Setting up DG in 11gR2 (Linux)

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# Pre-Setup At PRIMARY Database

### FORCE LOGGING

ALTER DATABASE FORCE LOGGING;

ALTER DATABASE FLASHBACK ON; -- not mandatory

### PASSWORD FILE

Run orapwd

Copy password file orapworcl (from $ORACLE\_HOME/dbs) to the Standby and rename it to orapwstby -- the password file name is based on the ORACLE\_SID

### Add Standby Redo Logs

ALTER DATABASE ADD STANDBY LOGFILE (as many times as : number of online redo logs + 1)

### INITORA on Primary

\*.archive\_lag\_target=0

\*.audit\_file\_dest='/u01/app/oracle/admin/orcl/adump'

\*.audit\_trail='db'

\*.compatible='11.2.0'

\*.control\_files='/u01/app/oracle/oradata/ORCL/control.dbf'

\*.db\_block\_size=8192

\*.db\_create\_file\_dest='/u01/app/oracle/oradata'

\*.db\_domain=''

\*.db\_name='ORCL'

\*.db\_recovery\_file\_dest\_size=2G

\*.db\_recovery\_file\_dest='/u02/FRA'

\*.db\_unique\_name='ORCL'

\*.dg\_broker\_start=TRUE

\*.diagnostic\_dest='/u01/app/oracle'

\*.enable\_goldengate\_replication=TRUE

\*.log\_archive\_config='DG\_CONFIG=(orcl,stby)'

\*.log\_archive\_dest\_1='location=USE\_DB\_RECOVERY\_FILE\_DEST','valid\_for=(ALL\_LOGFILES, ALL\_ROLES)'

\*.log\_archive\_dest\_2='SERVICE=stby SYNC VALID\_FOR=(ONLINE\_LOGFILES,PRIMARY\_ROLE) DB\_UNIQUE\_NAME=stby'

\*.log\_archive\_dest\_state\_2='ENABLE'

orcl.log\_archive\_format='%t\_%s\_%r.dbf'

\*.log\_archive\_max\_processes=4

\*.log\_archive\_min\_succeed\_dest=1

orcl.log\_archive\_trace=0

\*.memory\_target=1G

\*.open\_cursors=300

\*.processes=150

\*.remote\_login\_passwordfile='EXCLUSIVE'

\*.standby\_file\_management='AUTO'

\*.undo\_tablespace='UNDOTBS1'

### LISTENER.ORA on Primary

LISTENER =

  (DESCRIPTION\_LIST =

    (DESCRIPTION =

      (ADDRESS = (PROTOCOL = TCP)(HOST = ora11204)(PORT = 1521))

      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1521)) – this is not required

    )

  )

DEFAULT\_SERVICE\_LISTENER = (ORCL)

SID\_LIST\_LISTENER =

 (SID\_LIST =

  (SID\_DESC =

(GLOBAL\_DBNAME = orcl\_DGMGRL)

    (ORACLE\_HOME = /u01/app/oracle/product/11.2.0/orcl)

    (SID\_NAME = orcl)

   )

  (SID\_DESC =

(GLOBAL\_DBNAME = orcl)

    (ORACLE\_HOME = /u01/app/oracle/product/11.2.0/orcl)

    (SID\_NAME = orcl)

   )

)

### TNSNAMES.ORA on Primary

STBY =

  (DESCRIPTION =

    (ADDRESS = (PROTOCOL = TCP)(HOST = ora11204)(PORT = 1521))

    (CONNECT\_DATA =

      (SERVER = DEDICATED)

      (SERVICE\_NAME = stby) (UR=A) – this allows connection for the DUPLICATE DATABASE command when the database is not open

    )

  )

#for DataGuard Broker Connection

STBY\_DGB =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = ora11204)(PORT = 1521))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = stby\_DGMGRL)

)

)

# Pre-Setup At STANDBY Database

### INIT.ORA on Standby

\*.audit\_file\_dest='/u01/app/oracle/admin/stby/adump'

\*.audit\_trail='db'

\*.compatible='11.2.0'

\*.control\_files='/u02/oradata/STBY/control.dbf'

\*.db\_block\_size=8192

\*.db\_domain=''

\*.db\_name='ORCL'

\*.db\_unique\_name='STBY'

\*.db\_recovery\_file\_dest\_size=2G

\*.db\_recovery\_file\_dest='/u02/FRA'

\*.db\_create\_file\_dest='/u02/oradata'

.db\_file\_name\_convert='/u01/app/oracle/oradata/ORCL','/u02/oradata/STBY'

\*.log\_archive\_config='DG\_CONFIG=(stby,orcl)'

\*.log\_archive\_dest\_2='SERVICE=orcl SYNC VALID\_FOR=(ONLINE\_LOGFILES,PRIMARY\_ROLE) DB\_UNIQUE\_NAME=orcl'

\*.standby\_file\_management=AUTO

\*.diagnostic\_dest='/u01/app/oracle'

#\*.enable\_goldengate\_replication=TRUE

\*.memory\_target=1G

\*.open\_cursors=300

\*.processes=150

\*.remote\_login\_passwordfile='EXCLUSIVE'

\*.undo\_tablespace='UNDOTBS1'

### PreCreate all folders

Precreate folders specified in the parameter file.

### LISTENER.ORA on Standby

LISTENER =

  (DESCRIPTION\_LIST =

    (DESCRIPTION =

      (ADDRESS = (PROTOCOL = TCP)(HOST = ora11204)(PORT = 1521))

      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1521)) – this is not required

    )

  )

DEFAULT\_SERVICE\_LISTENER = (STBY)

SID\_LIST\_LISTENER =

 (SID\_LIST =

  (SID\_DESC =

(GLOBAL\_DBNAME=stby\_DGMGRL)

    (ORACLE\_HOME = /u01/app/oracle/product/11.2.0/orcl)

    (SID\_NAME = stby)

  )

  (SID\_DESC =

(GLOBAL\_DBNAME=stby)

    (ORACLE\_HOME = /u01/app/oracle/product/11.2.0/orcl)

    (SID\_NAME = stby)

  )

 )

### TNSNAMES.ORA on Standby

ORCL =

  (DESCRIPTION =

    (ADDRESS = (PROTOCOL = TCP)(HOST = ora11204)(PORT = 1521))

    (CONNECT\_DATA =

      (SERVER = DEDICATED)

      (SERVICE\_NAME = orcl) (UR=A)

    )

  )

#for DataGuard Broker Connection

ORCL\_DGB =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = ora11204)(PORT = 1521))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = orcl\_DGMGRL)

)

)

# Run DUPLICATE DATABASE Command

### Startup Standby Instance

STARTUP NOMOUNT

### Start RMAN Session

At Primary

RMAN TARGET / {or CONNECT TARGET SYS/ORACLE@

CONNECT AUXILIARY SYS/ORACLE@STBY

### Run DUPLICATE DATABASE Command

DUPLICATE TARGET DATABASE FOR STANDBY FROM ACTIVE DATABASE ;

Starting Duplicate Db at 05-DEC-16

using target database control file instead of recovery catalog

allocated channel: ORA\_AUX\_DISK\_1

channel ORA\_AUX\_DISK\_1: SID=96 device type=DISK

contents of Memory Script:

{

backup as copy reuse

targetfile '/u01/app/oracle/product/11.2.0/orcl/dbs/orapworcl' auxiliary format

'/u01/app/oracle/product/11.2.0/orcl/dbs/orapwstby' ;

}

executing Memory Script

Starting backup at 05-DEC-16

allocated channel: ORA\_DISK\_1

channel ORA\_DISK\_1: SID=27 device type=DISK

Finished backup at 05-DEC-16

contents of Memory Script:

{

backup as copy current controlfile for standby auxiliary format '/u02/oradata/STBY/control.dbf';

}

executing Memory Script

Starting backup at 05-DEC-16

using channel ORA\_DISK\_1

channel ORA\_DISK\_1: starting datafile copy

copying standby control file

output file name=/u01/app/oracle/product/11.2.0/orcl/dbs/snapcf\_orcl.f tag=TAG20161205T111049 RECID=10 STAMP=929790650

channel ORA\_DISK\_1: datafile copy complete, elapsed time: 00:00:01

Finished backup at 05-DEC-16

contents of Memory Script:

{

sql clone 'alter database mount standby database';

}

executing Memory Script

sql statement: alter database mount standby database

contents of Memory Script:

{

set newname for tempfile 1 to

"/u02/oradata/STBY/temp.dbf";

switch clone tempfile all;

set newname for datafile 1 to

"/u02/oradata/STBY/system.dbf";

set newname for datafile 2 to

"/u02/oradata/STBY/sysaux.dbf";

set newname for datafile 3 to

"/u02/oradata/STBY/undotbs1.dbf";

set newname for datafile 4 to

"/u02/oradata/STBY/users.dbf";

set newname for datafile 11 to

"/u02/oradata/STBY/datafile/o1\_mf\_hemant\_cdgb60g4\_.dbf";

set newname for datafile 12 to

"/u02/oradata/STBY/datafile/o1\_mf\_users\_c552qnsh\_.dbf";

set newname for datafile 13 to

"/u02/oradata/STBY/datafile/o1\_mf\_intermed\_c552qpc7\_.dbf";

backup as copy reuse

datafile 1 auxiliary format

"/u02/oradata/STBY/system.dbf" datafile

2 auxiliary format

"/u02/oradata/STBY/sysaux.dbf" datafile

3 auxiliary format

"/u02/oradata/STBY/undotbs1.dbf" datafile

4 auxiliary format

"/u02/oradata/STBY/users.dbf" datafile

11 auxiliary format

"/u02/oradata/STBY/datafile/o1\_mf\_hemant\_cdgb60g4\_.dbf" datafile

12 auxiliary format

"/u02/oradata/STBY/datafile/o1\_mf\_users\_c552qnsh\_.dbf" datafile

13 auxiliary format

"/u02/oradata/STBY/datafile/o1\_mf\_intermed\_c552qpc7\_.dbf" ;

sql 'alter system archive log current';

}

executing Memory Script

executing command: SET NEWNAME

renamed tempfile 1 to /u02/oradata/STBY/temp.dbf in control file

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

executing command: SET NEWNAME

Starting backup at 05-DEC-16

using channel ORA\_DISK\_1

channel ORA\_DISK\_1: starting datafile copy

input datafile file number=00002 name=/u01/app/oracle/oradata/ORCL/sysaux.dbf

output file name=/u02/oradata/STBY/sysaux.dbf tag=TAG20161205T111059

channel ORA\_DISK\_1: datafile copy complete, elapsed time: 00:00:25

channel ORA\_DISK\_1: starting datafile copy

input datafile file number=00001 name=/u01/app/oracle/oradata/ORCL/system.dbf

output file name=/u02/oradata/STBY/system.dbf tag=TAG20161205T111059

channel ORA\_DISK\_1: datafile copy complete, elapsed time: 00:00:15

channel ORA\_DISK\_1: starting datafile copy

input datafile file number=00003 name=/u01/app/oracle/oradata/ORCL/undotbs1.dbf

output file name=/u02/oradata/STBY/undotbs1.dbf tag=TAG20161205T111059

channel ORA\_DISK\_1: datafile copy complete, elapsed time: 00:00:15

channel ORA\_DISK\_1: starting datafile copy

input datafile file number=00004 name=/u01/app/oracle/oradata/ORCL/users.dbf

output file name=/u02/oradata/STBY/users.dbf tag=TAG20161205T111059

channel ORA\_DISK\_1: datafile copy complete, elapsed time: 00:00:03

channel ORA\_DISK\_1: starting datafile copy

input datafile file number=00011 name=/u01/app/oracle/oradata/ORCL/datafile/o1\_mf\_hemant\_cdgb60g4\_.dbf

output file name=/u02/oradata/STBY/datafile/o1\_mf\_hemant\_cdgb60g4\_.dbf tag=TAG20161205T111059

channel ORA\_DISK\_1: datafile copy complete, elapsed time: 00:00:07

channel ORA\_DISK\_1: starting datafile copy

input datafile file number=00012 name=/u01/app/oracle/oradata/ORCL/datafile/o1\_mf\_users\_c552qnsh\_.dbf

output file name=/u02/oradata/STBY/datafile/o1\_mf\_users\_c552qnsh\_.dbf tag=TAG20161205T111059

channel ORA\_DISK\_1: datafile copy complete, elapsed time: 00:00:03

channel ORA\_DISK\_1: starting datafile copy

input datafile file number=00013 name=/u01/app/oracle/oradata/ORCL/datafile/o1\_mf\_intermed\_c552qpc7\_.dbf

output file name=/u02/oradata/STBY/datafile/o1\_mf\_intermed\_c552qpc7\_.dbf tag=TAG20161205T111059

channel ORA\_DISK\_1: datafile copy complete, elapsed time: 00:00:03

Finished backup at 05-DEC-16

sql statement: alter system archive log current

contents of Memory Script:

{

switch clone datafile all;

}

executing Memory Script

datafile 1 switched to datafile copy

input datafile copy RECID=10 STAMP=929790732 file name=/u02/oradata/STBY/system.dbf

datafile 2 switched to datafile copy

input datafile copy RECID=11 STAMP=929790732 file name=/u02/oradata/STBY/sysaux.dbf

datafile 3 switched to datafile copy

input datafile copy RECID=12 STAMP=929790732 file name=/u02/oradata/STBY/undotbs1.dbf

datafile 4 switched to datafile copy

input datafile copy RECID=13 STAMP=929790732 file name=/u02/oradata/STBY/users.dbf

datafile 11 switched to datafile copy

input datafile copy RECID=14 STAMP=929790732 file name=/u02/oradata/STBY/datafile/o1\_mf\_hemant\_cdgb60g4\_.dbf

datafile 12 switched to datafile copy

input datafile copy RECID=15 STAMP=929790732 file name=/u02/oradata/STBY/datafile/o1\_mf\_users\_c552qnsh\_.dbf

datafile 13 switched to datafile copy

input datafile copy RECID=16 STAMP=929790732 file name=/u02/oradata/STBY/datafile/o1\_mf\_intermed\_c552qpc7\_.dbf

Finished Duplicate Db at 05-DEC-16

RMAN>

# Post-Setup At STANDBY Database

### Add Standby Redo Logs

ALTER DATABASE ADD STANDBY LOGFILE (add at least 1)

### Start Managed Recovery

CREATE SPFILE FROM PFILE ;

SHUTDOWN IMMEDIATE;

STARTUP MOUNT;

SHOW PARAMETER SPFILE; -- to verify that using SPFILE

ALTER DATABASE FLASHBACK ON; -- not mandatory

ALTER DATABASE RECOVER MANAGED STANDBY DATABASE

USING CURRENT LOGFILE

DISCONNECT FROM SESSION ;

### (Optional) Configure FAL\_SERVER

ALTER SYSTEM SET FAL\_SERVER=’ORCL’ ; -- optional if running single Standby

# Post-Setup At PRIMARY Database

### Configure Protection Level

ALTER DATABASE SET STANDBY TO MAXIMIZE AVAILABILITY ;

### Enable Redo Shipping

ALTER SYSTEM SET LOG\_ARCHIVE\_DEST\_STATE\_2=’ENABLE’;

# DATAGUARD BROKER SETUP

(also see Support Doc 1387859.1)

### Start DG Broker at both sites

ALTER SYSTEM SET DG\_BROKER\_START=TRUE;

### Add entry to listener

Add GLOBAL\_DBNAME to existing SID entry in the listener.ora at both sites:

(GLOBAL\_NAME = orcl\_DGMGRL)

(GLOBAL\_NAME = stby\_DGMGRL)

e.g.

SID\_LIST\_LISTENER =

 (SID\_LIST =

  (SID\_DESC =

    (ORACLE\_HOME = /u01/app/oracle/product/11.2.0/orcl)

    (SID\_NAME = orcl)

   )

  (SID\_DESC =

(GLOBAL\_NAME = orcl\_DGMGRL)

    (ORACLE\_HOME = /u01/app/oracle/product/11.2.0/orcl)

    (SID\_NAME = orcl)

   )

)

Restart Listener

### Add new entry to tnsnames

ORCL\_DGB =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = ora11204)(PORT = 1521))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = orcl\_DGMGRL)

)

)

STBY\_DGB =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = ora11204)(PORT = 1521))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = stby\_DGMGRL)

)

)

### Connect to Broker and Configure

dgmgrl

connect sys/oracle@orcl

create configuration orcl

as primary database is orcl

connect identifier is orcl;

add database stby ;

as connect identifier is stby

maintained as physical;

enable configuration;

show configuration;

### Test Switchover

switchover to stby;

(may need to manually STARTUP MOUNT the old primary ORCL after ORA-12514 error)

Verify Switchover at both sites

SQL : SELECT DATABASE\_ROLE FROM V$DATABASE;

DGMGRL : SHOW CONFIGURATION;