HOMEWORK 3

Oracle 11g Tablespace, Control File, and Redo File

Part I: Create Tablespaces

1. Create a permanent tablespace with the following name and storage - DATA01 (1MB) locally managed with uniform sized extents. Ensure that every used extent size in the tablespace is a multiple of 100 KB.

```
SQL> CREATE TABLESPACE data01 DATAFILE 'S:\app\sdevagup\oradata\sdevagupDBA\data01.dbf' SIZE 1M EXTENT
          MANAGEMENT LOCAL UNIFORM SIZE 100K;

Tablespace created.

SQL> COLUMN name FORMAT a50
SQL> SET LINESIZE 80
SQL> SET PAGESIZE 999
SQL> SELECT name, bytes, create_bytes FROM v$datafile;

NAME                                               BYTES    CREATE_BYTES
-------------------------------------------------- ---------- ------------
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\SYSTEM01.DBF          723517440            0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\SYSAUX01.DBF          587202560            0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\UNDOTBS01.DBF          57671680            0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\USERS01.DBF            5242880            0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\EXAMPLE01.DBF        104857600       104857600
S:\APP\SDEVAGUP\ORADATA\LAB454.HOLLYWOOD.DBF               5242880         5242880
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\DATA01.DBF             1048576         1048576

7 rows selected.
```

2. Create a permanent tablespace with the following name and storage - INDEX02 (2MB) locally managed with uniform sized extents of 40K. Enable automatic extension of 500 KB when more extents are required with a maximum size of 5 MB.

```
SQL> CREATE TABLESPACE index02 DATAFILE 'S:\app\sdevagup\oradata\sdevagupDBA\index02.dbf' SIZE 2M AUTOEXTEND ON
          NEXT 500K MAXSIZE 5M
  2  EXTENT MANAGEMENT LOCAL UNIFORM SIZE 40K;

Tablespace created.

SQL> COLUMN name FORMAT a50
SQL> SET LINESIZE 80
SQL> SET PAGESIZE 999
SQL> SELECT name, bytes, create_bytes FROM v$datafile;

NAME                                               BYTES    CREATE_BYTES
-------------------------------------------------- ---------- ------------
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\SYSTEM01.DBF          723517440            0
S:\APP\SDEVGAUP\ORADATA\SDEVAGUPDBA\SYSAUX01.DBF          587202560            0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\UNDOTBS01.DBF          57671680            0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\USERS01.DBF            5242880            0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\EXAMPLE01.DBF        104857600       104857600
S:\APP\SDEVAGUP\ORADATA\LAB454.HOLLYWOOD.DBF               5242880         5242880
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\DATA01.DBF             1048576         1048576
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\INDEX01.DBF            2097152         2097152

8 rows selected.
```

3. Create a permanent tablespace with the following name and storage – RONLY03 (3MB) for read-only tables with the default storage. DO NOT make the tablespace read only at this time.

```
SQL> CREATE TABLESPACE ronly03 DATAFILE 'S:\app\sdevagup\oradata\sdevagupDBA\ronly03.dbf' SIZE 3M;

Tablespace created.

SQL> COLUMN name FORMAT a50
SQL> SET LINESIZE 80
SQL> SET PAGESIZE 999
SQL> SELECT name, bytes, create_bytes FROM v$datafile;

NAME                                               BYTES    CREATE_BYTES
-------------------------------------------------- ---------- ------------
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\SYSTEM01.DBF    723517440          0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\SYSAUX01.DBF    587202560          0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\UNDOTBS01.DBF    57671680          0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\USERS01.DBF      5242880          0
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\EXAMPLE01.DBF  104857600  104857600
S:\APP\SDEVAGUP\ORADATA\LAB454.HOLLYWOOD.DBF         5242880    5242880
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\DATA01.DBF       1048576    1048576
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\INDEX01.DBF      2097152    2097152
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\RONLY03.DBF      3145728    3145728

9 rows selected.
```

4. Display the tablespace information from the data dictionary.

```
SQL> SELECT TABLESPACE_NAME "TABLESPACE",
  2    INITIAL_EXTENT "INITIAL_EXT",
  3    NEXT_EXTENT "NEXT_EXT",
  4    MIN_EXTENTS "MIN_EXT",
  5    MAX_EXTENTS "MAX_EXT",
  6    PCT_INCREASE
  7    FROM DBA_TABLESPACES;

TABLESPACE                INITIAL_EXT  NEXT_EXT   MIN_EXT    MAX_EXT
------------------------- ----------- ---------- ---------- ----------
PCT_INCREASE
------------
SYSTEM                        65536               1 2147483645


SYSAUX                        65536               1 2147483645


UNDOTBS1                      65536               1 2147483645


TEMP                        1048576    1048576         1
          0

USERS                        65536               1 2147483645


EXAMPLE                       65536               1 2147483645


HOLLYWOOD                     65536               1 2147483645


DATA01                      106496     106496         1 2147483645
          0

INDEX02                      40960      40960         1 2147483645
```

0

RONLY03 65536 1 2147483645

10 rows selected.

5. Allocate 500K more disk space to tablespace DATA01 and verify the result. ***(Hint: Query v$datafile)***

```
SQL> ALTER DATABASE DATAFILE 'S:\app\sdevagup\oradata\sdevagupDBA\data01.dbf' RESIZE 500K;

Database altered.
SQL> COLUMN name FORMAT a40
SQL> SELECT name, bytes, create_bytes FROM v$datafile WHERE name LIKE '%data01%';

no rows selected
```

6. Create a new directory called U4 in C:\. Relocate tablespace INDEX02 to C:\U4. Verify relocation and status of INDEX02.

```
SQL> ALTER TABLESPACE index02 OFFLINE;

Tablespace altered.

SQL> SELECT name, status FROM v$datafile;

NAME                                     STATUS
---------------------------------------- -------
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\SYSTEM01 SYSTEM
.DBF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\SYSAUX01 ONLINE
.DBF

S:\APP\SDEVAGUP\ORADATA\SDEVGAUPDBA\UNDOTBS0 ONLINE
1.DBF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\USERS01. ONLINE
DBF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\EXAMPLE0 ONLINE
1.DBF

S:\APP\SDEVAGUP\ORADATA\LAB454.HOLLYWOOD.D ONLINE
BF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\DATA01.D ONLINE
BF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\INDEX01. OFFLINE
DBF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\RONLY03. ONLINE
DBF


9 rows selected.

SQL> HOST move S:\app\sdevagup\oradata\sdevagupDBA\index02.dbf S:\app\sdevagup\oradata\sdevagupDBA\U4\index02.dbf
1 file(s) moved.
SQL> ALTER TABLESPACE index02 RENAME DATAFILE 'S:\app\sdevagup\oradata\sdevagupDBA\index02.dbf' TO
          'S:\app\sdevagup\oradata\sdevagupDBA\U4\index02.dbf';
Tablespace altered.

SQL> ALTER TABLESPACE index02 ONLINE;
```

Tablespace altered.

SQL> SELECT name, status FROM v$datafile;

```
NAME                                     STATUS
---------------------------------------- -------
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\SYSTEM01 SYSTEM
.DBF

S:\APP\SDEVAGUP\ORADATA\SDEAVGUPDBA\SYSAUX01 ONLINE
.DBF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\UNDOTBS0 ONLINE
1.DBF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\USERS01. ONLINE
DBF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\EXAMPLE0 ONLINE
1.DBF

S:\APP\SDEVAGUP\ORADATA\LAB454.HOLLYWOOD.D ONLINE
BF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\DATA01.D ONLINE
BF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\INDEX01. ONLINE
DBF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\RONLY03. ONLINE
DBF

9 rows selected.
```

7. Create a table with only one column in tablespace RONLY03. Make tablespace RONLY03 read-only. Run a query to verify it.

SQL> CREATE TABLE table1 (x CHAR(1)) TABLESPACE ronly03;

Table created.

SQL> ALTER TABLESPACE ronly03 READ ONLY;

Tablespace altered.

8. Attempt to create an additional table TABLE2 with only one column in RONLY03. Drop the first created table, TABLE1. What happens?

SQL> CREATE TABLE table1 (x CHAR(1)) TABLESPACE ronly03;

Table created.

SQL> SELECT name, enabled, status FROM v$datafile;

```
NAME                                     ENABLED    STATUS
---------------------------------------- ---------- -------
S:\APP\SDEVAGUP\ORADATA\SDEAVAGUPDBA\SYSTEM01 READ WRITE SYSTEM
.DBF

S:\APP\SDEAVAGUP\ORADATA\SDEVAGUPDBA\SYSAUX01 READ WRITE ONLINE
.DBF

S:\APP\SDEAVAGUP\ORADATA\SDEVAGUPDBA\UNDOTBS0 READ WRITE ONLINE
1.DBF
```

S:\APP\SDEVAGUP\ORADATA\SDEAVAGUPDBA\USERS01. READ WRITE ONLINE
DBF

S:\APP\SDEVAGUP\ORADATA\SDEAVAGUPDBA\EXAMPLE0 READ WRITE ONLINE
1.DBF

S:\APP\SDEAVAGUP\ORADATA\LAB454.HOLLYWOOD.D READ WRITE ONLINE
BF

S:\APP\SDEAVAGUP\ORADATA\SDEAVAGUPDBA\DATA01.D READ WRITE ONLINE
BF

S:\APP\SDEVAGUP\ORADATA\SDEAVAGUPDBA\INDEX01. READ WRITE ONLINE
DBF

S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\RONLY03. READ ONLY ONLINE
DBF

9 rows selected.

SQL> CREATE TABLE table2 (y CHAR(1)) TABLESPACE ronly03;

Table created.

SQL> DROP TABLE table1;

Table dropped.

9. Drop tablespace RONLY03 and the associated datafile. Verify it.

SQL> DROP TABLESPACE ronly03 INCLUDING CONTENTS AND DATAFILES;

Tablespace dropped.

SQL> SELECT * FROM v$tablespace;

TS#	NAME	INC	BIG	FLA	ENC
0	SYSTEM	YES	NO	YES	
1	SYSAUX	YES	NO	YES	
2	UNDOTBS1	YES	NO	YES	
4	USERS	YES	NO	YES	
3	TEMP	NO	NO	YES	
6	EXAMPLE	YES	NO	YES	
9	HOLLYWOOD	YES	NO	YES	
10	DATA01	YES	NO	YES	
11	INDEX02	YES	NO	YES	

9 rows selected.

10. Let's try to use OMF. Please set DB_CREATE_FILE_DEST to C:\U4 in memory only.
Create tablespace DATA03 size 5M without specifying a file location.
What's the datafile name associate with DATA03 tablespace? .

SQL> ALTER SYSTEM SET DB_CREATE_FILE_DEST='S:\app\sdevagup\oradata\sdevagupDBA\U4' SCOPE=MEMORY;

System altered.

SQL> CREATE TABLESPACE data03 DATAFILE SIZE 5M;

Tablespace created.
SQL> SELECT * FROM v$tablespace;

```
      TS# NAME                           INC BIG FLA ENC
--------- ------------------------------ --- --- --- ---
        0 SYSTEM                         YES NO  YES
        1 SYSAUX                         YES NO  YES
        2 UNDOTBS1                       YES NO  YES
        4 USERS                          YES NO  YES
        3 TEMP                           NO  NO  YES
        6 EXAMPLE                        YES NO  YES
        9 HOLLYWOOD                      YES NO  YES
       10 DATA01                         YES NO  YES
       11 INDEX02                        YES NO  YES
       13 DATA03                         YES NO  YES

10 rows selected.
```

Part II: Control Files and Redo Log Files

11. Where is the existing control file located and what is the name?

```
SQL> COL name FORMAT a50
SQL> SELECT * FROM v$controlfile;

STATUS  NAME                                               IS_ BLOCK_SIZE
------- -------------------------------------------------- --- ----------
FILE_SIZE_BLKS
--------------
        S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\CONTROL01.CTL      NO      16384
          594

        S:\APP\SDEAVAGUP\FLASH_RECOVERY_AREA\SDEAVAGUPDBA\CONTRO NO      16384
        L02.CTL
          594
```

12. Try to start the database without any control files. Simulate this by changing one of the control file in the parameter file or deleting one of the control file. What happens in the startup? What are the error messages in the Alert log?

```
SQL> delete S:\app\sdevagup\oradata\sdevagupDBA\CONTROL01.CTL
  2  connect sys/goldy as sysdba
  3
SQL> connect sys/goldy as sysdba
Connected to an idle instance.
SQL> startup
ORACLE instance started.

Total System Global Area  417546240 bytes
Fixed Size                 2176328 bytes
Variable Size            251660984 bytes
Database Buffers         155189248 bytes
Redo Buffers               8519680 bytes
Database mounted.
Database opened.
```

13. Restore Control01.CTL from your recycle bin and then restart Oracle.

```
SQL> shutdown immediate
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> connect sys/goldy as sysdba
Connected to an idle instance.
SQL> startup
ORACLE instance started.

Total System Global Area  417546240 bytes
Fixed Size                 2176328 bytes
Variable Size            251660984 bytes
Database Buffers         155189248 bytes
Redo Buffers               8519680 bytes
Database mounted.
Database opened.
```

14. Multiplex the existing control file as follows.

a). Add a new control file CONTROL04.CTL in C:\U4.

b). Confirm that both control files are being used.

```
SQL> conn sys as sysdba
Enter password:
Connected.
SQL> ALTER SYSTEM SET control_files = 'S:\app\sdevagup\oradata\sdevagupDBA\control01.ctl',
  2  'S:\app\sdevagup\oradata\sdevagupDBA\U4\control04.ctl' SCOPE=SPFILE;

System altered.
```

```
SQL> shutdown immediate
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> S:\app\sdevagup\product\11.2.0\dbhome_1\BIN>copy S:\app\sdevagup\oradata\sdevagupDBA\Control01.ctl
   S:\app\sdevagup\oradata\sdevagupDBA\U4\Control04.ctl
       1 file(s) copied.
SQL> STARTUP
ORACLE instance started.

Total System Global Area  417546240 bytes
Fixed Size                 2176328 bytes
Variable Size            251660984 bytes
Database Buffers         155189248 bytes
Redo Buffers               8519680 bytes
Database mounted.
Database opened.


SQL> SELECT name FROM v$controlfile;

NAME
--------------------------------------------------
copy S:\app\sdevagup\oradata\sdevagupDBA\CONTROL01.CTL
S:\app\sdevagup\oradata\sdevagupDBA\U4\CONTROL04.CTL
```

15. What is the initial sizing of the data file section in your control file?

```
SQL> select * from v$controlfile_record_section;

TYPE                    RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
---------------------------- ----------- ------------ ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
DATABASE                        316           1           1           0
         0         0

CKPT PROGRESS                  8180          11           0           0
         0         0

REDO THREAD                     256           8           1           0
         0         0


TYPE                    RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
---------------------------- ----------- ------------ ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
REDO LOG                         72          16           3           0
         0         3

DATAFILE                        520         100           9           0
         0        43

FILENAME                        524        2298          13           0
         0         0


TYPE                    RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
---------------------------- ----------- ------------ ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
TABLESPACE                       68         100          10           0
         0        30

TEMPORARY FILENAME               56         100           2           0
         0        15
```

```
RMAN CONFIGURATION              1108          50          0         0
        0         0

TYPE                    RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
LOG HISTORY                      56          292          33         1
       33         33

OFFLINE RANGE                   200          163           0         0
        0         0

ARCHIVED LOG                    584           28           0         0
        0         0

TYPE                    RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
BACKUP SET                       40          409           0         0
        0         0

BACKUP PIECE                    736          200           0         0
        0         0

BACKUP DATAFILE                 200          245           0         0
        0         0

TYPE                    RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
BACKUP REDOLOG                   76          215           0         0
        0         0

DATAFILE COPY                   736          200           1         1
        1         1

BACKUP CORRUPTION                44          371           0         0
        0         0

TYPE                    RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
COPY CORRUPTION                  40          409           0         0
        0         0

DELETED OBJECT                   20          818           1         1
        1         1

PROXY COPY                      928          246           0         0
        0         0

TYPE                    RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
BACKUP SPFILE                   124          131           0         0
        0         0
```

```
DATABASE INCARNATION               56         292          2          1
         2          2

FLASHBACK LOG                      84        2048          0          0
         0          0


TYPE                       RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
-------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
RECOVERY DESTINATION              180           1          1          0
         0          0

INSTANCE SPACE RESERVATION         28        1055          1          0
         0          0

REMOVABLE RECOVERY FILES           32        1000          0          0
         0          0


TYPE                       RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
-------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
RMAN STATUS                       116         141          0          0
         0          0

THREAD INSTANCE NAME MAPPING       80           8          8          0
         0          0

MTTR                              100           8          1          0
         0          0


TYPE                       RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
-------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
DATAFILE HISTORY                  568          57          0          0
         0          0

STANDBY DATABASE MATRIX           400          31         31          0
         0          0

GUARANTEED RESTORE POINT          212        2048          0          0
         0          0


TYPE                       RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
-------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
---------- ----------
RESTORE POINT                     212        2083          0          0
         0          0

DATABASE BLOCK CORRUPTION          80        8384          0          0
         0          0

ACM OPERATION                     104          64          6          0
         0          0


TYPE                       RECORD_SIZE RECORDS_TOTAL RECORDS_USED FIRST_INDEX
-------------------------- ----------- ------------- ------------ -----------
LAST_INDEX LAST_RECID
```

```
---------- ----------
FOREIGN ARCHIVED LOG              604        1002          0          0
         0          0


37 rows selected.
```

16. List the number and location of existing log files and display the number of redo log file groups and members your database has.

```
SQL> SELECT member FROM v$logfile;

MEMBER
--------------------------------------------------------------------------------
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\REDO03.LOG
S:\APP\SDEVAGUP\ORADATA\SSEVAGUPDBA\REDO02.LOG
S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\REDO01.LOG

SQL> SELECT group#, members FROM v$log;

    GROUP#    MEMBERS
---------- ----------
         1          1
         3          1
         2          1
```

17. Add a redo log member to each group in your database located on C:\u4, using the following naming conventions:
Add member to Group 1: redo01b.log
Add member to Group 2: redo02b.log
Add member to Group 3: redo03b.log
Verify the result.

```
SQL> ALTER DATABASE ADD LOGFILE MEMBER
  2  'S:\app\sdevagup\oradata\sdevagupDBA\U4\NEWWORLD\REDO01B.LOG' to Group 1,
  3  'S:\app\sdevagup\oradata\sdevagupDBA\U4\NEWWORLD\REDO02B.LOG' to Group 2,
  4  'S:\app\sdevagup\oradata\sdevagupDBA\U4\NEWWORLD\REDO03B.LOG' to Group 3;

Database altered.

SQL> COLUMN GROUP# FORMAT 99
SQL> COLUMN MEMBER FORMAT a40
SQL> SELECT * FROM v$logfile;

GROUP# STATUS  TYPE    MEMBER                                   IS_
------ ------- ------- ---------------------------------------- ---
     3         ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\REDO03.L NO
                       OG

     2         ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\REDO02.L NO
                       OG

     1         ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\REDO01.L NO
                       OG

     1 INVALID ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\U4\NEWWO NO
                       RLD\REDO01B.LOG

GROUP# STATUS  TYPE    MEMBER                                   IS_
------ ------- ------- ---------------------------------------- ---

     2 INVALID ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\U4\NEWWO NO
                       RLD\REDO02B.LOG
```

```
   3 INVALID ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\U4\NEWWO NO
                     RLD\REDO03B.LOG


6 rows selected.
```

18. Add a new redo log group with two members located on C:\APP\oradata\INST1 and C:\U4 using the following naming conventions and verify the result.
Add Group 4: redo04.log and redo04b.log

```
SQL> ALTER DATABASE ADD LOGFILE GROUP 4
          ('S:\app\sdevagup\oradata\sdevagupDBA\U4\NEWWORLD\REDO04.LOG','S:\app\sdevagup\oradata\sdevagupDBA\U4\NEWW
          ORLD\REDO04B.LOG') SIZE 9M;

Database altered.

SQL> COLUMN GROUP# FORMAT 99
SQL> COLUMN MEMBER FORMAT a40
SQL> SELECT * FROM v$logfile;

GROUP# STATUS  TYPE    MEMBER                                  IS_
------ ------- ------- ---------------------------------------- ---
   3       ONLINE  S:\APP\SSDEVAGUP\ORADATA\SDEVAGUPDBA\REDO03.L NO
                   OG

   2       ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\REDO02.L NO
                   OG

   1       ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\REDO01.L NO
                   OG

   1 INVALID ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\U4\NEWWO NO
                     RLD\REDO01B.LOG

GROUP# STATUS  TYPE    MEMBER                                  IS_
------ ------- ------- ---------------------------------------- ---

   2 INVALID ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\U4\NEWWO NO
                     RLD\REDO02B.LOG

   3 INVALID ONLINE  S:\APP\SDEVGUP\ORADATA\SDEVAGUPDBA\U4\NEWWO NO
                     RLD\REDO03B.LOG

   4       ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\U4\NEWWO NO
                   RLD\REDO04.LOG

   4       ONLINE  S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\U4\NEWWO NO

GROUP# STATUS  TYPE    MEMBER                                  IS_
------ ------- ------- ---------------------------------------- ---
                   RLD\REDO04B.LOG


8 rows selected.

SQL> SELECT group#, members FROM v$log;

GROUP#    MEMBERS
------ ---------
   1         2
   4         2
   3         2
   2         2
```

19. Remove the redo log group created in the previous step.

```
SQL> ALTER SYSTEM SWITCH LOGFILE;

System altered.

SQL> ALTER SYSTEM SWITCH LOGFILE;

System altered.

SQL> ALTER SYSTEM SWITCH LOGFILE;

System altered.

SQL> SELECT group#, members FROM v$log;

    GROUP#    MEMBERS
---------- ----------
         1          2
         4          2
         3          2
         2          2

SQL> ALTER DATABASE DROP LOGFILE GROUP 4;

Database altered.
```

20. Resize all online redo log files to 5 MB.

```
SQL> ALTER DATABASE ADD LOGFILE
  2  GROUP 5('S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA \log05a.rdo',
  3  'S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\log05b.rdo'
  4  ) SIZE 5M,
  5  GROUP 6('S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\log06a.rdo',
  6  'S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\log06b.rdo'
  7  ) SIZE 5M,
  8  GROUP 7('S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\log07a.rdo',
  9  'S:\APP\SDEVAGUP\ORADATA\SDEVAGUPDBA\log07b.rdo'
 10 ) SIZE 5M;

Database altered.

SQL> ALTER DATABASE DROP LOGFILE GROUP 1;

Database altered.

SQL> ALTER DATABASE DROP LOGFILE GROUP 2;

Database altered.

SQL> ALTER DATABASE DROP LOGFILE GROUP 3;

Database altered.

SQL> SELECT group#, bytes FROM v$log;

    GROUP#      BYTES
---------- ----------
         5    5242880
         6    5242880
         7    5242880
```