Lab 2 --- Understanding Oracle's architecture and key parameter files

Purpose: This lab reinforces your classroom discussions concerning Oracle architecture

Requirements: Complete the required tasks and submit the required responses in the **same** word document renamed as *lab2_fname_lname* (e.g., *Lab2_Doug_King*) via Brightspace by the end of the lab and demonstrate your work to the lab professor.

A complete and on-time submission will earn 2 marks.

Resources: https://docs.oracle.com/cd/B28359 01/server.111/b28318/startup.htm#CNCPT1293

https://docs.oracle.com/database/121/CNCPT/startup.htm#CNCPT601

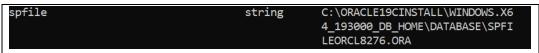
https://docs.oracle.com/cd/B28359 01/server.111/b31189/ch12042.htm

https://docs.oracle.com/cd/B28359 01/server.111/b28286/statements 6008.htm#SQLRF01308

Lab Submission tasks:

- 1. <u>Demo / Problem Solving:</u> During Week 2's lab, you will be required to confirm your Oracle 12c installation is working properly.
- 2. <u>Concepts:</u> Refer to the above noted resources. Copy your answers to your submission document.
 - a. Without using virtual tables or similar mechanisms, a database instance can be associated with __single(one)_ database(s).
 - b. To start a database instance, configuration parameters must be read. This information is contained in binary format in ___SPFile__ and in text format in ___PFile__.
 - c. During STARTUP, the instance knows where the data files are located by reading the <u>control</u> file.
 - d. The main difference between a TRANSACTIONAL SHUTDOWN and an IMMEDIATE SHUTDOWN is, in a TRANSACTIONAL SHUTDOWN ___waits for the open transaction to complete ____.
- 3. Review the Startup/Shutdown Process (Write the queries and their results):
 - a. Logon as SYS as SYSDBA.
 - b. Enter SHOW PARAMETERS

i. From the SHOW PARAMETERS results, determine where the SPFILE file is located. Record this location in your lab file below.



- c. Create a PFILE: Enter: CREATE PFILE from SPFILE;
- d. Locate and resulting **PFILE** and in your lab document, specify:
 - i. the name of the pfile



ii. Open the file and determine the **oracle_base** name

```
orcl8276.__oracle_base='C:\oracle19cinstall'#ORACLE_BASE set from environment
```

iii. the location of the control files

 $*. control_files='C:\oracle19 cinstall\oradata\ORCL8276\control01.ctl', 'C:\oracle19 cinstall\oradata\ORCL8276\control02.ctl'$

- e. Enter: SHUTDOWN
- f. Enter: STARTUP
- g. Indicate, in your lab document, the sequence of objects being started.

```
SQL> startup
ORACLE instance started.

Total System Global Area 5083495440 bytes
Fixed Size 9038864 bytes
Variable Size 922746880 bytes
Database Buffers 4143972352 bytes
Redo Buffers 7737344 bytes
Database mounted.
Database opened.
SQL>
```

4. **DATA DICTIONARY:** From the SQL prompt, enter **DESC DICT**- this command describes the structure (the columns) of the internal data dictionary.

Hint: Throughout the course, when you forget the names of special tables you can return to the dictionary and determine the name.

In your lab document answer the following questions (Write the queries and their results):

a. List the number of rows that are in this table (you may <u>not want</u> to select the rows as there are a lot). __Query : select count(*) from dict;
 Result : 4666

```
SQL> select count(*) from dict;

COUNT(*)

-----
4666
```

b. List the name of the view or table that describes Tablespaces:

Query: select table name from dict where table name like'%TABLESPACE%';

```
SQL> select table_name from dict where table_name like '%TABLESPACE%';
TABLE_NAME
USER_FILE_GROUP_TABLESPACES
USER_TABLESPACES
ALL_FILE_GROUP_TABLESPACES
DBA_FILE_GROUP_TABLESPACES
DBA HEATMAP TOP TABLESPACES
DBA_HIST_TABLESPACE
DBA_HIST_TABLESPACE_STAT
DBA_TABLESPACES
DBA_TABLESPACE_GROUPS
DBA_TABLESPACE_THRESHOLDS
DBA_TABLESPACE_USAGE_METRICS
TABLE_NAME
CDB_FILE_GROUP_TABLESPACES
CDB_HEATMAP_TOP_TABLESPACES
CDB_HIST_TABLESPACE
CDB_HIST_TABLESPACE_STAT
CDB_TABLESPACES
CDB_TABLESPACE_GROUPS
CDB_TABLESPACE_THRESHOLDS
CDB_TABLESPACE_USAGE_METRICS
GV$ENCRYPTED_TABLESPACES
GV$TABLESPACE
V$ENCRYPTED TABLESPACES
TABLE_NAME
V$TABLESPACE
23 rows selected.
```

c. List the name of the view or table that describes Datafiles:

_Query : select table_name from dict where table_name like '%DATAFILE%';_

```
SQL> select table_name from dict where table_name like '%DATAFILE%';
TABLE_NAME
DBA HIST DATAFILE
CDB_HIST_DATAFILE
GV$BACKUP DATAFILE
GV$DATAFILE
GV$DATAFILE_COPY
GV$DATAFILE_HEADER
GV$PROXY_DATAFILE
GV$SHADOW_DATAFILE
V$BACKUP_DATAFILE
V$BACKUP_DATAFILE_DETAILS
V$BACKUP_DATAFILE_SUMMARY
TABLE_NAME
V$DATAFILE
V$DATAFILE COPY
V$DATAFILE HEADER
V$PROXY_DATAFILE
V$SHADOW DATAFILE
16 rows selected.
```

- d. Write a query that joins the **V_\$DATAFILE** and **V_\$TABLESPACE** tables, then use the query results to answer the following questions:
 - i. What is the location and name of the datafile associated with the SYSTEM tablespace.

Query: select V_\$DATAFILE.NAME from V_\$DATAFILE, V_\$TABLESPACE where V_\$DATAFILE.TS# = V_\$TABLESPACE.TS# and V_\$TABLESPACE.NAME = 'SYSTEM';

```
SQL> select V_$DATAFILE.NAME from V_$DATAFILE, V_$TABLESPACE where V_$DATAFILE.TS# = V_$TABLESPACE.TS# and V_$TABLESPACE.NAME='SYSTEM';

NAME

C:\ORACLE19CINSTALL\ORADATA\ORCL8276\SYSTEM01.DBF
```

ii. What is the location and name of the datafile associated with the USERS tablespace.

Query: select V_\$DATAFILE.NAME from V_\$DATAFILE, V_\$TABLESPACE where V \$DATAFILE.TS# = V \$TABLESPACE.TS# and V \$TABLESPACE.NAME='USERS';

```
SQL> select V_$DATAFILE.NAME from V_$DATAFILE, V_$TABLESPACE where V_$DATAFILE.TS# = V_$TABLESPACE.TS# and V_$TABLESPACE.NAME='USERS';
NAME
C:\ORACLE19CINSTALL\ORADATA\ORCL8276\USERS01.DBF
```

You're done. Submit your lab.