Fisiere de log
(Cap.7)

1) Informatii despre fisierele de log si starea lor:

SQL> desc v$logfile

Name	Null?	Type
GROUP#		NUMBER
STATUS		VARCHAR2(7)
TYPE		VARCHAR2(7)
MEMBER		VARCHAR2(513)
IS_RECOVERY_DEST_FILE		VARCHAR2(3)
CON_ID		NUMBER
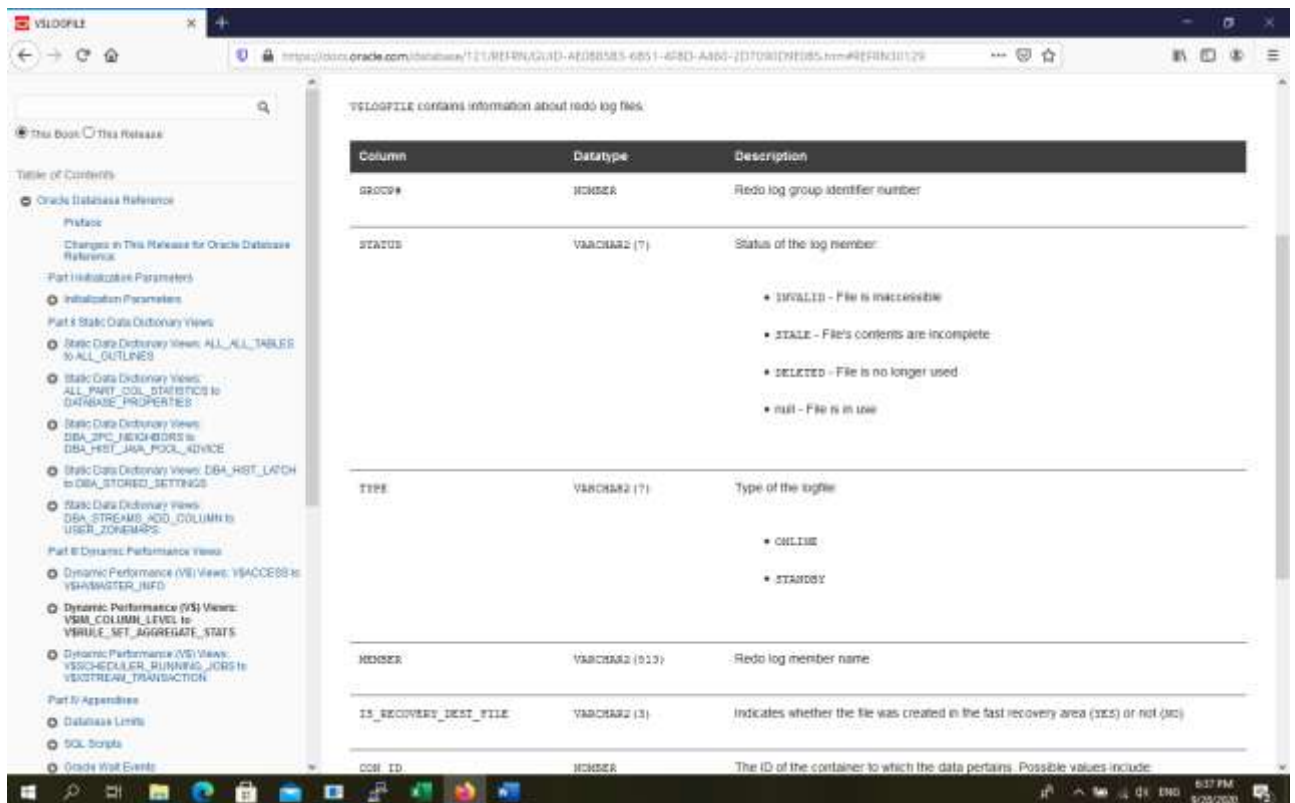
SQL> select * from v$logfile;

GROUP#	STATUS	TYPE	MEMBER	IS_
3		ONLINE	C:\ORACLE_12C\ORADATA\BD\REDO03.LOG	NO
2		ONLINE	C:\ORACLE_12C\ORADATA\BD\REDO02.LOG	NO
1		ONLINE	C:\ORACLE_12C\ORADATA\BD\REDO01.LOG	NO

2) Informatii legate de modul de lucru al bazei de date (cu arhivare sau fara arhivare a fisierelor de log, data cand au fost resetate fisierele de log, etc.)

SQL> desc v$database

Name	Null?	Type
DBID		NUMBER
NAME		VARCHAR2(9)
CREATED		DATE
RESETLOGS_CHANGE#		NUMBER
RESETLOGS_TIME		DATE
PRIOR_RESETLOGS_CHANGE#		NUMBER
PRIOR_RESETLOGS_TIME		DATE
LOG_MODE		VARCHAR2(12)
CHECKPOINT_CHANGE#		NUMBER
ARCHIVE_CHANGE#		NUMBER
CONTROLFILE_TYPE		VARCHAR2(7)
CONTROLFILE_CREATED		DATE
CONTROLFILE_SEQUENCE#		NUMBER
CONTROLFILE_CHANGE#		NUMBER
CONTROLFILE_TIME		DATE
OPEN_RESETLOGS		VARCHAR2(11)
VERSION_TIME		DATE
OPEN_MODE		VARCHAR2(20)
PROTECTION_MODE		VARCHAR2(20)
PROTECTION_LEVEL		VARCHAR2(20)
REMOTE_ARCHIVE		VARCHAR2(8)
ACTIVATION#		NUMBER
SWITCHOVER#		NUMBER
DATABASE_ROLE		VARCHAR2(16)
ARCHIVELOG_CHANGE#		NUMBER
ARCHIVELOG_COMPRESSION		VARCHAR2(8)
SWITCHOVER_STATUS		VARCHAR2(20)
DATAGUARD_BROKER		VARCHAR2(8)
GUARD_STATUS		VARCHAR2(7)
SUPPLEMENTAL_LOG_DATA_MIN		VARCHAR2(8)
SUPPLEMENTAL_LOG_DATA_PK		VARCHAR2(3)
SUPPLEMENTAL_LOG_DATA_UI		VARCHAR2(3)
FORCE_LOGGING		VARCHAR2(39)
PLATFORM_ID		NUMBER
PLATFORM_NAME		VARCHAR2(101)
RECOVERY_TARGET_INCARNATION#		NUMBER
LAST_OPEN_INCARNATION#		NUMBER
CURRENT_SCN		NUMBER
FLASHBACK_ON		VARCHAR2(18)
SUPPLEMENTAL_LOG_DATA_FK		VARCHAR2(3)
SUPPLEMENTAL_LOG_DATA_ALL		VARCHAR2(3)
DB_UNIQUE_NAME		VARCHAR2(30)
STANDBY_BECAME_PRIMARY_SCN		NUMBER
FS_FAILOVER_STATUS		VARCHAR2(22)
FS_FAILOVER_CURRENT_TARGET		VARCHAR2(30)
FS_FAILOVER_THRESHOLD		NUMBER
FS_FAILOVER_OBSERVER_PRESENT		VARCHAR2(7)
FS_FAILOVER_OBSERVER_HOST		VARCHAR2(512)
CONTROLFILE_CONVERTED		VARCHAR2(3)

```
PRIMARY_DB_UNIQUE_NAME            VARCHAR2(30)
SUPPLEMENTAL_LOG_DATA_PL          VARCHAR2(3)
MIN_REQUIRED_CAPTURE_CHANGE#      NUMBER
CDB                               VARCHAR2(3)
CON_ID                            NUMBER
PENDING_ROLE_CHANGE_TASKS         VARCHAR2(512)
CON_DBID                          NUMBER
FORCE_FULL_DB_CACHING             VARCHAR2(3)
```
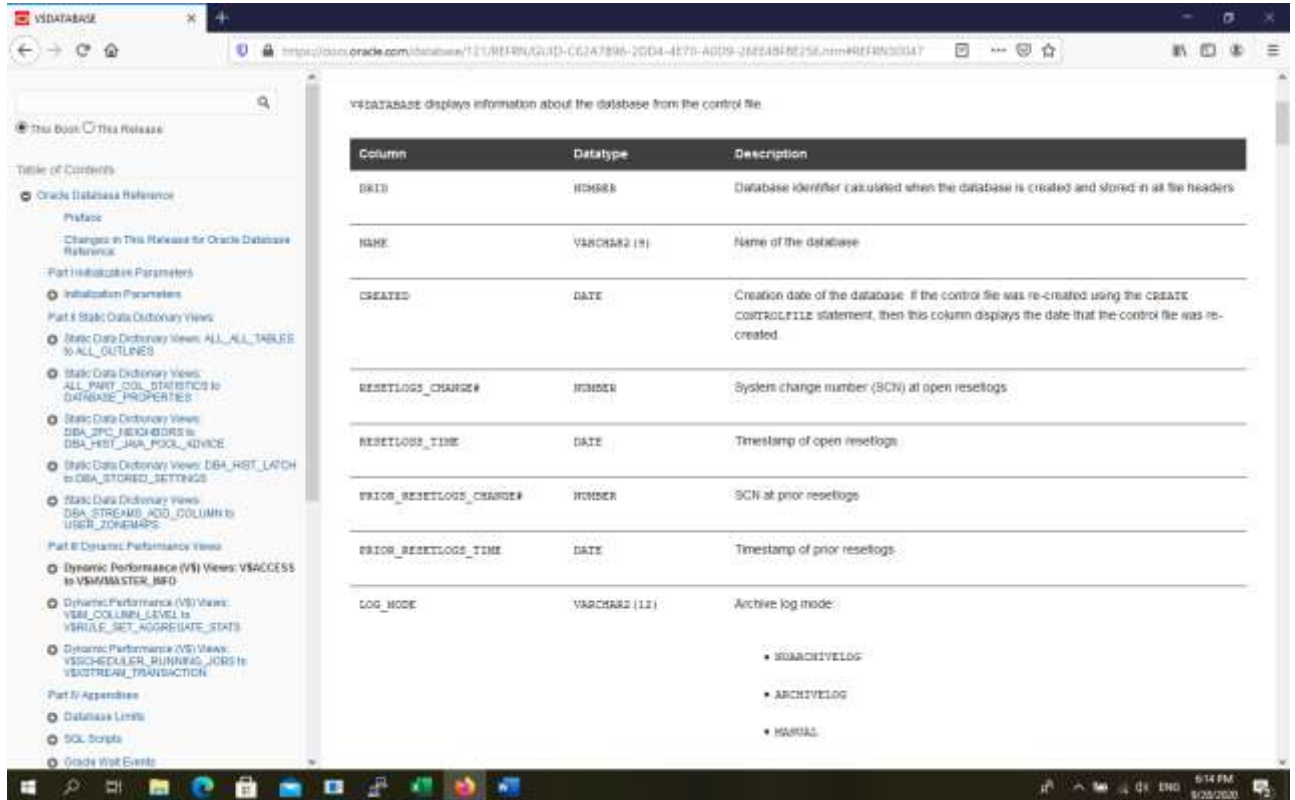


SQL> select name, log_mode, resetlogs_time from v$database;

```
NAME          LOG_MODE               RESETLOGS
---------     ------------           ---------
BD            NOARCHIVELOG           08-MAY-19
```

3) Informatii legate de starea instantei, a grupului curent din fisierele de log si a secventei curente:

SQL> desc v$thread

```
Name                            Null?      Type
------------------------------- --------   ----
THREAD#                                    NUMBER
STATUS                                     VARCHAR2(6)
ENABLED                                    VARCHAR2(8)
GROUPS                                     NUMBER
INSTANCE                                   VARCHAR2(16)
OPEN_TIME                                  DATE
CURRENT_GROUP#                             NUMBER
SEQUENCE#                                  NUMBER
CHECKPOINT_CHANGE#                         NUMBER
```

```
CHECKPOINT_TIME                    DATE
ENABLE_CHANGE#                     NUMBER
ENABLE_TIME                        DATE
DISABLE_CHANGE#                    NUMBER
DISABLE_TIME                       DATE
LAST_REDO_SEQUENCE#                NUMBER
LAST_REDO_BLOCK                    NUMBER
LAST_REDO_CHANGE#                  NUMBER
LAST_REDO_TIME                     DATE
CON_ID                             NUMBER
```
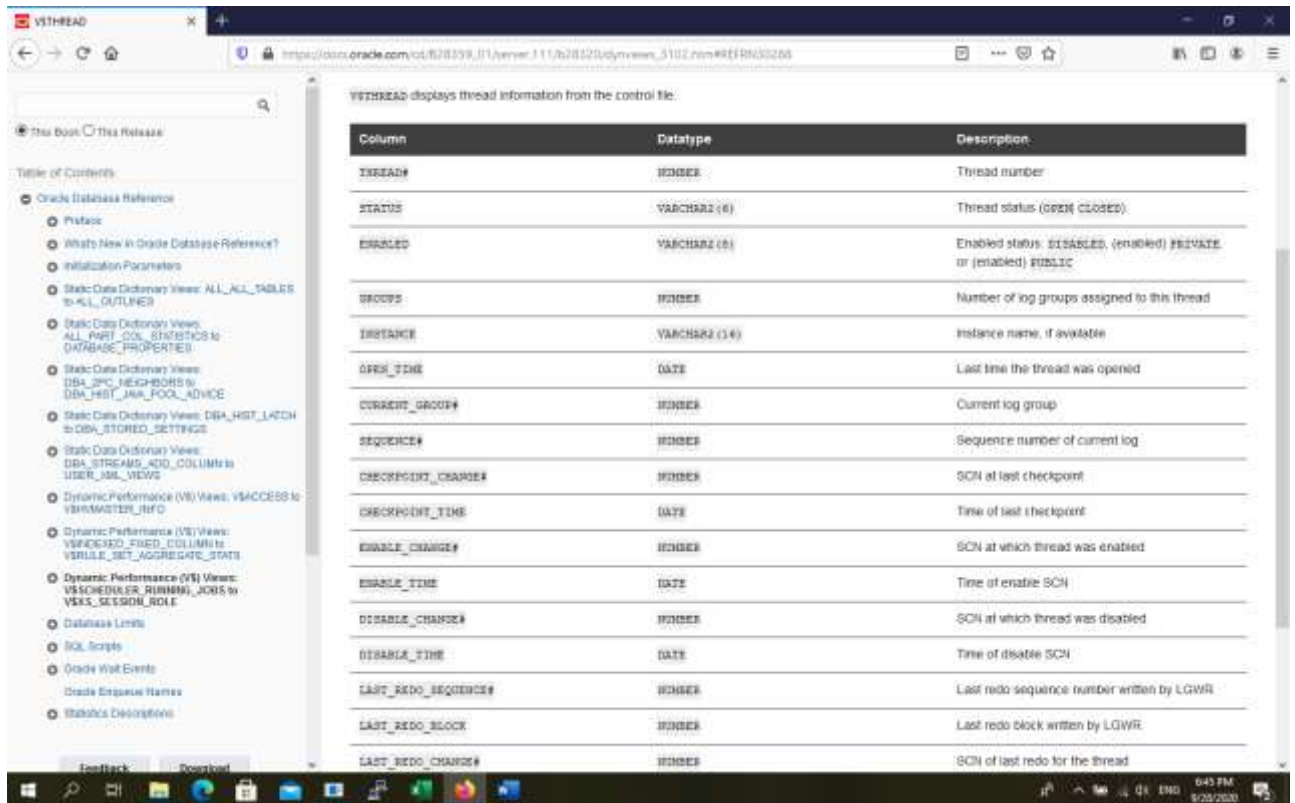

SQL> select groups, current_group#, sequence#, instance, status from v$thread;

GROUPS	CURRENT_GROUP#	SEQUENCE#	INSTANCE	STATUS
3	1	872	bd	OPEN

4) Informatii despre gupuri si membri in cadrul grupurilor:

```
SQL> desc v$log
 Name                            Null?    Type
 ------------------------------- -------- ----
 GROUP#                                   NUMBER
 THREAD#                                  NUMBER
 SEQUENCE#                                NUMBER
 BYTES                                    NUMBER
 MEMBERS                                  NUMBER
 ARCHIVED                                 VARCHAR2(3)
 STATUS                                   VARCHAR2(16)
```
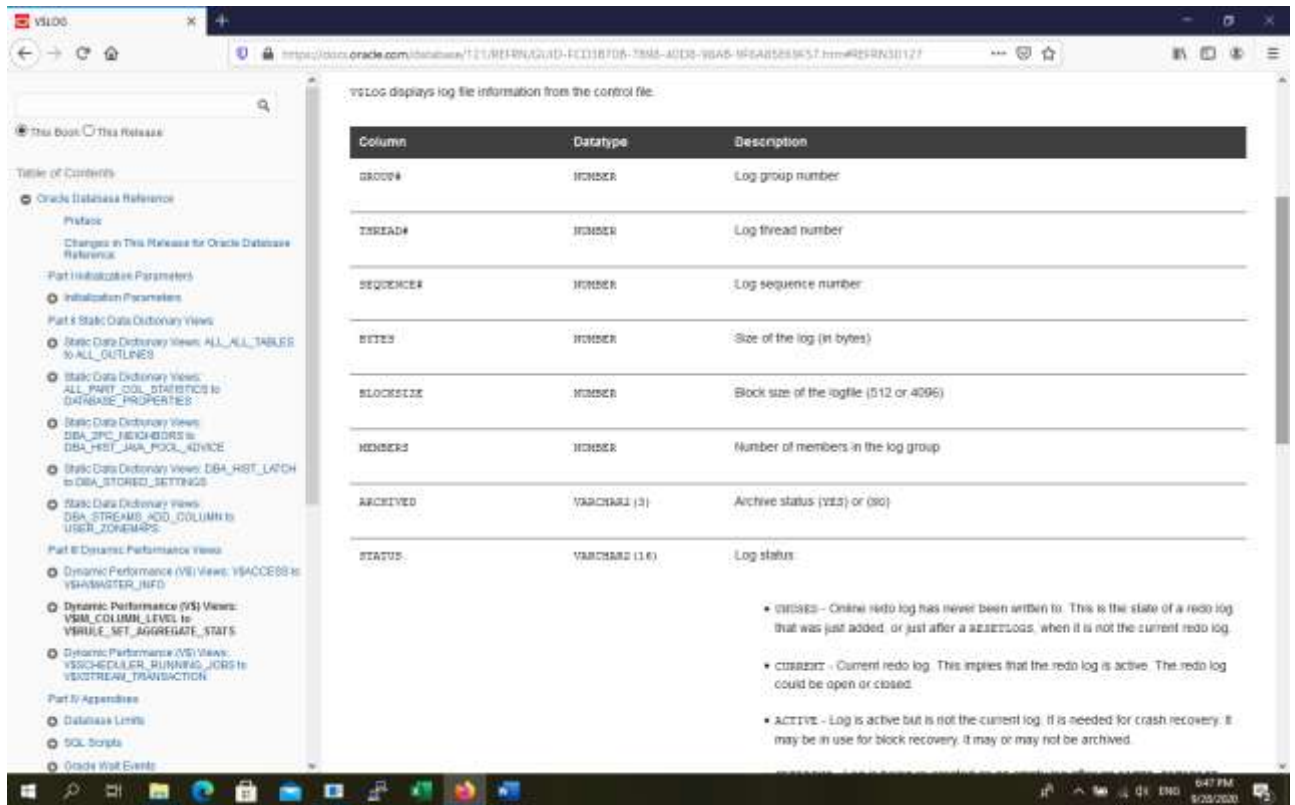
```
FIRST_CHANGE#                    NUMBER
FIRST_TIME                       DATE
NEXT_CHANGE#                     NUMBER
NEXT_TIME                        DATE
CON_ID                           NUMBER
```


SQL> select group#, members, bytes, archived, status from v$log;

```
   GROUP#   MEMBERS      BYTES     ARC   STATUS
---------- ---------- ---------- --- ----------------
        1          1   52428800   NO   CURRENT
        2          1   52428800   NO   INACTIVE
        3          1   52428800   NO   INACTIVE
```

   5)   Adaugarea unui membru la un grup (se creeaza automat in SO un nou fisier de log):

SQL> alter database add logfile member 'E:\TEMP\log2.rdo' to group 1;
Database altered.

   6)   Resetarea unui grup dintr-un fisier de log(care nu este grup curent):

SQL> alter database clear logfile group 2 ;
Database altered.

   7)   Relocarea unui fiser de log cu baza de date online (trebuie ca fisierul sa nu fie in grupul curent si
        sa existe o copie in noua locatie):

SQL> alter database rename file 'E:\TEMP\log2.rdo' to 'E:\TEMP\log22.rdo';
Database altered.

Observatii:
- ✓ Daca fisierul face parte din grupul curent, se genereaza eroarea:
ERROR at line 1:
ORA-01511: error in renaming log/data files
ORA-01621: cannot rename member of current log if database is open
ORA-00312: online log 1 thread 1:
'C:\ORACLE_12C\ORADATA\BD\REDO01.LOG'
ORA-00312: online log 1 thread 1: 'E:\TEMP\LOG2.RDO'
In acest caz se face un switch pe urmatorul grup, apoi se relocheaza fisierul respectiv.
SQL> alter system switch logfile;

- ✓ Daca fisierul nu a fost copiat deja in noua locatie se genereaza eroarea:
ERROR at line 1:
ORA-01511: error in renaming log/data files
ORA-01512: error renaming log file E:\TEMP\LOG2.RDO - new file
F:\temp1\log2.rdo not found
ORA-27041: unable to open file
OSD-04002: unable to open file
O/S-Error: (OS 2) The system cannot find the file specified.

8) Stergerea unui membru dintr-un grup :

➢ Se verifica starea fiserului care va fi sters :

SQL> select * from v$logfile;

GROUP#	STATUS	TYPE	MEMBER	IS_
3		ONLINE	C:\ORACLE_12C\ORADATA\BD\REDO03.LOG	NO
2		ONLINE	C:\ORACLE_12C\ORADATA\BD\REDO02.LOG	NO
1		ONLINE	C:\ORACLE_12C\ORADATA\BD\REDO01.LOG	NO
1	INVALID	ONLINE	E:\TEMP1\LOG2.RDO	NO

➢ Se sterge fisierul de log (trebuie sa nu fie in grupul curent) :

SQL> alter database drop logfile member 'E:\TEMP\LOG22.RDO';

Observatii:
- ✓ Daca fisierul face parte dintr-un grup urmator nu se poate sterge si se genereaza eroarea:
ERROR at line 1:
ORA-00362: member is required to form a valid logfile in group 3
ORA-01517: log member: 'E:\temp\log2.rdo'

- ✓ Daca fisierul face parte din grupul curent, se genereaza eroarea:
ERROR at line 1:
ORA-01609: log 1 is the current log for thread 1 - cannot drop members

In acest caz se face un switch pe urmatorul grup, apoi se sterge membrul respectiv:
SQL> alter system switch logfile;
System altered.

SQL> alter database drop logfile member 'E:\TEMP\LOG2.RDO';
Database altered.

SQL> select * from v$logfile;

GROUP#	STATUS	TYPE	MEMBER	IS_
3		ONLINE	C:\ORACLE_12C\ORADATA\BD\REDO03.LOG	NO
2		ONLINE	C:\ORACLE_12C\ORADATA\BD\REDO02.LOG	NO
1		ONLINE	C:\ORACLE_12C\ORADATA\BD\REDO01.LOG	NO

9) Informatii legate de modul de lucru al instantei (modul arhiva sau nonarhiva):

SQL> desc v$instance

Name	Null?	Type
INSTANCE_NUMBER		NUMBER
INSTANCE_NAME		VARCHAR2(16)
HOST_NAME		VARCHAR2(64)
VERSION		VARCHAR2(17)
STARTUP_TIME		DATE
STATUS		VARCHAR2(12)
PARALLEL		VARCHAR2(3)
THREAD#		NUMBER
ARCHIVER		VARCHAR2(7)
LOG_SWITCH_WAIT		VARCHAR2(15)
LOGINS		VARCHAR2(10)
SHUTDOWN_PENDING		VARCHAR2(3)
DATABASE_STATUS		VARCHAR2(17)
INSTANCE_ROLE		VARCHAR2(18)
ACTIVE_STATE		VARCHAR2(9)
BLOCKED		VARCHAR2(3)
CON_ID		NUMBER
INSTANCE_MODE		VARCHAR2(11)
EDITION		VARCHAR2(7)
FAMILY		VARCHAR2(80)

V$INSTANCE displays the state of the current instance.

Column	Datatype	Description
INSTANCE_NUMBER	NUMBER	Instance number used for instance registration (corresponds to the INSTANCE_NUMBER initialization parameter) **See Also:** "INSTANCE_NUMBER"
INSTANCE_NAME	VARCHAR2 (16)	Name of the instance
HOST_NAME	VARCHAR2 (64)	Name of the host machine
VERSION	VARCHAR2 (17)	Database version
STARTUP_TIME	DATE	Time when the instance was started
STATUS	VARCHAR2 (12)	Status of the instance: • STARTED - After STARTUP NOMOUNT • MOUNTED - After STARTUP MOUNT or ALTER DATABASE CLOSE • OPEN - After STARTUP or ALTER DATABASE OPEN • OPEN MIGRATE - After ALTER DATABASE OPEN { UPGRADE	DOWNGRADE }
PARALLEL	VARCHAR2 (3)	Indicates whether the instance is mounted in cluster database mode (YES) or not (NO)

THREAD#	NUMBER	Redo thread opened by the instance
ARCHIVER	VARCHAR2 (7)	Automatic archiving status: • STOPPED • STARTED • FAILED - Archiver failed to archive a log last time but will try again within 5 minutes
LOG_SWITCH_WAIT	VARCHAR2 (15)	Event that log switching is waiting for: • ARCHIVE LOG • CLEAR LOG • CHECKPOINT • NULL - ALTER SYSTEM SWITCH LOGFILE is hung but there is room in the current online redo log
LOGINS	VARCHAR2 (10)	Indicates whether the instance is in unrestricted mode, allowing logins by all users (ALLOWED), or in restricted mode, allowing logins by database administrators only (RESTRICTED)
SHUTDOWN_PENDING	VARCHAR2 (3)	Indicates whether a shutdown is pending (YES) or not (NO)

SQL> select instance_name, status, archiver from v$instance;

```
INSTANCE_NAME            STATUS        ARCHIVE
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bd                       OPEN          STOPPED
```
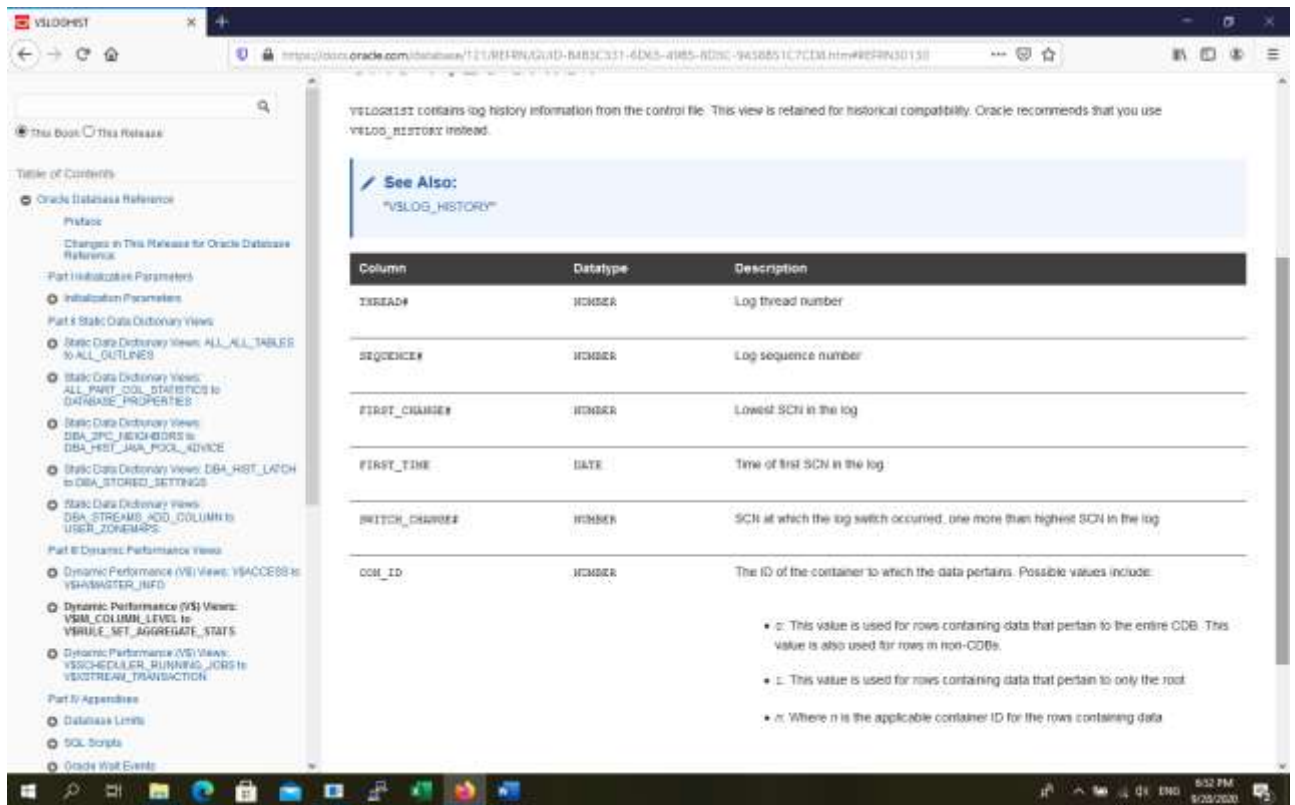
10) Informatii despre istoricul fisierelor de log:

```
SQL> desc v$loghist
 Name                                     Null?       Type
 ---------------------------------------- --------    ----------------------------
 THREAD#                                              NUMBER
 SEQUENCE#                                            NUMBER
 FIRST_CHANGE#                                        NUMBER
 FIRST_TIME                                           DATE
 SWITCH_CHANGE#                                       NUMBER
 CON_ID                                               NUMBER
```


SQL> select * from v$loghist;

THREAD#	SEQUENCE#	FIRST_CHANGE#	FIRST_TIM	SWITCH_CHANGE#	CON_ID
1	1	2233668	08-MAY-19	2251966	0
1	2	2251966	08-MAY-19	2257658	0
1	3	2257658	08-MAY-19	2257826	0
1	4	2257826	08-MAY-19	2260506	0
1	5	2260506	08-MAY-19	2370497	0
1	6	2370497	10-MAY-19	2385355	0
1	7	2385355	11-MAY-19	2393508	0
1	8	2393508	11-MAY-19	2401645	0
1	9	2401645	11-MAY-19	2417525	0
1	10	2417525	11-MAY-19	2426821	0
1	11	2426821	12-MAY-19	2441691	0

Exercitii (Cap 6 si Cap 7):

1. Aratati din dictionar numele bazei de date curenta, care sunt fisierele de control asignate si data cand au fost create.

2. Faceti o lista cu numele fisierelor de control asignate la baza de date curenta si dimensiunea lor exprimata in numar de blocuri.

3. Faceti o lista cu grupurile fisierelor de log, fisierele membru din cadrul fiecarui grup si dimensiunea lor in MB.

4. Aratati din dictionar numele instantei curente si grupurile fisierelor de log aflate in starea 'OPEN'

5. Aratati din dictionar data cand a fost creata baza de date si data cand au fost resetate fisierele de log (data in format cu ora/min/sec)