

SESSION 15 PERFORMING BACKUPS with RMAN (ARCHIVELOG)

The Oracle base remains unchanged with value /opt/oracle

```
[oracle@oracloud12c ~]$ pwd
/home/oracle
```

```
[oracle@oracloud12c ~]$ mkdir ARCHIVE
[oracle@oracloud12c ~]$ chmod 777 ARCHIVE
[oracle@oracloud12c ~]$ ls -l
total 24
-rw-r--r--. 1 oracle dba    52 Mar  9 09:42 afiedt.buf
drwxrwxrwx. 2 oracle dba 4096 Apr  4 17:50 ARCHIVE
drwxrwxrwx. 2 oracle dba 4096 Apr  4 14:27 BACKUP
drwxr-xr-x. 2 oracle dba 4096 Jul 24  2017 bea
drwxr-----. 3 oracle dba 4096 Jul 25  2017 oradiag_oracle
-rw-r--r--. 1 oracle dba   46 Jan 18 10:22 setport.sql
```

```
[oracle@oracloud12c ~]$ cd ARCHIVE
[oracle@oracloud12c ARCHIVE]$ ls -l
total 0
[oracle@oracloud12c ARCHIVE]$ pwd
/home/oracle/ARCHIVE
[oracle@oracloud12c ARCHIVE]$ sqlplus / as sysdba
```

SQL*Plus: Release 12.1.0.2.0 Production on Wed Apr 4 17:51:28 2018

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Connected to:

Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit
Production

With the Partitioning, OLAP, Advanced Analytics and Real Application
Testing options

SQL> SET PAGESIZE 200

SQL> **ARCHIVE LOG LIST;** ← to check the status of Archiving (only SYSDBA)

Database log mode	No Archive Mode
Automatic archival	Disabled
Archive destination	USE_DB_RECOVERY_FILE_DEST
Oldest online log sequence	1358
Current log sequence	1360

SQL> **SHOW PARAMETER ARCHIVE**

NAME	TYPE	VALUE
archive_lag_target	integer	0
log_archive_config	string	
log_archive_dest	string	
log_archive_dest_1	string	

log_archive_dest_10	string	
log_archive_dest_11	string	
etc ...		
log_archive_dest_8	string	
log_archive_dest_9	string	
log_archive_dest_state_1	string	enable
log_archive_dest_state_10	string	enable
etc ...		
log_archive_duplex_dest	string	
log_archive_format	string	%t_%s_%r.dbf
log_archive_max_processes	integer	4
log_archive_min_succeed_dest	integer	1
log_archive_start	boolean	FALSE
log_archive_trace	integer	0
standby_archive_dest	string	~/dbs/arch

Recipe for Switching to ARCHIVELOG mode (needs to be done by **SYSDBA**)

Step One: We need to modify 2 parameters in SPFILE before switch to archiving. First one sets the folder location and second one the log name convention.

```
SQL> ALTER SYSTEM SET LOG_ARCHIVE_DEST_1 =
      'LOCATION=/home/oracle/ARCHIVE/' SCOPE=SPFILE;
```

System altered.

```
SQL> ALTER SYSTEM SET LOG_ARCHIVE_FORMAT =
      'arch_%r_%t_%s.log' SCOPE=SPFILE;
```

System altered.

Step Two: Close your Database

```
SQL> SHUTDOWN IMMEDIATE;
```

Database closed.

Database dismounted.

ORACLE instance shut down.

Step Three: Mount your Database

```
SQL> STARTUP MOUNT;
```

ORACLE instance started.

```
Total System Global Area 1694498816 bytes
Fixed Size                  2925168 bytes
Variable Size               788532624 bytes
Database Buffers            872415232 bytes
Redo Buffers                 30625792 bytes
Database mounted.
```

Step Four: Turn on Archiving

```
SQL> ALTER DATABASE ARCHIVELOG;
```

Database altered.

Step Five: Open your Database

```
SQL> ALTER DATABASE OPEN;
```

Database altered.

```
SQL> ALTER SYSTEM SWITCH LOGFILE;
```

System altered.

```
SQL> ALTER SYSTEM SWITCH LOGFILE;
```

System altered.

```
SQL> ARCHIVE LOG LIST;
```

Database log mode	Archive Mode
Automatic archival	Enabled
Archive destination	/home/oracle/ARCHIVE/
Oldest online log sequence	1360
Next log sequence to archive	1362
Current log sequence	1362

```
SQL> SELECT group#, sequence#, archived, status FROM V$LOG;
```

GROUP#	SEQUENCE#	ARC	STATUS
1	1360	YES	ACTIVE
2	1361	YES	ACTIVE
3	1362	NO	CURRENT

← Archiving is enabled and we have our first two Archive Logs

```
SQL> HOST
```

```
[oracle@oracloud12c ARCHIVE]$ pwd
```

```
/home/oracle/ARCHIVE
```

```
[oracle@oracloud12c ARCHIVE]$ ls -l
```

```
total 7264
```

```
-rw-r-----. 1 oracle dba 2507264 Apr  4 17:56
```

```
arch_950182417_1_1360.log
```

```
-rw-r-----. 1 oracle dba 4925952 Apr  4 17:56
```

```
arch_950182417_1_1361.log
```

```
[oracle@oracloud12c ARCHIVE]$ exit
```

```
exit
```

```
SQL> exit
```

Disconnected from Oracle Database 12c Enterprise Edition Release

12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application
Testing options

```
[oracle@oracloud12c ARCHIVE]$ cd ../BACKUP  
[oracle@oracloud12c BACKUP]$ rman target /
```

Recovery Manager: Release 12.1.0.2.0 - Production on Wed Apr 4
18:01:18 2018

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connected to target database: STUDENT (DBID=4285838094)

*** We can perform Whole Database /Tablespace /Datafile /Archived Log then Full /
Incremental Level (0 or 1) and Off-Line (Cold) /On-Line (Hot) Backup ; these options exist
when doing Backup in ARCHIVELOG mode. This exercise will perform always Full and Hot
Backups. ***

```
RMAN> BACKUP DATABASE FILESPERSET=3;
```

```
Starting backup at 04-APR-18  
allocated channel: ORA_DISK_1  
channel ORA_DISK_1: SID=26 device type=DISK  
file 2 is excluded from whole database backup  
file 5 is excluded from whole database backup  
file 7 is excluded from whole database backup  
channel ORA_DISK_1: starting full datafile backup set  
channel ORA_DISK_1: specifying datafile(s) in backup set  
input datafile file number=00003  
name=/opt/oracle/oradata/student/sysaux01.dbf  
input datafile file number=00012  
name=/opt/oracle/oradata/student/indx01.dbf  
input datafile file number=00011  
name=/opt/oracle/oradata/student/joke02.dbf  
channel ORA_DISK_1: starting piece 1 at 04-APR-18  
channel ORA_DISK_1: finished piece 1 at 04-APR-18  
piece handle=/home/oracle/BACKUP/full_09svgsor_9_1  
tag=TAG20180404T180827 comment=NONE  
channel ORA_DISK_1: backup set complete, elapsed time: 00:01:25  
channel ORA_DISK_1: starting full datafile backup set  
channel ORA_DISK_1: specifying datafile(s) in backup set  
input datafile file number=00001  
name=/opt/oracle/oradata/student/system01.dbf  
input datafile file number=00006  
name=/opt/oracle/oradata/student/users01.dbf  
input datafile file number=00009  
name=/opt/oracle/oradata/student/joke01.dbf  
channel ORA_DISK_1: starting piece 1 at 04-APR-18  
channel ORA_DISK_1: finished piece 1 at 04-APR-18
```

```

piece handle=/home/oracle/BACKUP/full_0asvgsrh_10_1
tag=TAG20180404T180827 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:45
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00004
name=/opt/oracle/oradata/student/undotbs01.dbf
input datafile file number=00010
name=/opt/oracle/product/12.1.0/dbhome_1/dbs/myundo01.dbf
input datafile file number=00008
name=/opt/oracle/oradata/student/mine01.dbf
channel ORA_DISK_1: starting piece 1 at 04-APR-18
channel ORA_DISK_1: finished piece 1 at 04-APR-18
piece handle=/home/oracle/BACKUP/full_0bsvgssu_11_1
tag=TAG20180404T180827 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:07
Finished backup at 04-APR-18

```

```

Starting Control File and SPFILE Autobackup at 04-APR-18
piece
handle=/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1
_mf_s_972583845_fdbmc6ks_.bkp comment=NONE
Finished Control File and SPFILE Autobackup at 04-APR-18

```

RMAN> **LIST BACKUP OF DATABASE;**

List of Backup Sets
=====

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
1	Full		1.36G	DISK		00:02:53	27-MAR-18
BP Key: 1 Status: AVAILABLE Compressed: NO Tag: TAG20180327T202033							
Piece Name: /home/oracle/BACKUP/full_0lsus1gh_1_1							
List of Datafiles in backup set 1							
File	LV	Type	Ckp	SCN	Ckp Time	Name	
2	Full	25169175		27-MAR-18		/opt/oracle/oradata/student/mgmt.dbf	
9	Full	25169175		27-MAR-18		/opt/oracle/oradata/student/joke01.dbf	
11	Full	25169175		27-MAR-18		/opt/oracle/oradata/student/joke02.dbf	
ETC ...							

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
9	Full		1.70G	DISK		00:01:20	04-APR-18
BP Key: 9 Status: AVAILABLE Compressed: NO Tag: TAG20180404T180827							
Piece Name: /home/oracle/BACKUP/full_09svgsor_9_1							
List of Datafiles in backup set 9							
File	LV	Type	Ckp	SCN	Ckp Time	Name	
----	----	----	----	----	-----	----	

```

3 Full 28470564 04-APR-18 /opt/oracle/oradata/student/sysaux01.dbf
11 Full 28470564 04-APR-18 /opt/oracle/oradata/student/joke02.dbf
12 Full 28470564 04-APR-18 /opt/oracle/oradata/student/indx01.dbf

```

```

BS Key   Type LV Size          Device Type Elapsed Time Completion Time
-----

```

```

10      Full    937.50M      DISK           00:00:34      04-APR-18
      BP Key: 10   Status: AVAILABLE   Compressed: NO   Tag:

```

```

TAG20180404T180827

```

```

      Piece Name: /home/oracle/BACKUP/full_0asvgsrh_10_1

```

```

List of Datafiles in backup set 10

```

```

File LV Type Ckp SCN      Ckp Time  Name
-----

```

```

1 Full 28470959 04-APR-18 /opt/oracle/oradata/student/system01.dbf
6 Full 28470959 04-APR-18 /opt/oracle/oradata/student/users01.dbf
9 Full 28470959 04-APR-18 /opt/oracle/oradata/student/joke01.dbf

```

```

BS Key   Type LV Size          Device Type Elapsed Time Completion Time
-----

```

```

11      Full    32.35M      DISK           00:00:04      04-APR-18
      BP Key: 11   Status: AVAILABLE   Compressed: NO   Tag:

```

```

TAG20180404T180827

```

```

      Piece Name: /home/oracle/BACKUP/full_0bsvgssu_11_1

```

```

List of Datafiles in backup set 11

```

```

File LV Type Ckp SCN      Ckp Time  Name
-----

```

```

4 Full 28472490 04-APR-18 /opt/oracle/oradata/student/undotbs01.dbf
8 Full 28472490 04-APR-18 /opt/oracle/oradata/student/mine01.dbf
10 Full 28472490 04-APR-18
    /opt/oracle/product/12.1.0/dbhome_1/dbs/myundo01.dbf

```

*** Notice that in all sets created here with HOT backup like (9,10,11) → Checkpoint System Change Number is NOT the SAME number. This means that Datafiles and Controlfiles do NOT have same last transaction number, so HOT backup is also called INCONSISTENT ***

```

RMAN> BACKUP TABLESPACE mine, users FILESPERSET=2;

```

```

Starting backup at 04-APR-18

```

```

using channel ORA_DISK_1

```

```

channel ORA_DISK_1: starting full datafile backup set

```

```

channel ORA_DISK_1: specifying datafile(s) in backup set

```

```

input datafile file number=00008

```

```

name=/opt/oracle/oradata/student/mine01.dbf

```

```

input datafile file number=00006

```

```

name=/opt/oracle/oradata/student/users01.dbf

```

```

channel ORA_DISK_1: starting piece 1 at 04-APR-18

```

```

channel ORA_DISK_1: finished piece 1 at 04-APR-18

```

```

piece handle=/home/oracle/BACKUP/full_0dsvgt78_13_1

```

```

tag=TAG20180404T181608 comment=NONE

```

```

channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01

```

```

Finished backup at 04-APR-18

```

Starting Control File and SPFILE Autobackup at 04-APR-18
 piece
 handle=/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1
 _mf_s_972584169_fdbmo9nx_.bkp comment=NONE
 Finished Control File and SPFILE Autobackup at 04-APR-18

RMAN> **LIST BACKUP OF TABLESPACE mine;**

List of Backup Sets

=====

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

2	Full		1.68G	DISK		00:01:57	27-MAR-18
---	------	--	-------	------	--	----------	-----------

BP Key: 2 Status: AVAILABLE Compressed: NO Tag:

TAG20180327T202033

Piece Name: /home/oracle/BACKUP/full_02sus1m1_2_1

List of Datafiles in backup set 2

File	LV	Type	Ckp	SCN	Ckp Time	Name
------	----	------	-----	-----	----------	------

8	Full	25169175	27-MAR-18	/opt/oracle/oradata/student/mine01.dbf
---	------	----------	-----------	--

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

7	Full		16.96M	DISK		00:00:01	04-APR-18
---	------	--	--------	------	--	----------	-----------

BP Key: 7 Status: AVAILABLE Compressed: NO Tag:

TAG20180404T142656

Piece Name: /home/oracle/BACKUP/full_07svgfr3_7_1

List of Datafiles in backup set 7

File	LV	Type	Ckp	SCN	Ckp Time	Name
------	----	------	-----	-----	----------	------

8	Full	28459530	04-APR-18	/opt/oracle/oradata/student/mine01.dbf
---	------	----------	-----------	--

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

11	Full		32.35M	DISK		00:00:04	04-APR-18
----	------	--	--------	------	--	----------	-----------

BP Key: 11 Status: AVAILABLE Compressed: NO Tag:

TAG20180404T180827

Piece Name: /home/oracle/BACKUP/full_0bsvgssu_11_1

List of Datafiles in backup set 11

File	LV	Type	Ckp	SCN	Ckp Time	Name
------	----	------	-----	-----	----------	------

8	Full	28472490	04-APR-18	/opt/oracle/oradata/student/mine01.dbf
---	------	----------	-----------	--

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

13	Full		5.64M	DISK		00:00:00	04-APR-18
-----------	-------------	--	--------------	------	--	----------	-----------

BP Key: 13 Status: AVAILABLE Compressed: NO Tag:

TAG20180404T181608

Piece Name: /home/oracle/BACKUP/full_0dsvgt78_13_1

List of Datafiles in backup set 13

File	LV	Type	Ckp	SCN	Ckp Time	Name
8		Full	28473632	04-APR-18		/opt/oracle/oradata/student/mine01.dbf

RMAN> **BACKUP DATAFILE 4;** ← this is undotbs1.dbf file

Starting backup at 04-APR-18
 using channel ORA_DISK_1
 channel ORA_DISK_1: starting full datafile backup set
 channel ORA_DISK_1: specifying datafile(s) in backup set
 input datafile file number=00004
 name=/opt/oracle/oradata/student/undotbs01.dbf
 channel ORA_DISK_1: starting piece 1 at 04-APR-18
 channel ORA_DISK_1: finished piece 1 at 04-APR-18
 piece handle=/home/oracle/BACKUP/full_0fsvgtdr_15_1
 tag=TAG20180404T181939 comment=NONE
 channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
 Finished backup at 04-APR-18

Starting Control File and SPFILE Autobackup at 04-APR-18
 piece
 handle=/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1
 _mf_s_972584381_fdbmvx3c_.bkp comment=NONE
 Finished Control File and SPFILE Autobackup at 04-APR-18

RMAN> **LIST BACKUP OF DATAFILE 4;**

List of Backup Sets
 =====

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
3	Full		962.24M	DISK		00:00:44	27-MAR-18
BP Key: 3 Status: AVAILABLE Compressed: NO Tag:							
TAG20180327T202033							
Piece Name: /home/oracle/BACKUP/full_03sus1pv_3_1							
List of Datafiles in backup set 3							
File	LV	Type	Ckp	SCN	Ckp Time	Name	
4	Full		25169175	27-MAR-18		/opt/oracle/oradata/student/undotbs01.dbf	

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
7	Full		16.96M	DISK		00:00:01	04-APR-18
BP Key: 7 Status: AVAILABLE Compressed: NO Tag:							
TAG20180404T142656							
Piece Name: /home/oracle/BACKUP/full_07svgfr3_7_1							
List of Datafiles in backup set 7							
File	LV	Type	Ckp	SCN	Ckp Time	Name	
4	Full		28459530	04-APR-18		/opt/oracle/oradata/student/undotbs01.dbf	

BS Key	Type	LV Size	Device Type	Elapsed Time	Completion Time
11	Full	32.35M	DISK	00:00:04	04-APR-18
BP Key: 11 Status: AVAILABLE Compressed: NO Tag:					
TAG20180404T180827					
Piece Name: /home/oracle/BACKUP/full_0bsvgssu_11_1					
List of Datafiles in backup set 11					
File	LV	Type	Ckp SCN	Ckp Time	Name
4	Full	28472490	04-APR-18		/opt/oracle/oradata/student/undotbs01.dbf

BS Key	Type	LV Size	Device Type	Elapsed Time	Completion Time
15	Full	30.52M	DISK	00:00:01	04-APR-18
BP Key: 15 Status: AVAILABLE Compressed: NO Tag:					
TAG20180404T181939					
Piece Name: /home/oracle/BACKUP/full_0fsvgtdr_15_1					
List of Datafiles in backup set 15					
File	LV	Type	Ckp SCN	Ckp Time	Name
4	Full	28474641	04-APR-18		/opt/oracle/oradata/student/undotbs01.dbf

RMAN> **BACKUP AS COPY DATAFILE 8;** ← to perform an ordinary COPY of datafile

Starting backup at 04-APR-18
using channel ORA_DISK_1
channel ORA_DISK_1: starting datafile copy
input datafile file number=00008
name=/opt/oracle/oradata/student/mine01.dbf
output file name=/home/oracle/BACKUP/full_0hsvgtiq_17_1
tag=TAG20180404T182217 RECID=1 STAMP=972584538
channel ORA_DISK_1: datafile copy complete, elapsed time: 00:00:01
Finished backup at 04-APR-18

Starting Control File and SPFILE Autobackup at 04-APR-18 piece
handle=/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1
_mf_s_972584539_fdbn0vbc_.bkp comment=NONE
Finished Control File and SPFILE Autobackup at 04-APR-18

RMAN> **LIST COPY OF DATAFILE 8;**

List of Datafile Copies
=====

Key	File S	Completion Time	Ckp SCN	Ckp Time
1	8 A	04-APR-18	28475130	04-APR-18
Name: /home/oracle/BACKUP/full_0hsvgtiq_17_1				
Tag: TAG20180404T182217				

RMAN> **REPORT NEED BACKUP;**

← This will list all files that do not have at least Two backups (below Retention policy of 2)

RMAN retention policy will be applied to the command

RMAN retention policy is set to redundancy 2

Report of files with less than 2 redundant backups

File #bkps Name

file 2 is excluded from whole database backup

file 5 is excluded from whole database backup

file 7 is excluded from whole database backup

RMAN> **REPORT OBSOLETE;**

← This will list all files that have 3, 4, ... backups (above Retention policy of 2)

RMAN retention policy will be applied to the command

RMAN retention policy is set to redundancy 2

Report of obsolete backups and copies

Type	Key	Completion Time	Filename/Handle
Backup Set	2	27-MAR-18	
Backup Piece	2	27-MAR-18	
			/home/oracle/BACKUP/full_02sus1m1_2_1
Backup Set	4	27-MAR-18	
Backup Piece	4	27-MAR-18	
			/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_03_27/o1_mf_s_9
			71898661_fcor9fhq_.bkp
Backup Set	8	04-APR-18	
Backup Piece	8	04-APR-18	
			/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1_mf_s_9
			72570367_fdb696wo_.bkp
Backup Set	12	04-APR-18	
Backup Piece	12	04-APR-18	
			/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1_mf_s_9
			72583845_fdbmc6ks_.bkp
Backup Set	14	04-APR-18	
Backup Piece	14	04-APR-18	
			/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1_mf_s_9
			72584169_fdbmo9nx_.bkp

RMAN> **DELETE OBSOLETE;**

RMAN retention policy will be applied to the command

RMAN retention policy is set to redundancy 2

using channel ORA_DISK_1

Deleting the following obsolete backups and copies:

Type	Key	Completion Time	Filename/Handle
Backup Set	2	27-MAR-18	
Backup Piece	2	27-MAR-18	
			/home/oracle/BACKUP/full_02sus1m1_2_1

```

Backup Set          4          27-MAR-18
  Backup Piece      4          27-MAR-18
/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_03_27/o1_mf_s_9
71898661_fcor9fhq_.bkp
Backup Set          8          04-APR-18
  Backup Piece      8          04-APR-18
/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1_mf_s_9
72570367_fdb696wo_.bkp
Backup Set         12          04-APR-18
  Backup Piece     12          04-APR-18
/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1_mf_s_9
72583845_fdbmc6ks_.bkp
Backup Set         14          04-APR-18
  Backup Piece     14          04-APR-18
/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1_mf_s_9
72584169_fdbmo9nx_.bkp

```

```

Do you really want to delete the above objects (enter YES or NO)? YES
deleted backup piece
backup piece handle=/home/oracle/BACKUP/full_02sus1m1_2_1 RECID=2
STAMP=971900610
deleted backup piece
backup piece
handle=/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_03_27/o1
_mf_s_971898661_fcor9fhq_.bkp RECID=4 STAMP=971900781
deleted backup piece
backup piece
handle=/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1
_mf_s_972570367_fdb696wo_.bkp RECID=8 STAMP=972570470
deleted backup piece
backup piece
handle=/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1
_mf_s_972583845_fdbmc6ks_.bkp RECID=12 STAMP=972583846
deleted backup piece
backup piece
handle=/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1
_mf_s_972584169_fdbmo9nx_.bkp RECID=14 STAMP=972584169
Deleted 5 objects

```

```

RMAN> REPORT OBSOLETE;

```

```

RMAN retention policy will be applied to the command
RMAN retention policy is set to redundancy 2
no obsolete backups found

```

```

RMAN> EXIT
Recovery Manager complete.

```

```

[oracle@oracloud12c backup]$ pwd
/home/oracle/BACKUP
[oracle@oracloud12c BACKUP]$ ls -l
total 7983160

```

```

-rw-r----- . 1 oracle dba 1458790400 Mar 27 20:23 full_01suslgh_1_1
-rw-r----- . 1 oracle dba 1008992256 Mar 27 20:26 full_03suslpg_3_1
-rw-r----- . 1 oracle dba 1820352512 Apr 4 14:27 full_05svgfpg_5_1
-rw-r----- . 1 oracle dba 983040000 Apr 4 14:27 full_06svgfqk_6_1
-rw-r----- . 1 oracle dba 17793024 Apr 4 14:27 full_07svgfr3_7_1
-rw-r----- . 1 oracle dba 1820352512 Apr 4 18:09 full_09svgsor_9_1
-rw-r----- . 1 oracle dba 983048192 Apr 4 18:10 full_0asvgsrh_10_1
-rw-r----- . 1 oracle dba 33931264 Apr 4 18:10 full_0bsvgssu_11_1
-rw-r----- . 1 oracle dba 5922816 Apr 4 18:16 full_0dsvgt78_13_1
-rw-r----- . 1 oracle dba 32014336 Apr 4 18:19 full_0fsvgtqr_15_1
-rw-r----- . 1 oracle dba 10493952 Apr 4 18:22 full_0hsvgtiq_17_1

```

```
[oracle@oracloud12c BACKUP]$ rman target /
```

```
Recovery Manager: Release 12.1.0.2.0 - Production on Thu Apr 5
14:10:10 2018
```

```
Copyright (c) 1982, 2014, Oracle and/or its affiliates. All rights
reserved.
```

```
connected to target database: STUDENT (DBID=4285838094)
```

```
RMAN> list backup; ← to show ALL backup sets (both Datafiles and Archived Logs)
```

```
using target database control file instead of recovery catalog
```

```
List of Backup Sets
```

```
=====
```

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

1	Full		1.36G	DISK		00:02:53	27-MAR-18
---	------	--	-------	------	--	----------	-----------

```
BP Key: 1 Status: AVAILABLE Compressed: NO Tag:
```

```
TAG20180327T202033
```

```
Piece Name: /home/oracle/BACKUP/full_01suslgh_1_1
```

```
List of Datafiles in backup set 1
```

File	LV	Type	Ckp	SCN	Ckp Time	Name
------	----	------	-----	-----	----------	------

2	Full	25169175			27-MAR-18	/opt/oracle/oradata/student/mgmt.dbf
---	------	----------	--	--	-----------	--------------------------------------

9	Full	25169175			27-MAR-18	/opt/oracle/oradata/student/joke01.dbf
---	------	----------	--	--	-----------	--

11	Full	25169175			27-MAR-18	/opt/oracle/oradata/student/joke02.dbf
----	------	----------	--	--	-----------	--

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

3	Full		962.24M	DISK		00:00:44	27-MAR-18
---	------	--	---------	------	--	----------	-----------

```
BP Key: 3 Status: AVAILABLE Compressed: NO Tag:
```

```
TAG20180327T202033
```

```
Piece Name: /home/oracle/BACKUP/full_03suslpg_3_1
```

```
List of Datafiles in backup set 3
```

File	LV	Type	Ckp	SCN	Ckp Time	Name
1		Full	25169175		27-MAR-18	
/opt/oracle/oradata/student/system01.dbf						
4		Full	25169175		27-MAR-18	
/opt/oracle/oradata/student/undotbs01.dbf						
5		Full	25169175		27-MAR-18	
/opt/oracle/oradata/student/mgmt_depot.dbf						
7		Full	25169175		27-MAR-18	
/opt/oracle/oradata/student/mgmt_ad4j.dbf						

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
5	Full		1.70G	DISK		00:00:25	04-APR-18
BP Key: 5 Status: AVAILABLE Compressed: NO Tag:							
TAG20180404T142656							

Piece Name: /home/oracle/BACKUP/full_05svgfpg_5_1

List of Datafiles in backup set 5

File	LV	Type	Ckp	SCN	Ckp Time	Name
3		Full	28459530		04-APR-18	
/opt/oracle/oradata/student/sysaux01.dbf						
11		Full	28459530		04-APR-18	
/opt/oracle/oradata/student/joke02.dbf						
12		Full	28459530		04-APR-18	
/opt/oracle/oradata/student/indx01.dbf						

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
6	Full		937.49M	DISK		00:00:11	04-APR-18
BP Key: 6 Status: AVAILABLE Compressed: NO Tag:							
TAG20180404T142656							

Piece Name: /home/oracle/BACKUP/full_06svgfqk_6_1

List of Datafiles in backup set 6

File	LV	Type	Ckp	SCN	Ckp Time	Name
1		Full	28459530		04-APR-18	
/opt/oracle/oradata/student/system01.dbf						
6		Full	28459530		04-APR-18	
/opt/oracle/oradata/student/users01.dbf						
9		Full	28459530		04-APR-18	
/opt/oracle/oradata/student/joke01.dbf						

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
7	Full		16.96M	DISK		00:00:01	04-APR-18
BP Key: 7 Status: AVAILABLE Compressed: NO Tag:							
TAG20180404T142656							

Piece Name: /home/oracle/BACKUP/full_07svgfr3_7_1

List of Datafiles in backup set 7

File	LV	Type	Ckp	SCN	Ckp Time	Name
------	----	------	-----	-----	----------	------

```

4          Full 28459530    04-APR-18
/opt/oracle/oradata/student/undotbs01.dbf
8          Full 28459530    04-APR-18
/opt/oracle/oradata/student/mine01.dbf
10         Full 28459530    04-APR-18
/opt/oracle/product/12.1.0/dbhome_1/dbs/myundo01.dbf

```

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

9	Full		1.70G	DISK		00:01:20	04-APR-18
---	------	--	-------	------	--	----------	-----------

BP Key: 9 Status: AVAILABLE Compressed: NO Tag:

TAG20180404T180827

Piece Name: /home/oracle/BACKUP/full_09svgsor_9_1

List of Datafiles in backup set 9

File	LV	Type	Ckp	SCN	Ckp Time	Name
3		Full	28470564		04-APR-18	/opt/oracle/oradata/student/sysaux01.dbf
11		Full	28470564		04-APR-18	/opt/oracle/oradata/student/joke02.dbf
12		Full	28470564		04-APR-18	/opt/oracle/oradata/student/indx01.dbf

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

10	Full		937.50M	DISK		00:00:34	04-APR-18
----	------	--	---------	------	--	----------	-----------

BP Key: 10 Status: AVAILABLE Compressed: NO Tag:

TAG20180404T180827

Piece Name: /home/oracle/BACKUP/full_0asvgsrh_10_1

List of Datafiles in backup set 10

File	LV	Type	Ckp	SCN	Ckp Time	Name
1		Full	28470959		04-APR-18	/opt/oracle/oradata/student/system01.dbf
6		Full	28470959		04-APR-18	/opt/oracle/oradata/student/users01.dbf
9		Full	28470959		04-APR-18	/opt/oracle/oradata/student/joke01.dbf

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

11	Full		32.35M	DISK		00:00:04	04-APR-18
----	------	--	--------	------	--	----------	-----------

BP Key: 11 Status: AVAILABLE Compressed: NO Tag:

TAG20180404T180827

Piece Name: /home/oracle/BACKUP/full_0bsvgssu_11_1

List of Datafiles in backup set 11

File	LV	Type	Ckp	SCN	Ckp Time	Name
4		Full	28472490		04-APR-18	/opt/oracle/oradata/student/undotbs01.dbf
8		Full	28472490		04-APR-18	/opt/oracle/oradata/student/mine01.dbf

10 Full 28472490 04-APR-18
/opt/oracle/product/12.1.0/dbhome_1/dbs/myundo01.dbf

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

13	Full		5.64M	DISK		00:00:00	04-APR-18
----	------	--	-------	------	--	----------	-----------

BP Key: 13 Status: AVAILABLE Compressed: NO Tag:
TAG20180404T181608

Piece Name: /home/oracle/BACKUP/full_0dsvgt78_13_1

List of Datafiles in backup set 13

File	LV	Type	Ckp	SCN	Ckp Time	Name
------	----	------	-----	-----	----------	------

6		Full		28473632	04-APR-18	/opt/oracle/oradata/student/users01.dbf
---	--	------	--	----------	-----------	---

8		Full		28473632	04-APR-18	/opt/oracle/oradata/student/mine01.dbf
---	--	------	--	----------	-----------	--

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

15	Full		30.52M	DISK		00:00:01	04-APR-18
----	------	--	--------	------	--	----------	-----------

BP Key: 15 Status: AVAILABLE Compressed: NO Tag:
TAG20180404T181939

Piece Name: /home/oracle/BACKUP/full_0fsvgtldr_15_1

List of Datafiles in backup set 15

File	LV	Type	Ckp	SCN	Ckp Time	Name
------	----	------	-----	-----	----------	------

4		Full		28474641	04-APR-18	/opt/oracle/oradata/student/undotbs01.dbf
---	--	------	--	----------	-----------	---

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

16	Full		9.64M	DISK		00:00:00	04-APR-18
----	------	--	-------	------	--	----------	-----------

BP Key: 16 Status: AVAILABLE Compressed: NO Tag:
TAG20180404T181941

Piece Name:

/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1_mf_s_9
72584381_fdbmvx3c_.bkp

SPFILE Included: Modification time: 04-APR-18

SPFILE db_unique_name: STUDENT

Control File Included: Ckp SCN: 28474660 Ckp time: 04-APR-18

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

17	Full		9.64M	DISK		00:00:00	04-APR-18
----	------	--	-------	------	--	----------	-----------

BP Key: 17 Status: AVAILABLE Compressed: NO Tag:
TAG20180404T182219

Piece Name:

/opt/oracle/fast_recovery_area/STUDENT/autobackup/2018_04_04/o1_mf_s_9
72584539_fdbn0vbc_.bkp

SPFILE Included: Modification time: 04-APR-18

SPFILE db_unique_name: STUDENT

Control File Included: Ckp SCN: 28475139 Ckp time: 04-APR-18

*** Our backup sets (1,3,5,6,7) were created in NOARCHIVELOG mode and they are useless now and need to be removed manually like shown here ***

RMAN> **DELETE BACKUPSET 1;**

← to manually delete a single backup set - use BS key in syntax

using channel ORA_DISK_1

List of Backup Pieces

BP Key	BS Key	Pc#	Cp#	Status	Device Type	Piece Name
1	1	1	1	AVAILABLE	DISK	/home/oracle/BACKUP/full_01sus1gh_1_1

Do you really want to delete the above objects (enter YES or NO)? **YES**
deleted backup piece
backup piece handle=/home/oracle/BACKUP/full_01sus1gh_1_1 RECID=1
STAMP=971900433
Deleted 1 objects

RMAN> **DELETE NOPROMPT BACKUPSET 3;**

← to avoid answering with YES/NO about deleting – use NOPROMPT option

using channel ORA_DISK_1

List of Backup Pieces

BP Key	BS Key	Pc#	Cp#	Status	Device Type	Piece Name
3	3	1	1	AVAILABLE	DISK	/home/oracle/BACKUP/full_03sus1pv_3_1

deleted backup piece
backup piece handle=/home/oracle/BACKUP/full_03sus1pv_3_1 RECID=3
STAMP=971900735
Deleted 1 objects

RMAN> **DELETE NOPROMPT BACKUPSET 5,6,7 ;**

← to delete several backup sets - use comma separated list

using channel ORA_DISK_1

List of Backup Pieces

BP Key	BS Key	Pc#	Cp#	Status	Device Type	Piece Name
5	5	1	1	AVAILABLE	DISK	/home/oracle/BACKUP/full_05svgfpg_5_1
6	6	1	1	AVAILABLE	DISK	/home/oracle/BACKUP/full_06svgfqk_6_1
7	7	1	1	AVAILABLE	DISK	/home/oracle/BACKUP/full_07svgfr3_7_1

deleted backup piece
backup piece handle=/home/oracle/BACKUP/full_05svgfpg_5_1 RECID=5


```

STAMP=972570416
deleted backup piece
backup piece handle=/home/oracle/BACKUP/full_06svgfqk_6_1 RECID=6
STAMP=972570452
deleted backup piece
backup piece handle=/home/oracle/BACKUP/full_07svgfr3_7_1 RECID=7
STAMP=972570467
Deleted 3 objects

```

RMAN> **LIST BACKUP OF DATABASE;**

List of Backup Sets

=====

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

9	Full		1.70G	DISK		00:01:20	04-APR-18
---	------	--	-------	------	--	----------	-----------

BP Key: 9 Status: AVAILABLE Compressed: NO Tag:

TAG20180404T180827

Piece Name: /home/oracle/BACKUP/full_09svgsor_9_1

List of Datafiles in backup set 9

File	LV	Type	Ckp	SCN	Ckp Time	Name
------	----	------	-----	-----	----------	------

3		Full	28470564		04-APR-18	
---	--	------	----------	--	-----------	--

/opt/oracle/oradata/student/sysaux01.dbf

11		Full	28470564		04-APR-18	
----	--	------	----------	--	-----------	--

/opt/oracle/oradata/student/joke02.dbf

12		Full	28470564		04-APR-18	
----	--	------	----------	--	-----------	--

/opt/oracle/oradata/student/indx01.dbf

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

10	Full		937.50M	DISK		00:00:34	04-APR-18
----	------	--	---------	------	--	----------	-----------

BP Key: 10 Status: AVAILABLE Compressed: NO Tag:

TAG20180404T180827

Piece Name: /home/oracle/BACKUP/full_0asvgsrh_10_1

List of Datafiles in backup set 10

File	LV	Type	Ckp	SCN	Ckp Time	Name
------	----	------	-----	-----	----------	------

1		Full	28470959		04-APR-18	
---	--	------	----------	--	-----------	--

/opt/oracle/oradata/student/system01.dbf

6		Full	28470959		04-APR-18	
---	--	------	----------	--	-----------	--

/opt/oracle/oradata/student/users01.dbf

9		Full	28470959		04-APR-18	
---	--	------	----------	--	-----------	--

/opt/oracle/oradata/student/joke01.dbf

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
--------	------	----	------	--------	------	--------------	-----------------

11	Full		32.35M	DISK		00:00:04	04-APR-18
----	------	--	--------	------	--	----------	-----------

BP Key: 11 Status: AVAILABLE Compressed: NO Tag:

TAG20180404T180827

Piece Name: /home/oracle/BACKUP/full_0bsvgssu_11_1

```

List of Datafiles in backup set 11
File LV Type Ckp SCN      Ckp Time  Name
----- --
4          Full 28472490    04-APR-18
/opt/oracle/oradata/student/undotbs01.dbf
8          Full 28472490    04-APR-18
/opt/oracle/oradata/student/mine01.dbf
10         Full 28472490    04-APR-18
/opt/oracle/product/12.1.0/dbhome_1/dbs/myundo01.dbf

BS Key   Type LV Size          Device Type Elapsed Time Completion Time
----- --
13        Full   5.64M          DISK          00:00:00      04-APR-18
      BP Key: 13   Status: AVAILABLE Compressed: NO   Tag:
TAG20180404T181608
      Piece Name: /home/oracle/BACKUP/full_0dsvgt78_13_1
List of Datafiles in backup set 13
File LV Type Ckp SCN      Ckp Time  Name
----- --
6          Full 28473632    04-APR-18
/opt/oracle/oradata/student/users01.dbf
8          Full 28473632    04-APR-18
/opt/oracle/oradata/student/mine01.dbf

BS Key   Type LV Size          Device Type Elapsed Time Completion Time
----- --
15        Full  30.52M          DISK          00:00:01      04-APR-18
      BP Key: 15   Status: AVAILABLE Compressed: NO   Tag:
TAG20180404T181939
      Piece Name: /home/oracle/BACKUP/full_0fsvgtldr_15_1
List of Datafiles in backup set 15
File LV Type Ckp SCN      Ckp Time  Name
----- --
4          Full 28474641    04-APR-18
/opt/oracle/oradata/student/undotbs01.dbf

```

RMAN> **list copy;** ← to list all Backup Copies and all original Archived Logs stored

specification does not match any control file copy in the repository

List of Datafile Copies
 =====

```

Key      File S Completion Time Ckp SCN      Ckp Time
----- --
1         8    A 04-APR-18      28475130    04-APR-18
      Name: /home/oracle/BACKUP/full_0hsvgtiq_17_1
      Tag: TAG20180404T182217

```

List of Archived Log Copies for database with db_unique_name STUDENT
 =====

Key	Thrd	Seq	S	Low	Time
1	1	1360	A	04-APR-18	
Name: /home/oracle/ARCHIVE/arch_950182417_1_1360.log					
2	1	1361	A	04-APR-18	
Name: /home/oracle/ARCHIVE/arch_950182417_1_1361.log					
3	1	1362	A	04-APR-18	
Name: /home/oracle/ARCHIVE/arch_950182417_1_1362.log					
ETC ...					
28	1	1387	A	05-APR-18	
Name: /home/oracle/ARCHIVE/arch_950182417_1_1387.log					
29	1	1388	A	05-APR-18	
Name: /home/oracle/ARCHIVE/arch_950182417_1_1388.log					

RMAN> **list copy of datafile 8;**

List of Datafile Copies
=====

Key	File	S	Completion	Time	Ckp SCN	Ckp Time
1	8	A	04-APR-18		28475130	04-APR-18
Name: /home/oracle/BACKUP/full_0hsvgtiq_17_1						
Tag: TAG20180404T182217						

RMAN> **delete datafilecopy 1;**

allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=44 device type=DISK
List of Datafile Copies
=====

Key	File	S	Completion	Time	Ckp SCN	Ckp Time
1	8	A	04-APR-18		28475130	04-APR-18
Name: /home/oracle/BACKUP/full_0hsvgtiq_17_1						
Tag: TAG20180404T182217						

Do you really want to delete the above objects (enter YES or NO)? **YES**
deleted datafile copy
datafile copy file name=/home/oracle/BACKUP/full_0hsvgtiq_17_1 RECID=1
STAMP=972584538
Deleted 1 objects

RMAN> **EXIT**
Recovery Manager complete.
[oracle@oracloud12c BACKUP]\$ **exit**
logout