Wells Fargo
Internet Services Group

How to use RMAN DUPLICATE concept to clone a database In Oracle 10g R2

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Prepared by:
Khwaja Imran Mohammed
Kabir Kazimi
PPEM DBA

Prerequisites for using RMAN DUPLICATE:

The main requirement for using RMAN DUPLICATE command is for the source database to be in archive log mode. If your database is operating in noarchivelog mode, you can still clone it using RMAN DUPLICATE, but you have to first change your database into archivelog mode. To change your database into archive log mode, do the following:

- SYS on testkk> startup mount;
- SYS on testkk> alter database archivelog;
- SYS on testkk> alter database open;
- SYS on testkk> archive log list;

```
Database log mode              Archive Mode
Automatic archival             Enabled
Archive destination            USE_DB_RECOVERY_FILE_DEST
Oldest online log sequence     85
Next log sequence to archive   87
Current log sequence           87
```

Although this step is not mandatory, but it is a good idea to VALIDATE the source database through RMAN before starting the clone process. If you find anything out of the ordinary in the source database and require fixing, you have an opportunity here to fix it before continuing. To run the VALIDATE in RMAN, do the following:

- Export you ORACLE_SID to the source database
- Rman target /
- RMAN> validate database;

You will see a series of validations, and you will ,towards the end, see the following:

```
File Status Marked Corrupt Empty Blocks Blocks Examined High SCN
---- ------ -------------- ------------ --------------- ----------
181  OK     0              2552         2560            3318947415131
  File Name: +QP2SIMSI/tbs_brsa_vt_usr_idx1.dbf
  Block Type Blocks Failing Blocks Processed
  ---------- -------------- ----------------
  Data       0              0
  Index      0              0
  Other      0              8

File Status Marked Corrupt Empty Blocks Blocks Examined High SCN
---- ------ -------------- ------------ --------------- ----------
182  OK     0              2552         2560            3318947415162
  File Name: +QP2SIMSI/tbs_brsa_vt_usr_idx2.dbf
  Block Type Blocks Failing Blocks Processed
  ---------- -------------- ----------------
  Data       0              0
  Index      0              0
  Other      0              8
```

Finished validate at 25-MAR-10

The second requirement is to have an existing RMAN backup of the source database. If you do not have a current RMAN backup of the source database, get an RMAN backup of your database first, using the following procedure.

- Connect to your target(source) and optionally to your catalog database if you are using one.

```
apoint4:/opt/oracle/admin/testkk/scripts$ echo $ORACLE_SID
testkk

apoint4:/opt/oracle/admin/testkk/scripts$ rman target / catalog rman/pass@<recover_catalog_db_name>

Recovery Manager: Release 10.2.0.2.0 - Production on Wed Mar 24 15:22:11 2010

Copyright (c) 1982, 2005, Oracle.  All rights reserved.

connected to target database: TESTKK (DBID=3623922323)
connected to recovery catalog database

RMAN>
```

- Then run the following RMAN backup commands.

```
CONFIGURE DEVICE TYPE DISK PARALLELISM 16 BACKUP TYPE TO COMPRESSED BACKUPSET
;
run {
backup
  incremental level 0
  database
  format '/u/rman/backup/$ORACLE_SID/db0_%U'
;
backup archivelog all
  format '/u/rman/backup/$ORACLE_SID/arc_%U'
;
crosscheck backup;
delete noprompt obsolete;
}
```

Before you run this command, I presume that you have preconfigured RMAN’S default settings for best optimizations. Mine looks like this, and you might want to change your RMAN settings to resemble mine.

```
RMAN> show all;

RMAN configuration parameters are:

CONFIGURE RETENTION POLICY TO RECOVERY WINDOW OF 7 DAYS;
CONFIGURE BACKUP OPTIMIZATION ON; # default
CONFIGURE DEFAULT DEVICE TYPE TO DISK;
CONFIGURE CONTROLFILE AUTOBACKUP ON; # default
CONFIGURE CONTROLFILE AUTOBACKUP FORMAT FOR DEVICE TYPE DISK TO '%F'; # default
CONFIGURE DEVICE TYPE DISK PARALLELISM 16 BACKUP TYPE TO BACKUPSET;
CONFIGURE DATAFILE BACKUP COPIES FOR DEVICE TYPE DISK TO 1; # default
CONFIGURE ARCHIVELOG BACKUP COPIES FOR DEVICE TYPE DISK TO 1; # default
CONFIGURE MAXSETSIZE TO UNLIMITED; # default
```

```
CONFIGURE ENCRYPTION FOR DATABASE OFF; # default
CONFIGURE ENCRYPTION ALGORITHM 'AES128'; # default
CONFIGURE ARCHIVELOG DELETION POLICY TO NONE; # default
CONFIGURE SNAPSHOT CONTROLFILE NAME TO
'/opt/oracle/product/OPS/10.2.0/dbs/snapcf_testkk.f'; # default
```

ATCUAL DUPLICATION PROCESS STEPS:

Step one:

You must create a password file for the duplicate instance.

```
orapwd file=$ORACLE_HOME/dbs/<orapwSID> password=<password> entries=<number>, ex:
orapwd file=$ORACLE_HOME/dbs/orapwtestkk password=hello entries=10
```

Step two:

Add the appropriate entries in the tnsnames.ora and listener.ora files in the $ORACLE_HOME/network/admin (default Oracle location), or in our environments, /var/opt/oracle.

```
# Added to the listener.ora file:

(SID_DESC =
      (GLOBAL_DBNAME = testkk)
      (ORACLE_HOME = /opt/oracle/product/OPS/10.2.0)
      (SID_NAME = testkk)
 )

# Added to the tnsnames.ora file:

DUPKK =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = apoint4.wellsfargo.com)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SID = dupkk)
    )
  )

# Reload the listener

apoint4:/opt/oracle/product/OPS/10.2.0/network/admin$ lsnrctl

LSNRCTL for Solaris: Version 10.2.0.2.0 - Production on 26-MAR-2010 09:43:46
Copyright (c) 1991, 2005, Oracle.  All rights reserved.
Welcome to LSNRCTL, type "help" for information.

LSNRCTL> reload
Connecting to
(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=apoint4.wellsfargo.com)(PORT=1521)))
The command completed successfully
LSNRCTL>
```

Step 3:

Create an initSID.ora file for the duplicate database. Since in this process I am duplicating the source database onto the same database server, I must convert the file names so that there is no conflict.

In the initSID.ora file, mine being initdupkk.ora, add the following:

```
DB_NAME=dupkk
CONTROL_FILES=(/u/02/ORACLE/dupkk/control01.ctl,
                              /u/02/ORACLE/dupkk/control02.ctl,
                             /u/02/ORACLE/dupkk/control03.ctl)

# Convert file name in order to allow for different directory structure.
DB_FILE_NAME_CONVERT=(/u/02/ORACLE/testkk/,/u/02/ORACLE/dupkk/)
LOG_FILE_NAME_CONVERT=(/u/02/ORACLE/testkk/,/u/02/ORACLE/dupkk/)

# Make sure that DB_BLOCK_SIZE and COMPATIBLE parameters match, if you are not
using the defaults.
DB_BLOCK_SIZE=8192
COMPATIBLE=10.2.0.2.0
```

Step 4:

Copy the entry in /var/opt/oracle/oratab for souce db, in my case testkk, and change the source db name to the duplicate one.

```
testkk:/opt/oracle/product/OPS/10.2.0:N
dupkk:/opt/oracle/product/OPS/10.2.0:N
```

Step 5:

Set your environment to the duplicate database, in my case dupkk,

```
apoint4:/opt/oracle/product/OPS/10.2.0/network/admin$ . oraenv
ORACLE_SID = [testkk] ? dupkk
```

Confirm that the environment has set correctly:

```
apoint4:/opt/oracle/product/OPS/10.2.0/network/admin$ echo $ORACLE_SID
dupkk
```

Step 6:

Connect to the duplicate database and start it in nomount:

```
apoint4:/opt/oracle/product/OPS/10.2.0/network/admin$ sqlplus "/as sysdba"

SQL*Plus: Release 10.2.0.2.0 - Production on Fri Mar 26 10:16:04 2010
Copyright (c) 1982, 2005, Oracle.  All Rights Reserved.
Connected to an idle instance.

SYS on dupkk>startup force nomount;
ORACLE instance started.

Total System Global Area  171966464 bytes
Fixed Size                  2125776 bytes
Variable Size             115183664 bytes
Database Buffers           50331648 bytes
Redo Buffers                4325376 bytes
SYS on dupkk>
```

Step 7:

We can duplicate the database using the following command:
apoint4:/var/opt/oracle$ **rman target sys/pass@testkk auxiliary /**

Recovery Manager: Release 10.2.0.2.0 - Production on Tue Mar 23 16:13:08 2010

connected to target database: **TESTKK (DBID=3623922323)**
connected to auxiliary database: **DUPKK (not mounted)**

RMAN> duplicate target database to dupkk;

Below is the actual run time at various stages of the DUPLICATE process. If all the above steps got carried out correctly, you should see the same information on your monitor screen as it goes through the process of cloning.

```
Starting Duplicate Db at 23-MAR-10
using target database control file instead of recovery catalog
allocated channel: ORA_AUX_DISK_1
channel ORA_AUX_DISK_1: sid=46 devtype=DISK
allocated channel: ORA_AUX_DISK_2
channel ORA_AUX_DISK_2: sid=14 devtype=DISK
allocated channel: ORA_AUX_DISK_3
channel ORA_AUX_DISK_3: sid=45 devtype=DISK
allocated channel: ORA_AUX_DISK_4
channel ORA_AUX_DISK_4: sid=13 devtype=DISK
allocated channel: ORA_AUX_DISK_5
channel ORA_AUX_DISK_5: sid=44 devtype=DISK
allocated channel: ORA_AUX_DISK_6
channel ORA_AUX_DISK_6: sid=12 devtype=DISK
allocated channel: ORA_AUX_DISK_7
channel ORA_AUX_DISK_7: sid=43 devtype=DISK
allocated channel: ORA_AUX_DISK_8
---------------------------------
contents of Memory Script:
{
   set until scn  3319679;
   set newname for datafile  1 to
 "/u/02/ORACLE/dupkk/system01.dbf";
   set newname for datafile  2 to
 "/u/02/ORACLE/dupkk/undotbs01.dbf";
   set newname for datafile  3 to
 "/u/02/ORACLE/dupkk/sysaux01.dbf";
   set newname for datafile  4 to
 "/u/02/ORACLE/dupkk/users01.dbf";
   set newname for datafile  5 to
 "/u/02/ORACLE/dupkk/example01.dbf";
   set newname for datafile  6 to
 "/u/02/ORACLE/dupkk/brsaum_01.dbf";
   set newname for datafile  7 to
 "/u/02/ORACLE/dupkk/brsaumindx_01.dbf";
   restore
```

```
   check readonly
   clone database
   ;
}
executing Memory Script
executing command: SET until clause
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 restore at 23-MAR-10
using channel ORA_AUX_DISK_1
using channel ORA_AUX_DISK_2
using channel ORA_AUX_DISK_3
using channel ORA_AUX_DISK_4
using channel ORA_AUX_DISK_5
using channel ORA_AUX_DISK_6
using channel ORA_AUX_DISK_7
using channel ORA_AUX_DISK_8
----------------------------

channel ORA_AUX_DISK_1: starting datafile backupset restore
channel ORA_AUX_DISK_1: specifying datafile(s) to restore from backup set
restoring datafile 00002 to /u/02/ORACLE/dupkk/undotbs01.dbf
channel ORA_AUX_DISK_1: reading from backup piece
/u/rman/backup/testkk/testkk_db_157_20100320
channel ORA_AUX_DISK_2: starting datafile backupset restore
channel ORA_AUX_DISK_2: specifying datafile(s) to restore from backup set
restoring datafile 00007 to /u/02/ORACLE/dupkk/brsaumindx_01.dbf
channel ORA_AUX_DISK_2: reading from backup piece
/u/rman/backup/testkk/testkk_db_158_20100320
channel ORA_AUX_DISK_3: starting datafile backupset restore
channel ORA_AUX_DISK_3: specifying datafile(s) to restore from backup set
restoring datafile 00004 to /u/02/ORACLE/dupkk/users01.dbf
channel ORA_AUX_DISK_3: reading from backup piece
/u/rman/backup/testkk/testkk_db_160_20100320
channel ORA_AUX_DISK_4: starting datafile backupset restore
channel ORA_AUX_DISK_4: specifying datafile(s) to restore from backup set
restoring datafile 00006 to /u/02/ORACLE/dupkk/brsaum_01.dbf
channel ORA_AUX_DISK_4: reading from backup piece
/u/rman/backup/testkk/testkk_db_159_20100320
channel ORA_AUX_DISK_5: starting datafile backupset restore
channel ORA_AUX_DISK_5: specifying datafile(s) to restore from backup set
restoring datafile 00005 to /u/02/ORACLE/dupkk/example01.dbf
channel ORA_AUX_DISK_5: reading from backup piece
/u/rman/backup/testkk/testkk_db_156_20100320
channel ORA_AUX_DISK_6: starting datafile backupset restore
channel ORA_AUX_DISK_6: specifying datafile(s) to restore from backup set
restoring datafile 00003 to /u/02/ORACLE/dupkk/sysaux01.dbf
channel ORA_AUX_DISK_6: reading from backup piece
/u/rman/backup/testkk/testkk_db_155_20100320
channel ORA_AUX_DISK_7: starting datafile backupset restore
channel ORA_AUX_DISK_7: specifying datafile(s) to restore from backup set
```

```
restoring datafile 00001 to /u/02/ORACLE/dupkk/system01.dbf
channel ORA_AUX_DISK_7: reading from backup piece
/u/rman/backup/testkk/testkk_db_154_20100320
channel ORA_AUX_DISK_3: restored backup piece 1
piece handle=/u/rman/backup/testkk/testkk_db_160_20100320
tag=SAT_DB_L0_MAR_20_2010_1855PM
channel ORA_AUX_DISK_3: restore complete, elapsed time: 00:00:03
channel ORA_AUX_DISK_2: restored backup piece 1
piece handle=/u/rman/backup/testkk/testkk_db_158_20100320
tag=SAT_DB_L0_MAR_20_2010_1855PM
channel ORA_AUX_DISK_2: restore complete, elapsed time: 00:00:04
channel ORA_AUX_DISK_4: restored backup piece 1
piece handle=/u/rman/backup/testkk/testkk_db_159_20100320
tag=SAT_DB_L0_MAR_20_2010_1855PM
channel ORA_AUX_DISK_4: restore complete, elapsed time: 00:00:04
channel ORA_AUX_DISK_1: restored backup piece 1
piece handle=/u/rman/backup/testkk/testkk_db_157_20100320
tag=SAT_DB_L0_MAR_20_2010_1855PM
channel ORA_AUX_DISK_1: restore complete, elapsed time: 00:00:11
channel ORA_AUX_DISK_5: restored backup piece 1
piece handle=/u/rman/backup/testkk/testkk_db_156_20100320
tag=SAT_DB_L0_MAR_20_2010_1855PM
channel ORA_AUX_DISK_5: restore complete, elapsed time: 00:00:26
channel ORA_AUX_DISK_6: restored backup piece 1
piece handle=/u/rman/backup/testkk/testkk_db_155_20100320
tag=SAT_DB_L0_MAR_20_2010_1855PM
channel ORA_AUX_DISK_6: restore complete, elapsed time: 00:00:41
channel ORA_AUX_DISK_7: restored backup piece 1
piece handle=/u/rman/backup/testkk/testkk_db_154_20100320
tag=SAT_DB_L0_MAR_20_2010_1855PM
channel ORA_AUX_DISK_7: restore complete, elapsed time: 00:00:56
Finished restore at 23-MAR-10
sql statement: CREATE CONTROLFILE REUSE SET DATABASE "DUPKK" RESETLOGS ARCHIVELOG
  MAXLOGFILES     16
  MAXLOGMEMBERS      3
  MAXDATAFILES      100
  MAXINSTANCES     8
  MAXLOGHISTORY      292
 LOGFILE
  GROUP  1 ( '/u/02/ORACLE/dupkk/redo01.log' ) SIZE 50 M  REUSE,
  GROUP  2 ( '/u/02/ORACLE/dupkk/redo02.log' ) SIZE 50 M  REUSE,
  GROUP  3 ( '/u/02/ORACLE/dupkk/redo03.log' ) SIZE 50 M  REUSE
 DATAFILE
  '/u/02/ORACLE/dupkk/system01.dbf'
 CHARACTER SET WE8ISO8859P1
contents of Memory Script:
{
   switch clone datafile all;
}
executing Memory Script

released channel: ORA_AUX_DISK_1
released channel: ORA_AUX_DISK_2
released channel: ORA_AUX_DISK_3
released channel: ORA_AUX_DISK_4
released channel: ORA_AUX_DISK_5
released channel: ORA_AUX_DISK_6
```

```
released channel: ORA_AUX_DISK_7
released channel: ORA_AUX_DISK_8
released channel: ORA_AUX_DISK_9
released channel: ORA_AUX_DISK_10
released channel: ORA_AUX_DISK_11
released channel: ORA_AUX_DISK_12
released channel: ORA_AUX_DISK_13
released channel: ORA_AUX_DISK_14
released channel: ORA_AUX_DISK_15
released channel: ORA_AUX_DISK_16
released channel: ORA_AUX_DISK_17
released channel: ORA_AUX_DISK_18
released channel: ORA_AUX_DISK_19
released channel: ORA_AUX_DISK_20
released channel: ORA_AUX_DISK_21
released channel: ORA_AUX_DISK_22
released channel: ORA_AUX_DISK_23
released channel: ORA_AUX_DISK_24
datafile 2 switched to datafile copy
input datafile copy recid=1 stamp=714414628
filename=/u/02/ORACLE/dupkk/undotbs01.dbf
datafile 3 switched to datafile copy
input datafile copy recid=2 stamp=714414628
filename=/u/02/ORACLE/dupkk/sysaux01.dbf
datafile 4 switched to datafile copy
input datafile copy recid=3 stamp=714414628
filename=/u/02/ORACLE/dupkk/users01.dbf
datafile 5 switched to datafile copy
input datafile copy recid=4 stamp=714414628
filename=/u/02/ORACLE/dupkk/example01.dbf
datafile 6 switched to datafile copy
input datafile copy recid=5 stamp=714414628
filename=/u/02/ORACLE/dupkk/brsaum_01.dbf
datafile 7 switched to datafile copy
input datafile copy recid=6 stamp=714414628
filename=/u/02/ORACLE/dupkk/brsaumindx_01.dbf

contents of Memory Script:
{
   set until scn  3319679;
   recover
   clone database
    delete archivelog
   ;
}
executing Memory Script

executing command: SET until clause

Starting recover at 23-MAR-10
allocated channel: ORA_AUX_DISK_1
channel ORA_AUX_DISK_1: sid=15 devtype=DISK
allocated channel: ORA_AUX_DISK_2
channel ORA_AUX_DISK_2: sid=34 devtype=DISK
allocated channel: ORA_AUX_DISK_3
channel ORA_AUX_DISK_3: sid=35 devtype=DISK
allocated channel: ORA_AUX_DISK_4
```

```
channel ORA_AUX_DISK_4: sid=36 devtype=DISK
allocated channel: ORA_AUX_DISK_5
channel ORA_AUX_DISK_5: sid=37 devtype=DISK
allocated channel: ORA_AUX_DISK_6
channel ORA_AUX_DISK_6: sid=5 devtype=DISK
allocated channel: ORA_AUX_DISK_7
channel ORA_AUX_DISK_7: sid=38 devtype=DISK
allocated channel: ORA_AUX_DISK_8
channel ORA_AUX_DISK_8: sid=6 devtype=DISK
allocated channel: ORA_AUX_DISK_9
channel ORA_AUX_DISK_9: sid=39 devtype=DISK
allocated channel: ORA_AUX_DISK_10
channel ORA_AUX_DISK_10: sid=7 devtype=DISK
allocated channel: ORA_AUX_DISK_11
channel ORA_AUX_DISK_11: sid=40 devtype=DISK
allocated channel: ORA_AUX_DISK_12
channel ORA_AUX_DISK_12: sid=41 devtype=DISK
allocated channel: ORA_AUX_DISK_13
channel ORA_AUX_DISK_13: sid=8 devtype=DISK
allocated channel: ORA_AUX_DISK_14
channel ORA_AUX_DISK_14: sid=9 devtype=DISK
allocated channel: ORA_AUX_DISK_15
channel ORA_AUX_DISK_15: sid=42 devtype=DISK
allocated channel: ORA_AUX_DISK_16
channel ORA_AUX_DISK_16: sid=43 devtype=DISK
allocated channel: ORA_AUX_DISK_17
channel ORA_AUX_DISK_17: sid=44 devtype=DISK
allocated channel: ORA_AUX_DISK_18
channel ORA_AUX_DISK_18: sid=10 devtype=DISK
allocated channel: ORA_AUX_DISK_19
channel ORA_AUX_DISK_19: sid=45 devtype=DISK
allocated channel: ORA_AUX_DISK_20
channel ORA_AUX_DISK_20: sid=11 devtype=DISK
allocated channel: ORA_AUX_DISK_21
channel ORA_AUX_DISK_21: sid=46 devtype=DISK
allocated channel: ORA_AUX_DISK_22
channel ORA_AUX_DISK_22: sid=32 devtype=DISK
allocated channel: ORA_AUX_DISK_23
channel ORA_AUX_DISK_23: sid=12 devtype=DISK
allocated channel: ORA_AUX_DISK_24
channel ORA_AUX_DISK_24: sid=31 devtype=DISK

starting media recovery

archive log thread 1 sequence 83 is already on disk as file
/u/02/ORACLE/testkk/flash_recovery_area/TESTKK/archivelog/2010_03_21/o1_mf_1_83_5
tg45npg_.arc
archive log thread 1 sequence 84 is already on disk as file
/u/02/ORACLE/testkk/flash_recovery_area/TESTKK/archivelog/2010_03_22/o1_mf_1_84_5
tjlqxom_.arc
archive log thread 1 sequence 85 is already on disk as file
/u/02/ORACLE/testkk/flash_recovery_area/TESTKK/archivelog/2010_03_23/o1_mf_1_85_5
tllo5fv_.arc
archive log
filename=/u/02/ORACLE/testkk/flash_recovery_area/TESTKK/archivelog/2010_03_21/o1_
mf_1_83_5tg45npg_.arc thread=1 sequence=83
```

```
archive log
filename=/u/02/ORACLE/testkk/flash_recovery_area/TESTKK/archivelog/2010_03_22/o1_
mf_1_84_5tjlqxom_.arc thread=1 sequence=84
archive log
filename=/u/02/ORACLE/testkk/flash_recovery_area/TESTKK/archivelog/2010_03_23/o1_
mf_1_85_5tllo5fv_.arc thread=1 sequence=85
media recovery complete, elapsed time: 00:01:55
Finished recover at 23-MAR-10

contents of Memory Script:
{
   shutdown clone;
   startup clone nomount ;
}
executing Memory Script

database dismounted
Oracle instance shut down

connected to auxiliary database (not started)
Oracle instance started

Total System Global Area     171966464 bytes

Fixed Size                     2125776 bytes
Variable Size                115183664 bytes
Database Buffers              50331648 bytes
Redo Buffers                   4325376 bytes
sql statement: CREATE CONTROLFILE REUSE SET DATABASE "DUPKK" RESETLOGS ARCHIVELOG
  MAXLOGFILES     16
  MAXLOGMEMBERS      3
  MAXDATAFILES      100
  MAXINSTANCES     8
  MAXLOGHISTORY      292
 LOGFILE
  GROUP  1 ( '/u/02/ORACLE/dupkk/redo01.log' ) SIZE 50 M  REUSE,
  GROUP  2 ( '/u/02/ORACLE/dupkk/redo02.log' ) SIZE 50 M  REUSE,
  GROUP  3 ( '/u/02/ORACLE/dupkk/redo03.log' ) SIZE 50 M  REUSE
 DATAFILE
  '/u/02/ORACLE/dupkk/system01.dbf'
 CHARACTER SET WE8ISO8859P1


contents of Memory Script:
{
   set newname for tempfile  1 to
 "/u/02/ORACLE/dupkk/temp_02.dbf";
   switch clone tempfile all;
   catalog clone datafilecopy  "/u/02/ORACLE/dupkk/undotbs01.dbf";
   catalog clone datafilecopy  "/u/02/ORACLE/dupkk/sysaux01.dbf";
   catalog clone datafilecopy  "/u/02/ORACLE/dupkk/users01.dbf";
   catalog clone datafilecopy  "/u/02/ORACLE/dupkk/example01.dbf";
   catalog clone datafilecopy  "/u/02/ORACLE/dupkk/brsaum_01.dbf";
   catalog clone datafilecopy  "/u/02/ORACLE/dupkk/brsaumindx_01.dbf";
   switch clone datafile all;
}
executing Memory Script
```

```
executing command: SET NEWNAME

renamed temporary file 1 to /u/02/ORACLE/dupkk/temp_02.dbf in control file

cataloged datafile copy
datafile copy filename=/u/02/ORACLE/dupkk/undotbs01.dbf recid=1 stamp=714414779

cataloged datafile copy
datafile copy filename=/u/02/ORACLE/dupkk/sysaux01.dbf recid=2 stamp=714414780

cataloged datafile copy
datafile copy filename=/u/02/ORACLE/dupkk/users01.dbf recid=3 stamp=714414780

cataloged datafile copy
datafile copy filename=/u/02/ORACLE/dupkk/example01.dbf recid=4 stamp=714414781

cataloged datafile copy
datafile copy filename=/u/02/ORACLE/dupkk/brsaum_01.dbf recid=5 stamp=714414781

cataloged datafile copy
datafile copy filename=/u/02/ORACLE/dupkk/brsaumindx_01.dbf recid=6
stamp=714414782

datafile 2 switched to datafile copy
input datafile copy recid=1 stamp=714414779
filename=/u/02/ORACLE/dupkk/undotbs01.dbf
datafile 3 switched to datafile copy
input datafile copy recid=2 stamp=714414780
filename=/u/02/ORACLE/dupkk/sysaux01.dbf
datafile 4 switched to datafile copy
input datafile copy recid=3 stamp=714414780
filename=/u/02/ORACLE/dupkk/users01.dbf
datafile 5 switched to datafile copy
input datafile copy recid=4 stamp=714414781
filename=/u/02/ORACLE/dupkk/example01.dbf
datafile 6 switched to datafile copy
input datafile copy recid=5 stamp=714414781
filename=/u/02/ORACLE/dupkk/brsaum_01.dbf
datafile 7 switched to datafile copy
input datafile copy recid=6 stamp=714414782
filename=/u/02/ORACLE/dupkk/brsaumindx_01.dbf

contents of Memory Script:
{
   Alter clone database open resetlogs;
}
executing Memory Script

database opened
Finished Duplicate Db at 23-MAR-10

RMAN>
```

Step 8:

Shut down your new duplicate database and restart it to make sure it starts up properly.

You are done with cloning! Congratulations.