**Oracle Database Administration Service**

**Oracle Dataguard Configuration**

Submitted to

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**By**



CIS, Wipro Limited

Document Details

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Version History

(All revisions made to this document must be listed in chronological order. All revisions must be approved. Review and Approval can be done by an internal source or by the customer)

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| Version | Date of Revision | Description | Author | Reviewed By | Approved By |
| 1.0 | 09-01-2018 | Initial Draft | Jiten Pansara | Jiten Pansara | Mihir Gajjar |
| 1.1 | **25-01-2018** | **Document Completed** | Jiten Pansara | Balaji Ankalle | Mihir Gajjar |
| 1.2 | **01-01-2019** | Updated the content | Sreya Puthukudy | Jiten Pansara | Santosh Badiger |

Document Distribution List

|  |  |  |
| --- | --- | --- |
| **Sl. No.** | **Name and Company** | **Purpose** |
| 1 | RWEIT-ORACLEDBA | **This document is used to configure data guard for Oracle databases.** |
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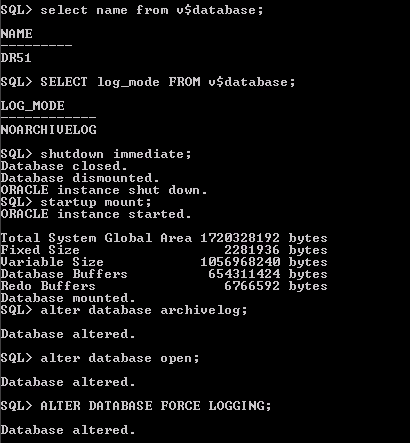
[3. Steps to Configure Dataguard 5](#_Toc300741641)

Primary Server Setup

Logging

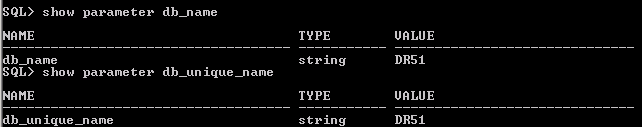
Check that the primary database is in archivelog mode.

If it is noarchivelog mode, switch is to archivelog mode.



### **Initialization Parameters**

Check the setting for the DB\_NAME and DB\_UNIQUE\_NAME parameters. In this case they are both set to "DR51" on the primary database.



The DB\_NAME of the standby database will be the same as that of the primary, but it must have a different DB\_UNIQUE\_NAME value. The DB\_UNIQUE\_NAME values of the primary and standby database should be used in the DG\_CONFIG setting of the LOG\_ARCHIVE\_CONFIG parameter. For this example, the standby database will have the value "DR51\_STBY".

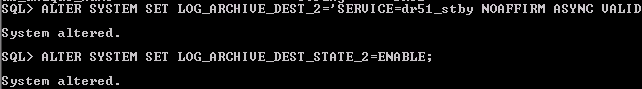
**Alter system set log\_archive\_config=’DG\_CONFIG=(DR51,DR51\_STBY)’;**



Set suitable remote archive log destinations. In this case I'm using the fast recovery area for the local location, but you could specify an location explicitly if you prefer. Notice the SERVICE and the DB\_UNIQUE\_NAME for the remote location reference the standby location.

If we want to move archives from primary to standby than we might need to do it manually. DR has feature to automate the process. By setting Log\_archive\_dest\_2, it will check for the automatically send archives from primary to standby using Service name specified.

ALTER SYSTEM SET LOG\_ARCHIVE\_DEST\_2='SERVICE=dr51g\_stby NOAFFIRM ASYNC VALID\_FOR=(ONLINE\_LOGFILES,PRIMARY\_ROLE) DB\_UNIQUE\_NAME=DR51\_STBY';

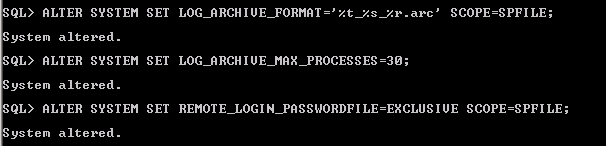


The LOG\_ARCHIVE\_FORMAT and LOG\_ARCHIVE\_MAX\_PROCESSES parameters must be set to appropriate values and the REMOTE\_LOGIN\_PASSWORDFILE must be set to exclusive.

Alter system set log\_archive\_format=’%t\_%s\_%r.arc’ SCOPE=SPFILE;

Alter system set log\_archive\_max\_processes=8;

cAlter system set Remote\_login\_passwordfile=EXCLUSIVE scope=spfile;

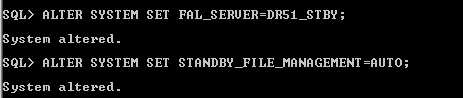


In addition to the previous setting, it is recommended to make sure the primary is ready to switch roles to become a standby. For that to work properly we need to set the following parameters. Adjust the \*\_CONVERT parameters to account for your filename and path differences between the servers.

FAL\_SERVER is the TNS Alias by which primary connects to standby and visa versa.

Alter system set FAL\_SERVER=DR51\_STBY;

Alter system set standby\_file\_managment=AUTO;



Remember, some of the parameters are not modifiable, so the database will need to be restarted before they take effect.

### **Service Setup**

Entries for the primary and standby databases are needed in the "$ORACLE\_HOME/network/admin/tnsnames.ora" files on both servers. You can create these using the Network Configuration Utility (netca) or manually. The following entries were used during this setup.

DR51 =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = ATLASARCHIVAL)(PORT = 1528))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = DR51)

)

)

DR51\_STBY =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = VMMSHJATLAS)(PORT = 1527))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = DR51\_STBY)

)

)

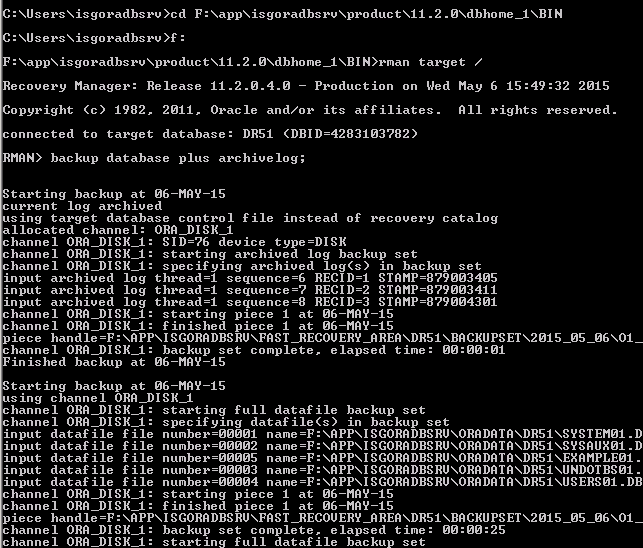
### **Backup Primary Database**

If you are planning to use an active duplicate to create the standby database, then this step is unnecessary. For a backup-based duplicate, or a manual restore, take a backup of the primary database.

Rman target /



If you face this issue go to $ORACLE\_HOME/BIN and than run rman target / and backup the database.



### **Create Standby Controlfile and PFILE**

Create a controlfile for the standby database by issuing the following command on the primary database.

**alter database create standby controlfile as 'E:\dr51\_stby.ctl';**



Create a parameter file for the standby database.

**create pfile='E:\initDR51\_stby.ora' from spfile;**

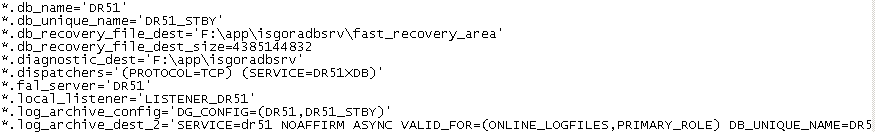


Amend the PFILE making the entries relevant for the standby database. I'm making a replica of the original server, so in my case I only had to amend the following parameters.

\*.db\_unique\_name='DR51\_STBY'

\*.fal\_server='DR51'

\*.log\_archive\_dest\_2='SERVICE=dr51 ASYNC VALID\_FOR=(ONLINE\_LOGFILES,PRIMARY\_ROLE) DB\_UNIQUE\_NAME=DR51'



## **Standby Server Setup (Manual)**

### **Insert the software only in standby server.**

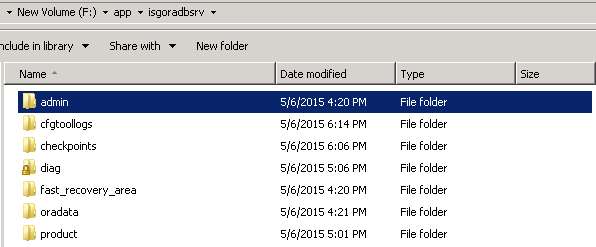
### **Copy Files**

Create the necessary directories on the standby server.

$ mkdir -p F:\app\isgoradbsrv\oradata\DR51

$ mkdir -p F:\app\isgoradbsrv\fast\_recovery\_area\DR51

$ mkdir -p F:\app\isgoradbsrv\admin\DR51\adump



Copy the files from the primary to the standby server.

***$ # Standby controlfile to all locations.***

**Windows:** Copy the file from F:\app\isgoradbsrv\dr51\_stby.ctl to Standby server: F:\app\isgoradbsrv\dr51\_stby.ctl

Copy the same file on F:\app\isgoradbsrv/fast\_recovery\_area/DB11G/control02.ctl and rename it to control02.ctl

**Linux:** $ scp oracle@ol5-112-dga1:/tmp/db11g\_stby.ctl /u01/app/oracle/oradata/DB11G/control01.ctl

$ cp /u01/app/oracle/oradata/DB11G/control01.ctl /u01/app/oracle/fast\_recovery\_area/DB11G/control02.ctl

***$ # Archivelogs and backups***

**Windows:**

Copy the archivelog and backupset directory from Primary F:\app\isgoradbsrv\fast\_recovery\_area\DR51 to Standby F:\app\isgoradbsrv\fast\_recovery\_area\DR51

**Linux:**

$ scp -r oracle@ol5-112-dga1:/u01/app/oracle/fast\_recovery\_area/DB11G/archivelog /u01/app/oracle/fast\_recovery\_area/DR51

$ scp -r oracle@ol5-112-dga1:/u01/app/oracle/fast\_recovery\_area/DB11G/backupset /u01/app/oracle/fast\_recovery\_area/DR51

***$ # Parameter file.***

**Windows:**

Copy the Parameter file from F:\app\isgoradbsrv\initDR51\_stby.ora to Standby F:\app\isgoradbsrv\initDR51\_stby.ora

**Linux:**

$ scp oracle@ol5-112-dga1:/tmp/initDB11G\_stby.ora /tmp/initDB11G\_stby.ora

***$ # Remote login password file.***

**Windows:**

Copy the password file from ORACLE\_HOME/database/PWDDR51.ora to standby ORACLE\_HOME/database

**Linux:**

$ scp oracle@ol5-112-dga1:$ORACLE\_HOME/dbs/orapwDR51 $ORACLE\_HOME/dbs

### **Start Listener**

Make sure the listener is started on the standby server.

If the listener is not present create it using **netua.**

LISTENER\_DR51 =

(DESCRIPTION\_LIST =

(DESCRIPTION =

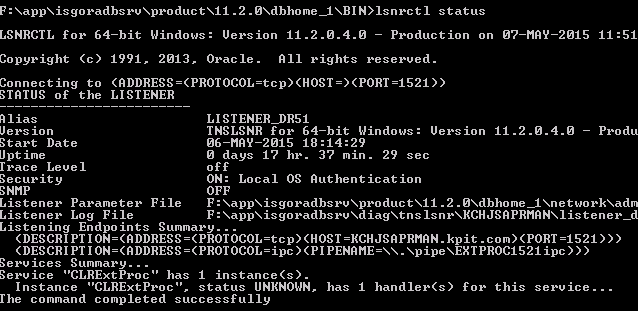
(ADDRESS = (PROTOCOL = TCP)(HOST = KCHJSAPRMAN)(PORT = 1521))

(ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1521))

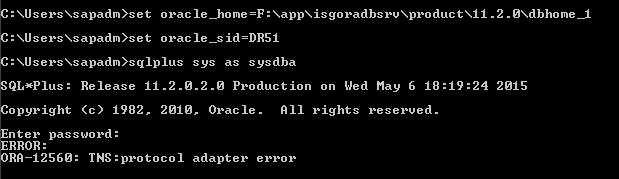
)

)

Check the status of the listener in Standlby.

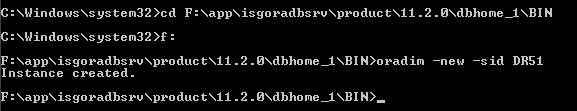


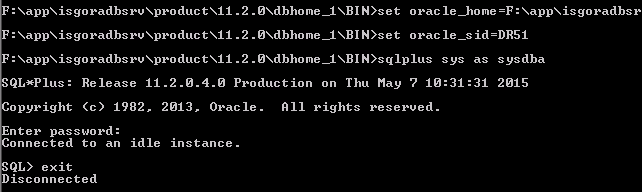
Set the oracle\_home,oracle\_sid and use sqlplus sys as sysdba



If you face this error, In Windows you have to register the SID. Kindly perform below steps.

1. Go to Oracle\_home\BIN
2. Execute: oradim –new –sid DR51





### **Restore Backup**

Create the SPFILE form the amended PFILE.

create spfile from pfile='F:\app\isgoradbsrv\initDR51\_stby.ora';



Restore the backup files.

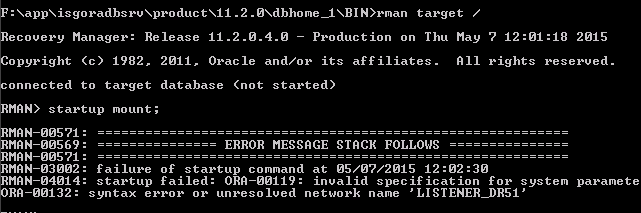
$ export ORACLE\_SID=DR51

$ rman target=/

RMAN> STARTUP MOUNT;

RMAN> RESTORE DATABASE;

You may get below error.

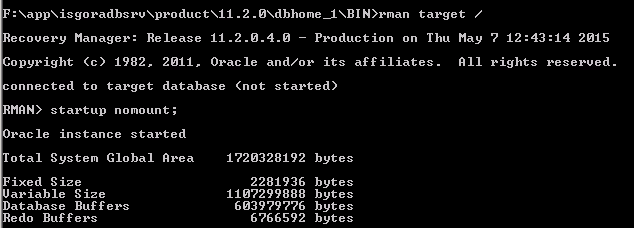


Solution:

IF the port no. for listener is 1521 than comment Local\_listener in Pfile and again create spfile.

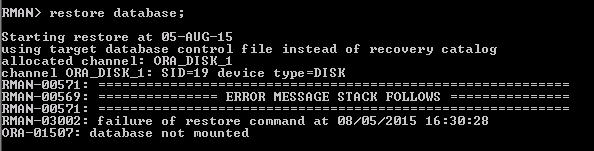






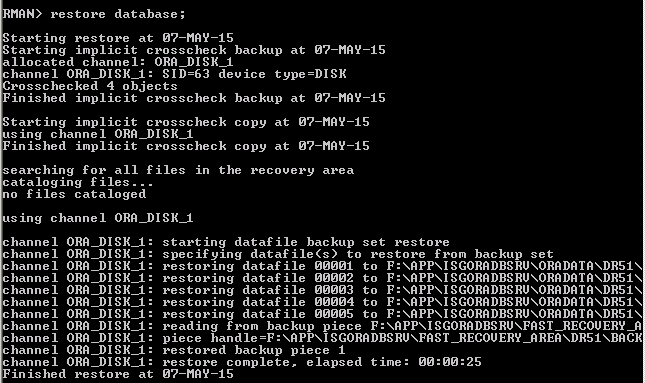
In case you get below error, check name and location of the control file in pfile which you have copied from primary database. Change the name and location accordingly and again create spfile from pfile.







Then again to rman prompt and restore the database.



### **Create Redo Logs**

Create online redo logs for the standby. It's a good idea to match the configuration of the primary server.

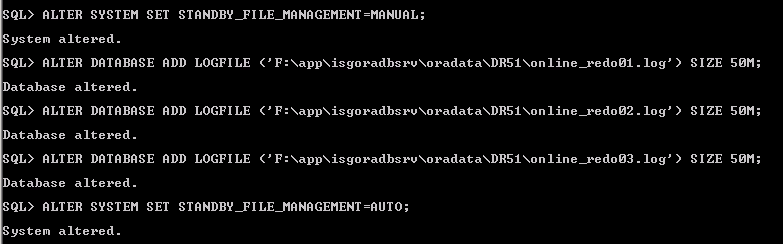
ALTER SYSTEM SET STANDBY\_FILE\_MANAGEMENT=MANUAL;

ALTER DATABASE ADD LOGFILE ('F:\app\isgoradbsrv\oradata\DR51\online\_redo01.log') SIZE 50M;

ALTER DATABASE ADD LOGFILE ('F:\app\isgoradbsrv\oradata\DR51\online\_redo02.log') SIZE 50M;

ALTER DATABASE ADD LOGFILE ('F:\app\isgoradbsrv\oradata\DR51\online\_redo03.log') SIZE 50M;

ALTER SYSTEM SET STANDBY\_FILE\_MANAGEMENT=AUTO;



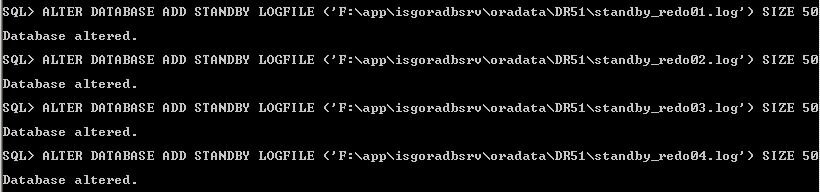
In addition to the online redo logs, you should create standby redo logs on both the standby and the primary database (in case of switchovers). The standby redo logs should be at least as big as the largest online redo log and there should be one extra group per thread compared the online redo logs. In my case, the following is standby redo logs must be created on both servers.

ALTER DATABASE ADD STANDBY LOGFILE ('F:\app\isgoradbsrv\oradata\DR51\standby\_redo01.log') SIZE 50M;

ALTER DATABASE ADD STANDBY LOGFILE ('F:\app\isgoradbsrv\oradata\DR51\standby\_redo02.log') SIZE 50M;

ALTER DATABASE ADD STANDBY LOGFILE ('F:\app\isgoradbsrv\oradata\DR51\standby\_redo03.log') SIZE 50M;

ALTER DATABASE ADD STANDBY LOGFILE ('F:\app\isgoradbsrv\oradata\DR51\standby\_redo04.log') SIZE 50M;



Once this is complete, we can start the apply process. Before it try to ping the database from one to another and visa versa.

You might get no listener error. Kindly go through TNS and listener of Primary and Standby and configure accordingly.

**Primary Database:**

**Listener.ora**

SID\_LIST\_LISTENER =

(SID\_LIST =

(SID\_DESC =

(GLOBAL\_DBNAME = DR51)

(ORACLE\_HOME = F:\app\isgoradbsrv\product\11.2.0\dbhome\_1)

(SID\_NAME = DR51)

)

)

LISTENER =

(DESCRIPTION\_LIST =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = IPC) (KEY = EXTPROC1528))

(ADDRESS = (PROTOCOL = TCP) (HOST = HJATLASDEV) (PORT = 1528))

)

**)**

**TNSNAMES.ora**

DR51 =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP) (HOST = ATLASARCHIVAL) (PORT = 1528))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = DR51)

)

)

DR51\_STBY =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP) (HOST = VMMSHJATLAS) (PORT = 1527))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = DR51\_STBY)

)

)

**Standby Database:**

**LISTENER.ora**

SID\_LIST\_LISTENER =

(SID\_LIST =

(SID\_DESC =

(GLOBAL\_DBNAME = DR51\_STBY)

(ORACLE\_HOME = F:\app\isgoradbsrv\product\11.2.0\dbhome\_1)

(SID\_NAME = DR51)

)

)

LISTENER =

(DESCRIPTION\_LIST =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = IPC) (KEY = EXTPROC1528))

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

)

**)**

**TNSNAMES.ora**

DR51 =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = ATLASARCHIVAL)(PORT = 1528))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = DR51)

)

)

DR51\_STBY =

(DESCRIPTION =

(ADDRESS = (PROTOCOL = TCP)(HOST = VMMSHJATLAS)(PORT = 1527))

(CONNECT\_DATA =

(SERVER = DEDICATED)

(SERVICE\_NAME = DR51\_STBY)

)

)

In case you still get error, remove listeners using netca from primary and standby both.

Create new listeners with port no. you want and put the same port number in TNS entry(for ex: Primary database: in listener if you keep port number as 1524 then TNS Entry should contain the same port number of primary database).

## Go to Services.msc, start and stop the listener.

## **Start Apply Process**

Start the apply process on standby server.

# Foreground redo apply. Session never returns until cancel.

ALTER DATABASE RECOVER MANAGED STANDBY DATABASE;

You might get below error while executing above command.

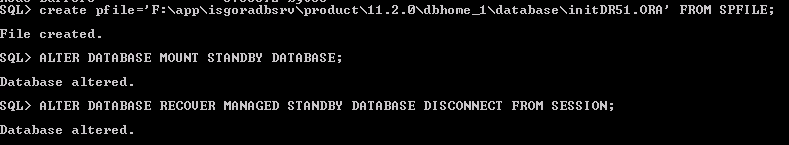


Solution:

1. Create pfile from Spfile
2. Check location and name of control file.
3. If name or location of the control file is different in pfile, than you have to change it accordingly.

# Background redo apply. Control is returned to the session once the apply process is started.

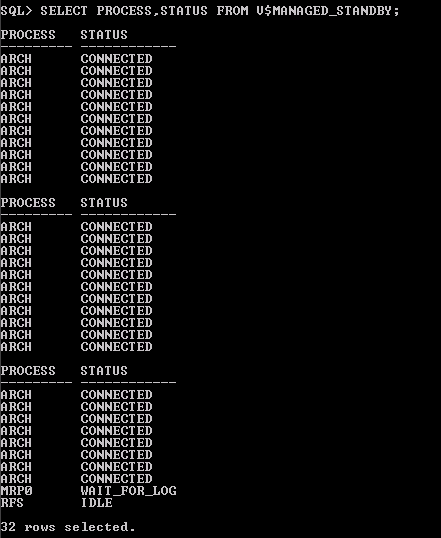
ALTER DATABASE RECOVER MANAGED STANDBY DATABASE DISCONNECT FROM SESSION;



If you need to cancel the apply process, issue the following command.

ALTER DATABASE RECOVER MANAGED STANDBY DATABASE CANCEL;

Check the running process, MRP0 process should be there.



Finally, last step check the DR is in sync or not.

Primary:



Standby:



Feel free to contact me in case of any queries.