

# Compte Rendue --- Sauvegarde et récupération

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## Archivage

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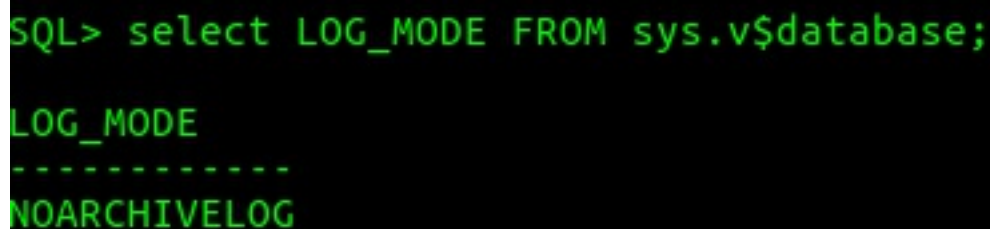
1. Écrivez un ordre SQL permettant d'afficher le nom de tous les fichiers physiques de votre base.

```
SELECT c.name, l.member, d.name
FROM V$CONTROLFILE c, V$LOGFILE l, V$DATAFILE d;
```

2. Réutilisez le résultat du point 1 pour écrire un script destiné à réaliser la sauvegarde complète de votre base de données fonctionnant en mode noarchivelog.

In ARCHIVELOG mode, the database will make copies of all online redo logs after they are filled. These copies are called archived redo logs. The archived redo logs are created via the ARCH process. The ARCH process copies the archived redo log files to one or more archive log destination directories.

```
--With this sql request we know that database is in mode noarchivelog.
SELECT log_mode FROM sys.v$database;
```



```
SQL> select LOG_MODE FROM sys.v$database;

LOG_MODE
-----
NOARCHIVELOG
```

With mode NOARCHIVELOG:

3. NOARCHIVELOG mode protects a database from instance failure but not from media failure. Only the most recent changes made to the database, which are stored in the online redo log groups, are available for instance recovery.
4. If a media failure occurs while the database is in NOARCHIVELOG mode, you can only restore the database to the point of the most recent full database backup. You cannot recover transactions subsequent to that backup.

There are two ways to create a backup noarchivelog:

5. By sql, I didn't find doc with this way, so I will choose second one.
6. By bash script, I just copy all the file of XE that I find in EXO1. ``bash

## For datafile and control file

---

```
$ sudo cp $ORACLE_BASE/oradata/XE/* $ORACLE_BASE/backup/XE/ $ sudo cp
$ORACLE_HOME/dbs/tb_td1.dbf $ORACLE_BASE/backup/XE/dbs/ $ sudo cp
$ORACLE_HOME/dbs/users.dbf $ORACLE_BASE/backup/XE/dbs/
```

## For log file

---

```
$ sudo cp $ORACLE_BASE/fast_recovery_area/XE/onlineelog/o1_mf_2dwdnm14d.log
$ORACLE_BASE/backup/XE/log/
```

## For init file

---

```
$ sudo cp $ORACLE_HOME/dbs/initXE.ora $ORACLE_BASE/backup/dbs/ $ sudo cp
$ORACLE_HOME/dbs/spfileXE.ora $ORACLE_BASE/backup/dbs/
```

```
3. Faire passer une base de données du mode noarchivelog au mode archivelog.
``sql
--we close the database and reopen with mode mount
SHUTDOWN
STARTUP MOUNT
--than alter the databse that I change mode to archivelog.
ALTER DATABASE ARCHIVELOG;
ALTER DATABASE OPEN;
-- show current mode
SQL> select log_mode from sys.v$database;

LOG_MODE
-----
ARCHIVELOG
```

```

SQL> shutdown;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> startup mount
ORACLE instance started.

Total System Global Area 1068937216 bytes
Fixed Size                  2233344 bytes
Variable Size               616565760 bytes
Database Buffers            444596224 bytes
Redo Buffers                 5541888 bytes
Database mounted.
SQL> alter database archivelog;

Database altered.

SQL> alter database open;

Database altered.

```

## RMAN

1. Dans l'environnement rman, écrivez la ou les instructions qui renvoient les mêmes informations que l'instruction suivante : SQL> select name, bytes from v\$datafile ;

```

--Firstly, it's imperative to connect database with a legitimate role
CONNECT TARGET SYS
--than we show it's report schema
report shcema;

```

```

RMAN> report schema
=====
Report of database schema for database with db_unique_name XE
List of Permanent Datafiles
=====
File Size(MB) Tablespace          RB segs Datafile Name
-----
1      360      SYSTEM                ***      /u01/app/oracle/oradata/XE/system.dbf
2      660      SYSAUX                  ***      /u01/app/oracle/oradata/XE/sysaux.dbf
3      25       UNDOTBS1                 ***      /u01/app/oracle/oradata/XE/undotbs1.dbf
4      100      USERS                    ***      /u01/app/oracle/oradata/XE/users.dbf
5      30       TB_TD1                   ***      /u01/app/oracle/product/11.2.0/xe/dbs/tb_td1.dbf
6      20       TB_TD1                   ***      /u01/app/oracle/product/11.2.0/xe/dbs/users.dbf
List of Temporary Files
=====
File Size(MB) Tablespace          Maxsize(MB) Tempfile Name
-----
1      20       TEMP                     32767     /u01/app/oracle/oradata/XE/temp.dbf

```

2. Affichez dans l'environnement rman des informations sur les paramètres de configuration en cours du gestionnaire rman.

```
SHOW ALL;
```

```
RMAN> show all
2> ;

using target database control file instead of recovery catalog
RMAN configuration parameters for database with db_unique_name XE are:
CONFIGURE RETENTION POLICY TO REDUNDANCY 1; # default
CONFIGURE BACKUP OPTIMIZATION OFF; # default
CONFIGURE DEFAULT DEVICE TYPE TO DISK; # default
CONFIGURE CONTROLFILE AUTOBACKUP OFF; # default
CONFIGURE CONTROLFILE AUTOBACKUP FORMAT FOR DEVICE TYPE DISK TO '%F'; # default
CONFIGURE DEVICE TYPE DISK PARALLELISM 1 BACKUP TYPE TO BACKUPSET; # default
CONFIGURE DATAFILE BACKUP COPIES FOR DEVICE TYPE DISK TO 1; # default
CONFIGURE ARCHIVELOG BACKUP COPIES FOR DEVICE TYPE DISK TO 1; # default
CONFIGURE MAXSETSIZE TO UNLIMITED; # default
CONFIGURE ENCRYPTION FOR DATABASE OFF; # default
CONFIGURE ENCRYPTION ALGORITHM 'AES128'; # default
CONFIGURE COMPRESSION ALGORITHM 'BASIC' AS OF RELEASE 'DEFAULT' OPTIMIZE FOR LOAD TRUE ; # default
CONFIGURE ARCHIVELOG DELETION POLICY TO NONE; # default
```

3. Configurez l'environnement rman pour omettre la sauvegarde d'un fichier si le fichier a déjà fait l'objet d'une sauvegarde par le gestionnaire rman au préalable et qu'il n'a pas été modifié depuis.

```
-- Activate backup option
configure backup optimization on;
```

```
RMAN> configure backup optimization on;
62 report shcema;
new RMAN configuration parameters:
CONFIGURE BACKUP OPTIMIZATION ON;
new RMAN configuration parameters are successfully stored
65 Affichez dans l'environnement rman des informations sur
```

4. Une fois la configuration par défaut établie, effectuez une sauvegarde complète de votre base dans l'environnement rman. — Identifier l'emplacement de la sauvegarde effectuée par RMAN. — Identifier la "backup piece" contenant la sauvegarde du fichier de contrôle. ``sql -- To make a complete backup (so also archivelog) BACKUP DATABASE;

--To identify the location of backup LIST BACKUPSE

--To identify bakcup piece LIST BACKUP OF CONTROLFILE;

```

```

```

```

```
## Récupération fichier de contrôle
```

Assurez-vous de disposer de n fichiers de contrôle (n>2) avant d'effectuer les exerci

1. Supprimez par une commande du système d'exploitation l'un de vos fichiers de contr  
``sql

```
--make sure that I have at least 2 control files(the other is in DISK_REPLIQUE);
```

```
SELECT NAME FROM v$controlfile;
```

1. Créer un tablespace ayant un fichier de données.

```
CREATE TABLESPACE td_tb3 DATAFILE 'tb_tb3.dbf' SIZE 30M ONLINE;
```

2. Créer un schéma/utilisateur « ventes ». Connectez-vous à ce compte et générez les objets du schéma à l'aide du script fourni. Les objets de ventes doivent être stockés dans le tablespace de la question précédente.

```
CREATE USER ventes IDENTIFIED BY ventes;  
GRANT CONNECT TO ventes;  
Alter USER ventes quota 30M on td_tb3;  
Alter USER ventes default TABLESPACE td_tb3;  
GRANT CREATE TABLE TO ventes;  
CONNECT ventes ventes;  
@~/Documents/ESIPÉ BD/create_ventes.sql
```

3. Simuler la perte du fichier de données contenant les objets de « ventes ». Constater le dysfonctionnement. ``sql --Before delete td\_tb3.dbf, I make a backup in using RMAN  
RMAN> BAKCUP DATABASE; --Delete this tablespace file bash\$ rm  
\$ORACLE\_HOME/dbs/td\_tb3.dbf

--Error occurs when I shutdown the database: ORA-01110: data file 7:  
'/u01/app/oracle/product/11.2.0/xe/dbs/tb\_tb3.dbf'

5. Utiliser RMAN pour restaurer le fichier de données.

```
``sql  
--To restore datafile, showing that the number of datafile  
RMAN > list backup of tablespace system;  
--The datafile indicate that it's number  
RMAN > restore datafile 7
```

```
RMAN> list backup of tablespace system;
```

```
List of Backup Sets
```

```
=====
```

BS Key	Type	LV	Size	Device	Type	Elapsed Time	Completion Time
7	Full		777.02M	DISK		00:00:35	10-NOV-17
BP Key: 7 Status: AVAILABLE Compressed: NO Tag: TAG20171110T105930							
Piece Name: /u01/app/oracle/fast_recovery_area/XE/XE/backupset/2017_11							
AG20171110T105930_f0by42z3_.bkp							
List of Datafiles in backup set 7							
File	LV	Type	Ckp	SCN	Ckp Time	Name	
1		Full	618203		10-NOV-17	/u01/app/oracle/oradata/XE/system.dbf	



```

RMAN> restore datafile 7;

Starting restore at 10-NOV-17
using channel ORA_DISK_1

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 00007 to /u01/app/oracle/product/11.2.0/xe/dbs/tb_tb3.dbf
channel ORA_DISK_1: reading from backup piece /u01/app/oracle/fast_recovery_area/XE/XE/backupset/2017_11_10/o1_mf_nnndf_TAG20171110T105930_f0by42z3_.bkp
channel ORA_DISK_1: piece handle=/u01/app/oracle/fast_recovery_area/XE/XE/backupset/2017_11_10/o1_mf_nnndf_TAG20171110T105930_f0by42z3_.bkp tag=TAG20171110T105930
channel ORA_DISK_1: restored backup piece 1
channel ORA_DISK_1: restore complete, elapsed time: 00:00:04
Finished restore at 10-NOV-17

```

Here we see that tb\_tb3.dbf is restored.

```

tearsyu@Dog:/u01/app/oracle/product/11.2.0/xe/dbs$ ls -l /u01/app/oracle/product/11.2.0/xe/dbs
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 hc_TP2_BASE.dat
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 hc_XE.dat
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 initTP2_BASE.ora
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 initXE.ora
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 lkXE
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 orapwXE
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 spfileTP2_BASE.ora
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 spfileXE.ora
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 tb_tb3.dbf
-rw-r--r-- 1 tearsyu oinstall 4096 Nov 10 10:59 tb_td1.dbf

```

I had a problem when I did this exercise, I restored the datafile in mode mounted, but I can't open database after restoring.

```

SQL> alter database open; alter database open* ERROR at line 1: ORA-01113: file 4 needs
media recovery ORA-01110: data file 4: '/u01/app/oracle/oradata/XE/users.dbf'

```

Solution:

```

recover datafile '/u01/app/oracle/oradata/XE/users.dbf'

```

1. Les n fichiers de contrôle sont endommagés, construisez un scénario de restauration de la base étape par étape.

```

--Delete control file
-- Show all the backup of control files
RMAN > list backup of CONTROLFILE;
--Choose one to restore, and restore it in mode NOMOUNT
RMAN > restore controlfile from
'/u01/app/oracle/fast_recovery_area/XE/XE/backupset/2017_11_10/o1_mf_nnndf_TAG20171110T105930_f0by42z3_.bkp'

```

```

BS Key   Type LV Size      Device Type Elapsed Time Completion Time
-----
6        Full   9.36M      DISK        00:00:07    10-NOV-17
BP Key: 6  Status: AVAILABLE Compressed: NO Tag: TAG20171110T105704
Piece Name: /u01/app/oracle/fast_recovery_area/XE/XE/backupset/2017_11_10/c
AG20171110T105704_f0by1t2n_.bkp
Control File Included: Ckp SCN: 618159      Ckp time: 10-NOV-17

BS Key   Type LV Size      Device Type Elapsed Time Completion Time
-----
8        Full   9.36M      DISK        00:00:07    10-NOV-17
BP Key: 8  Status: AVAILABLE Compressed: NO Tag: TAG20171110T105930
Piece Name: /u01/app/oracle/fast_recovery_area/XE/XE/backupset/2017_11_10/c
AG20171110T105930_f0by5n67_.bkp
Control File Included: Ckp SCN: 618225      Ckp time: 10-NOV-17

BS Key   Type LV Size      Device Type Elapsed Time Completion Time
-----
10       Full   9.33M      DISK        00:00:02    10-NOV-17
BP Key: 10 Status: AVAILABLE Compressed: NO Tag: TAG20171110T110216
Piece Name: /u01/app/oracle/fast_recovery_area/XE/XE/backupset/2017_11_10/c
AG20171110T110216_f0by9b0t_.bkp
Control File Included: Ckp SCN: 618298      Ckp time: 10-NOV-17

```

2. Tous les fichiers physiques de la base sont perdus, construisez un scénario de restauration de la base étape par étape.

```

RMAN > RESTORE DATABASE;

```

<http://www.thegeekstuff.com/2013/08/oracle-rman-backup/>