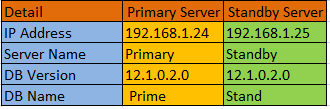
**Step by Step to configure Oracle 12c Data Guard Physical Standby**

Description:

This article  we are going to see 12.1.0.2.0 standby database creation using rman.

**Environment Details:-**



**Primary Server side Configurations:-**

**Step1:-Change Archivelog mode**

[oracle@primary ~]$ sqlplus ‘/as sysdba’  
SQL\*Plus: Release 12.1.0.2.0 Production on Tue Jun 12 05:10:47 2018  
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, OLAP, Advanced Analytics and Real Application Testing options

SQL> archive log list  
Database log mode No Archive Mode  
Automatic archival Disabled  
Archive destination USE\_DB\_RECOVERY\_FILE\_DEST  
Oldest online log sequence 2  
Current log sequence 4  
SQL> shut immediate  
Database closed.  
Database dismounted.  
ORACLE instance shut down.  
SQL> startup mount  
ORACLE instance started.  
Total System Global Area 1660944384 bytes  
Fixed Size 2925072 bytes  
Variable Size 1056968176 bytes  
Database Buffers 587202560 bytes  
Redo Buffers 13848576 bytes  
Database mounted.  
SQL> alter database archivelog;  
Database altered.

SQL> alter database open;  
Database altered.

**Step2:-Change force logging mode**

SQL> ALTER DATABASE FORCE LOGGING;  
Database altered.

SQL> select FORCE\_LOGGING,log\_mode from v$database;  
FORCE\_LOGGING  LOG\_MODE  
————        ————  
YES                               ARCHIVELOG

**Step3:-Adding Redologfile for standby database**

SQL> alter database add standby logfile group 4 ‘/u01/app/oracle/oradata/PRIME/onlinelog/redo04.log’ size 50m;  
Database altered.

SQL> alter database add standby logfile group 5 ‘/u01/app/oracle/oradata/PRIME/onlinelog/redo05.log’ size 50m;  
Database altered.

SQL> alter database add standby logfile group 6 ‘/u01/app/oracle/oradata/PRIME/onlinelog/redo06.log’ size 50m;  
Database altered.

SQL> SELECT GROUP#,THREAD#,SEQUENCE#,ARCHIVED,STATUS FROM V$STANDBY\_LOG;

GROUP# THREAD# SEQUENCE# ARC STATUS  
———- ———- ———- — ———-  
4 0 0 YES UNASSIGNED  
5 0 0 YES UNASSIGNED  
6 0 0 YES UNASSIGNED

**Step4:-Adding the network entry in primary and standby side(Both servers)**

Tnsnames entry:-  
\*\*\*\*\*\*\*\*\*\*\*\*\*\*  
PRIME =  
(DESCRIPTION =  
(ADDRESS\_LIST =  
(ADDRESS = (PROTOCOL = TCP)(HOST = primary)(PORT = 1539))  
)  
(CONNECT\_DATA =  
(SERVER = DEDICATED)  
(SERVICE\_NAME = prime)  
)  
)  
STAND =  
(DESCRIPTION =  
(ADDRESS\_LIST =  
(ADDRESS = (PROTOCOL = TCP)(HOST = standby)(PORT = 1539))  
)  
(CONNECT\_DATA =  
(SERVICE\_NAME = stand)  
)  
)  
Listener Entry:-  
\*\*\*\*\*\*\*\*\*\*\*\*  
SID\_LIST\_LISTENER =  
(SID\_LIST =  
(SID\_DESC =  
(GLOBAL\_DBNAME = prime)  
(ORACLE\_HOME = /u01/app/oracle/product/12.1.0.2/db\_1)  
(SID\_NAME = prime)  
)  
(SID\_DESC =  
(GLOBAL\_DBNAME = stand)  
(ORACLE\_HOME = /u01/app/oracle/product/12.1.0.2/db\_1)  
(SID\_NAME = stand)  
)  
)

**Output like the below**

[oracle@primary admin]$ tnsping prime  
TNS Ping Utility for Linux: Version 12.1.0.2.0 – Production on 12-JUN-2018 05:54:29  
Copyright (c) 1997, 2014, Oracle. All rights reserved.  
Used parameter files:  
/u01/app/oracle/product/12.1.0.2/db\_1/network/admin/sqlnet.ora  
Used TNSNAMES adapter to resolve the alias  
Attempting to contact (DESCRIPTION = (ADDRESS\_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = 192.168.1.24)(PORT = 1539))) (CONNECT\_DATA = (SERVER = DEDICATED) (SERVICE\_NAME = prime)))  
OK (0 msec)

[oracle@primary admin]$ tnsping stand  
TNS Ping Utility for Linux: Version 12.1.0.2.0 – Production on 12-JUN-2018 05:54:34  
Copyright (c) 1997, 2014, Oracle. All rights reserved.  
Used parameter files:  
/u01/app/oracle/product/12.1.0.2/db\_1/network/admin/sqlnet.ora  
Used TNSNAMES adapter to resolve the alias  
Attempting to contact (DESCRIPTION = (ADDRESS\_LIST = (ADDRESS = (PROTOCOL = TCP)(HOST = 192.168.1.25)(PORT = 1539))) (CONNECT\_DATA = (SERVICE\_NAME = stand)))  
OK (0 msec)

**step5:-Changing parameters in primary database**

SQL> ALTER SYSTEM SET db\_unique\_name=’PRIME’ SCOPE=SPFILE;  
System altered.

SQL> ALTER SYSTEM SET log\_archive\_config=’dg\_config=(prime,stand)’ SCOPE=SPFILE;  
System altered.

SQL> ALTER SYSTEM SET log\_archive\_dest\_1=’location=use\_db\_recovery\_file\_dest valid\_for=(all\_logfiles,all\_roles) db\_unique\_name=prime’ SCOPE=SPFILE;  
System altered.

SQL> ALTER SYSTEM SET log\_archive\_dest\_2=’service=stand async valid\_for=(online\_logfiles,primary\_role) db\_unique\_name=stand’ SCOPE=SPFILE;  
System altered.

SQL> ALTER SYSTEM SET fal\_server=’STAND’ SCOPE=SPFILE;  
System altered.

SQL> ALTER SYSTEM SET fal\_client=’PRIME’ SCOPE=SPFILE;  
System altered.

SQL> ALTER SYSTEM SET standby\_file\_management=’AUTO’ SCOPE=SPFILE;  
System altered.

SQL> ALTER SYSTEM SET db\_file\_name\_convert=’/u01/app/oracle/oradata/STAND/datafile’,’/u01/app/oracle/oradata/PRIME/datafile’ SCOPE=SPFILE;  
System altered.

SQL> ALTER SYSTEM SET log\_file\_name\_convert=’/u01/app/oracle/oradata/STAND/onlinelog’,’/u01/app/oracle/oradata/PRIME/onlinelog’ SCOPE=SPFILE;  
System altered.

**Standby Server side Configurations:-**

**Step1:- Password file creation**

copy the remote login password file (orapwprime) from the primary database server to the $ORACLE\_HOME/dbs directory on the  
standby database server, renaming it to orapwstand.

[oracle@primary dbs]$ scp orapwprime oracle@192.168.1.25:$ORACLE\_HOME/dbs  
oracle@192.168.1.25’s password:  
orapwprime 100% 7680 7.5KB/s 00:00

oracle@standby dbs]$ mv orapwprime orapwstand

**Step2:- Changing parameters in standby database**

In the $ORACLE\_HOME/dbs directory of the standby system, create an initialization parameter file named initstand.ora  
Containing a single parameter: DB\_NAME=stand

[oracle@standby admin]$ cd $ORACLE\_HOME/dbs  
[oracle@standby dbs]$ cat initstand.ora  
db\_name=stand

**Step3:- Create directory Structure in Standby database**

[oracle@standby dbs]$ cd $ORACLE\_BASE/admin/  
[oracle@standby admin]$ mkdir stand  
[oracle@standby admin]$ cd stand  
[oracle@standby stand]$ mkdir adump pfile dpdump  
[oracle@standby stand]$ mkdir -p /u01/app/oracle/oradata/STAND/onlinelog  
[oracle@standby stand]$ mkdir -p /u01/app/oracle/oradata/STAND/datafile

**Step4:- start the standby database using pfile**

[oracle@standby dbs]$ export ORACLE\_SID=stand  
[oracle@standby dbs]$ sqlplus ‘/as sysdba’  
SQL\*Plus: Release 12.1.0.2.0 Production on Tue Jun 12 06:03:47 2018  
Copyright (c) 1982, 2014, Oracle. All rights reserved.  
Connected to an idle instance.  
SQL> startup pfile=’initstand.ora’ nomount  
ORACLE instance started.  
Total System Global Area 218103808 bytes  
Fixed Size 2922712 bytes  
Variable Size 159385384 bytes  
Database Buffers 50331648 bytes  
Redo Buffers 5464064 bytes

**Step5:- connect to the rman**

**From standby do it**

[oracle@standby dbs]$ export ORACLE\_SID=prime  
[oracle@standby dbs]$ rman target sys/oracle@prime  
Recovery Manager: Release 12.1.0.2.0 – Production on Tue Jun 12 06:28:27 2018  
Copyright (c) 1982, 2014, Oracle and/or its affiliates. All rights reserved.  
connected to target database: PRIME (DBID=2055869989)  
RMAN> connect auxiliary sys/oracle@stand  
connected to auxiliary database: STAND (not mounted)  
RMAN> run   
{  
allocate channel p1 type disk;  
allocate channel p2 type disk;  
allocate channel p3 type disk;  
allocate channel p4 type disk;  
allocate auxiliary channel s1 type disk;  
duplicate target database for standby from active database  
spfile  
parameter\_value\_convert ‘prime’,’stand’

set db\_name='prime'

set db\_unique\_name=’stand’  
set db\_file\_name\_convert=’/u01/app/oracle/oradata/PRIME/datafile/’,’/u01/app/oracle/oradata/STAND/datafile/’  
set log\_file\_name\_convert=’/u01/app/oracle/oradata/PRIME/onlinelog/’,’/u01/app/oracle/oradata/STAND/onlinelog/’  
set control\_files=’/u01/app/oracle/oradata/STAND/onlinelog/standby1.ctl’  
set log\_archive\_max\_processes=’5′  
set fal\_client=’stand’  
set fal\_server=’prime’  
set standby\_file\_management=’AUTO’  
set log\_archive\_config=’dg\_config=(prime,stand)’  
set compatible=’12.1.0.2.0′  
set memory\_target=’500m’  
nofilenamecheck;  
}  
2> 3> 4> 5> 6> 7> 8> 9> 10> 11> 12> 13> 14> 15> 16> 17> 18> 19> 20> 21> 22> 23>  
using target database control file instead of recovery catalog  
allocated channel: p1  
channel p1: SID=54 device type=DISK  
allocated channel: p2  
channel p2: SID=42 device type=DISK  
allocated channel: p3  
channel p3: SID=53 device type=DISK  
allocated channel: p4  
channel p4: SID=50 device type=DISK  
allocated channel: s1  
channel s1: SID=23 device type=DISK  
Starting Duplicate Db at 12-JUN-18  
contents of Memory Script:  
{  
backup as copy reuse  
targetfile ‘/u01/app/oracle/product/12.1.0.2/db\_1/dbs/orapwprime’ auxiliary format  
‘/u01/app/oracle/product/12.1.0.2/db\_1/dbs/orapwstand’ targetfile  
‘/u01/app/oracle/product/12.1.0.2/db\_1/dbs/spfileprime.ora’ auxiliary format  
‘/u01/app/oracle/product/12.1.0.2/db\_1/dbs/spfilestand.ora’ ;  
sql clone “alter system set spfile= ”/u01/app/oracle/product/12.1.0.2/db\_1/dbs/spfilestand.ora””;  
}  
executing Memory Script  
Starting backup at 12-JUN-18  
Finished backup at 12-JUN-18  
sql statement: alter system set spfile= ”/u01/app/oracle/product/12.1.0.2/db\_1/dbs/spfilestand.ora”  
contents of Memory Script:  
{  
sql clone “alter system set audit\_file\_dest =  
”/u01/app/oracle/admin/stand/adump” comment=  
”” scope=spfile”;  
sql clone “alter system set dispatchers =  
”(PROTOCOL=TCP) (SERVICE=standXDB)” comment=  
”” scope=spfile”;  
sql clone “alter system set log\_archive\_dest\_1 =  
”location=use\_db\_recovery\_file\_dest valid\_for=(all\_logfiles,all\_roles) db\_unique\_name=stand” comment=  
”” scope=spfile”;  
sql clone “alter system set db\_unique\_name =  
”stand” comment=  
”” scope=spfile”;  
sql clone “alter system set db\_file\_name\_convert =  
”/u01/app/oracle/oradata/PRIME/datafile/”, ”/u01/app/oracle/oradata/STAND/datafile/” comment=  
”” scope=spfile”;  
sql clone “alter system set log\_file\_name\_convert =  
”/u01/app/oracle/oradata/PRIME/onlinelog/”, ”/u01/app/oracle/oradata/STAND/onlinelog/” comment=  
”” scope=spfile”;  
sql clone “alter system set control\_files =  
”/u01/app/oracle/oradata/STAND/onlinelog/standby1.ctl” comment=  
”” scope=spfile”;  
sql clone “alter system set log\_archive\_max\_processes =  
5 comment=  
”” scope=spfile”;  
sql clone “alter system set fal\_client =  
”stand” comment=  
”” scope=spfile”;  
sql clone “alter system set fal\_server =  
”prime” comment=  
”” scope=spfile”;  
sql clone “alter system set standby\_file\_management =  
”AUTO” comment=  
”” scope=spfile”;  
sql clone “alter system set log\_archive\_config =  
”dg\_config=(prime,stand)” comment=  
”” scope=spfile”;  
sql clone “alter system set compatible =  
”12.1.0.2.0” comment=  
”” scope=spfile”;  
sql clone “alter system set memory\_target =  
500m comment=  
”” scope=spfile”;  
shutdown clone immediate;  
startup clone nomount;  
}  
executing Memory Script  
sql statement: alter system set audit\_file\_dest = ”/u01/app/oracle/admin/stand/adump” comment= ”” scope=spfile  
sql statement: alter system set dispatchers = ”(PROTOCOL=TCP) (SERVICE=standXDB)” comment= ”” scope=spfile  
sql statement: alter system set log\_archive\_dest\_1 = ”location=use\_db\_recovery\_file\_dest valid\_for=(all\_logfiles,all\_roles) db\_unique\_name=stand” comment= ”” scope=spfile  
sql statement: alter system set db\_unique\_name = ”stand” comment= ”” scope=spfile  
sql statement: alter system set db\_file\_name\_convert = ”/u01/app/oracle/oradata/PRIME/datafile/”, ”/u01/app/oracle/oradata/STAND/datafile/” comment= ”” scope=spfile  
sql statement: alter system set log\_file\_name\_convert = ”/u01/app/oracle/oradata/PRIME/onlinelog/”, ”/u01/app/oracle/oradata/STAND/onlinelog/” comment= ”” scope=spfile  
sql statement: alter system set control\_files = ”/u01/app/oracle/oradata/STAND/onlinelog/standby1.ctl” comment= ”” scope=spfile  
sql statement: alter system set log\_archive\_max\_processes = 5 comment= ”” scope=spfile  
sql statement: alter system set fal\_client = ”stand” comment= ”” scope=spfile  
sql statement: alter system set fal\_server = ”prime” comment= ”” scope=spfile  
sql statement: alter system set standby\_file\_management = ”AUTO” comment= ”” scope=spfile  
sql statement: alter system set log\_archive\_config = ”dg\_config=(prime,stand)” comment= ”” scope=spfile  
sql statement: alter system set compatible = ”12.1.0.2.0” comment= ”” scope=spfile  
sql statement: alter system set memory\_target = 500m comment= ”” scope=spfile  
Oracle instance shut down  
connected to auxiliary database (not started)  
Oracle instance started  
Total System Global Area 524288000 bytes  
Fixed Size 2926320 bytes  
Variable Size 444598544 bytes  
Database Buffers 71303168 bytes  
Redo Buffers 5459968 bytes  
allocated channel: s1  
channel s1: SID=22 device type=DISK  
contents of Memory Script:  
{  
backup as copy current controlfile for standby auxiliary format ‘/u01/app/oracle/oradata/STAND/onlinelog/standby1.ctl’;  
}  
executing Memory Script  
Starting backup at 12-JUN-18  
channel p1: starting datafile copy  
copying standby control file  
output file name=/u01/app/oracle/product/12.1.0.2/db\_1/dbs/snapcf\_prime.f tag=TAG20180612T064910  
channel p1: datafile copy complete, elapsed time: 00:00:01  
Finished backup at 12-JUN-18  
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  
“/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_temp\_fkxw4qob\_.tmp”;  
switch clone tempfile all;  
set newname for datafile 1 to  
“/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_system\_fkxw1toz\_.dbf”;  
set newname for datafile 3 to  
“/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_sysaux\_fkxw0fh2\_.dbf”;  
set newname for datafile 4 to  
“/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_undotbs1\_fkxw3m3q\_.dbf”;  
set newname for datafile 6 to  
“/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_users\_fkxw3kvr\_.dbf”;  
backup as copy reuse  
datafile 1 auxiliary format  
“/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_system\_fkxw1toz\_.dbf” datafile  
3 auxiliary format  
“/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_sysaux\_fkxw0fh2\_.dbf” datafile  
4 auxiliary format  
“/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_undotbs1\_fkxw3m3q\_.dbf” datafile  
6 auxiliary format  
“/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_users\_fkxw3kvr\_.dbf” ;  
sql ‘alter system archive log current’;  
}  
executing Memory Script  
executing command: SET NEWNAME  
renamed tempfile 1 to /u01/app/oracle/oradata/STAND/datafile/o1\_mf\_temp\_fkxw4qob\_.tmp in control file  
executing command: SET NEWNAME  
executing command: SET NEWNAME  
executing command: SET NEWNAME  
executing command: SET NEWNAME  
Starting backup at 12-JUN-18  
channel p1: starting datafile copy  
input datafile file number=00001 name=/u01/app/oracle/oradata/PRIME/datafile/o1\_mf\_system\_fkxw1toz\_.dbf  
channel p2: starting datafile copy  
input datafile file number=00003 name=/u01/app/oracle/oradata/PRIME/datafile/o1\_mf\_sysaux\_fkxw0fh2\_.dbf  
channel p3: starting datafile copy  
input datafile file number=00004 name=/u01/app/oracle/oradata/PRIME/datafile/o1\_mf\_undotbs1\_fkxw3m3q\_.dbf  
channel p4: starting datafile copy  
input datafile file number=00006 name=/u01/app/oracle/oradata/PRIME/datafile/o1\_mf\_users\_fkxw3kvr\_.dbf  
output file name=/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_undotbs1\_fkxw3m3q\_.dbf tag=TAG20180612T064916  
channel p3: datafile copy complete, elapsed time: 00:00:03  
output file name=/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_users\_fkxw3kvr\_.dbf tag=TAG20180612T064916  
channel p4: datafile copy complete, elapsed time: 00:00:03  
output file name=/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_sysaux\_fkxw0fh2\_.dbf tag=TAG20180612T064916  
channel p2: datafile copy complete, elapsed time: 00:00:56  
output file name=/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_system\_fkxw1toz\_.dbf tag=TAG20180612T064916  
channel p1: datafile copy complete, elapsed time: 00:01:07  
Finished backup at 12-JUN-18  
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=1 STAMP=978589826 file name=/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_system\_fkxw1toz\_.dbf  
datafile 3 switched to datafile copy  
input datafile copy RECID=2 STAMP=978589826 file name=/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_sysaux\_fkxw0fh2\_.dbf  
datafile 4 switched to datafile copy  
input datafile copy RECID=3 STAMP=978589826 file name=/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_undotbs1\_fkxw3m3q\_.dbf  
datafile 6 switched to datafile copy  
input datafile copy RECID=4 STAMP=978589826 file name=/u01/app/oracle/oradata/STAND/datafile/o1\_mf\_users\_fkxw3kvr\_.dbf  
Finished Duplicate Db at 12-JUN-18  
released channel: p1  
released channel: p2  
released channel: p3  
released channel: p4  
released channel: s1

**Step6:- connect to the standby database**

[oracle@standby dbs]$ export ORACLE\_SID=stand  
[oracle@standby dbs]$ sqlplus ‘/as sysdba’  
SQL\*Plus: Release 12.1.0.2.0 Production on Tue Jun 12 06:35:29 2018  
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, OLAP, Advanced Analytics and Real Application Testing options

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

**Step7:- Physical Standby Database is Performing Correctly**

SQL> SELECT sequence#, first\_time, next\_time, applied FROM v$archived\_log ORDER BY sequence#;

SEQUENCE# FIRST\_TIM NEXT\_TIME APPLIED  
———- ——— ——— ———  
6 12-JUN-18 12-JUN-18 YES  
7 12-JUN-18 12-JUN-18 YES  
8 12-JUN-18 12-JUN-18 IN-MEMORY

Successfully configured the Oracle 12c Data Guard Physical Standby