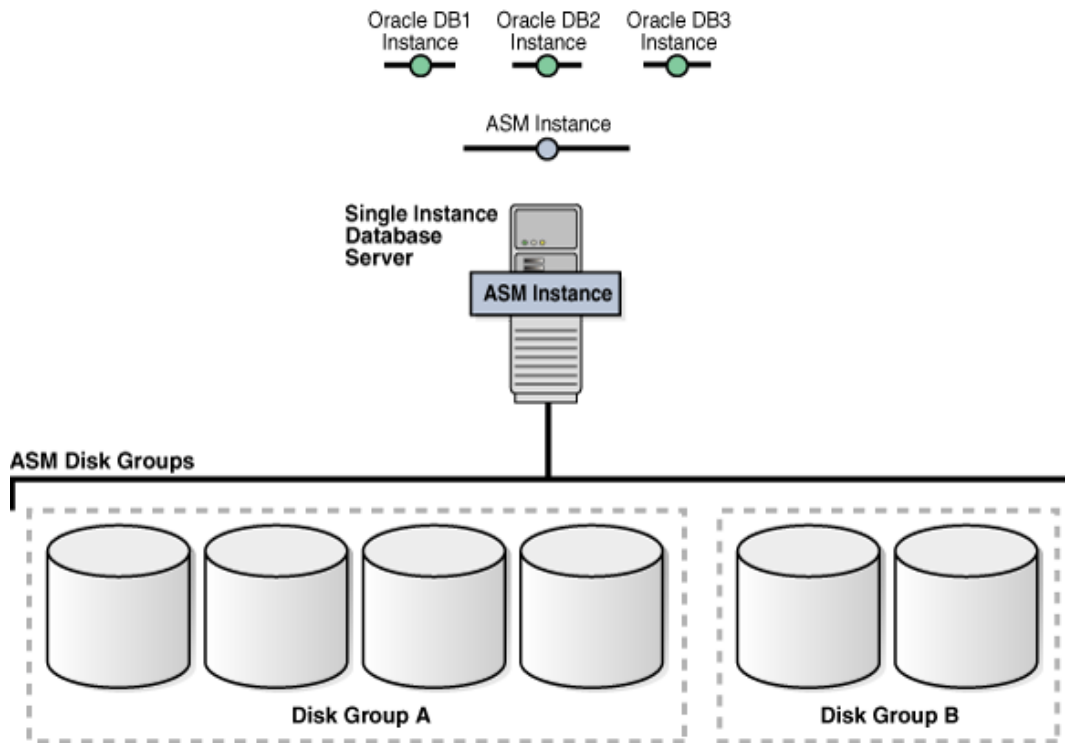


Migração do Banco de Dados Oracle 10g para ASM



```
[oracle@dbasm10g dbasm10g]$ df -h
```

```
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda1        18G   7.9G   9.0G  47% /
tmpfs            345M    0  345M   0% /dev/shm
```

```
[root@dbasm10g ~]# fdisk -l
```

```
Disk /dev/sda: 32.2 GB, 32212254720 bytes
```

```
255 heads, 63 sectors/track, 3916 cylinders
```

```
Units = cylinders of 16065 * 512 = 8225280 bytes
```

```
Device Boot    Start      End   Blocks  Id System
```

```
/dev/sda1 *        1      2384  19149448+  83 Linux
```

```
/dev/sda2        2385      2639   2048287+  82 Linux swap / Solaris
```

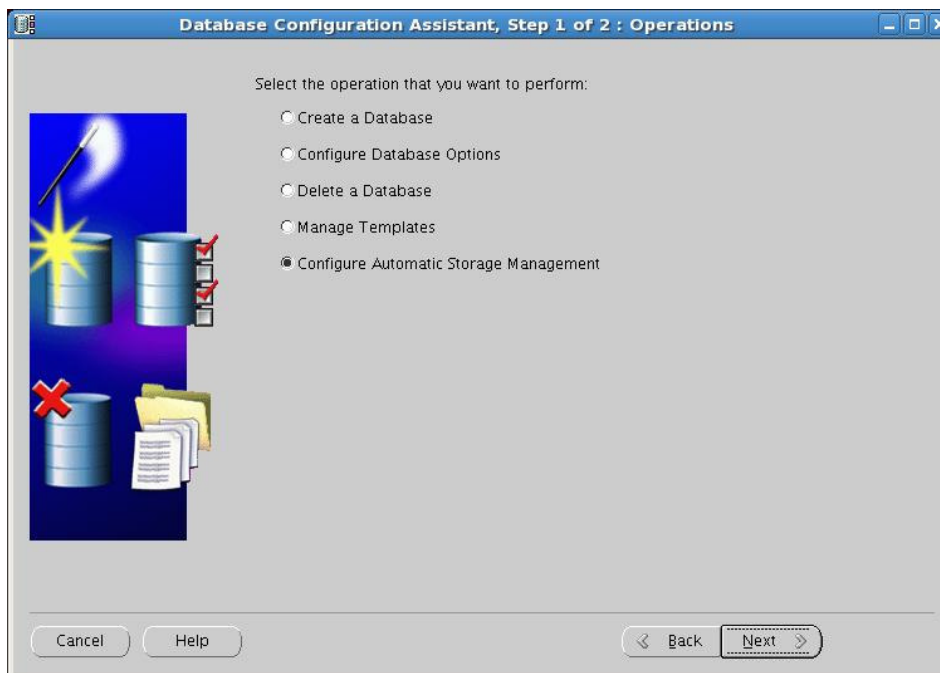
```
/dev/sda3        2640      3916  10257502+  83 Linux
```

```
[root@dbasm10g ~]# /etc/init.d/oracleasm listdisks
```

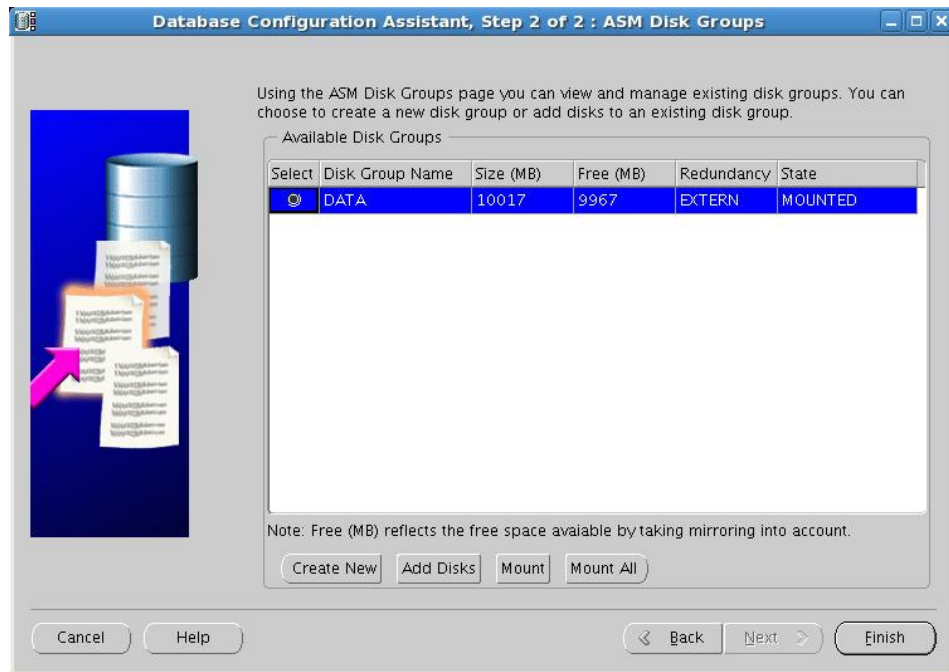
```
ASMDISK
```

Criar um Instancia ASM

```
[root@dbasm10g /]# /oracle/app/product/10.2.0/dbasm10g/bin/localconfig add
/etc/oracle does not exist. Creating it now.
Successfully accumulated necessary OCR keys.
Creating OCR keys for user 'root', privgrp 'root'..
Operation successful.
Configuration for local CSS has been initialized
Adding to inittab
Startup will be queued to init within 30 seconds.
Checking the status of new Oracle init process...
Expecting the CRS daemons to be up within 600 seconds.
CSS is active on these nodes.
    dbasm10g
CSS is active on all nodes.
Oracle CSS service is installed and running under init(1M)
```



Criando Disk Group (+DATA) com Tamanho de 10GB, no qual caberá todo nosso Banco de Dados.



=====
Considerando DiskGroup(+DATA) criado e a instancia ASM criada.
=====

Desabilitar Block Change Tracking:

SQL> select * from v\$block_change_tracking;

STATUS

FILENAME

BYTES

DISABLED

If not disabled then, disble using this command.

SQL> ALTER DATABASE DISABLE BLOCK CHANGE TRACKING;
Database altered.

Shutdown Database Cleanly:

```
SQL> shutdown immediate
Database closed.
Database dismounted.
ORACLE instance shut down.
```

SQL> create pfile='/installoracle/pfile.ora' from spfile;

```
File created.
SQL> exit
Disconnected from Oracle Database 10g Enterprise Edition Release 10.2.0.4.0 -
Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options
```

Modificar PFILE com estes parametros:

```
[oracle@dbasm10g installoracle]$ vi pfile.ora
```

Eu ja tenho criado 1 ASM diskgroups DATA

```
*.control_files=(+DATA)
*.db_recovery_file_dest=+DATA
*.db_recovery_file_dest_size=2147483648
*.db_create_file_dest=+DATA
*.db_create_online_log_dest_1=+DATA
```

[oracle@dbasm10g installoracle]\$ sqlplus /nolog

```
SQL*Plus: Release 10.2.0.4.0 - Production on Wed Feb 17 13:52:14 2010
Copyright (c) 1982, 2007, Oracle. All Rights Reserved.
SQL> conn / as sysdba
Connected to an idle instance.
SQL> create spfile from pfile='/installoracle/pfile.ora';
File created.
```

SQL> startup nomount

```
ORACLE instance started.
Total System Global Area 184549376 bytes
Fixed Size 1266488 bytes
Variable Size 75500744 bytes
Database Buffers 104857600 bytes
Redo Buffers 2924544 bytes
```

[oracle@dbasm10g dbs]\$ cp spfile+ASM.ora.bkp.original spfile+ASM.ora

```
[oracle@dbasm10g dbs]$ ls
ab_+ASM.dat init.ora spfile+ASM.ora
hc_+ASM.dat lk+ASM spfile+ASM.ora.bkp.original
hc_dbasm10g.dat lkDBASM10G spfiledbasm10g.ora
initdbasm10g.ora orapw+ASM spfiledbasm10g.ora.bkp.original
initdw.ora orapwdbasm10g
```

[oracle@dbasm10g dbs]\$ rman target /

Recovery Manager: Release 10.2.0.4.0 - Production on Wed Feb 17 13:53:28 2010

Copyright (c) 1982, 2007, Oracle. All rights reserved.

connected to target database: dbasm10g (not mounted)

=====

RMAN> restore controlfile from '/oracle/app/oradata/dbasm10g/control01.ctl';

Starting restore at 17-FEB-10

using target database control file instead of recovery catalog

allocated channel: ORA_DISK_1

channel ORA_DISK_1: sid=155 devtype=DISK

channel ORA_DISK_1: copied control file copy

output filename=+DATA/dbasm10g/controlfile/current.256.711208469

Finished restore at 17-FEB-10

=====

RMAN> alter database mount;

database mounted

released channel: ORA_DISK_1

=====

RMAN> configure device type disk parallelism 4;

new RMAN configuration parameters:

CONFIGURE DEVICE TYPE DISK PARALLELISM 4 BACKUP TYPE TO
BACKUPSET;

new RMAN configuration parameters are successfully stored

=====

RMAN> BACKUP AS COPY DATABASE FORMAT '+DATA';

Starting backup at 17-FEB-10

allocated channel: ORA_DISK_1

channel ORA_DISK_1: sid=155 devtype=DISK

allocated channel: ORA_DISK_2

channel ORA_DISK_2: sid=150 devtype=DISK

allocated channel: ORA_DISK_3

channel ORA_DISK_3: sid=149 devtype=DISK

allocated channel: ORA_DISK_4

channel ORA_DISK_4: sid=148 devtype=DISK

channel ORA_DISK_1: starting datafile copy

input datafile fno=00001 name=/oracle/app/oradata/dbasm10g/system01.dbf

channel ORA_DISK_2: starting datafile copy

input datafile fno=00003 name=/oracle/app/oradata/dbasm10g/sysaux01.dbf

channel ORA_DISK_3: starting datafile copy

input datafile fno=00005 name=/oracle/app/oradata/dbasm10g/example01.dbf

channel ORA_DISK_4: starting datafile copy

input datafile fno=00002 name=/oracle/app/oradata/dbasm10g/undotbs01.dbf

output filename=+DATA/dbasm10g/datafile/undotbs1.260.711208589

tag=TAG20100217T135628 recid=2 stamp=711208602

channel ORA_DISK_4: datafile copy complete, elapsed time: 00:00:16

channel ORA_DISK_4: starting datafile copy

input datafile fno=00004 name=/oracle/app/oradata/dbasm10g/users01.dbf

output filename=+DATA/dbasm10g/datafile/example.259.711208589
tag=TAG20100217T135628 recid=3 stamp=711208609
channel ORA_DISK_3: datafile copy complete, elapsed time: 00:00:23
channel ORA_DISK_3: starting datafile copy
copying current control file
output filename=+DATA/dbasm10g/datafile/system.257.711208589
tag=TAG20100217T135628 recid=6 stamp=711208629
channel ORA_DISK_1: datafile copy complete, elapsed time: 00:00:49
channel ORA_DISK_1: starting full datafile backupset
channel ORA_DISK_1: specifying datafile(s) in backupset
output filename=+DATA/dbasm10g/datafile/sysaux.258.711208589
tag=TAG20100217T135628 recid=7 stamp=711208632
channel ORA_DISK_2: datafile copy complete, elapsed time: 00:00:49
output filename=+DATA/dbasm10g/controlfile/backup.262.711208623
tag=TAG20100217T135628 recid=5 stamp=711208629
channel ORA_DISK_3: datafile copy complete, elapsed time: 00:00:25
output filename=+DATA/dbasm10g/datafile/users.261.711208623
tag=TAG20100217T135628 recid=4 stamp=711208629
channel ORA_DISK_4: datafile copy complete, elapsed time: 00:00:31
including current SPFILE in backupset
channel ORA_DISK_1: starting piece 1 at 17-FEB-10
channel ORA_DISK_1: finished piece 1 at 17-FEB-10
piece
handle=+DATA/dbasm10g/backupset/2010_02_17/nnsnf0_tag20100217t135628_0.263
.711208639 tag=TAG20100217T135628 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
Finished backup at 17-FEB-10

=====

RMAN> SWITCH DATABASE TO COPY;

datafile 1 switched to datafile copy
"+DATA/dbasm10g/datafile/system.257.711208589"
datafile 2 switched to datafile copy
"+DATA/dbasm10g/datafile/undotbs1.260.711208589"
datafile 3 switched to datafile copy
"+DATA/dbasm10g/datafile/sysaux.258.711208589"
datafile 4 switched to datafile copy "+DATA/dbasm10g/datafile/users.261.711208623"
datafile 5 switched to datafile copy
"+DATA/dbasm10g/datafile/example.259.711208589"

=====

RMAN> alter database open;

database opened

=====

RMAN> exit

Recovery Manager complete.

=====

MIGRAR TEMPFILE PARA ASM:

RMAN não migra os tempfiles does not migrate the tempfile as part of the BACKUP AS COPY and SWITCH command because the tempfile is not listed in controlfile. The tempfile has to be manually migrated to ASM.

```
[oracle@dbasm10g dbs]$ sqlplus /nolog
SQL*Plus: Release 10.2.0.4.0 - Production on Wed Feb 17 14:06:37 2010
Copyright (c) 1982, 2007, Oracle. All Rights Reserved.
SQL> conn / as sysdba
Connected.
```

```
=====
SQL> select name, bytes from v$tempfile;
NAME
```

```
-----
      BYTES
-----
/oracle/app/oradata/dbasm10g/temp01.dbf
20971520
```

```
=====
SQL> create temporary tablespace temp1 tempfile size 100M extent management
local uniform size 1M;
Tablespace created.
```

```
=====
SQL> alter database default temporary tablespace temp1;
Database altered.
```

```
=====
SQL> drop tablespace temp including contents;
Tablespace dropped.
```

```
=====
SQL> select name,bytes from v$tempfile;
NAME
```

```
-----
      BYTES
-----
+DATA/dbasm10g/tempfile/temp1.264.711209259
104857600
```

```
=====
SQL> create temporary tablespace temp tempfile size 100M extent management
local uniform size 1M;
Tablespace created.
```

```
=====
SQL> alter database default temporary tablespace temp;
Database altered.
```

```
=====
SQL> drop tablespace temp1 including contents;
Tablespace dropped.
```

```
=====
SQL> select name,bytes from v$tempfile;
NAME
```

```
-----
      BYTES
-----
+DATA/dbasm10g/tempfile/temp.265.711209423
104857600
```

OK, Tablespace Temporaria Migrada com sucesso.

=====

MIGRAR E DROPAR ANTIGOS REDOLOGS PARA ASM:

SQL> select member from v\$logfile;
MEMBER

/oracle/app/oradata/dbasm10g/redo03.log
/oracle/app/oradata/dbasm10g/redo02.log
/oracle/app/oradata/dbasm10g/redo01.log

=====

RODE A SEGUINTE PROCEDURE PARA MIGRAR OS REDOLOGS PARA O ASM. ESTA PROCEDURE ESTA DOCUMENTADA NO OTN/METALINK.

```
SQL> declare
cursor orlc is
  select lf.member, l.bytes
  from v$log l, v$logfile lf
  where l.group# = lf.group# and
        lf.type = 'ONLINE'
  order by l.thread#, l.sequence#;
type numTab_t is table of number index by binary_integer;
type charTab_t is table of varchar2(1024) index by binary_integer;
byteslist numTab_t; namelist charTab_t;
procedure migrateorlfile(name IN varchar2, bytes IN number) is
  retry number;
  stmt varchar2(1024);
  als varchar2(1024) := 'alter system switch logfile';
begin
  select count(*) into retry from v$logfile;
  stmt := 'alter database add logfile size ' || bytes;
  execute immediate stmt;
  stmt := 'alter database drop logfile "' || name || '"';
  for i in 1..retry loop
    begin execute immediate stmt;
    exit;
  exception
    when others then
      if i > retry then raise;
      end if;
    execute immediate als;
  end;
  end loop;
end;
begin
open orlc;
fetch orlc bulk collect into namelist, byteslist;
close orlc;
for i in 1..namelist.count loop migrateorlfile(namelist(i), byteslist(i));
end loop;
end;
/
```

PL/SQL procedure successfully completed.

```
=====
SQL> select member from v$logfile;
MEMBER
```

```
-----
+DATA/dbasm10g/onlineolog/group_3.266.711209753
/oracle/app/oradata/dbasm10g/redo02.log
+DATA/dbasm10g/onlineolog/group_1.267.711209755
+DATA/dbasm10g/onlineolog/group_4.264.711209751
=====
```

```
SQL> alter system switch logfile;
```

System altered.

```
SQL> /
```

System altered.

```
SQL> /
```

System altered.

```
=====
RODE A SEGUINTE PROCEDURE NOVAMENTE:
```

```
SQL> declare
  cursor orlc is
    select lf.member, l.bytes
    from v$log l, v$logfile lf
    where l.group# = lf.group# and
          lf.type = 'ONLINE'
    order by l.thread#, l.sequence#;
  type numTab_t is table of number index by binary_integer;
  type charTab_t is table of varchar2(1024) index by binary_integer;
  byteslist numTab_t; namelist charTab_t;
  procedure migrateorlfile(name IN varchar2, bytes IN number) is
    retry number;
    stmt varchar2(1024);
    als varchar2(1024) := 'alter system switch logfile';
  begin
    select count(*) into retry from v$logfile;
    stmt := 'alter database add logfile size ' || bytes;
    execute immediate stmt;
    stmt := 'alter database drop logfile "' || name || '"';
    for i in 1..retry loop
      begin execute immediate stmt;
      exit;
    exception
      when others then
        if i > retry then raise;
        end if;
      execute immediate als;
    end;
  end loop;
end;
begin
open orlc;
fetch orlc bulk collect into namelist, byteslist;
```

```
close orlc;  
for i in 1..namelist.count loop migrateorlfile(namelist(i), byteslist(i));  
end loop;  
end;  
/  
PL/SQL procedure successfully completed.
```

```
=====
```

SQL> select member from v\$logfile;
MEMBER

```
-----  
+DATA/dbasm10g/onlineelog/group_3.266.711209753  
+DATA/dbasm10g/onlineelog/group_2.269.711210291  
+DATA/dbasm10g/onlineelog/group_1.267.711210293  
+DATA/dbasm10g/onlineelog/group_4.264.711210291  
+DATA/dbasm10g/onlineelog/group_5.268.711210289  
=====
```

SQL> exit

Disconnected from Oracle Database 10g Enterprise Edition Release 10.2.0.4.0 -
Production

With the Partitioning, OLAP, Data Mining and Real Application Testing options

```
=====
```

DELETE OS ANTIGOS DATAFILES USANDO RMAN.

[oracle@dbasm10g dbs]\$ rman target /

Recovery Manager: Release 10.2.0.4.0 - Production on Wed Feb 17 14:27:36 2010

Copyright (c) 1982, 2007, Oracle. All rights reserved.

connected to target database: DBASM10G (DBID=677332511)

=====

RMAN> DELETE COPY OF DATABASE;

using target database control file instead of recovery catalog

allocated channel: ORA_DISK_1

channel ORA_DISK_1: sid=148 devtype=DISK

allocated channel: ORA_DISK_2

channel ORA_DISK_2: sid=147 devtype=DISK

allocated channel: ORA_DISK_3

channel ORA_DISK_3: sid=150 devtype=DISK

allocated channel: ORA_DISK_4

channel ORA_DISK_4: sid=156 devtype=DISK

List of Datafile Copies

Key	File S	Completion Time	Ckp SCN	Ckp Time	Name
-----	--------	-----------------	---------	----------	------

8	1	A	17-FEB-10	504382	17-FEB-10
---	---	---	-----------	--------	-----------

/oracle/app/oradata/dbasm10g/system01.dbf

9	2	A	17-FEB-10	504382	17-FEB-10
---	---	---	-----------	--------	-----------

/oracle/app/oradata/dbasm10g/undotbs01.dbf

10	3	A	17-FEB-10	504382	17-FEB-10
----	---	---	-----------	--------	-----------

/oracle/app/oradata/dbasm10g/sysaux01.dbf

11	4	A	17-FEB-10	504382	17-FEB-10
----	---	---	-----------	--------	-----------

/oracle/app/oradata/dbasm10g/users01.dbf

12	5	A	17-FEB-10	504382	17-FEB-10
----	---	---	-----------	--------	-----------

/oracle/app/oradata/dbasm10g/example01.dbf

Do you really want to delete the above objects (enter YES or NO)? YES

deleted datafile copy

datafile copy filename=/oracle/app/oradata/dbasm10g/system01.dbf recid=8

stamp=711208708

deleted datafile copy

datafile copy filename=/oracle/app/oradata/dbasm10g/undotbs01.dbf recid=9

stamp=711208708

deleted datafile copy

datafile copy filename=/oracle/app/oradata/dbasm10g/sysaux01.dbf recid=10

stamp=711208708

deleted datafile copy

datafile copy filename=/oracle/app/oradata/dbasm10g/users01.dbf recid=11

stamp=711208708

deleted datafile copy

datafile copy filename=/oracle/app/oradata/dbasm10g/example01.dbf recid=12

stamp=711208708

Deleted 5 objects

=====

RMAN> exit

Recovery Manager complete.

=====

REMOVER OS ANTIGOS ONLINE REDO LOGS FILES FISICAMENTE:

```
[oracle@dbasm10g dbasm10g]$ ls
control01.ctl control03.ctl redo02.log temp01.dbf
control02.ctl redo01.log redo03.log
[oracle@dbasm10g dbasm10g]$ rm *.log
[oracle@dbasm10g dbasm10g]$ ls
control01.ctl control02.ctl control03.ctl temp01.dbf
```

=====

REMOVER OS ANTIGOS CONTROLFILES FISICAMENTE:

```
[oracle@dbasm10g dbasm10g]$ ls
control01.ctl control02.ctl control03.ctl
[oracle@dbasm10g dbasm10g]$ rm *.ctl
[oracle@dbasm10g dbasm10g]$ ls
```

=====

Habilitar o Block Change Tracking:

SQL> ALTER DATABASE ENABLE BLOCK CHANGE TRACKING;

Database altered.

SQL>