

One of live recovery scenario faced by our DBA

We had a major power outage disaster due to which our storage group couldn't restore a LUN of the EMC storage which has led to the missing of datafiles across many production and development databases. Under my managers preview there were 3 production databases for which about 60 datafiles were missing and for one production database only the oracle binaries got corrupted. Storage team couldn't restore those files and the DBA's were asked to perform the recovery.

Below is the recovery strategy we implemented for one of the database PROD (DB Name changed) which has 12 datafiles missing. We came to know about these 12 datafiles from the Alert logfile and from the v\$datafile view (status='RECOVER').

We had this power outage on Sunday, for all the three databases we had a successful RMAN tape hot backup on Saturday (Evident from the RMAN logfiles).

To check if the backup is physically available in the backup silo (We have about 800 Production databases and all the backups go to the one silo) we gave the below command but it was hanging and never returned output.

```
RMAN> list backup;
```

Then we gave the below command to find the availability of backupset of datafile '4' ('4' is the file\_id of one of the missing datafile of PROD database) that is missing.

```
RMAN> LIST BACKUPSET OF DATAFILE 4;
```

The above command showed the datafile id '4' is available in the backup. Then we gave the below command to restore and recover the datafile 4; Then it failed with the below error saying that its didn't have archivelog file with sequence 185233 to restore.

```
RMAN> Connect target / ;
```

```
RMAN> Connect catalog rman/rman@PROD
```

```
RMAN> startup mount;
```

```
RMAN>run {  
allocate channel t1 type 'sbt_tape' parms 'ENV=(XXX_SERVER=xxhaxx)';  
sql 'alter database datafile 4 offline';  
restore datafile 4;  
recover datafile 4;  
sql 'alter database datafile 4 online';  
release channel t1;  
}
```

allocated channel: t1  
channel t1: sid=25 devtype=SBT\_TAPE  
channel t1: XXX v4.2.0.0

Starting restore at 27-APR-09

released channel: t1

RMAN-00571:=====

RMAN-00569:===== ERROR MESSAGE STACK FOLLOWS =====

RMAN-00571:=====

RMAN-03002: failure of restore command at 04/27/2009 12:43:00

RMAN-06026: some targets not found - aborting restore

RMAN-06025: no backup of log thread 1 seq 185233 scn 6111805242226 found to restore

RMAN> EXIT;

Then we checked the RMAN logfiles, they showed that all the archivelogs have been backed up successfully. We then listed the archivelog file that was missing and it showed as expired.

RMAN> LIST BACKUPSET OF archivelog sequence 185233;

List of Backup Sets

=====

BS Key Size Device Type Elapsed Time Completion Time

-----

39383086 269M SBT\_TAPE 00:00:41 26-APR-09

BP Key: 39383088 Status: **EXPIRED** Tag: TAG20090426T005740

Piece Name: offsite\_arch\_PROD\_S187166\_685155460

List of Archived Logs in backup set 39383086

Thrd Seq Low SCN Low Time Next SCN Next Time

-----

1 185233 6111805242226 25-APR-09 6111807600250 26-APR-09

Then we contacted the storage group about the missing archivelog file and they confirmed that they see the backupset 39383086 as available in the silo, So we went with the "CROSS CHECK" command as below. Now the RMAN has realized that the archivelog is available in the silo it changed its status to "AVAILABLE"

RMAN>ALLOCATE CHANNEL FOR MAINTENANCE DEVICE TYPE 'sbt\_tape'  
parms 'ENV=(XXX\_SERVER=xxhaxx)';

```
RMAN>CROSSCHECK BACKUPSET 39383086;
```

```
RMAN> LIST BACKUPSET OF archivelog sequence 185233;
```

#### List of Backup Sets

```
=====
BS Key Size    Device Type Elapsed Time Completion Time
-----
39383086 269M    SBT_TAPE  00:00:41  26-APR-09
      BP Key: 39383088  Status: AVAILABLE Tag: TAG20090426T005740
      Piece Name: offsite_arch_PROD_S187166_685155460
```

#### List of Archived Logs in backup set 39383086

```
Thrd Seq    Low SCN    Low Time Next SCN  Next Time
-----
1  185233  6111805242226 25-APR-09 6111807600250 26-APR-09
```

We followed the same method for making all the archivelog files that couldn't be restored. Then we gave the restore and recovery command for datafile '4' and this time it was successful. It restored the datafile '4' and all the archivelogfiles that are recovered for the recovery.

```
RMAN> Connect target / ;
```

```
RMAN> Connect catalog rman/rman@PROD
```

```
RMAN>run {
allocate channel t1 type 'sbt_tape' parms 'ENV=(XXX_SERVER=xxhaxx)';
sql 'alter database datafile 4 offline';
restore datafile 4;
recover datafile 4;
sql 'alter database datafile 4 online';
release channel t1;
}
```

```
RMAN> Exit;
```

Now we are sure that everything is working fine and went for the recovery of the remaining 11 datafiles as below. This time RMAN restored only the datafiles but not the archivelogfiles as all the archivelogfiles required for the recovery were already restored. We used multiple channels to improve the performance of restore and recovery. The restore and recovery of 11 datafiles finished in about 2 Hr's.

```
RMAN> Connect target / ;
```

```
RMAN> Connect catalog rman/rman@PROD
```

```
RMAN>run {  
allocate channel t1 type 'sbt_tape' parms 'ENV=(XXX_SERVER=xxhaxx)';  
allocate channel t2 type 'sbt_tape' parms 'ENV=(XXX_SERVER=xxhaxx)';  
allocate channel t3 type 'sbt_tape' parms 'ENV=(XXX_SERVER=xxhaxx)';  
allocate channel t4 type 'sbt_tape' parms 'ENV=(XXX_SERVER=xxhaxx)';  
allocate channel t5 type 'sbt_tape' parms 'ENV=(XXX_SERVER=xxhaxx)';  
allocate channel t6 type 'sbt_tape' parms 'ENV=(XXX_SERVER=xxhaxx)';  
sql 'alter database datafile 16 offline';  
sql 'alter database datafile 9 offline';  
sql 'alter database datafile 18 offline';  
sql 'alter database datafile 19 offline';  
sql 'alter database datafile 23 offline';  
sql 'alter database datafile 24 offline';  
sql 'alter database datafile 46 offline';  
sql 'alter database datafile 47 offline';  
sql 'alter database datafile 66 offline';  
sql 'alter database datafile 67 offline';  
sql 'alter database datafile 79 offline';  
restore datafile 16,9,18,19,23,24,46,47,66,67,79;  
recover datafile 16,9,18,19,23,24,46,47,66,67,79;  
sql 'alter database datafile 16 online';  
sql 'alter database datafile 9 online';  
sql 'alter database datafile 18 online';  
sql 'alter database datafile 19 online';  
sql 'alter database datafile 23 online';  
sql 'alter database datafile 24 online';  
sql 'alter database datafile 46 online';  
sql 'alter database datafile 47 online';  
sql 'alter database datafile 66 online';  
sql 'alter database datafile 67 online';  
sql 'alter database datafile 79 online';  
release channel t1;  
release channel t2;  
release channel t3;  
release channel t4;  
release channel t5;  
release channel t6;  
}
```

```
RMAN>sql 'alter database open';
```

```
RMAN>EXIT;
```