

Modulo 6  
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Ejercicio 3

Backup incremental

1. Utilizando el tablespace tbsp\_bk y el usuario user06bk crear la tabla prueba con el atributo codigo de tipo number autogenerado y el atributo datos de caracter variable e insertar 10 registros
2. Obtener la cantidad de registros de la tabla prueba
3. Realizar un backup full nivel 0
4. Listar el backup y observar el tamaño generado
5. Ingresar más datos a la tabla y verificar la cantidad de registros
6. Realizar un backup incremental diferencial y ver el tamaño del backup generado
7. Modificar los primeros 500 registros de la tabla
8. Realizar un backup incremental acumulativo y ver el tamaño del backup generado
9. Ingresar más datos a la tabla y verificar la cantidad de registros
10. Realizar nuevamente un backup incremental diferencial y observar su tamaño
11. Realizar un backup incremental full nivel 0

1.

```
SQL*Plus: Release 19.0.0.0.0 - Production on Fri Feb 2 16:13:18 2024
Version 19.3.0.0.0

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Last Successful login time: Sat Jan 27 2024 13:45:08 -06:00

Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.3.0.0.0

user06bk@jbadip02> create table prueba(codigo number generated by default on null as identity, datos varchar2(15));
Table created.

user06bk@jbadip02> 
```

2.

```
user06bk@jbadip02> insert into prueba(datos) values ('val1');
```

```
> TIMELINE
```

```
1 row created. 0 0
```

```
begin
```

```
2 for i in 1..10 loop
3   insert into prueba(datos)
4     select datos from prueba;
5 end loop;
6 commit;
7 end;
8 /
```

```
PL/SQL procedure successfully completed.
```

```
user06bk@jbadip02> select count(*) from prueba;
```

```
COUNT(*)
```

```
-----
2048
```

```
user06bk@jbadip02> |
```

3.

```
RMAN> backup incremental level 0 database tag bki_0;
```

```
Starting backup at 02-FEB-24
```

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

```
allocated channel: ORA_DISK_1
```

```
channel ORA_DISK_1: SID=179 device type=DISK
```

```
channel ORA_DISK_1: starting incremental level 0 datafile backup set
```

```
channel ORA_DISK_1: specifying datafile(s) in backup set
```

```
input datafile file number=00001 name=/u01/app/oracle/oradata/JBADIP02/system01.dbf
```

```
input datafile file number=00002 name=/u01/app/oracle/oradata/JBADIP02/sysaux01.dbf
```

```
input datafile file number=00004 name=/u01/app/oracle/oradata/JBADIP02/users01.dbf
```

```
input datafile file number=00005 name=/u01/app/oracle/oradata/JBADIP02/tbsp_bk
```

```
input datafile file number=00003 name=/u01/app/oracle/oradata/JBADIP02/undo01.dbf
```

```
channel ORA_DISK_1: starting piece 1 at 02-FEB-24
```

```
channel ORA_DISK_1: finished piece 1 at 02-FEB-24
```

```
piece handle=/unam-diplomado-bd/fast-recovery-area/JBADIP02/backupset/2024_02_02/o1_mf_nnnd0_BKI_0_lvty6tf_.bkp tag=BKI_0 comment=NONE
```

```
NE
```

```
channel ORA_DISK_1: backup set complete, elapsed time: 00:01:56
```

```
Finished backup at 02-FEB-24
```

```
Starting Control File and SPFILE Autobackup at 02-FEB-24
```

```
piece handle=/unam-diplomado-bd/fast-recovery-area/JBADIP02/autobackup/2024_02_02/o1_mf_s_1159892827_lvtv2b2o_.bkp comment=NONE
```

```
Finished Control File and SPFILE Autobackup at 02-FEB-24
```

```
RMAN> |
```

4.

```
RMAN> list backup summary;
```

```
List of Backups
```

```
=====
```

Key	TY	LV	S	Device	Type	Completion Time	#Pieces	#Copies	Compressed	Tag
12	B	0	A	DISK		02-FEB-24	1	1	NO	BKI_0
13	B	F	A	DISK		02-FEB-24	1	1	NO	TAG20240202T162705

```
RMAN> |
```

6.

```

RMAN> backup incremental level 1 database tag BKInc_D1;

Starting backup at 02-FEB-24
using channel ORA_DISK_1
channel ORA_DISK_1: starting incremental level 1 datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00001 name=/u01/app/oracle/oradata/JBADIP02/system01.dbf
input datafile file number=00002 name=/u01/app/oracle/oradata/JBADIP02/sysaux01.dbf
input datafile file number=00004 name=/u01/app/oracle/oradata/JBADIP02/users01.dbf
input datafile file number=00005 name=/u01/app/oracle/oradata/JBADIP02/tbsp_bk
input datafile file number=00003 name=/u01/app/oracle/oradata/JBADIP02/undo01.dbf
channel ORA_DISK_1: starting piece 1 at 02-FEB-24
channel ORA_DISK_1: finished piece 1 at 02-FEB-24
piece handle=/unam-diplomado-bd/fast-recovery-area/JBADIP02/backupset/2024_02_02/o1_mf_nnnd1_BKINC_D1_lvtvr45d_.bkp tag=BKINC_D1 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:03:46
Finished backup at 02-FEB-24

Starting Control File and SPFILE Autobackup at 02-FEB-24
piece handle=/unam-diplomado-bd/fast-recovery-area/JBADIP02/autobackup/2024_02_02/o1_mf_s_1159893566_lvtvs4cz_.bkp comment=NONE
Finished Control File and SPFILE Autobackup at 02-FEB-24

```

```

BS Key Type LV Size Device Type Elapsed Time Completion Time
-----
12      Incr 0 1.32G DISK 00:01:46 02-FEB-24
BP Key: 12 Status: AVAILABLE Compressed: NO Tag: BKI_0
Piece Name: /unam-diplomado-bd/fast-recovery-area/JBADIP02/backupset/2024_02_02/o1_mf_nnnd0_BKI_0_lvtty6tf_.bkp
List of Datafiles in backup set 12
File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name
-----
1 0 Incr 3021713 02-FEB-24 NO /u01/app/oracle/oradata/JBADIP02/system01.dbf
2 0 Incr 3021713 02-FEB-24 NO /u01/app/oracle/oradata/JBADIP02/sysaux01.dbf
3 0 Incr 3021713 02-FEB-24 NO /u01/app/oracle/oradata/JBADIP02/undo01.dbf
4 0 Incr 3021713 02-FEB-24 NO /u01/app/oracle/oradata/JBADIP02/users01.dbf
5 0 Incr 3021713 02-FEB-24 NO /u01/app/oracle/oradata/JBADIP02/tbsp_bk

BS Key Type LV Size Device Type Elapsed Time Completion Time
-----
13      Full 17.83M DISK 00:00:16 02-FEB-24
BP Key: 13 Status: AVAILABLE Compressed: NO Tag: TAG20240202T162705
Piece Name: /unam-diplomado-bd/fast-recovery-area/JBADIP02/autobackup/2024_02_02/o1_mf_s_1159892827_lvtv2b2o_.bkp
SPFILE Included: Modification time: 02-FEB-24
SPFILE db unique name: JBADIP02
Control File Included: Ckp SCN: 3021774 Ckp time: 02-FEB-24

BS Key Type LV Size Device Type Elapsed Time Completion Time
-----
14      Incr 1 34.71M DISK 00:03:32 02-FEB-24
BP Key: 14 Status: AVAILABLE Compressed: NO Tag: BKINC_D1
Piece Name: /unam-diplomado-bd/fast-recovery-area/JBADIP02/backupset/2024_02_02/o1_mf_nnnd1_BKINC_D1_lvtvr45d_.bkp
List of Datafiles in backup set 14
File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name
-----
1 1 Incr 3084045 02-FEB-24 3084059 NO /u01/app/oracle/oradata/JBADIP02/system01.dbf
2 1 Incr 3084045 02-FEB-24 3084072 NO /u01/app/oracle/oradata/JBADIP02/sysaux01.dbf
3 1 Incr 3084045 02-FEB-24 NO /u01/app/oracle/oradata/JBADIP02/undo01.dbf
4 1 Incr 3084045 02-FEB-24 NO /u01/app/oracle/oradata/JBADIP02/users01.dbf
5 1 Incr 3084045 02-FEB-24 NO /u01/app/oracle/oradata/JBADIP02/tbsp_bk

```

8.

```

RMAN> backup incremental level 1 cumulative database tag BkInc_c1
2> ;

Starting backup at 02-FEB-24
using channel ORA_DISK_1
channel ORA_DISK_1: starting incremental level 1 datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00001 name=/u01/app/oracle/oradata/JBADIP02/system01.dbf
input datafile file number=00002 name=/u01/app/oracle/oradata/JBADIP02/sysaux01.dbf
input datafile file number=00004 name=/u01/app/oracle/oradata/JBADIP02/users01.dbf
input datafile file number=00005 name=/u01/app/oracle/oradata/JBADIP02/tbsp_bk
input datafile file number=00003 name=/u01/app/oracle/oradata/JBADIP02/undo01.dbf
channel ORA_DISK_1: starting piece 1 at 02-FEB-24
channel ORA_DISK_1: finished piece 1 at 02-FEB-24
piece handle=/unam-diplomado-bd/fast-recovery-area/JBADIP02/backupset/2024_02_02/o1_mf_nnnd1_BKINC_C1_lvtw39yn_.bkp tag=BKINC_C1 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:08
Finished backup at 02-FEB-24

Starting Control File and SPFILE Autobackup at 02-FEB-24
piece handle=/unam-diplomado-bd/fast-recovery-area/JBADIP02/autobackup/2024_02_02/o1_mf_s_1159893904_lvtw3sh0_.bkp comment=NONE
Finished Control File and SPFILE Autobackup at 02-FEB-24

```

BS Key	Type	LV Size	Device Type	Elapsed Time	Completion Time
16	Incr 1	34.91M	DISK	00:00:03	02-FEB-24
BP Key: 16 Status: AVAILABLE Compressed: NO Tag: BKINC_C1 Piece Name: /unam-diplomado-bd/fast-recovery-area/JBADIP02/backupset/2024_02_02/o1_mf_nnnd1_BKINC_C1_lvtw39yn_.bkp List of Datafiles in backup set 16					
File	LV	Type	Ckp SCN	Ckp Time	Abs Fuz SCN Sparse Name
1	1	Incr	3084365	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/system01.dbf
2	1	Incr	3084365	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/sysaux01.dbf
3	1	Incr	3084365	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/undotbs01.dbf
4	1	Incr	3084365	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/users01.dbf
5	1	Incr	3084365	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/tbsp_bk
BS Key	Type	LV Size	Device Type	Elapsed Time	Completion Time
17	Full	17.83M	DISK	00:00:09	02-FEB-24
BP Key: 17 Status: AVAILABLE Compressed: NO Tag: TAG20240202T164504 Piece Name: /unam-diplomado-bd/fast-recovery-area/JBADIP02/autobackup/2024_02_02/o1_mf_s_1159893904_lvtw3sh0_.bkp SPFILE Included: Modification time: 02-FEB-24 SPFILE db unique name: JBADIP02 Control File Included: Ckp SCN: 3084376 Ckp time: 02-FEB-24					

10.

```

RMAN> backup incremental level 1 database tag bkInc_D2;

Starting backup at 02-FEB-24
using channel ORA_DISK_1
channel ORA_DISK_1: starting incremental level 1 datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00001 name=/u01/app/oracle/oradata/JBADIP02/system01.dbf
input datafile file number=00002 name=/u01/app/oracle/oradata/JBADIP02/sysaux01.dbf
input datafile file number=00004 name=/u01/app/oracle/oradata/JBADIP02/users01.dbf
input datafile file number=00005 name=/u01/app/oracle/oradata/JBADIP02/tbsp_bk
input datafile file number=00003 name=/u01/app/oracle/oradata/JBADIP02/undotbs01.dbf
channel ORA_DISK_1: starting piece 1 at 02-FEB-24
channel ORA_DISK_1: finished piece 1 at 02-FEB-24
piece handle=/unam-diplomado-bd/fast-recovery-area/JBADIP02/backupset/2024_02_02/o1_mf_nnnd1_BKINC_D2_lvtw83l9_.bkp tag=BKINC_D2 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:16
Finished backup at 02-FEB-24

```

11.

```

RMAN> backup incremental level 0 database tag Bkf_0f;

Starting backup at 02-FEB-24
using channel ORA_DISK_1
channel ORA_DISK_1: starting incremental level 0 datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00001 name=/u01/app/oracle/oradata/JBADIP02/system01.dbf
input datafile file number=00002 name=/u01/app/oracle/oradata/JBADIP02/sysaux01.dbf
input datafile file number=00004 name=/u01/app/oracle/oradata/JBADIP02/users01.dbf
input datafile file number=00005 name=/u01/app/oracle/oradata/JBADIP02/tbsp_bk
input datafile file number=00003 name=/u01/app/oracle/oradata/JBADIP02/undotbs01.dbf
channel ORA_DISK_1: starting piece 1 at 02-FEB-24

```

BS Key	Type	LV Size	Device Type	Elapsed Time	Completion Time
20	Incr 0	1.35G	DISK	00:01:11	02-FEB-24
BP Key: 20 Status: AVAILABLE Compressed: NO Tag: BKF_0F Piece Name: /unam-diplomado-bd/fast-recovery-area/JBADIP02/backupset/2024_02_02/o1_mf_nnnd0_BKF_0F_lvtwhcsd_.bkp List of Datafiles in backup set 20					
File	LV	Type	Ckp SCN	Ckp Time	Abs Fuz SCN Sparse Name
1	0	Incr	3085197	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/system01.dbf
2	0	Incr	3085197	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/sysaux01.dbf
3	0	Incr	3085197	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/undotbs01.dbf
4	0	Incr	3085197	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/users01.dbf
5	0	Incr	3085197	02-FEB-24	NO /u01/app/oracle/oradata/JBADIP02/tbsp_bk
BS Key	Type	LV Size	Device Type	Elapsed Time	Completion Time
21	Full	17.83M	DISK	00:00:07	02-FEB-24
BP Key: 21 Status: AVAILABLE Compressed: NO Tag: TAG20240202T165248 Piece Name: /unam-diplomado-bd/fast-recovery-area/JBADIP02/autobackup/2024_02_02/o1_mf_s_1159894370_lvtwl8g9_.bkp SPFILE Included: Modification time: 02-FEB-24 SPFILE db unique name: JBADIP02 Control File Included: Ckp SCN: 3085252 Ckp time: 02-FEB-24					

CONCLUSIONES

¿El ejercicio aportó y/o mejoró la comprensión del concepto ?

Con este ejercicio pudimos poner en práctica las diferencias entre backups de nivel 0 y nivel 1 (diferenciales y cumulativos).

Problemas identificados durante su elaboración así como la forma en la que se solucionaron  
no se tuvo problemas

Comentarios, sugerencias.