

# **Oracle 11gR2 : Recover dropped tablespace using RMAN tablespace point in time recovery**

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This is new feature for Oracle 11g R2. Here I'm going to demonstrate how to recover a dropped Tablespace using RMAN Tablespace point in time recovery.

### Step 1: Create Tablespace

```
SQL> conn / as sysdba
```

Connected.

```
SQL> create tablespace testtbs datafile 'd:\backup\testtbs01.dbf' size 100m;
```

Tablespace created.

```
SQL> create user testtbs identified by testtbs default tablespace testtbs;
```

User created.

```
SQL> grant connect,resource to testtbs;
```

Grant succeeded.

```
SQL> conn testtbs/testtbs;
```

Connected.

```
SQL> create table test(empname varchar2(20),city varchar2(20));
```

Table created.

```
SQL> insert into test values('azar','riyadh');
```

1 row created.

```
SQL> insert into test values('jabar','chennai');
```

1 row created.

```
SQL> commit;
```

Commit complete.

```
SQL> conn testdb/testdb;
```

Connected.

(Note : This table is allocated for another tablespace, I just insert data for this table to check data consistency after doing TBPIR)

```
SQL> create table d(empname varchar2(20));
```

Table created.

```
SQL> insert into d values('kareem');
```

1 row created.

```
SQL> insert into d values('syed');
```

1 row created.

```
SQL> commit;
```

Commit complete.

## **Step 2: Backup database Plus archivelog**

```
C:\Users\mazar>set oracle_sid=azardb
```

```
C:\Users\mazar>rman target sys/Admin123
```

Recovery Manager: Release 11.2.0.1.0 - Production on Sat Jan 1 15:39:34 2011

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connected to target database: AZARDB (DBID=1652383192)

```
RMAN> backup database plus archivelog;
```

```
Starting backup at 01-JAN-11
```

```
current log archived
```

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

```
allocated channel: ORA_DISK_1
```

```
channel ORA_DISK_1: SID=30 device type=DISK
```

## **Step 3: Note Current SCN**

```
SQL> conn / as sysdba
```

Connected.

```
SQL> select current_scn from v$database;
```

```
CURRENT_SCN
```

```
-----
```

```
8448197
```

## **Step 4: Drop tablespace**

```
SQL> drop tablespace testtbs including contents and datafiles;
```

Tablespace dropped.

## **Step 5: I just added data for another table allocated for other tablespace due to just check for data consistent.**

```
SQL> conn testdb/testdb;
```

Connected.

```
SQL> insert into d values('azmi');
```

1 row created.

```
SQL> commit;
```

Commit complete.

### **Step 6: Create auxiliary & Recover tablespace using tablespace point in time recovery.**

```
C:\Windows\system32>rman target sys/Admin123
```

```
Recovery Manager: Release 11.2.0.1.0 - Production on Sat Jan 1 14:45:08 2011
```

```
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```

```
connected to target database: AZARDB (DBID=1652383192)
```

```
RMAN> run{  
2> recover tablespace testtbs  
3> until scn 8448197  
4> auxiliary destination 'D:\backupnew';  
5> }
```

```
executing command: SET NEWNAME
```

```
Starting recover at 01-JAN-11
```

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

```
allocated channel: ORA_DISK_1
```

```
channel ORA_DISK_1: SID=31 device type=DISK
```

```
RMAN-05026: WARNING: presuming following set of tablespaces applies to specified point-in-time
```

```
List of tablespaces expected to have UNDO segments
```

```
Tablespace SYSTEM
```

```
Tablespace UNDOTBS2
```

```
Creating automatic instance, with SID='Bopd'
```

```
initialization parameters used for automatic instance:
```

```
db_name=AZARDB
```

```
db_unique_name=Bopd_tspitr_AZARDB
```

```
compatible=11.2.0.0.0
```

```
db_block_size=8192
```

```
db_files=200
```

```
sga_target=280M
```

```
processes=50
```

```
db_create_file_dest=D:\backupnew
```

```
log_archive_dest_1='location=D:\backupnew'
```

```
#No auxiliary parameter file used
```

```
starting up automatic instance AZARDB
```

```
Oracle instance started
```

```
Total System Global Area      292933632 bytes
```

```
Fixed Size                      1374164 bytes
```

Variable Size                    100665388 bytes  
Database Buffers                184549376 bytes  
Redo Buffers                    6344704 bytes

Automatic instance created

List of tablespaces that have been dropped from the target database:  
Tablespace testtbs

contents of Memory Script:

```
{  
# set requested point in time  
set until scn 8448197;  
# restore the controlfile  
restore clone controlfile;  
# mount the controlfile  
sql clone 'alter database mount clone database';  
# archive current online log  
sql 'alter system archive log current';  
# avoid unnecessary autobackups for structural changes during TSPITR  
sql 'begin dbms_backup_restore.AutoBackupFlag(FALSE); end;';  
}
```

executing Memory Script

executing command: SET until clause

Starting restore at 01-JAN-11

allocated channel: ORA\_AUX\_DISK\_1

channel ORA\_AUX\_DISK\_1: SID=59 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

C:\APP\ORACLE\MAZAR\FLASH\_RECOVERY\_AREA\AZARDB\AUTOBACKUP\2011\_01\_01\01\_MF\_N\_739286122\_6KXZOWTT\_.BKP

channel ORA\_AUX\_DISK\_1: piece

handle=C:\APP\ORACLE\MAZAR\FLASH\_RECOVERY\_AREA\AZARDB\AUTOBACKUP\2011\_01\_01\01\_MF\_N\_739286122\_6KXZOWTT\_.BKP tag=TAG20110101T13152

1

channel ORA\_AUX\_DISK\_1: restored backup piece 1

channel ORA\_AUX\_DISK\_1: restore complete, elapsed time: 00:01:00

output file name=D:\BACKUPNEW\AZARDB\CONTROLFILE\01\_MF\_6KY50OH2\_.CTL

Finished restore at 01-JAN-11

sql statement: alter database mount clone database

sql statement: alter system archive log current

sql statement: begin dbms\_backup\_restore.AutoBackupFlag(FALSE); end;

contents of Memory Script:

```
{  
# set requested point in time  
set until scn 8448197;  
# set destinations for recovery set and auxiliary set datafiles
```

```
set newname for clone datafile 1 to new;
set newname for clone datafile 8 to new;
set newname for clone datafile 2 to new;
set newname for clone tempfile 1 to new;
set newname for datafile 3 to
  "D:\BACKUP\TESTTBS01.DBF";
# switch all tempfiles
switch clone tempfile all;
# restore the tablespaces in the recovery set and the auxiliary set
restore clone datafile 1, 8, 2, 3;
switch clone datafile all;
}
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

renamed tempfile 1 to D:\BACKUPNEW\AZARDB\DATAFILE\01\_MF\_TEMP\_%U\_.TMP in control file

Starting restore at 01-JAN-11

using channel ORA\_AUX\_DISK\_1

channel ORA\_AUX\_DISK\_1: starting datafile backup set restore

channel ORA\_AUX\_DISK\_1: specifying datafile(s) to restore from backup set

channel ORA\_AUX\_DISK\_1: restoring datafile 00001 to

D:\BACKUPNEW\AZARDB\DATAFILE\01\_MF\_SYSTEM\_%U\_.DBF

channel ORA\_AUX\_DISK\_1: restoring datafile 00008 to

D:\BACKUPNEW\AZARDB\DATAFILE\01\_MF\_UNDOTBS2\_%U\_.DBF

channel ORA\_AUX\_DISK\_1: restoring datafile 00002 to

D:\BACKUPNEW\AZARDB\DATAFILE\01\_MF\_SYSAUX\_%U\_.DBF

channel ORA\_AUX\_DISK\_1: restoring datafile 00003 to D:\BACKUP\TESTTBS01.DBF

channel ORA\_AUX\_DISK\_1: reading from backup piece

C:\APP\ORACLE\MAZAR\FLASH\_RECOVERY\_AREA\AZARDB\BACKUPSET\2011\_01\_01\01\_MF\_NNDF\_TAG20110101T131020\_6  
KXZDFVB\_.

BKP

channel ORA\_AUX\_DISK\_1: restored backup piece 1

channel ORA\_AUX\_DISK\_1: restore complete, elapsed time: 00:03:06

Finished restore at 01-JAN-11

datafile 1 switched to datafile copy

input datafile copy RECID=388 STAMP=739291881 file

name=D:\BACKUPNEW\AZARDB\DATAFILE\01\_MF\_SYSTEM\_6KY53Y6C\_.DBF

datafile 8 switched to datafile copy

```
input datafile copy RECID=389 STAMP=739291881 file
name=D:\BACKUPNEW\AZARDB\DATAFILE\01_MF_UNDOTBS2_6KY53YJT_.DBF
datafile 2 switched to datafile copy
input datafile copy RECID=390 STAMP=739291881 file
name=D:\BACKUPNEW\AZARDB\DATAFILE\01_MF_SYSAUX_6KY53YG4_.DBF
```

contents of Memory Script:

```
{
# set requested point in time
set until scn 8448197;
# online the datafiles restored or switched
sql clone "alter database datafile 1 online";
sql clone "alter database datafile 8 online";
sql clone "alter database datafile 2 online";
sql clone "alter database datafile 3 online";
# recover and open resetlogs
recover clone database tablespace "TESTTBS", "SYSTEM", "UNDOTBS2", "SYSAUX" delete archivelog;
alter clone database open resetlogs;
}
```

executing Memory Script

executing command: SET until clause

sql statement: alter database datafile 1 online

sql statement: alter database datafile 8 online

sql statement: alter database datafile 2 online

sql statement: alter database datafile 3 online

Starting recover at 01-JAN-11

using channel ORA\_AUX\_DISK\_1

starting media recovery

archived log for thread 1 with sequence 17 is already on disk as file

C:\APP\ORACLE\MAZAR\FLASH\_RECOVERY\_AREA\AZARDB\ARCHIVELOG\2011\_01\_01\01\_MF\_1\_17\_6KY53B3J\_.ARC

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=16

channel ORA\_AUX\_DISK\_1: reading from backup piece

C:\APP\ORACLE\MAZAR\FLASH\_RECOVERY\_AREA\AZARDB\BACKUPSET\2011\_01\_01\01\_MF\_ANNNN\_TAG20110101T131514\_6KXZOPGN\_.

BKP

channel ORA\_AUX\_DISK\_1: piece

handle=C:\APP\ORACLE\MAZAR\FLASH\_RECOVERY\_AREA\AZARDB\BACKUPSET\2011\_01\_01\01\_MF\_ANNNN\_TAG20110101T131514\_6KXZOPGN\_.BKP tag=TAG20110101T131514

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=D:\BACKUPNEW\ARC000000016_0738861267.0001 thread=1 sequence=16
channel clone_default: deleting archived log(s)
archived log file name=D:\BACKUPNEW\ARC000000016_0738861267.0001 RECID=777 STAMP=739291886
archived log file
name=C:\APP\ORACLE\MAZAR\FLASH_RECOVERY_AREA\AZARDB\ARCHIVELOG\2011_01_01\01_MF_1_17_6KY53B3J_.ARC
thread=1 sequence=17
media recovery complete, elapsed time: 00:00:06
Finished recover at 01-JAN-11
```

database opened

contents of Memory Script:

```
{
# make read only the tablespace that will be exported
sql clone 'alter tablespace TESTTBS read only';
# create directory for datapump import
sql "create or replace directory TSPITR_DIROBJ_DPDIR as ''
D:\backupnew''";
# create directory for datapump export
sql clone "create or replace directory TSPITR_DIROBJ_DPDIR as ''
D:\backupnew''";
}
```

executing Memory Script

sql statement: alter tablespace TESTTBS read only

sql statement: create or replace directory TSPITR\_DIROBJ\_DPDIR as ''D:\backupnew''

sql statement: create or replace directory TSPITR\_DIROBJ\_DPDIR as ''D:\backupnew''

Performing export of metadata...

```
EXPDP> Starting "SYS"."TSPITR_EXP_Bopd":
EXPDP> Processing object type TRANSPORTABLE_EXPORT/PLUGTS_BLK
EXPDP> Processing object type TRANSPORTABLE_EXPORT/TABLE
EXPDP> Processing object type TRANSPORTABLE_EXPORT/POST_INSTANCE/PLUGTS_BLK
EXPDP> Master table "SYS"."TSPITR_EXP_Bopd" successfully loaded/unloaded
EXPDP> *****
EXPDP> Dump file set for SYS.TSPITR_EXP_Bopd is:
EXPDP> D:\BACKUPNEW\TSPITR_BOPD_37645.DMP
EXPDP> *****
EXPDP> Datafiles required for transportable tablespace TESTTBS:
EXPDP> D:\BACKUP\TESTTBS01.DBF
EXPDP> Job "SYS"."TSPITR_EXP_Bopd" successfully completed at 15:12:24
```

Export completed

contents of Memory Script:

```
{
# shutdown clone before import
shutdown clone immediate
}
```

executing Memory Script

database closed



database dismounted  
Oracle instance shut down

Performing import of metadata...

```
IMPDP> Master table "SYS"."TSPITR_IMP_Bopd" successfully loaded/unloaded
IMPDP> Starting "SYS"."TSPITR_IMP_Bopd":
IMPDP> Processing object type TRANSPORTABLE_EXPORT/PLUGTS_BLK
IMPDP> Processing object type TRANSPORTABLE_EXPORT/TABLE
IMPDP> Processing object type TRANSPORTABLE_EXPORT/POST_INSTANCE/PLUGTS_BLK
IMPDP> Job "SYS"."TSPITR_IMP_Bopd" successfully completed at 15:16:47
```

Import completed

contents of Memory Script:

```
{
# make read write and offline the imported tablespaces
sql 'alter tablespace TESTTBS read write';
sql 'alter tablespace TESTTBS offline';
# enable autobackups after TSPITR is finished
sql 'begin dbms_backup_restore.AutoBackupFlag(TRUE); end;';
}
```

executing Memory Script

sql statement: alter tablespace TESTTBS read write

sql statement: alter tablespace TESTTBS offline

sql statement: begin dbms\_backup\_restore.AutoBackupFlag(TRUE); end;

Removing automatic instance

Automatic instance removed

```
auxiliary instance file D:\BACKUPNEW\AZARDB\DATAFILE\01_MF_TEMP_6KY5C761_.TMP deleted
auxiliary instance file D:\BACKUPNEW\AZARDB\ONLINELOG\01_MF_4_6KY5BT82_.LOG deleted
auxiliary instance file D:\BACKUPNEW\AZARDB\ONLINELOG\01_MF_3_6KY5BQSZ_.LOG deleted
auxiliary instance file D:\BACKUPNEW\AZARDB\ONLINELOG\01_MF_2_6KY5BOYS_.LOG deleted
auxiliary instance file D:\BACKUPNEW\AZARDB\ONLINELOG\01_MF_1_6KY5BMV3_.LOG deleted
auxiliary instance file D:\BACKUPNEW\AZARDB\DATAFILE\01_MF_SYSAUX_6KY53YG4_.DBF deleted
auxiliary instance file D:\BACKUPNEW\AZARDB\DATAFILE\01_MF_UNDOTBS2_6KY53YJT_.DBF deleted
auxiliary instance file D:\BACKUPNEW\AZARDB\DATAFILE\01_MF_SYSTEM_6KY53Y6C_.DBF deleted
auxiliary instance file D:\BACKUPNEW\AZARDB\CONTROLFILE\01_MF_6KY500H2_.CTL deleted
Finished recover at 01-JAN-11
```

RMAN>

### Step 7: Check tablespace status

```
SQL> select status,tablespace_name from dba_tablespaces where tablespace_name like 'TESTTBS%';
```

```
STATUS    TABLESPACE_NAME
-----
OFFLINE   TESTTBS
```

11 rows selected.

Alter tablespace online

```
SQL> alter tablespace testtbs online;
```

Tablespace altered.

### Step 8: Check table

```
SQL> conn testtbs/testtbs;
```

Connected.

```
SQL> select * from tab;
```

TNAME	TABTYPE	CLUSTERID
TEST	TABLE	

```
SQL> select * from test;
```

EMPNAME	CITY
azar	riyadh
jabar	chennai

```
SQL>
```

And also I'm go to check other table for data consistent.

```
SQL> conn testdb/testdb;
```

Connected.

```
SQL> select * from d;
```

EMPNAME
azmi
kareem
syed

Now successfully recovered dropped tablespace using RMAN point in time recovery.