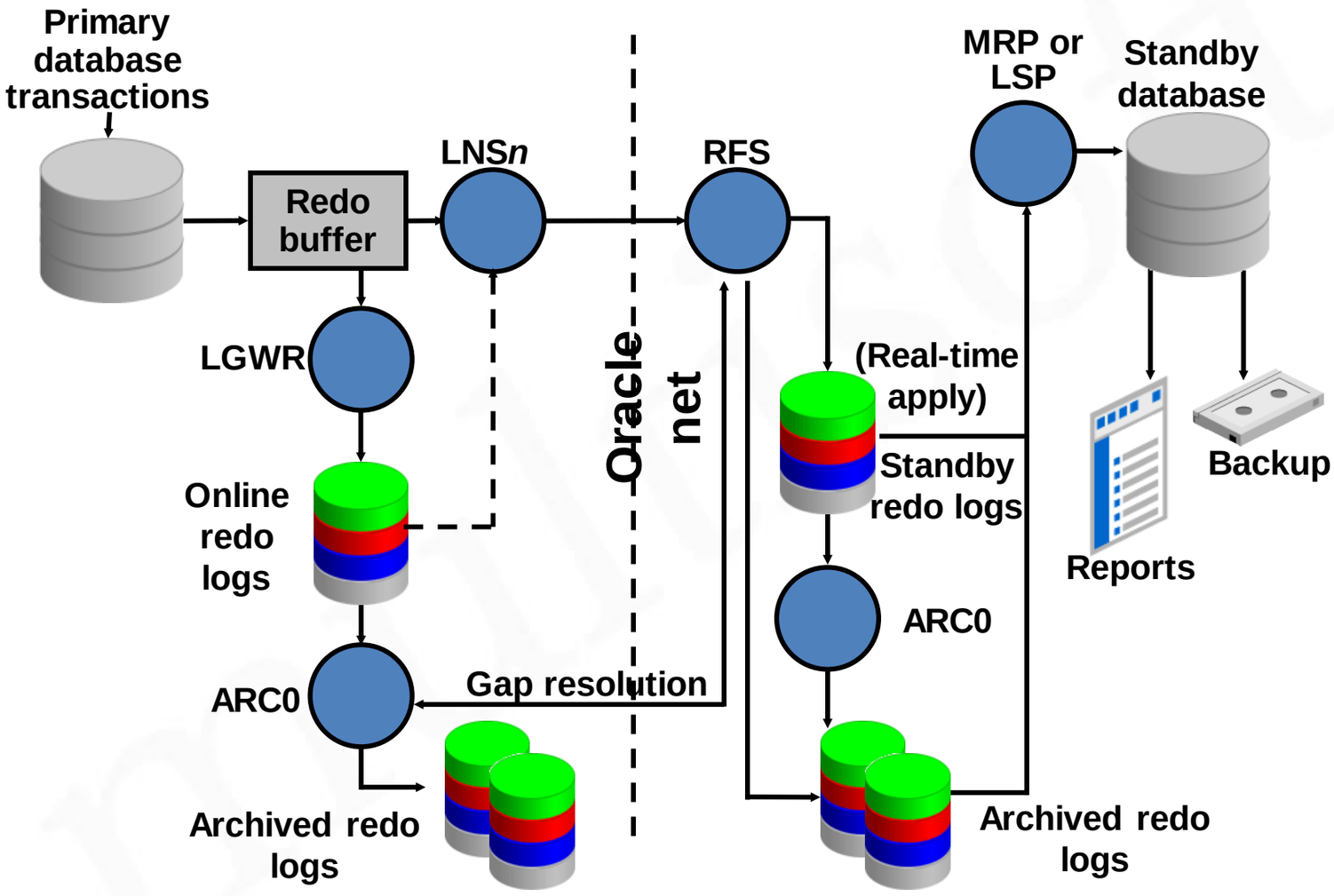
Failover

- Unplanned role reversal
- Emergency use
- Zero or minimal data loss (depending on choice of data protection mode)
- Can be initiated automatically when fast-start failover is enabled

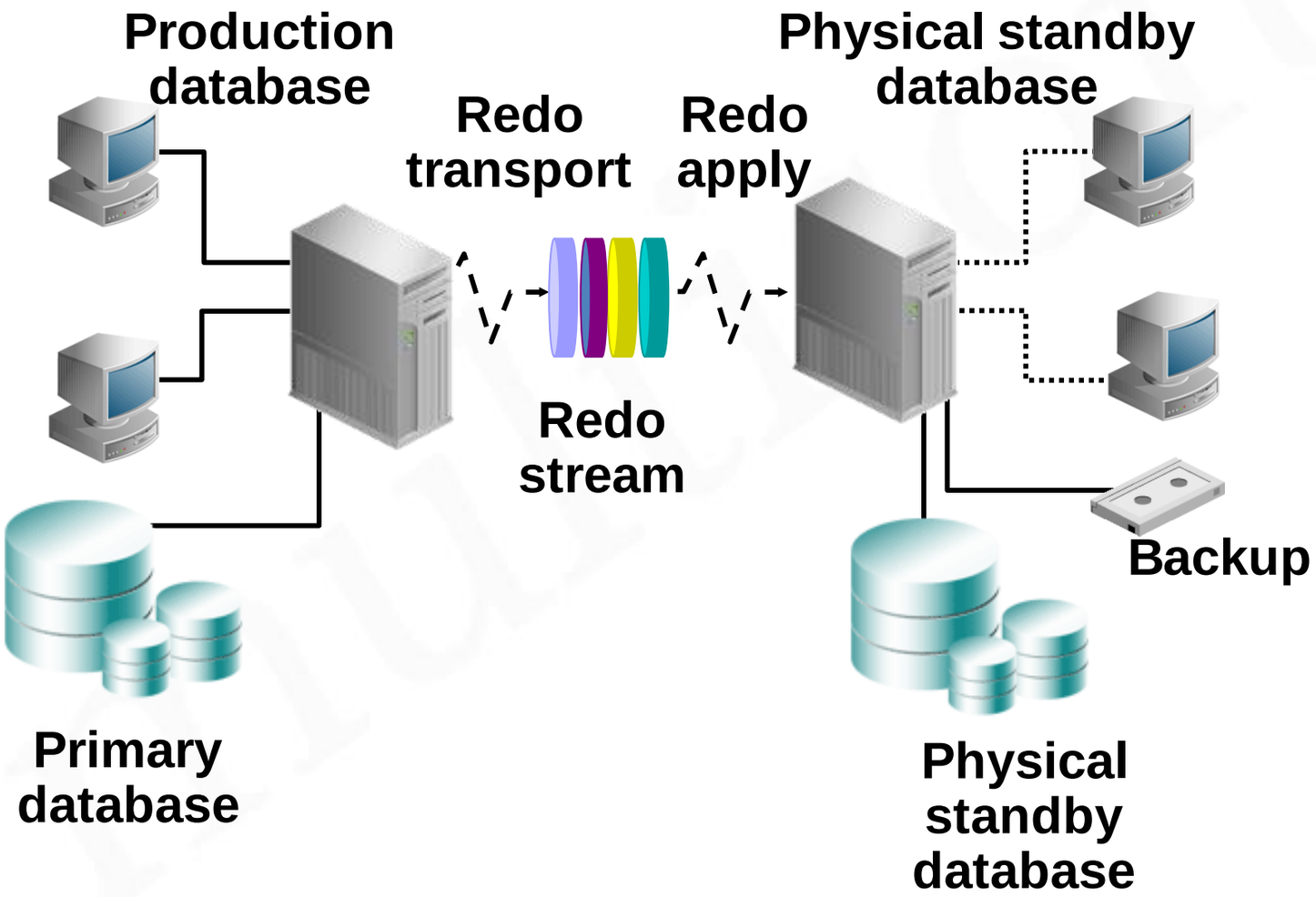
Oracle Data Guard Broker Framework



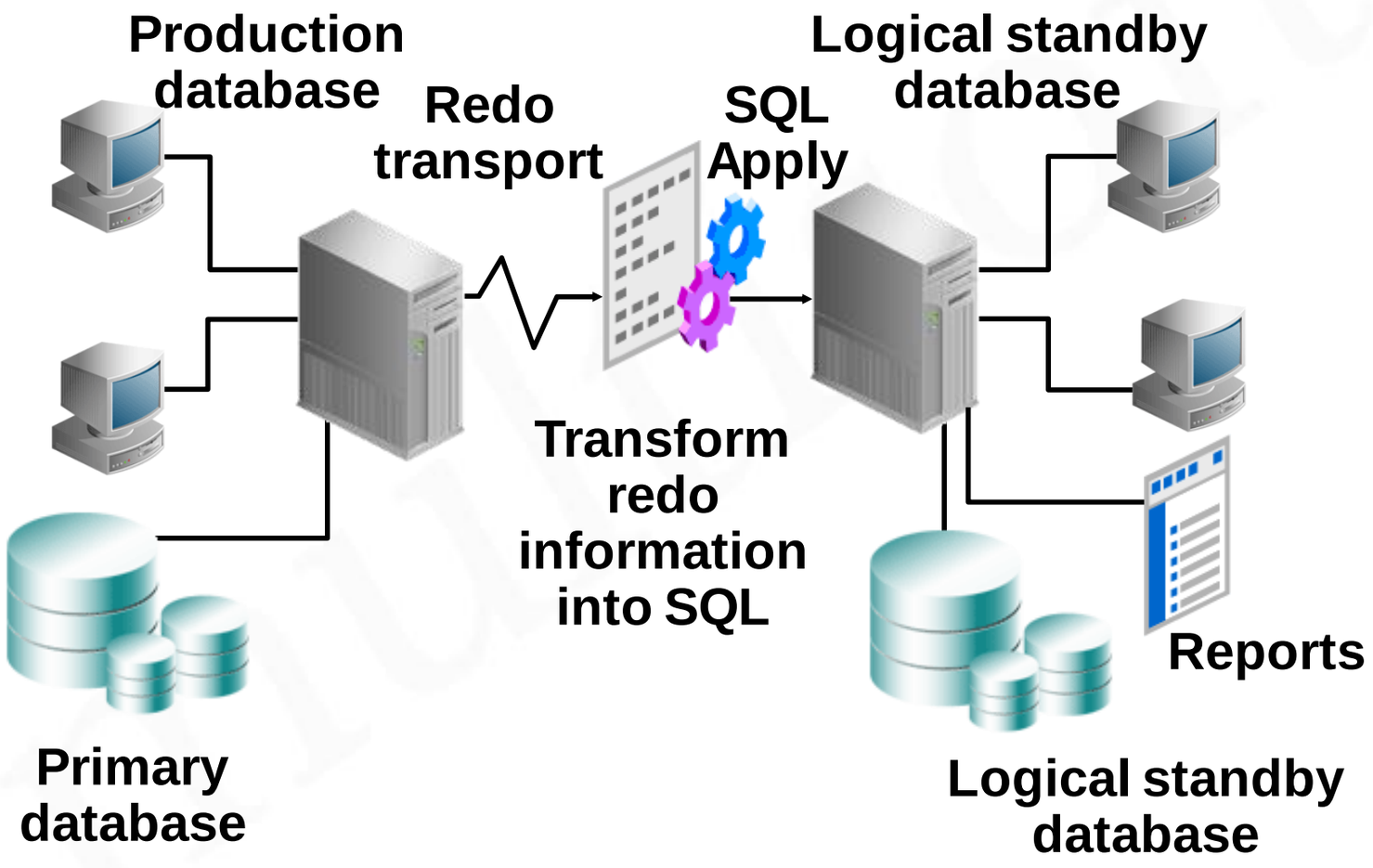
Oracle Data Guard: Architecture (Overview)



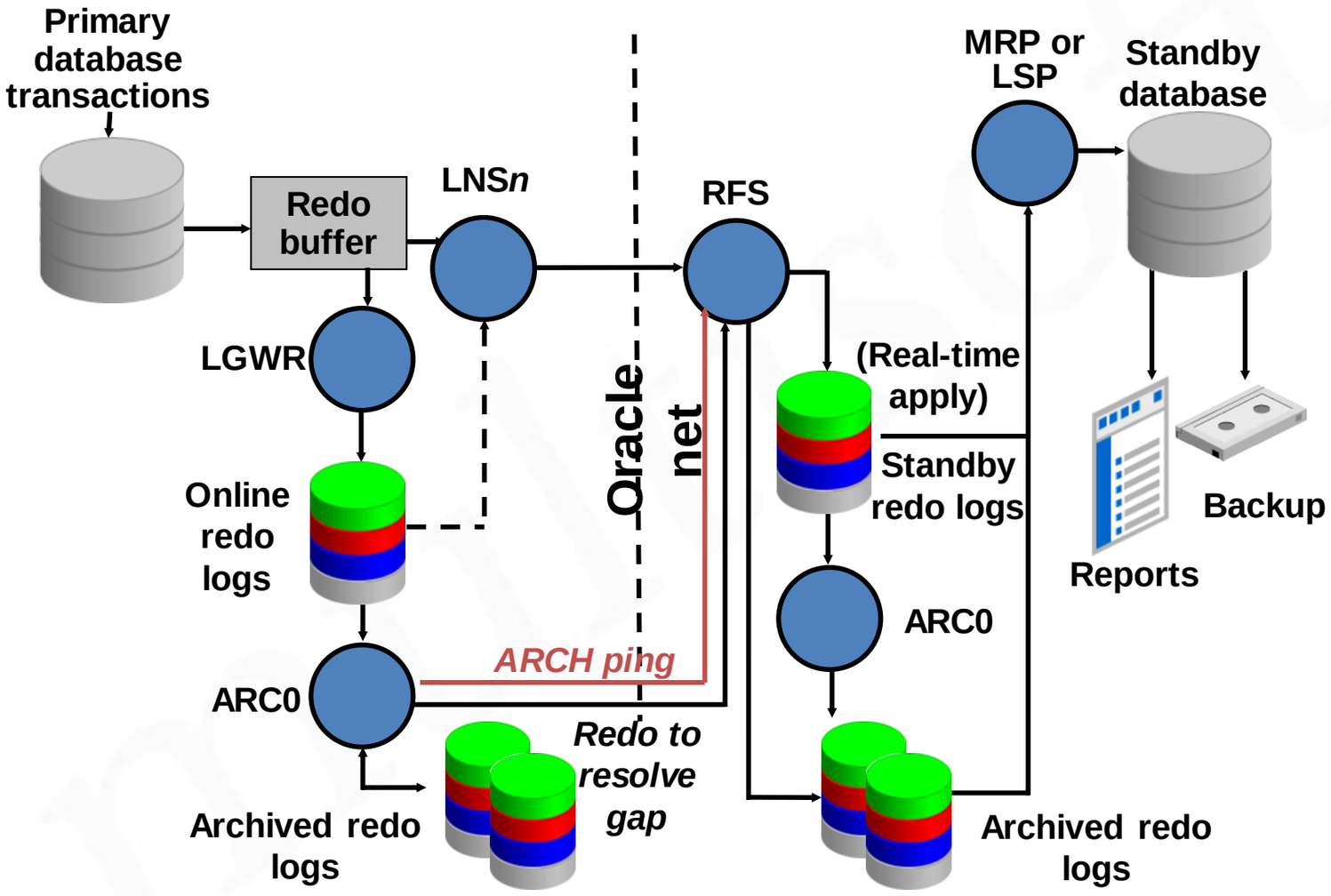
Physical Standby Database: Redo Apply Architecture



Logical Standby Database: SQL Apply Architecture



Automatic Gap Detection and Resolution



Data Protection Modes

Select the mode to balance cost, availability, performance, and data protection:

- Maximum protection
- Maximum availability
- Maximum performance

Data Guard Operational Requirements: Hardware and Operating System

Primary database systems and standby database systems may have different:

- CPU architectures
- Operating systems
- Operating system binaries (32-bit or 64-bit)
- Oracle Database binaries (32-bit or 64-bit)

Data Guard Operational Requirements: Oracle Database Software

- The same release of Oracle Database Enterprise Edition must be installed for all databases except when you perform a rolling database upgrade by using a logical standby database.
- If any database uses ASM or OMF, all databases should use the same combination.

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Thank You!