

Final project IT8406

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Business analysis and solution

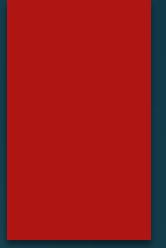
Problems:

- Old system
- The system doesn't run at high level
- The database structure is not organized
- The data increased dramatically and there's no enough resources
- There is no plan B or backup for the data
- The system doesn't run 24/7

Solutions:

1. **Creating three disks each disks have 1 specific container and create a standby database.**
2. Creating one container and adding two pluggable databases and assigning the correct permission
3. Upgrading the system without making any decisive changes

Project Budget



project budget.xlsx - Excel

Microsoft account

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

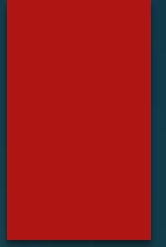
Clipboard Font Alignment Number Styles Cells Editing

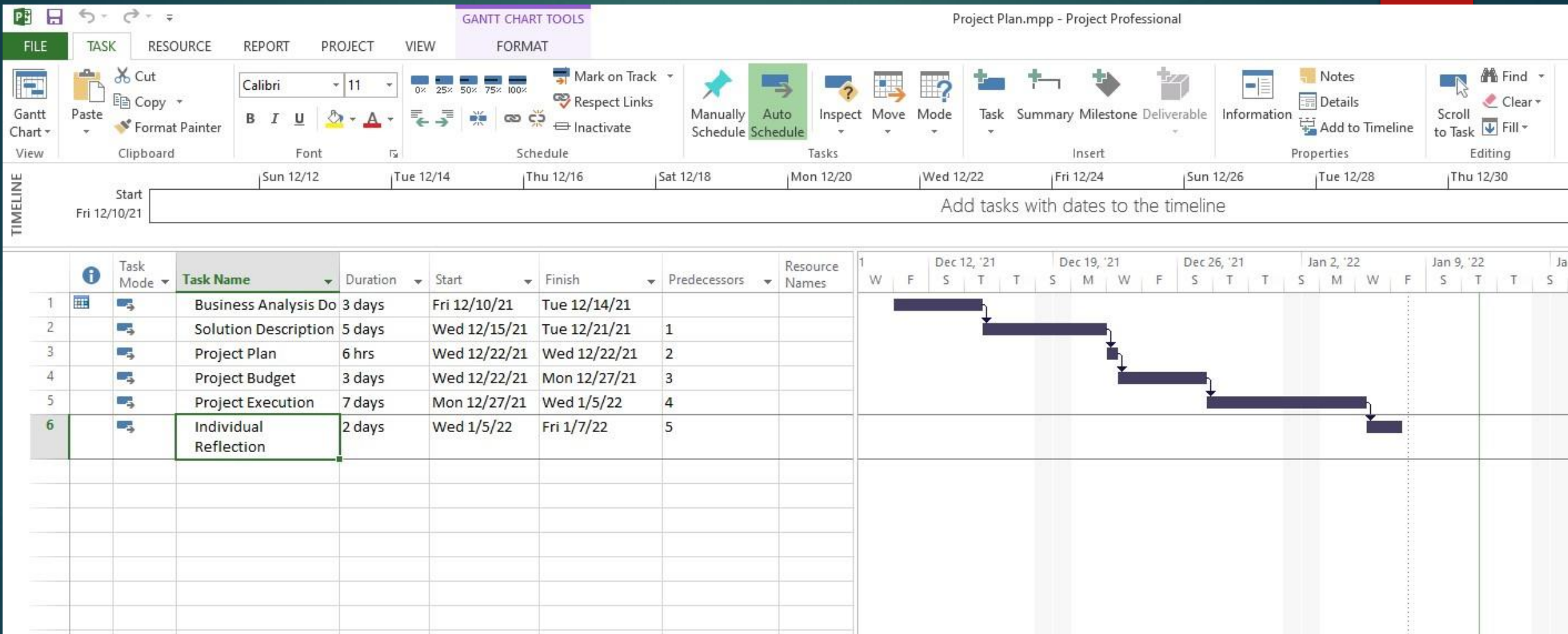
E5 X ✓ fx 8

	A	B	C	D	E	F	G	H	I	J	K
1	Pricing										
2		Item	Licence	Update and Support	No. of processors	Y1	Y2	Y3	Y4	Y5	Total
3		EE Database	47500	10450	8	380000	83600	83600	83600	83600	714400
4		Multitenant	17500	3850	8	140000	30800	30800	30800	30800	263200
5		Active Data Guard	11500	2530	8	92000	20240	20240	20240	20240	172960
6		Partitioning	11500	2530	8	92000	20240	20240	20240	20240	172960
7						704000	154880	154880	154880	154880	
8											1323520
9											
10											

*limited budget

Project Plan





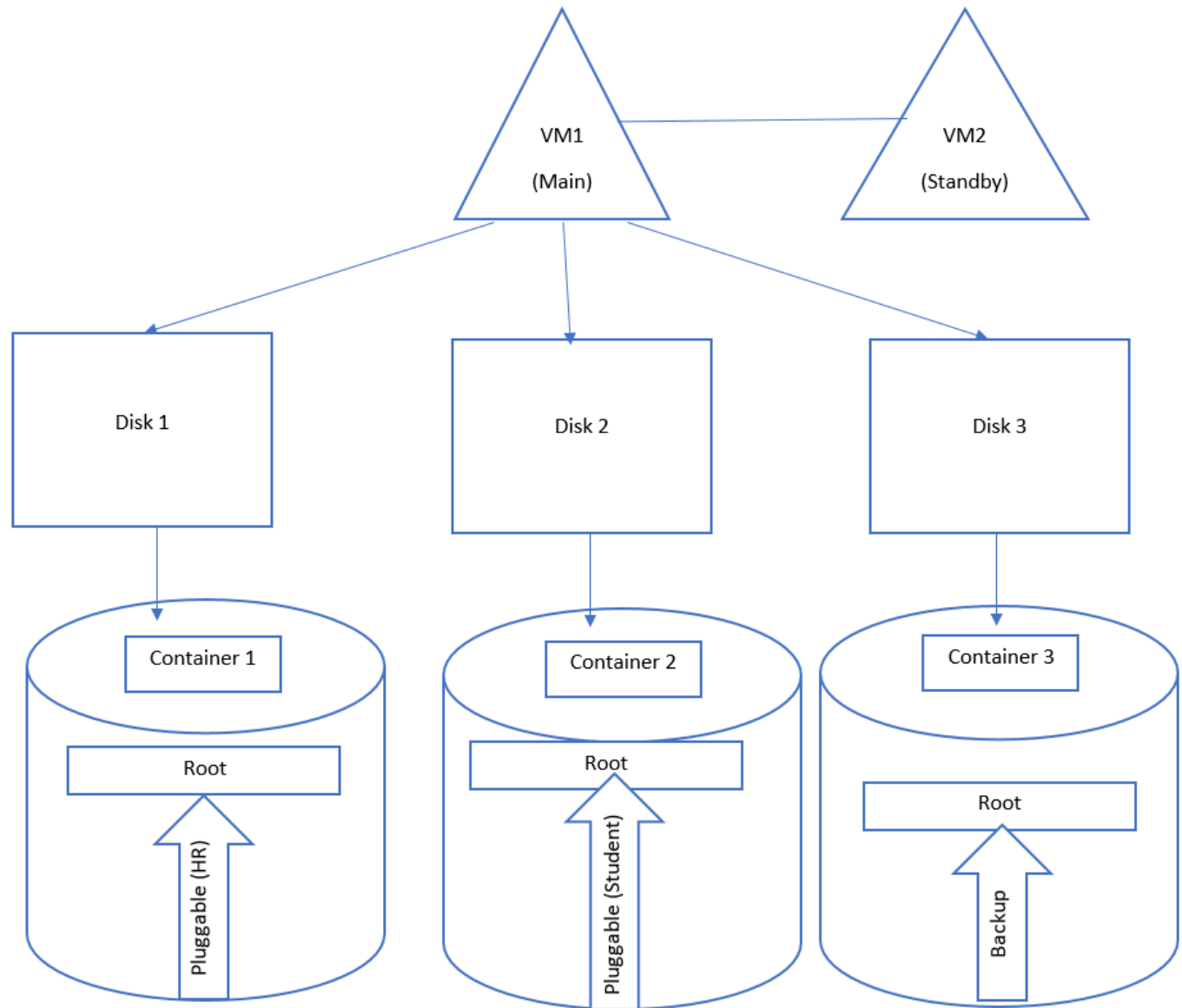
Project Execution



Steps:

1. Create VMs and adding Disks
2. Creating Fast Recovery Area (FRA)
3. Creating tablespaces in different location
4. Opening main and pluggable databases in SQL-developer
5. Creating and Inserting test users and tables
6. Opening sysbackup user and creating manual (cumulative and differential) and auto backup
7. Adding ports and start using EM
8. Start implementing data guard

Database structure



Create VMs and adding Disks

The screenshot displays the Microsoft Azure portal interface for managing a virtual machine's disks. The top navigation bar includes the 'Microsoft Azure' logo, a search bar, and user information. The left sidebar contains navigation links for 'Home', 'Server1', 'Settings', 'Operations', 'Monitoring', and 'Support + troubleshooting'. The main content area is titled 'Server1 | Disks' and shows the 'OS disk' and 'Data disks' sections. The 'OS disk' section lists the 'Server1' disk with a size of 32 GiB. The 'Data disks' section shows two attached disks, 'Disk2' and 'Disk3', both with a size of 30 GiB. The 'Data disks' table includes columns for LUN, Disk name, Storage type, Size (GiB), Max IOPS, Max throughput, Encryption, and Host caching.

Microsoft Azure

Search resources, services, and docs (G+)

201902860@student.po...
BAHRAIN POLYTECHNIC

Home > Server1

Server1 | Disks
Virtual machine

di

Save Discard Refresh Additional settings Feedback Troubleshoot

Diagnose and solve problems

Settings

Disks

Continuous delivery

Operations

Disaster recovery

Monitoring

Diagnostics settings

Support + troubleshooting

Boot diagnostics

Performance diagnostics

New Support Request

OS disk

Swap OS disk

Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...)	Encryption ⓘ	Host caching ⓘ
Server1	Standard SSD LRS	32	500	60	SSE with PMK	Read/write

Data disks

Filter by name

Showing 2 of 2 attached data disks

+ Create and attach a new disk Attach existing disks

LUN ⓘ	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...)	Encryption ⓘ	Host caching ⓘ
0	Disk2	Standard SSD LRS	30	500	60	SSE with PMK	None
1	Disk3	Standard SSD LRS	30	500	60	SSE with PMK	None

Recognize the disks

```
oracle@dgs1:~  
login as: oracle  
Authenticating with public key "rsa-key-20211105"  
Last login: Tue Jan  4 20:04:42 2022 from 193.188.113.40  
[oracle@dgs1 ~]$ df  
Filesystem      1K-blocks      Used Available Use% Mounted on  
devtmpfs         4069520          0    4069520   0% /dev  
tmpfs            4079548          0    4079548   0% /dev/shm  
tmpfs            4079548    16844    4062704   1% /run  
tmpfs            4079548          0    4079548   0% /sys/fs/cgroup  
/dev/sda2       30944256 23489860    5620908  81% /  
/dev/sdd1       30831524   45080   29197248   1% /u03  
/dev/sdc1       30831524   45092   29197236   1% /u02  
/dev/sda1        508588   121960    386628  24% /boot  
/dev/sdb1      16380796  8433696    7091960  55% /mnt/resource  
tmpfs           815912          0    815912   0% /run/user/1000  
[oracle@dgs1 ~]$
```

Creating Fast Recovery Area (FRA)

```
~$ ls mkdir -p /u03/app/oracle
oracle@dgs1:/u03/app/oracle/fra
[oracle@dgs1 u03]$ cd app
[oracle@dgs1 app]$ cd oracle
[oracle@dgs1 oracle]$ ls
[oracle@dgs1 oracle]$ cd ~
[oracle@dgs1 ~]$ ls
[oracle@dgs1 ~]$ cd /u03
[oracle@dgs1 u03]$ ls
app  lost+found
[oracle@dgs1 u03]$ cd app
[oracle@dgs1 app]$ cd ora
-bash: cd: ora: No such file or directory
[oracle@dgs1 app]$ ls
oracle  oraInventory
[oracle@dgs1 app]$ cd oracle/
[oracle@dgs1 oracle]$ ls
[oracle@dgs1 oracle]$ ls
[oracle@dgs1 oracle]$ mkdir -p fra
[oracle@dgs1 oracle]$ ls
fra
[oracle@dgs1 oracle]$ cd fra
[oracle@dgs1 fra]$ ls
[oracle@dgs1 fra]$ mkdir -p first
[oracle@dgs1 fra]$ mkdir -p second
[oracle@dgs1 fra]$
```

Assigning the FRA

```
[oracle@dgs1 ~]$ sql sys as sysdba

SQLcl: Release 19.1 Production on Tue Jan 04 22:42:30 2022

Copyright (c) 1982, 2022, Oracle. All rights reserved.

Password? (*****?) ***
Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.3.0.0.0

SQL> startup
ORA-01081: cannot start already-running ORACLE - shut it down first
SQL> !lsnrctl start

LSNRCTL for Linux: Version 19.0.0.0.0 - Production on 04-JAN-2022 22:43:09

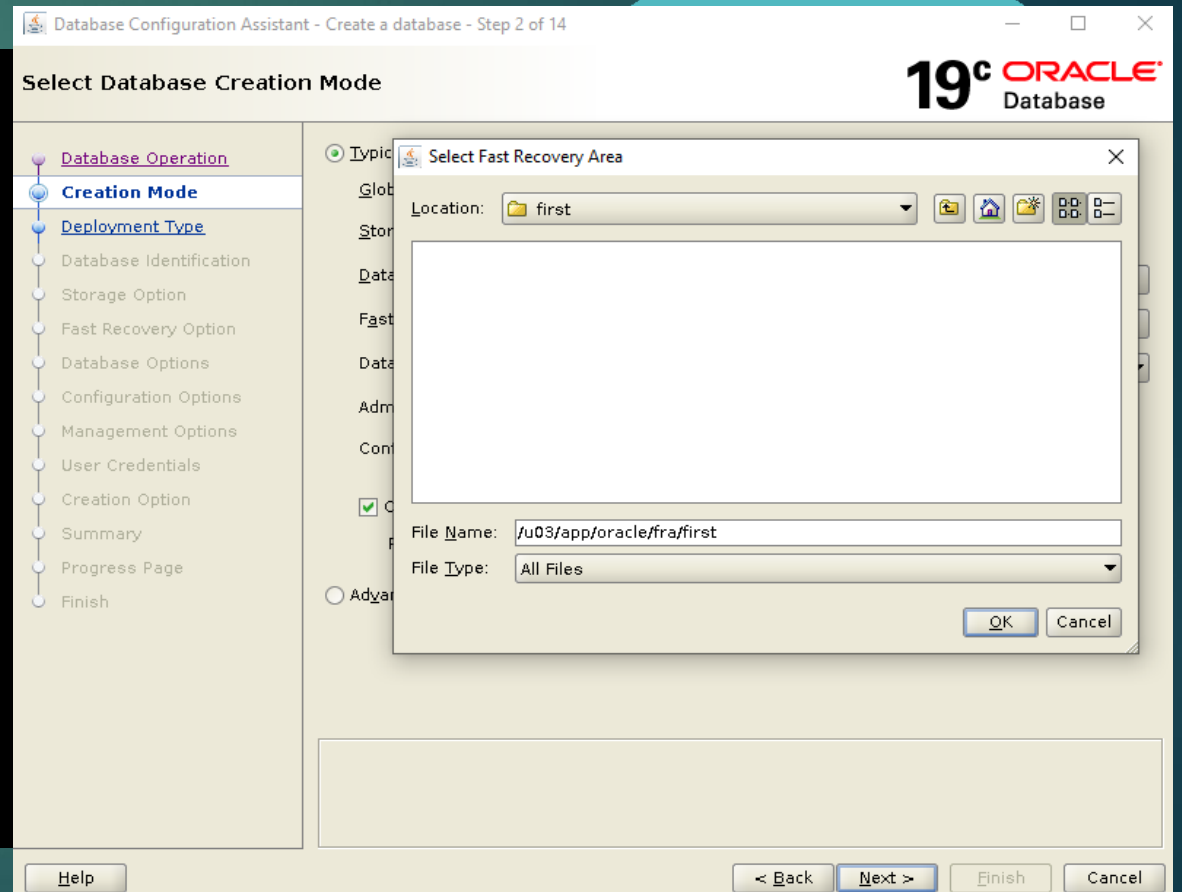
Copyright (c) 1991, 2019, Oracle. All rights reserved.

TNS-01106: Listener using listener name LISTENER has already been started

SQL> show parameter db_recovery_file
NAME                                TYPE        VALUE
-----
db_recovery_file_dest string      /u01/app/oracle/oradata/fra
db_recovery_file_dest_size big integer 10G
SQL> alter system set db_recovery_file_dest='/u03/app/oracle/fra/first' scope=both;

System altered.

SQL>
```



Creating tablespaces in different location

```
oracle@dgs1:~  
-----  
TS# NAME          INC BIG FLA ENC  CON_ID  
-----  
0 SYSTEM          YES NO YES      3  
1 SYSAUX          YES NO YES      3  
2 UNDOTBS1        YES NO YES      3  
3 TEMP            NO NO YES      3  
5 USERS           YES NO YES      3  
6 NEWTS           YES NO YES      3  
-----  
6 rows selected.  
  
SQL> DROP TABLESPACE NEWTS  
2 ;  
  
Tablespace dropped.  
  
SQL>  
  
SQL> select * from v$tablespace;  
  
-----  
TS# NAME          INC BIG FLA ENC  CON_ID  
-----  
0 SYSTEM          YES NO YES      3  
1 SYSAUX          YES NO YES      3  
2 UNDOTBS1        YES NO YES      3  
3 TEMP            NO NO YES      3  
5 USERS           YES NO YES      3  
-----  
  
SQL> CREATE TABLESPACE HRMembers DATAFILE '/u01/app/oracle/oradata/ORCL/HRMembers.dbf' SIZE 50M;  
  
CREATE TABLESPACE HRMembers DATAFILE '/u01/app/oracle/oradata/ORCL/HRMembers.dbf' SIZE 50M  
*  
ERROR at line 1:  
ORA-01119: error in creating database file  
'/u01/app/oracle/oradata/ORCL/HRMembers.dbf'  
ORA-27038: created file already exists  
Additional information: 1  
  
SQL> CREATE TABLESPACE HRMember DATAFILE '/u01/app/oracle/oradata/ORCL/HRMember.dbf' SIZE 50M;  
  
Tablespace created.  
  
SQL> CREATE TABLESPACE HeadMember DATAFILE '/u01/app/oracle/oradata/ORCL/HeadMember.dbf' SIZE 50M;  
  
Tablespace created.  
  
SQL> select * from v$tablespace;  
  
-----  
TS# NAME          INC BIG FLA ENC  CON_ID  
-----  
0 SYSTEM          YES NO YES      3  
1 SYSAUX          YES NO YES      3  
2 UNDOTBS1        YES NO YES      3  
3 TEMP            NO NO YES      3  
5 USERS           YES NO YES      3  
8 HRMEMBER        YES NO YES      3  
9 HEADMEMBER      YES NO YES      3  
-----  
7 rows selected.  
  
SQL>
```

```
oracle@dgs1:~  
Additional information: 1  
  
SQL> CREATE TABLESPACE StudentMember DATAFILE '/u02/app/oracle/oradata/ORCL2/StudentMember.dbf' SIZE 50M;  
  
CREATE TABLESPACE StudentMember DATAFILE '/u02/app/oracle/oradata/ORCL2/StudentMember.dbf' SIZE 50M  
*  
ERROR at line 1:  
ORA-01119: error in creating database file  
'/u02/app/oracle/oradata/ORCL2/StudentMember.dbf'  
ORA-27040: file create error, unable to create file  
Linux-x86_64 Error: 2: No such file or directory  
Additional information: 1  
  
SQL> SELECT con_id, name, open_mode FROM v$tablespace;  
  
-----  
CON_ID  
-----  
NAME  
-----  
OPEN_MODE  
-----  
3  
STUDENT  
READ WRITE  
  
SQL> select * from v$tablespace;  
  
-----  
TS# NAME          INC BIG FLA ENC  CON_ID  
-----  
0 SYSTEM          YES NO YES      3  
1 SYSAUX          YES NO YES      3  
2 UNDOTBS1        YES NO YES      3  
3 TEMP            NO NO YES      3  
5 USERS           YES NO YES      3  
-----  
  
SQL> CREATE TABLESPACE StudentMember DATAFILE '/u02/app/oracle/ORCL2/StudentMember.dbf' SIZE 50M;  
  
Tablespace created.  
  
SQL> CREATE TABLESPACE MentorMember DATAFILE '/u02/app/oracle/ORCL2/MentorMember.dbf' SIZE 50M;  
  
Tablespace created.  
  
SQL>  
  
SQL> select * from v$tablespace;  
  
-----  
TS# NAME          INC BIG FLA ENC  CON_ID  
-----  
0 SYSTEM          YES NO YES      3  
1 SYSAUX          YES NO YES      3  
2 UNDOTBS1        YES NO YES      3  
3 TEMP            NO NO YES      3  
5 USERS           YES NO YES      3  
7 STUDENTMEMBER   YES NO YES      3  
8 MENTORMEMBER    YES NO YES      3  
-----  
7 rows selected.  
  
SQL>
```


Opening main and pluggable databases in SQL- developer

New / Select Database Connection

Connection Name	Connection Details
Mohd1	B201902860@//d...
server1Main	sys@//dgs1.west...
server1pdb	sys@//dgs1.west...
server2Main	sys@//dgs1.west...
server2pdb	sys@//dgs1.west...

Name: server1Main

Database Type: Oracle

User Info: Proxy User

Authentication Type: Default

Username: sys Role: SYSDBA

Password: ***** Save Password: ☒

Connection Type: Basic

Details: Advanced

Hostname: dgs1.westeurope.cloudapp.azure.com

Port: 1521

☐ SID

☒ Service name: ord

Status: Success

Help Save

New / Select Database Connection

Connection Name	Connection Details
Mohd1	B201902860@//d...
server1Main	sys@//dgs1.west...
server1pdb	sys@//dgs1.west...
server2Main	sys@//dgs1.west...
server2pdb	sys@//dgs1.west...

Name: server1pdb

Database Type: Oracle

User Info: Proxy User

Authentication Type: Default

Username: sys Role: SYSDBA

Password: ***** Save Password: ☒

Connection Type: Basic

Details: Advanced

Hostname: dgs1.westeurope.cloudapp.azure.com

Port: 1521

☐ SID

☒ Service name: HR

Status: Success

Help Save Clear

New / Select Database Connection

Connection Name	Connection Details
Mohd1	B201902860@//d...
server1Main	sys@//dgs1.west...
server1pdb	sys@//dgs1.west...
server2Main	sys@//dgs1.west...
server2pdb	sys@//dgs1.west...

Name: server2Main

Database Type: Oracle

User Info: Proxy User

Authentication Type: Default

Username: sys Role: SYSDBA

Password: ***** Save Password: ☒

Connection Type: Basic

Details: Advanced

Hostname: dgs1.westeurope.cloudapp.azure.com

Port: 1521

☐ SID

☒ Service name: ord2

Status: Success

Help Save Clear Test Connect Cancel

New / Select Database Connection

Connection Name	Connection Details
Mohd1	B201902860@//d...
server1Main	sys@//dgs1.west...
server1pdb	sys@//dgs1.west...
server2Main	sys@//dgs1.west...
server2pdb	sys@//dgs1.west...

Name: server2pdb

Database Type: Oracle

User Info: Proxy User

Authentication Type: Default

Username: sys Role: SYSDBA

Password: ***** Save Password: ☒

Connection Type: Basic

Details: Advanced

Hostname: dgs1.westeurope.cloudapp.azure.com

Port: 1521

☐ SID

☒ Service name: STUDENT

Status: Success

Help Save Clear Test Connect Cancel

Creation test users , tablespaces and assigning permissions

The screenshot displays the Oracle SQL Developer interface with three main windows open:

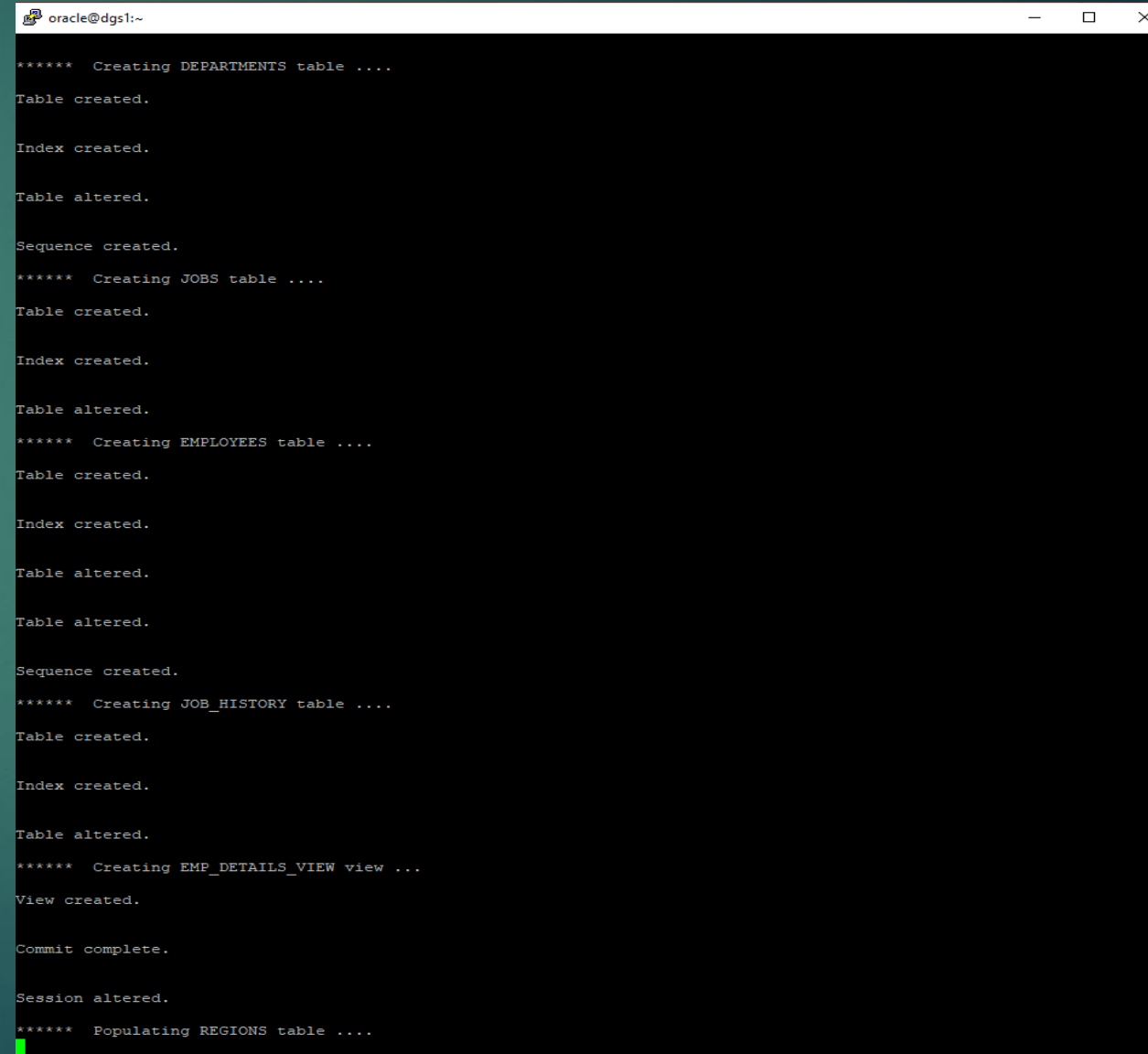
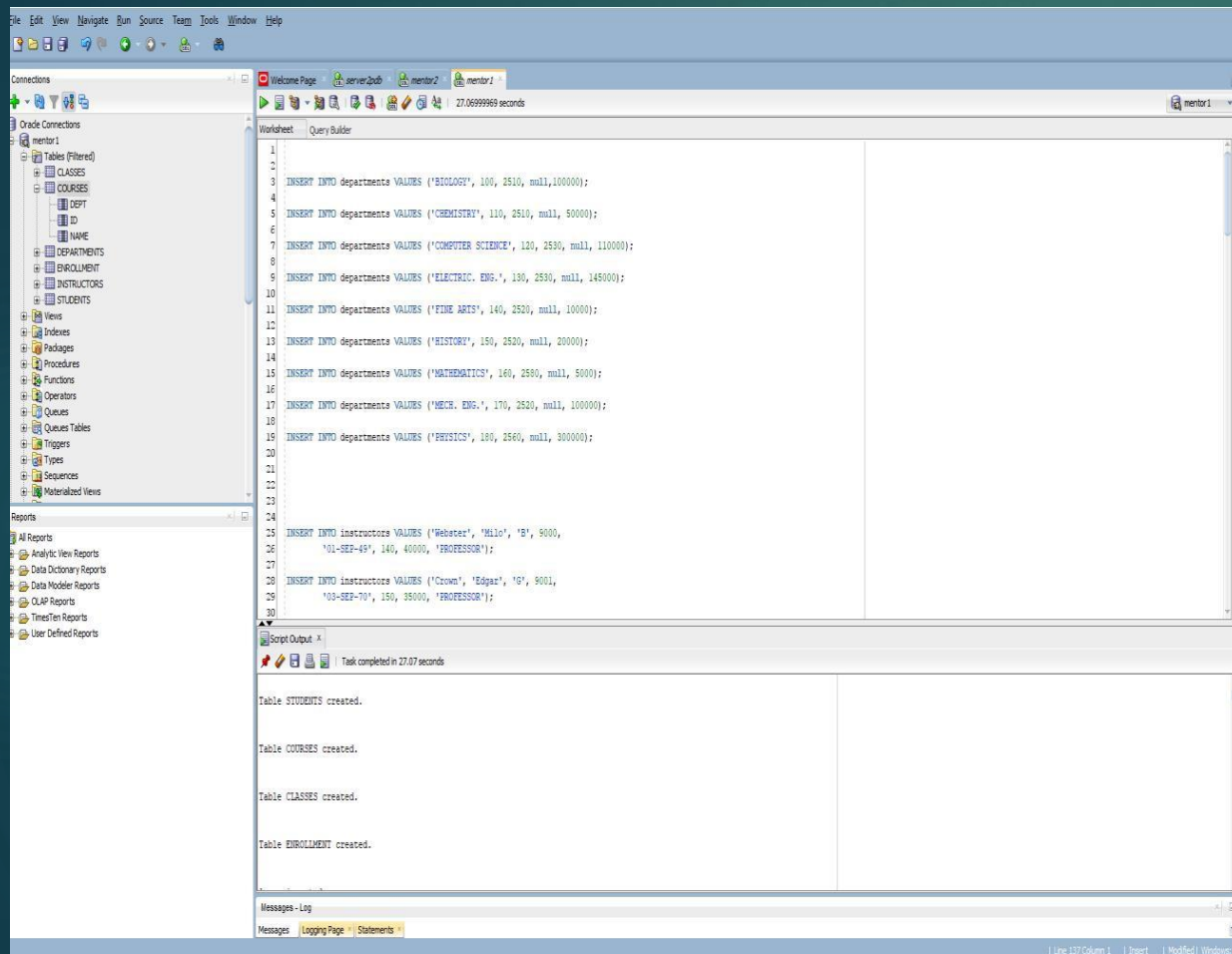
- Worksheet:** Contains the SQL script for creating a user and granting privileges:

```
1 create user mentor1 IDENTIFIED BY m0hd2001;  
2  
3 grant connect to mentor1;  
4  
5 grant connect, resource to mentor1;  
6  
7
```
- Edit User Dialog:** Shows the configuration for the user 'MENTOR1'. The 'Default Tablespace' is set to 'MENTORMEMBER' and the 'Temporary Tablespace' is set to 'TEMP'. The 'Password Expiry' checkbox is checked.
- Table Properties Dialog:** Shows the configuration for the 'COUNTRIES' table. The 'Tablespace' is set to 'MENTORMEMBER'. The 'Table Type' is 'Index Organized'. The 'Parallel Degree' is set to 'None'.

The 'Script Output' window at the bottom shows the execution results:

```
Grant succeeded.  
Task MENTOR1 altered.  
Messages - Log  
Messages - Logging Page - Statements
```

Inserting test tables



Relocate the FRA in both containers

```
[oracle@dgs1 ~]$ df
[oracle@dgs1 ~]$ df
Filesystem      1K-blocks      Used Available Use% Mounted on
devtmpfs         4069520         0   4069520   0% /dev
tmpfs            4079548         0   4079548   0% /dev/shm
tmpfs            4079548    16876   4062672   1% /run
tmpfs            4079548         0   4079548   0% /sys/fs/cgroup
/dev/sda2       30944256 23735404   5379156  82% /
/dev/sdd1       30831524   45092 29197236   1% /u03
/dev/sdc1       30831524 4537424 24704904  16% /u02
/dev/sda1        508588   121960   386628  24% /boot
/dev/sdb1       16380796 8433696  7091960  55% /mnt/resource
tmpfs           815912         0   815912   0% /run/user/1000
[oracle@dgs1 ~]$ sql sys as sysdba

SQLcl: Release 19.1 Production on Tue Jan 04 22:42:30 2022

Copyright (c) 1982, 2022, Oracle. All rights reserved.

Password? (*****?) ***
Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production
Version 19.3.0.0.0

SQL> startup
ORA-01081: cannot start already-running ORACLE - shut it down first
SQL> !lsnrctl start

LSNRCTL for Linux: Version 19.0.0.0.0 - Production on 04-JAN-2022 22:43:09

Copyright (c) 1991, 2019, Oracle. All rights reserved.

TNS-01106: Listener using listener name LISTENER has already been started

SQL> show parameter db_recovery_file
NAME                                TYPE                                VALUE
-----
db_recovery_file_dest                string                             /u01/app/oracle/oradata/fra
db_recovery_file_dest_size           big integer                        10G
SQL> alter system set db_recovery_file_dest='/u03/app/oracle/fra/first' scope=both;

System altered.

SQL>
```

```
SQL> show parameters recovery;

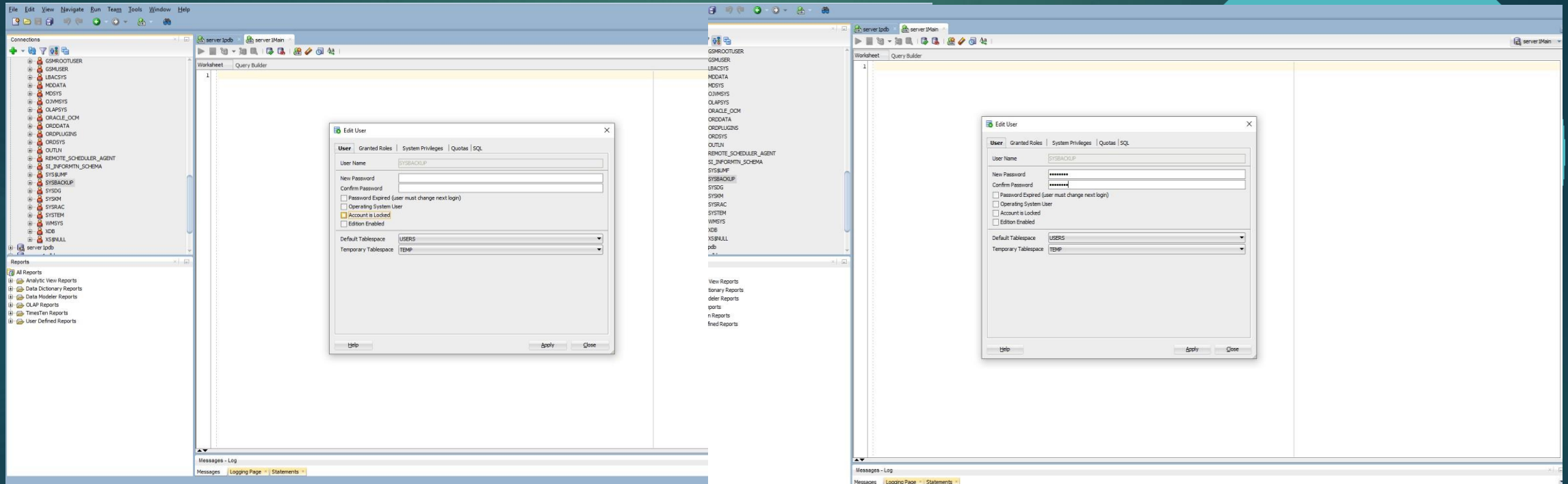
NAME                                TYPE                                VALUE
-----
db_recovery_file_dest                string                             /u02/app/oracle/fast_recovery_
area
db_recovery_file_dest_size           big integer                        12732M
recovery_parallelism                 integer                            0
remote_recovery_file_dest            string
SQL> alter system set db_recovery_file_dest='/u03/app/oracle/fra/second' scope=both;

System altered.

SQL> show parameters recovery;

NAME                                TYPE                                VALUE
-----
db_recovery_file_dest                string                             /u03/app/oracle/fra/second
db_recovery_file_dest_size           big integer                        12732M
recovery_parallelism                 integer                            0
remote_recovery_file_dest            string
SQL>
```

Opening sysbackup user



Entering RMAN

```
oracle@dgs1:~  
login as: oracle  
Authenticating with public key "rsa-key-20211105"  
Last login: Thu Jan 6 07:04:49 2022 from 193.188.113.40  
[oracle@dgs1 ~]$ rman  
  
Recovery Manager: Release 19.0.0.0.0 - Production on Thu Jan 6 07:37:47 2022  
Version 19.3.0.0.0  
  
Copyright (c) 1982, 2019, Oracle and/or its affiliates. All rights reserved.  
  
RMAN> exit  
  
Recovery Manager complete.  
[oracle@dgs1 ~]$ rman target sysbackup  
  
Recovery Manager: Release 19.0.0.0.0 - Production on Thu Jan 6 07:42:24 2022  
Version 19.3.0.0.0  
  
Copyright (c) 1982, 2019, Oracle and/or its affiliates. All rights reserved.  
  
target database Password:  
connected to target database: ORCL (DBID=1620913214)  
  
RMAN> █
```

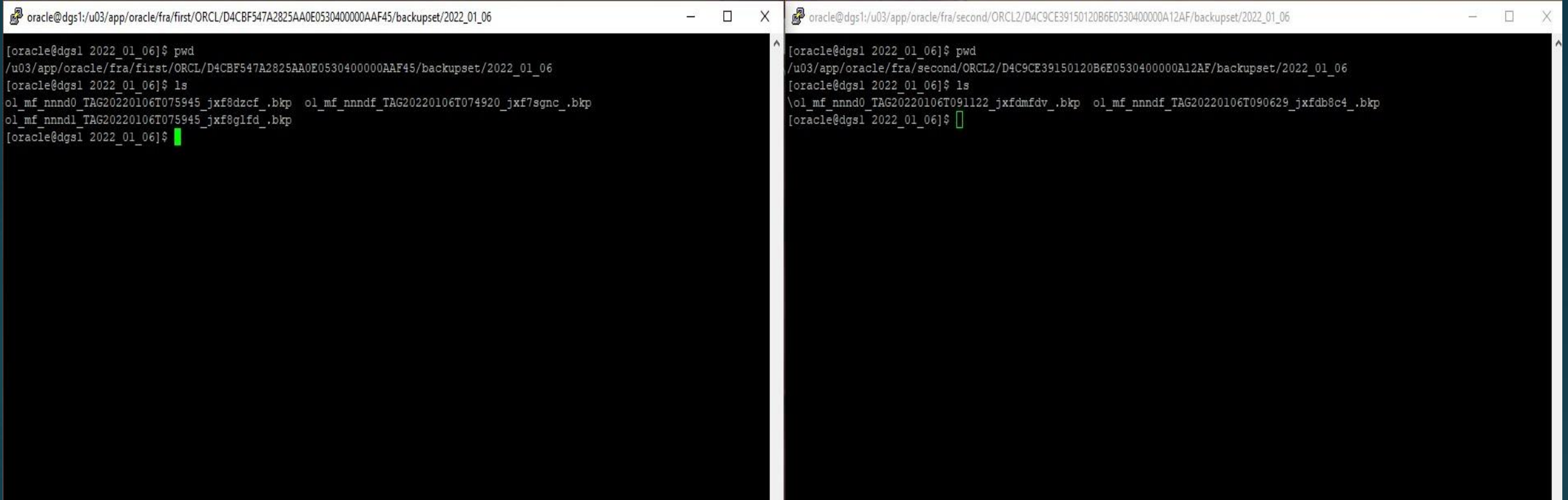

Start incremental level 1 backup (Differential) for HR database

```
oracle@dgs1:~  
Finished backup at 06-JAN-22  
  
Starting backup at 06-JAN-22  
using channel ORA_DISK_1  
channel ORA_DISK_1: starting full datafile backup set  
channel ORA_DISK_1: specifying datafile(s) in backup set  
input datafile file number=00001 name=/u01/app/oracle/oradata/ORCL/datafile/ol_mf_system_jx9qf311_.dbf  
input datafile file number=00003 name=/u01/app/oracle/oradata/ORCL/datafile/ol_mf_sysaux_jx9qgtx6_.dbf  
input datafile file number=00004 name=/u01/app/oracle/oradata/ORCL/datafile/ol_mf_undotbs1_jx9qhn60_.dbf  
input datafile file number=00007 name=/u01/app/oracle/oradata/ORCL/datafile/ol_mf_users_jx9qhggqy_.dbf  
channel ORA_DISK_1: starting piece 1 at 06-JAN-22  
channel ORA_DISK_1: finished piece 1 at 06-JAN-22  
piece handle=/u03/app/oracle/fra/first/ORCL/backupset/2022_01_06/ol_mf_nnndf_TAG20220106T074920_jxf7r28j_.bkp tag=TAG20220106T074920 comment=NONE  
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:46  
channel ORA_DISK_1: starting full datafile backup set  
channel ORA_DISK_1: specifying datafile(s) in backup set  
input datafile file number=00010 name=/u01/app/oracle/oradata/ORCL/D4CBF547A2825AA0E0530400000AAAF45/datafile/ol_mf_sysaux_jx9t28p4_.dbf  
input datafile file number=00009 name=/u01/app/oracle/oradata/ORCL/D4CBF547A2825AA0E0530400000AAAF45/datafile/ol_mf_system_jx9t28oy_.dbf  
input datafile file number=00011 name=/u01/app/oracle/oradata/ORCL/D4CBF547A2825AA0E0530400000AAAF45/datafile/ol_mf_undotbs1_jx9t28p5_.dbf  
input datafile file number=00014 name=/u01/app/oracle/oradata/ORCL/HRMember.dbf  
input datafile file number=00015 name=/u01/app/oracle/oradata/ORCL/HeadMember.dbf  
input datafile file number=00012 name=/u01/app/oracle/oradata/ORCL/D4CBF547A2825AA0E0530400000AAAF45/datafile/ol_mf_users_jx9t3q64_.dbf  
channel ORA_DISK_1: starting piece 1 at 06-JAN-22  
channel ORA_DISK_1: finished piece 1 at 06-JAN-22  
piece handle=/u03/app/oracle/fra/first/ORCL/D4CBF547A2825AA0E0530400000AAAF45/backupset/2022_01_06/ol_mf_nnndf_TAG20220106T074920_jxf7sgnc_.bkp tag=TAG20220106T074920 comment=NONE  
channel ORA_DISK_1: Backup set complete, elapsed time: 00:00:25  
channel ORA_DISK_1: starting full datafile backup set  
channel ORA_DISK_1: specifying datafile(s) in backup set  
input datafile file number=00006 name=/u01/app/oracle/oradata/ORCL/datafile/ol_mf_sysaux_jx9rlotc_.dbf  
input datafile file number=00005 name=/u01/app/oracle/oradata/ORCL/datafile/ol_mf_system_jx9rloow_.dbf  
input datafile file number=00008 name=/u01/app/oracle/oradata/ORCL/datafile/ol_mf_undotbs1_jx9rloowm_.dbf  
channel ORA_DISK_1: starting piece 1 at 06-JAN-22  
channel ORA_DISK_1: finished piece 1 at 06-JAN-22  
piece handle=/u03/app/oracle/fra/first/ORCL/D4CB7BFFE0F44C53E0530400000A420A/backupset/2022_01_06/ol_mf_nnndf_TAG20220106T074920_jxf7t83q_.bkp tag=TAG20220106T074920 comment=NONE  
channel ORA_DISK_1: Backup set complete, elapsed time: 00:00:26  
Finished backup at 06-JAN-22  
  
Starting backup at 06-JAN-22  
current log archived  
using channel ORA_DISK_1  
channel ORA_DISK_1: starting archived log backup set  
channel ORA_DISK_1: specifying archived log(s) in backup set  
input archived log thread=1 sequence=11 RECID=2 STAMP=1093247458  
channel ORA_DISK_1: starting piece 1 at 06-JAN-22  
channel ORA_DISK_1: finished piece 1 at 06-JAN-22  
piece handle=/u03/app/oracle/fra/first/ORCL/backupset/2022_01_06/ol_mf_anndf_TAG20220106T075059_jxf7v3oq_.bkp tag=TAG20220106T075059 comment=NONE  
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01  
Finished backup at 06-JAN-22  
  
Starting Control File and SPFILE Autobackup at 06-JAN-22  
piece handle=/u03/app/oracle/fra/first/ORCL/autobackup/2022_01_06/ol_mf_s_1093247461_jxf7v8w2_.bkp comment=NONE  
Finished Control File and SPFILE Autobackup at 06-JAN-22  
  
RMAN> BACKUP INCREMENTAL LEVEL 1 DATABASE;
```

Start incremental level 1 backup (cumulative) for student database

```
oracle@dgs1:~  
input datafile file number=00008 name=/u02/app/oracle/ORCL2/datafile/ol_mf_undotbs1_jx9k0dn3_.dbf  
channel ORA_DISK_1: starting piece 1 at 06-JAN-22  
channel ORA_DISK_1: finished piece 1 at 06-JAN-22  
piece handle=/u03/app/oracle/fra/second/ORCL2/D4C9CE39150120B6E053040000A12AF/backupset/2022_01_06/ol_mf_nnndf_220106T090629_jxfdb8c4_.bkp tag=TAG20220106T090629 comment=NONE  
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:15  
Finished backup at 06-JAN-22  
  
Starting backup at 06-JAN-22  
current log archived  
using channel ORA_DISK_1  
channel ORA_DISK_1: starting archived log backup set  
channel ORA_DISK_1: specifying archived log(s) in backup set  
input archived log thread=1 sequence=10 RECID=2 STAMP=1093252055  
channel ORA_DISK_1: starting piece 1 at 06-JAN-22  
channel ORA_DISK_1: finished piece 1 at 06-JAN-22  
piece handle=/u03/app/oracle/fra/second/ORCL2/backupset/2022_01_06/ol_mf_annnn_TAG20220106T090735_jxfdbqsj_.bkp AG20220106T090735 comment=NONE  
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01  
Finished backup at 06-JAN-22  
  
Starting Control File and SPFILE Autobackup at 06-JAN-22  
piece handle=/u03/app/oracle/fra/second/ORCL2/autobackup/2022_01_06/ol_mf_s_1093252056_jxfdbvvh_.bkp comment=NONE  
Finished Control File and SPFILE Autobackup at 06-JAN-22  
  
RMAN> BACKUP INCREMENTAL LEVEL 1 CUMULATIVE DATABASE PLUS ARCHIVELOG;  
  
Starting backup at 06-JAN-22  
current log archived  
using channel ORA_DISK_1  
skipping archived logs of thread 1 from sequence 9 to 10; already backed up  
channel ORA_DISK_1: starting archived log backup set  
channel ORA_DISK_1: specifying archived log(s) in backup set  
input archived log thread=1 sequence=11 RECID=3 STAMP=1093252281  
channel ORA_DISK_1: starting piece 1 at 06-JAN-22  
channel ORA_DISK_1: finished piece 1 at 06-JAN-22  
piece handle=/u03/app/oracle/fra/second/ORCL2/backupset/2022_01_06/ol_mf_annnn_TAG20220106T091121_jxfdknsb_.bkp AG20220106T091121 comment=NONE  
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:01  
Finished backup at 06-JAN-22  
  
Starting backup at 06-JAN-22  
using channel ORA_DISK_1  
no parent backup or copy of datafile 1 found  
no parent backup or copy of datafile 3 found  
no parent backup or copy of datafile 4 found  
no parent backup or copy of datafile 7 found  
no parent backup or copy of datafile 6 found  
no parent backup or copy of datafile 5 found  
no parent backup or copy of datafile 8 found  
no parent backup or copy of datafile 10 found  
no parent backup or copy of datafile 9 found  
no parent backup or copy of datafile 11 found  
channel ORA_DISK_1: starting incremental level 0 datafile backup set  
channel ORA_DISK_1: specifying datafile(s) in backup set  
input datafile file number=00001 name=/u02/app/oracle/ORCL2/datafile/ol_mf_system_jx9jlnlj_.dbf  
input datafile file number=00003 name=/u02/app/oracle/ORCL2/datafile/ol_mf_sysaux_jx9jn2lm_.dbf  
input datafile file number=00004 name=/u02/app/oracle/ORCL2/datafile/ol_mf_undotbs1_jx9jnvC7_.dbf  
input datafile file number=00007 name=/u02/app/oracle/ORCL2/datafile/ol_mf_users_jx9jnmwf_.dbf  
channel ORA_DISK_1: starting piece 1 at 06-JAN-22
```


Backup result



The image displays two terminal windows side-by-side, showing the results of an Oracle backup operation. The left window is titled 'oracle@dgs1:/u03/app/oracle/fra/first/ORCL/D4CBF547A2825AA0E0530400000AAF45/backupset/2022_01_06' and the right window is titled 'oracle@dgs1:/u03/app/oracle/fra/second/ORCL2/D4C9CE39150120B6E0530400000A12AF/backupset/2022_01_06'. Both windows show the output of the 'pwd' and 'ls' commands.

```
oracle@dgs1:/u03/app/oracle/fra/first/ORCL/D4CBF547A2825AA0E0530400000AAF45/backupset/2022_01_06
[oracle@dgs1 2022_01_06]$ pwd
/u03/app/oracle/fra/first/ORCL/D4CBF547A2825AA0E0530400000AAF45/backupset/2022_01_06
[oracle@dgs1 2022_01_06]$ ls
ol_mf_nnnd0_TAG20220106T075945_jxf8dzcf_.bkp  ol_mf_nnndf_TAG20220106T074920_jxf7sgnc_.bkp
ol_mf_nnnd1_TAG20220106T075945_jxf8qlfd_.bkp
[oracle@dgs1 2022_01_06]$
```

```
oracle@dgs1:/u03/app/oracle/fra/second/ORCL2/D4C9CE39150120B6E0530400000A12AF/backupset/2022_01_06
[oracle@dgs1 2022_01_06]$ pwd
/u03/app/oracle/fra/second/ORCL2/D4C9CE39150120B6E0530400000A12AF/backupset/2022_01_06
[oracle@dgs1 2022_01_06]$ ls
\ol_mf_nnnd0_TAG20220106T091122_jxfdmfdv_.bkp  ol_mf_nnndf_TAG20220106T090629_jxfdb8c4_.bkp
[oracle@dgs1 2022_01_06]$
```

Auto backup

```
oracle@dgs1:/u01/app/oracle/product/19.3.0/dbhome_1/autobackup
[oracle@dgs1 2022_01_06]$ pwd
/u03/app/oracle/fra/first/ORCL/D4CBF547A2825AA0E0530400000AAAF45/backupset/2022_01_06
[oracle@dgs1 2022_01_06]$ ls
ol_mf_nnnd0_TAG20220106T075945_jxf8dzcf_.bkp  ol_mf_nnndf_TAG20220106T074920_jxf7sgnc_.bkp
ol_mf_nnnd1_TAG20220106T075945_jxf8gldf_.bkp
[oracle@dgs1 2022_01_06]$ cd $ORACLE_HOME
[oracle@dgs1 dbhome_1]$ mkdir autobackup
mkdir: cannot create directory 'autobackup': File exists
[oracle@dgs1 dbhome_1]$ cd autobackup/
[oracle@dgs1 autobackup]$ ls
daily_backup.sh  hourly_backup.sh
[oracle@dgs1 autobackup]$ nano daily_backup.sh
[oracle@dgs1 autobackup]$ crontab -l
MAILTO=first.last@example.com
# MI HH DD MM DAY CMD
43 05 * * * /u01/app/oracle/product/19.3.0/dbhome_1/autobackup/daily_backup.sh
45 05 * * * /u01/app/oracle/product/19.3.0/dbhome_1/autobackup/hourly_backup.sh
[oracle@dgs1 autobackup]$ date
Thu Jan  6 11:20:39 UTC 2022
[oracle@dgs1 autobackup]$ nano .crontab
[oracle@dgs1 autobackup]$ ls
daily_backup.sh  hourly_backup.sh
[oracle@dgs1 autobackup]$ crontab -l
MAILTO=first.last@example.com
# MI HH DD MM DAY CMD
43 05 * * * /u01/app/oracle/product/19.3.0/dbhome_1/autobackup/daily_backup.sh
45 05 * * * /u01/app/oracle/product/19.3.0/dbhome_1/autobackup/hourly_backup.sh
[oracle@dgs1 autobackup]$ nano daily_backup.sh
[oracle@dgs1 autobackup]$ nano .crontab
[oracle@dgs1 autobackup]$ crontab -e
crontab: installing new crontab
[oracle@dgs1 autobackup]$ crontab -l
MAILTO=first.last@example.com
# MI HH DD MM DAY CMD
28 11 * * * /u01/app/oracle/product/19.3.0/dbhome_1/autobackup/daily_backup.sh
45 05 * * * /u01/app/oracle/product/19.3.0/dbhome_1/autobackup/hourly_backup.sh
[oracle@dgs1 autobackup]$
```

```
oracle@dgs1:/u03/app/oracle/fra/second/ORCL2/D4C9CE39150120B6E0530400000A12AF/backupset/2022_01_06
List of Datafiles in backup set 9
Container ID: 3, PDB Name: STUDENT
File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name
-----
9 0 Incr 2437265 06-JAN-22 NO /u02/app/oracle/ORCL2/D4CA00BA066B28BCE0530400000A9FAE/datafil
e/ol_mf_system_jx9kvsrr_.dbf
10 0 Incr 2437265 06-JAN-22 NO /u02/app/oracle/ORCL2/D4CA00BA066B28BCE0530400000A9FAE/datafil
e/ol_mf_sysaux_jx9kvssd_.dbf
11 0 Incr 2437265 06-JAN-22 NO /u02/app/oracle/ORCL2/D4CA00BA066B28BCE0530400000A9FAE/datafil
e/ol_mf_undotbs1_jx9kvssf_.dbf

BS Key Type LV Size Device Type Elapsed Time Completion Time
-----
10 Incr 0 555.32M DISK 00:00:13 06-JAN-22
BP Key: 10 Status: AVAILABLE Compressed: NO Tag: TAG20220106T091122
Piece Name: /u03/app/oracle/fra/second/ORCL2/D4C9CE39150120B6E0530400000A12AF/backupset/2022_01_06/ol_mf_nnnd
0_TAG20220106T091122_jxfdmfdv_.bkp
List of Datafiles in backup set 10
Container ID: 2, PDB Name: PDB$SEED
File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name
-----
5 0 Incr 2135888 04-JAN-22 NO /u02/app/oracle/ORCL2/datafile/ol_mf_system_jx9k0dlz_.dbf
6 0 Incr 2135888 04-JAN-22 NO /u02/app/oracle/ORCL2/datafile/ol_mf_sysaux_jx9k0dmo_.dbf
8 0 Incr 2135888 04-JAN-22 NO /u02/app/oracle/ORCL2/datafile/ol_mf_undotbs1_jx9k0dn3_.dbf

BS Key Type LV Size Device Type Elapsed Time Completion Time
-----
11 Incr 1 3.38M DISK 00:00:00 06-JAN-22
BP Key: 11 Status: AVAILABLE Compressed: NO Tag: TAG20220106T091122
Piece Name: /u03/app/oracle/fra/second/ORCL2/D4CA00BA066B28BCE0530400000A9FAE/backupset/2022_01_06/ol_mf_nnnd
1_TAG20220106T091122_jxfdmwkn_.bkp
List of Datafiles in backup set 11
Container ID: 3, PDB Name: STUDENT
File LV Type Ckp SCN Ckp Time Abs Fuz SCN Sparse Name
-----
12 1 Incr 2437265 06-JAN-22 NO /u02/app/oracle/ORCL2/D4CA00BA066B28BCE0530400000A9FAE/datafil
e/ol_mf_users_jx9kwotq_.dbf
15 1 Incr 2437265 06-JAN-22 NO /u02/app/oracle/ORCL2/StudentMember.dbf
16 1 Incr 2437265 06-JAN-22 NO /u02/app/oracle/ORCL2/MentorMember.dbf

BS Key Size Device Type Elapsed Time Completion Time
-----
12 50.00K DISK 00:00:01 06-JAN-22
BP Key: 12 Status: AVAILABLE Compressed: NO Tag: TAG20220106T091229
Piece Name: /u03/app/oracle/fra/second/ORCL2/backupset/2022_01_06/ol_mf_anndn_TAG20220106T091229_jxfdmplr_.bk
p

List of Archived Logs in backup set 12
Thrd Seq Low SCN Low Time Next SCN Next Time
-----
1 12 2451218 06-JAN-22 2451332 06-JAN-22

BS Key Type LV Size Device Type Elapsed Time Completion Time
-----
13 Full 17.95M DISK 00:00:03 06-JAN-22
BP Key: 13 Status: AVAILABLE Compressed: NO Tag: TAG20220106T091231
Piece Name: /u03/app/oracle/fra/second/ORCL2/autobackup/2022_01_06/ol_mf_s_1093252351_jxfdn27o_.bkp
SPFILE Included: Modification time: 06-JAN-22
SPFILE db_unique_name: ORCL2
Control File Included: Ckp SCN: 2451363 Ckp time: 06-JAN-22

RMAN>
```

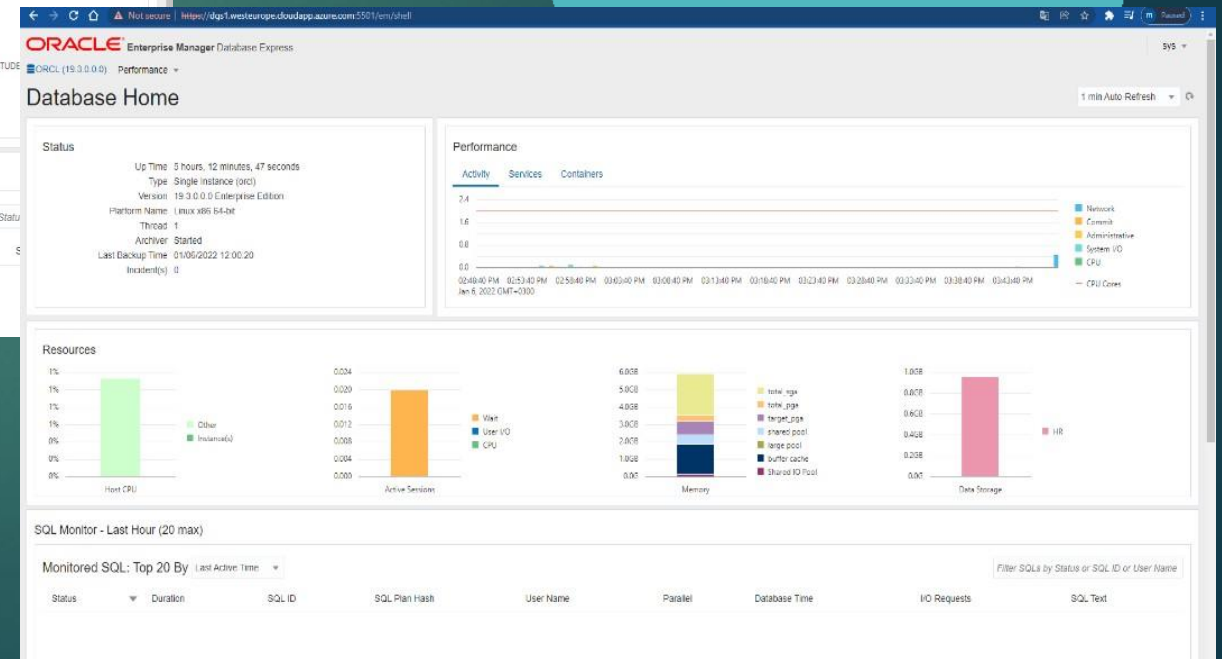
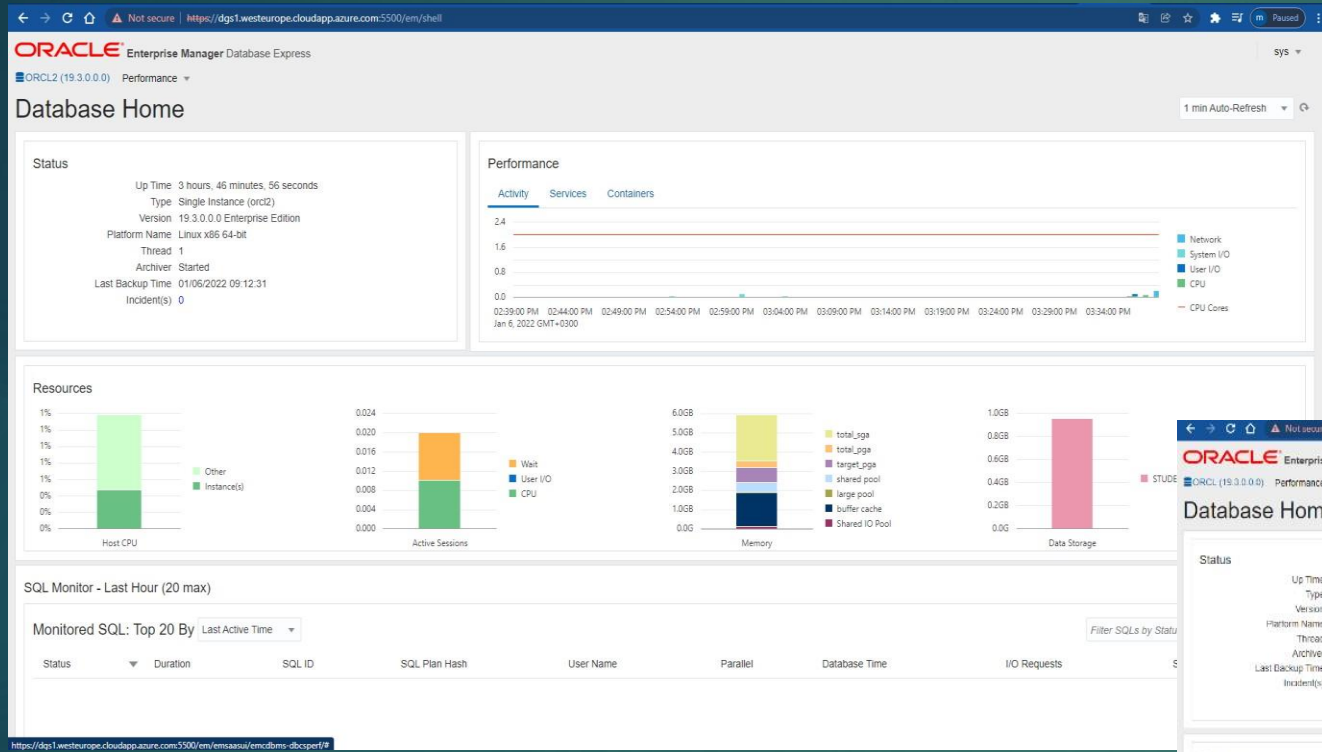
Auto Backup result

```
[oracle@dgs1 11:30]# ls
ORCL
[oracle@dgs1 first]$ cd ORCL/
[oracle@dgs1 ORCL]$ ls
archivelog  backupset  D4CB7BFFE0F44C53E053040000A420A  onlineolog
autobackup  controlfile D4CBF547A2825AA0E0530400000AAF45
[oracle@dgs1 ORCL]$ cd a
archivelog/ autobackup/
[oracle@dgs1 ORCL]$ cd autobackup/
[oracle@dgs1 autobackup]$ ls
2022_01_04  2022_01_06
[oracle@dgs1 autobackup]$ cd 2022_01_0
-bash: cd: 2022_01_0: No such file or directory
[oracle@dgs1 autobackup]$ cd 2022_01_06
[oracle@dgs1 2022_01_06]$ ls
ol_mf_s_1093260535_jxfnmvlp_.bkp  ol_mf_s_1093260656_jxfnqmxx_.bkp  ol_mf_s_1093261628_jxfpoozvo_.bkp  ol_mf_s_1093262156_jxfp6hfy_.bkp  ol_mf_s_1093262268_jxfp9y5l_.bkp  ol_mf_s_1093262420_jxfpggc0_.bkp
[oracle@dgs1 2022_01_06]$ ls -l
total 110400
-rw-r-----. 1 oracle oinstall 18841600 Jan  6 11:28 ol_mf_s_1093260535_jxfnmvlp_.bkp
-rw-r-----. 1 oracle oinstall 18841600 Jan  6 11:30 ol_mf_s_1093260656_jxfnqmxx_.bkp
-rw-r-----. 1 oracle oinstall 18841600 Jan  6 11:47 ol_mf_s_1093261628_jxfpoozvo_.bkp
-rw-r-----. 1 oracle oinstall 18841600 Jan  6 11:55 ol_mf_s_1093262156_jxfp6hfy_.bkp
-rw-r-----. 1 oracle oinstall 18841600 Jan  6 11:57 ol_mf_s_1093262268_jxfp9y5l_.bkp
-rw-r-----. 1 oracle oinstall 18841600 Jan  6 12:00 ol_mf_s_1093262420_jxfpggc0_.bkp
[oracle@dgs1 2022_01_06]$
```

Adding ports to start using EM

Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓	
<input type="checkbox"/> 300	⚠ SSH	22	TCP	Any	Any	✔ Allow	🗑
<input type="checkbox"/> 320	HTTPS	443	TCP	Any	Any	✔ Allow	🗑
<input type="checkbox"/> 340	HTTP	80	TCP	Any	Any	✔ Allow	🗑
<input type="checkbox"/> 1000	⚠ oracle	1521	Any	Any	Any	✔ Allow	🗑
<input type="checkbox"/> 1010	oracleem	5500	Any	Any	Any	✔ Allow	🗑
<input type="checkbox"/> 1020	oracleem1	5501	Any	Any	Any	✔ Allow	🗑
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	✔ Allow	🗑
<input type="checkbox"/> 65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	✔ Allow	🗑
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any	Any	✖ Deny	🗑

Analyzing in EM in both databases

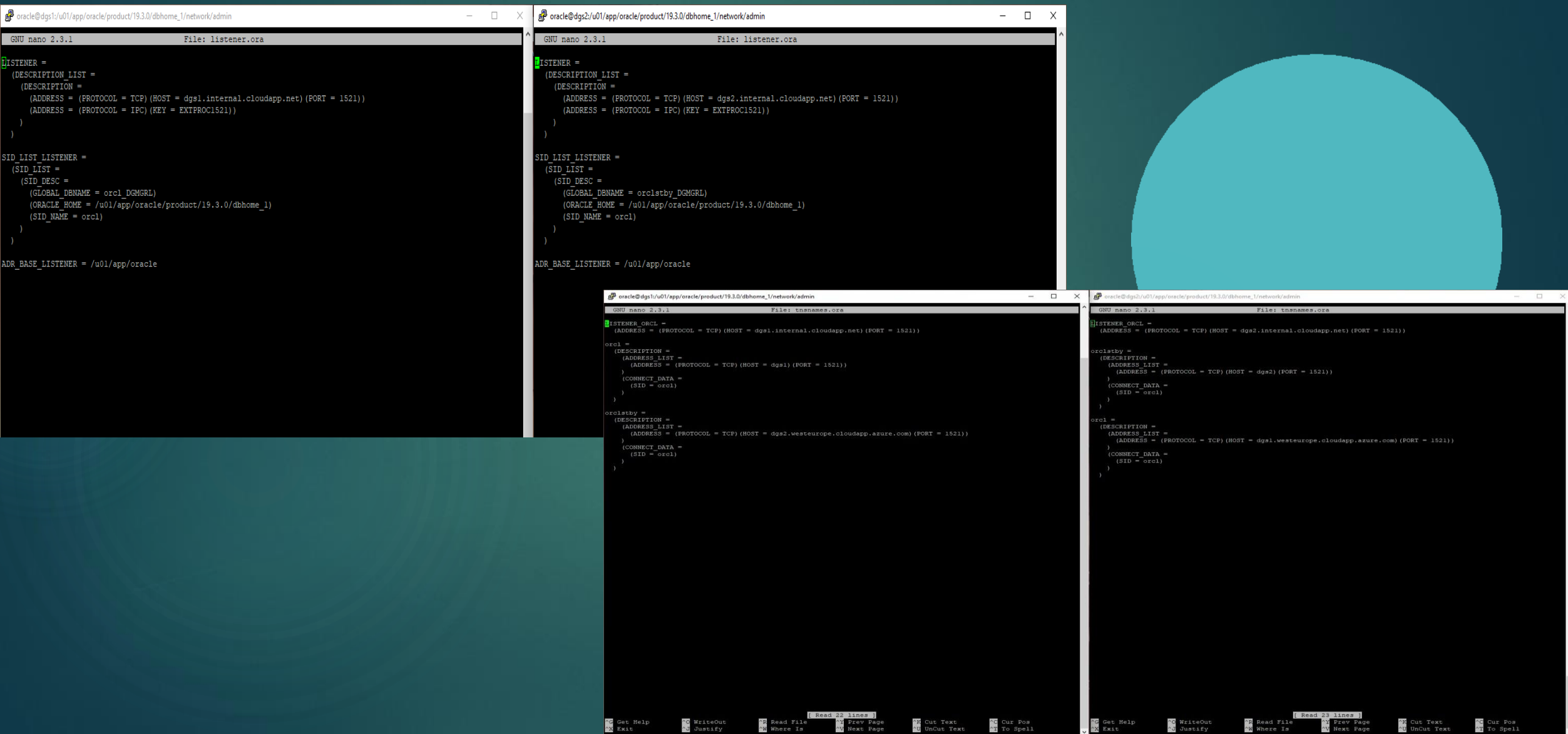


Start implementing data guard by adding standby log files

```
oracle@dgs1:~  
NO          0  
  
      2      ONLINE  
/u02/app/oracle/fast_recovery_area/ORCL2/onlinelog/ol_mf_2_jx9jq14f_.log  
  
GROUP# STATUS TYPE  
-----  
MEMBER  
-----  
IS_    CON_ID  
---  
YES      0  
  
      1      ONLINE  
/u02/app/oracle/ORCL2/onlinelog/ol_mf_1_jx9jqf56_.log  
NO          0  
  
      1      ONLINE  
  
GROUP# STATUS TYPE  
-----  
MEMBER  
-----  
IS_    CON_ID  
---  
YES      0  
  
      4      STANDBY  
/u01/app/oracle/oradata/ORCL/slog4.log  
NO          0  
  
GROUP# STATUS TYPE  
-----  
MEMBER  
-----  
IS_    CON_ID  
---  
      5      STANDBY  
/u01/app/oracle/oradata/ORCL/slog5.log  
NO          0  
  
      6      STANDBY  
/u01/app/oracle/oradata/ORCL/slog6.log  
NO          0  
  
GROUP# STATUS TYPE  
-----  
MEMBER  
-----  
IS_    CON_ID  
---  
      7      STANDBY  
/u01/app/oracle/oradata/ORCL/slog7.log  
NO          0  
  
10 rows selected.  
SQL>
```

```
oracle@dgs1:~  
-----  
db_recovery_file_dest      string      /u03/app/oracle/fra/second  
db_recovery_file_dest_size big integer 12732M  
SQL> ALTER SYSTEM SET DB_RECOVERY_FILE_DEST_SIZE = 2G;  
  
System altered.  
  
SQL> ^C  
  
SQL> show parameter db_recovery;  
  
NAME                                TYPE        VALUE  
-----  
db_recovery_file_dest              string      /u03/app/oracle/fra/second  
db_recovery_file_dest_size         big integer 2G  
SQL> SELECT FLASHBACK_ON FROM V$DATABASE;  
  
FLASHBACK_ON  
-----  
NO  
  
SQL> ALTER DATABASE FLASHBACK ON;  
ALTER DATABASE FLASHBACK ON  
*  
ERROR at line 1:  
ORA-38706: Cannot turn on FLASHBACK DATABASE logging.  
ORA-38708: not enough space for first flashback database log file  
  
SQL> ^C  
  
SQL> ALTER SYSTEM SET DB_RECOVERY_FILE_DEST_SIZE = 2G;  
  
System altered.  
  
SQL> ALTER SYSTEM SET DB_RECOVERY_FILE_DEST_SIZE = 10G;  
  
System altered.  
  
SQL> ^C  
  
SQL> ALTER DATABASE FLASHBACK ON;  
  
Database altered.  
  
SQL> SHOW PARAMETER STANDBY_FILE_MANAGEMENT;  
  
NAME                                TYPE        VALUE  
-----  
standby_file_management            string      MANUAL  
SQL> ALTER SYSTEM SET STANDBY_FILE_MANAGEMENT=AUTO;  
  
System altered.  
  
SQL> ^C  
  
SQL> SHOW PARAMETER STANDBY_FILE_MANAGEMENT;  
  
NAME                                TYPE        VALUE  
-----  
standby_file_management            string      AUTO  
SQL>
```

Adjust listener and tnsnames files



The image displays four terminal windows arranged in a 2x2 grid, each showing the configuration of Oracle listener and tnsnames files using the GNU nano 2.3.1 editor. The top-left window shows the listener.ora file for host dgs1, the top-right for dgs2, the bottom-left for tnsnames.ora on dgs1, and the bottom-right for tnsnames.ora on dgs2. A large blue circle is overlaid on the right side of the image.

```
oracle@dgs1:/u01/app/oracle/product/19.3.0/dbhome_1/network/admin
GNU nano 2.3.1 File: listener.ora
LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP) (HOST = dgs1.internal.cloudapp.net) (PORT = 1521))
      (ADDRESS = (PROTOCOL = IPC) (KEY = EXTPROC1521))
    )
  )
SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (GLOBAL_DBNAME = orcl_DGMGRL)
      (ORACLE_HOME = /u01/app/oracle/product/19.3.0/dbhome_1)
      (SID_NAME = orcl)
    )
  )
ADR_BASE_LISTENER = /u01/app/oracle

oracle@dgs2:/u01/app/oracle/product/19.3.0/dbhome_1/network/admin
GNU nano 2.3.1 File: listener.ora
LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP) (HOST = dgs2.internal.cloudapp.net) (PORT = 1521))
      (ADDRESS = (PROTOCOL = IPC) (KEY = EXTPROC1521))
    )
  )
SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (GLOBAL_DBNAME = orclstby_DGMGRL)
      (ORACLE_HOME = /u01/app/oracle/product/19.3.0/dbhome_1)
      (SID_NAME = orcl)
    )
  )
ADR_BASE_LISTENER = /u01/app/oracle

oracle@dgs1:/u01/app/oracle/product/19.3.0/dbhome_1/network/admin
GNU nano 2.3.1 File: tnsnames.ora
LISTENER_ORCL =
  (ADDRESS = (PROTOCOL = TCP) (HOST = dgs1.internal.cloudapp.net) (PORT = 1521))
orcl =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP) (HOST = dgs1) (PORT = 1521))
    )
    (CONNECT_DATA =
      (SID = orcl)
    )
  )
orclstby =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP) (HOST = dgs2.westeurope.cloudapp.azure.com) (PORT = 1521))
    )
    (CONNECT_DATA =
      (SID = orcl)
    )
  )

oracle@dgs2:/u01/app/oracle/product/19.3.0/dbhome_1/network/admin
GNU nano 2.3.1 File: tnsnames.ora
LISTENER_ORCL =
  (ADDRESS = (PROTOCOL = TCP) (HOST = dgs2.internal.cloudapp.net) (PORT = 1521))
orclstby =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP) (HOST = dgs2) (PORT = 1521))
    )
    (CONNECT_DATA =
      (SID = orcl)
    )
  )
orcl =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP) (HOST = dgs1.westeurope.cloudapp.azure.com) (PORT = 1521))
    )
    (CONNECT_DATA =
      (SID = orcl)
    )
  )
```

Creating initial server parameter for the standby DB

```
oracle@dgs2:/u01/app/oracle/product/19.3.0/dbhome_1/dbs
[oracle@dgs2 ~]$ nano /tmp/initiorclstby.ora
[oracle@dgs2 ~]$ ls\
>
[oracle@dgs2 ~]$ ls
[oracle@dgs2 ~]$ mkdir -p /u01/app/oracle/oradata/orcl/pdbseed
[oracle@dgs2 ~]$ mkdir -p /u01/app/oracle/oradata/orcl/orclpdb
[oracle@dgs2 ~]$ mkdir -p /u01/app/oracle/fast_recovery_area/orcl
[oracle@dgs2 ~]$ mkdir -p /u01/app/oracle/admin/orcl/adump
[oracle@dgs2 ~]$ cd $ORACLE_HOME/dbs
[oracle@dgs2 dbs]$ ls
hc_orcl.dat  init.ora
[oracle@dgs2 dbs]$ orapwd file=/u01/app/oracle/product/19.3.0/dbhome_1/dbs/orapworcl password=mohd2001 entries=10

OPW-00029: Password complexity failed for SYS user : Password must contain at least 1 special character.
[oracle@dgs2 dbs]$ orapwd file=/u01/app/oracle/product/19.3.0/dbhome_1/dbs/orapworcl password=$mohd2001 entries=10

OPW-00029: Password complexity failed for SYS user : Password must contain at least 8 characters.
[oracle@dgs2 dbs]$ orapwd file=/u01/app/oracle/product/19.3.0/dbhome_1/dbs/orapworcl password=P0lytechnic_ entries=10
[oracle@dgs2 dbs]$ sqlplus sys as sysdba

SQL*Plus: Release 19.0.0.0.0 - Production on Thu Jan 6 16:05:14 2022
Version 19.3.0.0.0

Copyright (c) 1982, 2019, Oracle. All rights reserved.

Enter password:
Connected to an idle instance.

SQL> STARTUP NOMOUNT PFILE='/tmp/initiorclstby.ora';
ORACLE instance started.

Total System Global Area  268434280 bytes
Fixed Size                  8895336 bytes
Variable Size              201326592 bytes
Database Buffers           50331648 bytes
Redo Buffers                7880704 bytes
SQL> █
```


Creating initial server parameter for the standby DB

```
oracle@dgs2:/u01/app/oracle/product/19.3.0/dbhome_1/dbs
[oracle@dgs2 ~]$ nano /tmp/initiorclstby.ora
[oracle@dgs2 ~]$ ls\
>
[oracle@dgs2 ~]$ ls
[oracle@dgs2 ~]$ mkdir -p /u01/app/oracle/oradata/orcl/pdbseed
[oracle@dgs2 ~]$ mkdir -p /u01/app/oracle/oradata/orcl/orclpdb
[oracle@dgs2 ~]$ mkdir -p /u01/app/oracle/fast_recovery_area/orcl
[oracle@dgs2 ~]$ mkdir -p /u01/app/oracle/admin/orcl/adump
[oracle@dgs2 ~]$ cd $ORACLE_HOME/dbs
[oracle@dgs2 dbs]$ ls
hc_orcl.dat  init.ora
[oracle@dgs2 dbs]$ orapwd file=/u01/app/oracle/product/19.3.0/dbhome_1/dbs/orapworcl password=mohd2001 entries=10

OPW-00029: Password complexity failed for SYS user : Password must contain at least 1 special character.
[oracle@dgs2 dbs]$ orapwd file=/u01/app/oracle/product/19.3.0/dbhome_1/dbs/orapworcl password=$mohd2001 entries=10

OPW-00029: Password complexity failed for SYS user : Password must contain at least 8 characters.
[oracle@dgs2 dbs]$ orapwd file=/u01/app/oracle/product/19.3.0/dbhome_1/dbs/orapworcl password=P0lytechnic_ entries=10
[oracle@dgs2 dbs]$ sqlplus sys as sysdba

SQL*Plus: Release 19.0.0.0.0 - Production on Thu Jan 6 16:05:14 2022
Version 19.3.0.0.0

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Enter password:
Connected to an idle instance.

SQL> STARTUP NOMOUNT PFILE='/tmp/initiorclstby.ora';
ORACLE instance started.

Total System Global Area  268434280 bytes
Fixed Size                  8895336 bytes
Variable Size              201326592 bytes
Database Buffers           50331648 bytes
Redo Buffers                7880704 bytes
SQL> █
```

Duplicate target

```
oracle@dgs1:~  
Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP) (HOST=dgs1.internal.cloudapp.net) (PORT=1521)))  
STATUS of the LISTENER  
-----  
Alias                LISTENER  
Version              TNSLSNR for Linux: Version 19.0.0.0.0 - Production  
Start Date           07-JAN-2022 03:27:12  
Uptime               0 days 0 hr. 0 min. 0 sec  
Trace Level          off  
Security             ON: Local OS Authentication  
SNMP                 OFF  
Listener Parameter File /u01/app/oracle/product/19.3.0/dbhome_1/network/admin/listener.ora  
Listener Log File    /u01/app/oracle/diag/tnslnr/dgs1/listener/alert/log.xml  
Listening Endpoints Summary...  
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp) (HOST=dgs1.internal.cloudapp.net) (PORT=1521)))  
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc) (KEY=EXTPROC1521)))  
Services Summary...  
Service "orcl_DGMGRL" has 1 instance(s).  
  Instance "orcl", status UNKNOWN, has 1 handler(s) for this service...  
The command completed successfully  
  
SQL> exit  
Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production  
Version 19.3.0.0.0  
[oracle@dgs1 ~]$ rman TARGET sys/P0lytechnic_@orcl AUXILIARY sys/P0lytechnic_@dgs2.westeurope.cloudapp.azure.com/orcl  
 standby_DGMGRL  
  
Recovery Manager: Release 19.0.0.0.0 - Production on Fri Jan 7 03:28:28 2022  
Version 19.3.0.0.0  
  
Copyright (c) 1982, 2019, Oracle and/or its affiliates. All rights reserved.  
  
connected to target database: ORCL (DBID=1620913214)  
connected to auxiliary database: ORCL (not mounted)  
  
RMAN> DUPLICATE TARGET DATABASE FOR STANDBY FROM ACTIVE DATABASE DORECOVER SPFILE SET db_unique_name='ORCLSTBY' COM  
ENT 'Is standby' NOFILENAMECHECK;  
  
Starting Duplicate Db at 07-JAN-22  
using target database control file instead of recovery catalog  
allocated channel: ORA_AUX_DISK_1  
channel ORA_AUX_DISK_1: SID=182 device type=DISK  
current log archived  
  
Contents of Memory Script:  
{  
  backup as copy reuse  
  passwordfile auxiliary format '/u01/app/oracle/product/19.3.0/dbhome_1/dbs/orapworcl' ;  
  restore clone from service 'orcl' spfile to  
  '/u01/app/oracle/product/19.3.0/dbhome_1/dbs/spfileorcl.ora';  
  sql clone "alter system set spfile= '/u01/app/oracle/product/19.3.0/dbhome_1/dbs/spfileorcl.ora'";  
}  
executing Memory Script  
  
Starting backup at 07-JAN-22  
allocated channel: ORA_DISK_1  
channel ORA_DISK_1: SID=291 device type=DISK  
Finished backup at 07-JAN-22  
  
Starting restore at 07-JAN-22  
using channel ORA_AUX_DISK_1  
  
█
```

Entering DGMGRL

```
oracle@dgs1:~  
channel ORA_AUX_DISK_1: restoring SPFILE  
output file name=/u01/app/oracle/product/19.3.0/dbhome_1/dbs/spfileorcl.ora  
channel ORA_AUX_DISK_1: restore complete, elapsed time: 00:00:01  
Finished restore at 07-JAN-22  
  
sql statement: alter system set spfile= '/u01/app/oracle/product/19.3.0/dbhome_1/dbs/spfileorcl.ora'  
  
contents of Memory Script:  
(  
  sql clone "alter system set  db_unique_name =  
  'ORCLSTBY' comment=  
  'Is standby' scope=spfile";  
  shutdown clone immediate;  
  startup clone nomount;  
)  
executing Memory Script  
  
sql statement: alter system set  db_unique_name = 'ORCLSTBY' comment= 'Is standby' scope=spfile  
  
Oracle instance shut down  
  
connected to auxiliary database (not started)  
RMAN-00571: =====  
RMAN-00569: ===== ERROR MESSAGE STACK FOLLOWS =====  
RMAN-00571: =====  
RMAN-03002: failure of Duplicate Db command at 01/07/2022 03:39:43  
RMAN-05501: aborting duplication of target database  
RMAN-03015: error occurred in stored script Memory Script  
RMAN-04014: startup failed: ORA-01261: Parameter db_recovery_file_dest destination string cannot be translated  
ORA-01262: Stat failed on a file destination directory  
Linux-x86_64 Error: 2: No such file or directory  
  
RMAN> exit  
  
Recovery Manager complete.  
[oracle@dgs1 ~]$ sqlplus sys/P0lytechnic_orcl as sysdba  
  
SQL*Plus: Release 19.0.0.0.0 - Production on Fri Jan 7 03:39:59 2022  
Version 19.3.0.0.0  
  
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Last Successful login time: Fri Jan 07 2022 03:39:15 +00:00  
  
Connected to:  
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production  
Version 19.3.0.0.0  
  
SQL> exit  
Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production  
Version 19.3.0.0.0  
[oracle@dgs1 ~]$ dgmgrl sys/P0lytechnic_orcl  
DGMGRL for Linux: Release 19.0.0.0.0 - Production on Fri Jan 7 03:41:26 2022  
Version 19.3.0.0.0  
  
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Welcome to DGMGRL, type "help" for information.  
Connected to "orcl"  
Connected as SYSDBA.  
DGMGRL>   
oracle@dgs2:~  
Listener Parameter File /u01/app/oracle/product/19.3.0/dbhome_1/network/admin/listener.ora  
Listener Log File /u01/app/oracle/diag/tnslsnr/dgs2/listener/alert/log.xml  
Listening Endpoints Summary...  
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=dgs2.internal.cloudapp.net)(PORT=1521)))  
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=EXTPROC1521)))  
Services Summary...  
Service "orclstby_DGMGRL" has 1 instance(s).  
  Instance "orcl", status UNKNOWN, has 1 handler(s) for this service...  
The command completed successfully  
  
SQL> exit  
Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production  
Version 19.3.0.0.0  
[oracle@dgs2 ~]$ sqlplus sys/P0lytechnic_orclstby as sysdba  
  
SQL*Plus: Release 19.0.0.0.0 - Production on Fri Jan 7 03:35:44 2022  
Version 19.3.0.0.0  
  
Copyright (c) 1982, 2019, Oracle. All rights reserved.  
  
Connected to an idle instance.  
  
SQL> ALTER SYSTEM SET dg_broker_start=true;  
ALTER SYSTEM SET dg_broker_start=true  
*  
ERROR at line 1:  
ORA-01034: ORACLE not available  
Process ID: 0  
Session ID: 0 Serial number: 0  
  
SQL> STARTUP NOMOUNT PFILE='/tmp/initorclstby.ora';  
ORACLE instance started.  
  
Total System Global Area 268434280 bytes  
Fixed Size 8895336 bytes  
Variable Size 201326592 bytes  
Database Buffers 50331648 bytes  
Redo Buffers 7880704 bytes  
SQL> ALTER SYSTEM SET dg_broker_start=true;  
  
System altered.  
  
SQL> exit  
ERROR:  
ORA-03113: end-of-file on communication channel  
Process ID: 0  
Session ID: 162 Serial number: 58600  
  
Disconnected from Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 - Production  
Version 19.3.0.0.0 (with complications)  
[oracle@dgs2 ~]$ dgmgrl sys/P0lytechnic_orclstby  
DGMGRL for Linux: Release 19.0.0.0.0 - Production on Fri Jan 7 03:42:03 2022  
Version 19.3.0.0.0  
  
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Welcome to DGMGRL, type "help" for information.  
Connected to an idle instance.  
Connected as SYSDBA.  
DGMGRL>   

```