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How to clone database on the DIFFERENT HOST?

The document will highlight the steps needed to use rman to clone **NON-ASM database to ASM database** on the same server.

The following is Source and “Intended” Destination Database information.

	Source	Destination
Database Name	MazDB	ASMMazDB
Database Version	10.2.0.4	10.2.0.4
Hostname	Linux-223	Linux-118
IP Address	192.168.0.223	192.168.0.118
Listener Name	LISTENER	LISTENER

Datafile	/u14/oradata/MazDB	+DG1/oradata/ASMMazDB
Redo Logs	/u15/oradata/MazDB /u16/oradata/MazDB /u17/oradata/MazDB	+REDO/oradata/ASMMazDB
Control Files	/u02/oradata/MazDB /u03/oradata/MazDB /u04/oradata/MazDB	+FLASH/oradata/ASMMazDB
Flash Recovery Area	/u05/flash_recovery_area	+FLASH
Dump Directories	/u01/app/oracle/admin/MazDB/adump /u01/app/oracle/admin/MazDB/bdump /u01/app/oracle/admin/MazDB/cdump /u01/app/oracle/admin/MazDB/udump	/u01/app/oracle/admin/ASMMazDB/adump /u01/app/oracle/admin/ASMMazDB/bdump /u01/app/oracle/admin/ASMMazDB/cdump /u01/app/oracle/admin/ASMMazDB/udump
Backup	/u99/MazDB/Backup	/u99/ASMMazDB/Backup
Archivelog	/u99/MazDB/Archive	/u99/ASMMazDB/Archive

1) Login to your database server as “oracle”

2) Take a full RMAN backup of MazDB

export ORACLE_SID=MazDB

mkdir -p /u99/MazDB/Backup

mkdir -p /u99/MazDB/Archive

mkdir -p /u99/MazDB/archive

rman target /

```
run
{
CONFIGURE RETENTION POLICY TO REDUNDANCY 1;
CONFIGURE BACKUP OPTIMIZATION ON;
CONFIGURE DEFAULT DEVICE TYPE TO DISK;
CONFIGURE CONTROLFILE AUTOBACKUP ON;
CONFIGURE CONTROLFILE AUTOBACKUP FORMAT FOR DEVICE TYPE DISK TO '/u99/MazDB/Backup/control_n_spfile_%F';
CONFIGURE DEVICE TYPE DISK BACKUP TYPE TO COMPRESSED BACKUPSET PARALLELISM 1;
CONFIGURE CHANNEL DEVICE TYPE DISK FORMAT ' /u99/MazDB/Backup/full_%d_%T_%t_%U.bak' MAXPIECESIZE 400 M;
Backup database plus archivelog;
}
exit;
```

3) Send the backups to Destination Server.

A) Create directories in the Destination Server

```
ssh 192.168.0.118 mkdir -p /u99/MazDB/Backup
```

```
ssh 192.168.0.118 mkdir -p /u99/MazDB/Archive
```

```
ssh 192.168.0.118 mkdir -p /u99/MazDB/archive
```

B) Send backups to the destination Server.

```
scp /u99/MazDB/Backup/* 192.168.0.118:/u99/MazDB/Backup/
```

4) create password file for ASMMazDB

```
ssh oracle@192.168.0.118 orapwd file=$ORACLE_HOME/dbs/orapwASMMazDB password='abc123' entries=5 force=y
```

4) Add tns entry for ASMMazDB

```
cd $TNS_ADMIN
```

```
vi tnsnames.ora --and add the following lines at the end.
```

```
cat >> tnsnames.ora << EOF

ASMMazDB =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = 192.168.0.223)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = ASMMazDB)
    )
  )
EOF
```

5) Add SID_DESC into the listener.ora (under SID_LIST_LISTENER)

```
cd $TNS_ADMIN
```

```
vi listener.ora
```

```
(SID_DESC =
  (SID_NAME = ASMMazDB)
```

```
(ORACLE_HOME = /u01/app/oracle/product/10.2.0/db_1)  
)
```

6) Reload Listener

```
lsnrctl reload
```

7) Create a init.ora from source DB's init.ora

```
create pfile='/u01/app/oracle/product/10.2.0/db_1/dbs/initASMMazDB.ora' from spfile;
```

8) Edit initMazDB.ora and make the following changes.

a) replace all the occurrences of MazDB with ASMMazDB

```
vi /u01/app/oracle/product/10.2.0/db_1/dbs/initASMMazDB.ora  
:%s/MazDB/ASMMazDB/g  
  
change  
*.db_recovery_file_dest='/u05/flash_recovery_area'  
to  
*.db_recovery_file_dest='+FLASH/flash_recovery_area'  
  
:wq!
```

b) Make sure you change the datafile location (otherwise you may over write the original datafiles).

```
DB_FILE_NAME_CONVERT=('/u14/oradata/MazDB','+DG1/oradata/ASMMazDB')
```

c) Make sure you change the Redo Log location (otherwise you will over write the original Redo Logs).

```
LOG_FILE_NAME_CONVERT=('/u15/oradata/MazDB','+FLASH/oradata/ASMMazDB','/u16/oradata/MazDB','+FLASH/oradata/ASMMazDB','/u17/oradata/MazDB','+FLASH/oradata/ASMMazDB')
```

8) Create spfile from pfile (from edited initASMMazDB.ora)

```
export ORACLE_SID=MazDB
```

```
sqlplus / as sysdba
create spfile='/u01/app/oracle/product/10.2.0/db_1/dbs/spfileASMMazDB.ora' from
pfile='/u01/app/oracle/product/10.2.0/db_1/dbs/initASMMazDB.ora';
exit;
```

9) Create all directories necessary for ASMMazDB (Verify the directories from init.ora)

OS

```
mkdir -p /u01/app/oracle/admin/ASMMazDB/adump
mkdir -p /u01/app/oracle/admin/ASMMazDB/bdump
mkdir -p /u01/app/oracle/admin/ASMMazDB/cdump
mkdir -p /u01/app/oracle/admin/ASMMazDB/udump
mkdir -p /u99/ASMMazDB/Backup
mkdir -p /u99/ASMMazDB/Archive
mkdir -p /u99/ASMMazDB/archive
```

ASM

```
. ~/.bash_profile_asm
export ORACLE_SID=+ASM
asmcmd -p
```

```
cd +DG1
mkdir oradata
cd oradata
mkdir ASMMazDB
mkdir ASMMazDB
```

```
cd +FLASH
mkdir oradata
cd oradata
cd +Redo
mkdir oradata
cd oradata
mkdir ASMMazDB
```

```
exit
```

```
. ~/.bash_profile
```

10) Copy the output of the following SQL that needs to be used in the rman block of step-12 later.

```
export ORACLE_SID=MazDB  
sqlplus / as sysdba
```

```
set linesize 200  
set pagesize 200  
set heading off
```

```
select 'set newname for datafile '||file_id||' to '||chr(39)||replace(file_name,'/u14/oradata/MazDB/','+DG1/oradata/ASMMazDB/')||chr(39)||';'  
as "Datafile Names for ASM" from dba_data_files  
union  
select 'set newname for tempfile '||file_id||' to '||chr(39)||replace(file_name,'/u14/oradata/MazDB/','+DG1/oradata/ASMMazDB/')||chr(39)||';'  
as "Datafile Names for ASM" from dba_temp_files;  
exit;
```

I see the following output.

```
set newname for datafile 1 to '+DG1/oradata/ASMMazDB/system01.dbf';  
set newname for datafile 2 to '+DG1/oradata/ASMMazDB/undotbs01.dbf';  
set newname for datafile 3 to '+DG1/oradata/ASMMazDB/sysaux01.dbf';  
set newname for datafile 4 to '+DG1/oradata/ASMMazDB/users01.dbf';  
set newname for datafile 5 to '+DG1/oradata/ASMMazDB/DEVTBS01.dbf';  
set newname for tempfile 1 to '+DG1/oradata/ASMMazDB/temp01.dbf';
```

11) Start the ASMMazDB instance in nomount

```
export ORACLE_SID=ASMMazDB  
sqlplus / as sysdba  
startup nomount;
```

```
exit;
```

12) Connect to Target (MazDB) and Auxiliary (ASMMazDB) from RMAN (from step-10).

```
export ORACLE_SID=MazDB
rman target / auxiliary sys/abc123@ASMMazDB
```

```
run
{
set newname for datafile 1 to '+DG1/oradata/ASMMazDB/system01.dbf';
set newname for datafile 2 to '+DG1/oradata/ASMMazDB/undotbs01.dbf';
set newname for datafile 3 to '+DG1/oradata/ASMMazDB/sysaux01.dbf';
set newname for datafile 4 to '+DG1/oradata/ASMMazDB/users01.dbf';
set newname for datafile 5 to '+DG1/oradata/ASMMazDB/DEVTBS01.dbf';
set newname for tempfile 1 to '+DG1/oradata/ASMMazDB/temp01.dbf';
DUPLICATE TARGET DATABASE TO ASMMazDB;
}
exit;
```

13) Verify the instance status is set to “OPEN”.

```
export ORACLE_SID=ASMMazDB
sqlplus / as sysdba
select status from v$instance.
```

14) Setup RMAN for new ASMMazDB

```
export ORACLE_SID=ASMMazDB
rman target /
```

```
CONFIGURE RETENTION POLICY TO REDUNDANCY 1;
CONFIGURE BACKUP OPTIMIZATION ON;
CONFIGURE DEFAULT DEVICE TYPE TO DISK;
CONFIGURE CONTROLFILE AUTOBACKUP ON;
CONFIGURE CONTROLFILE AUTOBACKUP FORMAT FOR DEVICE TYPE DISK TO '/u99/ASMMazDB/Backup/control_n_spfile_%F';
CONFIGURE DEVICE TYPE DISK BACKUP TYPE TO COMPRESSED BACKUPSET PARALLELISM 1;
CONFIGURE CHANNEL DEVICE TYPE DISK FORMAT '/u99/ASMMazDB/Backup/full_%d_%T_%t_%U.bak' MAXPIECESIZE 400 M;
```

15) Backup ASMMazDB

```
Backup database plus archivelog;
```

That's it. You are done. You just cloned a database from NON-ASM to ASM on the same server.

--Moid Muhammad