POINT IN TIME RECOVERY

RMAN PITR allows you to specify a System Change Number (SCN) or a recovery time until when you want to recover the database. PITR is used when you need to restore the database to a point just before a crash or an undesired event occurred.

STEP 1: **Take Full Db Backup By Using Rman**

```
RMAN> backup database;

Starting backup at 10-FEB-25
using target database control file instead of recovery catalog
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=46 device type=DISK
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=/u01/app/oracle/oradata/ORCL/system01.dbf
input datafile file number=00003 name=/u01/app/oracle/oradata/ORCL/sysaux01.dbf
input datafile file number=00004 name=/u01/app/oracle/oradata/ORCL/undotbs01.dbf
input datafile file number=00005 name=/u01/app/oracle/oradata/ORCL/sonata_tbs_o1.dbf
input datafile file number=00007 name=/u01/app/oracle/oradata/ORCL/users01.dbf
input datafile file number=00002 name=/u01/app/oracle/oradata/ORCL/memorial_01.dbf
channel ORA_DISK_1: starting piece 1 at 10-FEB-25
channel ORA_DISK_1: finished piece 1 at 10-FEB-25
piece handle=/u02/rman_bkp/4j3he707_1_1.bkp tag=TAG20250210T084039 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:07
Finished backup at 10-FEB-25

Starting Control File and SPFILE Autobackup at 10-FEB-25
piece handle=/u02/rman_bkp/c-1715186164-20250210-04.bkp comment=NONE
Finished Control File and SPFILE Autobackup at 10-FEB-25
```

```
RMAN> list backup of database summary;

using target database control file instead of recovery catalog

List of Backups
===============
Key     TY LV S Device Type Completion Time #Pieces #Copies Compressed Tag
------- -- -- - ----------- --------------- ------- ------- ---------- ---
109     B  F  A DISK        08-FEB-25       1       1       NO         TAG20250208T090015
132     B  0  A DISK        09-FEB-25       1       1       NO         LEVEL0_BEFORE_USER
134     B  1  A DISK        10-FEB-25       1       1       NO         LEVEL1_AFTER_USER
136     B  1  A DISK        10-FEB-25       1       1       NO         LEVEL1_AFTER_USER
138     B  1  A DISK        10-FEB-25       1       1       NO         LEVEL1_CUMULATIVE_1
140     B  F  A DISK        10-FEB-25       1       1       NO         TAG20250210T034150
142     B  F  A DISK        10-FEB-25       1       1       NO         TAG20250210T084039
```

STEP 2: **Create user and table**

create user pitrex identified by pitrex;

grant connect, resource, create session to pitrex;

conn pitrex/pitrex;

create table testpitr(serial number(2), name varchar2(5));

insert into testpitr values (1, 'one');

insert into testpitr values (2, 'Two');

insert into testpitr values (3, 'Three');

insert into testpitr values (4, 'Four');

commit;

```
SQL> select * from testpitr;

    SERIAL NAME
---------- -----
         1 one
         2 Two
         3 Three
         4 Four

SQL> commit;

Commit complete.
```

STEP 3: **Take timestamp before drop and note it down**

```
SQL> ALTER SESSION SET NLS_TIMESTAMP_TZ_FORMAT = 'DD-MON-YYYY HH24:MI:SS.FF6 TZH:TZM';

Session altered.

SQL> select systimestamp from dual;

SYSTIMESTAMP
---------------------------------------------------------------------------
10-FEB-2025 09:01:42.665540 -05:00
```

STEP 4: **Now drop the table . and take current time stamp**

```
SQL> drop table testpitr;

Table dropped.

SQL> select systimestamp from dual;

SYSTIMESTAMP
---------------------------------------------------------------------------
10-FEB-2025 09:04:07.148525 -05:00
```

STEP 5: **Restore and Recover the Database Until Timestamp before drop**

Now recover. Put database in mount state

```
SQL> SHUTDOWN IMMEDIATE;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> startup mount
ORACLE instance started.

Total System Global Area 1509945616 bytes
Fixed Size                   8896784 bytes
Variable Size             1124073472 bytes
Database Buffers           369098752 bytes
Redo Buffers                 7876608 bytes
Database mounted.
```

STEP 6: connect to rman

Rman target /

Restore database

```
RMAN> restore database from tag=TAG20250210T084039;

Starting restore at 10-FEB-25
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=46 device type=DISK

channel ORA_DISK_1: starting datafile backup set restore
channel ORA_DISK_1: specifying datafile(s) to restore from backup set
channel ORA_DISK_1: restoring datafile 00001 to /u01/app/oracle/oradata/ORCL/system01.dbf
channel ORA_DISK_1: restoring datafile 00002 to /u01/app/oracle/oradata/ORCL/memorial_01.dbf
channel ORA_DISK_1: restoring datafile 00003 to /u01/app/oracle/oradata/ORCL/sysaux01.dbf
channel ORA_DISK_1: restoring datafile 00004 to /u01/app/oracle/oradata/ORCL/undotbs01.dbf
channel ORA_DISK_1: restoring datafile 00005 to /u01/app/oracle/oradata/ORCL/sonata_tbs_o1.dbf
channel ORA_DISK_1: restoring datafile 00007 to /u01/app/oracle/oradata/ORCL/users01.dbf
channel ORA_DISK_1: reading from backup piece /u02/rman_bkp/4j3he707_1_1.bkp
channel ORA_DISK_1: piece handle=/u02/rman_bkp/4j3he707_1_1.bkp tag=TAG20250210T084039
channel ORA_DISK_1: restored backup piece 1
channel ORA_DISK_1: restore complete, elapsed time: 00:00:07
Finished restore at 10-FEB-25
```

STEP 7: Now recover database until before drop the table

RECOVER DATABASE UNTIL TIME ''TO_DATE('2025-02-10 09:01:42', 'YYYY-MM-DD HH24:MI:SS')'';

```
RMAN> RECOVER DATABASE UNTIL TIME "TO_DATE('2025-02-10 09:01:42', 'YYYY-MM-DD HH24:MI:SS')";

Starting recover at 10-FEB-25
using channel ORA_DISK_1

starting media recovery
media recovery complete, elapsed time: 00:00:01

Finished recover at 10-FEB-25
```

STEP 8: Now connect database check the table recover or not

```
SQL> alter database open resetlogs;

Database altered.

SQL> conn pitrex/pitrex;
Connected.
SQL> select * from testpitr;

    SERIAL NAME
---------- -----
         1 one
         2 Two
         3 Three
         4 Four
```