# 10g Data Guard, Physical Standby Creation, step by step

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Creating a Data Guard Physical Standby environment, General Review.

Manually setting up a Physical standby database is a simple task when all prerequisites and setup steps are carefully met and executed. In this example I did use 2 hosts, that host a RAC database. All RAC preinstall requisites are then in place and no additional configuration was necessary to implement Data Guard Physical Standby manually. Note that using Enterprise Manager Grid Control Data Guard Physical Standby can be implemented from the Grid Control Console easily. Still, this exercise provide a degree of familiarity with Data Guard.

The Environment

2 Linux servers, Oracle Distribution 2.6.9-55 EL i686 i386 GNU/Linux
Oracle Database 10g Enterprise Edition Release 10.2.0.1.0
ssh is configured for user oracle on both nodes
Oracle Home is on identical path on both nodes

Implementation notes:

Once you have your primary database up and running these are the steps to follow:

1. Enable Forced Logging
2. Create a Password File
3. Configure a Standby Redo Log
4. Enable Archiving
5. Set Primary Database Initialization Parameters

Having followed these steps to implement the Physical Standby you need to follow these steps:
1. Create a Control File for the Standby Database
2. Backup the Primary Database and transfer a copy to the Standby node.
3. Prepare an Initialization Parameter File for the Standby Database
4. Configure the listener and tnsnames to support the database on both nodes
5. Set Up the Environment to Support the Standby Database on the standby node.
6. Start the Physical Standby Database
7. Verify the Physical Standby Database Is Performing Properly

**Step by Step Implementation of a Physical Standby Environment**

**Primary Database Steps**

**Primary Database General View**

```sql
SQL> select name from v$database;
NAME
-------
WHITEOWL

SQL> select file_name from dba_data_files;

FILE_NAME
-----------------------------------------------
```
7 rows selected.

SQL> select name from v$database;

NAME
---------
WHITEOWL

SQL> show parameters unique

<table>
<thead>
<tr>
<th>NAME</th>
<th>TYPE</th>
<th>VALUE</th>
</tr>
</thead>
</table>
| db_unique_name     | string | whiteowl

**Enable Forced Logging**

In order to implement Standby Database we enable 'Forced Logging'.
This option ensures that even in the event that a 'nologging' operation is done, force logging takes precedence and all operations are logged into the redo logs.

```sql
SQL> ALTER DATABASE FORCE LOGGING;
Database altered.
```

**Create a Password File**

A password file must be created on the Primary and copied over to the Standby site. The sys password must be identical on both sites. This is a key prerequisite in order to be able to ship and apply archived logs from Primary to Standby.

```bash
cd $ORACLE_HOME/dbs
[vmractest1] > orapwd file=orapwwhiteowl password=oracle force=y
```
Configure a Standby Redo Log

A Standby Redo log is added to enable Data Guard Maximum Availability and Maximum Protection modes. It is important to configure the Standby Redo Logs (SRL) with the same size as the online redo logs.
In this example I'm using Oracle Managed Files, that's why I don't need to provide the SRL path and file name. If you are not using OMF's you then must pass the full qualified name.

```
SQL> select * from v$logfile;
GROUP# STATUS  TYPE    MEMBER                                                                 IS_
---------- ------- ------- ---------------------------------------------------------------------- ---
3         ONLINE  /vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_3_310n22jj_.log      NO
2         ONLINE  /vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_2_310n21sx_.log      NO
1         ONLINE  /vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_1_310n215q_.log      NO
```

```
SQL> select bytes from v$log;
BYTES
--------
52428800
52428800
52428800
```

```
SQL> ALTER DATABASE ADD STANDBY LOGFILE GROUP 4 SIZE 50M;
Database altered.
```

```
SQL> ALTER DATABASE ADD STANDBY LOGFILE GROUP 5 SIZE 50M;
Database altered.
```

```
SQL> ALTER DATABASE ADD STANDBY LOGFILE GROUP 6 SIZE 50M;
Database altered.
```
SQL> select * from v$logfile
   2  /
GROUP# STATUS  TYPE    MEMBER                                                                 IS_  
---------- ------- ------- ---------------------------------------------------------------------- ---
 3         ONLINE  /vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_3_310n22jj_.log      NO
 2         ONLINE  /vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_2_310n21sx_.log      NO
 1         ONLINE  /vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_1_310n215q_.log      NO
 4         STANDBY /vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_4_3gznjc9v_.log      NO
 5         STANDBY /vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_5_3gznrrh0_.log      NO
 6         STANDBY /vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_6_3gznrwd7_.log      NO

6 rows selected.

Enable Archiving

On 10g you can enable archive log mode by mounting the database and executing the archivelog command:

SQL> startup mount;
ORACLE instance started.

Total System Global Area  285212672 bytes
Fixed Size                  1218992 bytes
Variable Size              75499088 bytes
Database Buffers          205520896 bytes
Redo Buffers                2973696 bytes
Database mounted.
SQL> alter database archivelog;

Database altered.
SQL> alter database open;
Database altered.

SQL> archive log list
Database log mode Archive Mode
Automatic archival Enabled
Archive destination /vmasmtest/whiteowl/archdest/arch
Oldest online log sequence 92
Next log sequence to archive 94
Current log sequence 94

**Set Primary Database Initialization Parameters**

Data Guard must use spfile, in order to configure it we create and configure the standby parameters on a regular pfile, and once it is ready we convert it to an spfile.

Several init.ora parameters control the behavior of a Data Guard environment. In this example the Primary database init.ora is configured so that it can hold both roles, as Primary or Standby.

```
SQL> create pfile='/oradisk/app01/oracle/product/10gDB/dbs/pfilewhiteowl.ora' from spfile;
File created.
```

**Edit the pfile to add the standby parameters, here shown highlighted:**

```sql
db_name='whiteowl'
db_unique_name='whiteowl'
LOG_ARCHIVE_CONFIG='DG_CONFIG=(whiteowl,blackowl)'
control_files='/vmasmtest/od01/WHITEOWL/WHITEOWL/controlfile/o1_mf_310nlxf0_.ctl'
```
LOG_ARCHIVE_DEST_1=
  'LOCATION=/vmasmtest/whiteowl/archdest/
  VALID_FOR=(ALL_LOGFILES,ALL_ROLES)
  DB_UNIQUE_NAME=whiteowl'
LOG_ARCHIVE_DEST_2=
  'SERVICE=blackowl LGWR ASYNC
  VALID_FOR=(ONLINE_LOGFILES,PRIMARY_ROLE)
  DB_UNIQUE_NAME=blackowl'
LOG_ARCHIVE_DEST_STATE_1=ENABLE
LOG_ARCHIVE_DEST_STATE_2=ENABLE
REMOTE_LOGIN_PASSWORDFILE=EXCLUSIVE
LOG_ARCHIVE_FORMAT=%t_%s_%r.arc
LOG_ARCHIVE_MAX_PROCESSES=30
# Standby role parameters  
*.fal_server=blackowl
*.fal_client=whiteowl
*.standby_file_management=auto
*.db_file_name_convert='BLACKOWL/BLACKOWL','WHITEOWL/WHITEOWL'
*.log_file_name_convert='/vmasmtest/od01/BLACKOWL/BLACKOWL/','/vmasmtest/od01/WHITEOWL/WHITEOWL'/
# ----------------------------------------
audit_file_dest='/oradisk/app01/oracle/admin/whiteowl/adump'
background_dump_dest='/oradisk/app01/oracle/admin/whiteowl/bdump'
core_dump_dest='/oradisk/app01/oracle/admin/whiteowl/cdump'
user_dump_dest='/oradisk/app01/oracle/admin/whiteowl/udump'
compatible='10.2.0.1.0'
db_block_size=8192
db_create_file_dest='/vmasmtest/od01/WHITEOWL'
db_domain=''
db_file_multiblock_read_count=16
job_queue_processes=10
open_cursors=300
pga_aggregate_target=94371840
processes=150
remote_login_passwordfile='EXCLUSIVE'
sga_target=283115520
undo_management='AUTO'
undo_tablespace='UNDOTBS1'

Once the new parameter file is ready we create from it the spfile:

SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> startup nomount pfile='/oradisk/app01/oracle/product/10gDB/dbs/pfilewhiteowl.ora';
ORACLE instance started.
Total System Global Area  285212672 bytes
Fixed Size                  1218992 bytes
Variable Size              92276304 bytes
Database Buffers          188743680 bytes
Redo Buffers                2973696 bytes
SQL> create spfile from pfile='/oradisk/app01/oracle/product/10gDB/dbs/pfilewhiteowl.ora';
File created.

SQL> shutdown immediate;
ORA-01507: database not mounted

ORACLE instance shut down.
SQL> startup;
ORACLE instance started.
Total System Global Area  285212672 bytes
Fixed Size                  1218992 bytes
Variable Size 92276304 bytes
Database Buffers 188743680 bytes
Redo Buffers 2973696 bytes
Database mounted.
Database opened.

Standby Database Steps

Create a Control File for the Standby Database

The standby database will use a control file that is generated on the primary database

    SQL> startup mount;
    ORACLE instance started.

    Total System Global Area 285212672 bytes
    Fixed Size 1218992 bytes
    Variable Size 92276304 bytes
    Database Buffers 188743680 bytes
    Redo Buffers 2973696 bytes
    Database mounted.
    SQL> ALTER DATABASE CREATE STANDBY CONTROLFILE AS
    '/oradisk/app01/oracle/product/10gDB/dbs/blackowl.ctl';

    Database altered.
SQL> ALTER DATABASE OPEN;
Database altered.

Backup the Primary Database and transfer a copy to the Standby node.

Generate a script to copy datafiles

SQL> set pages 50000 lines 120 head off veri off flush off ti off
SQL> spool cpfiles
SQL> select 'scp -p ''||file_name||'' $v_dest' from dba_data_files;
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_users_310mzm19_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_sysaux_310mzm34_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_undotbs1_310mzmk2_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_system_310mzm27_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_test2_3117h15v_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_test3_3117h8nv_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_test4_3117hk7d_.dbf $v_dest
7 rows selected.

SQL> select 'scp -p ''||file_name||'' $v_dest' from dba_temp_files;
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_temp_310n2bnj_.tmp $v_dest

SQL> select 'scp -p ''||member||'' $v_dest' from v$logfile;
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_3_310n22jj_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_2_310n21sx_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_1_310n215q_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_4_3gznjc9v_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_5_3gznnrh0_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_6_3gznrwd7_.log $v_dest

6 rows selected.

SQL> spool off

Shutdown the database, edit the script to add the v_dest location, and execute it.

[vmractest1] > mv cpfiles.lst cpfiles

#!/bin/ksh
v_dest=vmractest2:/oradisk/od01/BLACKOWL/datafile/
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_users_310mzmi9_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_sysaux_310mzm34_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_undotbs1_310mzmk2_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_system_310mzm27_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_test2_3117h15v_.dbf $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/datafile/o1_mf_temp_310n2bnj_.tmp $v_dest
v_dest= vmractest2:/oradisk/od01/BLACKOWL/onlinelog/
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_3_310n22jj_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_2_310n21sx_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_1_310n215q_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_4_3gznjc9v_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_5_3gznnrh0_.log $v_dest
scp -p /vmasmttest/od01/WHITEOWL/WHITEOWL/onlinelog/o1_mf_6_3gznrwd7_.log $v_dest
On the standby node create the required directories to get the datafiles

[root@vmractest2 root]# mkdir -p /oradisk/od01/BLACKOWL/datafile/
[root@vmractest2 root]# mkdir -p /oradisk/od01/BLACKOWL/onlinelog/
[root@vmractest2 root]# chown -R oracle:dba /oradisk/od01

On the primary node execute the script to copy the database while the main database is down (or in backup mode)

[vmractest1] > chmod 700 cpfiles
[vmractest1] > ./cpfiles

o1_mf_users_310mzm19_.dbf          100%  2801MB   7.0MB/s   06:37
ol_mf_systaux_310mzm34_.dbf         100%  340MB    7.4MB/s   00:45
ol_mf_utidbs1_310mzmk2_.dbf         100%  100MB    8.0MB/s   00:12
ol_mf_system_310mzm27_.dbf          100%  490MB    7.0MB/s   01:09
ol_mf_test2_3117h15v_.dbf           100%  100MB    6.5MB/s   00:15
ol_mf_test3_3117h8nv_.dbf           100%  100MB    6.0MB/s   00:16
ol_mf_test4_3117hk7d_.dbf           100%  100MB    6.4MB/s   00:15
ol_mf_temp_310n2bnj_.tmp            100%  433MB    5.8MB/s   01:14
ol_mf_3_310n22jj_.log               100%  50MB     7.5MB/s   00:06
ol_mf_2_310n21sx_.log               100%  50MB     8.4MB/s   00:05
ol_mf_1_310n215q_.log               100%  50MB     8.8MB/s   00:05
ol_mf_4_3gznjc9v_.log               100%  50MB     7.7MB/s   00:06
ol_mf_5_3gznnrh0_.log               100%  50MB     8.2MB/s   00:06
ol_mf_6_3gznrwd7_.log               100%  50MB     4.9MB/s   00:10
Prepare an Initialization Parameter File for the Standby Database

Copy and edit the primary init.ora to set it up for the standby role

```
*.db_name='whiteowl'
*.db_unique_name='blackowl'
*.audit_file_dest='/oradisk/app01/oracle/admin/blackowl/adump'
*.background_dump_dest='/oradisk/app01/oracle/admin/blackowl/bdump'
*.core_dump_dest='/oradisk/app01/oracle/admin/blackowl/cdump'
*.user_dump_dest='/oradisk/app01/oracle/admin/blackowl/udump'
*.compatible='10.2.0.1.0'
*.control_files='/oradisk/od01/BLACKOWL/controlfile/blackowl_01.ctl','/oradisk/od01/BLACKOWL/controlfile/blackowl_02.ctl'
*.db_block_size=8192
*.db_create_file_dest='/oradisk/od01/BLACKOWL'
*.db_domain=''
*.db_file_multiblock_read_count=16
*.db_file_name_convert='/oradisk/od01/BLACKOWL/datafile','/vmasmtest/od01/WHITEOWL/WHITEOWL/datafile'
*.log_file_name_convert='/oradisk/od01/BLACKOWL/onlinelog','/vmasmtest/od01/WHITEOWL/WHITEOWL/onlinelog'
*.fal_server='whiteowl'
*.fal_client='blackowl'
*.job_queue_processes=10
*.LOG_ARCHIVE_CONFIG='DG_CONFIG=(whiteowl,blackowl)'  
*.LOG_ARCHIVE_DEST_1='LOCATION=/oradisk/od01/BLACKOWL/archives/
VALID_FOR=(ALL_LOGFILES,ALL_ROLES)
DB_UNIQUE_NAME=blackowl'
*.LOG_ARCHIVE_DEST_2='SERVICE=whiteowl LGWR_ASYNC
VALID_FOR=(ONLINE_LOGFILES,PRIMARY_ROLE)
```
Create all required directories for dump directories and archived log destination

[vmractest2] > mkdir -p /oradisk/app01/oracle/admin/blackowl/adump
{oracle} /oradisk/app01/oracle/product/10gDB/dbs [vmractest2] > mkdir -p /oradisk/app01/oracle/admin/blackowl/bdump
{oracle} /oradisk/app01/oracle/product/10gDB/dbs [vmractest2] > mkdir -p /oradisk/app01/oracle/admin/blackowl/cdump
{oracle} /oradisk/app01/oracle/product/10gDB/dbs [vmractest2] > mkdir -p /oradisk/app01/oracle/admin/blackowl/udump
{oracle} /oradisk/app01/oracle/product/10gDB/dbs [vmractest2] > mkdir -p /oradisk/od01/BLACKOWL/archives/

Copy from the primary the standby controlfile to its destination

[vmractest1] > scp -p blackowl.ctl vmractest2:/oradisk/od01/BLACKOWL/controlfile/blackowl_02.ctl
blackowl.ctl 100% 6992KB 7.2MB/s 00:00
[vmractest1] > scp -p blackowl.ctl vmractest2:/oradisk/od01/BLACKOWL/controlfile/blackowl_01.ctl
blackowl.ctl 100% 6992KB 6.9MB/s 00:00
Configure the listener and tnsnames to support the database on both nodes

Configure listener.ora on both servers to hold entries for both databases

```sql
# ON VMRACTEST1
LISTENER_VMRACTEST =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest1)(PORT = 1522)(IP = FIRST))
    )
  )

SID_LIST_LISTENER_VMRACTEST =
  (SID_LIST =
    (SID_DESC =
      (GLOBAL_DBNAME = whiteowl)
      (ORACLE_HOME = /oradisk/app01/oracle/product/10gDB )
      (SID_NAME = whiteowl)
    )
  )

# ON VMRACTEST2
LISTENER_VMRACTEST =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest2)(PORT = 1522)(IP = FIRST))
    )
  )

SID_LIST_LISTENER_VMRACTEST =
```
Configure tnsnames.ora on both servers to hold entries for both databases

# ON VMRACTEST1
LISTENER_VMRACTEST =
  (DESCRIPTION_LIST =
   (DESCRIPTION =
     (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest1)(PORT = 1522)(IP = FIRST))
   )
  )

WHITHEOWL =
  (DESCRIPTION =
   (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest1)(PORT = 1522))
   (CONNECT_DATA =
     (SERVER = DEDICATED)
     (SERVICE_NAME = whiteowl)
   )
  )

BLACKOWL =
  (DESCRIPTION =
   (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest2)(PORT = 1522))
   (CONNECT_DATA =
(SERVER = DEDICATED)
(SERVICE_NAME = blackowl)
)
)

# ON VMRACTEST2
LISTENER_VMR_ACTEST =
(DESCRIPTION_LIST =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest2)(PORT = 1522)(IP = FIRST))
  )
)

BLACKOWL =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest2)(PORT = 1522))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = blackowl)
    )
  )
)

WHITHEOWL =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest1)(PORT = 1522))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = whiteowl)
    )
  )
)
)
Start the listener and check tnsping on both nodes to both services

[vmractest1.partnergsm.co.il] > **tnsping whiteowl**
TNS Ping Utility for Linux: Version 10.2.0.1.0 - Production on 19-SEP-2007 15:10:00

Copyright (c) 1997, 2005, Oracle. All rights reserved.

Used parameter files:
/oradisk/app01/oracle/product/10gDB/network/admin/sqlnet.ora

Used TNSNAMES adapter to resolve the alias
Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest1)(PORT = 1522)) (CONNECT_DATA = (SERVER = DEDICATED) (SERVICE_NAME = whiteowl)))
OK (10 msec)

{oracle} /oradisk/app01/oracle/product/10gDB/network/admin

[vmractest1.partnergsm.co.il] > **tnsping blackowl**
TNS Ping Utility for Linux: Version 10.2.0.1.0 - Production on 19-SEP-2007 15:10:09

Copyright (c) 1997, 2005, Oracle. All rights reserved.

Used parameter files:
/oradisk/app01/oracle/product/10gDB/network/admin/sqlnet.ora

Used TNSNAMES adapter to resolve the alias
Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = vmractest2)(PORT = 1522)) (CONNECT_DATA = (SERVER = DEDICATED) (SERVICE_NAME = blackowl)))
OK (10 msec)
Set Up the Environment to Support the Standby Database on the standby node.

Copy the password file from Primary to Standby, sys password must be identical

```bash
[vmractest1] > scp orapwwhiteowl
vmractest2:/oradisk/app01/oracle/product/10gDB/dbs/orapwblackowl
orapwwhiteowl               100% 1536     4.0MB/s   00:00
```

Setup the environment variables to point to the Standby database

- `ORACLE_HOME=/oradisk/app01/oracle/product/10gDB`
- `ORACLE_SID=blackowl`

Startup nomount the Standby database and generate an spfile

```sql
{oracle} /oradisk/app01/oracle/product/10gDB/dbs [vmractest2] > sqlplus / as sysdba
SQL*Plus: Release 10.2.0.1.0 - Production on Wed Sep 19 16:17:18 2007
Copyright (c) 1982, 2005, Oracle. All rights reserved.
Connected to an idle instance.
SQL> startup nomount pfile=.'/oradisk/app01/oracle/product/10gDB/dbs/initblackowl.ora'
ORACLE instance started.
Total System Global Area  285212672 bytes
Fixed Size 1218992 bytes
Variable Size 92276304 bytes
Database Buffers 188743680 bytes
Redo Buffers          2973696 bytes
SQL> create spfile from pfile='/oradisk/app01/oracle/product/10gDB/dbs/initblackowl.ora';
File created.

SQL> shutdown immediate;
ORA-01507: database not mounted

ORACLE instance shut down.

**Startup mount the Standby database and perform recovery**

SQL> startup mount
ORACLE instance started.

```
Total System Global Area  285212672 bytes
Fixed Size                1218992 bytes
Variable Size             92276304 bytes
Database Buffers          188743680 bytes
Redo Buffers              2973696 bytes
Database mounted.
```

SQL> ALTER DATABASE RECOVER MANAGED STANDBY DATABASE DISCONNECT FROM SESSION;

Database altered.

**The alert log of the standby will show the operations taking place**

```
... ...
ALTER DATABASE RECOVER MANAGED STANDBY DATABASE DISCONNECT FROM SESSION
```
Attempt to start background Managed Standby Recovery process (blackowl)
MRP0 started with pid=47, OS id=12498
MRP0: Background Managed Standby Recovery process started (blackowl)
Managed Standby Recovery not using Real Time Apply
Clearing online redo logfile 1 /oradisk/od01/BLACKOWL/onlinelog/o1_mf_1_310n215q_.log
Clearing online log 1 of thread 1 sequence number 95
Deleted Oracle managed file /oradisk/od01/BLACKOWL/onlinelog/o1_mf_1_310n215q_.log
Completed: ALTER DATABASE RECOVER MANAGED STANDBY DATABASE DISCONNECT FROM SESSION
Clearing online redo logfile 1 complete
Clearing online redo logfile 2 /oradisk/od01/BLACKOWL/onlinelog/o1_mf_2_310n21sx_.log
Clearing online log 2 of thread 1 sequence number 96
Deleted Oracle managed file /oradisk/od01/BLACKOWL/onlinelog/o1_mf_2_310n21sx_.log
Clearing online redo logfile 2 complete
Clearing online redo logfile 3 /oradisk/od01/BLACKOWL/onlinelog/o1_mf_3_310n22jj_.log
Clearing online log 3 of thread 1 sequence number 94
Deleted Oracle managed file /oradisk/od01/BLACKOWL/onlinelog/o1_mf_3_310n22jj_.log
Clearing online redo logfile 3 complete
Media Recovery Waiting for thread 1 sequence 96
**Start the Primary Database**

The alert log of the primary will show how it recognize the standby and start shipping archived logs

******************************************************************************
LGWR: Setting 'active' archival for destination LOG_ARCHIVE_DEST_2
******************************************************************************
Wed Sep 19 16:01:07 2007
LNS: Standby redo logfile selected for thread 1 sequence 100 for destination LOG_ARCHIVE_DEST_2
Wed Sep 19 16:01:07 2007
Successfully onlined Undo Tablespace 1.
Wed Sep 19 16:01:07 2007
SMON: enabling tx recovery
Wed Sep 19 16:01:09 2007
Database Characterset is AL32UTF8
replication_dependency_tracking turned off (no async multimaster replication found)
Starting background process QMNC
QMNC started with pid=21, OS id=13864
Wed Sep 19 16:01:12 2007
Completed: ALTER DATABASE OPEN
Wed Sep 19 16:01:13 2007
ARCq: Standby redo logfile selected for thread 1 sequence 99 for destination LOG_ARCHIVE_DEST_2
Wed Sep 19 16:05:05 2007
Thread 1 advanced to log sequence 101
	Current log# 1 seq# 101 mem# 0:
/vmasmtest/od01/WHITEOWL/WHITEOWL/onlineolog/o1_mf_1_310n215q_.log
Wed Sep 19 16:05:06 2007
LNS: Standby redo logfile selected for thread 1 sequence 101 for destination LOG_ARCHIVE_DEST_2
**Verify the Physical Standby Database Is Performing Properly**

**Check archived redo log on Standby**

SQL> show parameters db_unique_name;

<table>
<thead>
<tr>
<th>NAME</th>
<th>TYPE</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>db_unique_name</td>
<td>string</td>
<td>blackowl</td>
</tr>
</tbody>
</table>

SQL> l

1* SELECT NAME FROM V$DATABASE

SQL> SELECT SEQUENCE#, FIRST_TIME, NEXT_TIME FROM V$ARCHIVED_LOG ORDER BY SEQUENCE#;

<table>
<thead>
<tr>
<th>SEQUENCE#</th>
<th>FIRST_TIME</th>
<th>NEXT_TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>96</td>
<td>19-SEP-07</td>
<td>19-SEP-07</td>
</tr>
<tr>
<td>97</td>
<td>19-SEP-07</td>
<td>19-SEP-07</td>
</tr>
<tr>
<td>98</td>
<td>19-SEP-07</td>
<td>19-SEP-07</td>
</tr>
<tr>
<td>99</td>
<td>19-SEP-07</td>
<td>19-SEP-07</td>
</tr>
<tr>
<td>100</td>
<td>19-SEP-07</td>
<td>19-SEP-07</td>
</tr>
</tbody>
</table>

**Switch logfiles on Primary**

SQL> alter system switch logfile;

System altered.

SQL> archive log list

Database log mode               Archive Mode
Automatic archival              Enabled
Archive destination             /vmasmtest/whiteowl/archdest/
Oldest online log sequence      100
Next log sequence to archive   102
Current log sequence           102

SQL> alter system switch logfile;
System altered.

SQL> archive log list
Database log mode            Archive Mode
Automatic archival           Enabled
Archive destination         /vmasmtest/whiteowl/archdest/
Oldest online log sequence   101
Next log sequence to archive 103
Current log sequence         103

Check archived redo log on Standby

SQL> SELECT SEQUENCE#, FIRST_TIME, NEXT_TIME FROM V$ARCHIVED_LOG ORDER BY SEQUENCE#;

<table>
<thead>
<tr>
<th>SEQUENCE#</th>
<th>FIRST_TIME</th>
<th>NEXT_TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>96</td>
<td>19/09/07 09:35</td>
<td>19/09/07 09:45</td>
</tr>
<tr>
<td>97</td>
<td>19/09/07 09:45</td>
<td>19/09/07 15:20</td>
</tr>
<tr>
<td>98</td>
<td>19/09/07 15:20</td>
<td>19/09/07 15:48</td>
</tr>
<tr>
<td>99</td>
<td>19/09/07 15:48</td>
<td>19/09/07 16:00</td>
</tr>
<tr>
<td>100</td>
<td>19/09/07 16:00</td>
<td>19/09/07 16:05</td>
</tr>
<tr>
<td>101</td>
<td>19/09/07 16:05</td>
<td>19/09/07 16:08</td>
</tr>
<tr>
<td>102</td>
<td>19/09/07 16:08</td>
<td>19/09/07 16:08</td>
</tr>
</tbody>
</table>

7 rows selected.
Reference:

Oracle® Data Guard Concepts and Administration
10g Release 2 (10.2)
Part Number B14239-04
http://download.oracle.com/docs/cd/B19306_01/server.102/b14239/create_ps.htm#SBYDB00210