

1. Purpose of ODG

One database – if database lost -> data lost. It's bad

We need additional copy of data

So, ODG solves this problem: add "replicas" - standby database – that mirrors primary data and automatically sync contents

2. Types of database in ODG and working principles

Primary database – original database (which must be replicated)

Physical standby – copy of original database at physical level. Read-only. Usually resides on another server and has same structure. Receives archived logs and applies it "as is"

Logical standby – "logical" copy of database. Read-write. Can have another physical structure (files, tablespaces, tables, indexes, etc.). Receives archived logs, construct equivalent SQL-statements and applies these statements. More independent.

3. Process of creating standby databases

Primary DB -> /copied with RMAN/ -> Physical DB -> /can transformed to/ -> Logical DB

Every standby database can be transformed to "common" (or Primary) database during planned switchover or unexpected failover.

4. How ODG configured? Changes to "usual" database's configuration

Primary database: only register additional - "remote" – archived logs destination. So, there was only local destination -> + remote destination. Every remote destination specified through Net Service Name of standby database.

connection string = user/password + connection identifier.

connection identifier = connection descriptor or name that resolved to connection descriptor

connection descriptor = host (of listener) + protocol + service name

5. Oracle Database Naming

Instance associates database. Database has db_name (global, unique). Instance exposes database through service name. Instance registers service name in listener

6. What we need to restore ODG

Collection of Host + Database role

Primary/Physical Standby database in backup -> Primary + Physical Standbys

If there is Logical Standby in backup (besides Primary/Physical) -> Primary + Physical + Given Logical

Also, we can restore Logical Standby by creating Physical Standby converted to Logical.

7. What we need to restore ODG (low level)

Database files

Map of Database Role -> Host IP or DNS name

PFiles (contains configuration)

tnsnames.ora and listener.ora (optional) but we can register database with own (generated) Net Service Names and Service Names