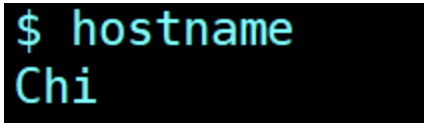
How to duplicate 19c database on remote aws server using RMAN?

Task:
Task is to clone a database called ADB which is in Chicago to ADBCLONE in AWS.

Source and Destination is as follows:

	Source	Destination
Hostname:		
Host Alias	Chicago	AWS
Database Name:	ADB	ADBCLONE
Database Version:	19.3.0	19.3.0
ORACLE_BASE:	/u01/app/oracle	/u01/app/oracle
ORACLE_HOME:	$ORACLE_BASE/prodcut/19.3.0_dbhome_1	$ORACLE_BASE/prodcut/19.3.0_dbhome_1
TNS_ADMIN:	$ORACLE_HOME/network/admin	$ORACLE_HOME/network/admin
Temp Backup Location:	/u99/temp/Backup/ADB	/u99/temp/Backup/ADB
RMAN Catalog Used?	No	No

Listener Name:	LISTENER	LISTENER
Listener Port:	1521	1521

On Source Database Server:

No	Description	Command / Details / Screenshots
1	Putty to Source Database Server	
2	Set Database SID	`. oraenv → ADB`
3	Note: Verify database is up	`sqlplus / as sysdba` `select instance_name, status from v$instance;` `Connected to:` `Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production` `Version 19.3.0.0.0` `SQL> select instance_name, status from v$instance;` `INSTANCE_NAME STATUS` `---------- ------------` `ADB OPEN` `SQL>` `select name, db_unique_name from v$database;` `SQL> select name, db_unique_name from v$database;` `NAME DB_UNIQUE_NAME` `--------- ------------------------------` `ADB ADB` `SQL>`

4	Verify listener is up	`lsnrctl status listener` --If the listener is not up, start the listener `lsnrctl start listener` Chi:(ADB) | Chicago $ lsnrctl status listener LSNRCTL for Linux: Version 19.0.0.0.0 - Production on 07-SEP-2020 07:44:10 Copyright (c) 1991, 2019, Oracle. All rights reserved. Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=Chi)(PORT=1521))) STATUS of the LISTENER ------------------------ Alias LISTENER Version TNSLSNR for Linux: Version 19.0.0.0.0 - Production Start Date 05-SEP-2020 11:09:54 Uptime 1 days 20 hr. 34 min. 15 sec Trace Level off Security ON: Local OS Authentication SNMP OFF Listener Parameter File /u01/app/oracle/product/19.3.0/dbhome_1/network/admin/listener.ora Listener Log File /u01/app/oracle/diag/tnslsnr/Chi/listener/alert/log.xml Listening Endpoints Summary... (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=Chi)(PORT=1521))) (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=EXTPROC1521))) Services Summary... Service "ADB" has 1 instance(s). Instance "ADB", status READY, has 1 handler(s) for this service... Service "ADBXDB" has 1 instance(s). Instance "ADB", status READY, has 1 handler(s) for this service... Service "ADDB" has 1 instance(s). Instance "ADDB", status READY, has 1 handler(s) for this service... Service "ADDBXDB" has 1 instance(s). Instance "ADDB", status READY, has 1 handler(s) for this service...
5	Create a temp backup directory on Source Server:	`mkdir -p /u99/temp/Backup/$ORACLE_SID`

<table>
<tr>
<td></td>
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<td>
<pre>
Chi:(ADB) | Chicago
$ mkdir -p /u99/temp/Backup/$ORACLE_SID
Chi:(ADB) | Chicago
$
</pre>
<pre>ls -ld /u99/temp/Backup/$ORACLE_SID</pre>
<pre>
Chi:(ADB) | Chicago
$ ls -ld /u99/temp/Backup/$ORACLE_SID
drwxr-xr-x. 2 oracle oinstall 6 Sep 7 08:06 /u99/temp/Backup/ADB
Chi:(ADB) | Chicago
$
</pre>
--Note: Be sure that you can create the same directory on destination server as well. Since we are not using rman catalog, we cannot catalog new backup location on destination database.

mkdir -p /u99/temp/Backup/ADB
<pre>
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u99/temp/Backup/ADB
</pre>
ls -ld /u99/temp/Backup/ADB
<pre>
$ ls -ld /u99/temp/Backup/ADB
drwxr-xr-x 2 oracle oinstall 4096 Sep 7 15:31 /u99/temp/Backup/ADB
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$
</pre>
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</tr>
<tr>
<td>7</td>
<td>Take a full backup with archivelog</td>
<td>
<pre>
rman target /
run
{
 CONFIGURE CONTROLFILE AUTOBACKUP FORMAT FOR DEVICE TYPE DISK TO
'/u99/temp/Backup/ADB/control_n_spfile_%F';
     CONFIGURE DEVICE TYPE DISK BACKUP TYPE TO COMPRESSED BACKUPSET
PARALLELISM 4;
</pre>
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</tr>
</table>

```
     CONFIGURE CHANNEL DEVICE TYPE DISK FORMAT
'/u99/temp/Backup/ADB/full_%d_%T_%t_%U.bak' MAXPIECESIZE 1500 M;
     BACKUP DATABASE PLUS ARCHIVELOG;
}
```

```
Chi:(ADB) | Chicago
$ rman target /
/temp/Backup/ADB/full_%d_%T_%t_%U.bak' MAXPIECESIZE 1500 M;
        BACKUP DATABASE PLUS ARCHIVELOG;
}

Recovery Manager: Release 19.0.0.0.0 - Production on Mon Sep 7 08:16:53 2020
Version 19.3.0.0.0

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connected to target database: ADB (DBID=1857766239)

RMAN> 2> 3>
using target database control file instead of recovery catalog
new RMAN configuration parameters:
CONFIGURE CONTROLFILE AUTOBACKUP FORMAT FOR DEVICE TYPE DISK TO '/u99/temp/Backup/ADB/control_n_spfile_%F';
new RMAN configuration parameters are successfully stored

new RMAN configuration parameters:
CONFIGURE DEVICE TYPE DISK BACKUP TYPE TO COMPRESSED BACKUPSET PARALLELISM 4;
new RMAN configuration parameters are successfully stored
```

```
new RMAN configuration parameters:
CONFIGURE DEVICE TYPE DISK BACKUP TYPE TO COMPRESSED BACKUPSET PARALLELISM 4;
new RMAN configuration parameters are successfully stored

new RMAN configuration parameters:
CONFIGURE CHANNEL DEVICE TYPE DISK FORMAT   '/u99/temp/Backup/ADB/full_%d_%T_%t_%U.bak' MAXPIECESIZE 1500 M;
new RMAN configuration parameters are successfully stored


Starting backup at 07-SEP-20
current log archived
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=506 device type=DISK
allocated channel: ORA_DISK_2
channel ORA_DISK_2: SID=629 device type=DISK
allocated channel: ORA_DISK_3
channel ORA_DISK_3: SID=752 device type=DISK
allocated channel: ORA_DISK_4
```

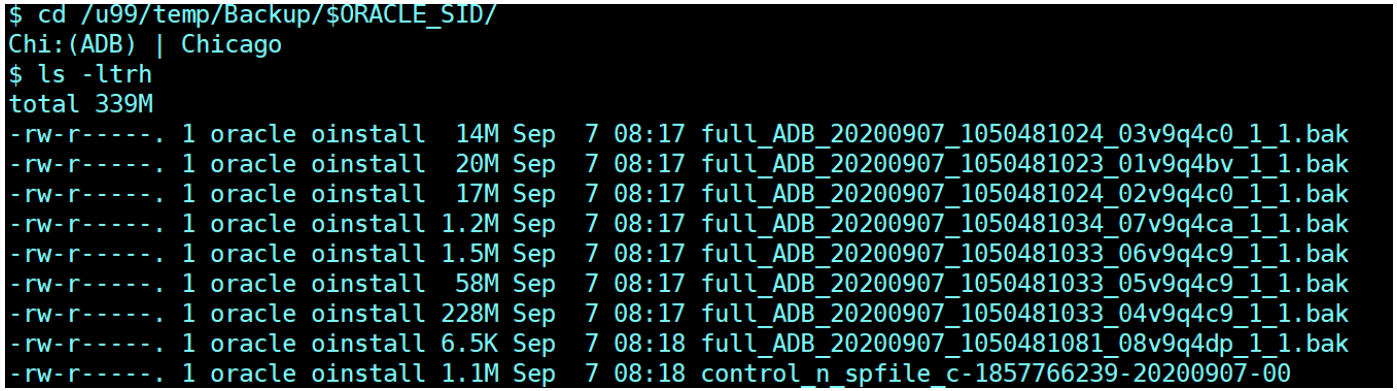
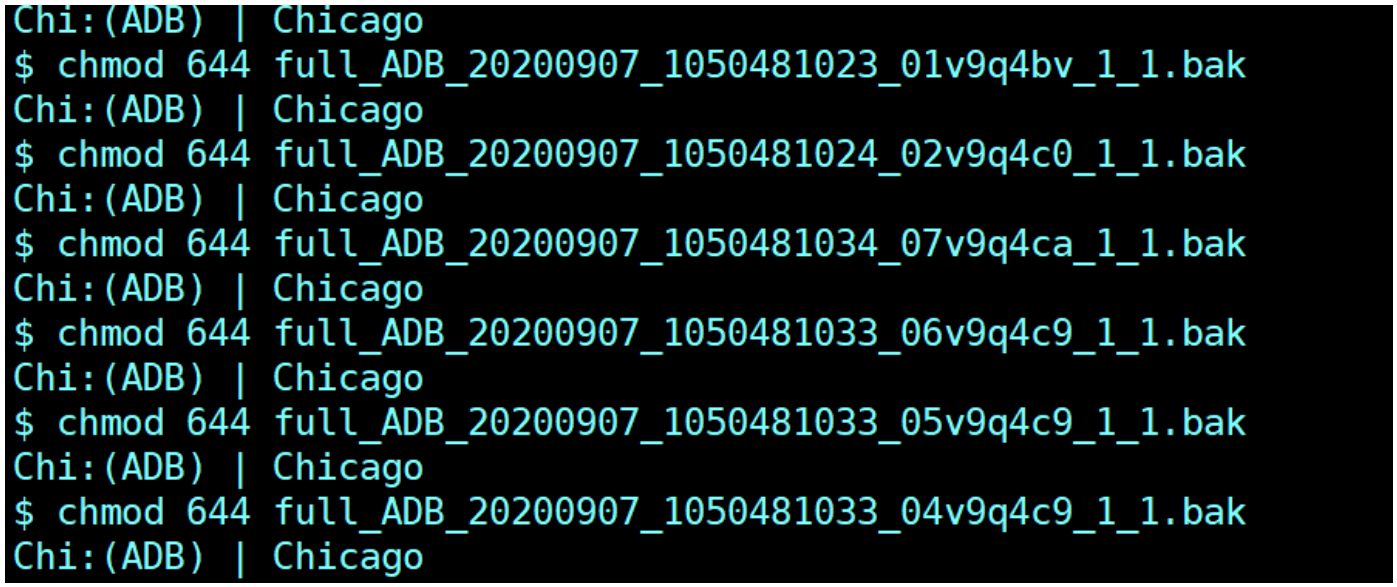
```
channel ORA_DISK_4: SID=875 device type=DISK
channel ORA_DISK_1: starting compressed archived log backup set
channel ORA_DISK_1: specifying archived log(s) in backup set
input archived log thread=1 sequence=50 RECID=4 STAMP=1050476143
input archived log thread=1 sequence=51 RECID=5 STAMP=1050476152
input archived log thread=1 sequence=52 RECID=6 STAMP=1050476159
channel ORA_DISK_1: starting piece 1 at 07-SEP-20
channel ORA_DISK_2: starting compressed archived log backup set
channel ORA_DISK_2: specifying archived log(s) in backup set
input archived log thread=1 sequence=47 RECID=1 STAMP=1050476103
input archived log thread=1 sequence=48 RECID=2 STAMP=1050476122
input archived log thread=1 sequence=49 RECID=3 STAMP=1050476131
channel ORA_DISK_2: starting piece 1 at 07-SEP-20
channel ORA_DISK_3: starting compressed archived log backup set
channel ORA_DISK_3: specifying archived log(s) in backup set
input archived log thread=1 sequence=53 RECID=7 STAMP=1050476167
input archived log thread=1 sequence=54 RECID=8 STAMP=1050476265
input archived log thread=1 sequence=55 RECID=9 STAMP=1050481019
channel ORA_DISK_3: starting piece 1 at 07-SEP-20
channel ORA_DISK_3: finished piece 1 at 07-SEP-20
piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050481024_03v9q4c0_1_1.bak tag=TAG20200907T081703 comment=NONE
channel ORA_DISK_3: backup set complete, elapsed time: 00:00:03
channel ORA_DISK_1: finished piece 1 at 07-SEP-20
piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050481023_01v9q4bv_1_1.bak tag=TAG20200907T081703 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:08
```

```
piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050481024_02v9q4c0_1_1.ba
channel ORA_DISK_2: backup set complete, elapsed time: 00:00:07
Finished backup at 07-SEP-20

Starting backup at 07-SEP-20
using channel ORA_DISK_1
using channel ORA_DISK_2
using channel ORA_DISK_3
using channel ORA_DISK_4
channel ORA_DISK_1: starting compressed full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00001 name=/u14/oradata/ADB/system01.dbf
channel ORA_DISK_1: starting piece 1 at 07-SEP-20
channel ORA_DISK_2: starting compressed full datafile backup set
channel ORA_DISK_2: specifying datafile(s) in backup set
input datafile file number=00003 name=/u14/oradata/ADB/sysaux01.dbf
channel ORA_DISK_2: starting piece 1 at 07-SEP-20
channel ORA_DISK_3: starting compressed full datafile backup set
channel ORA_DISK_3: specifying datafile(s) in backup set
input datafile file number=00004 name=/u14/oradata/ADB/undotbs01.dbf
channel ORA_DISK_3: starting piece 1 at 07-SEP-20
channel ORA_DISK_4: starting compressed full datafile backup set
channel ORA_DISK_4: specifying datafile(s) in backup set
input datafile file number=00007 name=/u14/oradata/ADB/users01.dbf
```

```
channel ORA_DISK_4: starting piece 1 at 07-SEP-20
channel ORA_DISK_3: finished piece 1 at 07-SEP-20
piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050481033_06v9q4c9_1_1.bak tag=TAG20200907T081711 comment=NONE
channel ORA_DISK_3: backup set complete, elapsed time: 00:00:03
channel ORA_DISK_4: finished piece 1 at 07-SEP-20
piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050481034_07v9q4ca_1_1.bak tag=TAG20200907T081711 comment=NONE
channel ORA_DISK_4: backup set complete, elapsed time: 00:00:03
channel ORA_DISK_2: finished piece 1 at 07-SEP-20
piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050481033_05v9q4c9_1_1.bak tag=TAG20200907T081711 comment=NONE
channel ORA_DISK_2: backup set complete, elapsed time: 00:00:16
channel ORA_DISK_1: finished piece 1 at 07-SEP-20
piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050481033_04v9q4c9_1_1.bak tag=TAG20200907T081711 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:46
Finished backup at 07-SEP-20

Starting backup at 07-SEP-20
current log archived
using channel ORA_DISK_1
using channel ORA_DISK_2
using channel ORA_DISK_3
using channel ORA_DISK_4
channel ORA_DISK_1: starting compressed archived log backup set
channel ORA_DISK_1: specifying archived log(s) in backup set
input archived log thread=1 sequence=56 RECID=10 STAMP=1050481081
channel ORA_DISK_1: starting piece 1 at 07-SEP-20
```



```
current log archived
using channel ORA_DISK_1
using channel ORA_DISK_2
using channel ORA_DISK_3
using channel ORA_DISK_4
channel ORA_DISK_1: starting compressed archived log backup set
channel ORA_DISK_1: specifying archived log(s) in backup set
input archived log thread=1 sequence=56 RECID=10 STAMP=1050481081
channel ORA_DISK_1: starting piece 1 at 07-SEP-20
channel ORA_DISK_1: finished piece 1 at 07-SEP-20
piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050481081_08v9q4dp_1_1.bak tag=TAG20200907T081801 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
Finished backup at 07-SEP-20

Starting Control File and SPFILE Autobackup at 07-SEP-20
piece handle=/u99/temp/Backup/ADB/control_n_spfile_c-1857766239-20200907-00 comment=NONE
Finished Control File and SPFILE Autobackup at 07-SEP-20

RMAN>
```

8	Send backups to destination server	  cd /u99/temp/Backup/$ORACLE_SID/ chmod 644 full_ADB_20200907_1050481024_03v9q4c0_1_1.bak Winscp backup files to aws server

<table>
<tr>
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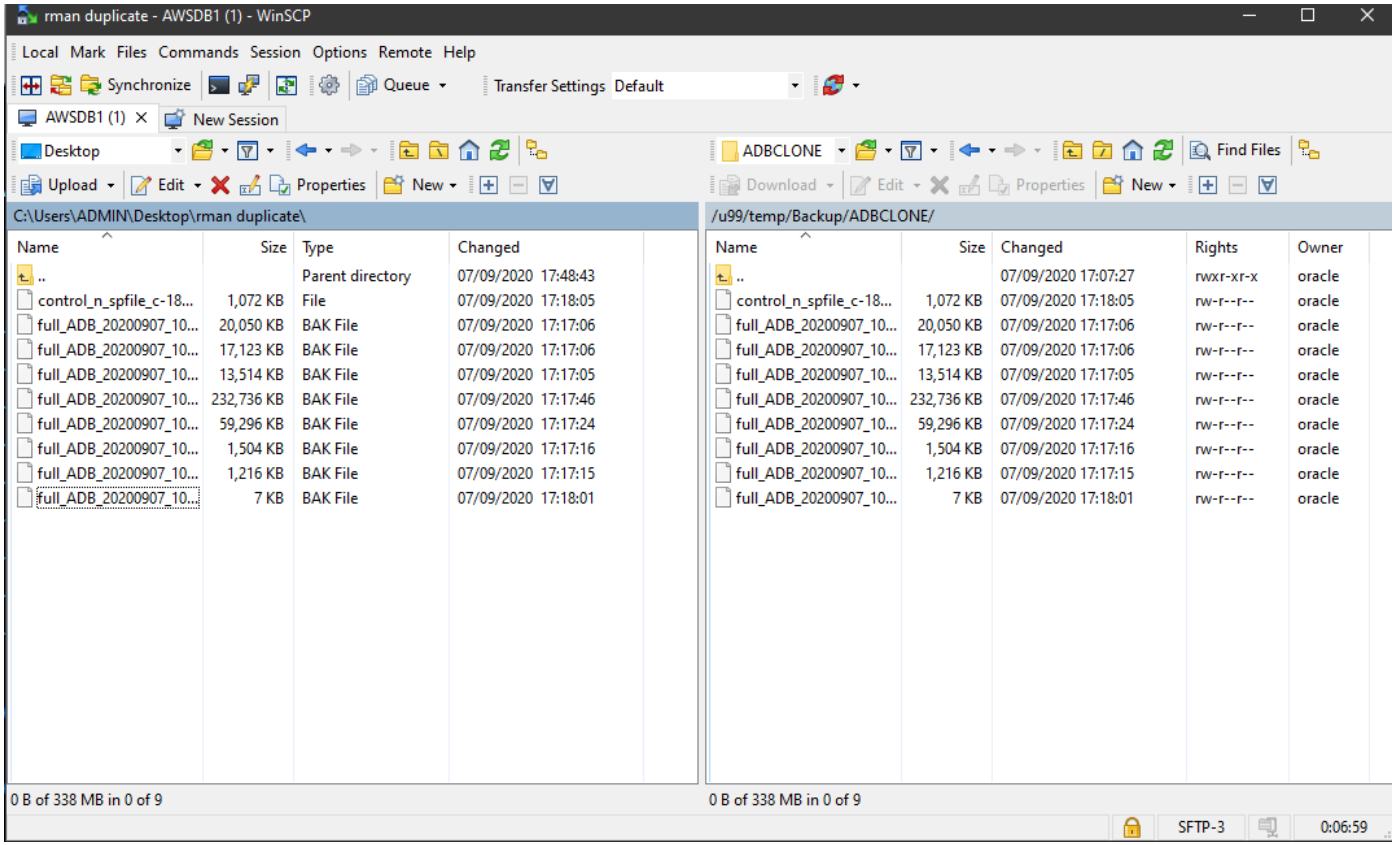
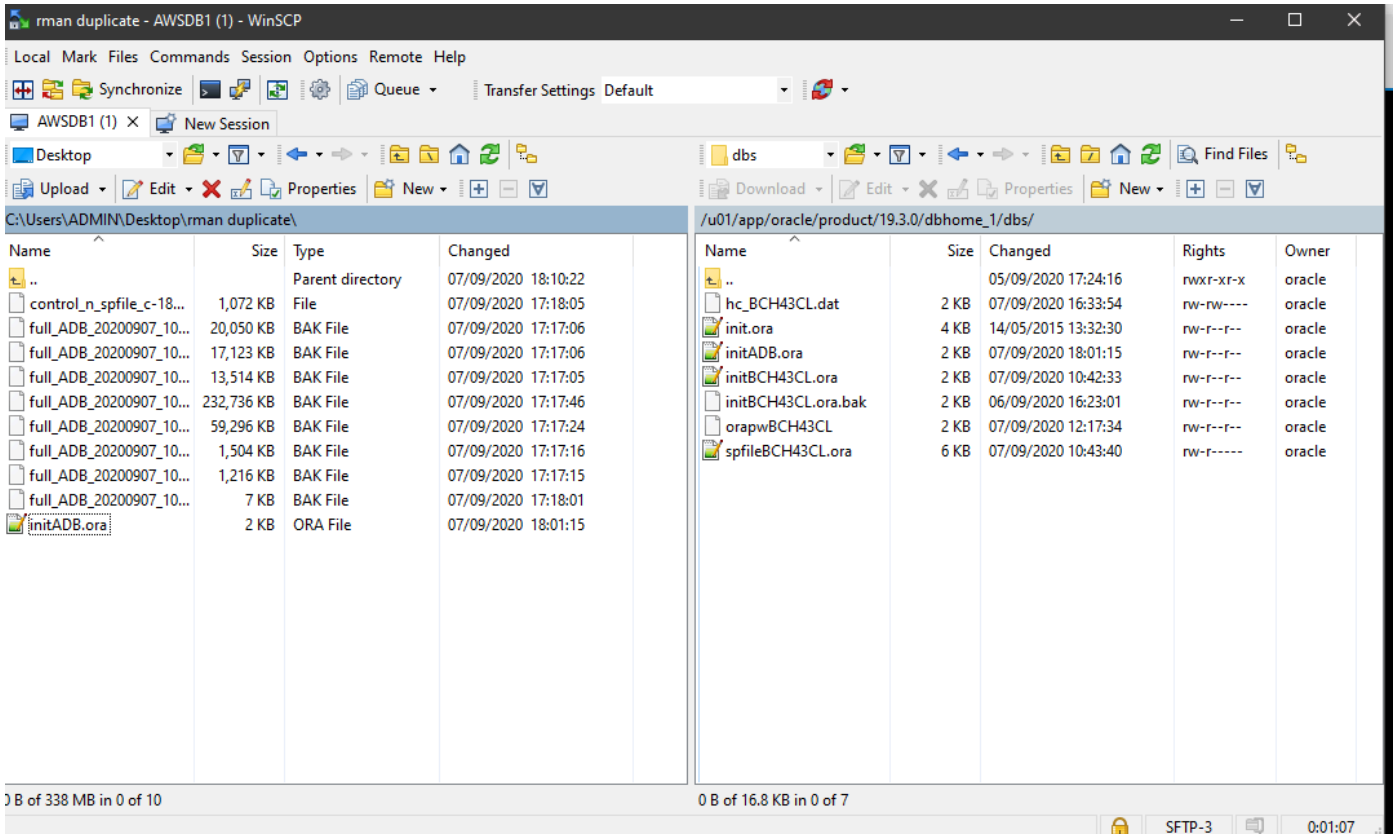


Verify backups are sent to destination server

```
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ ls -ltrh
total 339M
-rw-r--r-- 1 oracle oinstall  14M Sep  7 08:17 full_ADB_20200907_1050481024_03v9q4c0_1_1.bak
-rw-r--r-- 1 oracle oinstall  17M Sep  7 08:17 full_ADB_20200907_1050481024_02v9q4c0_1_1.bak
-rw-r--r-- 1 oracle oinstall  20M Sep  7 08:17 full_ADB_20200907_1050481023_01v9q4bv_1_1.bak
-rw-r--r-- 1 oracle oinstall 1.2M Sep  7 08:17 full_ADB_20200907_1050481034_07v9q4ca_1_1.bak
-rw-r--r-- 1 oracle oinstall 1.5M Sep  7 08:17 full_ADB_20200907_1050481033_06v9q4c9_1_1.bak
-rw-r--r-- 1 oracle oinstall  58M Sep  7 08:17 full_ADB_20200907_1050481033_05v9q4c9_1_1.bak
-rw-r--r-- 1 oracle oinstall 228M Sep  7 08:17 full_ADB_20200907_1050481033_04v9q4c9_1_1.bak
-rw-r--r-- 1 oracle oinstall 6.5K Sep  7 08:18 full_ADB_20200907_1050481081_08v9q4dp_1_1.bak
-rw-r--r-- 1 oracle oinstall 1.1M Sep  7 08:18 control_n_spfile_c-1857766239-20200907-00
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$
```
</td>
</tr>
<tr>
<td>9</td>
<td>Send init.ora from source to</td>
<td>. oraenv --> ADB</td>
</tr>
</table>

	destination	cd $ORACLE_HOME/dbs sqlplus / as sysdba create pfile from spfile; SQL*Plus: Release 19.0.0.0.0 - Production on Mon Sep 7 08:02:49 2020 Version 19.3.0.0.0 Copyright (c) 1982, 2019, Oracle. All rights reserved. Connected to: Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production Version 19.3.0.0.0 SQL> create pfile from spfile; File created. SQL> exit; $ ls -ltrh initADB.ora -rw-r--r--. 1 oracle oinstall 1.2K Sep 7 09:01 initADB.ora Chi:(ADB) | Chicago $ winscp init.ora



Verify init.ora are sent to destination server

```
$ ls -ltrh  initADB.ora
-rw-r--r-- 1 oracle oinstall 1.2K Sep  7 09:01 initADB.ora
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$
```

On Destination Server:

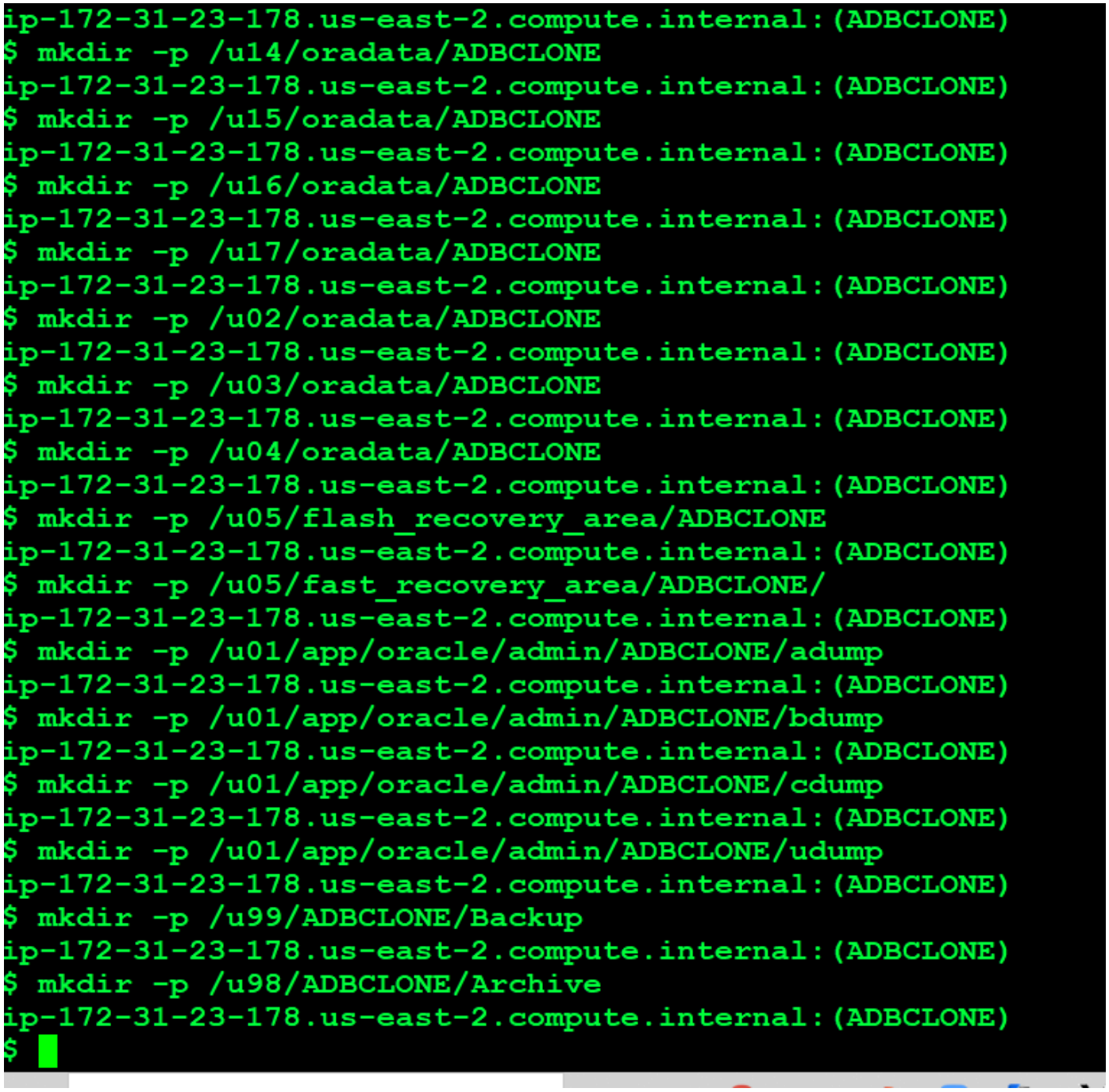
No	Description	Command / Details / Screenshots

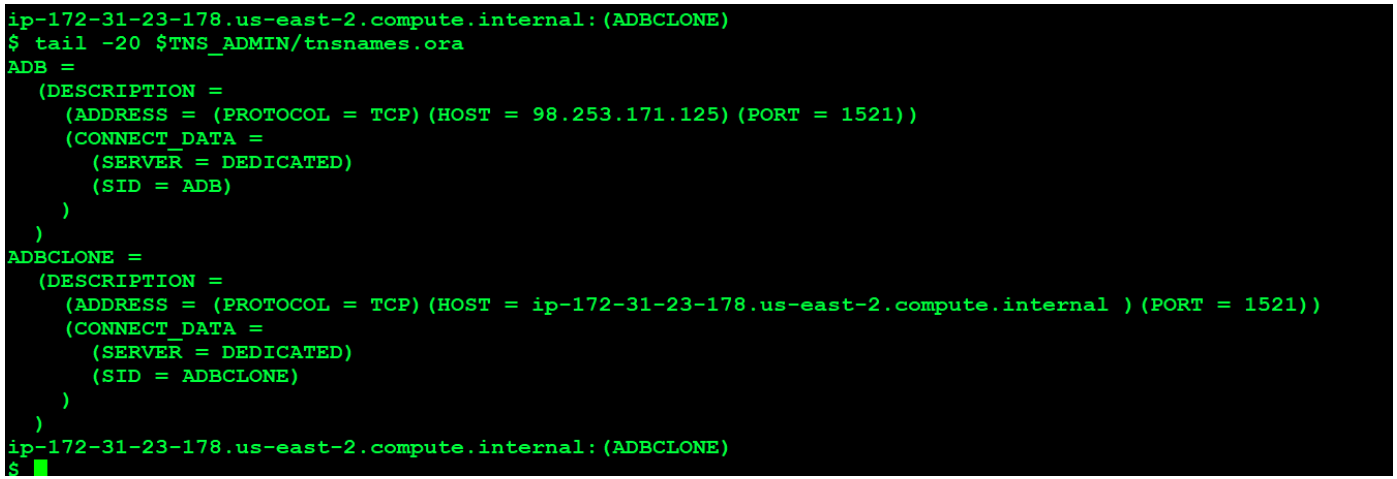
11	Putty to Destination server	`ssh oracle@TN`
11	Add database entry in oratab	`cat >> /etc/oratab << EOF` `ADBCLONE:/u01/app/oracle/product/19.3.0/dbhome_1:N` `EOF` `$ cat >> /etc/oratab << EOF` `> ADBClone:/u01/app/oracle/product/19.3.0/dbhome_1:N` `> EOF`
12	Set oracle environment	`. oraenv → ADBCLONE` `ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)` `$ . oraenv` `ORACLE_SID = [ADBCLONE] ? ADBCLONE` `The Oracle base remains unchanged with value /u01/app/oracle` `ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)` `$`
13	Verify listener is up	`lsnrctl status listener` --If not up, start the listener `lsnrctl start listener` `lsnrctl status listener` `ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)` `$ lsnrctl status listener` `LSNRCTL for Linux: Version 19.0.0.0.0 - Production on 07-SEP-2020 07:59:28` `Copyright (c) 1991, 2019, Oracle. All rights reserved.` `Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=ip-172-31-23-178.us-east-2.compute.internal)(PORT=1521)))` `STATUS of the LISTENER` `------------------------` `Alias LISTENER` `Version TNSLSNR for Linux: Version 19.0.0.0.0 - Production` `Start Date 07-SEP-2020 02:06:22` `Uptime 0 days 5 hr. 53 min. 6 sec` `Trace Level off` `Security ON: Local OS Authentication` `SNMP OFF` `Listener Parameter File /u01/app/oracle/product/19.3.0/dbhome_1/network/admin/listener.ora` `Listener Log File /u01/app/oracle/diag/tnslsnr/ip-172-31-23-178/listener/alert/log.xml` `Listening Endpoints Summary...` `(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=ip-172-31-23-178.us-east-2.compute.internal)(PORT=1521)))` `(DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=EXTPROC1521)))` `The listener supports no services` `The command completed successfully` `ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)` `$`

14	Make changes in init.ora	ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $ mv initADB.ora initADBCLONE.ora ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) cd $ORACLE_HOME/dbs vi init$ORACLE_SID.ora : %s/ADB/ADBCLONE/g Note: Above will make all the changes from ADB to ADBCLONE in the initialization parameter file. $ cat initADBCLONE.ora ADBCLONE.__data_transfer_cache_size=0 ADBCLONE.__db_cache_size=700448768 ADBCLONE.__inmemory_ext_roarea=0 ADBCLONE.__inmemory_ext_rwarea=0 ADBCLONE.__java_pool_size=0 ADBCLONE.__large_pool_size=20971520 ADBCLONE.__oracle_base='/u01/app/oracle'#ORACLE_BASE set from environment ADBCLONE.__pga_aggregate_target=536870912 ADBCLONE.__sga_target=1073741824 ADBCLONE.__shared_io_pool_size=50331648 ADBCLONE.__shared_pool_size=285212672 ADBCLONE.__streams_pool_size=0 ADBCLONE.__unified_pga_pool_size=0 *.audit_file_dest='/u01/app/oracle/admin/ADBCLONE/adump' *.audit_trail='db' *.compatible='19.0.0' *.control_files='/u02/oradata/ADBCLONE/control01.ctl','/u03/oradata/ADBCLONE/control02.ctl','/u04/oradata/ADBCLONE/control03.ctl','/u05/fast_recovery_area/ADBCLONE/control04.ctl' *.db_block_size=8192 *.db_name='ADBCLONE' *.db_recovery_file_dest='/u05/fast_recovery_area' *.db_recovery_file_dest_size=8192m *.diagnostic_dest='/u01/app/oracle' *.dispatchers='(PROTOCOL=TCP) (SERVICE=ADBCLONEXDB)' *.log_archive_dest_1='LOCATION=/u99/ADBCLONE/Archive' *.log_archive_format='Arch_%t_%s_%r.arc' *.nls_language='AMERICAN' *.nls_territory='AMERICA' *.open_cursors=300 *.pga_aggregate_target=512m *.processes=640 *.remote_login_passwordfile='EXCLUSIVE' *.sga_target=1024m *.undo_tablespace='UNDOTBS1'
15	Add covert parameters to convert datafile and redo log location	cat >> init$ORACLE_SID.ora << EOF *.DB_FILE_NAME_CONVERT=('/u14/oradata/ADB','/u14/oradata/ADBCLONE') *.LOG_FILE_NAME_CONVERT=('/u15/oradata/ADB','/u15/oradata/ADBCLONE','/u16/oradata/ADB','/u16/oradata/ADBCLONE','/u17/oradata/ADB','/u17/oradata/ADBCLONE') EOF

		ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $ cat >> init$ORACLE_SID.ora << EOF > *.DB_FILE_NAME_CONVERT=('/u14/oradata/ADB','/u14/oradata/ADBCLONE') > *.LOG_FILE_NAME_CONVERT=('/u15/oradata/ADB','/u15/oradata/ADBCLONE','/u16/oradata/ADB','/u16/oradata/ADBCLONE','/u17/oradata/ADB','/u17/oradata/ADBCLONE') > EOF ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
16	Verify the file again to be sure all is okay/	`cat $ORACLE_HOME/dbs/init$ORACLE_SID.ora` $ cat $ORACLE_HOME/dbs/init$ORACLE_SID.ora ADBCLONE.__data_transfer_cache_size=0 ADBCLONE.__db_cache_size=700448768 ADBCLONE.__inmemory_ext_roarea=0 ADBCLONE.__inmemory_ext_rwarea=0 ADBCLONE.__java_pool_size=0 ADBCLONE.__large_pool_size=20971520 ADBCLONE.__oracle_base='/u01/app/oracle'#ORACLE_BASE set from environment ADBCLONE.__pga_aggregate_target=536870912 ADBCLONE.__sga_target=1073741824 ADBCLONE.__shared_io_pool_size=50331648 ADBCLONE.__shared_pool_size=285212672 ADBCLONE.__streams_pool_size=0 ADBCLONE.__unified_pga_pool_size=0 *.audit_file_dest='/u01/app/oracle/admin/ADBCLONE/adump' *.audit_trail='db' *.compatible='19.0.0' *.control_files='/u02/oradata/ADBCLONE/control01.ctl','/u03/oradata/ADBCLONE/control02.ctl','/u04/oradata/ADBCLONE/control03.ctl','/u05/fast_recovery_area/ADBCLONE/control04.ctl' *.db_block_size=8192 *.db_name='ADBCLONE' *.db_recovery_file_dest='/u05/fast_recovery_area' *.db_recovery_file_dest_size=8192m *.diagnostic_dest='/u01/app/oracle' *.dispatchers='(PROTOCOL=TCP) (SERVICE=ADBCLONEXDB)' *.log_archive_dest_1='LOCATION=/u99/ADBCLONE/Archive' *.log_archive_format='Arch_%t_%s_%r.arc' *.nls_language='AMERICAN' *.nls_territory='AMERICA' *.open_cursors=300 *.pga_aggregate_target=512m *.processes=640 *.remote_login_passwordfile='EXCLUSIVE' *.sga_target=1024m *.undo_tablespace='UNDOTBS1' *.DB_FILE_NAME_CONVERT=('/u14/oradata/ADB','/u14/oradata/ADBCLONE') *.LOG_FILE_NAME_CONVERT=('/u15/oradata/ADB','/u15/oradata/ADBCLONE','/u16/oradata/ADB','/u16/oradata/ADBCLONE','/u17/oradata/ADB','/u17/oradata/ADBCLONE') ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $
17	Create spfile from pfile	`sqlplus / as sysdba` `create spfile from pfile`

		ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $ sqlplus / as sysdba SQL*Plus: Release 19.0.0.0.0 - Production on Mon Sep 7 09:22:16 2020 Version 19.3.0.0.0 Copyright (c) 1982, 2019, Oracle. All rights reserved. Connected to an idle instance. SQL> create spfile from pfile; File created. SQL>
18	Create all database directories for ADBCLONE.	mkdir -p /u14/oradata/ADBCLONE mkdir -p /u15/oradata/ADBCLONE mkdir -p /u16/oradata/ADBCLONE mkdir -p /u17/oradata/ADBCLONE mkdir -p /u02/oradata/ADBCLONE mkdir -p /u03/oradata/ADBCLONE mkdir -p /u04/oradata/ADBCLONE mkdir -p /u05/flash_recovery_area/ADBCLONE mkdir -p /u05/fast_recovery_area/ADBCLONE/ mkdir -p /u01/app/oracle/admin/ADBCLONE/adump mkdir -p /u01/app/oracle/admin/ADBCLONE/bdump mkdir -p /u01/app/oracle/admin/ADBCLONE/cdump mkdir -p /u01/app/oracle/admin/ADBCLONE/udump mkdir -p /u99/ADBCLONE/Backup mkdir -p /u98/ADBCLONE/Archive


ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u14/oradata/ADBCLONE
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u15/oradata/ADBCLONE
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u16/oradata/ADBCLONE
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u17/oradata/ADBCLONE
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u02/oradata/ADBCLONE
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u03/oradata/ADBCLONE
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u04/oradata/ADBCLONE
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u05/flash_recovery_area/ADBCLONE
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u05/fast_recovery_area/ADBCLONE/
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u01/app/oracle/admin/ADBCLONE/adump
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u01/app/oracle/admin/ADBCLONE/bdump
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u01/app/oracle/admin/ADBCLONE/cdump
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u01/app/oracle/admin/ADBCLONE/udump
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u99/ADBCLONE/Backup
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ mkdir -p /u98/ADBCLONE/Archive
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$

19		cat >> $TNS_ADMIN//tnsnames.ora << EOF ADB = (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = [redacted])(PORT = 1521)) (CONNECT_DATA = (SERVER = DEDICATED) (SID = ADB))) ADBCLONE = (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = ip-172-31-23-178.us-east-2.compute.internal)(PORT = 1521)) (CONNECT_DATA = (SERVER = DEDICATED) (SID = ADBCLONE))) EOF
20	Verify tnsnames.ora file updated	tail -20 $TNS_ADMIN/tnsnames.ora  ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $ tail -20 $TNS_ADMIN/tnsnames.ora ADB = (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = 98.253.171.125)(PORT = 1521)) (CONNECT_DATA = (SERVER = DEDICATED) (SID = ADB))) ADBCLONE = (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = ip-172-31-23-178.us-east-2.compute.internal)(PORT = 1521)) (CONNECT_DATA = (SERVER = DEDICATED) (SID = ADBCLONE))) ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $
21	Verify tnsping is working	tnsping ADB

		ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $ tnsping ADB TNS Ping Utility for Linux: Version 19.0.0.0.0 - Production on 07-SEP-2020 07:56:23 Copyright (c) 1997, 2019, Oracle. All rights reserved. Used parameter files: Used TNSNAMES adapter to resolve the alias Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = 98.253.171.125)(PORT = 1521)) (CONNECT_DATA = (SERVER = DEDICATED) (SID = ADB))) OK (40 msec) ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $ tnsping ADBCLONE ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $ tnsping ADBCLONE TNS Ping Utility for Linux: Version 19.0.0.0.0 - Production on 07-SEP-2020 07:57:51 Copyright (c) 1997, 2019, Oracle. All rights reserved. Used parameter files: Used TNSNAMES adapter to resolve the alias Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = ip-172-31-23-178.us-east-2.compute.internal)(PORT = 1521)) (CONNECT_DATA = (SERVER = DEDICATED) (SID = ADBCLONE))) OK (10 msec) ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE) $
25	Startup database in nomount mode	sqlplus / as sysdba startup nomount; $ sq SQL*Plus: Release 19.0.0.0.0 - Production on Mon Sep 7 09:27:40 2020 Version 19.3.0.0.0 Copyright (c) 1982, 2019, Oracle. All rights reserved. Connected to an idle instance. SQL> startup nomount; ORACLE instance started. Total System Global Area 1073737800 bytes Fixed Size 8904776 bytes Variable Size 306184192 bytes Database Buffers 750780416 bytes Redo Buffers 7868416 bytes SQL>

		exit;
26	Connect to rman and start duplicating database	rman **connect target sys/abc123@ADB** **connect auxiliary /** RUN { SET UNTIL SEQUENCE 61 THREAD 1; DUPLICATE TARGET DATABASE TO "ADBCLONE"; Exit; $ rman Recovery Manager: Release 19.0.0.0.0 - Production on Mon Sep 7 15:50:22 2020 Version 19.3.0.0.0 Copyright (c) 1982, 2019, Oracle and/or its affiliates. All rights reserved. RMAN> connect target sys/abc123@ADB connected to target database: ADB (DBID=1857766239) RMAN> connect auxiliary / connected to auxiliary database: ADBCLONE (not mounted) RMAN> RUN { SET UNTIL SEQUENCE 61 THREAD 1; DUPLICATE TARGET DATABASE TO "ADBCLONE"; }2> 3> 4> 5>

```
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ rman

Recovery Manager: Release 19.0.0.0.0 - Production on Mon Sep 7 09:32:25 2020
Version 19.3.0.0.0

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RMAN> connect target sys/abc123@ADB

connected to target database: ADB (DBID=1857766239)

RMAN> connect auxiliary /

connected to auxiliary database: ADBCLONE (not mounted)

RMAN>
```

--For our records, when I cloned ADB to ADBCLONE, following is what I saw:

```
RMAN>  RUN
{
 SET UNTIL SEQUENCE 61 THREAD 1;
 DUPLICATE TARGET DATABASE TO "ADBCLONE";
}2> 3> 4> 5>

executing command: SET until clause

Starting Duplicate Db at 07-SEP-20
using target database control file instead of recovery catalog
allocated channel: ORA_AUX_DISK_1
channel ORA_AUX_DISK_1: SID=410 device type=DISK
allocated channel: ORA_AUX_DISK_2
channel ORA_AUX_DISK_2: SID=900 device type=DISK
allocated channel: ORA_AUX_DISK_3
channel ORA_AUX_DISK_3: SID=411 device type=DISK
allocated channel: ORA_AUX_DISK_4
channel ORA_AUX_DISK_4: SID=901 device type=DISK

contents of Memory Script:
{
   set until scn  2056346;
   sql clone "alter system set  db_name =
 ''ADB'' comment=
 ''Modified by RMAN duplicate'' scope=spfile";
   sql clone "alter system set  db_unique_name =
 ''ADBCLONE'' comment=
 ''Modified by RMAN duplicate'' scope=spfile";
   shutdown clone immediate;
   startup clone force nomount
   restore clone primary controlfile;
   alter clone database mount;
}
```

```
executing Memory Script

executing command: SET until clause

sql statement: alter system set  db_name =  ''ADB'' comment= ''Modified by RMAN duplicate'' scope=spfile

sql statement: alter system set  db_unique_name =  ''ADBCLONE'' comment= ''Modified by RMAN duplicate'' scope=spfile

Oracle instance shut down

Oracle instance started
```



```
Total System Global Area    1073737800 bytes

Fixed Size                     8904776 bytes
Variable Size                293601280 bytes
Database Buffers             763363328 bytes
Redo Buffers                   7868416 bytes

Starting restore at 07-SEP-20
allocated channel: ORA_AUX_DISK_1
channel ORA_AUX_DISK_1: SID=410 device type=DISK
allocated channel: ORA_AUX_DISK_2
channel ORA_AUX_DISK_2: SID=900 device type=DISK
allocated channel: ORA_AUX_DISK_3
channel ORA_AUX_DISK_3: SID=411 device type=DISK
allocated channel: ORA_AUX_DISK_4
channel ORA_AUX_DISK_4: SID=901 device type=DISK

channel ORA_AUX_DISK_1: starting datafile backup set restore
channel ORA_AUX_DISK_1: restoring control file
```

```
channel ORA_AUX_DISK_1: reading from backup piece /u99/temp/Backup/ADB/control_n_spfile_c-1857766239-20200907-00
channel ORA_AUX_DISK_1: piece handle=/u99/temp/Backup/ADB/control_n_spfile_c-1857766239-20200907-00 tag=TAG20200907T081803
channel ORA_AUX_DISK_1: restored backup piece 1
channel ORA_AUX_DISK_1: restore complete, elapsed time: 00:00:04
output file name=/u02/oradata/ADBCLONE/control01.ctl
output file name=/u03/oradata/ADBCLONE/control02.ctl
output file name=/u04/oradata/ADBCLONE/control03.ctl
output file name=/u05/fast_recovery_area/ADBCLONE/control04.ctl
Finished restore at 07-SEP-20

database mounted
Using previous duplicated file /u14/oradata/ADBCLONE/system01.dbf for datafile 1 with checkpoint SCN of 2037129
Using previous duplicated file /u14/oradata/ADBCLONE/sysaux01.dbf for datafile 3 with checkpoint SCN of 2037130
Using previous duplicated file /u14/oradata/ADBCLONE/undotbs01.dbf for datafile 4 with checkpoint SCN of 2037131
Using previous duplicated file /u14/oradata/ADBCLONE/users01.dbf for datafile 7 with checkpoint SCN of 2037132

contents of Memory Script:
{
   set until scn  2056346;
   set newname for datafile  1 to
 "/u14/oradata/ADBCLONE/system01.dbf";
   set newname for datafile  3 to
 "/u14/oradata/ADBCLONE/sysaux01.dbf";
   set newname for datafile  4 to
 "/u14/oradata/ADBCLONE/undotbs01.dbf";
   set newname for datafile  7 to
 "/u14/oradata/ADBCLONE/users01.dbf";
}
executing Memory Script

executing command: SET until clause

executing command: SET NEWNAME

executing command: SET NEWNAME
```



```
}
executing Memory Script

cataloged datafile copy
datafile copy file name=/u14/oradata/ADBCLONE/sysaux01.dbf RECID=2 STAMP=1050508566
cataloged datafile copy
datafile copy file name=/u14/oradata/ADBCLONE/undotbs01.dbf RECID=3 STAMP=1050508567
cataloged datafile copy
datafile copy file name=/u14/oradata/ADBCLONE/users01.dbf RECID=4 STAMP=1050508567
cataloged datafile copy
datafile copy file name=/u14/oradata/ADBCLONE/system01.dbf RECID=1 STAMP=1050508566

datafile 1 switched to datafile copy
input datafile copy RECID=1 STAMP=1050508566 file name=/u14/oradata/ADBCLONE/system01.dbf

datafile 3 switched to datafile copy
input datafile copy RECID=2 STAMP=1050508566 file name=/u14/oradata/ADBCLONE/sysaux01.dbf
```

```
executing command: SET NEWNAME

executing command: SET NEWNAME

contents of Memory Script:
{
   catalog clone datafilecopy  "/u14/oradata/ADBCLONE/system01.dbf",
 "/u14/oradata/ADBCLONE/sysaux01.dbf",
 "/u14/oradata/ADBCLONE/undotbs01.dbf",
 "/u14/oradata/ADBCLONE/users01.dbf";
   switch clone datafile  1 to datafilecopy
 "/u14/oradata/ADBCLONE/system01.dbf";
   switch clone datafile  3 to datafilecopy
 "/u14/oradata/ADBCLONE/sysaux01.dbf";
   switch clone datafile  4 to datafilecopy
 "/u14/oradata/ADBCLONE/undotbs01.dbf";
   switch clone datafile  7 to datafilecopy
 "/u14/oradata/ADBCLONE/users01.dbf";
```



```
datafile 4 switched to datafile copy
input datafile copy RECID=3 STAMP=1050508567 file name=/u14/oradata/ADBCLONE/undotbs01.dbf

datafile 7 switched to datafile copy
input datafile copy RECID=4 STAMP=1050508567 file name=/u14/oradata/ADBCLONE/users01.dbf

contents of Memory Script:
{
   set until scn  2056346;
   recover
   clone database
    delete archivelog
   ;
}
executing Memory Script

executing command: SET until clause
```

```
Starting recover at 07-SEP-20
using channel ORA_AUX_DISK_1
using channel ORA_AUX_DISK_2
using channel ORA_AUX_DISK_3
using channel ORA_AUX_DISK_4

starting media recovery

channel ORA_AUX_DISK_1: starting archived log restore to default destination
channel ORA_AUX_DISK_1: restoring archived log
archived log thread=1 sequence=56
channel ORA_AUX_DISK_1: reading from backup piece /u99/temp/Backup/ADB/full_ADB_20200907_1050481081_08v9q4dp_1_1.bak
channel ORA_AUX_DISK_2: starting archived log restore to default destination
channel ORA_AUX_DISK_2: restoring archived log
archived log thread=1 sequence=57
channel ORA_AUX_DISK_2: reading from backup piece /u99/temp/Backup/ADB/full_ADB_20200907_1050506298_0bv9qt1q_1_1.bak
channel ORA_AUX_DISK_3: starting archived log restore to default destination
channel ORA_AUX_DISK_3: restoring archived log
```

```
archived log thread=1 sequence=58
channel ORA_AUX_DISK_3: reading from backup piece /u99/temp/Backup/ADB/full_ADB_20200907_1050506298_0cv9qt1q_1_1.bak
channel ORA_AUX_DISK_4: starting archived log restore to default destination
channel ORA_AUX_DISK_4: restoring archived log
archived log thread=1 sequence=59
channel ORA_AUX_DISK_4: reading from backup piece /u99/temp/Backup/ADB/full_ADB_20200907_1050506298_0dv9qt1q_1_1.bak
channel ORA_AUX_DISK_1: piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050481081_08v9q4dp_1_1.bak tag=TAG20200907T081801
channel ORA_AUX_DISK_1: restored backup piece 1
channel ORA_AUX_DISK_1: restore complete, elapsed time: 00:00:01
archived log file name=/u99/ADBCLONE/ArchiveArch_1_56_1050474725.arc thread=1 sequence=56
channel clone_default: deleting archived log(s)
archived log file name=/u99/ADBCLONE/ArchiveArch_1_56_1050474725.arc RECID=11 STAMP=1050508585
channel ORA_AUX_DISK_1: starting archived log restore to default destination
channel ORA_AUX_DISK_1: restoring archived log
archived log thread=1 sequence=60
channel ORA_AUX_DISK_1: reading from backup piece /u99/temp/Backup/ADB/full_ADB_20200907_1050506298_0av9qt1q_1_1.bak
channel ORA_AUX_DISK_2: piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050506298_0bv9qt1q_1_1.bak tag=TAG20200907T151817
channel ORA_AUX_DISK_2: restored backup piece 1
channel ORA_AUX_DISK_2: restore complete, elapsed time: 00:00:04
archived log file name=/u99/ADBCLONE/ArchiveArch_1_57_1050474725.arc thread=1 sequence=57
channel clone_default: deleting archived log(s)
archived log file name=/u99/ADBCLONE/ArchiveArch_1_57_1050474725.arc RECID=14 STAMP=1050508588
channel ORA_AUX_DISK_3: piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050506298_0cv9qt1q_1_1.bak tag=TAG20200907T151817
channel ORA_AUX_DISK_3: restored backup piece 1
channel ORA_AUX_DISK_3: restore complete, elapsed time: 00:00:16
archived log file name=/u99/ADBCLONE/ArchiveArch_1_58_1050474725.arc thread=1 sequence=58
channel clone_default: deleting archived log(s)
archived log file name=/u99/ADBCLONE/ArchiveArch_1_58_1050474725.arc RECID=13 STAMP=1050508588
channel ORA_AUX_DISK_4: piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050506298_0dv9qt1q_1_1.bak tag=TAG20200907T151817
channel ORA_AUX_DISK_4: restored backup piece 1
channel ORA_AUX_DISK_4: restore complete, elapsed time: 00:00:25
archived log file name=/u99/ADBCLONE/ArchiveArch_1_59_1050474725.arc thread=1 sequence=59
channel clone_default: deleting archived log(s)
archived log file name=/u99/ADBCLONE/ArchiveArch_1_59_1050474725.arc RECID=12 STAMP=1050508587
channel ORA_AUX_DISK_1: piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050506298_0av9qt1q_1_1.bak tag=TAG20200907T151817
channel ORA_AUX_DISK_1: restored backup piece 1
```

```
channel ORA_AUX_DISK_4: restored backup piece 1
channel ORA_AUX_DISK_4: restore complete, elapsed time: 00:00:25
archived log file name=/u99/ADBCLONE/ArchiveArch_1_59_1050474725.arc thread=1 sequence=59
channel clone_default: deleting archived log(s)
archived log file name=/u99/ADBCLONE/ArchiveArch_1_59_1050474725.arc RECID=12 STAMP=1050508587
channel ORA_AUX_DISK_1: piece handle=/u99/temp/Backup/ADB/full_ADB_20200907_1050506298_0av9qt1q_1_1.bak tag=TAG20200907T151817
channel ORA_AUX_DISK_1: restored backup piece 1
channel ORA_AUX_DISK_1: restore complete, elapsed time: 00:00:26
archived log file name=/u99/ADBCLONE/ArchiveArch_1_60_1050474725.arc thread=1 sequence=60
channel clone_default: deleting archived log(s)
archived log file name=/u99/ADBCLONE/ArchiveArch_1_60_1050474725.arc RECID=15 STAMP=1050508594
media recovery complete, elapsed time: 00:00:09
Finished recover at 07-SEP-20
Oracle instance started

Total System Global Area    1073737800 bytes

Fixed Size                     8904776 bytes
Variable Size                293601280 bytes
Database Buffers             763363328 bytes
Redo Buffers                   7868416 bytes

contents of Memory Script:
{
   sql clone "alter system set  db_name =
```



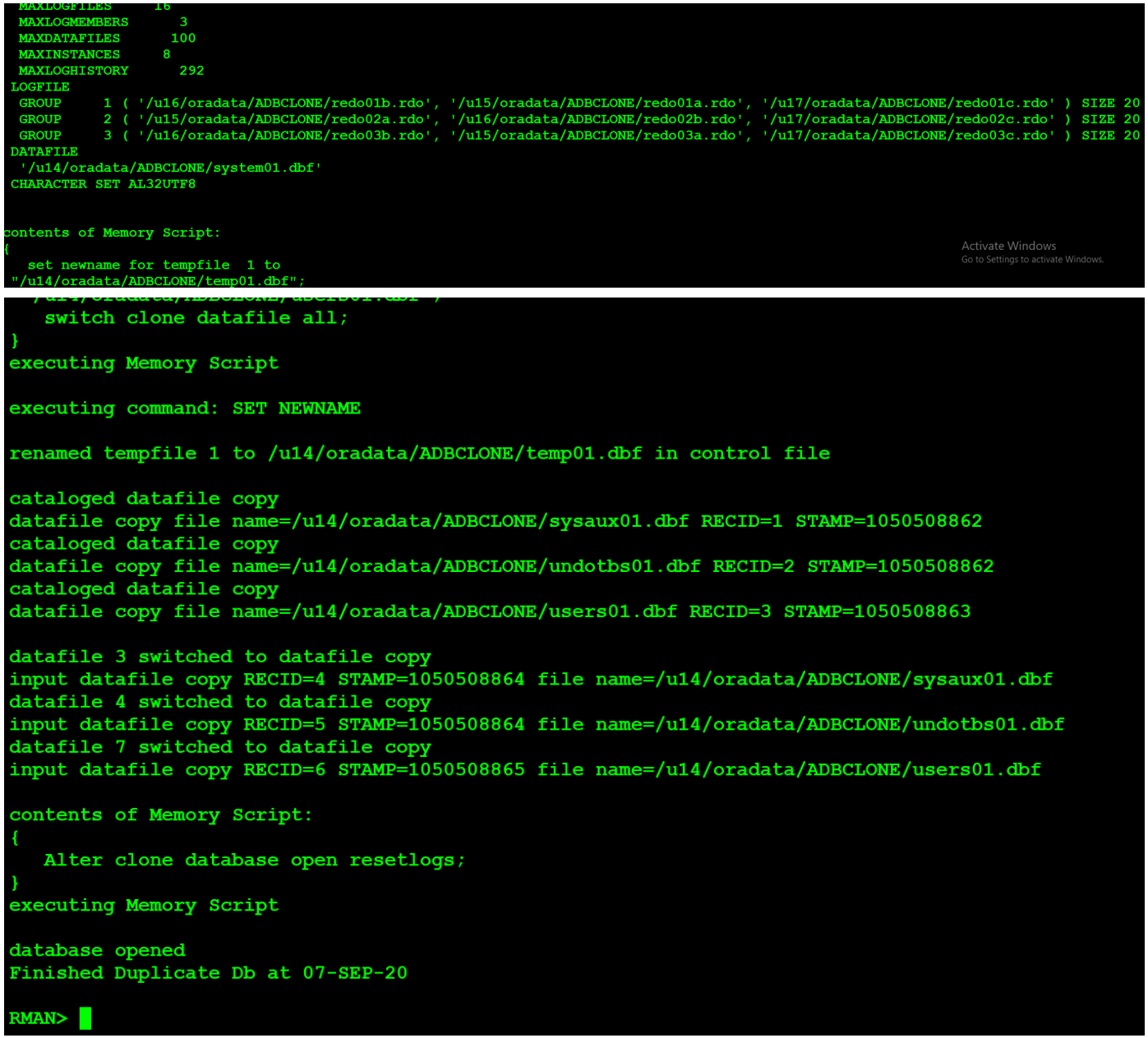
```
contents of Memory Script:
{
   sql clone "alter system set  db_name =
 ''ADBCLONE'' comment=
 ''Reset to original value by RMAN'' scope=spfile";
   sql clone "alter system reset  db_unique_name scope=spfile";
}
executing Memory Script

sql statement: alter system set  db_name =  ''ADBCLONE'' comment= ''Reset to original value by RMAN'' scope=spfile

sql statement: alter system reset  db_unique_name scope=spfile
Oracle instance started

Total System Global Area    1073737800 bytes

Fixed Size                     8904776 bytes
Variable Size                293601280 bytes
Database Buffers             763363328 bytes
Redo Buffers                   7868416 bytes
sql statement: CREATE CONTROLFILE REUSE SET DATABASE "ADBCLONE" RESETLOGS ARCHIVELOG
```

		
27	Verify database is up and running	`. oraenv → ADBCLONE` `sqlplus / as sysdba` `Select name, db_unique_name from v$database;` `Select instance_name, status from v$instance;`

```
ip-172-31-23-178.us-east-2.compute.internal:(ADBCLONE)
$ sq

SQL*Plus: Release 19.0.0.0.0 - Production on Mon Sep 7 16:22:29 2020
Version 19.3.0.0.0

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Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.3.0.0.0

SQL> Select name, db_unique_name from v$database;

NAME      DB_UNIQUE_NAME
--------- ------------------------------
ADBCLONE  ADBCLONE

SQL> Select instance_name, status from v$instance;

INSTANCE_NAME    STATUS
---------------- ------------
ADBCLONE         OPEN

SQL>
```

```
Set linesize 200
Set pagesize 200
col SOURCE_DATABASE format a71

select name||' - '||instance_name||'@'||host_name||' - '||DB_UNIQUE_NAME||' -
'||version||' - '||open_mode||' - '||to_char(startup_time,'DD-MON-YYYY
HH24:MI:SS') as source_database from v$database, v$instance;
```

```
SQL> /

SOURCE_DATABASE
--------------------------------------------------------------------------------
ADB - ADB@Chi - ADB - 19.0.0.0.0 - READ WRITE - 07-SEP-2020 06:57:16

SQL>
```

```
select name||' - '||instance_name||'@'||host_name||' - '||DB_UNIQUE_NAME||' -
'||version||' - '||open_mode||' - '||to_char(startup_time,'DD-MON-YYYY
HH24:MI:SS') as cloned_database from v$database, v$instance;
```

```
SQL> /

CLONED_DATABASE
--------------------------------------------------------------------------------
ADBCLONE - ADBCLONE@ip-172-31-23-178.us-east-2.compute.internal - ADBCLONE - 19.0.0.0.0 - READ WRITE - 07-SEP-2020 15:59:26
```

by
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