Create physical standby database using the RECOVER STANDBY DATABASE command with the FROM SERVICE clause

PRIMARY –

Base Database VM - sngoa

DBNAME - sngoa

UNIQUE NAME - sngoa\_p

STANDBY –

Base Database VM - sngoa

DBNAME - sngoa

UNIQUE NAME - sngoa\_s

Refer – If the environment is On-premise, refer to the document below to setup the primary database.

<https://docs.oracle.com/en/solutions/standby-database-in-cloud/encrypt-data-source-database1.html#GUID-5F306AB7-1489-4934-860E-C846206ABF8D>

**Prerequisite**

Configure /etc/hosts on Primary and Standby environment

Sngoa\_p – Primary-

127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4

::1 localhost localhost.localdomain localhost6 localhost6.localdomain6

10.0.0.48 sngoa.sub06291309370.snvcn.oraclevcn.com sngoa

192.168.16.18 sngoa-priv.sub06291309370.snvcn.oraclevcn.com sngoa-priv

10.0.0.48 sngoa-vip.sub06291309370.snvcn.oraclevcn.com sngoa-vip

10.0.0.48 sngoa-scan.sub06291309370.snvcn.oraclevcn.com sngoa-scan

10.0.0.126 sngoabcdr.sub06291309370.snvcn.oraclevcn.com sngoabcdr

10.0.0.215 sngoadr.sub06291309370.snvcn.oraclevcn.com sngoadr

Sngoa\_s – dr

[oracle@sngoadr ~]$ cat /etc/hosts

127.0.0.1 localhost localhost.localdomain localhost4 localhost4.localdomain4

::1 localhost localhost.localdomain localhost6 localhost6.localdomain6

10.0.0.215 sngoadr.sub06291309370.snvcn.oraclevcn.com sngoadr

192.168.16.18 sngoadr-priv.sub06291309370.snvcn.oraclevcn.com sngoadr-priv

10.0.0.215 sngoadr-vip.sub06291309370.snvcn.oraclevcn.com sngoadr-vip

10.0.0.215 sngoadr-scan.sub06291309370.snvcn.oraclevcn.com sngoadr-scan

10.0.0.48 sngoa.sub06291309370.snvcn.oraclevcn.com sngoa

[oracle@sngoadr ~]$ sqlplus system/WElcome12#\_@sngoa\_p

SQL\*Plus: Release 19.0.0.0.0 - Production on Fri Mar 8 11:19:51 2024

Version 19.20.0.0.0

Copyright (c) 1982, 2022, Oracle. All rights reserved.

Last Successful login time: Wed Mar 06 2024 12:21:13 +00:00

Connected to:

Oracle Database 19c EE Extreme Perf Release 19.0.0.0.0 - Production

Version 19.20.0.0.0

SQL> exit

## Prepare the primary database

To prepare the primary database, you'll need to configure static listeners, update tnsnames.ora, and configure some database settings and parameters, like:

* Check database flashback is enabled
* Check force database logging is enabled
* Check database is in archive log mode
* Check database is in open mode
* Check database is in Primary database role

**The output will look similar to the following:**

SQL> SELECT LOG\_MODE, FORCE\_LOGGING, FLASHBACK\_ON, OPEN\_MODE, DATABASE\_ROLE FROM V$DATABASE;

LOG\_MODE FORCE\_LOGGING FLASHBACK\_ON OPEN\_MODE DATABASE\_ROLE

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ARCHIVELOG YES YES READ WRITE PRIMARY

**The output will look similar to the following:**

SQL> show parameter standby\_file\_management

NAME TYPE VALUE

------------------------------------ ----------- ----------

standby\_file\_management string AUTO

* Broker configuration files should be set

**The output will look similar to the following:**

SQL> show parameter dg\_broker\_config\_file1;

NAME TYPE VALUE

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dg\_broker\_config\_file1 string /u01/app/oracle/product/19.0.0.0/dbhome\_1/dbs/dr1dbuks\_898\_lhr.dat

SQL> show parameter dg\_broker\_config\_file2;

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

dg\_broker\_config\_file2 string /u01/app/oracle/product/19.0.0.0/dbhome\_1/dbs/dr2dbuks\_898\_lhr.da

* Enable Data Guard Broker

**The output will look similar to the following:**

SQL> show parameter dg\_broker\_start

NAME TYPE VALUE

------------------------------------ ----------- --------------

dg\_broker\_start boolean FALSE

SQL> alter system set dg\_broker\_start=true scope=both;

SQL> show parameter dg\_broker\_start

NAME TYPE VALUE

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dg\_broker\_start boolean TRUE

* Check listener status

**The output will look similar to the following:**

[oracle@sngoa tde]$ lsnrctl status

LSNRCTL for Linux: Version 19.0.0.0.0 - Production on 06-MAR-2024 13:40:48

Copyright (c) 1991, 2023, Oracle. All rights reserved.

Connecting to (ADDRESS=(PROTOCOL=tcp)(HOST=)(PORT=1521))

STATUS of the LISTENER

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Alias LISTENER

Version TNSLSNR for Linux: Version 19.0.0.0.0 - Production

Start Date 06-MAR-2024 12:09:54

Uptime 0 days 1 hr. 30 min. 54 sec

Trace Level off

Security ON: Local OS Authentication

SNMP OFF

Listener Parameter File /u01/app/19.0.0.0/grid/network/admin/listener.ora

Listener Log File /u01/app/grid/diag/tnslsnr/sngoa/listener/alert/log.xml

Listening Endpoints Summary...

(DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=LISTENER)))

(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=10.0.0.48)(PORT=1521)))

Services Summary...

Service "+APX" has 1 instance(s).

Instance "+APX1", status READY, has 1 handler(s) for this service...

Service "+ASM" has 1 instance(s).

Instance "+ASM1", status READY, has 1 handler(s) for this service...

Service "+ASM\_DATA" has 1 instance(s).

Instance "+ASM1", status READY, has 1 handler(s) for this service...

Service "+ASM\_RECO" has 1 instance(s).

Instance "+ASM1", status READY, has 1 handler(s) for this service...

Service "02a979ca24549a30e0630706f40ab807.sub06291309370.snvcn.oraclevcn.com" has 1 instance(s).

Instance "sngoa", status READY, has 2 handler(s) for this service...

Service "12fe1204497c090fe0633000000ab26f.sub06291309370.snvcn.oraclevcn.com" has 1 instance(s).

Instance "sngoa", status READY, has 2 handler(s) for this service...

Service "goa.sub06291309370.snvcn.oraclevcn.com" has 1 instance(s).

Instance "sngoa", status READY, has 2 handler(s) for this service...

Service "sngoaXDB.sub06291309370.snvcn.oraclevcn.com" has 1 instance(s).

Instance "sngoa", status READY, has 1 handler(s) for this service...

Service "sngoa\_goa.paas.oracle.com" has 1 instance(s).

Instance "sngoa", status READY, has 2 handler(s) for this service...

Service "sngoa\_p.sub06291309370.snvcn.oraclevcn.com" has 1 instance(s).

Instance "sngoa", status READY, has 2 handler(s) for this service...

The command completed successfully

* Note the tns entries (Update Primary with Standby tns entry and Update Standby with Primary tns entry)

[oracle@sngoa ]$ cat $ORACLE\_HOME/network/admin/tnsnames.ora

# tnsnames.ora Network Configuration File: /u01/app/oracle/product/19.0.0.0/dbhome\_1/network/admin/tnsnames.ora

# Generated by Oracle configuration tools.

SNGOA\_P =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = sngoa)(PORT = 1521))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = sngoa\_p.sub06291309370.snvcn.oraclevcn.com)

)

)

LISTENER\_SNGOA =

(ADDRESS = (PROTOCOL = TCP)(HOST = sngoa)(PORT = 1521))

* Note the sqlnet.ora output

[oracle@sngoa ]$ cat $ORACLE\_HOME/network/admin/sqlnet.ora

* Note the database configuration details

[oracle@sngoa ]$ srvctl config database -d <db\_unique\_name>

**The output will look similar to the following:**

[oracle@sngoa tde]$ srvctl config database -d sngoa\_p

Database unique name: sngoa\_p

Database name: sngoa

Oracle home: /u01/app/oracle/product/19.0.0.0/dbhome\_1

Oracle user: oracle

Spfile: +DATA/SNGOA\_P/PARAMETERFILE/spfile.262.1162902271

Password file:

Domain: sub06291309370.snvcn.oraclevcn.com

Start options: open

Stop options: immediate

Database role: PRIMARY

Management policy: AUTOMATIC

Server pools:

Disk Groups: RECO,DATA

Mount point paths: /opt/oracle/dcs/commonstore

Services: sngoa\_goa.paas.oracle.com

Type: SINGLE

OSDBA group: dba

OSOPER group: dbaoper

Database instance: sngoa

Configured nodes: sngoa

CSS critical: no

CPU count: 0

Memory target: 0

Maximum memory: 0

Default network number for database services:

Database is administrator managed

[oracle@sngoa tde]$

* Copy the Password File to the standby DB system in the /tmp location

[oracle@~]$ cd $ORACLE\_HOME/dbs

[oracle@~]$ cp $ORACLE\_HOME/dbs/orapw<sid> /tmp/orapw<sid>

[oracle@~]$ chmod 777 /tmp/orapw<sid>

[opc@ ~]$ cd .ssh

**[opc@ ~]$ scp -i <private\_key> /tmp/orapw<sid> opc@<ip\_standby\_vm>:/tmp/orapw<sid>**

**The output will look similar to the following:**

[oracle@sngoa tde]$ cd $ORACLE\_HOME/dbs

[oracle@sngoa dbs]$ ls -ltra

-rw-r--r-- 1 oracle oinstall 3079 May 14 2015 init.ora

-rw-rw---- 1 oracle asmadmin 1544 Mar 6 12:28 hc\_sngoa.dat

-rw-r----- 1 oracle oinstall 2560 Mar 6 13:03 orapwsngoa

[oracle@sngoa dbs]$ cp $ORACLE\_HOME/dbs/orapwsngoa /tmp

chmod 777 /tmp/orapwsngoa

**scp -i <private\_key> /tmp/orapwsngoa opc@<ip\_standby\_vm>:/tmp/orapwsngoa**

* Locate and copy the wallet files to the standby DB system in the /tmp location

SQL> select CON\_ID, WRL\_PARAMETER, WRL\_TYPE, STATUS, WALLET\_TYPE from V$ENCRYPTION\_WALLET;

[oracle@ ~]$ cd /opt/oracle/dcs/commonstore/wallets/<db\_unique\_name>/tde

[oracle@ tde]$ ls -ltra

-rw------- 1 oracle asmadmin 5467 Jun 19 18:59 ewallet.p12

-rw------- 1 oracle asmadmin 5512 Jun 19 18:59 cwallet.sso

[oracle@ ~]$ cp /opt/oracle/dcs/commonstore/wallets/<db\_unique\_name>/tde/ewallet.p12 /tmp/ewallet.p12

[oracle@ ~]$ cp /opt/oracle/dcs/commonstore/wallets/< db\_unique\_name>/tde/cwallet.sso /tmp/cwallet.sso

[oracle@ ~]$ chmod 777 /tmp/ewallet.p12

[oracle@ ~]$ chmod 777 /tmp/cwallet.sso

[opc@.ssh]$ scp -i <private\_key> /tmp/ewallet.p12 opc@<ip\_standby\_vm>:/tmp/ewallet.p12

[opc@.ssh]$ scp -i <private\_key> /tmp/cwallet.sso [opc@<ip\_standby\_vm>:/tmp/cwallet.sso](mailto:opc@%3cip_standby_vm%3e:/tmp/cwallet.sso)

**The output will look similar to the following:**

CON\_ID WRL\_PARAMETER STATUS WALLET\_TYPE

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1 /opt/oracle/dcs/commonstore/wallets/sngoa\_p/tde/ OPEN AUTOLOGIN

2 OPEN AUTOLOGIN

3 OPEN AUTOLOGIN

Wallet files to scp to dr site –

[oracle@ ~]$ cd /opt/oracle/dcs/commonstore/wallets/sngoa\_p/tde/

-rw------- 1 oracle asmadmin 5467 Mar 6 12:26 ewallet.p12

-rw------- 1 oracle asmadmin 5512 Mar 6 12:26 cwallet.sso

[oracle@ ~]$ cp /opt/oracle/dcs/commonstore/wallets/sngoa\_p /tde/ewallet.p12 /tmp/ewallet.p12

[oracle@ ~]$ cp /opt/oracle/dcs/commonstore/wallets/sngoa\_p/tde/cwallet.sso /tmp/cwallet.sso

[oracle@ ~]$ chmod 777 /tmp/ewallet.p12

[oracle@ ~]$ chmod 777 /tmp/cwallet.sso

[opc@.ssh]$ scp -i <private\_key> /tmp/ewallet.p12 opc@<ip\_standby\_vm>:/tmp/ewallet.p12

[opc@.ssh]$ scp -i <private\_key> /tmp/cwallet.sso [opc@<ip\_standby\_vm>:/tmp/cwallet.sso](mailto:opc@%3cip_standby_vm%3e:/tmp/cwallet.sso)

* Configure static listener

A static listener is required for the initial instantiation of the standby database. When a database is down, a static listener enables a remote connection to an instance, enabling you to use Oracle Data Guard to start the instance. Do not have any line breaks or white spaces in the listener.ora files.

On the primary database, append the SID\_LIST\_LISTENER file in the listener.ora to include the database unique name, Oracle Home, and the Oracle System Identifier (SID) of the primary database.

[grid@~]$ lsnrctl status

[grid@~]$ vi listener.ora

Add the following entry to listener.ora file-

SID\_LIST\_LISTENER=(SID\_LIST=(SID\_DESC=(GLOBAL\_DBNAME=DB\_UNIQUE\_NAME of the primary database)(ORACLE\_HOME=Local Oracle Home of the primary database)

(SID\_NAME = ORACLE SID of the primary database)))

**The entry will look similar to the following:**

[oracle@sngoa dbs]$ cat /u01/app/19.0.0.0/grid/network/admin/listener.ora

LISTENER=(DESCRIPTION=(ADDRESS\_LIST=(ADDRESS=(PROTOCOL=IPC)(KEY=LISTENER)))) # line added by Agent

ASMNET1LSNR\_ASM=(DESCRIPTION=(ADDRESS\_LIST=(ADDRESS=(PROTOCOL=IPC)(KEY=ASMNET1LSNR\_ASM)))) # line added by Agent

ENABLE\_GLOBAL\_DYNAMIC\_ENDPOINT\_ASMNET1LSNR\_ASM=ON # line added by Agent

VALID\_NODE\_CHECKING\_REGISTRATION\_ASMNET1LSNR\_ASM=SUBNET # line added by Agent

ENABLE\_GLOBAL\_DYNAMIC\_ENDPOINT\_LISTENER=ON # line added by Agent

VALID\_NODE\_CHECKING\_REGISTRATION\_LISTENER=SUBNET # line added by Agent

SID\_LIST\_LISTENER=

(SID\_LIST=

(SID\_DESC=(

GLOBAL\_DBNAME= sngoa\_p.sub06291309370.snvcn.oraclevcn.com)

(ORACLE\_HOME=/u01/app/oracle/product/19.0.0.0/dbhome\_1)

(SID\_NAME= sngoa)))

* Reload listener and check status

[grid@~]$ lsnrctl reload

[grid@~]$ lsnrctl status

## Prepare the standby database

* Manually delete the database created by OCI UI

Before deleting the Standby Database, save the current db\_unique\_name and note the wallet location as that will be used later. Below query provides details for the wallet location.

SQL> select CON\_ID, WRL\_PARAMETER, WRL\_TYPE, STATUS, WALLET\_TYPE from V$ENCRYPTION\_WALLET;

**The entry will look similar to the following:**

SQL> select CON\_ID, WRL\_PARAMETER, WRL\_TYPE, STATUS, WALLET\_TYPE from V$ENCRYPTION\_WALLET;

CON\_ID WRL\_PARAMETER STATUS WALLET\_TYPE

---------- ------------------------------------------------------------------------------------------ ------------ ----------------------------

1 /opt/oracle/dcs/commonstore/wallets/sngoa\_s/tde/ OPEN AUTOLOGIN

2 OPEN AUTOLOGIN

3 OPEN AUTOLOGIN

* Note the database configuration details

srvctl config database -d <db\_unique\_name>

**The entry will look similar to the following:**

[oracle@sngoadr ~]$ srvctl config database -d sngoa\_s

Database unique name: sngoa\_s

Database name: sngoa

Oracle home: /u01/app/oracle/product/19.0.0.0/dbhome\_1

Oracle user: oracle

Spfile: +DATA/SNGOA\_S/PARAMETERFILE/spfile.262.1162906943

Password file:

Domain: sub06291309370.snvcn.oraclevcn.com

Start options: open

Stop options: immediate

Database role: PRIMARY

Management policy: AUTOMATIC

Server pools:

Disk Groups: RECO,DATA

Mount point paths: /opt/oracle/dcs/commonstore

Services: sngoa\_sngoa\_pdb1.paas.oracle.com

Type: SINGLE

OSDBA group: dba

OSOPER group: dbaoper

Database instance: sngoa

Configured nodes: sngoadr

CSS critical: no

CPU count: 0

Memory target: 0

Maximum memory: 0

Default network number for database services:

Database is administrator managed

* Remove the database files and shutdown the database which is being built as a Standby

vi rm\_dbfiles.sql

set heading off linesize 999 pagesize 0 feedback off trimspool on

spool /home/oracle/demo/files.lst

select 'asmcmd rm '||name from v$datafile union all select 'asmcmd rm '||name from v$tempfile union all select 'asmcmd rm '||member from v$logfile;

spool off

create pfile='/home/oracle/ORACLE\_UNQNAME.pfile' from spfile;

exit

[oracle@]$ sqlplus "/ as sysdba"

SQL> @rm\_dbfiles.sql

SQL> exit

[oracle@ demo]$ chmod 777 files.lst

[oracle@ demo]$ srvctl stop database -d <db\_unique\_name>

Save and Execute the Script

[oracle@sngoa demo]$ ./files.lst

All files for the starter database have now been removed.

**The entry will look similar to the following:**

[oracle@sngoadr ~]$ pwd

/home/oracle

[oracle@sngoadr ~]$ vi rm\_dbfiles.sql

[oracle@sngoadr ~]$ chmod +x rm\_dbfiles.sql

[oracle@sngoadr ~]$ ls -ltra

-rw-r--r-- 1 oracle oinstall 172 Nov 23 2021 .kshrc

-rw-r--r-- 1 oracle oinstall 18 Nov 23 2021 .bash\_logout

-rw-r--r-- 1 oracle oinstall 203 Mar 6 13:14 .bash\_profile

-rw-r--r-- 1 oracle oinstall 635 Mar 6 13:47 .bashrc

asmcmd rm +DATA/SNGOA\_S/DATAFILE/system.261.1162906773

drwxr-xr-x 2 oracle oinstall 4096 Mar 6 13:47 .ssh

-rwxr-xr-x 1 oracle oinstall 340 Mar 7 13:12 rm\_dbfiles.sql

-rw------- 1 oracle oinstall 112 Mar 7 13:13 .bash\_history

[oracle@sngoadr ~]$ sqlplus "/ as sysdba"

SQL\*Plus: Release 19.0.0.0.0 - Production on Thu Mar 7 13:15:53 2024

Version 19.20.0.0.0

Copyright (c) 1982, 2022, Oracle. All rights reserved.

Connected to:

Oracle Database 19c EE Extreme Perf Release 19.0.0.0.0 - Production

Version 19.20.0.0.0

SQL> @rm\_dbfiles.sql

asmcmd rm +DATA/SNGOA\_S/DATAFILE/system.261.1162906773

asmcmd rm +DATA/SNGOA\_S/DATAFILE/sysaux.268.1162906761

asmcmd rm +DATA/SNGOA\_S/DATAFILE/undotbs1.260.1162906793

asmcmd rm +DATA/SNGOA\_S/02A979CA24559A30E0630706F40AB807/DATAFILE/system.264.1162906537

asmcmd rm +DATA/SNGOA\_S/02A979CA24559A30E0630706F40AB807/DATAFILE/sysaux.265.1162906537

asmcmd rm +DATA/SNGOA\_S/02A979CA24559A30E0630706F40AB807/DATAFILE/undotbs1.266.1162906537

asmcmd rm +DATA/SNGOA\_S/12FF285E05526CA0E063D700000A1259/DATAFILE/system.273.1162907089

asmcmd rm +DATA/SNGOA\_S/12FF285E05526CA0E063D700000A1259/DATAFILE/sysaux.271.1162907097

asmcmd rm +DATA/SNGOA\_S/12FF285E05526CA0E063D700000A1259/DATAFILE/undotbs1.270.1162907105

asmcmd rm +DATA/SNGOA\_S/DATAFILE/users.269.1162907239

asmcmd rm +DATA/SNGOA\_S/12FF285E05526CA0E063D700000A1259/DATAFILE/users.274.1162907239

asmcmd rm +DATA/SNGOA\_S/TEMPFILE/temp.263.1162906845

asmcmd rm +DATA/SNGOA\_S/12FF0A64F19E2F62E063D700000A3A33/TEMPFILE/temp.267.1162906565

asmcmd rm +DATA/SNGOA\_S/12FF285E05526CA0E063D700000A1259/TEMPFILE/temp.272.1162907085

asmcmd rm +RECO/SNGOA\_S/ONLINELOG/group\_3.259.1162906499

asmcmd rm +RECO/SNGOA\_S/ONLINELOG/group\_2.258.1162906499

asmcmd rm +RECO/SNGOA\_S/ONLINELOG/group\_1.257.1162906499

not spooling currently

Disconnected from Oracle Database 19c EE Extreme Perf Release 19.0.0.0.0 - Production

Version 19.20.0.0.0

[oracle@sngoadr ~]$ vi files.lst

[oracle@sngoadr ~]$ chmod 777 files.lst

[oracle@sngoadr ~]$ srvctl stop database -d sngoa\_s

[oracle@sngoadr ~]$ ./files.lst

[oracle@sngoadr ~]$ asmcmd

ASMCMD> ls

ASMCMD> lsdg

ASMCMD> exit

[oracle@sngoadr ~]$

* Copy the Password File and wallet file

Copy the database password file and the wallet files received in /tmp from Primary to the respective locations on the Standby database DB system.

[opc@ tmp]$ sudo cp /tmp/orapw<sid> $ORACLE\_HOME/dbs/orapw<sid>

**The output will look similar to the following:**

[opc@sngoadr ~]$ sudo chown oracle:oinstall /tmp/orapwsngoa

[opc@sngoadr ~]$ sudo chown oracle:asmadmin /tmp/ewallet.p12

[opc@sngoadr ~]$ sudo chown oracle:asmadmin /tmp/cwallet.sso

[opc@sngoa]$ sudo ls -ltra /u01/app/oracle/product/19.0.0.0/dbhome\_1/dbs/orapwsngoa

-rw-r-----1 oracle oinstall 2048 Jul3 13:42 /u01/app/oracle/product/19.0.0.0/dbhome\_1/dbs/orapwsngoa

* Verify that the md5sum output of password file matches on Primary and Standby

md5sum /u01/app/oracle/product/19.0.0.0/dbhome\_1/dbs/orapw<sid>

**The output will look similar to the following:**

* Primary

[oracle@ ~]$ md5sum /u01/app/oracle/product/19.0.0.0/dbhome\_1/dbs/orapwsngoa

b3895fa6357471f80c6e0f4ac16fdc23 /u01/app/oracle/product/19.0.0.0/dbhome\_1/dbs/orapwsngoa

* Standby

[oracle@ ~]$ md5sum /u01/app/oracle/product/19.0.0.0/dbhome\_1/dbs/orapwsngoa

b3895fa6357471f80c6e0f4ac16fdc23 /u01/app/oracle/product/19.0.0.0/dbhome\_1/dbs/orapwsngoa

* Remove existing wallet files and copy wallet files from /tmp to tde location

[oracle@ ~]$ cd /opt/oracle/dcs/commonstore/wallets/<db\_unique\_name>/tde/

[oracle@tde]$ rm ewallet.p12 cwallet.sso

[opc@tmp]$ sudo cp /tmp/ewallet.p12 /opt/oracle/dcs/commonstore/wallets/<db\_unique\_name>/tde/ewallet.p12

[opc@tmp]$ sudo cp /tmp/cwallet.sso /opt/oracle/dcs/commonstore/wallets/<db\_unique\_name>/tde/cwallet.sso

[opc@sngoa ~]$ sudo chown oracle:asmadmin /opt/oracle/dcs/commonstore/wallets/sngoa\_s/tde/ewallet.p12

[opc@sngoa ~]$ sudo chown oracle:asmadmin /opt/oracle/dcs/commonstore/wallets/sngoa\_s/tde/cwallet.sso

* Configure static listener

On the standby database in OCI, append the SID\_LIST\_LISTENER file to include the database unique name, Oracle Home of OCI, and the Oracle System Identifier (SID) of the primary database.

[grid@sngoa]$ lsnrctl status

[grid@sngoa]$ vi listener.ora

Add the following entry to listener.ora file-

SID\_LIST\_LISTENER=(SID\_LIST=(SID\_DESC=(GLOBAL\_DBNAME=DB\_UNIQUE\_NAME of the primary database)(ORACLE\_HOME=Local Oracle Home of the primary database)

(SID\_NAME = ORACLE SID of the primary database)))

[grid@sngoadr ~]$ vi /u01/app/19.0.0.0/grid/network/admin/listener.ora

[grid@sngoadr ~]$ lsnrctl reload

LSNRCTL for Linux: Version 19.0.0.0.0 - Production on 08-MAR-2024 11:30:18

Copyright (c) 1991, 2023, Oracle. All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC)(KEY=LISTENER)))

The command completed successfully

[grid@sngoadr ~]$ lsnrctl status

LSNRCTL for Linux: Version 19.0.0.0.0 - Production on 08-MAR-2024 11:30:24

Copyright (c) 1991, 2023, Oracle. All rights reserved.

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC)(KEY=LISTENER)))

STATUS of the LISTENER

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Alias LISTENER

Version TNSLSNR for Linux: Version 19.0.0.0.0 - Production

Start Date 07-MAR-2024 10:01:36

Uptime 1 days 1 hr. 28 min. 48 sec

Trace Level off

Security ON: Local OS Authentication

SNMP OFF

Listener Parameter File /u01/app/19.0.0.0/grid/network/admin/listener.ora

Listener Log File /u01/app/grid/diag/tnslsnr/sngoadr/listener/alert/log.xml

Listening Endpoints Summary...

(DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=LISTENER)))

Services Summary...

Service "sngoadr.sub06291309370.snvcn.oraclevcn.com" has 1 instance(s).

Instance "sngoa", status UNKNOWN, has 1 handler(s) for this service...

The command completed successfully

**The entry will look similar to the following:**

SID\_LIST\_LISTENER=(SID\_LIST=(SID\_DESC=(GLOBAL\_DBNAME= sngoadr.sub06291309370.snvcn.oraclevcn.com)(ORACLE\_HOME=/u01/app/oracle/product/19.0.0.0/dbhome\_1)(SID\_NAME=sngoa)))

* Reload listener and check status

[grid@sngoa]$ lsnrctl reload

[grid@sngoa]$ lsnrctl status

* Configure tns entries

[oracle@sngoa]$ cd $ORACLE\_HOME/network/admin

[oracle@sngoa]$ vi tnsnames.ora

**The entry in tnsnames.ora should look similar to the following:**

SNGOA\_P =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = sngoa)(PORT = 1521))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = sngoa\_p.sub06291309370.snvcn.oraclevcn.com)

)

)

**Entry Standby tns entry**

**Deploy**

Create a Standby Database Using RMAN

Use Oracle Recovery Manager (RMAN) to duplicate a standby database from the active primary database. Alternatively, you can duplicate from a backup of the primary database.

* Connect to the database and start the database in nomount mode

$ rman target /

RMAN> startup nomount;

* Restore the standby control file from the primary service

RMAN> restore standby controlfile from service <db\_unique\_name>;

In this example, sngoa\_p is the primary database.

**The output will look similar to the following:**

RMAN> restore standby controlfile from service 'sngoa\_p';

Starting restore at 04-JUL-23

using target database control file instead of recovery catalog

allocated channel: ORA\_DISK\_1

channel ORA\_DISK\_1: SID=28 device type=DISK

channel ORA\_DISK\_1: starting datafile backup set restore

channel ORA\_DISK\_1: using network backup set from service DBUKS\_898\_LHR

channel ORA\_DISK\_1: restoring control file

channel ORA\_DISK\_1: restore complete, elapsed time: 00:00:04

output file name=+RECO/sngoa\_s/CONTROLFILE/current.256.1139953721

Finished restore at 04-JUL-23

* Mount the database.

RMAN> alter database mount;

**The output will look similar to the following:**

RMAN> alter database mount;

released channel: ORA\_DISK\_1

Statement processed

* As root on the OCI instance, change the permissions of the Oracle directory to open (chmod 777).

[root@sngoa]$ cd /opt/

[root@sngoa]$ ls -ltra

drwxr-xr-x 10 root root 4096 Jun 20 03:52 oracle

[root@sngoa]$ chmod 777 oracle/

[root@sngoa]$ ls -ltra

drwxrwxrwx 10 root root 4096 Jun 20 03:52 oracle

* Restore the database from the primary database (sngoa\_p).

RMAN> restore database from service <db\_unique\_name>;

or

RUN

{

ALLOCATE CHANNEL c1 DEVICE TYPE DISK;

restore database from service 'sngoa\_p';

}

**The output will look similar to the following:**

RMAN> RUN

{

ALLOCATE CHANNEL c1 DEVICE TYPE DISK;

restore database from service 'sngoa\_p';

}

allocated channel: c1

channel c1: SID=326 device type=DISK

Starting restore at 08-MAR-24

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00001 to +DATA/SNGOA\_P/DATAFILE/system.261.1162902099

channel c1: restore complete, elapsed time: 00:00:07

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00003 to +DATA/SNGOA\_P/DATAFILE/sysaux.268.1162902087

channel c1: restore complete, elapsed time: 00:00:08

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00004 to +DATA/SNGOA\_P/DATAFILE/undotbs1.260.1162902119

channel c1: restore complete, elapsed time: 00:00:01

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00005 to +DATA/SNGOA\_P/02A979CA24559A30E0630706F40AB807/DATAFILE/system.264.1162901861

channel c1: restore complete, elapsed time: 00:00:03

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00006 to +DATA/SNGOA\_P/02A979CA24559A30E0630706F40AB807/DATAFILE/sysaux.265.1162901861

channel c1: restore complete, elapsed time: 00:00:04

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00007 to +DATA/SNGOA\_P/02A979CA24559A30E0630706F40AB807/DATAFILE/undotbs1.266.1162901861

channel c1: restore complete, elapsed time: 00:00:01

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00008 to +DATA/SNGOA\_P/12FE1204497C090FE0633000000AB26F/DATAFILE/system.273.1162902421

channel c1: restore complete, elapsed time: 00:00:03

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00009 to +DATA/SNGOA\_P/12FE1204497C090FE0633000000AB26F/DATAFILE/sysaux.271.1162902429

channel c1: restore complete, elapsed time: 00:00:04

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00010 to +DATA/SNGOA\_P/12FE1204497C090FE0633000000AB26F/DATAFILE/undotbs1.270.1162902437

channel c1: restore complete, elapsed time: 00:00:01

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00011 to +DATA/SNGOA\_P/DATAFILE/users.269.1162902567

channel c1: restore complete, elapsed time: 00:00:02

channel c1: starting datafile backup set restore

channel c1: using network backup set from service sngoa\_p

channel c1: specifying datafile(s) to restore from backup set

channel c1: restoring datafile 00012 to +DATA/SNGOA\_P/12FE1204497C090FE0633000000AB26F/DATAFILE/users.274.1162902567

channel c1: restore complete, elapsed time: 00:00:01

Finished restore at 08-MAR-24

released channel: c1

RMAN>

Standby Validation

* View the database name and role.

SQL> select FORCE\_LOGGING, FLASHBACK\_ON, OPEN\_MODE, DATABASE\_ROLE, DATAGUARD\_BROKER, PROTECTION\_MODE from v$database ;

FORCE\_LOGGING FLASHBACK\_ON OPEN\_MODE DATABASE\_ROLE DATAGUAR PROTECTION\_MODE

----------------------------------------------------------------- ---------- ----------

YES NO MOUNTED PHYSICAL STANDBY DISABLED MAXIMUM PERFORMANCE

* View the archive process, status thread number and sequence number for the database.

SQL> select sysdate,process,status,thread#,sequence#,block# from v$managed\_standby where status!='IDLE';

04-JUL-23 ARCH CONNECTED 0 0 0

04-JUL-23 DGRD ALLOCATED 0 0 0

04-JUL-23 DGRD ALLOCATED 0 0 0

04-JUL-23 ARCH CONNECTED 0 0 0

04-JUL-23 ARCH CONNECTED 0 0 0

04-JUL-23 ARCH CONNECTED 0 0 0

SQL> select distinct process from gv$managed\_standby;

PROCESS

---------

ARCH

DGRD

Add Standby logfiles to primary and standby databases

**On the Primary database**

select group#, type, member from v$logfile;

select bytes, group# from v$log;

alter database add standby logfile thread 1 group <number>('+RECO') size <bytes>;

**The output will look similar to the following:**

SQL> select group#, type, member from v$logfile;

GROUP# TYPE MEMBER

---------- ------- -------------------------------------------------------

3 ONLINE +RECO/SNGOA\_P/ONLINELOG/group\_3.259.1139942665

2 ONLINE +RECO/SNGOA\_P/ONLINELOG/group\_2.258.1139942665

1 ONLINE +RECO/SNGOA\_P/ONLINELOG/group\_1.257.1139942665

SQL> select bytes, group# from v$log;

1073741824 1

1073741824 3

1073741824 2

SQL> alter database add standby logfile thread 1 group 4('+RECO') size 1073741824;

Database altered.

SQL> alter database add standby logfile thread 1 group 5('+RECO') size 1073741824;

Database altered.

SQL> alter database add standby logfile thread 1 group 6('+RECO') size 1073741824;

Database altered.

SQL> alter database add standby logfile thread 1 group 7('+RECO') size 1073741824;

Database altered.

SQL> select group#, type, member from v$logfile;

GROUP# TYPE MEMBER

---------- ------- ------------------------------------------

3 ONLINE +RECO/SNGOA\_P/ONLINELOG/group\_3.259.1162901821

2 ONLINE +RECO/SNGOA\_P/ONLINELOG/group\_2.258.1162901821

1 ONLINE +RECO/SNGOA\_P/ONLINELOG/group\_1.257.1162901821

4 STANDBY +RECO/SNGOA\_P/ONLINELOG/group\_4.265.1162908055

5 STANDBY +RECO/SNGOA\_P/ONLINELOG/group\_5.266.1162908061

6 STANDBY +RECO/SNGOA\_P/ONLINELOG/group\_6.267.1162908067

7 STANDBY +RECO/SNGOA\_P/ONLINELOG/group\_7.268.1162908075

7 rows selected.

**On the Standby database**

select group#, type, member from v$logfile;

select bytes, group# from v$log;

alter database add standby logfile group <number>('+RECO') size <bytes>;

**The output will look similar to the following:**

SQL> select group#, type, member from v$logfile;

GROUP# TYPE MEMBER

---------- ------- -------------------------------------------------------

3 ONLINE +RECO/SNGOA\_S/ONLINELOG/group\_3.259.1139942665

2 ONLINE +RECO/SNGOA\_S/ONLINELOG/group\_2.258.1139942665

1 ONLINE +RECO/SNGOA\_S/ONLINELOG/group\_1.257.1139942665

SQL> select bytes, group# from v$log;

BYTES GROUP#

---------- ----------

1073741824 1

1073741824 2

1073741824 3

SQL> alter database add standby logfile thread 1 group 4('+RECO') size 1073741824;

Database altered.

SQL> alter database add standby logfile thread 1 group 5('+RECO') size 1073741824;

Database altered.

SQL> alter database add standby logfile thread 1 group 6('+RECO') size 1073741824;

Database altered.

SQL> alter database add standby logfile thread 1 group 7('+RECO') size 1073741824;

Database altered.

SQL> select group#, type, member from v$logfile;

GROUP# TYPE MEMBER

---------- ------- ------------------------------------------

3 ONLINE +RECO/SNGOA\_S/ONLINELOG/group\_3.259.1162901821

2 ONLINE +RECO/SNGOA\_S/ONLINELOG/group\_2.258.1162901821

1 ONLINE +RECO/SNGOA\_S/ONLINELOG/group\_1.257.1162901821

4 STANDBY +RECO/SNGOA\_S/ONLINELOG/group\_4.265.1162908055

5 STANDBY +RECO/SNGOA\_S/ONLINELOG/group\_5.266.1162908061

6 STANDBY +RECO/SNGOA\_S/ONLINELOG/group\_6.267.1162908067

7 STANDBY +RECO/SNGOA\_S/ONLINELOG/group\_7.268.1162908075

7 rows selected.

Configure Oracle Data Guard Broker

Configure Oracle Data Guard, register the standby database, and synchronize primary and standby databases. Configure Oracle Data Guard by enabling the dg\_broker\_config\_file parameter on the primary and standby databases. For Oracle Automatic Storage Management (Oracle ASM), place the broker configuration files on separate disk groups. For Oracle Real Application Clusters (Oracle RAC), broker configuration files must be on shared storage.

* Check the dg\_broker\_start value for the primary database and standby database. Ensure it is set to True.

SQL> show parameter dg\_broker\_start;

**The output will look similar to the following:**

NAME                   TYPE                   VALUE

------------------- ----------------- -----------

dg\_broker\_start        boolean                TRUE

If the dg\_broker\_start is set to FALSE, then set the parameter to TRUE before proceeding to the next steps.

SQL> alter system set dg\_broker\_start=true;

SQL> select pname from v$process where pname like 'DMON%';

PNAME

-----

DMON

* Check the Oracle Data Guard files for the primary database.

SQL> show parameter dg\_broker\_config\_file1;

dg\_broker\_config\_file1 string +DATA/SNGOA\_P/dr1sngoa\_p.dat

SQL> show parameter dg\_broker\_config\_file2;

dg\_broker\_config\_file2 string +DATA/SNGOA\_P/dr2sngoa\_p.dat

If you have Oracle RAC or Oracle ASM, then you can change the configuration file location. Example-

SQL> alter system set dg\_broker\_config\_file1=broker\_config\_file location;

SQL> alter system set dg\_broker\_config\_file2=broker\_config\_file location;

* Register the Primary and Standby Database

Use the Oracle Data Guard command-line interface (DGMGRL) to register the primary database and to add the standby database profile to the broker configuration.

Log into the primary host as sys.

$ dgmgrl sys/<password>@<net service name for primary database>

* Create a configuration that uses the primary database name.

DGMGRL> CREATE CONFIGURATION <configuration\_name> AS PRIMARY DATABASE IS <primary database name> CONNECT IDENTIFIER IS <primary database name>;

**The output will look similar to the following:**

CREATE CONFIGURATION sngoa\_p\_sngoa\_s AS PRIMARY DATABASE IS sngoa\_p CONNECT IDENTIFIER IS sngoa\_p;

* Add the standby database.

DGMGRL> ADD DATABASE <standby unique database name> AS CONNECT IDENTIFIER IS <standby unique database name> MAINTAINED AS PHYSICAL;

**The output will look similar to the following:**

DGMGRL> ADD DATABASE sngoa\_s AS CONNECT IDENTIFIER IS sngoa\_s MAINTAINED AS PHYSICAL;

Database "sngoa\_s" added

* Enable the configuration.

DGMGRL> enable configuration;

* Display the configuration.

DGMGRL> show configuration;

Note: If you receive a WARNING that the apply lag could not be determined, log in to the primary database through sqlplus and do some log switches.

**The output will look similar to the following:**

**DGMGRL> show configuration;**

Configuration - sngoa\_p\_sngoa\_s

  Protection Mode: MaxPerformance

Members:

  sngoa\_p - Primary database

    sngoa\_s - Physical standby database

Fast-Start Failover:  Disabled

Configuration Status: SUCCESS (status updated 36 seconds ago)

**DGMGRL> show database sngoa\_p**

Database – sngoa\_p

Role:               PRIMARY

  Intended State:     TRANSPORT-ON

  Instance(s): sngoa

Database Status: SUCCESS

**DGMGRL> show database sngoa\_s**

Database – sngoa\_s

Role:               PHYSICAL STANDBY

  Intended State:     APPLY-ON

  Transport Lag:      0 seconds (computed 1 second ago)

  Apply Lag:          0 seconds (computed 0 seconds ago)

  Average Apply Rate: 59.00 KByte/s

  Real Time Query:    ON

  Instance(s): sngoa

Database Status: SUCCESS

## You can set the state of the Physical standby database to apply-off or apply-on using the below commands in dgmgrl

edit database sngoa\_s set state=apply-off;

edit database sngoa\_s set state=apply-on;

Confirm the Primary and Standby replication

**On the Standby database**

select sysdate, process, status, thread#, sequence#, block#

from v$managed\_standby

where status!='IDLE';

**The output will look similar to the following:**

SQL> select sysdate, process, status, thread#, sequence#, block#

from v$managed\_standby

where status!='IDLE';

SYSDATE   PROCESS   STATUS          THREAD#  SEQUENCE#     BLOCK#

--------- --------- ------------ ---------- ---------- ----------

10-JUL-23 DGRD      ALLOCATED             0          0          0

10-JUL-23 ARCH      CONNECTED             0          0          0

10-JUL-23 DGRD      ALLOCATED             0          0          0

10-JUL-23 ARCH      CONNECTED             0          0          0

10-JUL-23 ARCH      CONNECTED             0          0          0

10-JUL-23 ARCH      CONNECTED             0          0          0

10-JUL-23 RFS       RECEIVING             1        417       2413

10-JUL-23 MRP0      APPLYING\_LOG          1        417       2412

* View the Data guard processes.

SQL> select distinct process from gv$managed\_standby;

PROCESS

---------

DGRD

RFS

MRP0

ARCH

* The Standby database has now started applying the log. Do some log switches on Primary database and confirm again on the standby database.

**On the Primary database**

SQL> archive log list

Database log mode              Archive Mode

Automatic archival             Enabled

Archive destination            USE\_DB\_RECOVERY\_FILE\_DEST

Oldest online log sequence     415

Next log sequence to archive   417

Current log sequence           417

SQL> alter system switch logfile;

System altered.

SQL> /

System altered.

SQL> archive log list

Database log mode              Archive Mode

Automatic archival             Enabled

Archive destination            USE\_DB\_RECOVERY\_FILE\_DEST

Oldest online log sequence     417

Next log sequence to archive   419

Current log sequence           419

**On the Standby database**

SQL> select sysdate, process, status, thread#, sequence#, block#

from v$managed\_standby

where status!='IDLE';

SYSDATE   PROCESS   STATUS          THREAD#  SEQUENCE#     BLOCK#

--------- --------- ------------ ---------- ---------- ----------

10-JUL-23 DGRD      ALLOCATED             0          0          0

10-JUL-23 ARCH      CONNECTED             0          0          0

10-JUL-23 DGRD      ALLOCATED             0          0          0

10-JUL-23 ARCH      CLOSING               1        418          1

10-JUL-23 ARCH      CONNECTED             0          0          0

10-JUL-23 ARCH      CLOSING               1        417       2048

10-JUL-23 RFS       RECEIVING             1        419         59

10-JUL-23 MRP0      APPLYING\_LOG          1        419         58

* Enable flashback on the standby database

SQL> ALTER DATABASE RECOVER MANAGED STANDBY DATABASE cancel;

Database altered.

SQL> alter database flashback on;

Database altered

* Confirm that database flashback is enabled (on).

SQL> select flashback\_on from v$database;

**The output will look similar to the following:**

FLASHBACK\_ON

------------------

YES

SQL> recover managed standby database using current logfile disconnect from session;

Media recovery complete.

* View the database details

SQL> select FORCE\_LOGGING, FLASHBACK\_ON, OPEN\_MODE, DATABASE\_ROLE, DATAGUARD\_BROKER, PROTECTION\_MODE from v$database ;

FORCE\_LOGGING   FLASHBACK\_ON   OPEN\_MODE    DATABASE\_ROLE   DATAGUARD\_BROKER     PROTECTION\_MODE

-------------- -------------- ----------- --------------   ----------------- ---------------

YES             YES            MOUNTED       PHYSICAL STANDBY  ENABLED              MAXIMUM PERFORMANCE

* Stop the standby database by using the Server Control (srvctl) utility.

Using srvctl utility to stop the database:

srvctl stop database -d <db\_unique\_name>

**The output will look similar to the following:**

srvctl stop database -d dbuks\_r2j\_ams

* Start the standby database by using the Server Control (srvctl) utility.

Using srvctl utility to start the database:

srvctl start database -d <db\_unique\_name>

**The output will look similar to the following:**

srvctl start database -d dbuks\_r2j\_ams

* View the database details

SQL> select FORCE\_LOGGING, FLASHBACK\_ON, OPEN\_MODE, DATABASE\_ROLE, DATAGUARD\_BROKER, PROTECTION\_MODE from v$database ;

FORCE\_LOGGING  FLASHBACK\_ON  OPEN\_MODE     DATABASE\_ROLE  DATAGUARD\_BROKER PROTECTION\_MODE

-------------- ------------- -------------------- ----------------- ----------------  ---------------

YES            YES           READ ONLY WITH APPLY PHYSICAL STANDBY   ENABLED     MAXIMUM PERFORMANCE

* You may now give some more logfile switches from the primary and ensure that the redo is being applied to the standby.
* Recreate the pending logfile which exist with primary unique name

SQL> ALTER DATABASE RECOVER MANAGED STANDBY DATABASE cancel;

Database altered.

SQL> alter database drop logfile group 1;

Database altered.

SQL> alter database add standby logfile thread 1 group 1 ('+RECO') size 1073741824;

Database altered.

SQL> recover managed standby database using current logfile disconnect from session;

Media recovery complete.

Validate DR Readiness

Review best practices for disaster recovery readiness and verify your disaster recovery setup for planned and unplanned events.

## Switch the Primary Database to Standby Database

When you have a planned activity, such as maintenance, you can make the current standby database the primary database with zero data loss. A switchover is a planned event that's initiated on the Primary database and completed on the standby database.

Log into a DGMGRL session on the Primary database with a sys username and password.

* On the Primary database, validate that the standby database is ready for switchover and failover.

In this example, the primary database is DBUKS\_898\_LHR and the standby database is DBUKS\_R2J\_AMS.

DGMGRL> validate database DBUKS\_R2J\_AMS (Standby Database)

**The output will look similar to the following:**

DGMGRL> validate database DBUKS\_R2J\_AMS

  Database Role:     Physical standby database

  Primary Database:  dbuks\_898\_lhr

Ready for Switchover:  Yes

  Ready for Failover:    Yes (Primary Running)

  Managed by Clusterware:

    dbuks\_898\_lhr:  YES

    dbuks\_r2j\_ams:  YES

* On the primary database, execute the command to switchover to the standby database.

DGMGRL> switchover to DBUKS\_R2J\_AMS (Standby Database)

**The output will look similar to the following:**

**DGMGRL> switchover to DBUKS\_R2J\_AMS**

Performing switchover NOW, please wait...

Operation requires a connection to database "dbuks\_r2j\_ams"

Connecting ...

Connected to "dbuks\_r2j\_ams"

Connected as SYSDBA.

New primary database "dbuks\_r2j\_ams" is opening...

Oracle Clusterware is restarting database "dbuks\_898\_lhr" ...

Connected to an idle instance.

Connected to "dbuks\_898\_lhr"

**Switchover succeeded, new primary is "dbuks\_r2j\_ams"**

**DGMGRL> validate database dbuks\_r2j\_ams**

  Database Role:    Primary database

  Ready for Switchover:  Yes

  Managed by Clusterware:

    dbuks\_r2j\_ams:  YES

**DGMGRL> validate database dbuks\_898\_lhr**

  Database Role:     Physical standby database

  Primary Database:  dbuks\_r2j\_ams

  Ready for Switchover:  Yes

  Ready for Failover:    Yes (Primary Running)

  Managed by Clusterware:

    dbuks\_r2j\_ams:  YES

    dbuks\_898\_lhr:  YES

**DGMGRL> show configuration;**

Configuration - dbuks\_898\_lhr\_dbuks\_r2j\_ams

  Protection Mode: MaxPerformance

  Members:

  dbuks\_r2j\_ams - Primary database

    dbuks\_898\_lhr - Physical standby database

Fast-Start Failover:  Disabled

Configuration Status:

SUCCESS (status updated 52 seconds ago)

* On the new remote primary database, determine the open mode status.

SQL> select open\_mode from v$database;

**The output will look similar to the following:**

OPEN\_MODE

--------------------

READ WRITE

* On the previous primary database which is now the standby, determine the open mode status.

SQL> select open\_mode from v$database;

**The output will look similar to the following:**

OPEN\_MODE

--------------------

READ ONLY WITH APPLY

**The standby database is now the primary database.**

## Switch back to the Original Primary database

* Connect to dgmgrl from new Primary.

[oracle@sngoa]$ dgmgrl

DGMGRL for Linux: Release 19.0.0.0.0 - Production on Mon Jul 10 06:59:41 2023

Version 19.19.0.0.0

Copyright (c) 1982, 2019, Oracle and/or its affiliates.  All rights reserved.

Welcome to DGMGRL, type "help" for information.

DGMGRL> connect sys/<password>

Connected to "dbuks\_r2j\_ams"

Connected as SYSDBA.

**DGMGRL> show configuration;**

Configuration - dbuks\_898\_lhr\_dbuks\_r2j\_ams

  Protection Mode: MaxPerformance

  Members:

  dbuks\_r2j\_ams - Primary database

    dbuks\_898\_lhr - Physical standby database

Fast-Start Failover:  Disabled

Configuration Status:

SUCCESS (status updated 39 seconds ago)

**DGMGRL> validate database dbuks\_r2j\_ams;**

  Database Role:    Primary database

  Ready for Switchover:  Yes

  Managed by Clusterware:

    dbuks\_r2j\_ams:  YES

**DGMGRL> validate database dbuks\_898\_lhr;**

  Database Role:     Physical standby database

  Primary Database:  dbuks\_r2j\_ams

  Ready for Switchover:  Yes

  Ready for Failover:    Yes (Primary Running)

  Managed by Clusterware:

    dbuks\_r2j\_ams:  YES

    dbuks\_898\_lhr:  YES

**DGMGRL> switchover to dbuks\_898\_lhr ;**

Performing switchover NOW, please wait...

Operation requires a connection to database "dbuks\_898\_lhr"

Connecting ...

Connected to "dbuks\_898\_lhr"

Connected as SYSDBA.

New primary database "dbuks\_898\_lhr" is opening...

Oracle Clusterware is restarting database "dbuks\_r2j\_ams" ...

Connected to an idle instance.

Connected to an idle instance.

Connected to an idle instance.

Connected to an idle instance.

Connected to an idle instance.

Connected to an idle instance.

Connected to "dbuks\_r2j\_ams"

**Switchover succeeded, new primary is "dbuks\_898\_lhr"**

**The switchover is now completed.**

<https://doyensys.com/blogs/dataguard-issue-warning-ora-16826-apply-service-state-is-inconsistent-with-the-delaymins-property/>

<https://martincarstenbach.com/2017/12/13/little-things-worth-knowing-redo-transport-in-data-guard-12-2-part-1/>

Last failed login: Wed Mar 13 03:10:38 UTC 2024 from 170.64.209.81 on ssh:notty

There were 3 failed login attempts since the last successful login.

Last login: Mon Mar 11 13:07:46 2024 from 148.87.23.12

[opc@sngoa ~]$ sudo su - oracle

Last login: Thu Mar 14 11:01:26 UTC 2024

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

grid 16492 1 0 Mar07 ? 00:00:18 asm\_pmon\_+ASM1

grid 19601 1 0 Mar07 ? 00:00:19 apx\_pmon\_+APX1

oracle 23253 1 0 Mar07 ? 00:00:27 ora\_pmon\_sngoa

oracle 57221 57041 0 11:02 pts/0 00:00:00 grep --color=auto pmon

[oracle@sngoa ~]$ dgmgrl

DGMGRL for Linux: Release 19.0.0.0.0 - Production on Thu Mar 14 11:02:30 2024

Version 19.20.0.0.0

Copyright (c) 1982, 2019, Oracle and/or its affiliates. All rights reserved.

Welcome to DGMGRL, type "help" for information.

DGMGRL> connect sys/WElcome12#\_

Connected to "sngoa\_p"

Connected as SYSDBA.

DGMGRL> show configuration;

ORA-16532: Oracle Data Guard broker configuration does not exist

Configuration details cannot be determined by DGMGRL

DGMGRL> exit

[oracle@sngoa ~]$ sqlplus "/ as sysdba"

SQL\*Plus: Release 19.0.0.0.0 - Production on Thu Mar 14 11:05:22 2024

Version 19.20.0.0.0

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Connected to:

Oracle Database 19c EE Extreme Perf Release 19.0.0.0.0 - Production

Version 19.20.0.0.0

SQL> set lines 9000

SQL> show parameter dg\_con

SQL> show parameter dg\_config

SQL> show paramater config

SP2-0158: unknown SHOW option "paramater"

SP2-0158: unknown SHOW option "config"

SQL> show parameter db\_name

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

db\_name string sngoa

SQL> show parameter archive

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

archive\_lag\_target integer 0

log\_archive\_config string nodg\_config

log\_archive\_dest string

log\_archive\_dest\_1 string

log\_archive\_dest\_10 string

log\_archive\_dest\_11 string

log\_archive\_dest\_12 string

log\_archive\_dest\_13 string

log\_archive\_dest\_14 string

log\_archive\_dest\_15 string

log\_archive\_dest\_16 string

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

log\_archive\_dest\_17 string

log\_archive\_dest\_18 string

log\_archive\_dest\_19 string

log\_archive\_dest\_2 string

log\_archive\_dest\_20 string

log\_archive\_dest\_21 string

log\_archive\_dest\_22 string

log\_archive\_dest\_23 string

log\_archive\_dest\_24 string

log\_archive\_dest\_25 string

log\_archive\_dest\_26 string

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

log\_archive\_dest\_27 string

log\_archive\_dest\_28 string

log\_archive\_dest\_29 string

log\_archive\_dest\_3 string

log\_archive\_dest\_30 string

log\_archive\_dest\_31 string

log\_archive\_dest\_4 string

log\_archive\_dest\_5 string

log\_archive\_dest\_6 string

log\_archive\_dest\_7 string

log\_archive\_dest\_8 string

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

log\_archive\_dest\_9 string

log\_archive\_dest\_state\_1 string enable

log\_archive\_dest\_state\_10 string enable

log\_archive\_dest\_state\_11 string enable

log\_archive\_dest\_state\_12 string enable

log\_archive\_dest\_state\_13 string enable

log\_archive\_dest\_state\_14 string enable

log\_archive\_dest\_state\_15 string enable

log\_archive\_dest\_state\_16 string enable

log\_archive\_dest\_state\_17 string enable

log\_archive\_dest\_state\_18 string enable

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

log\_archive\_dest\_state\_19 string enable

log\_archive\_dest\_state\_2 string ENABLE

log\_archive\_dest\_state\_20 string enable

log\_archive\_dest\_state\_21 string enable

log\_archive\_dest\_state\_22 string enable

log\_archive\_dest\_state\_23 string enable

log\_archive\_dest\_state\_24 string enable

log\_archive\_dest\_state\_25 string enable

log\_archive\_dest\_state\_26 string enable

log\_archive\_dest\_state\_27 string enable

log\_archive\_dest\_state\_28 string enable

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

log\_archive\_dest\_state\_29 string enable

log\_archive\_dest\_state\_3 string ENABLE

log\_archive\_dest\_state\_30 string enable

log\_archive\_dest\_state\_31 string enable

log\_archive\_dest\_state\_4 string enable

log\_archive\_dest\_state\_5 string enable

log\_archive\_dest\_state\_6 string enable

log\_archive\_dest\_state\_7 string enable

log\_archive\_dest\_state\_8 string enable

log\_archive\_dest\_state\_9 string enable

log\_archive\_duplex\_dest string

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

log\_archive\_format string %t\_%s\_%r.dbf

log\_archive\_max\_processes integer 8

log\_archive\_min\_succeed\_dest integer 1

log\_archive\_start boolean FALSE

log\_archive\_trace integer 0

SQL> show parameter dg\_

NAME TYPE VALUE

------------------------------------ ----------- ------------------------------

adg\_account\_info\_tracking string LOCAL

adg\_redirect\_dml boolean FALSE

cell\_offloadgroup\_name string

dg\_broker\_config\_file1 string +DATA/SNGOA\_P/dr1sngoa\_p.dat

dg\_broker\_config\_file2 string +DATA/SNGOA\_P/dr2sngoa\_p.dat

dg\_broker\_start boolean TRUE

inmemory\_adg\_enabled boolean TRUE

SQL> archive log list

Database log mode Archive Mode

Automatic archival Enabled

Archive destination USE\_DB\_RECOVERY\_FILE\_DEST

Oldest online log sequence 203

Next log sequence to archive 205

Current log sequence 205

SQL> exit

Disconnected from Oracle Database 19c EE Extreme Perf Release 19.0.0.0.0 - Production

Version 19.20.0.0.0

[oracle@sngoa ~]$ dgmgrl

DGMGRL for Linux: Release 19.0.0.0.0 - Production on Thu Mar 14 11:07:09 2024

Version 19.20.0.0.0

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Welcome to DGMGRL, type "help" for information.

DGMGRL> connect sys/WElcome12#\_

Connected to "sngoa\_p"

Connected as SYSDBA.

DGMGRL> CREATE CONFIGURATION sngoa\_p\_sngoa\_s AS PRIMARY DATABASE IS sngoa\_p CONNECT IDENTIFIER IS sngoa\_p;

Configuration "sngoa\_p\_sngoa\_s" created with primary database "sngoa\_p"

DGMGRL> ADD DATABASE sngoa\_s AS CONNECT IDENTIFIER IS sngoa\_s MAINTAINED AS PHYSICAL;

Database "sngoa\_s" added

DGMGRL> show configuration;

Configuration - sngoa\_p\_sngoa\_s

Protection Mode: MaxPerformance

Members:

sngoa\_p - Primary database

sngoa\_s - Physical standby database

Fast-Start Failover: Disabled

Configuration Status:

DISABLED

DGMGRL> enable configuration;

Enabled.

DGMGRL> show configuration;

Configuration - sngoa\_p\_sngoa\_s

Protection Mode: MaxPerformance

Members:

sngoa\_p - Primary database

sngoa\_s - Physical standby database

Warning: ORA-16809: multiple warnings detected for the member

Fast-Start Failover: Disabled

Configuration Status:

WARNING (status updated 13 seconds ago)

DGMGRL> show database sngoa\_s

Database - sngoa\_s

Role: PHYSICAL STANDBY

Intended State: APPLY-ON

Transport Lag: 2 days 17 hours 9 minutes 41 seconds (computed 1 second ago)

Apply Lag: 2 days 21 hours 9 minutes 41 seconds (computed 1 second ago)

Average Apply Rate: 5.00 KByte/s

Real Time Query: ON

Instance(s):

sngoa

Database Warning(s):

ORA-16853: apply lag has exceeded specified threshold

ORA-16855: transport lag has exceeded specified threshold

ORA-16826: apply service state is inconsistent with the DelayMins property

ORA-16789: standby redo logs configured incorrectly

Database Status:

WARNING

DGMGRL> show database sngoa\_p

Database - sngoa\_p

Role: PRIMARY

Intended State: TRANSPORT-ON

Instance(s):

sngoa

Database Status:

SUCCESS

DGMGRL>

Standby –

Last login: Thu Mar 14 11:00:05 UTC 2024

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

grid 17659 1 0 Mar07 ? 00:00:18 asm\_pmon\_+ASM1

grid 19235 1 0 Mar07 ? 00:00:20 apx\_pmon\_+APX1

oracle 82833 82768 0 11:03 pts/0 00:00:00 grep --color=auto pmon

oracle 94522 1 0 Mar11 ? 00:00:11 ora\_pmon\_sngoa

[oracle@sngoadr ~]$ sqlplus "/ as sysdba"

SQL\*Plus: Release 19.0.0.0.0 - Production on Thu Mar 14 11:03:28 2024

Version 19.20.0.0.0

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Connected to:

Oracle Database 19c EE Extreme Perf Release 19.0.0.0.0 - Production

Version 19.20.0.0.0

SQL> set line s9000

SP2-0268: linesize option not a valid number

SQL> set lines 9000

SQL> select sysdate,process,status,thread#,sequence#,block# from v$managed\_standby where status!='IDLE';

SYSDATE PROCESS STATUS THREAD# SEQUENCE# BLOCK#

--------- --------- ------------ ---------- ---------- ----------

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 ARCH CLOSING 1 129 8192

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 MRP0 WAIT\_FOR\_LOG 1 130 0

7 rows selected.

SQL> /

SYSDATE PROCESS STATUS THREAD# SEQUENCE# BLOCK#

--------- --------- ------------ ---------- ---------- ----------

14-MAR-24 ARCH CLOSING 1 205 1

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 ARCH CLOSING 1 129 8192

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 RFS RECEIVING 1 206 2

14-MAR-24 RFS OPENING 1 188 0

14-MAR-24 RFS OPENING 1 187 0

14-MAR-24 RFS OPENING 1 186 0

10 rows selected.

SQL> /

SYSDATE PROCESS STATUS THREAD# SEQUENCE# BLOCK#

--------- --------- ------------ ---------- ---------- ----------

14-MAR-24 ARCH CLOSING 1 205 1

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 ARCH CLOSING 1 129 8192

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 RFS RECEIVING 1 206 5

14-MAR-24 MRP0 APPLYING\_LOG 1 133 1

8 rows selected.

SQL> /

SYSDATE PROCESS STATUS THREAD# SEQUENCE# BLOCK#

--------- --------- ------------ ---------- ---------- ----------

14-MAR-24 ARCH CLOSING 1 205 1

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 ARCH CLOSING 1 129 8192

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 RFS RECEIVING 1 206 39

14-MAR-24 MRP0 WAIT\_FOR\_GAP 1 134 0

8 rows selected.

SQL> /

SYSDATE PROCESS STATUS THREAD# SEQUENCE# BLOCK#

--------- --------- ------------ ---------- ---------- ----------

14-MAR-24 ARCH CLOSING 1 205 1

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 DGRD ALLOCATED 0 0 0

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 ARCH CLOSING 1 129 8192

14-MAR-24 ARCH CONNECTED 0 0 0

14-MAR-24 RFS RECEIVING 1 206 70

14-MAR-24 MRP0 WAIT\_FOR\_GAP 1 134 0

8 rows selected.

Errors occurred-

RMAN-06172: no AUTOBACKUP found or specified handle is not a valid copy or piece

RMAN> CONFIGURE DEVICE TYPE 'SBT\_TAPE' clear;

RMAN configuration parameters are successfully reset to default value

RMAN> show device type;

RMAN configuration parameters for database with db\_unique\_name SNGOA\_S are:

CONFIGURE DEVICE TYPE DISK PARALLELISM 1 BACKUP TYPE TO BACKUPSET; # default

CONFIGURE DEVICE TYPE SBT\_TAPE PARALLELISM 1 BACKUP TYPE TO BACKUPSET; # default

RMAN> CONFIGURE DEVICE TYPE 'sbt\_tape' clear;

RMAN configuration parameters are successfully reset to default value

RMAN> show device type;

RMAN configuration parameters for database with db\_unique\_name SNGOA\_S are:

CONFIGURE DEVICE TYPE DISK PARALLELISM 1 BACKUP TYPE TO BACKUPSET; # default

CONFIGURE DEVICE TYPE SBT\_TAPE PARALLELISM 1 BACKUP TYPE TO BACKUPSET; # default

**scp -i** jan29.key **/tmp/**orapwsngoa **opc@**132.226.59.40**:/tmp/**orapwsngoa

**scp -i** jan29.key  **/tmp/ewallet.p12 opc@**132.226.59.40:**/tmp/ewallet.p12**

**scp -i** jan29.key  **/tmp/cwallet.sso** [**opc@**132.226.59.40**:/tmp/cwallet.sso**](mailto:opc@132.226.59.40:/tmp/cwallet.sso)

**scp -i** jan29.key  **/tmp/initsngoa** [**opc@**132.226.59.40**:/tmp/sngoa**](mailto:opc@132.226.59.40:/tmp/sngoa)