SESSION 1 → Linux Directories, SPFILE/PFILE & Alert Log

You use MOBAXTERM tool to open NEW SSH session and connect to your server myvmlab.senecacollege.ca with your PORT# (as user oracle) Password is PSmgi30

```
|                        • MobaXterm 10.4 •
|
|           (SSH client, X-server and networking tools)
|
| → SSH session to oracle@myvmlab.senecacollege.ca
|
|    • SSH compression : v
|
|    • SSH-browser     : v
|
|    • X11-forwarding  : v  (remote display is forwarded through
SSH)  |
|    • DISPLAY         : v  (automatically set on remote server)
|
| → For more info, ctrl+click on help or visit our website
```

The Oracle base remains unchanged with value /opt/oracle
```
[oracle@oracloud12c ~]$ whoami
oracle
[oracle@oracloud12c ~]$ pwd
/home/oracle

[oracle@oracloud12c ~]$ lsnrctl status
```
We need to check firstly, whether our LISTENER process is running (and it is running according to the output below)

```
Connecting to
(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=oracloud12c)(PORT=1521)))
STATUS of the LISTENER
------------------------
Alias                    LISTENER
Version                  TNSLSNR for Linux: Version 12.1.0.2.0 -
Production
Start Date               31-OCT-2017 11:30:23
Uptime                   43 days 23 hr. 36 min. 40 sec
Trace Level              off
Security                 ON: Local OS Authentication
SNMP                     OFF
Listener Parameter File
```
/opt/oracle/product/12.1.0/dbhome_1/network/admin/listener.ora
```
Listener Log File
/opt/oracle/diag/tnslsnr/oracloud12c/listener/alert/log.xml
Listening Endpoints Summary...
```

```
    (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=oracloud12c)(PORT=1521)))
(DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=oracloud12c)(PORT=5589))(Pre
sentation=HTTP)(Session=RAW))

(DESCRIPTION=(ADDRESS=(PROTOCOL=tcps)(HOST=oracloud12c)(PORT=5500))(Se
curity=(my_wallet_directory=/opt/oracle/admin/student/xdb_wallet))(Pre
sentation=HTTP)(SessioAW))
Services Summary...
```
Service "student" has 2 instance(s).
  Instance "student", status UNKNOWN, has 1 handler(s) for this
service...
  Instance "student", status READY, has 1 handler(s) for this
service...
```
Service "studentXDB" has 1 instance(s).
  Instance "student", status READY, has 1 handler(s) for this
service...
The command completed successfully
```

Let's see the 3 most important Environment Variables (related to Oracle instance)

```
[oracle@oracloud12c ~]$ echo $ORACLE_BASE  $ORACLE_HOME $ORACLE_SID
/opt/oracle    /opt/oracle/product/12.1.0/dbhome_1   student

[oracle@oracloud12c ~]$ cd /opt/oracle
[oracle@oracloud12c oracle]$ ls -l
total 32
drwxr-x---.  4 oracle dba 4096 Dec 14 17:03 admin
drwxr-x---.  4 oracle dba 4096 Dec 14 17:06 audit
drwxr-xr-x.  4 oracle dba 4096 Jul 24 11:31 cfgtoollogs
drwxr-xr-x.  2 oracle dba 4096 Jul 24 11:36 checkpoints
drwxrwxr-x. 19 oracle dba 4096 Jul 24 11:29 diag
drwxr-x---.  6 oracle dba 4096 Dec 14 17:03 fast_recovery_area
drwxr-x---.  6 oracle dba 4096 Dec 14 17:03 oradata
drwxr-xr-x.  3 oracle dba 4096 Jul 24 11:26 product

[oracle@oracloud12c oracle]$ cd oradata
 [oracle@oracloud12c oradata]$ ls -l
total 16
drwxr-xr-x. 2 oracle dba 4096 Jul 25 11:25 student
[oracle@oracloud12c oradata]$ cd student
[oracle@oracloud12c student]$ pwd
```
/opt/oracle/oradata/student   Here are stored all Database files,
Redo Log files and First copy of the Control file

```
[oracle@oracloud12c student]$ ls -l
total 10885728
-rw-r-----. 1 oracle dba   10043392 Dec 18 10:55 control01.ctl
-rw-r-----. 1 oracle dba  209723392 Dec 18 10:36 mgmt_ad4j.dbf
-rw-r-----. 1 oracle dba 6396321792 Dec 18 10:55 mgmt.dbf
-rw-r-----. 1 oracle dba  167780352 Dec 18 10:55 mgmt_depot.dbf
-rw-r-----. 1 oracle dba   52429312 Dec 18 10:31 redo01.log
```

```
-rw-r-----. 1 oracle dba    52429312 Dec 18 10:55 redo02.log
-rw-r-----. 1 oracle dba    52429312 Dec 18 08:58 redo03.log
-rw-r-----. 1 oracle dba  2212503552 Dec 18 10:55 sysaux01.dbf
-rw-r-----. 1 oracle dba  1111498752 Dec 18 10:55 system01.dbf
-rw-r-----. 1 oracle dba    62922752 Dec 18 10:21 temp01.dbf
-rw-r-----. 1 oracle dba   849354752 Dec 18 10:55 undotbs01.dbf
-rw-r-----. 1 oracle dba     5251072 Dec 18 10:36 users01.dbf

[oracle@oracloud12c student]$ cd /opt/oracle
 [oracle@oracloud12c oracle]$ cd admin
[oracle@oracloud12c admin]$ ls -l
total 8
drwxr-x---. 6 oracle dba 4096 Jul 24 11:31 student
[oracle@oracloud12c admin]$ cd student
[oracle@oracloud12c student]$ ls -l
total 132
drwxr-x---. 2 oracle dba 122880 Dec 18 03:01 adump
drwxr-x---. 2 oracle dba   4096 Jul 24 11:33 dpdump
drwxr-x---. 2 oracle dba   4096 Jul 24 11:33 pfile
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 xdb_wallet

[oracle@oracloud12c student]$ cd pfile
[oracle@oracloud12c student]$ pwd
/opt/oracle/admin/student/pfile        Here is stored our SEED PFILE

[oracle@oracloud12c pfile]$ ls -l
total 4
-rw-r-----. 1 oracle dba 1767 Jul 24 11:31 init.ora.6242017113352
     This is our SEED PFILE (we may edit it and use it to open DB)

[oracle@oracloud12c pfile]$ cat init.ora.6242017113352
#############################################################################
########
# Copyright (c) 1991, 2013 by Oracle Corporation
#############################################################################
########

##########################################
# Cache and I/O
##########################################
db_block_size=8192

##########################################
# Cursors and Library Cache
##########################################
open_cursors=300

##########################################
# Database Identification
##########################################
db_domain=""
db_name="student"
```

```
###########################################
# File Configuration
###########################################
control_files=("/opt/oracle/oradata/student/control01.ctl",
"/opt/oracle/fast_recovery_area/student/control02.ctl")
db_recovery_file_dest="/opt/oracle/fast_recovery_area"
db_recovery_file_dest_size=4560m

###########################################
# Miscellaneous
###########################################
compatible=12.1.0.2.0
diagnostic_dest=/opt/oracle
memory_target=3935m

###########################################
# Processes and Sessions
###########################################
processes=300

###########################################
# Security and Auditing
###########################################
audit_file_dest="/opt/oracle/admin/student/adump"
audit_trail=db
remote_login_passwordfile=EXCLUSIVE

###########################################
# Shared Server
###########################################
dispatchers="(PROTOCOL=TCP) (SERVICE=studentXDB)"

###########################################
# System Managed Undo and Rollback Segments
###########################################
undo_tablespace=UNDOTBS1
```

     **We can see that the SEED PFILE is using AMM (AUTO MEMORY MGMT),
same as our SPFILE -- parameter MEMORY_TARGET = 3935M > 0**

```
[oracle@oracloud12c pfile]$ vi init*
```
    **Let's edit this PFILE to turn OFF the AMM and turn ON the ASMM
option (AUTO SGA MEMORY MGMT) and rename it to initstudent.ora**

```
[oracle@oracloud12c pfile]$ ls -l
total 8
-rw-r-----. 1 oracle dba 1809 Dec 18 10:59 init.ora.6242017113352
-rw-r--r--. 1 oracle dba 1809 Dec 18 10:58 initstudent.ora

[oracle@oracloud12c pfile]$ cat initstudent.ora
####################################################################
```

```
########
# Copyright (c) 1991, 2013 by Oracle Corporation
################################################################
########

###########################################
# Cache and I/O
###########################################
db_block_size=8192

###########################################
# Cursors and Library Cache
###########################################
open_cursors=300

###########################################
# Database Identification
###########################################
db_domain=""
db_name="student"

###########################################
# File Configuration
###########################################
control_files=("/opt/oracle/oradata/student/control01.ctl",
"/opt/oracle/fast_recovery_area/student/control02.ctl")
db_recovery_file_dest="/opt/oracle/fast_recovery_area"
db_recovery_file_dest_size=4560m

###########################################
# Miscellaneous
###########################################
compatible=12.1.0.2.0
diagnostic_dest=/opt/oracle
#memory_target=3935m          These 3 lines have been changed only
sga_target=804m
pga_aggregate_target=220m
###########################################
# Processes and Sessions
###########################################
processes=300

###########################################
# Security and Auditing
###########################################
audit_file_dest="/opt/oracle/admin/student/adump"
audit_trail=db
remote_login_passwordfile=EXCLUSIVE

###########################################
# Shared Server
###########################################
```

```
dispatchers="(PROTOCOL=TCP) (SERVICE=studentXDB)"

##########################################
# System Managed Undo and Rollback Segments
##########################################
undo_tablespace=UNDOTBS1
```

Let's login to SQL*PLUS command line tool as super-user SYSDBA

[oracle@oracloud12c pfile]$ **sqlplus / as sysdba**

SQL*Plus: Release 12.1.0.2.0 Production on Mon Dec 18 11:00:38 2017
Copyright (c) 1982, 2014, Oracle. All rights reserved.

Connected to: **<-Our Instance is running (otherwise Idle Instance msg)**
Oracle Database 12c Enterprise Edition Release 12.1.0.2.0 - 64bit
Production
With the Partitioning, OLAP, Advanced Analytics and Real Application
Testing options

SQL> **SET PAGESIZE 200**
SQL> **SELECT instance_name, host_name FROM V$INSTANCE;**

```
INSTANCE_NAME       HOST_NAME
----------------------------------------------------------------
Student             oracloud12c
```

SQL> **SELECT name, open_mode FROM V$DATABASE;**

```
NAME      OPEN_MODE
--------- --------------------
STUDENT   READ WRITE
```

SQL> **SHOW PARAMETER SPFILE**

```
NAME                                  TYPE        VALUE
------------------------------------- ----------- ---------
spfile                                string
```
/opt/oracle/product/12.1.0/dbhome_1/dbs/spfilestudent.ora

Instance was opened with SPFILE (just STARTUP command)→ SPFILE value is NOT blank above and it uses AMM. Why? Parameter MEMORY_TARGET=3936M >0 while SGA_TARGET=0 and PGA_AGGREGATE_TARGET=0

SQL> **SHOW PARAMETER TARGET**

```
NAME                                  TYPE        VALUE
------------------------------------- ----------- ------------
archive_lag_target                    integer     0
db_big_table_cache_percent_target     string      0
db_flashback_retention_target         integer     1440
```

```
fast_start_io_target                      integer     0
fast_start_mttr_target                    integer     0
memory_max_target                         big integer 3936M
memory_target                             big integer 3936M
parallel_servers_target                   integer     8
pga_aggregate_target                      big integer 0
sga_target                                big integer 0

SQL> SHUTDOWN IMMEDIATE;
Database closed.
Database dismounted.
ORACLE instance shut down.

SQL> STARTUP PFILE=initstudent.ora;
ORACLE instance started.

Total System Global Area  843055104 bytes
Fixed Size                  2929984 bytes
Variable Size             327158464 bytes
Database Buffers          507510784 bytes
Redo Buffers                5455872 bytes
Database mounted.
Database opened.

SQL> SHOW PARAMETER SPFILE
NAME                                      TYPE        VALUE
----------------------------------------- ----------- ----------
spfile                                    string

SQL> SHOW PARAMETER TARGET

NAME                                      TYPE        VALUE
----------------------------------------- ----------- -------------
archive_lag_target                        integer     0
db_big_table_cache_percent_target         string      0
db_flashback_retention_target             integer     1440
fast_start_io_target                      integer     0
fast_start_mttr_target                    integer     0
memory_max_target                         big integer 0
memory_target                             big integer 0
parallel_servers_target                   integer     32
pga_aggregate_target                      big integer 220M
sga_target                                big integer 804M
```

Instance was opened with PFILE (STARTUP PFILE=initSID.ora command)➔ SPFILE value is blank above and it uses ASMM. Why? Parameter MEMORY_TARGET=0 while SGA_TARGET>0 and PGA_AGGREGATE_TARGET>0

```
SQL> HOST
[oracle@oracloud12c pfile]$ cd /opt/oracle/diag
[oracle@oracloud12c admin]$ ls -l
```

```
total 68
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 afdboot
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 apx
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 asm
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 asmtool
drwxrwxr-x. 3 oracle dba 4096 Jul 25 13:54 clients
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 crs
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 diagtool
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 dps
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 em
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 gsm
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 ios
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 lsnrctl
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 netcman
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 ofm
drwxrwxr-x. 2 oracle dba 4096 Jul 24 11:29 plsqlapp
drwxrwxr-x. 4 oracle dba 4096 Dec 14 17:03 rdbms
drwxrwxr-x. 3 oracle dba 4096 Jul 24 11:31 tnslsnr

[oracle@oracloud12c diag]$ cd rdbms
[oracle@oracloud12c rdbms]$ ls -l
total 8
drwxr-x---. 3 oracle dba 4096 Jul 24 11:31 student
[oracle@oracloud12c rdbms]$ cd student
[oracle@oracloud12c student]$ ls -l
total 4
-rw-r-----.  1 oracle dba    0 Jul 24 11:31 i_1.mif
drwxr-x---. 16 oracle dba 4096 Jul 24 11:31 student
[oracle@oracloud12c student]$ cd student
[oracle@oracloud12c student]$ ls -l
total 248
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 alert
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 cdump
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 hm
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 incident
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 incpkg
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 ir
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 lck
drwxr-x---. 6 oracle dba   4096 Jul 24 11:31 log
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 metadata
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 metadata_dgif
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 metadata_pv
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 stage
drwxr-x---. 2 oracle dba   4096 Jul 24 11:31 sweep
drwxr-x---. 2 oracle dba 196608 Dec 18 11:04 trace

[oracle@oracloud12c student]$ cd trace

[oracle@oracloud12c student]$ pwd
/opt/oracle/diag/rdbms/student/student/trace
     This is the folder where our ALERT LOG FILE sits.
[oracle@oracloud12c trace]$ ls -l al*
```

```
-rw-r-----. 1 oracle dba 1120889 Dec 18 11:04 alert_student.log
```

Let's see the LAST 50 lines from our Alert Log or "Database Diary"

```
[oracle@oracloud12c trace]$ tail -50 alert_student.log
Completed: ALTER DATABASE    MOUNT
Mon Dec 18 11:04:31 2017
ALTER DATABASE OPEN
Mon Dec 18 11:04:31 2017
Ping without log force is disabled
.
Starting background process TMON
Mon Dec 18 11:04:31 2017
TMON started with pid=25, OS id=15213
Mon Dec 18 11:04:31 2017
Thread 1 opened at log sequence 2660
  Current log# 2 seq# 2660 mem# 0:
/opt/oracle/oradata/student/redo02.log
Successful open of redo thread 1
Mon Dec 18 11:04:31 2017
MTTR advisory is disabled because FAST_START_MTTR_TARGET is not set
Mon Dec 18 11:04:31 2017
SMON: enabling cache recovery
Mon Dec 18 11:04:32 2017
[15211] Successfully onlined Undo Tablespace 2.
Undo initialization finished serial:0 start:1022107332 end:1022107622
diff:290 ms (0.3 seconds)
Verifying minimum file header compatibility (11g) for tablespace
encryption..
Verifying 11g file header compatibility for tablespace encryption
completed
Mon Dec 18 11:04:32 2017
SMON: enabling tx recovery
Starting background process SMCO
Mon Dec 18 11:04:32 2017
Database Characterset is WE8MSWIN1252
Mon Dec 18 11:04:32 2017
SMCO started with pid=27, OS id=15225
No Resource Manager plan active
replication_dependency_tracking turned off (no async multimaster
replication found)
Starting background process AQPC
Mon Dec 18 11:04:35 2017
AQPC started with pid=33, OS id=15314
Starting background process CJQ0
Completed: ALTER DATABASE OPEN
Mon Dec 18 11:04:36 2017
CJQ0 started with pid=35, OS id=15357
Mon Dec 18 11:04:47 2017
Shared IO Pool defaulting to 32MB. Trying to get it from Buffer Cache
for process 15050.
========================================================
```

```
Dumping current patch information
=========================================================
No patches have been applied
=========================================================
Mon Dec 18 11:04:49 2017
db_recovery_file_dest_size of 4560 MB is 0.00% used. This is a
user-specified limit on the amount of space that will be used by this
database for recovery-related files, and does not reflect the amount
of
space available in the underlying filesystem or ASM diskgroup.
[oracle@oracloud12c trace]$
[oracle@oracloud12c trace]$ exit

SQL> EXIT
Disconnected from Oracle Database 12c Enterprise Edition Release
12.1.0.2.0 - 64bit Production
With the Partitioning, OLAP, Advanced Analytics and Real Application
Testing options
[oracle@oracloud12c pfile]$ exit
logout


_____
_____
_____

Session stopped
    - Press <return> to exit tab
    - Press R to restart session
    - Press S to save terminal output to file
```