Evaluare activitate practică

10% - **Prezență laborator**

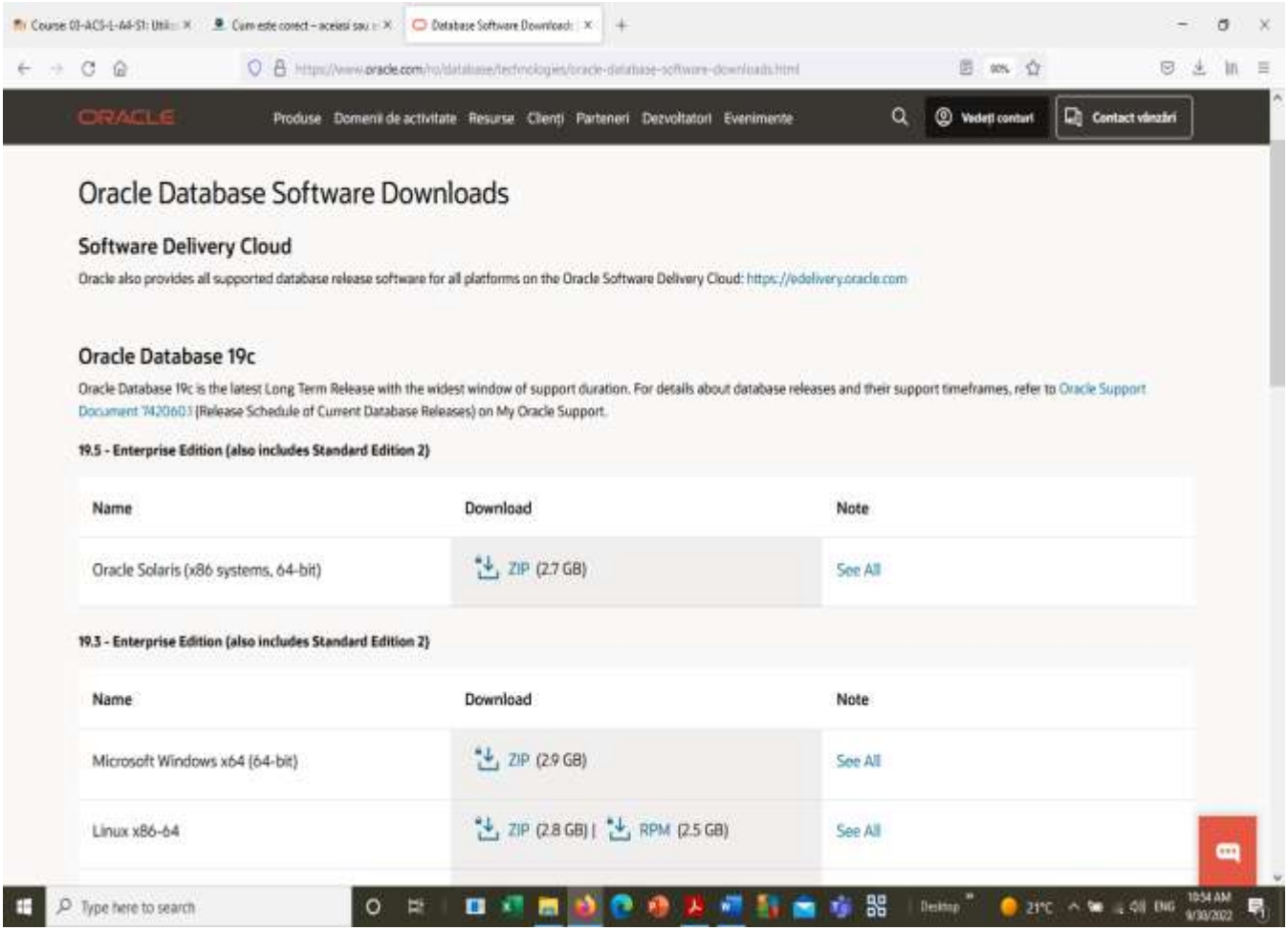
(minim 7 prezențe pentru promovare laborator)

40% - **Evaluare activitate pe parcursul semestrului**

50% - **Colocviu laborator**

Instalarea si administrarea unei baze de date Oracle 19c

- Se face download la kit-ul de instalare Oracle Database 19c https://www.oracle.com/ro/database/technologies/oracle-database-software-downloads.html

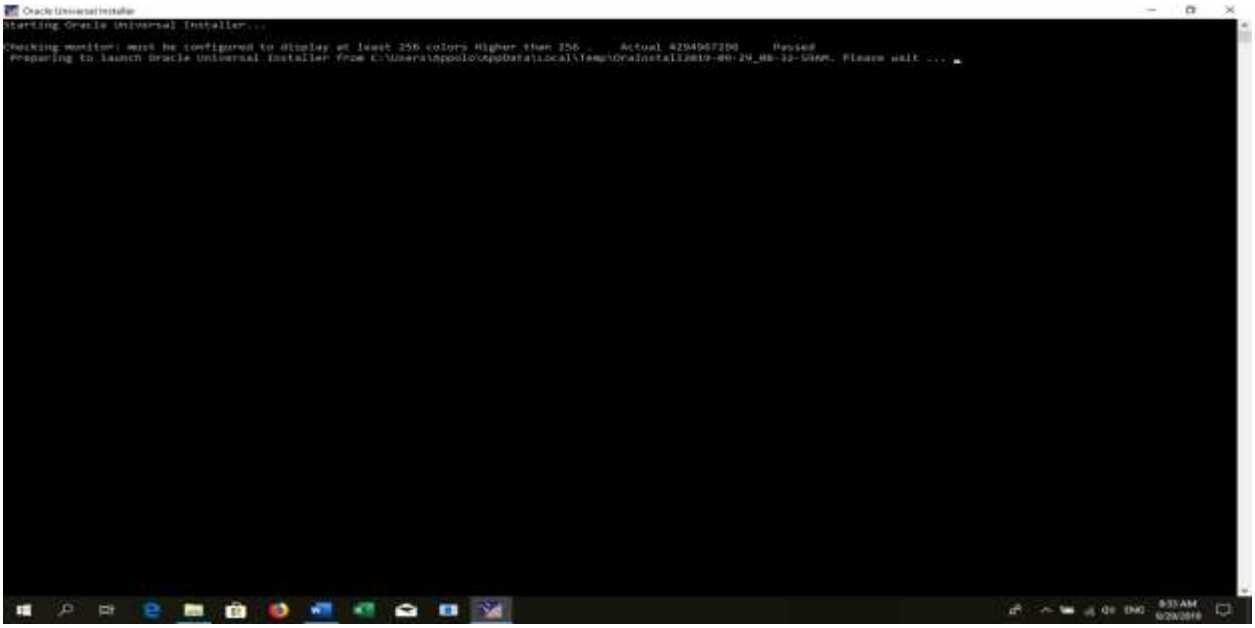


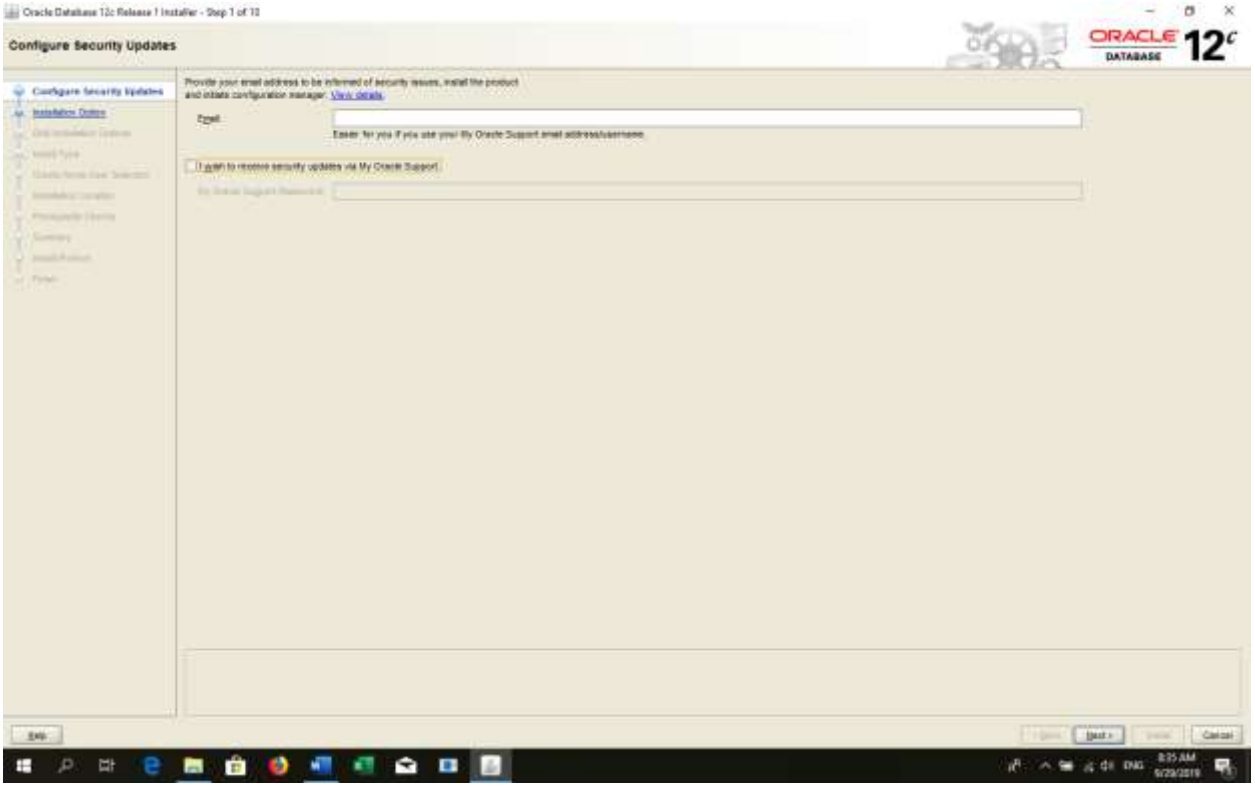
- Se porneste aplicatia Setup pentru instalarea bazei de date si se parcurg pasii de instalare.

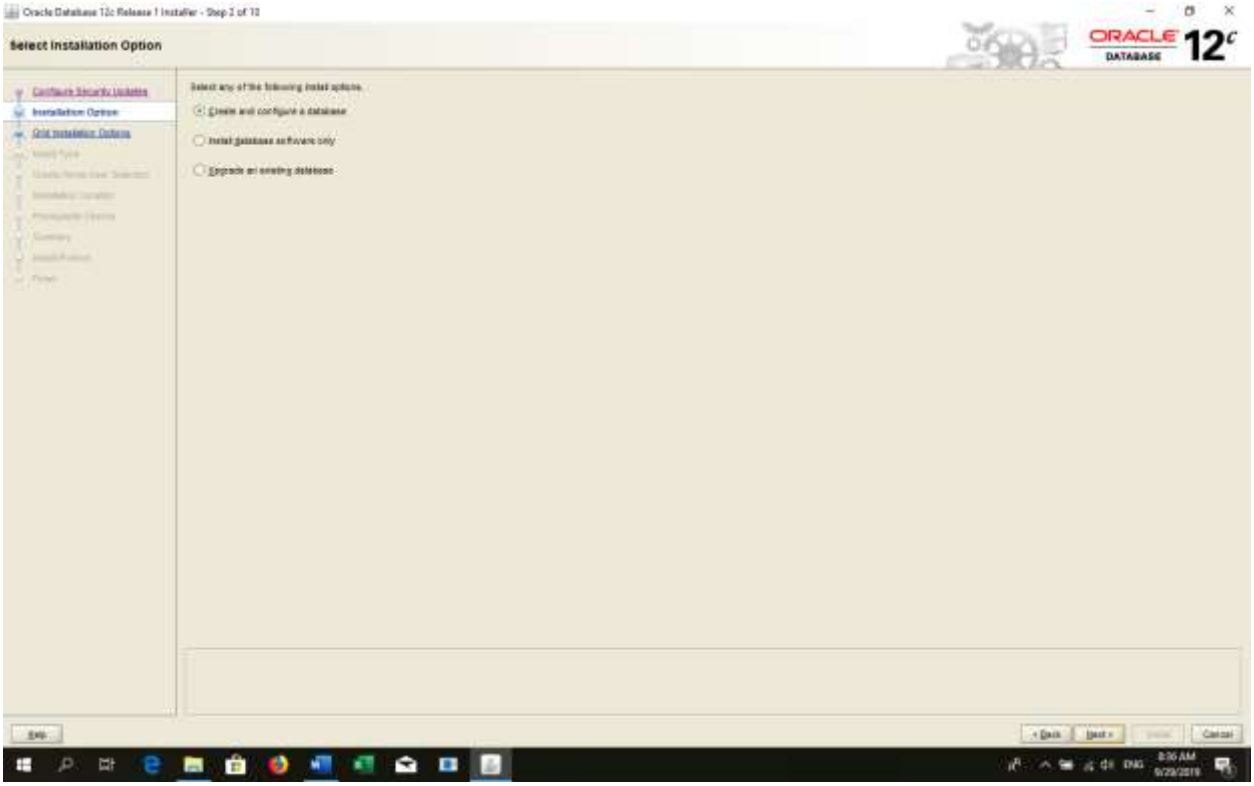
Obs. Pasii de instalare sunt aceiasi ca la Oracle Database 12c descrisi mai jos.

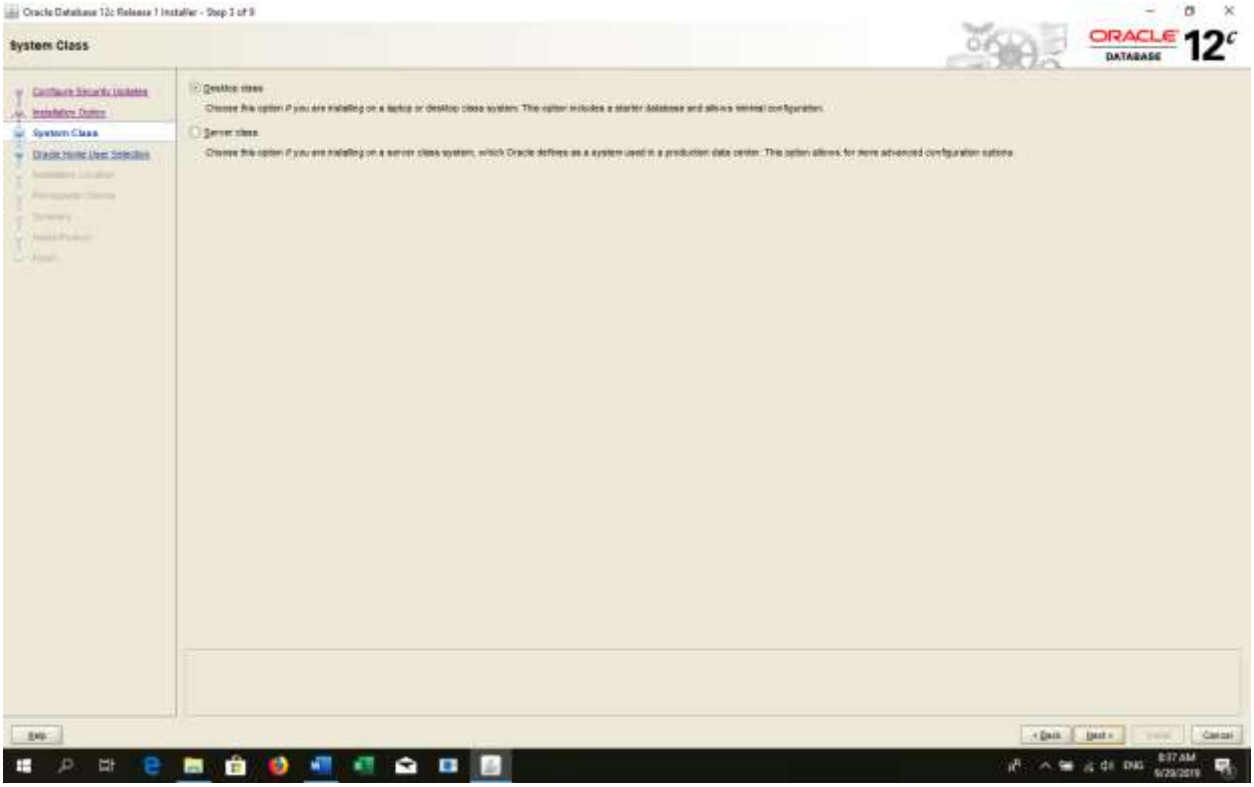
A. Instalarea bazei de date Oracle Database 12c

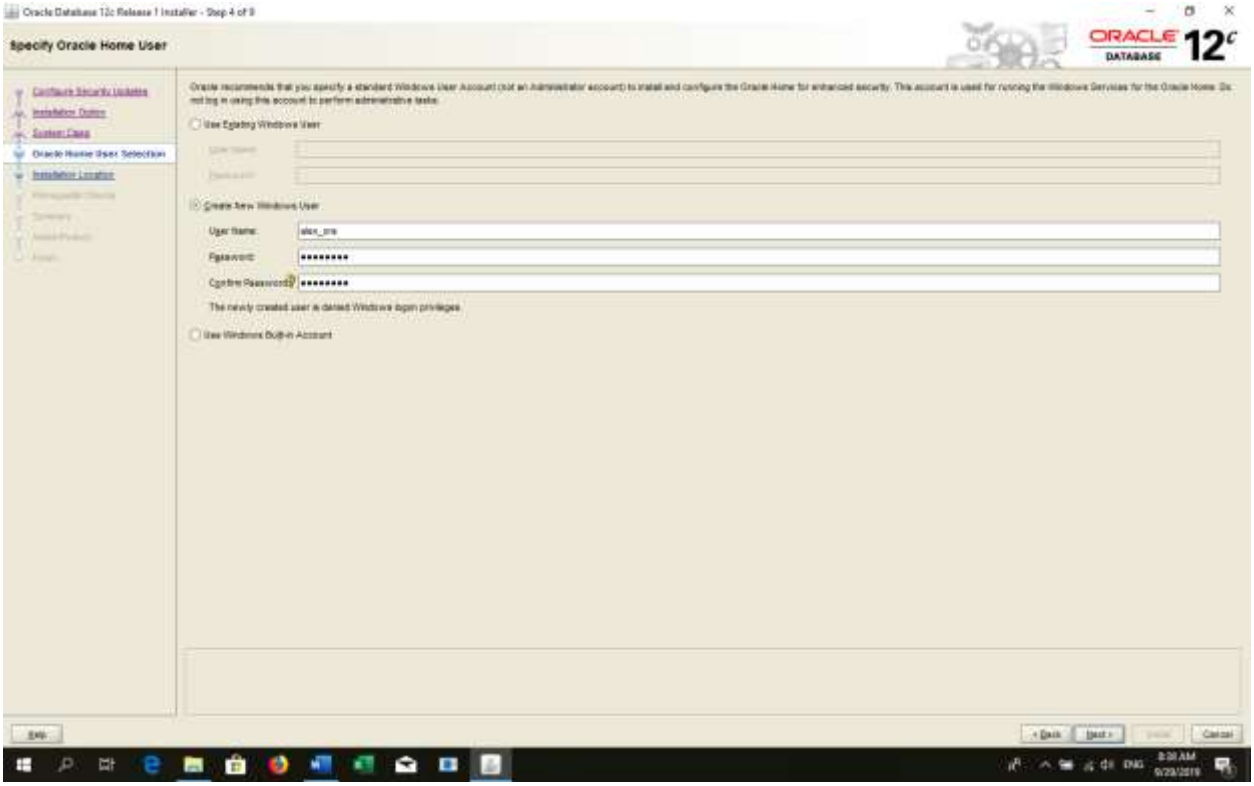
Run Setup as Administrator

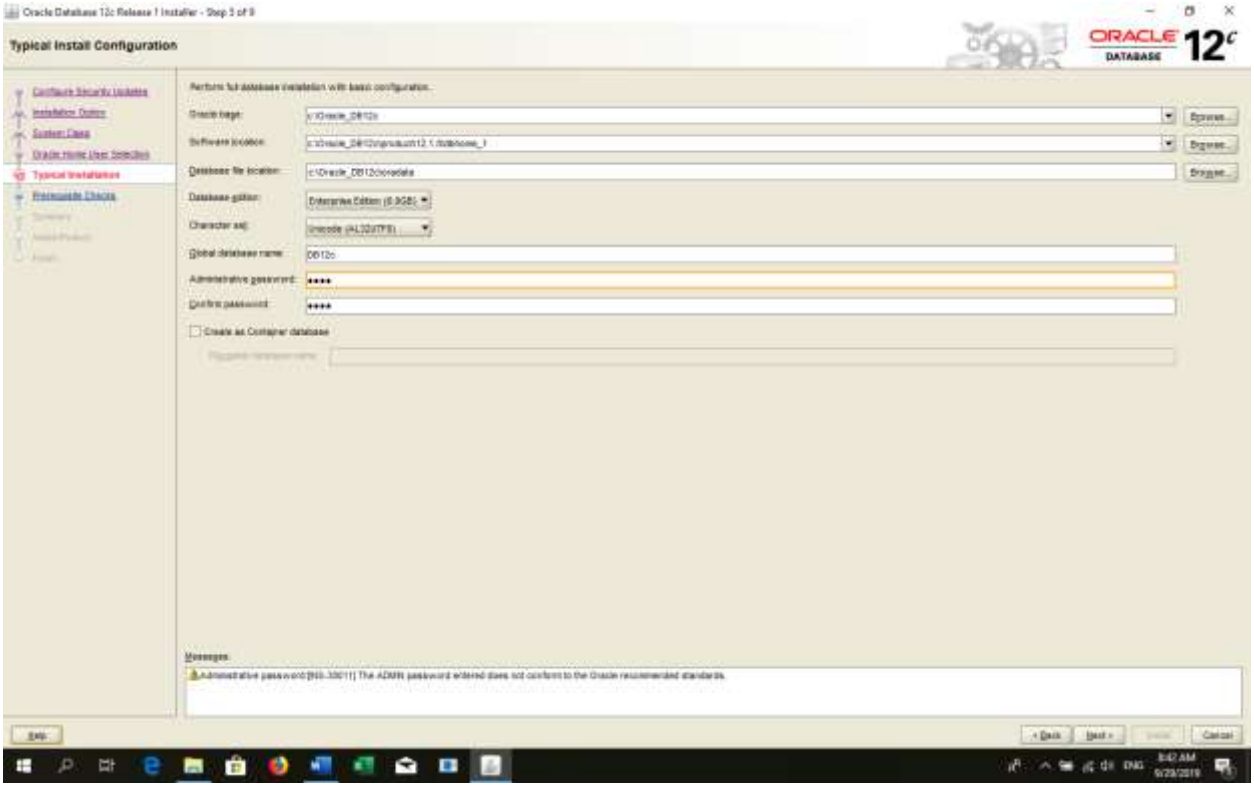


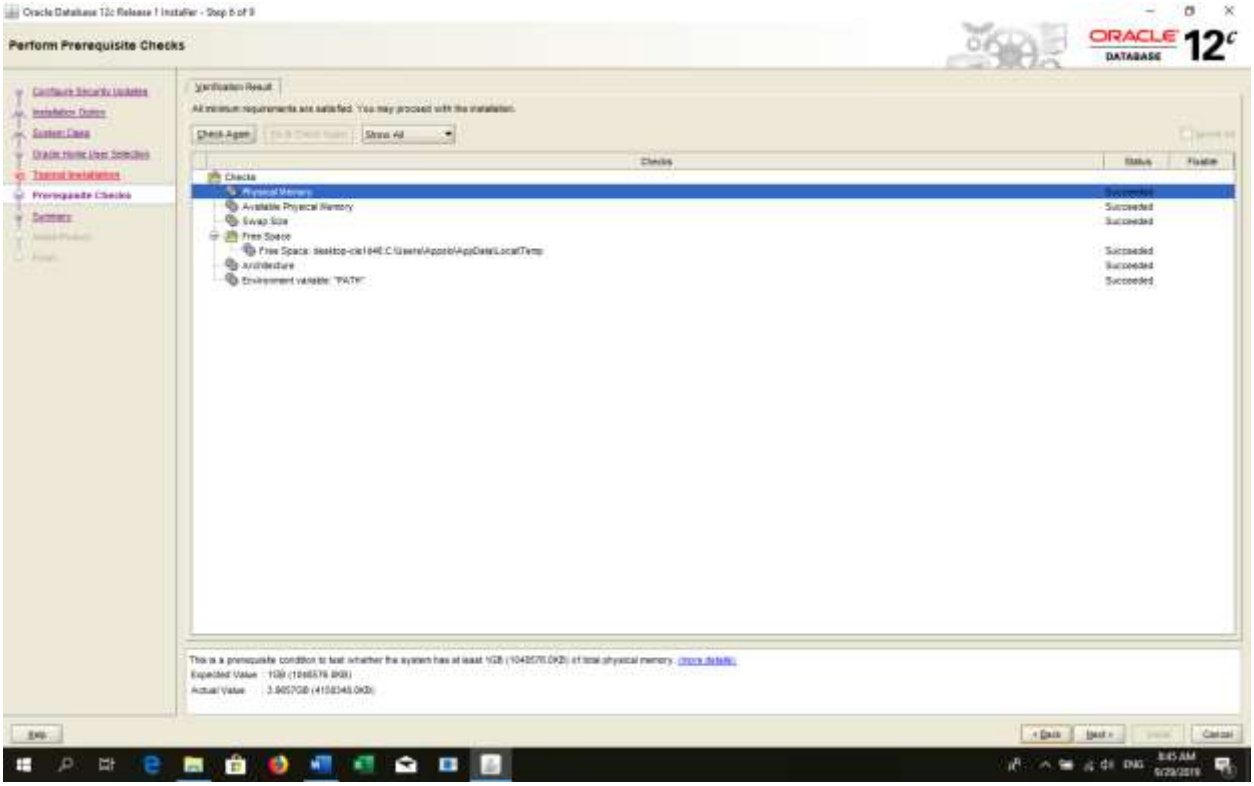


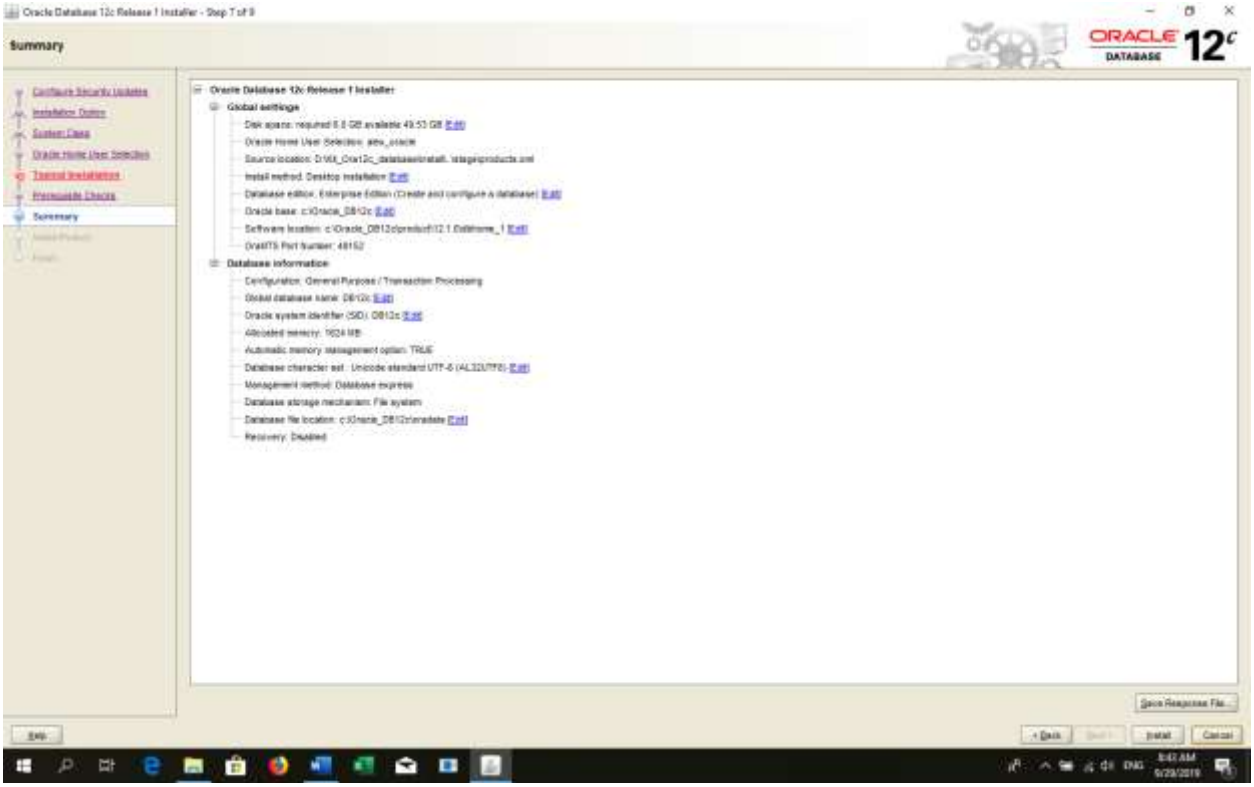

Oracle Database 12c Release 1 Installer - Step 2 of 10
Select Installation Option
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
Grid Installation Options
Select any of the following install options.
Create and configure a database
Install database software only
Upgrade an existing database
Help
< Back
Next >
Install
Cancel
8:36 AM
9/29/2019

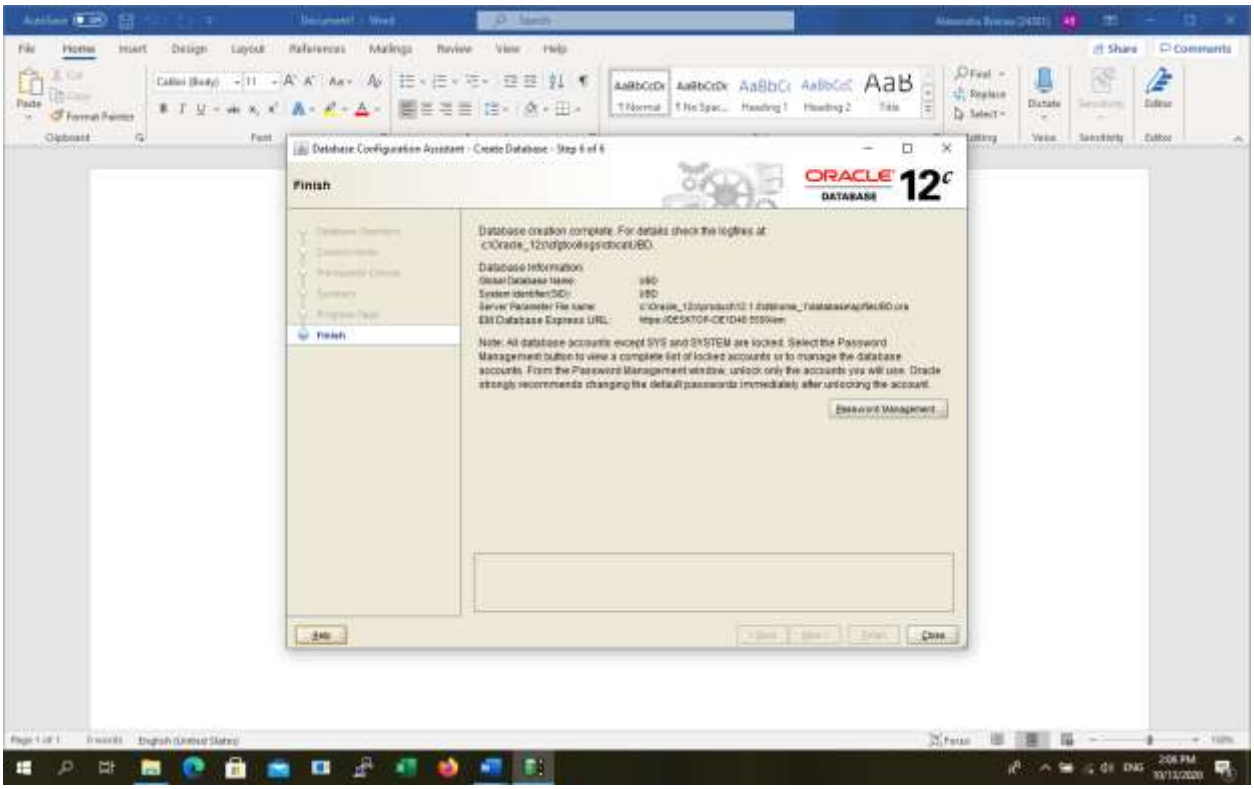

Oracle Database 12c Release 1 Installer - Step 3 of 9
System Class
ORACLE DATABASE 12c
Configure Security Updates
Installation Option
System Class
Oracle Home User Selection
Desktop class
Choose this option if you are installing on a laptop or desktop class system. This option includes a starter database and allows minimal configuration.
Server class
Choose this option if you are installing on a server class system, which Oracle defines as a system used in a production data center. This option allows for more advanced configuration options.
Help
< Back
Next >
Install
Cancel
8:37 AM
9/29/2019

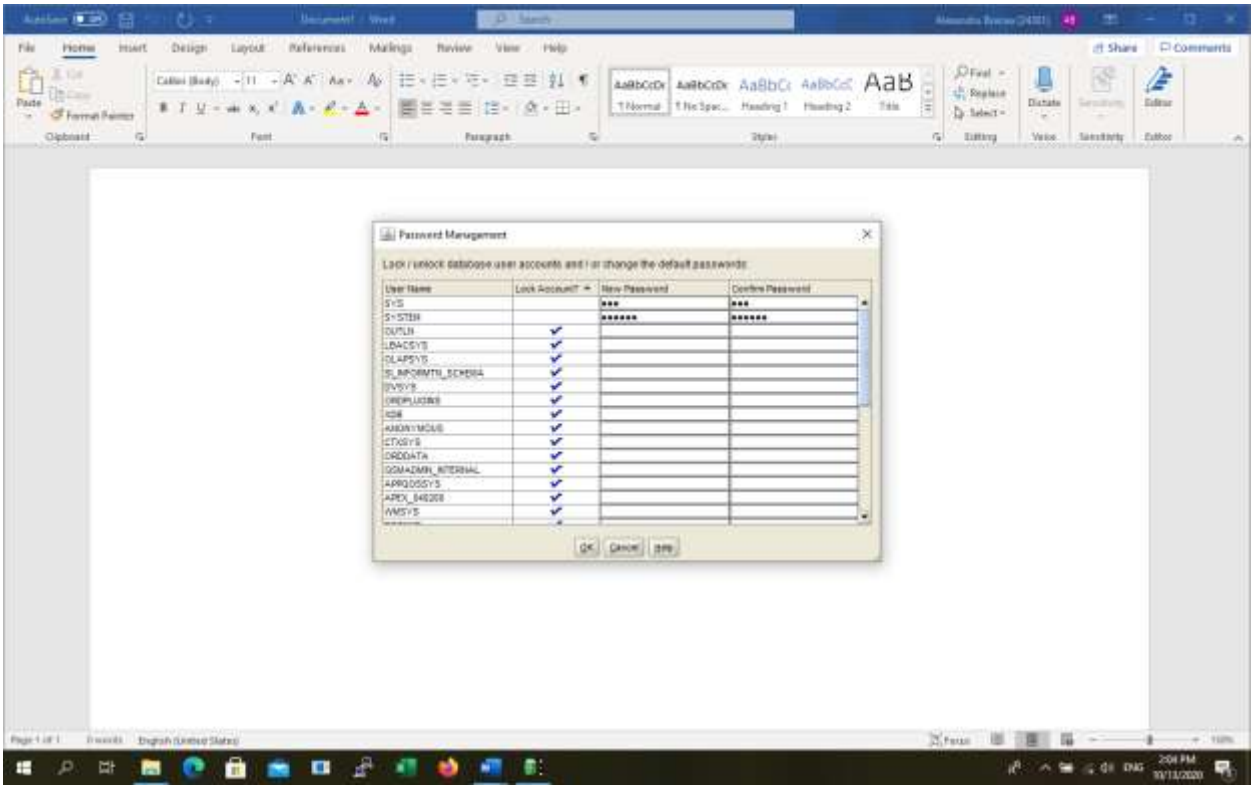

Oracle Database 12c Release 1 Installer - Step 4 of 9
Specify Oracle Home User
ORACLE 12c
DATABASE
Configure Security Updates
Installation Option
System Class
Oracle Home User Selection
Installation Location
Prerequisite Checks
Summary
Install Product
Finish
Oracle recommends that you specify a standard Windows User Account (not an Administrator account) to install and configure the Oracle Home for enhanced security. This account is used for running the Windows Services for the Oracle Home. Do not log in using this account to perform administrative tasks.
Use Existing Windows User
User Name:
Password:
Create New Windows User
User Name:
alex_ora
Password:
Confirm Password:
The newly created user is denied Windows login privileges.
Use Windows Built-in Account
Help
< Back
Next >
Install
Cancel
ENG
8:38 AM
9/29/2019


Oracle Database 12c Release 1 Installer - Step 5 of 9
Typical Install Configuration
ORACLE 12c
DATABASE
Configure Security Updates
Installation Option
System Class
Oracle Home User Selection
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Perform full database installation with basic configuration.
Oracle base:
c:\Oracle_DB12c
Browse...
Software location:
c:\Oracle_DB12c\product\12.1.0\dbhome_1
Database file location:
c:\Oracle_DB12c\oradata
Database edition:
Enterprise Edition (6.4GB)
Character set:
Unicode (AL32UTF8)
Global database name:
DB12c
Administrative password:
Confirm password:
Create as Container database
Pluggable database name:
Messages
Administrative password [INS-30011] The ADMIN password entered does not conform to the Oracle recommended standards.
Help
< Back
Next >
Install
Cancel
ENG
8:47 AM
9/29/2019

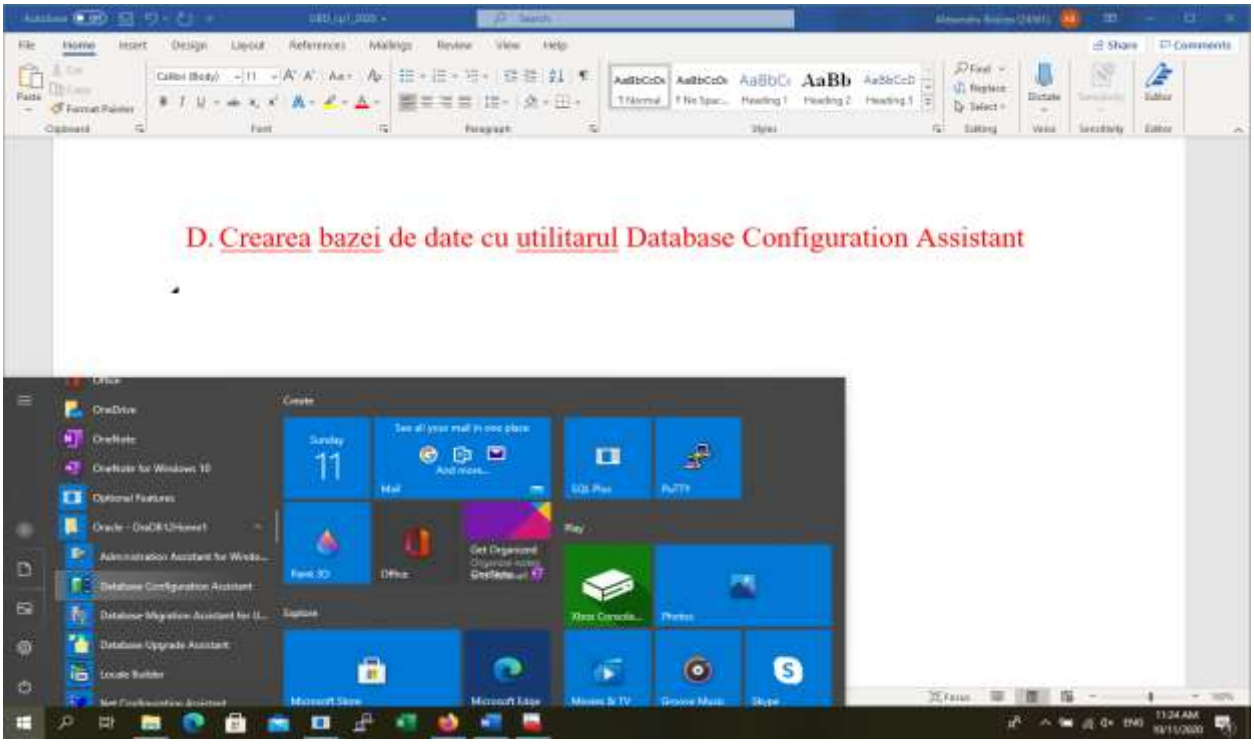

Oracle Database 12c Release 1 Installer - Step 6 of 9
Perform Prerequisite Checks
ORACLE 12c
DATABASE
Configure Security Updates
Installation Option
System Class
Oracle Home User Selection
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Verification Result
All minimum requirements are satisfied. You may proceed with the installation.
Check Again
Fix & Check Again
Show All
Ignore All
Checks
Status
Fixable
Checks
Physical Memory
Available Physical Memory
Swap Size
Free Space
Free Space: desktop-cie1646:C:\Users\Apoorv\AppData\Local\Temp
Architecture
Environment variable: "PATH"
Succeeded
This is a prerequisite condition to test whether the system has at least 1GB (1048576.0KB) of total physical memory. Check details
Expected Value : 1GB (1048576.0KB)
Actual Value : 3.9857GB (4180340.0KB)
Help
< Back
Next >
Install
Cancel
ENG
8:45 AM
5/29/2019

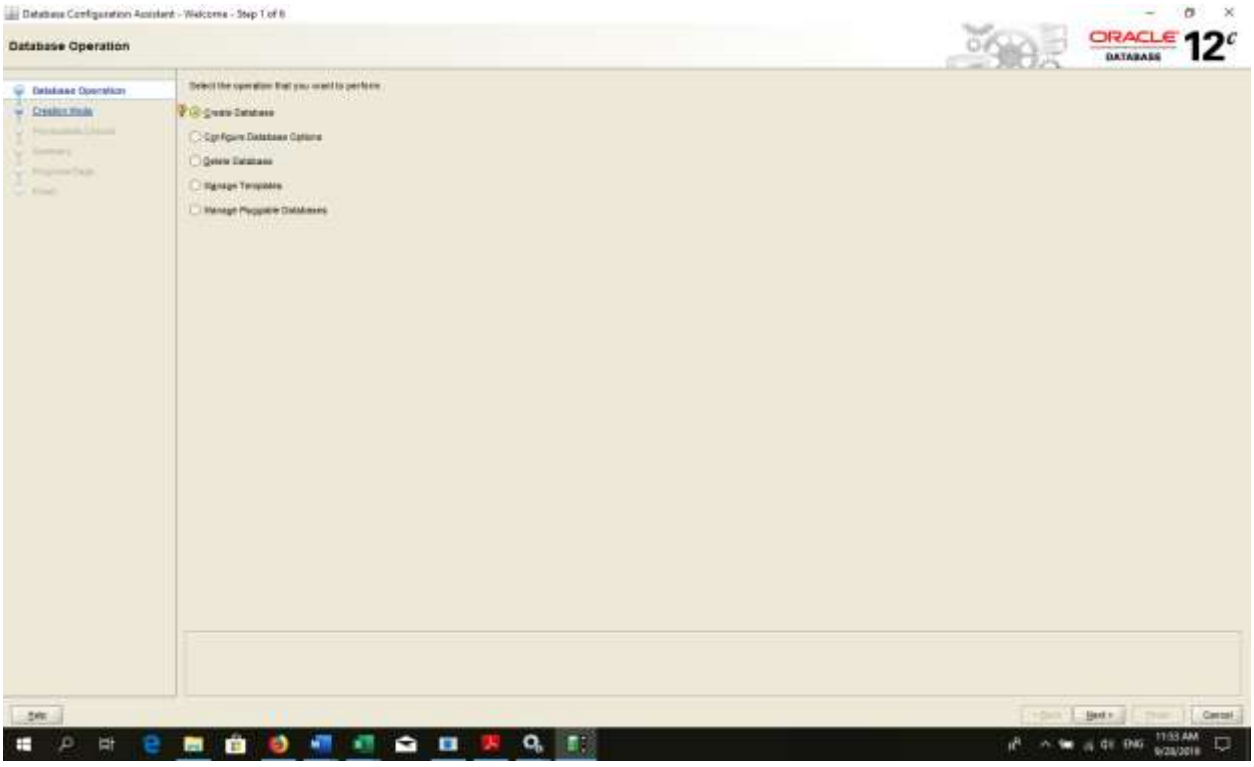

Oracle Database 12c Release 1 Installer - Step 7 of 9
Summary
ORACLE 12c
DATABASE
Configure Security Updates
Installation Option
System Class
Oracle Home User Selection
Typical Installation
Prerequisite Checks
Summary
Install Product
Finish
Oracle Database 12c Release 1 Installer
Global settings
Disk space: required 6.8 GB available 49.53 GB [Edit]
Oracle Home User Selection: adv_oracle
Source location: D:\Ora12c_database\install\..\stage\products.xml
Install method: Desktop installation [Edit]
Database edition: Enterprise Edition (Create and configure a database) [Edit]
Oracle base: c:\Oracle_DB12c [Edit]
Software location: c:\Oracle_DB12c\product\12.1.0\dbhome_1 [Edit]
Database information
Configuration: General Purpose / Transaction Processing
Oracle system identifier (SID): DB12c [Edit]
Allocated memory: 1024 MB
Automatic memory management option: TRUE
Management method: Database express
Database storage mechanism: File system
Database file location: c:\Oracle_DB12c\oradata [Edit]
Recovery: Disabled
Save Response File...
Help
< Back
Next >
Install
Cancel
ENG
8:47 AM
5/29/2019

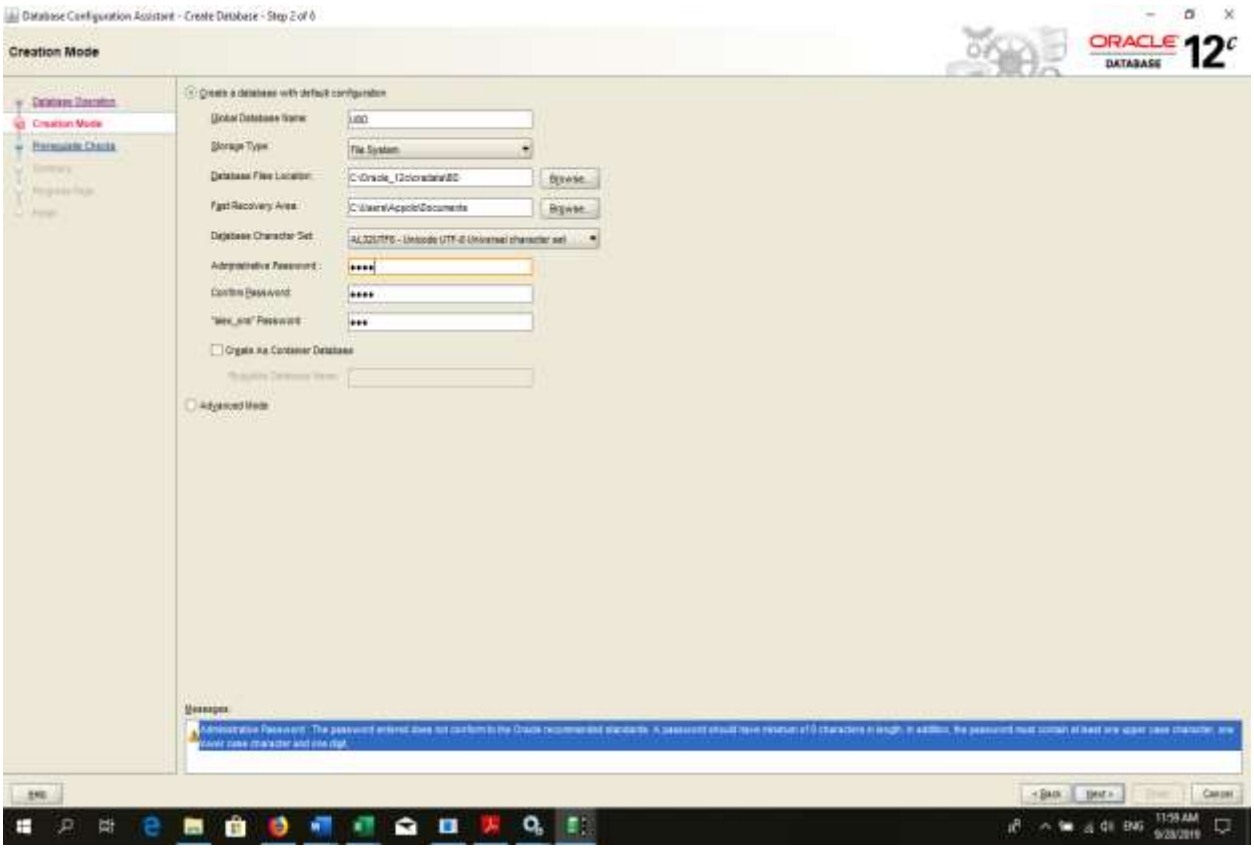

Database Configuration Assistant - Create Database - Step 6 of 6
Finish
ORACLE 12c
DATABASE
Database creation complete. For details check the logfiles at:
c:\Oracle_12c\cfgtoollogs\dbca\UBD.
Database Information:
Global Database Name: UBD
System Identifier(SID): UBD
Server Parameter File name:
EM Database Express URL:
Note: All database accounts except SYS and SYSTEM are locked. Select the Password Management button to view a complete list of locked accounts or to manage the database accounts. From the Password Management window, unlock only the accounts you will use. Oracle strongly recommends changing the default passwords immediately after unlocking the account.
Password Management...
Help
Close


Password Management
Lock / unlock database user accounts and / or change the default passwords
User Name
Lock Account?
New Password
Confirm Password
SYS
SYSTEM
OUTLN
DBACSYS
DIP
ORDPLUGINS
SI_INFORMTN_SCHEMA
ORDSYS
ORDDATA
XDB
ANONYMOUS
CTXSYS
MDSYS
OLAPSYS
WMSYS
OK
Cancel
Help

B. Crearea unei baze de date cu utilitarul Database Configuration Assistant

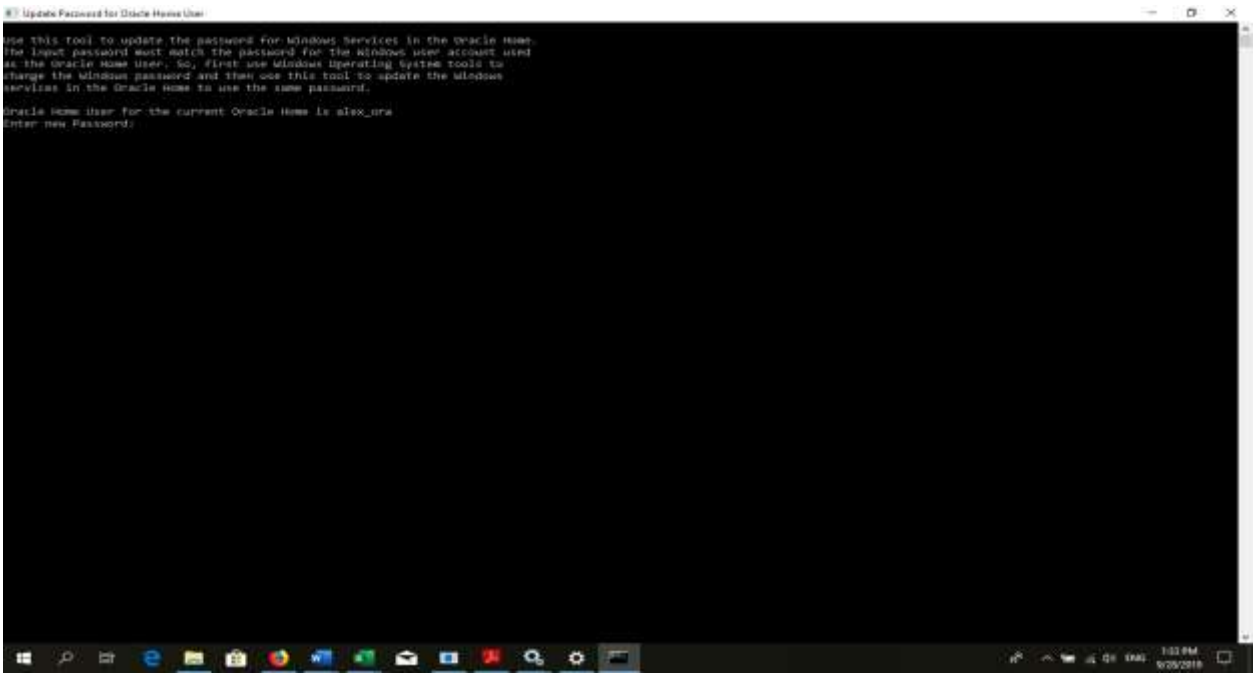


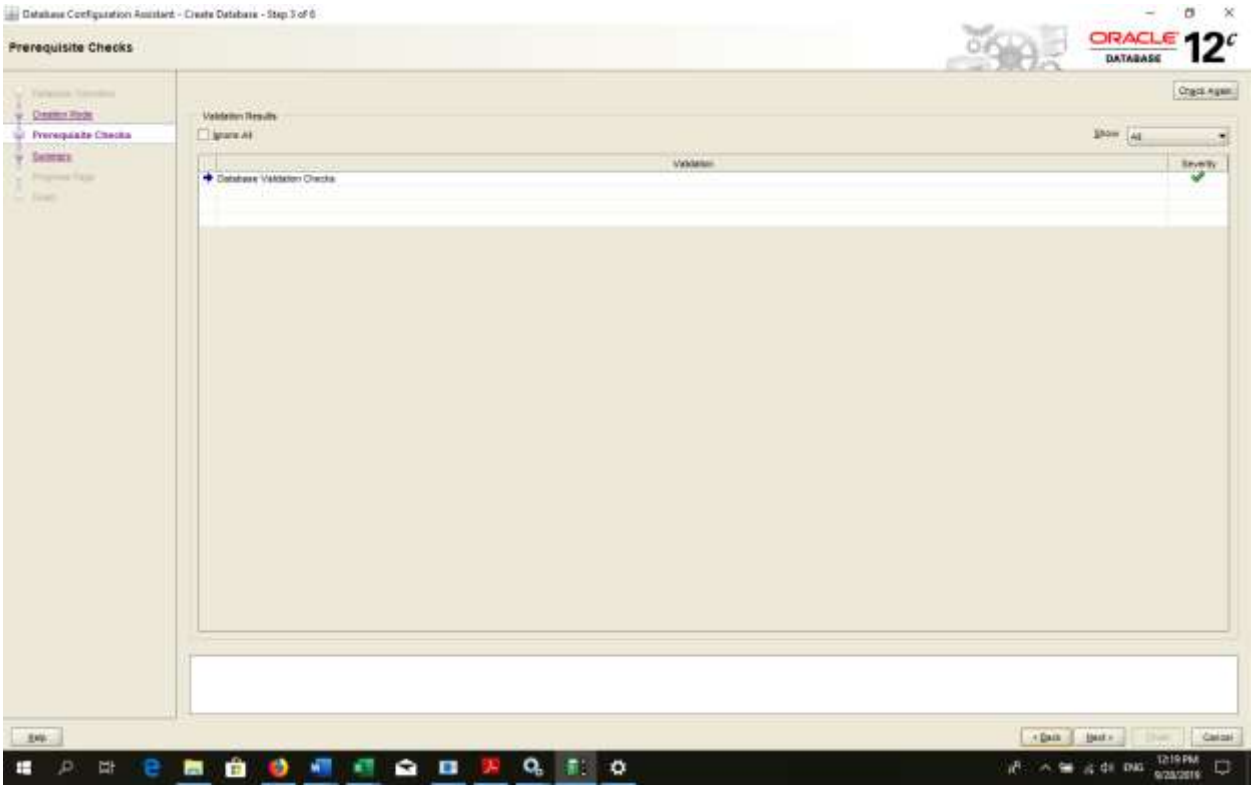


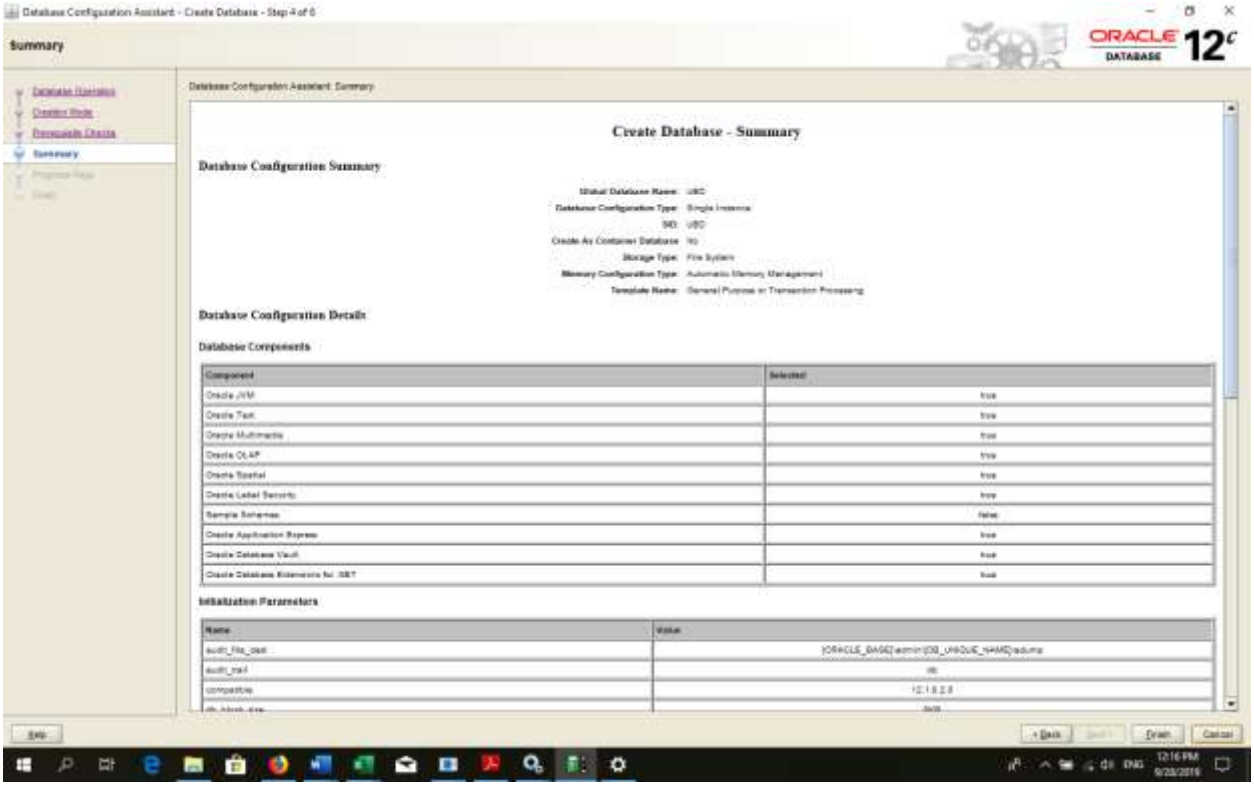


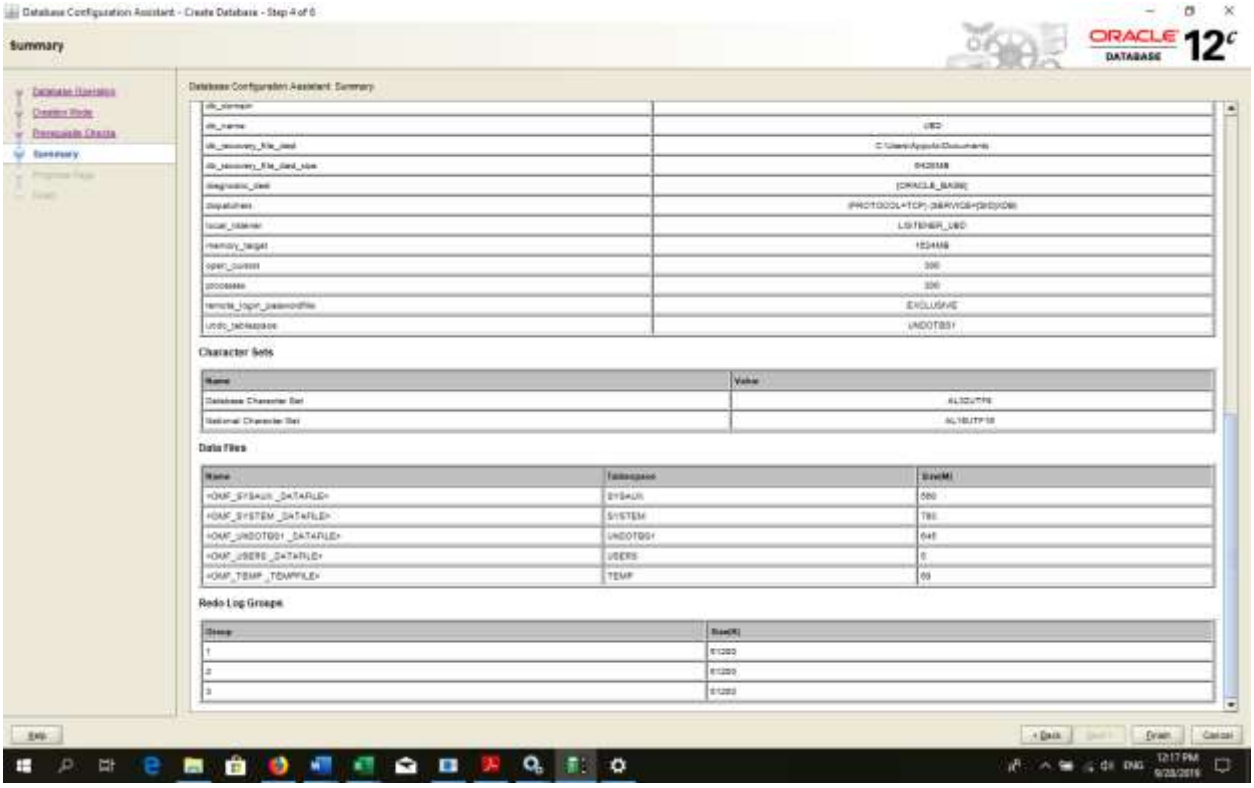
Obs:

- Se poate opta pentru crearea unui nou user extern pentru administrarea bazei de date.
- Parola pentru Oracle User se poate schimba din START => Oracle_Home1 => Update Password for Oracle Home User :

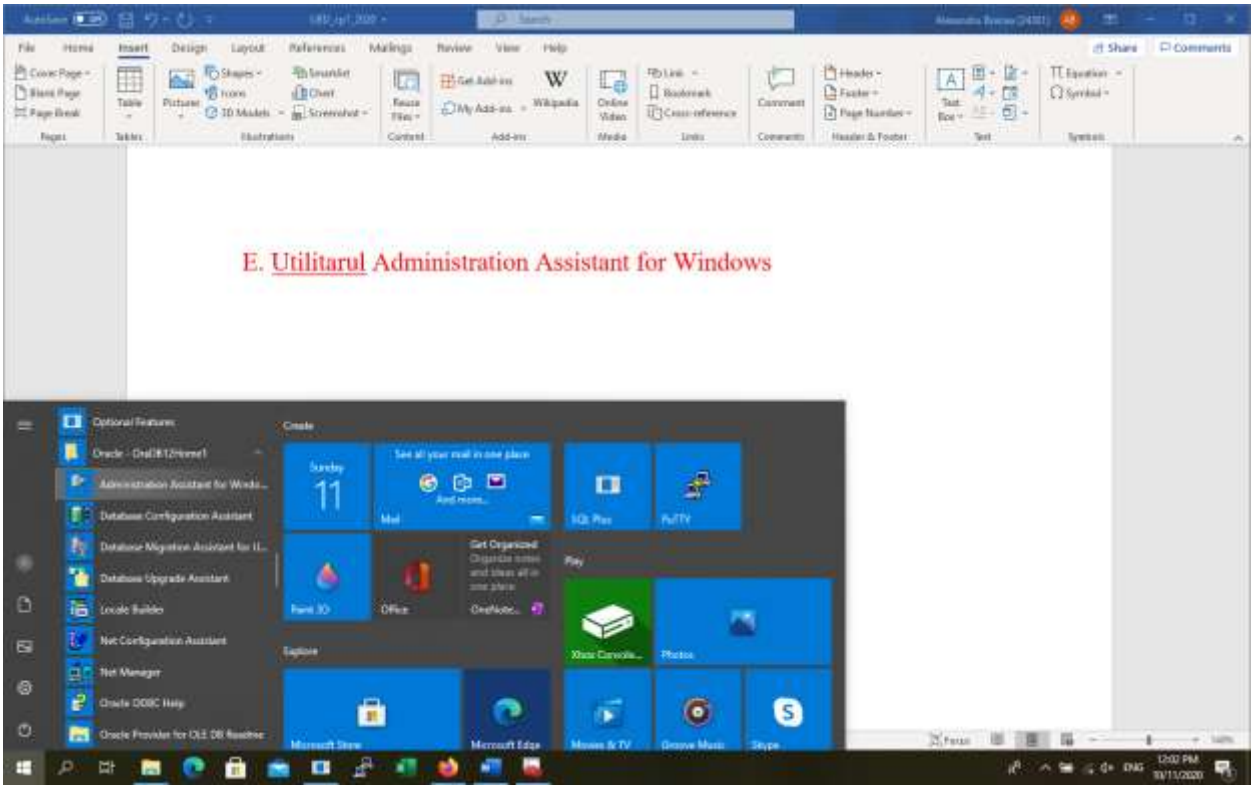

Update Password for Oracle Home User
Use this tool to update the password for Windows Services in the Oracle Home.
The input password must match the password for the Windows user account used
as the Oracle Home user. So, first use Windows Operating System tools to
change the Windows password and then use this tool to update the Windows
services in the Oracle Home to use the same password.
Oracle Home User for the current Oracle Home is alex_ora
Enter new Password:

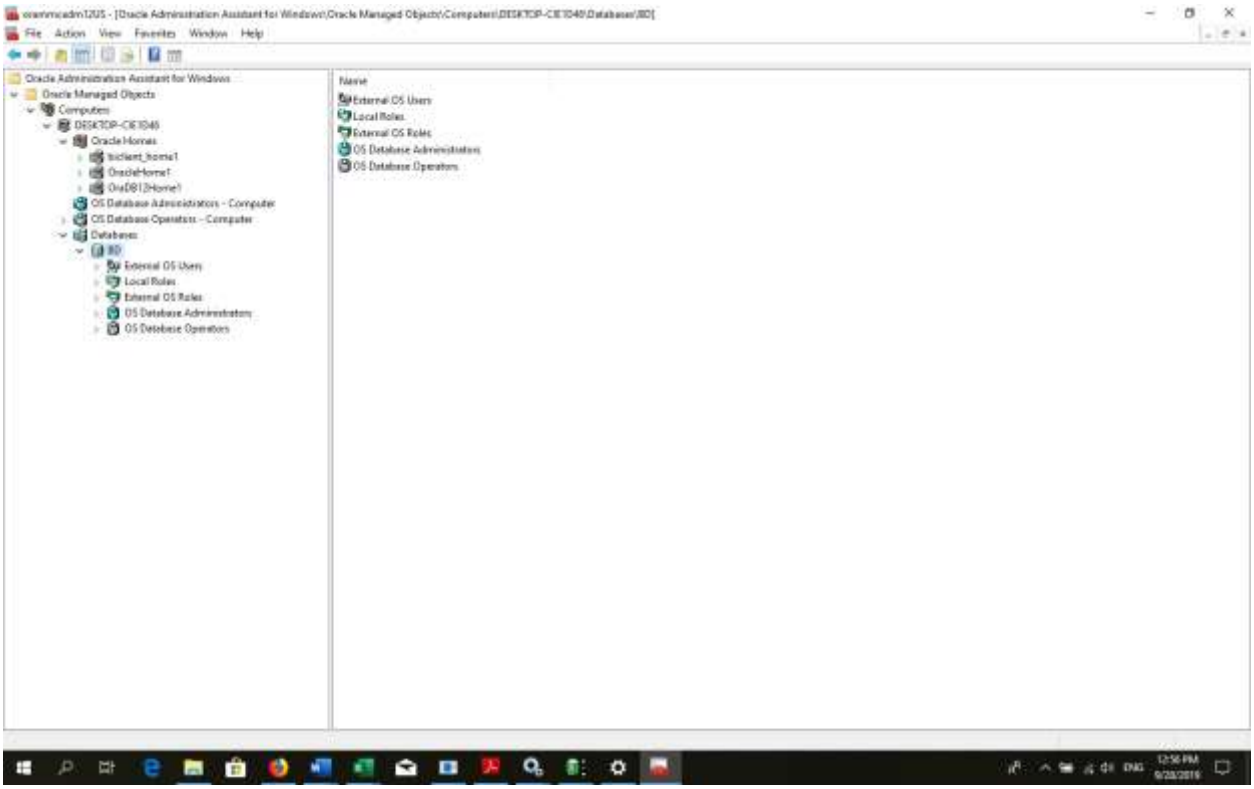

Database Configuration Assistant - Create Database - Step 3 of 6
Prerequisite Checks
ORACLE DATABASE 12c
Creation Mode
Prerequisite Checks
Summary
Validation Results
Ignore All
Show
All
Validation
Severity
Database Validation Checks
Help
Back
Next
Finish
Cancel


Database Configuration Assistant - Create Database - Step 4 of 6
Summary
ORACLE 12c DATABASE
Database Configuration Assistant: Summary
Create Database - Summary
Database Configuration Summary
Database Configuration Details
Database Components
Initialization Parameters
Help
Back
Finish
Cancel
12:16 PM

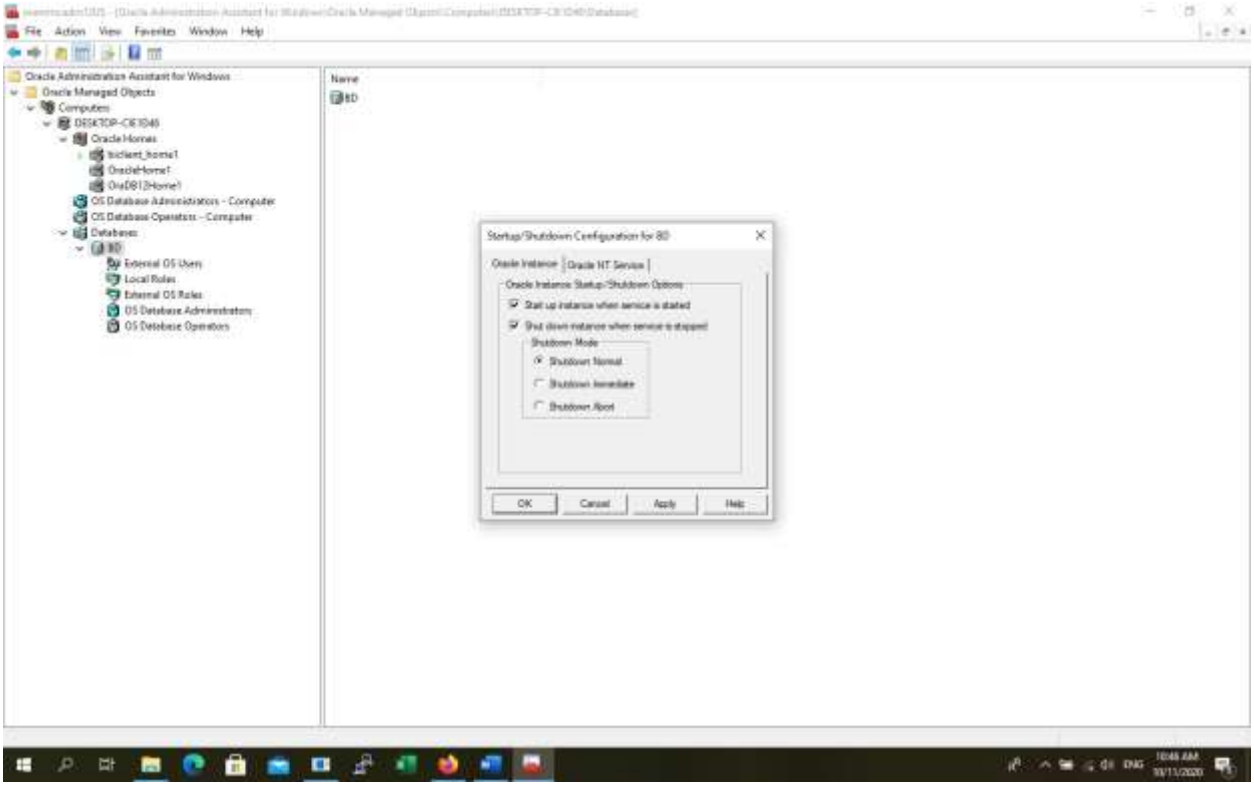

Database Configuration Assistant - Create Database - Step 4 of 6
Summary
ORACLE 12c DATABASE
Database Configuration Assistant: Summary
Character Sets
Data Files
Redo Log Groups
Help
Back
Finish
Cancel
12:17 PM

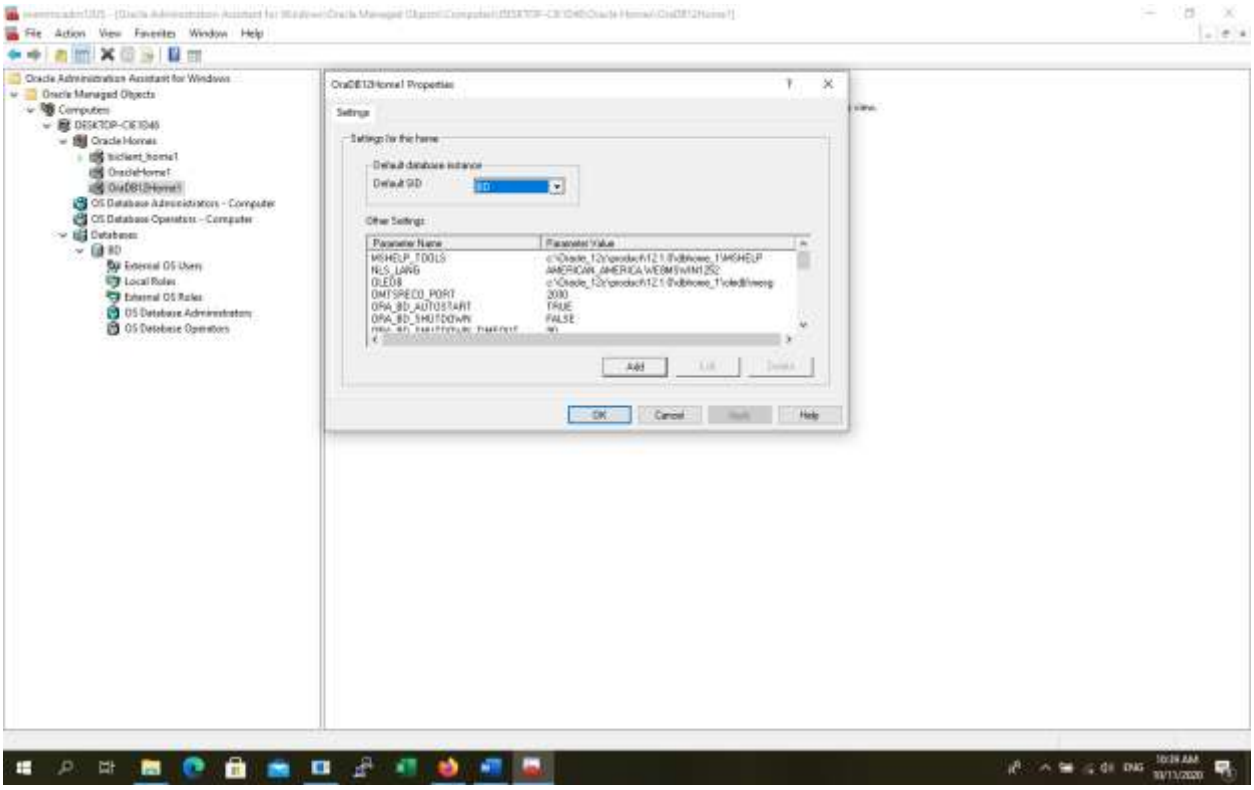
C. Utilitarul Administration Assistant for Windows

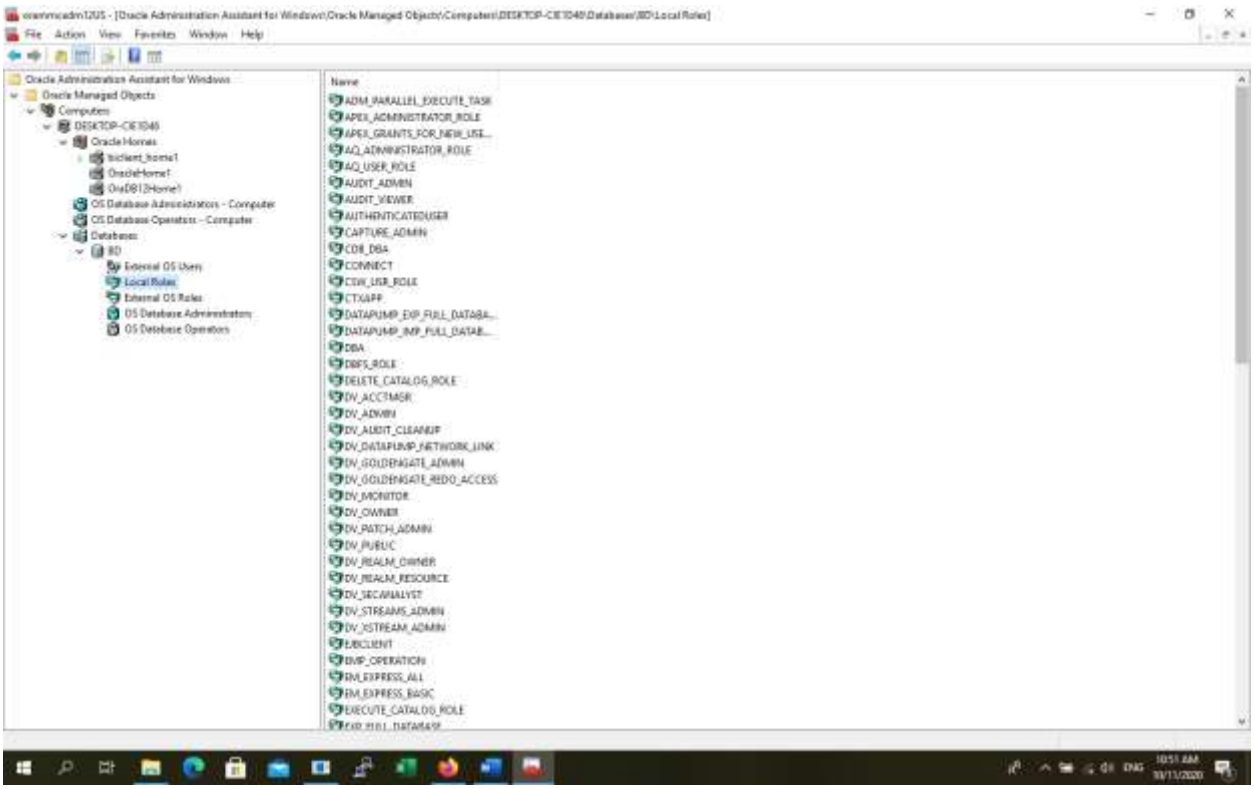




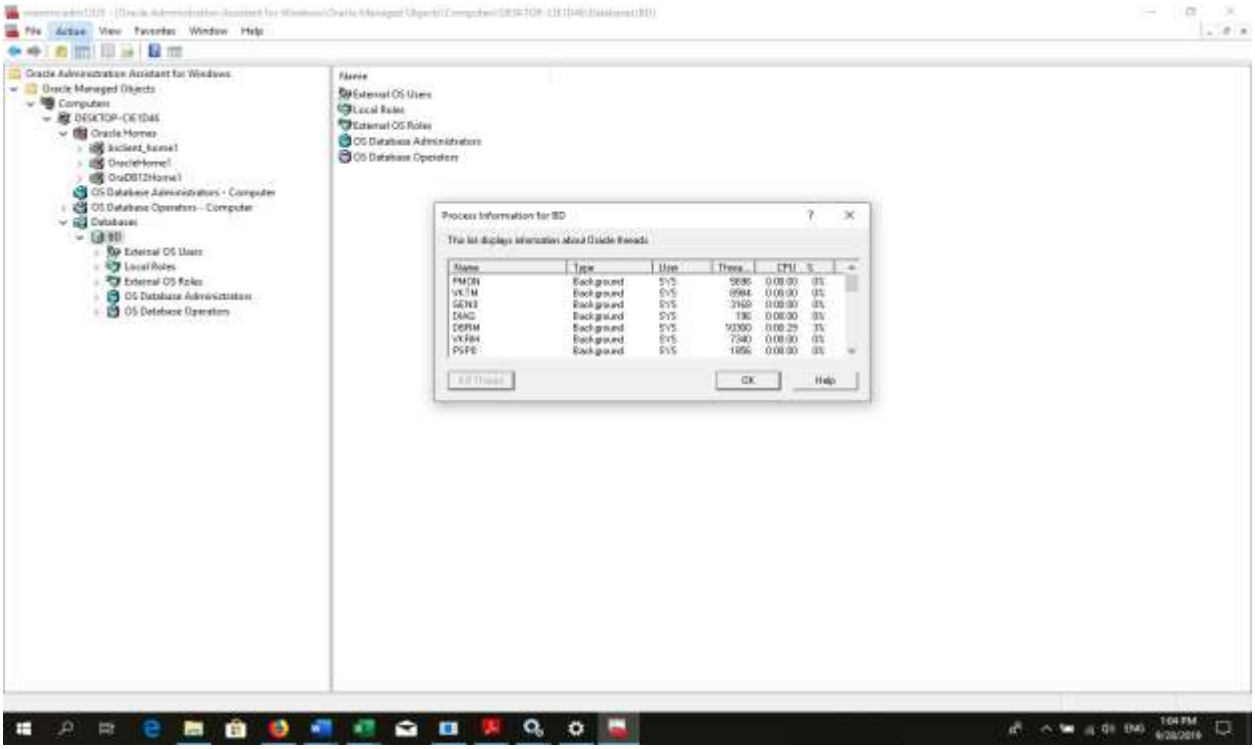
1. Informatii despre anumiti parametri ai bazei de date:
   (dupa Connect Database se alege cu click dreapta optiunea Startup/Shutdown, Properties, ..)



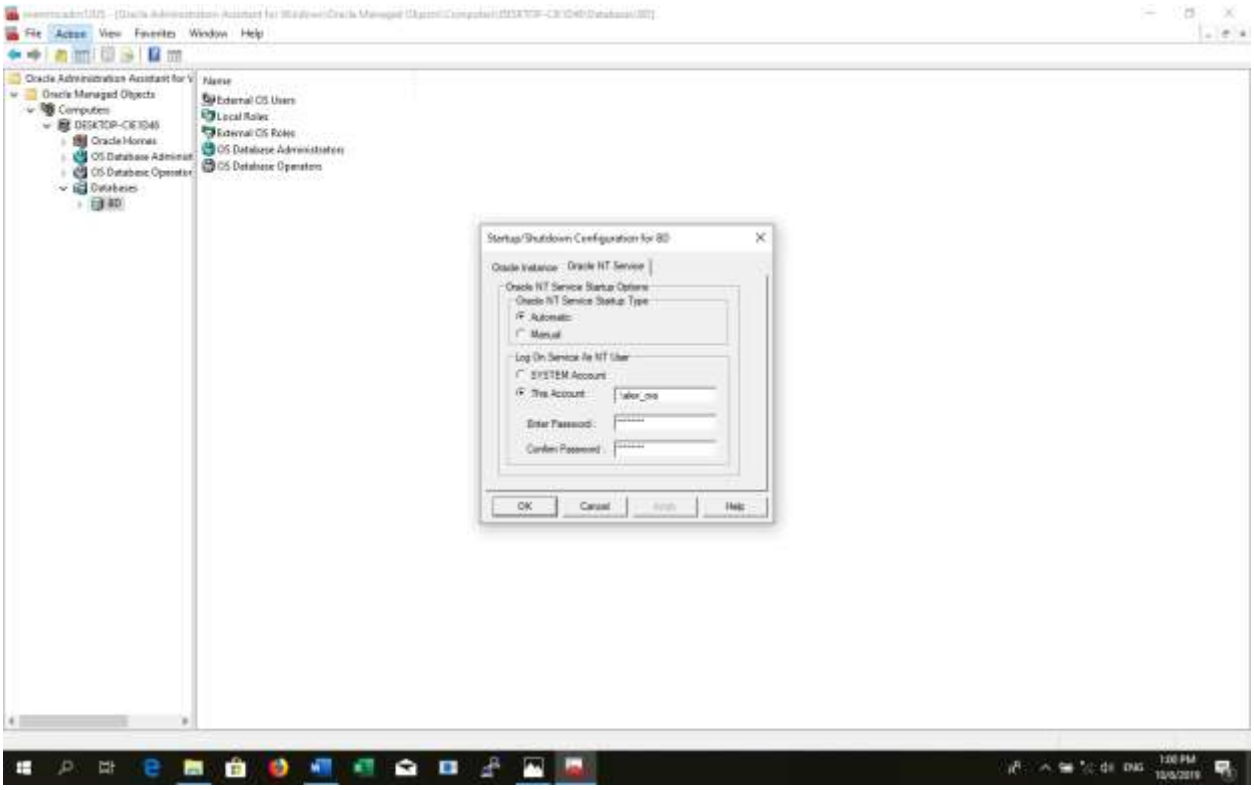




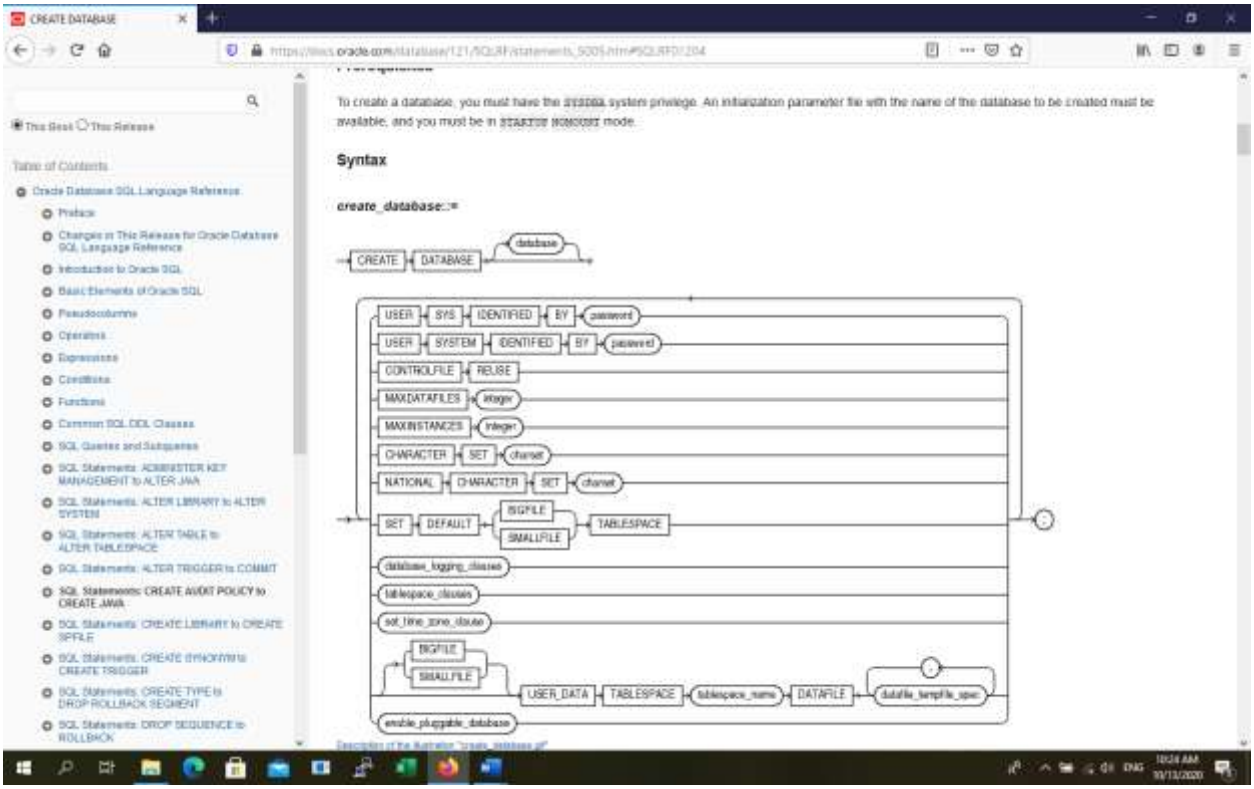
2. Informatii despre procese:



3. Modificare credentiale pentru userii externi:



D. Crearea unei baze de date prin comenzi manuale



Pasii pentru crearea unei baze de date in mod manual sunt:

Pas 1 : Conectarea la baza de date

Se conecteaza cu userul SYS si privilegiul SYSDBA.

Enter user-name: **sys@BD as sysdba**
Enter password: ****

Pas 2 : Se porneste baza de date in starea NOMOUNT

SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.

SQL> startup nomount;
ORACLE instance started.
Total System Global Area 21790532 bytes
Fixed Size 278340 bytes

Variable Size 16777216 bytes
Database Buffers 4194304 bytes
Redo Buffers 540672 bytes

Pas 3 : Se creeaza si se executa comanda CREATE DATABASE

Se editeaza un script care continue comanda CREATE DATABASE si se executa scriptul:
SQL> @e:\student\creare_db.sql

Exemplu:

```
CREATE DATABASE UBD
USER SYS IDENTIFIED BY sys_password
USER SYSTEM IDENTIFIED BY system_password
LOGFILE
GROUP 1 ('C:\Oracle_12c\oradata\BD\REDO01.rdo') SIZE 100M,
GROUP 2 ('C:\Oracle_12c\oradata\BD\REDO02.rdo') SIZE 100M,
GROUP 3 ('C:\Oracle_12c\oradata\BD\REDO03.rdo') SIZE 100M
DATAFILE 'C:\Oracle_12c\oradata\BD\SYSTEM01.dbf' SIZE 325M REUSE
SYSAUX DATAFILE 'C:\Oracle_12c\oradata\BD\SYSAUX01.dbf' SIZE 325M REUSE
MAXLOGFILES 5
MAXLOGMEMBERS 5
MAXLOGHISTORY 1
MAXDATAFILES 100
CHARACTER SET US7ASCII
NATIONAL CHARACTER SET AL16UTF16
EXTENT MANAGEMENT LOCAL
DEFAULT TABLESPACE users
DATAFILE 'C:\Oracle_12c\oradata\BD\USERS01.dbf' SIZE 500M REUSE AUTOEXTEND
ON MAXSIZE UNLIMITED
DEFAULT TEMPORARY TABLESPACE temp
TEMPFILE 'C:\Oracle_12c\oradata\BD\TEMP01.dbf' SIZE 20M REUSE
UNDO TABLESPACE undotbs1
DATAFILE 'C:\Oracle_12c\oradata\BD\UNDOTBS01.dbf' SIZE 200M REUSE
AUTOEXTEND ON MAXSIZE UNLIMITED
/
```

Obs. Parametrii specificati in comanda CREATE DATABASE trebuie sa se mapeze pe parametrii bazei de date care a fost deja creata la instalarea sistemului de gestiune.

Pas 4 : Se trece baza de date in starea OPEN

SQL> alter database open;
Database altered.

Pas 5 : Se executa scripturile catalog.sql si catproc.sql

• Aceste scripturi se executa dupa crearea bazei de date:
  - **catalog.sql** - continue comenzi de creare a tabelelor, sinonimelor si view-urilor dinamice in dictionarul bazei de date;
  - **catproc.sql** - contine comenzi de creare a package-urilor si procedurilor necesare limbajului PL/SQL in dictionarul bazei de date. Acest script mai contine si alte package-uri pentru alerte, replicari, diferite tipuri de obiecte, etc.
• Scripturile se executa in userul SYS cu privilegiul SYSDBA.
• Baza de date trebuie sa fie in starea OPEN.

SQL> @e:\student\catalog.sql
SQL> @e:\student\catproc.sql

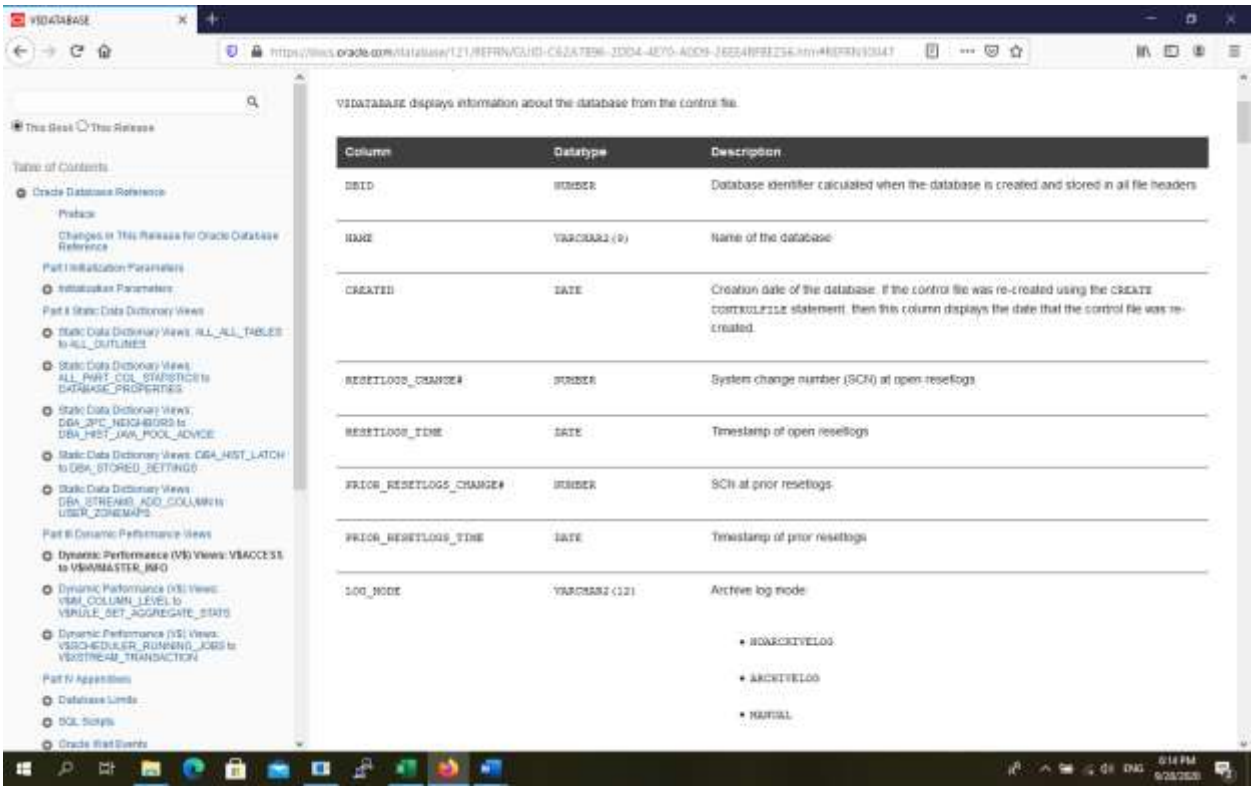
Pas 6: Informatii din dictionar despre baza de date:

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)

……..



V$DATABASE displays information about the database from the control file.

Column	Datatype	Description
DBID	NUMBER	Database identifier calculated when the database is created and stored in all file headers
NAME	VARCHAR2 (9)	Name of the database
CREATED	DATE	Creation date of the database. If the control file was re-created using the CREATE CONTROLFILE statement, then this column displays the date that the control file was re-created.
RESETLOGS_CHANGE#	NUMBER	System change number (SCN) at open resetlogs
RESETLOGS_TIME	DATE	Timestamp of open resetlogs
PRIOR_RESETLOGS_CHANGE#	NUMBER	SCN at prior resetlogs
PRIOR_RESETLOGS_TIME	DATE	Timestamp of prior resetlogs
LOG_MODE	VARCHAR2 (12)	Archive log mode: • NOARCHIVELOG • ARCHIVELOG • MANUAL

SQL> select name, created, log_mode, open_mode from v$database;

NAME	CREATED	LOG_MODE	OPEN_MODE
---------	---------	----------	----------
BD	08-MAY-19	NOARCHIVELOG	READ WRITE

E. Trecerea bazei de date in diferite stari

a) SQL> alter database close;

Database altered.

b) SQL> alter database mount;

alter database mount
*
ERROR at line 1:
ORA-01100: database already mounted

c) SQL> alter database dismount;

Database altered.

d) SQL> alter database mount;

alter database mount
*
ERROR at line 1:
ORA-00750: database has been previously mounted and dismounted

e) SQL> startup;

ORA-01081: cannot start already-running ORACLE - shut it down first

f) SQL> shutdown

ORA-01507: database not mounted
ORACLE instance shut down.

g) SQL> startup nomount;

ORACLE instance started.
Total System Global Area 1711276032 bytes
Fixed Size 3046464 bytes
Variable Size 1006633920 bytes
Database Buffers 687865856 bytes
Redo Buffers 13729792 bytes

h) SQL> alter database open;

alter database open
*
ERROR at line 1:
ORA-01507: database not mounted

i) SQL> alter database mount;

Database altered.

j) SQL> alter database open;

Database altered.

F. Stergerea din dictionar a unei baze de date prin comenzi manuale

Pas 1 : Conectarea la baza de date

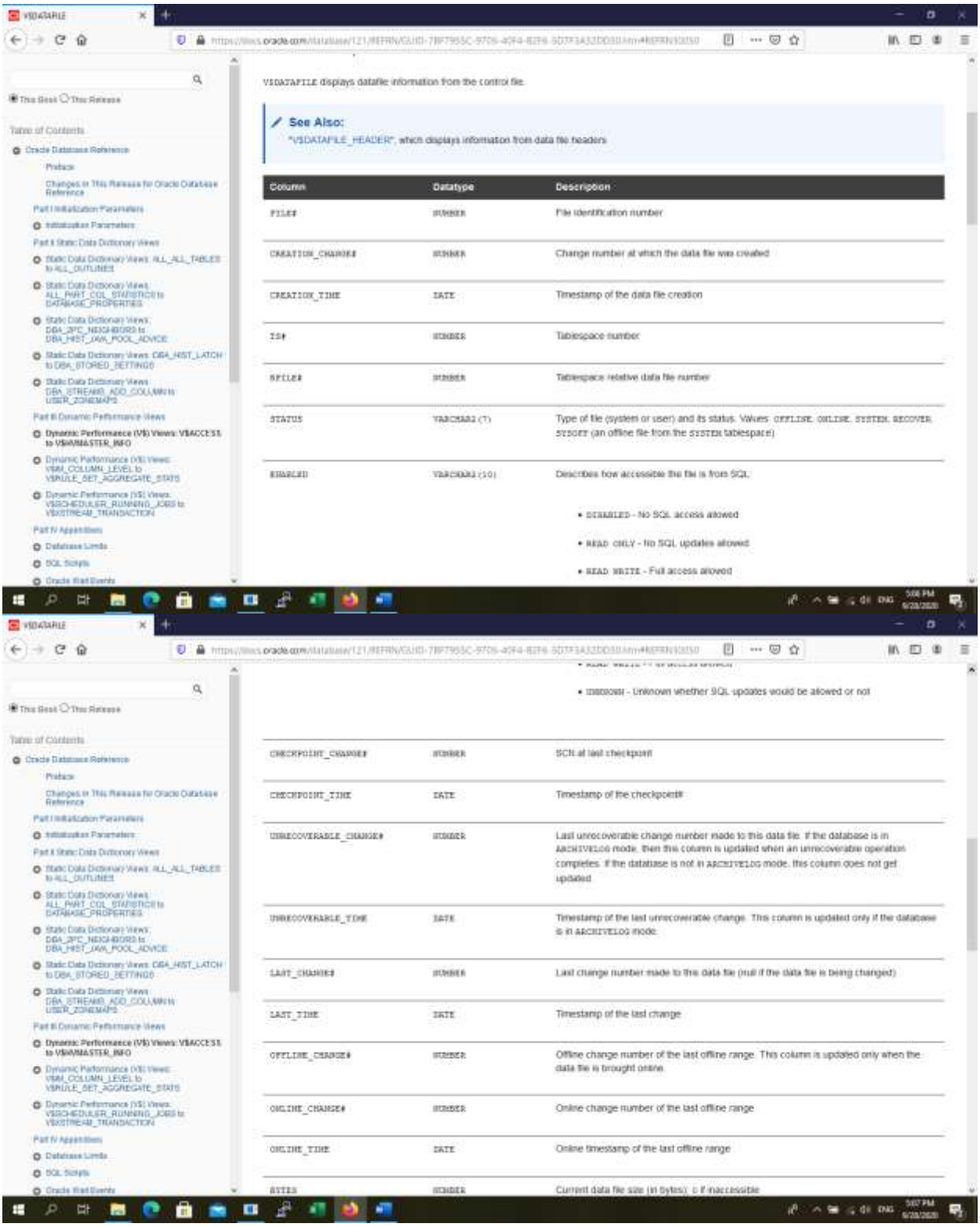
Se conecteaza cu userul SYS si privilegiul SYSDBA.

Pas 2 : Localizarea fisierelor de date, control si log

Aceste fisiere trebuie sterse manual dupa stergerea bazei de date.

SQL> desc V$DATAFILE

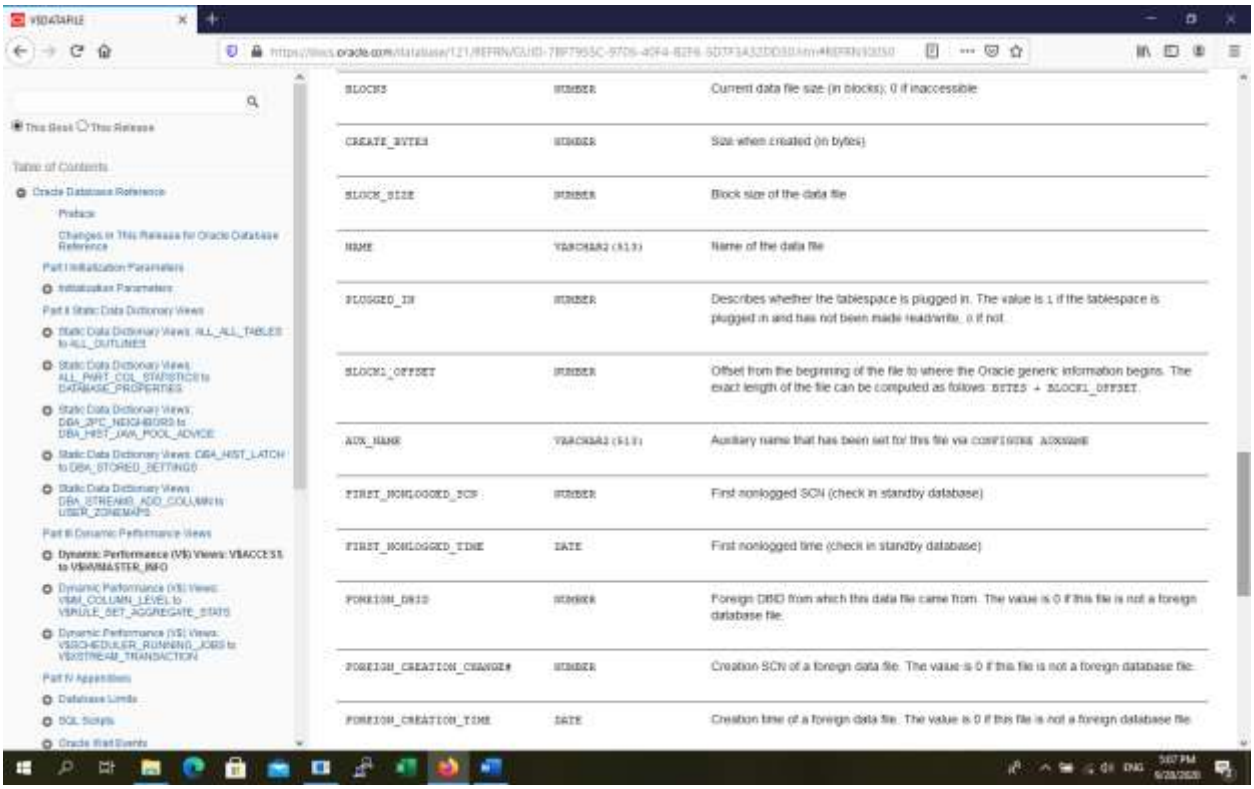
Name	Null?	Type
FILE#		NUMBER
CREATION_CHANGE#		NUMBER
CREATION_TIME		DATE
TS#		NUMBER
RFILE#		NUMBER
STATUS		VARCHAR2(7)
ENABLED		VARCHAR2(10)
CHECKPOINT_CHANGE#		NUMBER
CHECKPOINT_TIME		DATE
UNRECOVERABLE_CHANGE#		NUMBER
UNRECOVERABLE_TIME		DATE
LAST_CHANGE#		NUMBER
LAST_TIME		DATE
OFFLINE_CHANGE#		NUMBER
ONLINE_CHANGE#		NUMBER
ONLINE_TIME		DATE
BYTES		NUMBER
BLOCKS		NUMBER
CREATE_BYTES		NUMBER
BLOCK_SIZE		NUMBER
NAME		VARCHAR2(513)
PLUGGED_IN		NUMBER
BLOCK1_OFFSET		NUMBER
AUX_NAME		VARCHAR2(513)
FIRST_NONLOGGED_SCN		NUMBER
FIRST_NONLOGGED_TIME		DATE
FOREIGN_DBID		NUMBER
FOREIGN_CREATION_CHANGE#		NUMBER
FOREIGN_CREATION_TIME		DATE
PLUGGED_READONLY		VARCHAR2(3)
PLUGIN_CHANGE#		NUMBER
PLUGIN_RESETLOGS_CHANGE#		NUMBER
PLUGIN_RESETLOGS_TIME		DATE
CON_ID		NUMBER



V$DATAFILE displays datafile information from the control file.

See Also:
"V$DATAFILE_HEADER", which displays information from data file headers

Column	Datatype	Description
FILE#	NUMBER	File identification number
CREATION_CHANGE#	NUMBER	Change number at which the data file was created
CREATION_TIME	DATE	Timestamp of the data file creation
TS#	NUMBER	Tablespace number
RFILE#	NUMBER	Tablespace relative data file number
STATUS	VARCHAR2 (7)	Type of file (system or user) and its status. Values: OFFLINE, ONLINE, SYSTEM, RECOVER, SYSOFF (an offline file from the SYSTEM tablespace)
ENABLED	VARCHAR2 (10)	Describes how accessible the file is from SQL • DISABLED - No SQL access allowed • READ ONLY - No SQL updates allowed • READ WRITE - Full access allowed • UNKNOWN - Unknown whether SQL updates would be allowed or not
CHECKPOINT_CHANGE#	NUMBER	SCN at last checkpoint
CHECKPOINT_TIME	DATE	Timestamp of the checkpoint#
UNRECOVERABLE_CHANGE#	NUMBER	Last unrecoverable change number made to this data file. If the database is in ARCHIVELOG mode, then this column is updated when an unrecoverable operation completes. If the database is not in ARCHIVELOG mode, this column does not get updated
UNRECOVERABLE_TIME	DATE	Timestamp of the last unrecoverable change. This column is updated only if the database is in ARCHIVELOG mode
LAST_CHANGE#	NUMBER	Last change number made to this data file (null if the data file is being changed)
LAST_TIME	DATE	Timestamp of the last change
OFFLINE_CHANGE#	NUMBER	Offline change number of the last offline range. This column is updated only when the data file is brought online
ONLINE_CHANGE#	NUMBER	Online change number of the last offline range
ONLINE_TIME	DATE	Online timestamp of the last offline range
BYTES	NUMBER	Current data file size (in bytes); 0 if inaccessible



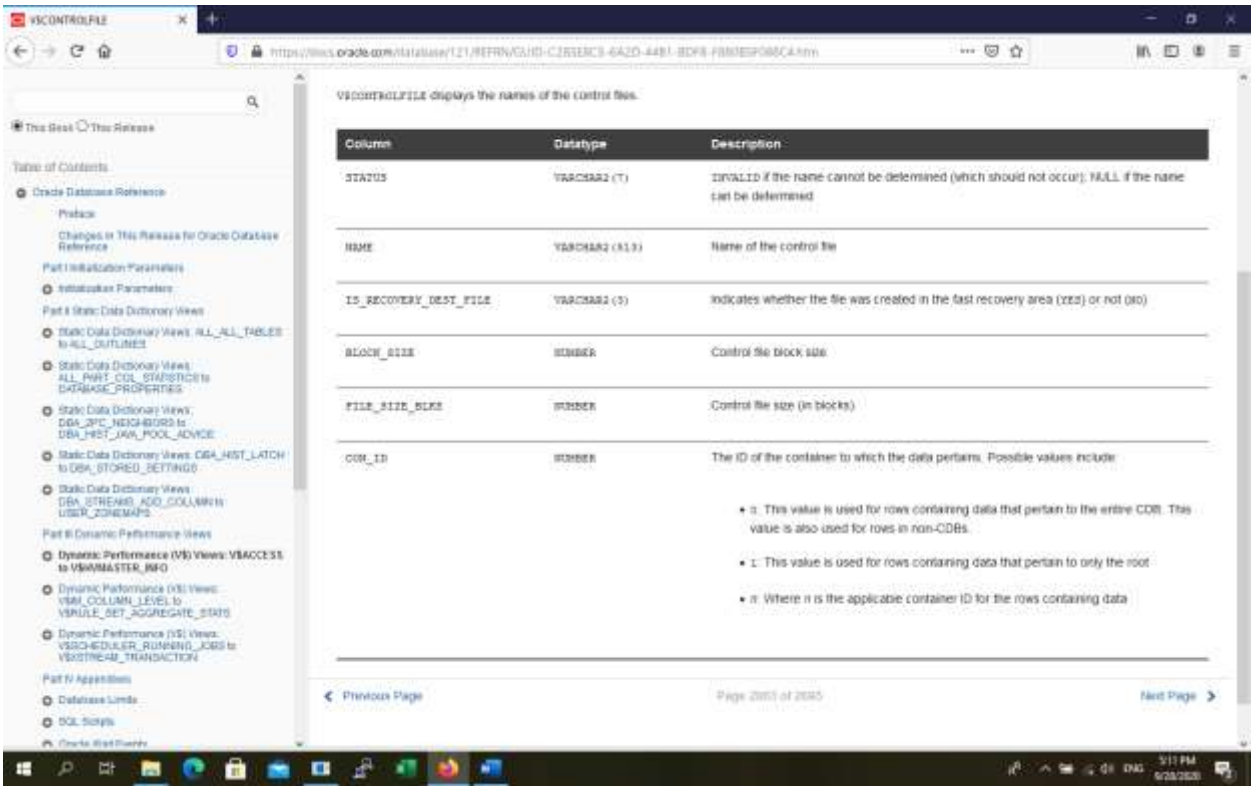
SQL> select name from v$datafile;

NAME

C:\ORACLE_12C\ORADATA\BD\SYSTEM01.DBF
C:\ORACLE_12C\ORADATA\BD\SYSAUX01.DBF
C:\ORACLE_12C\ORADATA\BD\UNDOTBS01.DBF
C:\ORACLE_12C\ORADATA\BD\USERS01.DBF
C:\ORACLE_12C\ORADATA\BD\EXAMPLE01.DBF
C:\ORACLE_12C\ORADATA\BD\BI_IAS_OPSS.DBF
C:\ORACLE_12C\ORADATA\BD\BI_UMS.DBF
C:\ORACLE_12C\ORADATA\BD\BI_MDS.DBF
C:\ORACLE_12C\ORADATA\BD\BI_IAU.DBF
C:\ORACLE_12C\ORADATA\BD\BI_BIPLATFORM.DBF
C:\ORACLE_12C\ORADATA\BD\BI_WLSSERVICES.DBF
C:\ORACLE_12C\ORADATA\BD\BI_SVCTBL.DBF

SQL> desc V$CONTROLFILE

Name	Null?	Type
STATUS		VARCHAR2(7)
NAME		VARCHAR2(513)
IS_RECOVERY_DEST_FILE		VARCHAR2(3)
BLOCK_SIZE		NUMBER
FILE_SIZE_BLKS		NUMBER
CON_ID		NUMBER



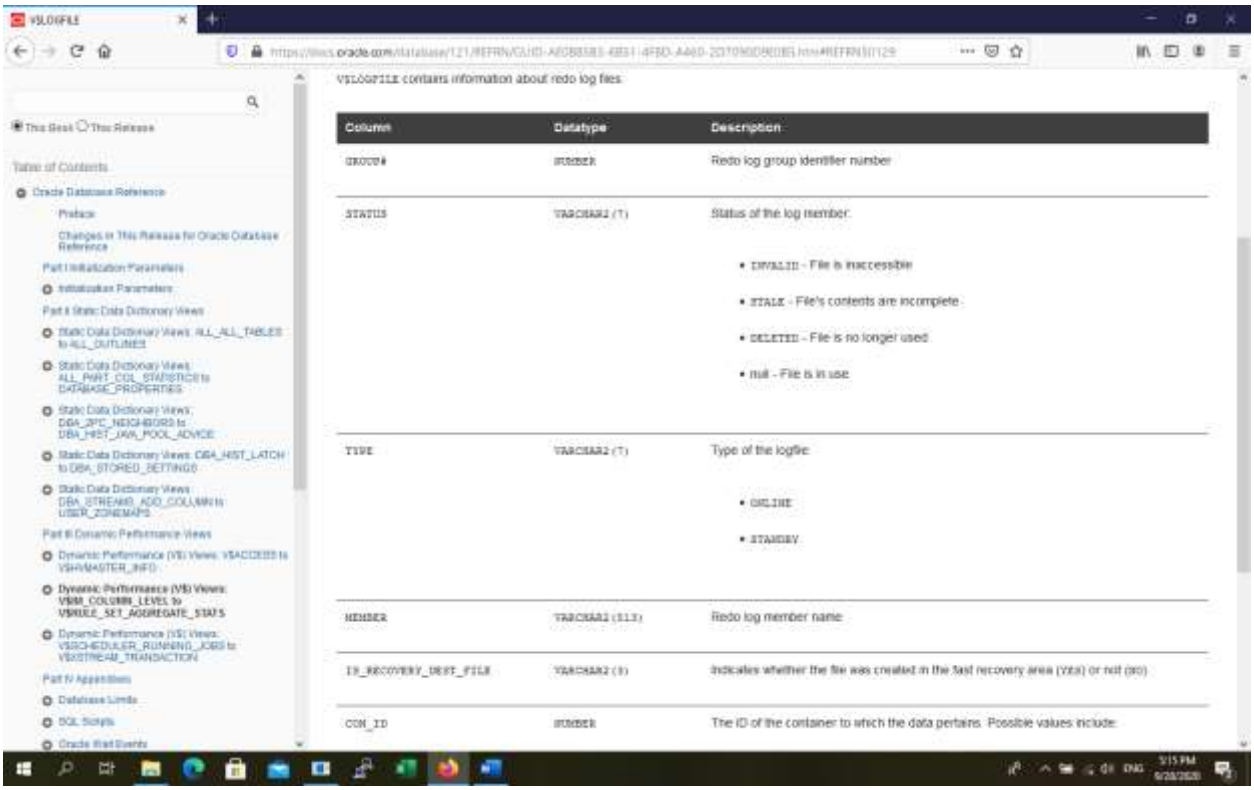
SQL> select name from v$controlfile;

NAME

C:\ORACLE_12C\ORADATA\BD\CONTROL01.CTL
C:\ORACLE_12C\ORADATA\BD\CONTROL02.CTL

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 member from v$logfile;

MEMBER

C:\ORACLE_12C\ORADATA\BD\REDO03.LOG

C:\ORACLE_12C\ORADATA\BD\REDO02.LOG

C:\ORACLE_12C\ORADATA\BD\REDO01.LOG

Pas 3 : Oprirea bazei de date

SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.

Pas 4: Pornirea bazei de date in modul Exclusive

SQL> startup mount exclusive restrict;

Pas 5: Stergerea bazei de date

SQL> drop database;

Pas 6 : Verificari si stergeri de fisiere dupa stergerea bazei de date

1) Stergerea fisierelor de date, control si log cu comenzi din sistemul de operare;
2) Stergerea directoarelor devenite inutile;
3) Stergerea shortcut-urilor;
4) Modificarea scripturilor care fac referire la baza de date care a fost stearsa.