**Database cloning**

Database cloning is nothing but a replica of the database server.

There are two type of cloning

1. **Online cloning**
2. **Offline cloning**

**Online cloning:**

We will clone the database server when the database server is up and running

Eg: production server

Production server is running 24 by 7 and 365 days

**Offline cloning:-**

We will clone the database server after shutting down

Eg: non production servers

Eg:DEV,TEST etc

**Prerequisites for online cloning:-**

**On the production server side:**

1. Oracle instance must be in OPEN stage
2. Create and configure fra and the size
3. The database must be in archivelog mode
4. Production server and the clone server must be in the network
5. Create and configure the listener
6. Listener must be up and running
7. The db\_name=prd, SID=prd and ip=192.168.1.1

**On the clone server side:-**

1. Install os
2. Install oracle software only
3. The clone server and the production server must be in the network
4. The db\_name=clone, SID=clone and ip=192.168.1.2
5. Create clone folder under /home directory and grant full permissions

#su – oracle

$cd /home

$mkdir clone

$chmod –R 777 /home/clone

**Steps for online cloning :-**

On the product server side:

1. Create an empty folder named clone under /home/prd directory and grant full permissions

#su – oracle

$cd /home/prd

Prd]$mkdir clone

Prd}$chmod –R 777 /home/prd/clone

1. Keep the database is in begin backup mode

Sql>alter database begin backup;

1. Copy all database files (.dbf) into the /home/prd /clone folder

#su – oracle

$cd /home/prd

Prd}$cp \*.dbf /home/prd/clone

1. While copying .dbf files users performs some transactions we have to move these transaction into flash recovery area (fra)

$su – oracle

$sqlplus ‘/as sysdba’

Sql>grant connect, resource to cluser identified by cluser;

Sql>conn cluser/cluser;

Sql>create table emp(eno number);

Sql>insert into emp values(888);

Sql>commit;

**Sql>conn /as sysdba**

**Sql>alter system switch logfile;**

**Sql>alter system switch logfile;**

**Sql>alter system switch logfile;**

1. Keep the database is in the end backup mode

Sql>alter database end backup;

1. Generate one more archivelog file for synchronization

Sql>alter system switch logfile;

1. Convert binary control file into a trace file i.e text file

**Sql>alter database backup controlfile to trace;**

By default all trace file are stored in the **udump folder**

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**How to find the udump location?**

Sql>show parameter user\_dump\_dest;

Output: /home/prd/udump

1. Go to /home/prd/udump folder and copy the last trace file in to the backup folder i.e /home/prd/clone

#su – oracle

$cd /home/prd/udump

Udump}$**ls –ltr** <enter>

Udump}$cp lasttracefilename.trc /home/prd/clone

1. Copy all archivelog files located at /home/prd/fra/PRD/archivelog/todaysdate into the /home/prd/clone folder

Udump]$cd /home/prd/fra/PRD/archivelog/todaysdate

Todaysdate]$cp \*.arc /home/prd/clone

1. Copy parameter file which is located at $ORACLE\_HOME/dbs folder into the /home/prd/clone folder

Todaysdate]$cd $ORACLE\_HOME/dbs

Dbs]$cp initprd.ora /home/prd/clone

1. Go to /home/prd/clone folder and check all the files

Todaysdate]$cd /home/prd/clone

Clone]$ls <enter>

**Here we may find .dbf , .tra, initprd.ora and arch files**

1. Copy all files located at /home/prd/clone folder into the clone server /home/clone folder

Syntax:

**Clone]$scp \* targetserverip:targetlocation**

**Eg clone]$scp \* 192.168.1.2:/home/clone**

**Enter password:oracle**

On the clone server side:

1. Go to /home/clone folder and check all the files

#su – oracle

$cd /home/clone

Clone]$ls <enter>

Here we may find initprd.ora, .arc, .dbf, .trc files

1. Move parameter file into the $ORACLE\_HOME/dbs folder

Clone]$mv initprd.ora $ORACLE\_HOME/dbs

1. Go to $ORACLE\_HOME/dbs folder and rename initprd.ora to initclone.ora

Clone]$cd $ORACLE\_HOME/dbs

Dbs]$ls <enter>

Initprd.ora

Dbs]$mv initprd.ora initclone.ora

1. Open initclone.ora file and replaceprd with clone

Dbs]$vi initclone.ora

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Go to insert mode

#replace prd with clone using the following unix command

**Esc:%s/oldstring/newstring/g**

Eg:

**Esc:%s/prd/clone/g**

Here g means all occurrences

:wq

1. Go to /home/clone folder create udump cdump bdump and fra folders grant full permission to above directories

Dbs]$cd /home/clone

Clone]$mkdir udump bdump cdump fra

Clone]$chmod –R 777 /home/clone

1. Open trace file which is located at /homce/clone folder

Clone]$vi tracefilename.tra <enter>

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#delete all the lines before create controlfile

#delete all the lines after CHARACTERSET US7ASCII;

#replace RESUSE with SET

#replace PRD with clone

#replace NORESETLOGS with RESETLOGS

#replace prd with clone using the following unix command

**Esc:%s/prd/clone**

:wq

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1. Convert trace file into a binary control file we can recreate control file from the trace file only in the nomount stage

Clone]$sqlplus ‘/as sysdba’

Sql>startup nomount;

**Sql>@/home/clone/tracefilename.trc;**

Control file created.

1. Check the status of the oracle instance

Sql>select status from v$instance;

Output: mounted

🡪after creating the control file, oracle instance will go to **mount** stage automatically

1. Apply all archivelog files we can apply all archivelog files only in the mount stage

**Sql>recover database using backup controlfile until cancel;**

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🡪here the server is expecting archivelog files from this location i.e /home/clone/fra/CLONE/archivelog/todaysdate but archive log files are located at /home/clone folder

So copy all archivelog files located at /home/clone folder into the /home/clone/fra/CLONE/archivelog/todaysdate folder

#su – oracle

$cd /home/clone

Clone]$cp \*.arc /home/clone/fra/CLONE/archivelog/todaysdate/

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Type AUTO

1. Inform to the database server no more archivelog files are available

Sql>recover database using backup controlfile until cancel;

Type CANCEL

1. Open the database

Sql>alter database open resetlogs;

1. Check the database name

Sql>show parameter db\_name

Output: **clone**

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**Steps for offline cloning:**

On the production server sid:-

1. Create an empty folder named clone under /home/prd directory and grant full permissions

#su – oracle

$cd /home/prd

Prd]$mkdir clone

Prd}$chmod –R 777 /home/prd/clone

1. Shutdown the database server if it is up and running

Sql>shut immediate;

Sql>host <enter>

$

1. Go to /home/prd folder and copy all .dbf and .log files into the /home/prd/clone folder

$cd /home/prd

Prd]$cp \*.dbf \*.log /home/prd/clone

1. Start an oracle instance in the open stage

Prd]$sqlplus ‘/as sysdba’

Sql>startup;

1. Convert binary control file into a trace file i.e text file

Sql>alter database backup controlfile to trace;

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By default all trace files are stored in the udump folder

How to find the udump location?

Sql>show parameter user\_dump\_dest;

Output: /home/prd/udump

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1. Go to /home/prd/udump folder and copy the last trace file into the backup folder I.e /home/prd/clone

#su – oracle

$cd /home/prd/udump

Udump]$ls –ltr <enter>

Udump]$cp lasttracefilename.trc /home/prd/clone

1. Shutdown the database server

Sql>shut immediate;

Sql>host <enter>

$

1. Copy parameter file which is located at $ORACLE\_HOME/dbs folder into thee /home/prd/clone folder

Todaysdate]$cd $ORACLE\_HOME/dbs

Dbs]$cp initprd.ora /home/prd/clone

1. Go to /home/prd/clone folder and check all the files

Todaysdate]$cd /home/prd/clone

Cole]$ls <enter>

🡪here we may .dbf, .tra, initprd.ora and .log files

1. Copy all files located at /home/prd/clone folder into the clone server /home/clone/folder

Syntax:Clone]$scp \* targetserverip:taraget location

Eg: clone]$scp \* 192.168.1.2:/home/clone

Enter password:oracle

**On the clone server side:**

1. Go to /home/clone folder and check all the files

#su – oracle

$cd /home/clone

Clone]$ls <enter>

Here we may find initprd.ora, .arc, .dbf, .trc files

1. Move parameter file into the $ORACLE\_HOME/dbs folder

Clone]$mv initprd.ora $ORACLE\_HOME/dbs

1. Go to $ORACLE\_HOME/dbs folder and rename initprd.ora to initclone.ora

Clone]$cd $ORACLE\_HOME/dbs

Dbs]$ls <enter>

Initprd.ora

Dbs]$mv initprd.ora initclone.ora

1. Open initclone.ora file and replaceprd with clone

Dbs]$vi initclone.ora

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Go to insert mode

#replace prd with clone using the following unix command

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Eg:

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1. Go to /home/clone folder create udump cdump bdump and fra folders grant full permission to above directories

Dbs]$cd /home/clone

Clone]$mkdir udump bdump cdump fra

Clone]$chmod –R 777 /home/clone

1. Open trace file which is located at /homce/clone folder

Clone]$vi tracefilename.tra <enter>

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#delete all the lines before create controlfile

#delete all the lines after CHARACTERSET US7ASCII;

#replace RESUSE with SET

#replace PRD with clone

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1. Convert trace file into a binary control file we can recreate control file from the trace file only in the nomount stage

Clone]$sqlplus ‘/as sysdba’

Sql>startup nomount;

Sql>@/home/clone/tracefilename.trc;

Control file created.

1. Check the status of the oracle instance

Sql>select status from v$instance;

Output: mounted

🡪after creating the control file, oracle instance will go to mount stage automatically

1. Apply all redolog files. We can apply all redolog files only in the mount stage

Sql>recover database using backup controlfile until cancel;

/home/clone/redo1.log

We will see log applied

Otherwise apply another log

/home/clone/redo2.log

1. Open the database

Sql>alter database opne resetlogs;

1. Check the database name:

Sql>show parameter dn\_name;

Output: clone

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**How to uninstall oracle software with manual database creation?**

#xhost +

#su – oracle

$sh $ORACLE\_HOME/oui/bin/runInstaller.sh

**Step1:**

Click on deinstall

Click the check box oraDb10g\_home1

Click on remove button

Click on yes button

**Step2:**

Delete the contents of oracle home folder

#su – oracle

$cd $ORACLE\_HOME

**$rm –rf \***

$ls

**Delete the content of orainventary folder**

**$cd /home/oracle/oraInventory**

**$rm –rf\***

Delete the content of clone folder

$cd /home/clone

$rm –rf

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