***SESSION 3 CREATING/ALTERING TABLESPACES in SQL\*PLUS***

***and Tablespace/Datafile Performance/Dictionary Views***

Last login: Thu Feb 3 19:52:06 2022 from 10.30.2.33

[student@oracledb19c ~]$ **su - oracle**

Password:

Last login: Thu Feb 3 19:53:27 EST 2022 on pts/0

The Oracle base remains unchanged with value /opt/oracle/app/oracle

[oracle@oracledb19c ~]$ **cd /opt/oracle/app/oracle/oradata**

[oracle@oracledb19c oradata]$ **ls -l**

total 0

drwxr-x--- 2 oracle dba 179 Jan 28 10:29 LEMON

drwxr-x--- 2 oracle dba 179 Mar 10 2021 STUDENT

**\* Let’s make 4 new Folders that will mimic 4 new Disks \***

[oracle@oracledb19c oradata]$ **mkdir DISK2 DISK3 DISK4 DISK5**

[oracle@oracledb19c oradata]$ **ls -l**

total 0

drwxr-xr-x 2 oracle dba 6 Feb 3 19:54 DISK2

drwxr-xr-x 2 oracle dba 6 Feb 3 19:54 DISK3

drwxr-xr-x 2 oracle dba 6 Feb 3 19:54 DISK4

drwxr-xr-x 2 oracle dba 6 Feb 3 19:54 DISK5

drwxr-x--- 2 oracle dba 179 Jan 28 10:29 LEMON

drwxr-x--- 2 oracle dba 179 Mar 10 2021 STUDENT

[oracle@oracledb19c oradata]$ **cd STUDENT**

**\* In this folder are ALL our Logfiles and Datafiles plus the 1st copy of our Controlfile \***

[oracle@oracledb19c STUDENT]$ ls -l

total 3128888

-rw-r----- 1 oracle dba 10600448 Feb 4 10:23 control01.ctl

-rw-r----- 1 oracle dba 209715712 Feb 4 07:03 redo01.log

-rw-r----- 1 oracle dba 209715712 Feb 4 10:22 redo02.log

-rw-r----- 1 oracle dba 209715712 Feb 3 20:18 redo03.log

-rw-r----- 1 oracle dba 1101012992 Feb 4 10:20 sysaux01.dbf

-rw-r----- 1 oracle dba 975183872 Feb 4 10:19 system01.dbf

-rw-r----- 1 oracle dba 137371648 Feb 3 22:00 temp01.dbf

-rw-r----- 1 oracle dba 356524032 Feb 4 10:19 undotbs01.dbf

-rw-r----- 1 oracle dba 5251072 Feb 4 07:08 users01.dbf

[oracle@oracledb19c STUDENT]$ **sqlplus / as sysdba**

SQL\*Plus: Release 19.0.0.0.0 - Production on Fri Feb 4 10:30:26 2022

Version 19.3.0.0.0

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**Connected to: 🡨 Our Instance student is running**

Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production

Version 19.3.0.0.0

SQL> **set pagesize 120**

SQL> **set linesize 120**

SQL> **select instance\_name, status FROM v$instance;**

INSTANCE\_NAME STATUS

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student OPEN

**\* Lets create a NEW tablespace called MINE, with initial size of 10M and uniform size of its extents is 0.5M (or 512k). It may be auto-extended with extents of also 0.5M up to 20M. In the syntax below, BLACK font is for DEFAULT options and may be skipped. \***

SQL> **CREATE SMALLFILE TABLESPACE mine**

**DATAFILE '/opt/oracle/app/oracle/oradata/STUDENT/mine01.dbf' SIZE 10M**

**AUTOEXTEND ON NEXT 512K MAXSIZE 20M**

**LOGGING EXTENT MANAGEMENT LOCAL**

**UNIFORM SIZE 512K**

**SEGMENT SPACE MANAGEMENT AUTO ;**

Tablespace created.

**\* Let’s create a small tablespace, with initial size of 2M and uniform size of its extents is 80K. It can not auto-extend. \***

SQL> **CREATE TABLESPACE joke**

**DATAFILE '/opt/oracle/app/oracle/oradata/STUDENT/joke01.dbf' SIZE 2M**

**AUTOEXTEND OFF**

**UNIFORM SIZE 80K;**

Tablespace created.

**Three methods to Change the Size of a Tablespace**

1. **ADD NEW DATAFILE**

SQL> **ALTER TABLESPACE joke**

**ADD DATAFILE '/opt/oracle/app/oracle/oradata/DISK2/joke02.dbf' SIZE 3M;**

Tablespace altered.

1. **RESIZE an EXISTING DATAFILE**

SQL> **ALTER DATABASE DATAFILE**

**'/opt/oracle/app/oracle/oradata/STUDENT/joke01.dbf' RESIZE 15M;**

Database altered.

1. **Turn ON the AUTOEXTEND feature for an EXISTING DATAFILE**

SQL> **ALTER DATABASE DATAFILE '/opt/oracle/app/oracle/oradata/DISK2/joke02.dbf'**

**AUTOEXTEND ON NEXT 80K MAXSIZE 10M;**

Database altered.

**Performance/Dictionary Views for Tablespaces/Datafiles**

SQL> **desc v$tablespace**

Name Null? Type

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TS# NUMBER

NAME VARCHAR2(30)

INCLUDED\_IN\_DATABASE\_BACKUP VARCHAR2(3)

BIGFILE VARCHAR2(3)

FLASHBACK\_ON VARCHAR2(3)

ENCRYPT\_IN\_BACKUP VARCHAR2(3)

CON\_ID NUMBER

SQL> **SELECT ts#, name FROM V$TABLESPACE;**

TS# NAME

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1 SYSAUX

0 SYSTEM

2 UNDOTBS1

4 USERS

3 TEMP

6 MINE

7 JOKE

7 rows selected.

SQL> **SELECT tablespace\_name, initial\_extent, status, contents,**

**allocation\_type**

**FROM dba\_tablespaces**

**WHERE tablespace\_name IN ('USERS', 'MINE', 'JOKE');**

TABLESPACE\_NAME INITIAL\_EXTENT STATUS CONTENTS

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EXTENT\_MAN ALLOCATIO

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JOKE 81920 ONLINE PERMANENT

LOCAL UNIFORM

MINE 524288 ONLINE PERMANENT

LOCAL UNIFORM

USERS 65536 ONLINE PERMANENT

LOCAL SYSTEM

**\* We can format this output better like shown below \***

SQL> **column tablespace\_name format a15**

SQL> **column extent\_management format a6**

QL> **column contents format a12**

SQL> /

TABLESPACE\_NAME INITIAL\_EXTENT STATUS CONTENTS EXTENT ALLOCATIO

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JOKE 81920 ONLINE PERMANENT LOCAL UNIFORM

MINE 524288 ONLINE PERMANENT LOCAL UNIFORM

USERS 65536 ONLINE PERMANENT LOCAL **SYSTEM**

*** In the last row SYSTEM means AUTOALLOCATE option for Extent Allocation Type***

SQL> **SELECT file#, name, status, bytes, create\_bytes**

**FROM V$DATAFILE WHERE ts# IN (4,6,7);**

FILE#

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NAME

-----------------------------------------------------------------------------

STATUS BYTES CREATE\_BYTES

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2

/opt/oracle/app/oracle/oradata/STUDENT/joke01.dbf

ONLINE 15728640 5242880

5

/opt/oracle/app/oracle/oradata/STUDENT/mine01.dbf

ONLINE 10485760 10485760

7

/opt/oracle/app/oracle/oradata/STUDENT/users01.dbf

ONLINE 5242880 0

8

/opt/oracle/app/oracle/oradata/DISK2/joke02.dbf

ONLINE 3145728 3145728

***🡨 This view can show us the current and original size in bytes for data files.***

SQL> **column file# format 999**

SQL> **column name format a50**

SQL> /

FILE# NAME STATUS BYTES CREATE\_BYTES

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2 /opt/oracle/app/oracle/oradata/STUDENT/joke01.dbf ONLINE 15728640 5242880

5 /opt/oracle/app/oracle/oradata/STUDENT/mine01.dbf ONLINE 10485760 10485760

7 /opt/oracle/app/oracle/oradata/STUDENT/users01.dbf ONLINE 5242880 0

8 /opt/oracle/app/oracle/oradata/DISK2/joke02.dbf ONLINE 3145728 3145728

SQL> **SELECT file#, name, bytes, create\_bytes**

**FROM V$DATAFILE WHERE ts# IN (4,6,7);**

FILE# NAME BYTES CREATE\_BYTES

----- -------------------------------------------------- ------- ------------

2 /opt/oracle/app/oracle/oradata/STUDENT/joke01.dbf 15728640 5242880

5 /opt/oracle/app/oracle/oradata/STUDENT/mine01.dbf 10485760 10485760

7 /opt/oracle/app/oracle/oradata/STUDENT/users01.dbf 5242880 0

8 /opt/oracle/app/oracle/oradata/DISK2/joke02.dbf 3145728 3145728

SQL> **SELECT file\_id, file\_name, status,bytes,**

**autoextensible, increment\_by, maxbytes**

**FROM dba\_data\_files**

**WHERE tablespace\_name IN ('USERS', 'MINE', 'JOKE');**

FILE\_ID

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FILE\_NAME

-----------------------------------------------------------

STATUS BYTES AUT INCREMENT\_BY MAXBYTES

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5

/opt/oracle/app/oracle/oradata/STUDENT/mine01.dbf

AVAILABLE 10485760 YES 64 20971520

7

/opt/oracle/app/oracle/oradata/STUDENT/users01.dbf

AVAILABLE 5242880 YES 160 3.4360E+10

2

/opt/oracle/app/oracle/oradata/STUDENT/joke01.dbf

AVAILABLE 15728640 NO 0 0

8

/opt/oracle/app/oracle/oradata/DISK2/joke02.dbf

AVAILABLE 3145728 YES 10 10485760

* ***This view can show us 3 AUTOEXTEND components for data files***

SQL> **column file\_id format 99**

SQL> **column file\_name format a50**

SQL> /

FILE\_ID FILE\_NAME STATUS

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BYTES AUT INCREMENT\_BY MAXBYTES

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5 /opt/oracle/app/oracle/oradata/STUDENT/mine01.dbf AVAILABLE 10485760 YES 64 20971520

7 /opt/oracle/app/oracle/oradata/STUDENT/users01.dbf AVAILABLE 5242880 YES 160 3.4360E+10

2 /opt/oracle/app/oracle/oradata/STUDENT/joke01.dbf AVAILABLE 15728640 NO 0 0

8 /opt/oracle/app/oracle/oradata/DISK2/joke02.dbf AVAILABLE 3145728 YES 10 10485760

SQL> **exit**

Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production

Version 19.3.0.0.0

[oracle@oracledb19c ~]$ exit

logout

[student@oracledb19c ~]$ exit

logout