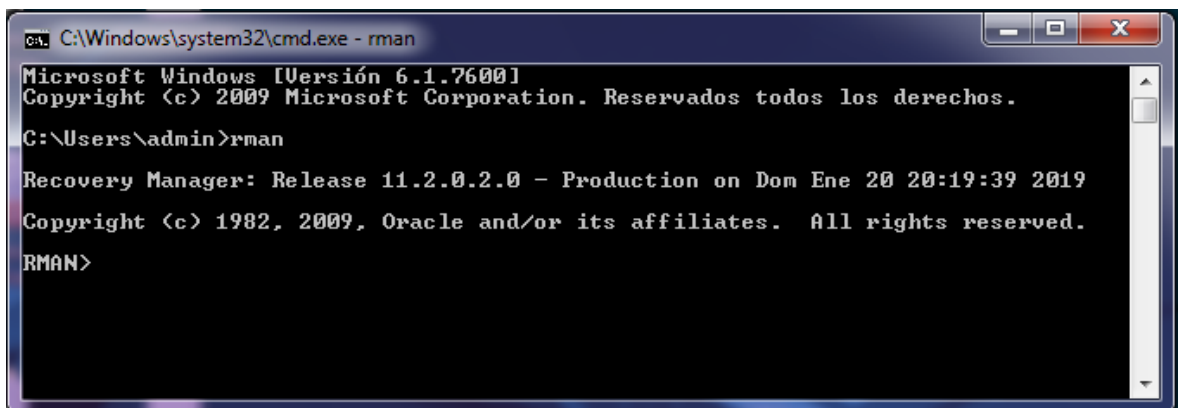
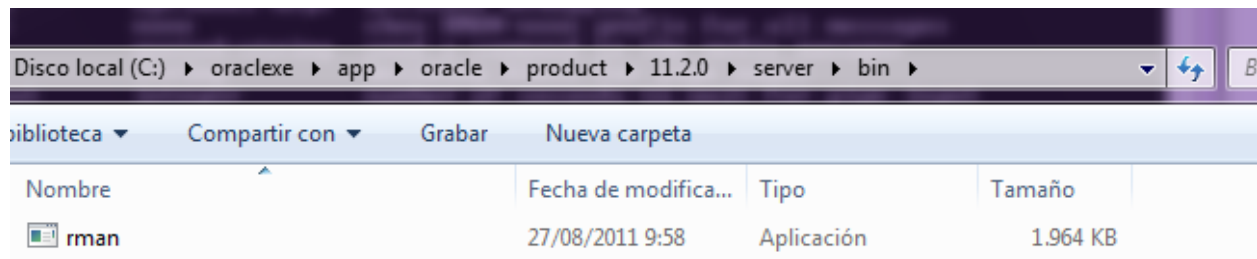


5.4 Copia de Seguridad y Recuperación con RMAN (Recovery Manager)

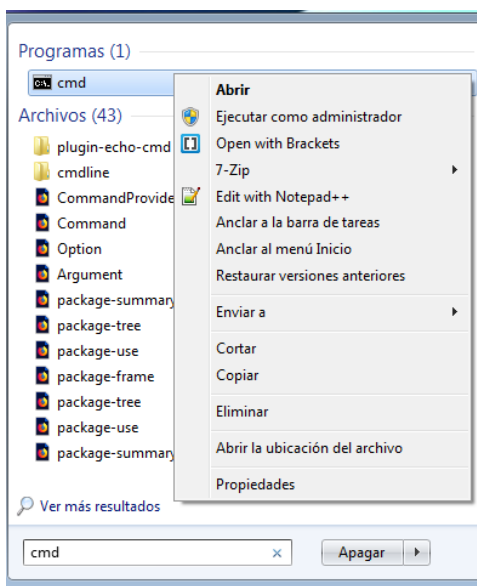
Es una utilidad de Oracle que permite hacer rápidamente backup de todos los datos o de una parte de la base de datos. Facilita la realización de copias de seguridad, restauraciones y recuperaciones mediante un lenguaje de comandos.

Ejecutable RMAN

Se encuentra en el directorio bin de la carpeta de Oracle y se ejecuta desde el sistema operativo



Para poder trabajar con él tenemos que estar en el cmd en modo **administrador**.



TEMA 5: Mantenimiento y Recuperación Errores

Lo primero que haremos será conectarnos a la instancia de la base de datos, en nuestro caso XE

RMAN TARGET XE

```

C:\Windows\system32>RMAN TARGET XE

Recovery Manager: Release 11.2.0.2.0 - Production on Lun Ene 20 21:31:41 2020
Copyright (c) 1982, 2009, Oracle and/or its affiliates. All rights reserved.

target database Password:
connected to target database: XE (DBID=2771011960)
  
```

Se necesitan privilegios de DBA por lo que nos pedirá la contraseña del SYS

Para salir EXIT

```

RMAN> EXIT

Recovery Manager complete.

C:\Windows\system32>
  
```

También podemos acceder de la siguiente manera:

RMAN TARGET SYS/manager@XE

```

C:\Windows\system32>RMAN TARGET SYS/manager@XE

Recovery Manager: Release 11.2.0.2.0 - Production on Lun Ene 20 21:41:30 2020
Copyright (c) 1982, 2009, Oracle and/or its affiliates. All rights reserved.

connected to target database: XE (DBID=2771011960)

RMAN>
  
```

Una vez dentro podemos ejecutar diversos comandos:

- RMAN> REPORT SCHEMA, visualiza la estructura de la base de datos

```

C:\Windows\system32>RMAN TARGET SYS/manager@XE

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    380      SYSTEM                ***    C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSTEM.DBF
2    660      SYSAUX                 ***    C:\ORACLE\APP\ORACLE\ORADATA\XE\UNDOTBS1.DBF
3    25       UNDOTBS1               ***    C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSTEM.DBF
4    100      USERS                  ***    C:\ORACLE\APP\ORACLE\ORADATA\XE\USERS.DBF
5     1       TRABAJO                 ***    C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERVER\DATABASE\TRABAJO.DBF
6     1       TRABAJO                 ***    C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERVER\DATABASE\OTRO.DBF

List of Temporary Files
=====
File Size(MB) Tablespace          Maxsize(MB) Tempfile Name
-----
1    20       TEMP                    32767      C:\ORACLE\APP\ORACLE\ORADATA\XE\TEMP.DBF
  
```

TEMA 5: Mantenimiento y Recuperación Errores

- RMAN> REPORT NEED BACKUP, muestra los archivos que necesitan hacer copias de seguridad

```

RMAN> REPORT NEED BACKUP;

RMAN retention policy will be applied to the command
RMAN retention policy is set to redundancy 1
Report of files with less than 1 redundant backups
File #bkps Name
-----
1      0      C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSTEM.DBF
2      0      C:\ORACLE\APP\ORACLE\ORADATA\XE\UNDOTBS1.DBF
3      0      C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSAUX.DBF
4      0      C:\ORACLE\APP\ORACLE\ORADATA\XE\USERS.DBF
5      0      C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERVER\DATABASE\TRABAJO.DBF
6      0      C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERVER\DATABASE\OTRO.DBF

```

- RMAN> REPORT OBSOLETE, indica las copias de seguridad que se puede eliminar.

```

RMAN> REPORT OBSOLETE;

RMAN retention policy will be applied to the command
RMAN retention policy is set to redundancy 1
no obsolete backups found

RMAN>

```

Comando BACKUP

Permite realizar una copia de seguridad de una base de datos, un tablespace, un archivo de datos o de los Redo Logs archivados.

- BACKUP TABLESPACE nombre; copia el tablespace indicado

(Puede darnos un error si la BD no está en modo ARCHIVELOG, en ese caso la ponemos en dicho modo.

```

RMAN> BACKUP TABLESPACE TRABAJO;

Starting backup at 29/01/21
using target database control file instead of recovery catalog
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=16 device type=DISK
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
RMAN-00571: =====
RMAN-00569: ===== ERROR MESSAGE STACK FOLLOWS =====
RMAN-00571: =====
RMAN-03009: failure of backup command on ORA_DISK_1 channel at 01/29/2021 00:18:
36
ORA-19602: cannot backup or copy active file in NOARCHIVELOG mode

RMAN>

```

Recordamos:

- ARCHIVE LOG LIST para ver el modo
- SHUTDOWN IMMEDIATE
- STARTUP MOUNT
- ALTER DATABASE ARCHIVELOG
- ALTER DATABASE OPEN)

TEMA 5: Mantenimiento y Recuperación Errores

RMAN> BACKUP TABLESPACE TRABAJO;

```
Starting backup at 28/01/21
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=105 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=000005 name=C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERV
ER\DATABASE\TRABAJO.DBF
input datafile file number=000006 name=C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERV
ER\DATABASE\OTRO.DBF
channel ORA_DISK_1: starting piece 1 at 28/01/21
channel ORA_DISK_1: finished piece 1 at 28/01/21
piece handle=C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_28\O
1_MF_NNNDP_TAG20210128T234847_J168SJ92_.BKP tag=TAG20210128T234847 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:02
Finished backup at 28/01/21
```

RMAN> REPORT NEED BACKUP;

```
RMAN retention policy will be applied to the command
RMAN retention policy is set to redundancy 1
Report of files with less than 1 redundant backups
File #bkps Name
-----
1 0 C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSTEM.DBF
2 0 C:\ORACLE\APP\ORACLE\ORADATA\XE\UNDOTBS1.DBF
3 0 C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSAUX.DBF
4 0 C:\ORACLE\APP\ORACLE\ORADATA\XE\USERS.DBF
```

- BACKUP ARCHIVELOG ALL; copia los Redo Logs archivados

RMAN> BACKUP ARCHIVELOG ALL;

```
Starting backup at 29/01/21
current log archived
using channel ORA_DISK_1
channel ORA_DISK_1: starting archived log backup set
channel ORA_DISK_1: specifying archived log(s) in backup set
input archived log thread=1 sequence=7 RECID=1 STAMP=1061641531
input archived log thread=1 sequence=8 RECID=2 STAMP=1061674474
input archived log thread=1 sequence=9 RECID=3 STAMP=1061675855
input archived log thread=1 sequence=10 RECID=4 STAMP=1061896849
input archived log thread=1 sequence=11 RECID=5 STAMP=1062376031
input archived log thread=1 sequence=12 RECID=6 STAMP=1063064286
input archived log thread=1 sequence=13 RECID=7 STAMP=1063065810
channel ORA_DISK_1: starting piece 1 at 29/01/21
channel ORA_DISK_1: finished piece 1 at 29/01/21
piece handle=C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\O
1_MF_ANNNDP_TAG20210129T000330_J169031Q_.BKP tag=TAG20210129T000330 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:07
Finished backup at 29/01/21
RMAN>
```

- BACKUP DATAFILE nombre; copia un archivo de datos

RMAN> BACKUP DATAFILE 'OTRO.DBF';

```
Starting backup at 29/01/21
using channel ORA_DISK_1
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=000006 name=C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERV
ER\DATABASE\OTRO.DBF
channel ORA_DISK_1: starting piece 1 at 29/01/21
channel ORA_DISK_1: finished piece 1 at 29/01/21
piece handle=C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\O
1_MF_ANNNDP_TAG20210129T001147_J16B4N1R_.BKP tag=TAG20210129T001147 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
Finished backup at 29/01/21
RMAN>
```

TEMA 5: Mantenimiento y Recuperación Errores

- LIST BACKUP; muestra información sobre los archivos de copias de seguridad disponibles.

Los archivos de backup que hemos ido generando se encuentran en:

Equipo > Disco local (C:) > oraclexe > app > oracle > fast_recovery_area > XE >

Abrir Incluir en biblioteca Compartir con Nueva carpeta

Nombre	Fecha de modifica...	Tipo	Tamaño
ARCHIVELOG	29/01/2021 0:03	Carpeta de archivos	
BACKUPSET	29/01/2021 0:03	Carpeta de archivos	
ONLINELOG	11/09/2019 18:19	Carpeta de archivos	

```

RMAN> LIST BACKUP;

List of Backup Sets
=====

BS Key Type LU Size Device Type Elapsed Time Completion Time
-----
1 Full 152.00K DISK 00:00:01 28/01/21
BP Key: 1 Status: AVAILABLE Compressed: NO Tag: TAG20210128T234847
Piece Name: C:\ORACLEXE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021
01_28\01_MF_MNNDP_TAG20210128T234847_J168SJ92_.BKP
List of Datafiles in backup set 1
File LU Type Ckp SCN Ckp Time Name
-----
5 Full 645691 28/01/21 C:\ORACLEXE\APP\ORACLE\PRODUCT\11.2.0\SERVER\
DATABASE\TRABAJO.DBF
6 Full 645691 28/01/21 C:\ORACLEXE\APP\ORACLE\PRODUCT\11.2.0\SERVER\
DATABASE\OTRO.DBF
BS Key Size Device Type Elapsed Time Completion Time
-----
2 115.92M DISK 00:00:06 29/01/21
BP Key: 2 Status: AVAILABLE Compressed: NO Tag: TAG20210129T000330
Piece Name: C:\ORACLEXE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021
01_29\01_MF_ANNNN_TAG20210129T000330_J169031Q_.BKP
List of Archived Logs in backup set 2
Thrd Seq Low SCN Low Time Next SCN Next Time
-----
1 7 459681 11/01/21 481028 12/01/21
1 8 481028 12/01/21 515424 12/01/21
1 9 515424 12/01/21 536762 12/01/21
1 10 536762 12/01/21 581786 15/01/21
1 11 581786 15/01/21 630029 21/01/21
1 12 630029 21/01/21 644945 28/01/21
1 13 644945 28/01/21 646301 29/01/21
BS Key Type LU Size Device Type Elapsed Time Completion Time
-----
3 Full 88.00K DISK 00:00:00 29/01/21
BP Key: 3 Status: AVAILABLE Compressed: NO Tag: TAG20210129T001147
Piece Name: C:\ORACLEXE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021
01_29\01_MF_MNNDP_TAG20210129T001147_J16B4N1R_.BKP
List of Datafiles in backup set 3
File LU Type Ckp SCN Ckp Time Name
-----
6 Full 646810 29/01/21 C:\ORACLEXE\APP\ORACLE\PRODUCT\11.2.0\SERVER\
DATABASE\OTRO.DBF
RMAN>
    
```

- BACKUP DATABASE; copia la base de datos

TEMA 5: Mantenimiento y Recuperación Errores

```

RMAN> BACKUP DATABASE;

Starting backup at 29/01/21
using channel ORA_DISK_1
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00002 name=C:\ORACLE\APP\ORACLE\ORADATA\XE\UNDOTBS1.DBF
input datafile file number=00001 name=C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSTEM.DBF
input datafile file number=00004 name=C:\ORACLE\APP\ORACLE\ORADATA\XE\USERS.DBF
input datafile file number=00003 name=C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSAUX.DBF
input datafile file number=00005 name=C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERVER\DATABASE\TRABAJO.DBF
input datafile file number=00006 name=C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERVER\DATABASE\OTRO.DBF
channel ORA_DISK_1: starting piece 1 at 29/01/21
channel ORA_DISK_1: finished piece 1 at 29/01/21
piece handle=C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\O1_MF_NNMF_TAG20210129T002338_J16BTIFZ_.BKP tag=TAG20210129T002338 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:01:25
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
including current control file in backup set
including current SPFILE in backup set
channel ORA_DISK_1: starting piece 1 at 29/01/21
channel ORA_DISK_1: finished piece 1 at 29/01/21
piece handle=C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\O1_MF_NCSNF_TAG20210129T002338_J16BXJOS_.BKP tag=TAG20210129T002338 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:03
Finished backup at 29/01/21

RMAN>
  
```

Si hacemos ahora REPORT NEED BACKUP no saldrá nada porque acabamos de hacer una copia de toda la base de datos.

```

RMAN> REPORT NEED BACKUP;

RMAN retention policy will be applied to the command
RMAN retention policy is set to redundancy 1
Report of files with less than 1 redundant backups
File #bkps Name
-----
RMAN>
  
```

Si creo un nuevo tablespace y vuelvo a ejecutar entonces si aparecerá este nuevo archivo.

```

SQL> CONNECT SYSTEM/manager;
Connected.
SQL> CREATE TABLESPACE NUEVO DATAFILE 'NUEVO.DBF' SIZE 1M;

Tablespace created.

SQL>
  
```

```

RMAN> REPORT NEED BACKUP;

RMAN retention policy will be applied to the command
RMAN retention policy is set to redundancy 1
Report of files with less than 1 redundant backups
File #bkps Name
-----
7      0      C:\ORACLE\APP\ORACLE\PRODUCT\11.2.0\SERVER\DATABASE\NUEVO.DBF
RMAN>
  
```

Restauración y recuperación con RMAN

Se pueden hacer restauraciones de:

- base de datos
- tablespaces
- archivos de datos.

Si las copias de seguridad han sido realizadas con RMAN sólo pueden ser restauradas con RMAN.

Para restaurar una base de datos o un tablespace utilizaremos:

- **RESTORE:** este comando restaura archivos de copias de seguridad en la ubicación predeterminada o en otra ubicación si se indica.
 - **RESTORE DATABASE;** restaura la base de datos completa.
 - **RESTORE TABLESPACE nombre;** restaura un tablespace
- **RECOVER:** aplica registros de Redo Logs o copias de seguridad incrementales si las hubiera a un conjunto de copias restaurado o a una copia normal, con el fin de actualizar la base de datos a un instante específico y sincronizar todos los archivos de datos.
 - **RECOVER DATABASE;** recupera y sincroniza la base de datos completa.
 - **RECOVER TABLESPACE nombre;** recupera y sincroniza un tablespace:

Para restaurar una base de datos tenemos que tener la base de datos en estado MOUNT y sin abrir.

Para restaurar un tablespace podemos hacerlo también en esta situación (BD en estado MOUNT) o con la base de datos abierta ponerlo en modo offline, restaurar y después volverlo a poner en modo online

```
RMAN> SQL "ALTER TABLESPACE TRABAJO OFFLINE IMMEDIATE";  
RMAN> RESTORE TABLESPACE TRABAJO;  
RMAN> RECOVER TABLESPACE TRABAJO;  
RMAN> SQL "ALTER TABLESPACE TRABAJO ONLINE";
```

Además de lo visto, RMAN tiene una gran cantidad de comandos para realizar las copias de seguridad, restaurar y recuperar una base de datos.

<https://orasite.com/tutoriales/backup-base-datos/rman-comandos-guia>

TEMA 5: Mantenimiento y Recuperación Errores

Ejemplo de BACKUP y restauración de un tablespace

```

RMAN> BACKUP TABLESPACE NUEVO;

Starting backup at 29/01/21
using channel ORA_DISK_1
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00007 name=C:\ORACLEXE\APP\ORACLE\PRODUCT\11.2.0\SERVER\DATABASE\NUEVO.DBF
channel ORA_DISK_1: starting piece 1 at 29/01/21
channel ORA_DISK_1: finished piece 1 at 29/01/21
piece handle=C:\ORACLEXE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\01_MF_NNNDP_TAG20210129T005058_J16DG2W4_.BKP tag=TAG20210129T005058 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01
Finished backup at 29/01/21

RMAN>

```

Para restaurar el tablespace paramos la BD, montamos la BD, hacemos restore, recover y abrimos la base de datos

```

RMAN> SHUTDOWN IMMEDIATE

database closed
database dismounted
Oracle instance shut down

RMAN> STARTUP MOUNT

connected to target database (not started)
Oracle instance started
database mounted

Total System Global Area      535662592 bytes
Fixed Size                     1384760 bytes
Variable Size                  390074056 bytes
Database Buffers               138412032 bytes
Redo Buffers                    5791744 bytes

RMAN> RESTORE TABLESPACE NUEVO;

Starting restore at 29/01/21
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=10 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 00007 to C:\ORACLEXE\APP\ORACLE\PRODUCT\11.2.0\SERVER\DATABASE\NUEVO.DBF
channel ORA_DISK_1: reading from backup piece C:\ORACLEXE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\01_MF_NNNDP_TAG20210129T005058_J16DG2W4_.BKP
channel ORA_DISK_1: piece handle=C:\ORACLEXE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\01_MF_NNNDP_TAG20210129T005058_J16DG2W4_.BKP tag=TAG20210129T005058
channel ORA_DISK_1: restored backup piece 1
channel ORA_DISK_1: restore complete, elapsed time: 00:00:01
Finished restore at 29/01/21

RMAN> RECOVER TABLESPACE NUEVO;

Starting recover at 29/01/21
using channel ORA_DISK_1

starting media recovery
media recovery complete, elapsed time: 00:00:01
Finished recover at 29/01/21

RMAN> SQL "ALTER DATABASE OPEN";

sql statement: ALTER DATABASE OPEN

RMAN>

```


TEMA 5: Mantenimiento y Recuperación Errores

También podemos SOLO poner el tablespace offline, hacemos restore, recover y volvemos a ponerlo online

```

RMAN> SQL "ALTER TABLESPACE NUEVO OFFLINE IMMEDIATE";
sql statement: ALTER TABLESPACE NUEVO OFFLINE IMMEDIATE
RMAN> RESTORE TABLESPACE NUEVO;
Starting restore at 29/01/21
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 C:\ORACLE\APP\ORACLE\PRODUCT\1
1.2.0\SERVER\DATABASE\NUEVO.DBF
channel ORA_DISK_1: reading from backup piece C:\ORACLE\APP\ORACLE\FAST_RECOVE
RY_AREA\X\BACKUPSET\2021_01_29\01_MF_NNND TAG20210129T010658_J16FD2Q8_.BKP
channel ORA_DISK_1: piece handle=C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\X\BA
CKUPSET\2021_01_29\01_MF_NNND TAG20210129T010658_J16FD2Q8_.BKP tag=TAG20210129T
010658
channel ORA_DISK_1: restored backup piece 1
channel ORA_DISK_1: restore complete, elapsed time: 00:00:01
Finished restore at 29/01/21
RMAN> RECOVER TABLESPACE NUEVO;
Starting recover at 29/01/21
using channel ORA_DISK_1
starting media recovery
media recovery complete, elapsed time: 00:00:01
Finished recover at 29/01/21
RMAN> SQL "ALTER TABLESPACE NUEVO ONLINE";
sql statement: ALTER TABLESPACE NUEVO ONLINE
RMAN>
    
```

Si en lugar de un tablespace queremos restaurar la base de datos completa teniendo un backup de ella lo haremos del mismo modo pero con RESTORE DATABASE y RECOVER DATABASE

TEMA 5: Mantenimiento y Recuperación Errores

```

RMAN> SHUTDOWN IMMEDIATE

database closed
database dismounted
Oracle instance shut down

RMAN> STARTUP MOUNT

connected to target database (not started)
Oracle instance started
database mounted

Total System Global Area      535662592 bytes

Fixed Size                     1384760 bytes
Variable Size                  390074056 bytes
Database Buffers               138412032 bytes
Redo Buffers                    5791744 bytes

RMAN> RESTORE DATABASE
2> ;

Starting restore at 29/01/21
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=10 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 C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSTEM.DBF
channel ORA_DISK_1: restoring datafile 00002 to C:\ORACLE\APP\ORACLE\ORADATA\XE\UNDOTBS1.DBF
channel ORA_DISK_1: restoring datafile 00003 to C:\ORACLE\APP\ORACLE\ORADATA\XE\SYSAUX.DBF
channel ORA_DISK_1: restoring datafile 00004 to C:\ORACLE\APP\ORACLE\ORADATA\XE\USERS.DBF
channel ORA_DISK_1: restoring datafile 00005 to C:\ORACLE\APP\ORACLE\PRODUCT\1\1.2.0\SERVER\DATABASE\TRABAJO.DBF
channel ORA_DISK_1: restoring datafile 00006 to C:\ORACLE\APP\ORACLE\PRODUCT\1\1.2.0\SERVER\DATABASE\OTRO.DBF
channel ORA_DISK_1: reading from backup piece C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\01_MF_NNNDP_TAG20210129T002338_J16BTTFZ_.BKP
channel ORA_DISK_1: piece handle=C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\01_MF_NNNDP_TAG20210129T002338_J16BTTFZ_.BKP tag=TAG20210129T002338
channel ORA_DISK_1: restored backup piece 1
channel ORA_DISK_1: restore complete, elapsed time: 00:00:55
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 C:\ORACLE\APP\ORACLE\PRODUCT\1\1.2.0\SERVER\DATABASE\NUEVO.DBF
channel ORA_DISK_1: reading from backup piece C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\01_MF_NNNDP_TAG20210129T010658_J16FD2Q8_.BKP
channel ORA_DISK_1: piece handle=C:\ORACLE\APP\ORACLE\FAST_RECOVERY_AREA\XE\BACKUPSET\2021_01_29\01_MF_NNNDP_TAG20210129T010658_J16FD2Q8_.BKP tag=TAG20210129T010658
channel ORA_DISK_1: restored backup piece 1
channel ORA_DISK_1: restore complete, elapsed time: 00:00:01
Finished restore at 29/01/21

RMAN> RECOVER DATABASE;

Starting recover at 29/01/21
using channel ORA_DISK_1

starting media recovery
media recovery complete, elapsed time: 00:00:01
Finished recover at 29/01/21

RMAN> SQL "ALTER DATABASE OPEN";

sql statement: ALTER DATABASE OPEN
    
```