Step by step rolling upgrade database from 11gR2 to 12c

http://ohsdba.cn

Contents

Prerequisites

Before doing rolling upgrade, please make sure you meet below

- Primary and physical standby database environment exists
- Flashback database is enabled on both Primary and Standby database
- If Data Guard Broker is managing the configuration, then it has to be disabled for the duration of the upgrade process (by setting the initialization parameter DG_BROKER_START=FALSE)
- Ensure that the log transport (initialization parameter LOG_ARCHIVE_DEST_n) is correctly configured to perform a switchover from the primary database to physical standby database and revert back.
- Static entries defined in the listener.ora file on primary and Standby database
- Oracle 12.1.0.2.0 software has already been installed on primary and standby database nodes.

Upgrade environment

Database Summary

	Primary	Standby
Hosts	ohs1.ohsdba.cn ohs2.ohsdba.cn	ohs3.ohsdba.cn ohs4.ohsdba.cn
Database Unique Name	prod	stdby
Instance Names	prod1,prod2	stdby1,stdby2
Scan Name	prod-scan	stdby-scan
Scan Port	10010	10015
DiskGroup	SYSTEMDG DATA_PROD FRA_PROD	SYSTEMDG DATA_STDBY FRA_STDBY
11gR2 GI	GRID_BASE=/pgold/orgrid/grid_base	
	GRID_HOME=/pgold/orgrid/oracle/product/112	
12cR1 GI	GRID_BASE=/pgold/orgrid/grid_base	
	GRID_HOME=/pgold/orgrid/oracle/product/121	
11gR2 DB	ORACLE_BASE=/pgold/ordb/oracle/product	
	ORACLE_HOME=/pgold/ordb/oracle/product/112	
12cR1 DB	ORACLE_BASE=/pgold/ordb/oracle/product	
	ORACLE_HOME=/pgold/ordb/oracle/product/121	

Listener.ora Info

Add below lines to $GI_HOME/network/admin/listener.ora on instance prod1

```
SID_LIST_LISTENER =
(SID_LIST =
  (SID_DESC =
    (SID_NAME = prod1)
    (ORACLE_HOME = /pgold/ordb/oracle/product/112)
  )
)
```

Add below lines to $GI_HOME/network/admin/listener.ora on instance stdby1

```
SID_LIST_LISTENER =
(SID_LIST =
  (SID_DESC =
    (SID_NAME = stdby1)
    (ORACLE_HOME = /pgold/ordb/oracle/product/112)
  )
)
```

Tnsnames.ora Info

$ORACLE_HOME/network/admin/tnsnames.ora for all nodes

```
PROD =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = prod-scan.ohsdba.cn)(PORT = 10010))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = prod)
    )
  )

STDBY =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = stdby-scan.ohsdba.cn)(PORT = 10015))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = stdby)
    )
  )
dup =
 (DESCRIPTION =
  (ADDRESS = (PROTOCOL = TCP) (HOST = ohs3.ohsdba.cn) (PORT = 1521))
```

```
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SID = stdby1)
    )
  )


pri =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = ohs1.ohsdba.cn)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = prod1)
    )
  )

std =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = ohs3.ohsdba.cn)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = stdby1)
    )
  )
```

Pre-steps before doing rolling upgrade

Disable dg broker

```
[oracle@ohs1 ~]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.4.0 Production on Sun Dec 4 07:48:57 2016
Copyright (c) 1982, 2013, Oracle.  All rights reserved.
Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options

SQL> show parameter broker

NAME                                 TYPE        VALUE
```

```
---------------------------------- ----------- ----------------------------
dg_broker_config_file1               string      +DATA_PROD/prod/dr1prod.dat
dg_broker_config_file2               string      +DATA_PROD/prod/dr2prod.dat
dg_broker_start                      boolean     TRUE
SQL> alter system set dg_broker_start=false;

System altered.

SQL>

[oracle@ohs3 ~]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.4.0 Production on Sun Dec 4 07:49:29 2016

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Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options
SQL> show parameter broker

NAME                                 TYPE        VALUE
---------------------------------- ----------- ----------------------------
dg_broker_config_file1               string      +DATA_STDBY/stdby/dr1stdby.dat
dg_broker_config_file2               string      +DATA_STDBY/stdby/dr2stdby.dat
dg_broker_start                      boolean     TRUE
SQL> alter system set dg_broker_start=false;

System altered.
```

Enable flashback

Enable flashback on primary

11g:we can enable the flashback in mount/open status.
10g:we can enable the flashback in mount status only.

```
SQL> select flashback_on from v$database;

FLASHBACK_ON
------------------
NO
```

```
SQL> alter database flashback on;

Database altered.

SQL> select flashback_on from v$database;

FLASHBACK_ON
------------------
YES

SQL> show parameter db_flashback_retention_target

NAME                                 TYPE          VALUE
------------------------------------ ----------- ------------------------------
db_flashback_retention_target        integer       1440
SQL> SQL>
```

Enable flashback on standby

```
SQL> select flashback_on from v$database;

FLASHBACK_ON
------------------
NO

SQL> alter database flashback on;
alter database flashback on
*
ERROR at line 1:
ORA-01153: an incompatible media recovery is active
SQL> exit
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit
Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options
[oracle@ohs3 ~]$ srvctl stop database -d stdby
[oracle@ohs3 ~]$ srvctl start database -d stdby -o mount
[oracle@ohs3 ~]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.4.0 Production on Sun Dec 4 08:03:08 2016
Copyright (c) 1982, 2013, Oracle.  All rights reserved.
Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options
```

```
SQL> select flashback_on from v$database;
FLASHBACK_ON
------------------
NO

SQL> alter database flashback on;

Database altered.

SQL> select flashback_on from v$database;

FLASHBACK_ON
------------------
YES

SQL>
```

physru.sh usage

Note: physru.sh is dos format, we need to convert it to Unix format.

Change

```
EOF  > /dev/null`
```

To

```
EOF
> /dev/null`
```

```
[oracle@ohs1 ~]$ chmod 755 physru.sh
[oracle@ohs1 ~]$ ls -l physru.sh
-rwxr-xr-x. 1 oracle oinstall 139458 Dec  6 16:48 physru.sh
[oracle@ohs1 ~]$ cksum physru.sh
2437052056 139458 physru.sh
[oracle@ohs1 ~]$
[oracle@ohs1 ~]$ ./physru.sh
Usage: physru <username> <primary_tns> <standby_tns>
              <primary_name> <standby_name> <upgrade_version>
Arguments:
  <username>        = dba username
  <primary_tns>     = tns service name to primary
  <standby_tns>     = tns service name to physical standby
  <primary_name>    = db_unique_name of primary
  <standby_name>    = db_unique_name of standby
  <upgrade_version> = target rdbms version
```

Example:

./physru.sh sys pri std prod stdby 12.1.0.2.0

We need to execute physru.sh three times.

First execution

- Creates controlfile backups for primary and physical standby database
- Creates GRP(Guaranteed Restore Points) on primary database and physical standby database.It can be used to flashback to the beginning in case of unexpected failure
- Converts a physical standby database into a transient logical standby database

Second execution

- Synchronize the transient logical standby database with the primary database using SQL apply
- Perform switchover to the upgraded 12c transient logical standby, and the standby database becomes the primary
- Perform flashback on the original primary database with GRP created before, and converts the original primary database into physical standby database

Third execution

- Starts Redo Apply on the new physical standby database to apply all redo that has been generated during the rolling upgrade including any SQL statements that have been executed on the transient logical standby as part of the upgrade.
- When synchronized, performing a final switchover to revert back to their original roles of primary and standby

Run physru.sh

First execution

```
[oracle@ohs1 ~]$ ./physru.sh sys pri std prod stdby 12.1.0.2.0
Please enter the sysdba password:

### Initialize script to either start over or resume execution
Dec 06 16:52:03 2016 [0-1] Identifying rdbms software version
Dec 06 16:52:03 2016 [0-1] database prod is at version 11.2.0.4.0
Dec 06 16:52:03 2016 [0-1] database stdby is at version 11.2.0.4.0
Dec 06 16:52:03 2016 [0-1] verifying flashback database is enabled at prod and stdby
Dec 06 16:52:04 2016 [0-1] verifying available flashback restore points
Dec 06 16:52:04 2016 [0-1] verifying DG Broker is disabled
Dec 06 16:52:04 2016 [0-1] looking up prior execution history
Dec 06 16:52:04 2016 [0-1] purging script execution state from database prod
Dec 06 16:52:04 2016 [0-1] purging script execution state from database stdby
```

```
Dec 06 16:52:04 2016 [0-1] starting new execution of script

### Stage 1: Backup user environment in case rolling upgrade is aborted
Dec 06 16:52:04 2016 [1-1] stopping media recovery on stdby
Dec 06 16:52:06 2016 [1-1] creating restore point PRU_0000_0001 on database stdby
Dec 06 16:52:07 2016 [1-1] backing up current control file on stdby
Dec 06 16:52:08 2016 [1-1] created backup control file
/pgold/ordb/oracle/product/112/dbs/PRU_0001_stdby_f.f
Dec 06 16:52:08 2016 [1-1] creating restore point PRU_0000_0001 on database prod
Dec 06 16:52:10 2016 [1-1] backing up current control file on prod
Dec 06 16:52:10 2016 [1-1] created backup control file
/pgold/ordb/oracle/product/112/dbs/PRU_0001_prod_f.f

NOTE: Restore point PRU_0000_0001 and backup control file PRU_0001_stdby_f.f
      can be used to restore stdby back to its original state as a
      physical standby, in case the rolling upgrade operation needs to be aborted
      prior to the first switchover done in Stage 4.

### Stage 2: Create transient logical standby from existing physical standby
Dec 06 16:52:10 2016 [2-1] verifying RAC is disabled at stdby

WARN: stdby is a RAC database.  Before this script can continue, you
      must manually reduce the RAC to a single instance, disable the RAC, and
      restart instance stdby1 in mounted mode.  This can be accomplished
      with the following steps:

        1) Shutdown all instances other than instance stdby1.
           eg: srvctl stop instance -d stdby -i stdby2 -o abort

        2) On instance stdby1, set the cluster_database parameter to FALSE.
           eg: SQL> alter system set cluster_database=false scope=spfile;

        3) Shutdown instance stdby1.
           eg: SQL> shutdown abort;

        4) Startup instance stdby1 in mounted mode.
           eg: SQL> startup mount;

      Once these steps have been performed, enter 'y' to continue the script.
      If desired, you may enter 'n' to exit the script to perform the required
      steps, and recall the script to resume from this point.

Are you ready to continue? (y/n):.
```

Do below steps on standby database

```
[oracle@ohs3 ~]$ srvctl stop instance -d stdby -i stdby2 -o abort
[oracle@ohs3 ~]$ ssh ohs4 ps -ef|grep pmon
orgrid     4977      1   0 16:16 ?        00:00:00 asm_pmon_+ASM2
[oracle@ohs3 ~]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.4.0 Production on Tue Dec 6 16:52:52 2016

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With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options

SQL> alter system set cluster_database=false scope=spfile;

System altered.

SQL> shutdown abort;
ORACLE instance shut down.
SQL> startup mount;
ORACLE instance started.

Total System Global Area 2137886720 bytes
Fixed Size                  2254952 bytes
Variable Size             603981720 bytes
Database Buffers         1526726656 bytes
Redo Buffers                4923392 bytes
Database mounted.
SQL>
SQL>
```

Continue the First execution

```
Dec 06 16:54:18 2016 [2-1] continuing
Dec 06 16:54:18 2016 [2-1] verifying RAC is disabled at stdby
Dec 06 16:54:18 2016 [2-1] verifying database roles
Dec 06 16:54:18 2016 [2-1] verifying physical standby is mounted
Dec 06 16:54:18 2016 [2-1] verifying database protection mode
Dec 06 16:54:18 2016 [2-1] verifying transient logical standby datatype support
Dec 06 16:54:19 2016 [2-2] starting media recovery on stdby
Dec 06 16:54:25 2016 [2-2] confirming media recovery is running
```

Dec 06 16:54:27 2016 [2-2] waiting for apply lag to fall under 30 seconds
Dec 06 16:54:34 2016 [2-2] apply lag measured at 7 seconds
Dec 06 16:54:34 2016 [2-2] stopping media recovery on stdby
Dec 06 16:54:35 2016 [2-2] executing dbms_logstdby.build on database prod
Dec 06 16:55:01 2016 [2-2] converting physical standby into transient logical standby
Dec 06 16:55:04 2016 [2-3] opening database stdby
Dec 06 16:55:06 2016 [2-4] configuring transient logical standby parameters for rolling upgrade
Dec 06 16:55:07 2016 [2-4] starting logical standby on database stdby
Dec 06 16:55:13 2016 [2-4] waiting until logminer dictionary has fully loaded
Dec 06 16:56:03 2016 [2-4] dictionary load 42% complete
Dec 06 16:56:14 2016 [2-4] dictionary load 75% complete
Dec 06 16:56:24 2016 [2-4] dictionary load is complete
Dec 06 16:56:24 2016 [2-4] waiting for apply lag to fall under 30 seconds
Dec 06 16:56:28 2016 [2-4] apply lag measured at 3 seconds

NOTE: Database stdby is now ready to be upgraded. This script has left the database open in case you want to perform any further tasks before upgrading the database. Once the upgrade is complete, the database must opened in READ WRITE mode before this script can be called to resume the rolling upgrade.

NOTE: Database stdby may be reverted back to a RAC database upon completion of the rdbms upgrade. This can be accomplished by performing the following steps:

1) On instance stdby1, set the cluster_database parameter to TRUE.
eg: SQL> alter system set cluster_database=true scope=spfile;

2) Shutdown instance stdby1.
eg: SQL> shutdown abort;

3) Startup and open all instances for database stdby.
eg: srvctl start database -d stdby

[oracle@ohs1 ~]$ $

Upgrade standby to 12c using dbua

Note: as we the upgrade with DBUA, we need to change the cluster_database to true
Please refer http://www.ohsdba.cn/index.php?g=Home&m=Article&a=show&id=196
[oracle@ohs3 ~]$ sqlplus / as sysdba
SQL*Plus: Release 11.2.0.4.0 Production on Tue Dec 6 16:57:01 2016

Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options

SQL> show parameter cluster

NAME	TYPE	VALUE
cluster_database	boolean	FALSE
cluster_database_instances	integer	1
cluster_interconnects	string	

SQL> alter system set cluster_database=true scope=spfile;

System altered.

SQL> exit
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options
[oracle@ohs3 ~]$ srvctl stop database -d stdby
[oracle@ohs3 ~]$ srvctl start database -d stdby
[oracle@ohs3 ~]$ sqlplus / as sysdba

SQL*Plus: Release 11.2.0.4.0 Production on Tue Dec 6 16:58:59 2016

Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options
SQL> show parameter cluster

NAME	TYPE	VALUE
cluster_database	boolean	TRUE
cluster_database_instances	integer	2
cluster_interconnects	string	

SQL> exit
Disconnected from Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production

With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP, Data Mining and Real Application Testing options

```
[oracle@ohs3 ~]$ ps -ef|grep pmon
orgrid     4915      1   0 16:16 ?        00:00:00 asm_pmon_+ASM1
orgrid     6053      1   0 16:17 ?        00:00:00 mdb_pmon_-MGMTDB
oracle    26935      1   0 16:58 ?        00:00:00 ora_pmon_stdby1
oracle    27277 19414   0 16:59 pts/0    00:00:00 grep pmon
[oracle@ohs3 ~]$ ssh ohs4 ps -ef|grep pmon
orgrid     4977      1   0 16:16 ?        00:00:00 asm_pmon_+ASM2
oracle    25041      1   0 16:58 ?        00:00:00 ora_pmon_stdby2
[oracle@ohs3 ~]$
```

Test logical standby apply

Copy the 11g password file and tns file to 12c

```
[oracle@ohs3 dbs]$ pwd
/pgold/ordb/oracle/product/121/dbs
[oracle@ohs3 dbs]$ ls -l /pgold/ordb/oracle/product/112/dbs/
total 18376
-rw-rw----. 1 oracle asmadmin      1544 Dec   6 17:19 hc_stdby1.dat
-rw-r--r--. 1 oracle oinstall        56 Dec   3 02:44 init.ora
-rw-r--r--. 1 oracle oinstall        66 Dec   6 16:58 initstdby1.ora
-rw-r--r--. 1 oracle oinstall        66 Dec   6 16:39 initstdby1.ora.bak.ohs3
-rw-r-----. 1 oracle oinstall      2048 Dec   3 03:52 orapwstdby1
-rw-r-----. 1 oracle asmadmin 18792448 Dec   6 16:52 PRU_0001_stdby_f.f
-rw-r--r--. 1 oracle oinstall      1741 Dec   3 02:51 s.ora
[oracle@ohs3 dbs]$ pwd
/pgold/ordb/oracle/product/121/dbs
[oracle@ohs3 dbs]$ ls
hc_stdby1.dat  id_stdby1.dat  init.ora  initprod.ora  initstdby1.ora  initstdby.ora
orapwstdby1  orapwstdby2
[oracle@ohs3 dbs]$ ls -l
total 548
-rw-rw----. 1 oracle asmadmin    1544 Dec   7 05:40 hc_stdby1.dat
-rw-rw----. 1 oracle asmadmin 524288 Dec   7 05:50 id_stdby1.dat
-rw-r--r--. 1 oracle oinstall    2992 Feb   3   2012 init.ora
-rw-r-----. 1 oracle oinstall      43 Dec   6 18:18 initprod.ora
-rw-r-----. 1 oracle oinstall      43 Dec   6 18:18 initstdby1.ora
-rw-r-----. 1 oracle oinstall    1901 Dec   6 18:17 initstdby.ora
-rw-r-----. 1 oracle oinstall    8192 Dec   6 17:19 orapwstdby1
-rw-r-----. 1 oracle oinstall    8192 Dec   6 17:19 orapwstdby2
[oracle@ohs3 dbs]$ mv orapwstdby1 orapwstdby1_12c
[oracle@ohs3 dbs]$ mv orapwstdby2 orapwstdby2_12c
[oracle@ohs3 dbs]$ cp /pgold/ordb/oracle/product/112/dbs/orapwstdby1 .
```

```
[oracle@ohs3 dbs]$

[oracle@ohs4 ~]$ cd $ORACLE_HOME
[oracle@ohs4 121]$ cd dbs/
[oracle@ohs4 dbs]$ ls
hc_stdby2.dat  id_stdby2.dat  init.ora  initstdby2.ora  orapwstdby2
[oracle@ohs4 dbs]$ ls -l
total 532
-rw-rw----. 1 oracle asmadmin    1544 Dec  7 05:40 hc_stdby2.dat
-rw-rw----. 1 oracle asmadmin 524288 Dec  7 05:51 id_stdby2.dat
-rw-r--r--. 1 oracle oinstall    2992 Dec  3 06:29 init.ora
-rw-r-----. 1 oracle oinstall      43 Dec  6 18:18 initstdby2.ora
-rw-r-----. 1 oracle oinstall    8192 Dec  6 17:19 orapwstdby2
[oracle@ohs4 dbs]$ mv orapwstdby2 orapwstdby2_12c
[oracle@ohs4 dbs]$ cp /pgold/ordb/oracle/product/112/dbs/orapwstdby2 .
[oracle@ohs4 dbs]$
```

If you did not copy the password file, you may encounter ORA-16191

```
------------------------------------------------------------
2016-12-07 05:51:11.707000 -05:00
Error 1017 received logging on to the standby
------------------------------------------------------------
Check that the primary and standby are using a password file
and remote_login_passwordfile is set to SHARED or EXCLUSIVE,
and that the SYS password is same in the password files.
      returning error ORA-16191
------------------------------------------------------------
2016-12-07 05:52:12.586000 -05:00
ARC0: Standby redo logfile selected for thread 1 sequence 82 for destination LOG_ARCHIVE_DEST_2
Thread 1 advanced to log sequence 89 (LGWR switch)
  Current log# 2 seq# 89 mem# 0: +DATA_PROD/prod/redo02.log
Archived Log entry 280 added for thread 1 sequence 88 ID 0x1459866f dest 1:
ARC0: Standby redo logfile selected for thread 1 sequence 88 for destination LOG_ARCHIVE_DEST_2
Expanded controlfile section 11 from 280 to 560 records
Requested to grow by 280 records; added 10 blocks of records
2016-12-07 05:52:13.749000 -05:00
LNS: Standby redo logfile selected for thread 1 sequence 89 for destination LOG_ARCHIVE_DEST_2
adrci>
```

```
[oracle@ohs3 ~]$ cd /pgold/ordb/oracle/product/121/network/admin/
[oracle@ohs3 admin]$ pwd
/pgold/ordb/oracle/product/121/network/admin
[oracle@ohs3 admin]$ cp /pgold/ordb/oracle/product/112/network/admin/tnsnames.ora .

[oracle@ohs4 ~]$ cd /pgold/ordb/oracle/product/121/network/admin/
[oracle@ohs4 admin]$ pwd
/pgold/ordb/oracle/product/121/network/admin
[oracle@ohs4 admin]$ cp /pgold/ordb/oracle/product/112/network/admin/tnsnames.ora .
```

Modify listener.ora

```
[orgrid@ohs3 admin]$ pwd
/pgold/orgrid/oracle/product/121/network/admin/listener.ora
SID_LIST_LISTENER =
(SID_LIST =
 (SID_DESC =
  (SID_NAME = stdby1)
  (ORACLE_HOME = /pgold/ordb/oracle/product/121)
 )
```

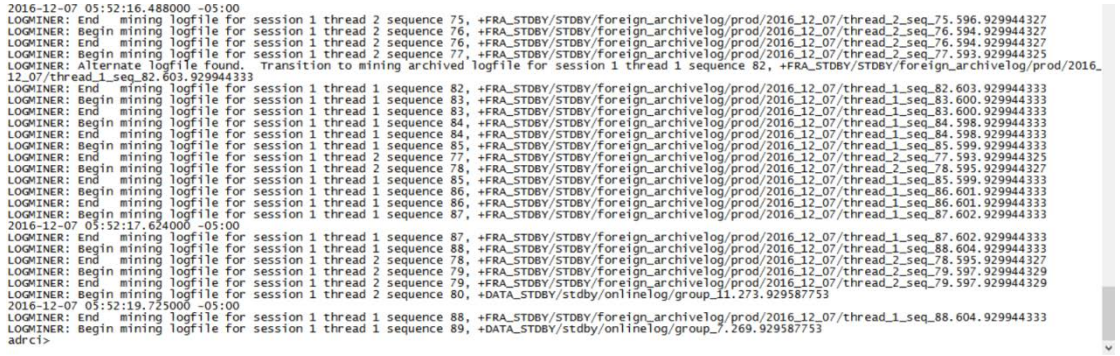
```
)
[orgrid@ohs3 admin]$
[orgrid@ohs3 admin]$srvctl stop listener
[orgrid@ohs3 admin]$srvctl start listener
```

Do insert testing

```
[oracle@ohs2 ~]$ sqlplus / as sysdba
SQL*Plus: Release 11.2.0.4.0 Production on Wed Dec 7 01:00:08 2016
Copyright (c) 1982, 2013, Oracle.  All rights reserved.
Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.4.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Data Mining and Real Application Testing options

SQL> insert into ohsdba.t1 values ('OHSDBA',110);

1 row created.

SQL> commit;

Commit complete.

SQL>

[oracle@ohs3 dbs]$ sqlplus / as sysdba
SQL*Plus: Release 12.1.0.2.0 Production on Wed Dec 7 05:51:53 2016
Copyright (c) 1982, 2014, Oracle.  All rights reserved.
Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Advanced Analytics and Real Application Testing options

SQL> alter database start logical standby apply immediate;

Database altered.

SQL>
SQL> select * from ohsdba.t1;

no rows selected

SQL> /

NAME                           AGE
------------------- ----------
```

OHSDBA 110
ohsdba 120

SQL>



Stop logical standby apply

SQL> alter database stop logical standby apply;

[oracle@ohs3 ~]$ ps -ef|grep lsp
oracle 10068 8528 0 17:14 pts/0 00:00:00 grep lsp
[oracle@ohs3 ~]$ ssh ohs4 ps -ef|grep lsp
[oracle@ohs3 ~]$

Second execution

[oracle@ohs1 ~]$ ./physru.sh sys pri std prod stdby 12.1.0.2.0
Please enter the sysdba password:

Initialize script to either start over or resume execution
Dec 07 02:10:18 2016 [0-1] Identifying rdbms software version
Dec 07 02:10:18 2016 [0-1] database prod is at version 11.2.0.4.0
Dec 07 02:10:19 2016 [0-1] database stdby is at version 12.1.0.2.0
Dec 07 02:10:19 2016 [0-1] verifying flashback database is enabled at prod and stdby
Dec 07 02:10:19 2016 [0-1] verifying available flashback restore points
Dec 07 02:10:20 2016 [0-1] verifying DG Broker is disabled
Dec 07 02:10:20 2016 [0-1] looking up prior execution history
Dec 07 02:10:20 2016 [0-1] last completed stage [2-4] using script version 0001
Dec 07 02:10:20 2016 [0-1] resuming execution of script

Stage 3: Validate upgraded transient logical standby
Dec 07 02:10:20 2016 [3-1] database stdby is no longer in OPEN MIGRATE mode
Dec 07 02:10:20 2016 [3-1] database stdby is at version 12.1.0.2.0

Stage 4: Switch the transient logical standby to be the new primary

Dec 07 02:10:21 2016 [4-1] waiting for stdby to catch up (this could take a while)

Dec 07 02:10:21 2016 [4-1] starting logical standby on database stdby

Dec 07 02:10:22 2016 [4-1] waiting for apply lag to fall under 30 seconds

Dec 07 02:40:26 2016 [4-1] ERROR: timed out after 30 minutes of inactivity

[oracle@ohs1 ~]$

```
[oracle@ohs1 ~]$ ./physru.sh sys pri std prod stdby 12.1.0.2.0
Please enter the sysdba password:

### Initialize script to either start over or resume execution
Dec 07 02:10:18 2016 [0-1] Identifying rdbms software version
Dec 07 02:10:18 2016 [0-1] database prod is at version 11.2.0.4.0
Dec 07 02:10:19 2016 [0-1] database stdby is at version 12.1.0.2.0
Dec 07 02:10:19 2016 [0-1] verifying flashback database is enabled at prod and stdby
Dec 07 02:10:19 2016 [0-1] verifying available flashback restore points
Dec 07 02:10:20 2016 [0-1] verifying DG Broker is disabled
Dec 07 02:10:20 2016 [0-1] looking up prior execution history
Dec 07 02:10:20 2016 [0-1] last completed stage [2-4] using script version 0001
Dec 07 02:10:20 2016 [0-1] resuming execution of script

### Stage 3: Validate upgraded transient logical standby
Dec 07 02:10:20 2016 [3-1] database stdby is no longer in OPEN MIGRATE mode
Dec 07 02:10:20 2016 [3-1] database stdby is at version 12.1.0.2.0

### Stage 4: Switch the transient logical standby to be the new primary
Dec 07 02:10:21 2016 [4-1] waiting for stdby to catch up (this could take a while)
Dec 07 02:10:21 2016 [4-1] starting logical standby on database stdby
Dec 07 02:10:22 2016 [4-1] waiting for apply lag to fall under 30 seconds
Dec 07 02:40:26 2016 [4-1] ERROR: timed out after 30 minutes of inactivity
```

Note: It's password file issue, you need to copy the password file from 11g to 12c

```
------------------------------------------------------------
2016-12-07 05:51:11.707000 -05:00
Error 1017 received logging on to the standby
------------------------------------------------------------
Check that the primary and standby are using a password file
and remote_login_passwordfile is set to SHARED or EXCLUSIVE,
and that the SYS password is same in the password files.
      returning error ORA-16191
------------------------------------------------------------
2016-12-07 05:52:12.586000 -05:00
ARC0: Standby redo logfile selected for thread 1 sequence 82 for destination LOG_ARCHIVE_DEST_2
Thread 1 advanced to log sequence 89 (LGWR switch)
  Current log# 2 seq# 89 mem# 0: +DATA_PROD/prod/redo02.log
Archived Log entry 280 added for thread 1 sequence 88 ID 0x1459866f dest 1:
ARC0: Standby redo logfile selected for thread 1 sequence 88 for destination LOG_ARCHIVE_DEST_2
Expanded controlfile section 11 from 280 to 560 records
Requested to grow by 280 records; added 10 blocks of records
2016-12-07 05:52:13.749000 -05:00
LNS: Standby redo logfile selected for thread 1 sequence 89 for destination LOG_ARCHIVE_DEST_2
adrci>
```

[oracle@ohs1 ~]$ ./physru.sh sys pri std prod stdby 12.1.0.2.0

Please enter the sysdba password:

Initialize script to either start over or resume execution

Dec 07 17:18:10 2016 [0-1] Identifying rdbms software version

Dec 07 17:18:10 2016 [0-1] database prod is at version 11.2.0.4.0

Dec 07 17:18:10 2016 [0-1] database stdby is at version 12.1.0.2.0

Dec 07 17:18:11 2016 [0-1] verifying flashback database is enabled at prod and stdby

Dec 07 17:18:11 2016 [0-1] verifying available flashback restore points

Dec 07 17:18:11 2016 [0-1] verifying DG Broker is disabled

Dec 07 17:18:12 2016 [0-1] looking up prior execution history

Dec 07 17:18:12 2016 [0-1] last completed stage [3-1] using script version 0001

WARN: The last execution of this script either exited in error or at the
user's request. At this point, there are three available options:

1) resume the rolling upgrade where the last execution left off
2) restart the script from scratch
3) exit the script

Option (2) assumes the user has restored the primary and physical
standby back to the original configuration as required by this script.

Enter your selection (1/2/3): 1

Dec 07 17:18:19 2016 [0-1] resuming execution of script

Stage 4: Switch the transient logical standby to be the new primary
Dec 07 17:18:20 2016 [4-1] waiting for stdby to catch up (this could take a while)
Dec 07 17:18:20 2016 [4-1] starting logical standby on database stdby
Dec 07 17:18:26 2016 [4-1] waiting for apply lag to fall under 30 seconds
Dec 07 17:18:31 2016 [4-1] apply lag measured at 4 seconds
Dec 07 17:18:32 2016 [4-2] switching prod to become a logical standby
Dec 07 17:19:07 2016 [4-2] prod is now a logical standby
Dec 07 17:19:07 2016 [4-3] waiting for standby stdby to process end-of-redo from primary
Dec 07 17:19:09 2016 [4-4] switching stdby to become the new primary
Dec 07 17:19:17 2016 [4-4] stdby is now the new primary

Stage 5: Flashback former primary to pre-upgrade restore point and convert to physical
Dec 07 17:19:17 2016 [5-1] verifying instance prod1 is the only active instance

WARN: prod is a RAC database. Before this script can continue, you
must manually reduce the RAC to a single instance. This can be
accomplished with the following step:

1) Shutdown all instances other than instance prod1.
eg: srvctl stop instance -d prod -i prod2 -o abort

Once these steps have been performed, enter 'y' to continue the script.
If desired, you may enter 'n' to exit the script to perform the required
steps, and recall the script to resume from this point.

Shutdown instance prod2 and continue
[oracle@ohs1 ~]$ srvctl stop instance -d prod -i prod2 -o abort

Continue the second execution
Are you ready to continue? (y/n): y
Dec 07 17:21:41 2016 [5-1] continuing
Dec 07 17:21:41 2016 [5-1] verifying instance prod1 is the only active instance
Dec 07 17:21:41 2016 [5-1] shutting down database prod

Dec 07 17:22:57 2016 [5-1] mounting database prod
Dec 07 17:23:13 2016 [5-2] flashing back database prod to restore point PRU_0000_0001
Dec 07 17:23:15 2016 [5-3] converting prod into physical standby
Dec 07 17:23:15 2016 [5-4] shutting down database prod

NOTE: Database prod has been shutdown, and is now ready to be started
using the newer version Oracle binary. This script requires the
database to be mounted (on all active instances, if RAC) before calling
this script to resume the rolling upgrade.

NOTE: Database prod is no longer limited to single instance operation since
the database has been successfully converted into a physical standby.
For increased availability, Oracle recommends starting all instances in
the RAC on the newer binary by performing the following step:

1) Startup and mount all instances for database prod
eg: srvctl start database -d prod -o mount

[oracle@ohs1 ~]$

```
[oracle@ohs1 ~]$ ./physru.sh sys pri std prod stdby 12.1.0.2.0
Please enter the sysdba password:

### Initialize script to either start over or resume execution
Dec 07 17:18:10 2016 [0-1] Identifying rdbms software version
Dec 07 17:18:10 2016 [0-1] database prod is at version 11.2.0.4.0
Dec 07 17:18:10 2016 [0-1] database stdby is at version 12.1.0.2.0
Dec 07 17:18:11 2016 [0-1] verifying flashback database is enabled at prod and stdby
Dec 07 17:18:11 2016 [0-1] verifying available flashback restore points
Dec 07 17:18:11 2016 [0-1] verifying DG Broker is disabled
Dec 07 17:18:12 2016 [0-1] looking up prior execution history
Dec 07 17:18:12 2016 [0-1] last completed stage [3-1] using script version 0001

WARN: The last execution of this script either exited in error or at the
      user's request.  At this point, there are three available options:

        1) resume the rolling upgrade where the last execution left off
        2) restart the script from scratch
        3) exit the script

      Option (2) assumes the user has restored the primary and physical
      standby back to the original configuration as required by this script.

Enter your selection (1/2/3): 1

Dec 07 17:18:19 2016 [0-1] resuming execution of script

### Stage 4: Switch the transient logical standby to be the new primary
Dec 07 17:18:20 2016 [4-1] waiting for stdby to catch up (this could take a while)
Dec 07 17:18:20 2016 [4-1] starting logical standby on database stdby
Dec 07 17:18:26 2016 [4-1] waiting for apply lag to fall under 30 seconds
Dec 07 17:18:31 2016 [4-1] apply lag measured at 4 seconds
Dec 07 17:18:32 2016 [4-2] switching prod to become a logical standby
Dec 07 17:19:07 2016 [4-2] prod is now a logical standby
Dec 07 17:19:07 2016 [4-3] waiting for standby stdby to process end-of-redo from primary
Dec 07 17:19:09 2016 [4-4] switching stdby to become the new primary
Dec 07 17:19:17 2016 [4-4] stdby is now the new primary

### Stage 5: Flashback former primary to pre-upgrade restore point and convert to physical
Dec 07 17:19:17 2016 [5-1] verifying instance prod1 is the only active instance

WARN: prod is a RAC database.  Before this script can continue, you
      must manually reduce the RAC to a single instance.  This can be
      accomplished with the following step:

        1) Shutdown all instances other than instance prod1.
           eg: srvctl stop instance -d prod -i prod2 -o abort

      Once these steps have been performed, enter 'y' to continue the script.
      If desired, you may enter 'n' to exit the script to perform the required
      steps, and recall the script to resume from this point.
```

```
Are you ready to continue? (y/n): y

Dec 07 17:21:41 2016 [5-1] continuing
Dec 07 17:21:41 2016 [5-1] verifying instance prod1 is the only active instance
Dec 07 17:21:41 2016 [5-1] shutting down database prod
Dec 07 17:22:57 2016 [5-1] mounting database prod
Dec 07 17:23:13 2016 [5-2] flashing back database prod to restore point PRU_0000_0001
Dec 07 17:23:15 2016 [5-3] converting prod into physical standby
Dec 07 17:23:15 2016 [5-4] shutting down database prod

NOTE: Database prod has been shutdown, and is now ready to be started
      using the newer version Oracle binary.  This script requires the
      database to be mounted (on all active instances, if RAC) before calling
      this script to resume the rolling upgrade.

NOTE: Database prod is no longer limited to single instance operation since
      the database has been successfully converted into a physical standby.
      For increased availability, Oracle recommends starting all instances in
      the RAC on the newer binary by performing the following step:

        1) Startup and mount all instances for database prod
        eg: srvctl start database -d prod -o mount
```

Check databae role

Now, the primary database is on stdby1 and stdby2

[oracle@ohs1 ~]$ sqlplus sys/oracle@stdby as sysdba

SQL*Plus: Release 11.2.0.4.0 Production on Wed Dec 7 17:25:20 2016

Copyright (c) 1982, 2013, Oracle. All rights reserved.

Connected to:

Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production

With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP, Advanced Analytics and Real Application Testing options

SQL> select open_mode,database_role from gv$database;

OPEN_MODE	DATABASE_ROLE
READ WRITE	PRIMARY
READ WRITE	PRIMARY

SQL> exit

Disconnected from Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production

With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP, Advanced Analytics and Real Application Testing options

[oracle@ohs1 ~]$ ps -ef|grep pmon

oracle 4584 26582 0 17:25 pts/0 00:00:00 grep pmon

orgrid 4968 1 0 03:25 ? 00:00:03 asm_pmon_+ASM1

orgrid 22791 1 0 17:03 ? 00:00:00 mdb_pmon_-MGMTDB

[oracle@ohs1 ~]$ ssh ohs2 ps -ef|grep pmon

orgrid 17289 1 0 17:04 ? 00:00:00 asm_pmon_+ASM2

[oracle@ohs1 ~]$

```
Dec 07 17:21:41 2016 [5-1] continuing
Dec 07 17:21:41 2016 [5-1] verifying instance prod1 is the only active instance
Dec 07 17:21:41 2016 [5-1] shutting down database prod
Dec 07 17:22:57 2016 [5-1] mounting database prod
Dec 07 17:23:13 2016 [5-2] flashing back database prod to restore point PRU_0000_0001
Dec 07 17:23:15 2016 [5-3] converting prod into physical standby
Dec 07 17:23:15 2016 [5-4] shutting down database prod

NOTE: Database prod has been shutdown, and is now ready to be started
      using the newer version Oracle binary.  This script requires the
      database to be mounted (on all active instances, if RAC) before calling
      this script to resume the rolling upgrade.

NOTE: Database prod is no longer limited to single instance operation since
      the database has been successfully converted into a physical standby.
      For increased availability, Oracle recommends starting all instances in
      the RAC on the newer binary by performing the following step:

        1) Startup and mount all instances for database prod
        eg: srvctl start database -d prod -o mount

[oracle@ohs1 ~]$ sqlplus sys/oracle@stdby as sysdba

SQL*Plus: Release 11.2.0.4.0 Production on Wed Dec 7 17:25:20 2016

Copyright (c) 1982, 2013, Oracle.  All rights reserved.


Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Advanced Analytics and Real Application Testing options

SQL> select open_mode,database_role from gv$database;

OPEN_MODE            DATABASE_ROLE
-------------------- ----------------
READ WRITE           PRIMARY
READ WRITE           PRIMARY

SQL> exit
Disconnected from Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Advanced Analytics and Real Application Testing options
[oracle@ohs1 ~]$ ps -ef|grep pmon
oracle    4584 26582  0 17:25 pts/0    00:00:00 grep pmon
orgrid    4968     1  0 03:25 ?        00:00:03 asm_pmon_+ASM1
orgrid   22791     1  0 17:03 ?        00:00:00 mdb_pmon_-MGMTDB
[oracle@ohs1 ~]$ ssh ohs2 ps -ef|grep pmon
orgrid   17289     1  0 17:04 ?        00:00:00 asm_pmon_+ASM2
[oracle@ohs1 ~]$
```

Third execution

Copy the 11g password file and tns file to 12c on ohs1, ohs2

[oracle@ohs1 dbs]$ cp /pgold/ordb/oracle/product/112/dbs/* /pgold/ordb/oracle/product/121/dbs/

[oracle@ohs1 dbs]$ cp -rp /pgold/ordb/oracle/product/112/network/admin/* /pgold/ordb/oracle/product/121/network/admin/

[oracle@ohs1 dbs]$

[oracle@ohs2 ~]$ cp /pgold/ordb/oracle/product/112/dbs/* /pgold/ordb/oracle/product/121/dbs/

[oracle@ohs2 ~]$ cp -rp /pgold/ordb/oracle/product/112/network/admin/* /pgold/ordb/oracle/product/121/network/admin/

[oracle@ohs2 ~]$ ls -l /pgold/ordb/oracle/product/121/dbs/

total 20

-rw-r-----. 1 oracle oinstall 1544 Dec 7 17:38 hc_prod2.dat

-rw-r--r--. 1 oracle oinstall 2851 Dec 7 17:38 init.ora

-rw-r--r--. 1 oracle oinstall 63 Dec 7 17:38 initprod2.ora

-rw-r--r--. 1 oracle oinstall 63 Dec 7 17:38 initprod2.ora.bak.ohs2

-rw-r-----. 1 oracle oinstall 2048 Dec 7 17:38 orapwprod2

[oracle@ohs2 ~]$ ls -l /pgold/ordb/oracle/product/121/network/admin/

total 12

drwxr-xr-x. 2 oracle oinstall 4096 Dec 3 02:12 samples

-rw-r--r--. 1 oracle oinstall 381 Dec 3 02:12 shrept.lst

```
-rw-r-----. 1 oracle oinstall 1041 Dec  7 02:14 tnsnames.ora
[oracle@ohs2 ~]$
```

Modify listener.ora

```
SID_LIST_LISTENER =
(SID_LIST =
 (SID_DESC =
  (SID_NAME = prod1)
  (ORACLE_HOME = /pgold/ordb/oracle/product/121)
 )
)
[orgrid@ohs1 admin]$ srvctl stop listener
[orgrid@ohs1 admin]$ srvctl start listener
[orgrid@ohs1 admin]$ lsnrctl status

LSNRCTL for Linux: Version 12.1.0.2.0 - Production on 07-DEC-2016 17:40:47

Copyright (c) 1991, 2014, Oracle.  All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC)(KEY=LISTENER)))
STATUS of the LISTENER
------------------------
Alias                     LISTENER
Version                   TNSLSNR for Linux: Version 12.1.0.2.0 - Production
Start Date                07-DEC-2016 17:40:37
Uptime                    0 days 0 hr. 0 min. 10 sec
Trace Level               off
Security                  ON: Local OS Authentication
SNMP                      OFF
Listener Parameter File   /pgold/orgrid/oracle/product/121/network/admin/listener.ora
Listener Log File         /pgold/orgrid/grid_base/diag/tnslsnr/ohs1/listener/alert/log.xml
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=LISTENER)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=10.0.2.21)(PORT=1521)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=10.0.2.31)(PORT=1521)))
Services Summary...
Service "-MGMTDBXDB" has 1 instance(s).
  Instance "-MGMTDB", status READY, has 1 handler(s) for this service...
Service "_mgmtdb" has 1 instance(s).
  Instance "-MGMTDB", status READY, has 1 handler(s) for this service...
Service "prod1" has 1 instance(s).
  Instance "prod1", status UNKNOWN, has 1 handler(s) for this service...
Service "prod_cluster" has 1 instance(s).
  Instance "-MGMTDB", status READY, has 1 handler(s) for this service...
The command completed successfully
```

```
[orgrid@ohs1 admin]$
```

Remove 11g database

```
[oracle@ohs1 ~]$ which srvctl
/pgold/ordb/oracle/product/112/bin/srvctl
[oracle@ohs1 ~]$
[oracle@ohs1 ~]$ srvctl config database -d prod
Database unique name: prod
Database name: prod
Oracle home: /pgold/ordb/oracle/product/112
Oracle user: oracle
Spfile: +DATA_PROD/prod/spfileprod.ora
Domain:
Start options: open
Stop options: immediate
Database role: PRIMARY
Management policy: AUTOMATIC
Server pools: prod
Database instances: prod1,prod2
Disk Groups: DATA_PROD,FRA_PROD
Mount point paths:
Services:
Type: RAC
Database is administrator managed
[oracle@ohs1 ~]$ srvctl remove database -d prod
Remove the database prod? (y/[n]) y
[oracle@ohs1 ~]$
```

Edit bash profile

```
export ORACLE_SID=prod1
export ORACLE_HOME=/pgold/ordb/oracle/product/121
export PATH=$ORACLE_HOME/bin:$PATH
```

Note: do this on prod1 and prod2

```
[oracle@ohs1 ~]$ source .bash_profile
[oracle@ohs1 ~]$ which srvctl
/pgold/ordb/oracle/product/121/bin/srvctl
```

Add 12c database

```
[oracle@ohs1 ~]$ srvctl add database -d prod -o /pgold/ordb/oracle/product/121 -p
+DATA_PROD/prod/spfileprod.ora -a DATA_PROD,FRA_PROD
[oracle@ohs1 ~]$ srvctl config database -d prod
Database unique name: prod
Database name:
Oracle home: /pgold/ordb/oracle/product/121
```

```
Oracle user: oracle
Spfile: +DATA_PROD/prod/spfileprod.ora
Password file:
Domain:
Start options: open
Stop options: immediate
Database role: PRIMARY
Management policy: AUTOMATIC
Server pools:
Disk Groups: DATA_PROD,FRA_PROD
Mount point paths:
Services:
Type: RAC
Start concurrency:
Stop concurrency:
OSDBA group: dba
OSOPER group: oper
Database instances:
Configured nodes:
Database is administrator managed
[oracle@ohs1 ~]$ srvctl add instance -d prod -i prod1 -n ohs1
[oracle@ohs1 ~]$ srvctl add instance -d prod -i prod2 -n ohs2

[root@ohs2 ~]# su - oracle
[oracle@ohs2 ~]$ srvctl config database -d prod
Database unique name: prod
Database name:
Oracle home: /pgold/ordb/oracle/product/121
Oracle user: oracle
Spfile: +DATA_PROD/prod/spfileprod.ora
Password file:
Domain:
Start options: open
Stop options: immediate
Database role: PRIMARY
Management policy: AUTOMATIC
Server pools:
Disk Groups: DATA_PROD,FRA_PROD
Mount point paths:
Services:
Type: RAC
Start concurrency:
Stop concurrency:
OSDBA group: dba
```

OSOPER group: oper
Database instances: prod1,prod2
Configured nodes: ohs1,ohs2
Database is administrator managed
[oracle@ohs2 ~]$

Mount database with 12c ORACLE_HOME

[oracle@ohs1 ~]$ srvctl start database -d prod -o mount
SQL> select name,database_role,open_mode from gv$database;

NAME DATABASE_ROLE OPEN_MODE
--------- ---------- --------------------
PROD PHYSICAL STANDBY MOUNTED
PROD PHYSICAL STANDBY MOUNTED

SQL> select banner from v$version;

BANNER

Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
PL/SQL Release 12.1.0.2.0 - Production
CORE 12.1.0.2.0 Production
TNS for Linux: Version 12.1.0.2.0 - Production
NLSRTL Version 12.1.0.2.0 - Production

SQL>

```
[oracle@ohs1 ~]$ which sqlplus
/pgold/ordb/oracle/product/121/bin/sqlplus
[oracle@ohs1 ~]$ srvctl start database -d prod -o mount
[oracle@ohs1 ~]$ ps -ef|grep pmon
orgrid    4968     1  0 03:25 ?        00:00:03 asm_pmon_+ASM1
oracle   19459     1  0 18:05 ?        00:00:00 ora_pmon_prod1
oracle   19685 26582  0 18:05 pts/0    00:00:00 grep pmon
orgrid   22791     1  0 17:03 ?        00:00:00 mdb_pmon_-MGMTDB
[oracle@ohs1 ~]$ ssh ohs2 ps -ef|grep pmon
oracle   10510     1  0 18:05 ?        00:00:00 ora_pmon_prod2
orgrid   17289     1  0 17:04 ?        00:00:00 asm_pmon_+ASM2
[oracle@ohs1 ~]$ sqlplus / as sysdba
```

```
SQL> select name,database_role,open_mode from gv$database;

NAME      DATABASE_ROLE    OPEN_MODE
--------- ---------------- --------------------
PROD      PHYSICAL STANDBY MOUNTED
PROD      PHYSICAL STANDBY MOUNTED

SQL> select banner from v$version;

BANNER
--------------------------------------------------------------------------------
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
PL/SQL Release 12.1.0.2.0 - Production
CORE    12.1.0.2.0      Production
TNS for Linux: Version 12.1.0.2.0 - Production
NLSRTL Version 12.1.0.2.0 - Production

SQL>
```

Run phyrsu.sh

```
[oracle@ohs1 ~]$ ./physru.sh sys pri std prod stdby 12.1.0.2.0
Please enter the sysdba password:

### Initialize script to either start over or resume execution
Dec 07 18:09:21 2016 [0-1] Identifying rdbms software version
Dec 07 18:09:21 2016 [0-1] database prod is at version 12.1.0.2.0
Dec 07 18:09:21 2016 [0-1] database stdby is at version 12.1.0.2.0
Dec 07 18:09:23 2016 [0-1] verifying flashback database is enabled at prod and stdby
Dec 07 18:09:23 2016 [0-1] verifying available flashback restore points
Dec 07 18:09:23 2016 [0-1] verifying DG Broker is disabled
Dec 07 18:09:24 2016 [0-1] looking up prior execution history
Dec 07 18:09:24 2016 [0-1] last completed stage [5-4] using script version 0001
Dec 07 18:09:24 2016 [0-1] resuming execution of script

### Stage 6: Run media recovery through upgrade redo
Dec 07 18:09:26 2016 [6-1] upgrade redo region identified as scn range [1328223, 2589965]
Dec 07 18:09:26 2016 [6-1] starting media recovery on prod
Dec 07 18:09:32 2016 [6-1] confirming media recovery is running
Dec 07 18:09:33 2016 [6-1] waiting for media recovery to initialize v$recovery_progress
Dec 07 18:09:55 2016 [6-1] monitoring media recovery's progress
Dec 07 18:09:57 2016 [6-3] recovery of upgrade redo at 05% - estimated complete at Dec 07 18:16:18
Dec 07 18:10:14 2016 [6-3] recovery of upgrade redo at 06% - estimated complete at Dec 07 18:21:08
Dec 07 18:10:31 2016 [6-3] recovery of upgrade redo at 12% - estimated complete at Dec 07 18:16:58
Dec 07 18:10:48 2016 [6-3] recovery of upgrade redo at 20% - estimated complete at Dec 07 18:15:30
Dec 07 18:11:04 2016 [6-3] recovery of upgrade redo at 24% - estimated complete at Dec 07 18:15:32
Dec 07 18:11:21 2016 [6-3] recovery of upgrade redo at 28% - estimated complete at Dec 07 18:15:39
Dec 07 18:11:38 2016 [6-3] recovery of upgrade redo at 33% - estimated complete at Dec 07 18:15:44
Dec 07 18:11:55 2016 [6-3] recovery of upgrade redo at 35% - estimated complete at Dec 07 18:16:05
Dec 07 18:12:11 2016 [6-3] recovery of upgrade redo at 38% - estimated complete at Dec 07 18:16:26
Dec 07 18:12:28 2016 [6-3] recovery of upgrade redo at 43% - estimated complete at Dec 07 18:16:14
Dec 07 18:12:45 2016 [6-3] recovery of upgrade redo at 46% - estimated complete at Dec 07 18:16:24
Dec 07 18:13:02 2016 [6-3] recovery of upgrade redo at 51% - estimated complete at Dec 07 18:16:16
Dec 07 18:13:18 2016 [6-3] recovery of upgrade redo at 57% - estimated complete at Dec 07 18:16:05
Dec 07 18:13:35 2016 [6-3] recovery of upgrade redo at 60% - estimated complete at Dec 07 18:16:14
Dec 07 18:13:52 2016 [6-3] recovery of upgrade redo at 64% - estimated complete at Dec 07 18:16:14
Dec 07 18:14:08 2016 [6-3] recovery of upgrade redo at 70% - estimated complete at Dec 07 18:16:00
Dec 07 18:14:25 2016 [6-3] recovery of upgrade redo at 73% - estimated complete at Dec 07 18:16:07
Dec 07 18:14:42 2016 [6-3] recovery of upgrade redo at 80% - estimated complete at Dec 07 18:15:56
Dec 07 18:14:59 2016 [6-3] recovery of upgrade redo at 83% - estimated complete at Dec 07 18:16:03
Dec 07 18:15:15 2016 [6-3] recovery of upgrade redo at 87% - estimated complete at Dec 07 18:16:05
Dec 07 18:15:32 2016 [6-3] recovery of upgrade redo at 89% - estimated complete at Dec 07 18:16:12
Dec 07 18:15:49 2016 [6-3] recovery of upgrade redo at 91% - estimated complete at Dec 07 18:16:22
```

```
Dec 07 18:16:05 2016 [6-4] media recovery has finished recovering through upgrade

### Stage 7: Switch back to the original roles prior to the rolling upgrade

NOTE: At this point, you have the option to perform a switchover
      which will restore prod back to a primary database and
      stdby back to a physical standby database.  If you answer 'n'
      to the question below, prod will remain a physical standby
      database and stdby will remain a primary database.

Do you want to perform a switchover? (y/n): y

Dec 07 18:31:36 2016 [7-1] continuing
Dec 07 18:31:36 2016 [7-2] verifying instance stdby1 is the only active instance

WARN: stdby is a RAC database.  Before this script can continue, you
      must manually reduce the RAC to a single instance.  This can be
      accomplished with the following step:

        1) Shutdown all instances other than instance stdby1.
           eg: srvctl stop instance -d stdby -i stdby2

      Once these steps have been performed, enter 'y' to continue the script.
      If desired, you may enter 'n' to exit the script to perform the required
      steps, and recall the script to resume from this point.

Are you ready to continue? (y/n): y

Dec 07 18:32:43 2016 [7-2] continuing
Dec 07 18:32:43 2016 [7-2] verifying instance stdby1 is the only active instance
Dec 07 18:32:45 2016 [7-2] waiting for apply lag to fall under 30 seconds
Dec 07 18:33:15 2016 [7-2] apply lag measured at 30 seconds
Dec 07 18:33:16 2016 [7-3] switching stdby to become a physical standby
Dec 07 18:33:20 2016 [7-3] stdby is now a physical standby
Dec 07 18:33:20 2016 [7-3] shutting down database stdby
Dec 07 18:33:22 2016 [7-3] mounting database stdby
Dec 07 18:33:35 2016 [7-4] waiting for standby prod to process end-of-redo from primary
Dec 07 18:33:36 2016 [7-5] switching prod to become the new primary
Dec 07 18:33:37 2016 [7-5] prod is now the new primary
Dec 07 18:33:37 2016 [7-5] opening database prod
Dec 07 18:33:49 2016 [7-6] starting media recovery on stdby
Dec 07 18:33:55 2016 [7-6] confirming media recovery is running

NOTE: Database prod has completed the switchover to the primary role, but
```

instance prod1 is the only open instance. For increased availability, Oracle recommends opening the remaining active instances which are currently in mounted mode by performing the following steps:

1) Shutdown all instances other than instance prod1.
eg: srvctl stop instance -d prod -i prod2

2) Startup and open all inactive instances for database prod.
eg: srvctl start database -d prod

NOTE: Database stdby is no longer limited to single instance operation since it has completed the switchover to the physical standby role. For increased availability, Oracle recommends starting the inactive instances in the RAC by performing the following step:

1) Startup and mount inactive instances for database stdby
eg: srvctl start database -d stdby -o mount

Stage 8: Statistics

script start time:	06-Dec-16 16:52:06
script finish time:	07-Dec-16 18:33:59
total script execution time:	+01 01:41:53
wait time for user upgrade:	+00 09:13:53
active script execution time:	+00 16:28:00
transient logical creation start time:	06-Dec-16 16:54:19
transient logical creation finish time:	06-Dec-16 16:55:04
primary to logical switchover start time:	07-Dec-16 17:18:31
logical to primary switchover finish time:	07-Dec-16 17:19:17
primary services offline for:	+00 00:00:46
total time former primary in physical role:	+00 01:08:12
time to reach upgrade redo:	
time to recover upgrade redo:	+00 00:06:09
primary to physical switchover start time:	07-Dec-16 18:31:36
physical to primary switchover finish time:	07-Dec-16 18:33:48
primary services offline for:	+00 00:02:12

SUCCESS: The physical rolling upgrade is complete

[oracle@ohs1 ~]$

```
[oracle@ohs1 ~]$ echo $ORACLE_HOME
/pgold/ordb/oracle/product/121
[oracle@ohs1 ~]$ ./physru.sh sys pri std prod stdby 12.1.0.2.0
Please enter the sysdba password:

### Initialize script to either start over or resume execution
Dec 07 18:09:21 2016 [0-1] Identifying rdbms software version
Dec 07 18:09:21 2016 [0-1] database prod is at version 12.1.0.2.0
Dec 07 18:09:21 2016 [0-1] database stdby is at version 12.1.0.2.0
Dec 07 18:09:23 2016 [0-1] verifying flashback database is enabled at prod and stdby
Dec 07 18:09:23 2016 [0-1] verifying available flashback restore points
Dec 07 18:09:23 2016 [0-1] verifying DG Broker is disabled
Dec 07 18:09:24 2016 [0-1] looking up prior execution history
Dec 07 18:09:24 2016 [0-1] last completed stage [5-4] using script version 0001
Dec 07 18:09:24 2016 [0-1] resuming execution of script

### Stage 6: Run media recovery through upgrade redo
Dec 07 18:09:26 2016 [6-1] upgrade redo region identified as scn range [1328223, 2589965]
Dec 07 18:09:26 2016 [6-1] starting media recovery on prod
Dec 07 18:09:32 2016 [6-1] confirming media recovery is running
Dec 07 18:09:33 2016 [6-1] waiting for media recovery to initialize v$recovery_progress
Dec 07 18:09:55 2016 [6-1] monitoring media recovery's progress
Dec 07 18:09:57 2016 [6-3] recovery of upgrade redo at 05% - estimated complete at Dec 07 18:16:18
Dec 07 18:10:14 2016 [6-3] recovery of upgrade redo at 06% - estimated complete at Dec 07 18:21:08
Dec 07 18:10:31 2016 [6-3] recovery of upgrade redo at 12% - estimated complete at Dec 07 18:16:58
Dec 07 18:10:48 2016 [6-3] recovery of upgrade redo at 20% - estimated complete at Dec 07 18:15:30
Dec 07 18:11:04 2016 [6-3] recovery of upgrade redo at 24% - estimated complete at Dec 07 18:15:32
Dec 07 18:11:21 2016 [6-3] recovery of upgrade redo at 28% - estimated complete at Dec 07 18:15:39
Dec 07 18:11:38 2016 [6-3] recovery of upgrade redo at 33% - estimated complete at Dec 07 18:15:44
Dec 07 18:11:55 2016 [6-3] recovery of upgrade redo at 35% - estimated complete at Dec 07 18:16:05
Dec 07 18:12:11 2016 [6-3] recovery of upgrade redo at 38% - estimated complete at Dec 07 18:16:26
Dec 07 18:12:28 2016 [6-3] recovery of upgrade redo at 43% - estimated complete at Dec 07 18:16:14
Dec 07 18:12:45 2016 [6-3] recovery of upgrade redo at 46% - estimated complete at Dec 07 18:16:24
Dec 07 18:13:02 2016 [6-3] recovery of upgrade redo at 51% - estimated complete at Dec 07 18:16:16
Dec 07 18:13:18 2016 [6-3] recovery of upgrade redo at 57% - estimated complete at Dec 07 18:16:05
Dec 07 18:13:35 2016 [6-3] recovery of upgrade redo at 60% - estimated complete at Dec 07 18:16:14
Dec 07 18:13:52 2016 [6-3] recovery of upgrade redo at 64% - estimated complete at Dec 07 18:16:14
Dec 07 18:14:08 2016 [6-3] recovery of upgrade redo at 70% - estimated complete at Dec 07 18:16:00
Dec 07 18:14:25 2016 [6-3] recovery of upgrade redo at 73% - estimated complete at Dec 07 18:16:07
Dec 07 18:14:42 2016 [6-3] recovery of upgrade redo at 80% - estimated complete at Dec 07 18:15:56
Dec 07 18:14:59 2016 [6-3] recovery of upgrade redo at 83% - estimated complete at Dec 07 18:16:03
Dec 07 18:15:15 2016 [6-3] recovery of upgrade redo at 87% - estimated complete at Dec 07 18:16:05
Dec 07 18:15:32 2016 [6-3] recovery of upgrade redo at 89% - estimated complete at Dec 07 18:16:12
Dec 07 18:15:49 2016 [6-3] recovery of upgrade redo at 91% - estimated complete at Dec 07 18:16:22
Dec 07 18:16:05 2016 [6-4] media recovery has finished recovering through upgrade

### Stage 7: Switch back to the original roles prior to the rolling upgrade

NOTE: At this point, you have the option to perform a switchover
      which will restore prod back to a primary database and
      stdby back to a physical standby database.  If you answer 'n'
      to the question below, prod will remain a physical standby
      database and stdby will remain a primary database.

Do you want to perform a switchover? (y/n):
```

```
Do you want to perform a switchover? (y/n): y

Dec 07 18:31:36 2016 [7-1] continuing
Dec 07 18:31:36 2016 [7-2] verifying instance stdby1 is the only active instance

WARN: stdby is a RAC database.  Before this script can continue, you
      must manually reduce the RAC to a single instance.  This can be
      accomplished with the following step:

        1) Shutdown all instances other than instance stdby1.
           eg: srvctl stop instance -d stdby -i stdby2

      Once these steps have been performed, enter 'y' to continue the script.
      If desired, you may enter 'n' to exit the script to perform the required
      steps, and recall the script to resume from this point.

Are you ready to continue? (y/n): y

Dec 07 18:32:43 2016 [7-2] continuing
Dec 07 18:32:43 2016 [7-2] verifying instance stdby1 is the only active instance
Dec 07 18:32:45 2016 [7-2] waiting for apply lag to fall under 30 seconds
Dec 07 18:33:15 2016 [7-2] apply lag measured at 30 seconds
Dec 07 18:33:16 2016 [7-3] switching stdby to become a physical standby
Dec 07 18:33:20 2016 [7-3] stdby is now a physical standby
Dec 07 18:33:20 2016 [7-3] shutting down database stdby
Dec 07 18:33:22 2016 [7-3] mounting database stdby
Dec 07 18:33:35 2016 [7-4] waiting for standby prod to process end-of-redo from primary
Dec 07 18:33:36 2016 [7-5] switching prod to become the new primary
Dec 07 18:33:37 2016 [7-5] prod is now the new primary
Dec 07 18:33:37 2016 [7-5] opening database prod
Dec 07 18:33:49 2016 [7-6] starting media recovery on stdby
Dec 07 18:33:55 2016 [7-6] confirming media recovery is running

NOTE: Database prod has completed the switchover to the primary role, but
      instance prod1 is the only open instance.  For increased availability,
      Oracle recommends opening the remaining active instances which are
      currently in mounted mode by performing the following steps:

        1) Shutdown all instances other than instance prod1.
        eg: srvctl stop instance -d prod -i prod2

        2) Startup and open all inactive instances for database prod.
        eg: srvctl start database -d prod

NOTE: Database stdby is no longer limited to single instance operation since
      it has completed the switchover to the physical standby role.  For
      increased  availability, Oracle recommends starting the inactive
      instances in the RAC by performing the following step:

        1) Startup and mount inactive instances for database stdby
        eg: srvctl start database -d stdby -o mount


### Stage 8: Statistics
script start time:                                  06-Dec-16 16:52:06
script finish time:                                 07-Dec-16 18:33:59
total script execution time:                              +01 01:41:53
wait time for user upgrade:                               +00 09:13:53
active script execution time:                             +00 16:28:00
transient logical creation start time:              06-Dec-16 16:54:19
transient logical creation finish time:             06-Dec-16 16:55:04
primary to logical switchover start time:           07-Dec-16 17:18:31
logical to primary switchover finish time:          07-Dec-16 17:19:17
primary services offline for:                             +00 00:00:46
total time former primary in physical role:               +00 01:08:12
time to reach upgrade redo:
time to recover upgrade redo:                             +00 00:06:09
primary to physical switchover start time:          07-Dec-16 18:31:36
physical to primary switchover finish time:         07-Dec-16 18:33:48
primary services offline for:                             +00 00:02:12

SUCCESS: The physical rolling upgrade is complete

[oracle@ohs1 ~]$
```

Note: now the prod is completed and is the primary database

Post steps

Recover the standby database using current logfile

SQL> select open_mode,database_role from gv$database;

```
OPEN_MODE            DATABASE_ROLE
-------------------- ----------------
MOUNTED              PHYSICAL STANDBY
MOUNTED              PHYSICAL STANDBY

SQL> alter system set "_transient_logical_clear_hold_mrp_bit"=true;

System altered.

SQL> alter database recover managed standby database using current logfile disconnect;

Database altered.

SQL>

SQL> alter database recover managed standby database cancel;

Database altered.

SQL> select open_mode,database_role from gv$database;

OPEN_MODE            DATABASE_ROLE
-------------------- ----------------
MOUNTED              PHYSICAL STANDBY
MOUNTED              PHYSICAL STANDBY

SQL> exit
Disconnected from Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit
Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Advanced Analytics and Real Application Testing options
[oracle@ohs3 ~]$ srvctl stop database -d stdby
[oracle@ohs3 ~]$ srvctl start database -d stdby
[oracle@ohs3 ~]$ sqlplus / as sysdba

SQL*Plus: Release 12.1.0.2.0 Production on Wed Dec 7 22:53:34 2016

Copyright (c) 1982, 2014, Oracle.  All rights reserved.


Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
```

Advanced Analytics and Real Application Testing options

SQL> select open_mode,database_role from gv$database;

OPEN_MODE DATABASE_ROLE
---------- ----------
READ ONLY PHYSICAL STANDBY
READ ONLY PHYSICAL STANDBY

SQL> alter database recover managed standby database using current logfile disconnect;

Database altered.

SQL>

```
SQL> alter system set "_transient_logical_clear_hold_mrp_bit"=true;

System altered.

SQL> alter database recover managed standby database using current logfile disconnect;

Database altered.

SQL> select open_mode,database_role from gv$database;

OPEN_MODE            DATABASE_ROLE
-------------------- ----------------
MOUNTED              PHYSICAL STANDBY
MOUNTED              PHYSICAL STANDBY

[oracle@ohs3 ~]$ srvctl stop database -d stdby
[oracle@ohs3 ~]$ srvctl start database -d stdby
[oracle@ohs3 ~]$ sqlplus / as sysdba

SQL*Plus: Release 12.1.0.2.0 Production on Wed Dec 7 22:53:34 2016

Copyright (c) 1982, 2014, Oracle.  All rights reserved.


Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Advanced Analytics and Real Application Testing options

SQL> select open_mode,database_role from gv$database;

OPEN_MODE            DATABASE_ROLE
-------------------- ----------------
READ ONLY            PHYSICAL STANDBY
READ ONLY            PHYSICAL STANDBY

SQL> alter database recover managed standby database using current logfile disconnect;

Database altered.

SQL>
```

Last verify

[oracle@ohs1 ~]$ sqlplus ohsdba

SQL*Plus: Release 12.1.0.2.0 Production on Wed Dec 7 22:55:31 2016

Copyright (c) 1982, 2014, Oracle. All rights reserved.

```
Enter password:

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Advanced Analytics and Real Application Testing options

SQL> select * from t1;

NAME                           AGE
------------------- ----------
OHSDBA                          110
ohsdba                         120

SQL> insert into t1 values ('ohsdba',150);

1 row created.

SQL> commit;

Commit complete.

SQL>
[oracle@ohs3 ~]$ sqlplus / as sysdba

SQL*Plus: Release 12.1.0.2.0 Production on Wed Dec 7  22:53:34 2016

Copyright (c) 1982, 2014, Oracle.  All rights reserved.

Connected to an idle instance.

SQL>
SQL> select open_mode,database_role from gv$database;

OPEN_MODE              DATABASE_ROLE
------------------- ----------------
READ ONLY              PHYSICAL STANDBY
READ ONLY              PHYSICAL STANDBY

SQL> alter database recover managed standby database using current logfile disconnect;

Database altered.
```

```
SQL>
SQL>
SQL> select * from ohsdba.t1;

NAME                          AGE
------------------- ----------
OHSDBA                         110
ohsdba                        120
ohsdba                        150

SQL>
```

```
[oracle@ohs1 ~]$ sqlplus ohsdba

SQL*Plus: Release 12.1.0.2.0 Production on Wed Dec 7 22:55:31 2016

Copyright (c) 1982, 2014, Oracle.  All rights reserved.

Enter password:

Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Advanced Analytics and Real Application Testing options

SQL> select * from t1;

NAME                          AGE
--------------------- ----------
OHSDBA                        110
ohsdba                        120

SQL> insert into t1 values ('ohsdba',150);

1 row created.

SQL> commit;

Commit complete.

SQL>
```

```
[oracle@ohs3 ~]$ sqlplus / as sysdba

SQL*Plus: Release 12.1.0.2.0 Production on Wed Dec 7 22:53:34 2016

Copyright (c) 1982, 2014, Oracle.  All rights reserved.


Connected to:
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit Production
With the Partitioning, Real Application Clusters, Automatic Storage Management, OLAP,
Advanced Analytics and Real Application Testing options

SQL> select open_mode,database_role from gv$database;

OPEN_MODE            DATABASE_ROLE
-------------------- ----------------
READ ONLY            PHYSICAL STANDBY
READ ONLY            PHYSICAL STANDBY

SQL> alter database recover managed standby database using current logfile disconnect;

Database altered.

SQL>
SQL>
SQL> select * from ohsdba.t1;

NAME                          AGE
--------------------- ----------
OHSDBA                        110
ohsdba                        120
ohsdba                        150

SQL>
```

Enable dg broker in 12c

Add below to listener.ora on each nodes

```
SID_LIST_LISTENER =
(SID_LIST =
  (SID_DESC =
    (GLOBAL_DBNAME = <db_unique_name>_DGMGRL)
    (SID_NAME = <instance_name>)
    (ORACLE_HOME = /pgold/ordb/oracle/product/121)
  )
)
```

```
SQL> alter system set dg_broker_start=true;

System altered.

SQL>
```

Do switchover

```
[oracle@ohs1 ~]$ dgmgrl sys/oracle
DGMGRL for Linux: Version 12.1.0.2.0 - 64bit Production

Copyright (c) 2000, 2013, Oracle. All rights reserved.

Welcome to DGMGRL, type "help" for information.
Connected as SYSDG.
DGMGRL> show configuration;

Configuration - dg_ohs

    Protection Mode: MaxPerformance
    Members:
    prod    - Primary database
      stdby - Physical standby database

Fast-Start Failover: DISABLED

Configuration Status:
SUCCESS     (status updated 40 seconds ago)

DGMGRL> show database verbose prod;
```

```
Database - prod

  Role:                PRIMARY
  Intended State:      TRANSPORT-ON
  Instance(s):
    prod1
    prod2

  Properties:
    DGConnectIdentifier             = 'prod'
    ObserverConnectIdentifier       = ''
    LogXptMode                      = 'ASYNC'
    RedoRoutes                      = ''
    DelayMins                       = '0'
    Binding                         = 'optional'
    MaxFailure                      = '0'
    MaxConnections                  = '1'
    ReopenSecs                      = '300'
    NetTimeout                      = '30'
    RedoCompression                 = 'DISABLE'
    LogShipping                     = 'ON'
    PreferredApplyInstance          = ''
    ApplyInstanceTimeout            = '0'
    ApplyLagThreshold               = '0'
    TransportLagThreshold           = '0'
    TransportDisconnectedThreshold  = '30'
    ApplyParallel                   = 'AUTO'
    StandbyFileManagement           = 'AUTO'
    ArchiveLagTarget                = '0'
    LogArchiveMaxProcesses          = '4'
    LogArchiveMinSucceedDest        = '1'
    DbFileNameConvert               = '+DATA_STDBY/stdby, +DATA_PROD/prod'
    LogFileNameConvert              = '+DATA_STDBY/stdby, +DATA_PROD/prod'
    FastStartFailoverTarget         = ''
    InconsistentProperties          = '(monitor)'
    InconsistentLogXptProps         = '(monitor)'
    SendQEntries                    = '(monitor)'
    LogXptStatus                    = '(monitor)'
    RecvQEntries                    = '(monitor)'
    StaticConnectIdentifier(*)
    StandbyArchiveLocation(*)
    AlternateLocation(*)
    LogArchiveTrace(*)
```

```
    LogArchiveFormat(*)
    TopWaitEvents(*)
    (*) - Please check specific instance for the property value

Database Status:
SUCCESS

DGMGRL> show database verbose stdby;

Database - stdby

  Role:                PHYSICAL STANDBY
  Intended State:      APPLY-ON
  Transport Lag:       0 seconds (computed 1 second ago)
  Apply Lag:           0 seconds (computed 1 second ago)
  Average Apply Rate: 5.20 MByte/s
  Active Apply Rate:   0 Byte/s
  Maximum Apply Rate: 0 Byte/s
  Real Time Query:     ON
  Instance(s):
    stdby1
    stdby2 (apply instance)

  Properties:
    DGConnectIdentifier                 = 'stdby'
    ObserverConnectIdentifier           = ''
    LogXptMode                          = 'ASYNC'
    RedoRoutes                          = ''
    DelayMins                           = '0'
    Binding                             = 'OPTIONAL'
    MaxFailure                          = '0'
    MaxConnections                      = '1'
    ReopenSecs                          = '15'
    NetTimeout                          = '30'
    RedoCompression                     = 'DISABLE'
    LogShipping                         = 'ON'
    PreferredApplyInstance              = ''
    ApplyInstanceTimeout                = '0'
    ApplyLagThreshold                   = '0'
    TransportLagThreshold               = '0'
    TransportDisconnectedThreshold      = '30'
    ApplyParallel                       = 'AUTO'
    StandbyFileManagement               = 'AUTO'
    ArchiveLagTarget                    = '0'
```

```
    LogArchiveMaxProcesses          = '4'
    LogArchiveMinSucceedDest        = '1'
    DbFileNameConvert               = '+DATA_PROD/prod, +DATA_STDBY/stdby'
    LogFileNameConvert              = '+DATA_PROD/prod, +DATA_STDBY/stdby'
    FastStartFailoverTarget         = ''
    InconsistentProperties          = '(monitor)'
    InconsistentLogXptProps         = '(monitor)'
    SendQEntries                    = '(monitor)'
    LogXptStatus                    = '(monitor)'
    RecvQEntries                    = '(monitor)'
    StaticConnectIdentifier(*)
    StandbyArchiveLocation(*)
    AlternateLocation(*)
    LogArchiveTrace(*)
    LogArchiveFormat(*)
    TopWaitEvents(*)
    (*) - Please check specific instance for the property value

Database Status:
SUCCESS

DGMGRL>
DGMGRL> show configuration;

Configuration - dg_ohs

  Protection Mode: MaxPerformance
  Members:
  prod    - Primary database
    stdby - Physical standby database

Fast-Start Failover: DISABLED

Configuration Status:
SUCCESS     (status updated 40 seconds ago)

DGMGRL> switchover to stdby;
Performing switchover NOW, please wait...
Operation requires a connection to instance "stdby1" on database "stdby"
Connecting to instance "stdby1"...
Connected as SYSDBA.
New primary database "stdby" is opening...
Oracle Clusterware is restarting database "prod" ...
Switchover succeeded, new primary is "stdby"
```

```
DGMGRL> show configuration;

Configuration - dg_ohs

  Protection Mode: MaxPerformance
  Members:
  stdby - Primary database
    prod    - Physical standby database

Fast-Start Failover: DISABLED

Configuration Status:
SUCCESS     (status updated 33 seconds ago)

DGMGRL> switchover to prod;
Performing switchover NOW, please wait...
Operation requires a connection to instance "prod1" on database "prod"
Connecting to instance "prod1"...
Connected as SYSDBA.
New primary database "prod" is opening...
Oracle Clusterware is restarting database "stdby" ...
Switchover succeeded, new primary is "prod"
DGMGRL> show configuration;

Configuration - dg_ohs

  Protection Mode: MaxPerformance
  Members:
  prod    - Primary database
    stdby - Physical standby database

Fast-Start Failover: DISABLED

Configuration Status:
SUCCESS     (status updated 53 seconds ago)

DGMGRL>
```

```
DGMGRL> show configuration;

Configuration - dg_ohs

  Protection Mode: MaxPerformance
  Members:
  prod  - Primary database
    stdby - Physical standby database

Fast-Start Failover: DISABLED

Configuration Status:
SUCCESS   (status updated 40 seconds ago)

DGMGRL> switchover to stdby;
Performing switchover NOW, please wait...
Operation requires a connection to instance "stdby1" on database "stdby"
Connecting to instance "stdby1"...
Connected as SYSDBA.
New primary database "stdby" is opening...
Oracle Clusterware is restarting database "prod" ...
Switchover succeeded, new primary is "stdby"
DGMGRL> show configuration;

Configuration - dg_ohs

  Protection Mode: MaxPerformance
  Members:
  stdby - Primary database
    prod  - Physical standby database

Fast-Start Failover: DISABLED

Configuration Status:
SUCCESS   (status updated 33 seconds ago)

DGMGRL> switchover to prod;
Performing switchover NOW, please wait...
Operation requires a connection to instance "prod1" on database "prod"
Connecting to instance "prod1"...
Connected as SYSDBA.
New primary database "prod" is opening...
Oracle Clusterware is restarting database "stdby" ...
Switchover succeeded, new primary is "prod"
DGMGRL> show configuration;

Configuration - dg_ohs

  Protection Mode: MaxPerformance
  Members:
  prod  - Primary database
    stdby - Physical standby database

Fast-Start Failover: DISABLED

Configuration Status:
SUCCESS   (status updated 53 seconds ago)

DGMGRL>
```

Reference

Oracle11g Data Guard: Database Rolling Upgrade Shell Script (Doc ID 949322.1)