

**A
LAB REPORT
ON
Database Administration**

**By
Prajwal Dahal
TU Reg-no: 6-2-388-03-2019**



**Submitted to:
Pradip Bhochhibhoya
Lecturer**

**Kantipur College of Management and Information
Technology**

In partial fulfillment of the requirements for the Course
Database Administration

Mid Baneshwor, Kathmandu

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TABLE OF CONTENTS

1	Configure Database in oracle using DBCA.....	1
2	Create a connection with SQL developer to created database.....	3
3	Create user and grant privilege to connect to database.	4
3.1	Query.....	4
3.2	Output Window.....	4
4	Create tablespace in oracle database.....	5
4.1	Query.....	5
4.2	Output Window.....	5
5	Create user and assign 5mb quota on tablespace created above.....	6
5.1	Query.....	6
5.2	Output.....	6
6	Create profile and assign it to user.	7
6.1	Query.....	7
6.2	Output Window.....	7
7	Create Pluggable database in container database.	8
7.1	Query.....	8
7.2	Output Window:.....	8
8	Use TNSPING to Test Oracle Net Connectivity.	9
8.1	Command.....	9
8.2	Output Window.....	9
9	Checking log mode and altering database to archive log mode.	10

9.1	Query.....	10
10	Checking listener status in oracle database	11
10.1	Output Window	11
11	Backup database using RMAN utility.....	12
11.1	Query	12

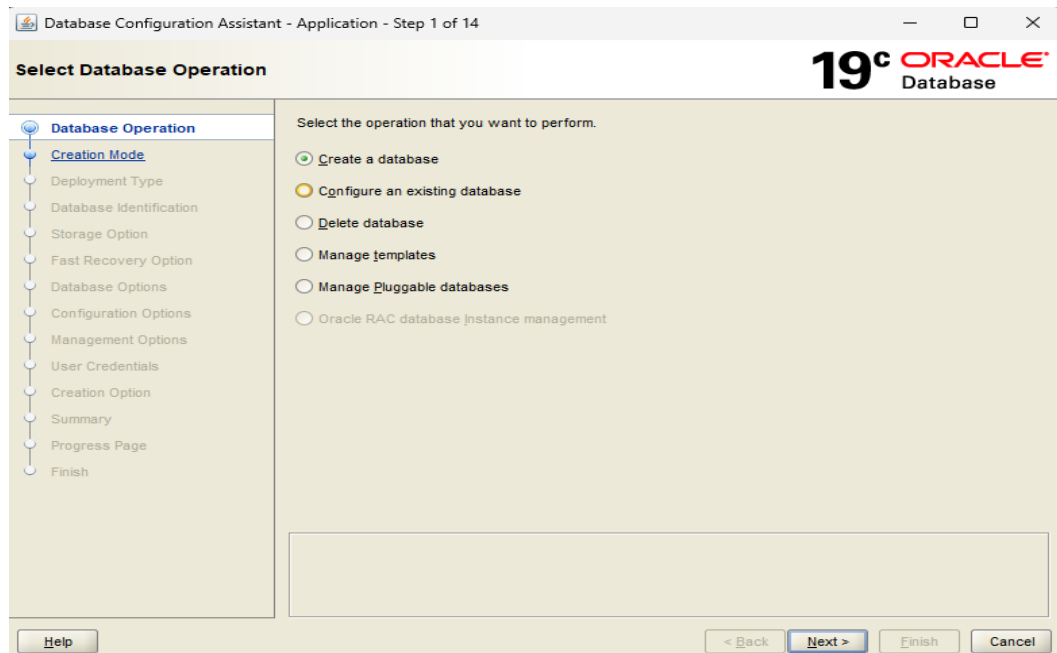
1 Configure Database in oracle using DBCA

- Run DBCA command from Command Line

```
Administrator: Command Prompt - dbca
Microsoft Windows [Version 10.0.22631.3737]
(c) Microsoft Corporation. All rights reserved.

C:\Windows\System32>dbca
```

- GUI Window will appear. Select create database from the option and click next button.



➤ Setup typical installation and clicked on next-next

Database Configuration Assistant - Create 'bca' database - Step 2 of 5

19c ORACLE Database

Select Database Creation Mode

Database Operation
Creation Mode
Summary
Progress Page
Finish

☒ Typical configuration

Global database name: bca

Storage type: File System

Database files location: (ORACLE_BASE)\oradata\{DB_UNIQUE_NAME} Browse...

Fast Recovery Area (FRA): (ORACLE_BASE)\fast_recovery_area\{DB_UNIQUE_NAME} Browse...

Database character set: AL32UTF8 - Unicode UTF-8 Universal character set

Administrative password: ****

Confirm password: ****

Oracle home user password: ****

☒ Create as Container database

Pluggable database name: bcapdb

☐ Advanced configuration

Messages:

Administrative password [DBT-06208] The 'ADMIN' password entered does not conform to the Oracle recommended standards.

Help < Back Next > Finish Cancel

Database Configuration Assistant - Create 'bca' database - Step 3 of 5

19c ORACLE Database

Summary

Database Operation
Creation Mode
Summary
Progress Page
Finish

Database Configuration Assistant

Global Settings

- Global database name: bca
- Configuration type: Oracle Single Instance database
- SID: bca
- Create as Container database: Yes
- Pluggable Database Name: bcapdb
- Number of Pluggable Databases: 1
- Use Local Undo tablespace for PDBs: Yes
- Database Files Storage Type: File System
- Memory Configuration Type: Automatic Shared Memory Management
- Template name: General Purpose

Initialization Parameters

- audit_file_dest: (ORACLE_BASE)\admin\{DB_UNIQUE_NAME}\adump
- audit_trail: db
- compatible: 19.0.0
- db_block_size: 8 KB
- db_create_file_dest: (ORACLE_BASE)\oradata\{DB_UNIQUE_NAME}\
- db_name: bca
- db_recovery_file_dest: (ORACLE_BASE)\fast_recovery_area\{DB_UNIQUE_NAME}
- db_recovery_file_dest_size: 12732 MB

Save Response File...

Help < Back Next > Finish Cancel

Database Configuration Assistant - Create 'bca' database - Step 4 of 5

19c ORACLE Database

Progress Page

Database Operation
Creation Mode
Summary
Progress Page
Finish

Progress

Copying database files: In Progress 8%

Status

DB Creation	In Progress
• Prepare for db operation	Succeeded
• Copying database files	In Progress
• Creating and starting Oracle instance	Pending
• Completing Database Creation	Pending
• Creating Pluggable Databases	Pending
• Execution Post Configuration Actions	Pending

Details Revert All Revert Retry Skip

DBCA Log Location:
D:\app\pdaha\cfgtoollogs\dbcabca\trace.log_2024-06-25_05-40-08PM

Help < Back Next > Finish Cancel

2 Create a connection with SQL developer to created database.

- Open SQL developer and create new connection and fill the filed with valid value and connect to bcapdb service

The screenshot shows the 'New / Select Database Connection' dialog box in SQL Developer. The dialog is divided into two main sections: 'Connection Name' and 'Connection Details'. The 'Connection Name' section is empty. The 'Connection Details' section contains the following fields and options:

- Name:** PDBSYS
- Database Type:** Oracle
- User Info:** Proxy User
- Authentication Type:** Default
- Username:** sys
- Role:** SYSDBA
- Password:** (masked with dots)
- Save Password:** (unchecked)
- Connection Type:** Basic
- Details:** Advanced
- Hostname:** localhost
- Port:** 1521
- Service name:** bcapdb (selected)

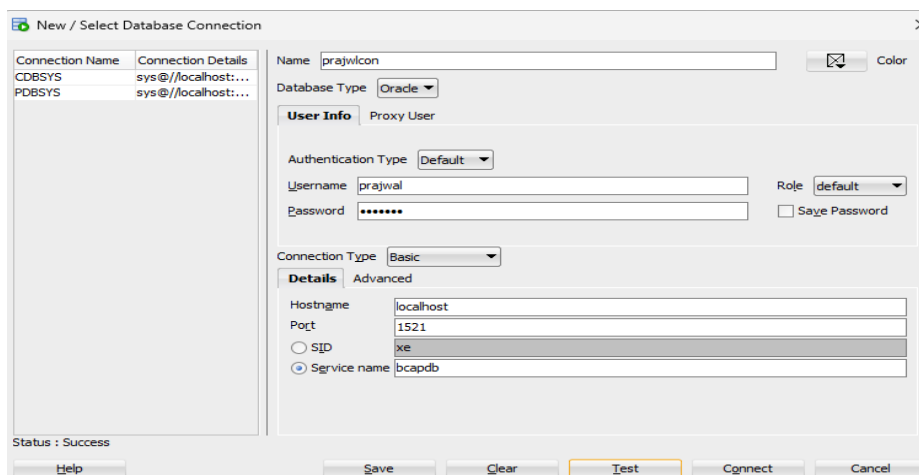
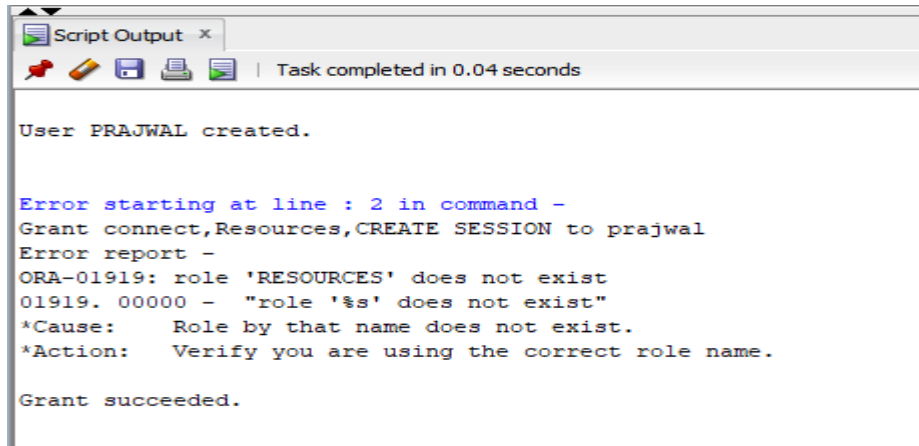
At the bottom of the dialog, there are buttons for 'Help', 'Save', 'Clear', 'Test' (highlighted with a yellow border), 'Connect', and 'Cancel'. The status bar at the bottom left indicates 'Status : Success'.

3 Create user and grant privilege to connect to database.

3.1 Query

```
CREATE user prajwal IDENTIFIED BY prajwal;  
Grant CONNECT, RESOURCE, CREATE SESSION to prajwal;
```

3.2 Output Window

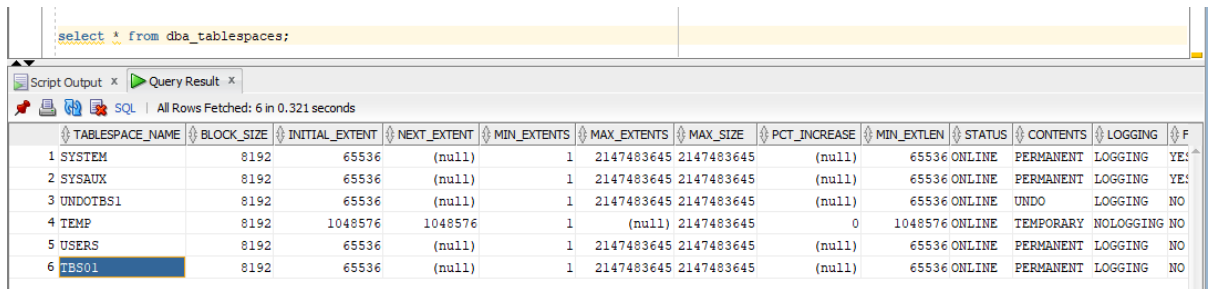


4 Create tablespace in oracle database.

4.1 Query

```
create tablespace tbs01 Datafile 'D:\datafiles\tbs0101.dbf'  
size 10m blocksize 8k;
```

4.2 Output Window



The screenshot shows the Oracle SQL Developer interface. At the top, a SQL script is entered: `select * from dba_tablespaces;`. Below the script, the 'Query Result' window displays the output of the query. The output is a table with 13 columns: TABLESPACE_NAME, BLOCK_SIZE, INITIAL_EXTENT, NEXT_EXTENT, MIN_EXTENTS, MAX_EXTENTS, MAX_SIZE, PCT_INCREASE, MIN_EXTLEN, STATUS, CONTENTS, LOGGING, and F. There are 6 rows of data, with the 6th row, 'TBS01', highlighted in blue. The status of 'TBS01' is 'ONLINE'.

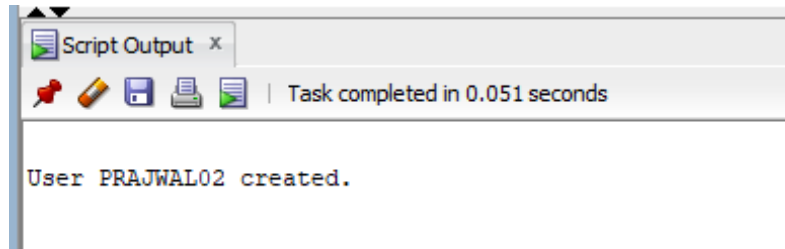
	TABLESPACE_NAME	BLOCK_SIZE	INITIAL_EXTENT	NEXT_EXTENT	MIN_EXTENTS	MAX_EXTENTS	MAX_SIZE	PCT_INCREASE	MIN_EXTLEN	STATUS	CONTENTS	LOGGING	F
1	SYSTEM	8192	65536	(null)	1	2147483645	2147483645	(null)	65536	ONLINE	PERMANENT	LOGGING	YES
2	SYSAUX	8192	65536	(null)	1	2147483645	2147483645	(null)	65536	ONLINE	PERMANENT	LOGGING	YES
3	UNDOTBS1	8192	65536	(null)	1	2147483645	2147483645	(null)	65536	ONLINE	UNDO	LOGGING	NO
4	TEMP	8192	1048576	1048576	1	(null)	2147483645	0	1048576	ONLINE	TEMPORARY	NOLOGGING	NO
5	USERS	8192	65536	(null)	1	2147483645	2147483645	(null)	65536	ONLINE	PERMANENT	LOGGING	NO
6	TBS01	8192	65536	(null)	1	2147483645	2147483645	(null)	65536	ONLINE	PERMANENT	LOGGING	NO

5 Create user and assign 5mb quota on tablespace created above.

5.1 Query

```
Create user prajwal02 identified by prajwal2 default Tablespace  
tbs01 quota 5m on tbs01;
```

5.2 Output



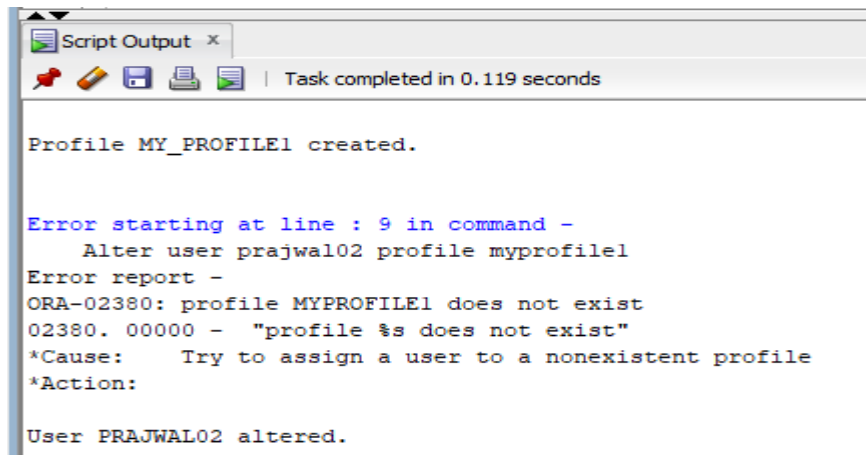
6 Create profile and assign it to user.

6.1 Query

```
CREATE PROFILE my_profile1 LIMIT
  SESSIONS_PER_USER          5
  CPU_PER_SESSION            10000
  CONNECT_TIME                600
  IDLE_TIME                   30
  PASSWORD_LIFE_TIME          90;
```

```
Alter user prajwal02 profile my_profile1;
```

6.2 Output Window



7 Create Pluggable database in container database.

7.1 Query

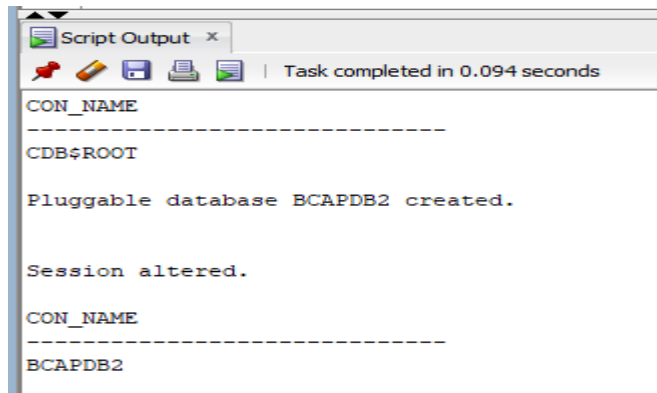
```
show con_name;
```

```
CREATE PLUGGABLE DATABASE bcapdb2  
ADMIN USER prajwal IDENTIFIED BY prajwal;
```

```
Alter session set container=bcapdb2;
```

```
show con_name;
```

7.2 Output Window:



8 Use TNSPING to Test Oracle Net Connectivity.

8.1 Command

Tnsping bca

8.2 Output Window

```
C:\Users\prajwal>tnspring bca

TNS Ping Utility for 64-bit Windows: Version 19.0.0.0.0 - Production on 25-JUN-2024 20:56:37

Copyright (c) 1997, 2019, Oracle. All rights reserved.

Used parameter files:
D:\oracle\network\admin\sqlnet.ora

Used TNSNAMES adapter to resolve the alias
Attempting to contact (DESCRIPTION = (ADDRESS = (PROTOCOL = TCP)(HOST = Inspiron3493)(PORT = 1521)) (CONNECT_DATA = (SER
VER = DEDICATED) (SERVICE_NAME = bca)))
OK (30 msec)
```

9 Checking log mode and altering database to archive log mode.

9.1 Query

```
SQL> SELECT LOG_MODE FROM V$DATABASE;
```

```
LOG_MODE
-----
NOARCHIVELOG
```

```
SQL> SHUTDOWN IMMEDIATE;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> startup mount;
ORACLE instance started.
```

```
Total System Global Area 2516579496 bytes
Fixed Size                  9270440 bytes
Variable Size               553648128 bytes
Database Buffers            1946157056 bytes
Redo Buffers                 7503872 bytes
Database mounted.
```

```
SQL> alter database archivelog;

Database altered.
```

```
SQL> SELECT LOG_MODE FROM V$DATABASE;
```

```
LOG_MODE
-----
ARCHIVELOG
```

10 Checking listener status in oracle database

10.1 Output Window

```
C:\Windows\System32>lsnrctl status

LSNRCTL for 64-bit Windows: Version 19.0.0.0.0 - Production on 25-JUN-2024 21:24:06

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

Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=Inspiron3493)(PORT=1521)))
STATUS of the LISTENER
-----
Alias                     LISTENER
Version                  TNSLSNR for 64-bit Windows: Version 19.0.0.0.0 - Production
Start Date               25-JUN-2024 17:44:07
Uptime                   0 days 3 hr. 40 min. 2 sec
Trace Level              off
Security                 ON: Local OS Authentication
SNMP                     OFF
Listener Parameter File  D:\oracle\network\admin\listener.ora
Listener Log File        D:\app\pdahal\diag\tnslnsr\Inspiron3493\listener\alert\log.xml
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=Inspiron3493)(PORT=1521)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(PIPENAME=\\.\pipe\EXTPROC1521ipc)))
Services Summary...
Service "CLRExtProc" has 1 instance(s).
  Instance "CLRExtProc", status UNKNOWN, has 1 handler(s) for this service...
Service "bca" has 1 instance(s).
  Instance "bca", status READY, has 1 handler(s) for this service...
The command completed successfully
```

11 Backup database using RMAN utility

11.1 Query

```
C:\Windows\System32>rman target /
```

```
Recovery Manager: Release 19.0.0.0.0 - Production on Tue Jun 25
22:08:29 2024
Version 19.3.0.0.0
```

```
Copyright (c) 1982, 2019, Oracle and/or its affiliates. All rights
reserved.
```

```
connected to target database: BCA (DBID=1930167002)
```

```
RMAN> BACKUP DATABASE;
```

```
Starting backup at 25-JUN-24
using target database control file instead of recovery catalog
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=505 device type=DISK
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=D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_SYSTEM_M7ODFDQ2_.DBF
input datafile file number=00003
name=D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_SYSAUX_M7ODGT7N_.DBF
input datafile file number=00004
name=D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_UNDOTBS1_M7ODHMQM_.DBF
input datafile file number=00007
name=D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_USERS_M7ODHO4Z_.DBF
channel ORA_DISK_1: starting piece 1 at 25-JUN-24
channel ORA_DISK_1: finished piece 1 at 25-JUN-24
piece
handle=D:\APP\PDAHAL\FAST_RECOVERY_AREA\BCA\BACKUPSET\2024_06_25\O1_
MF_NNNDP_TAG20240625T220834_M7OVR6QW_.BKP tag=TAG20240625T220834
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=D:\APP\PDAHAL\ORADATA\BCA\91A52D17D4E94165BFD41C62988B7D79\DATA
FILE\O1_MF_SYSAUX_M7OFL2MJ_.DBF
input datafile file number=00009
name=D:\APP\PDAHAL\ORADATA\BCA\91A52D17D4E94165BFD41C62988B7D79\DATA
FILE\O1_MF_SYSTEM_M7OFL2J2_.DBF
input datafile file number=00011
name=D:\APP\PDAHAL\ORADATA\BCA\91A52D17D4E94165BFD41C62988B7D79\DATA
FILE\O1_MF_UNDOTBS1_M7OFL2MV_.DBF
```

```

input datafile file number=00013 name=D:\DATAFILES\TBS0101.DBF
input datafile file number=00012
name=D:\APP\PDAHAL\ORADATA\BCA\91A52D17D4E94165BFD41C62988B7D79\DATA
FILE\O1_MF_USERS_M7OFM8D3_.DBF
channel ORA_DISK_1: starting piece 1 at 25-JUN-24
channel ORA_DISK_1: finished piece 1 at 25-JUN-24
piece
handle=D:\APP\PDAHAL\FAST_RECOVERY_AREA\BCA\91A52D17D4E94165BFD41C62
988B7D79\BACKUPSET\2024_06_25\O1_MF_NNND_FTAG20240625T220834_M7OVSOJ
O_.BKP tag=TAG20240625T220834 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:45
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=D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_SYSAUX_M7ODSJ8L_.DBF
input datafile file number=00005
name=D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_SYSTEM_M7ODSJ6M_.DBF
input datafile file number=00008
name=D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_UNDOTBS1_M7ODSJ9K_.DBF
channel ORA_DISK_1: starting piece 1 at 25-JUN-24
channel ORA_DISK_1: finished piece 1 at 25-JUN-24
piece
handle=D:\APP\PDAHAL\FAST_RECOVERY_AREA\BCA\24240407AFB642BBBD9367A4
17ADE125\BACKUPSET\2024_06_25\O1_MF_NNND_FTAG20240625T220834_M7OVV2R
9_.BKP tag=TAG20240625T220834 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:00:35
channel ORA_DISK_1: starting full datafile backup set
channel ORA_DISK_1: specifying datafile(s) in backup set
input datafile file number=00015
name=D:\APP\PDAHAL\ORADATA\BCA\61E63737ECC54BA18E5EF3EDD0378D96\DATA
FILE\O1_MF_SYSAUX_M7OQ8TB3_.DBF
input datafile file number=00014
name=D:\APP\PDAHAL\ORADATA\BCA\61E63737ECC54BA18E5EF3EDD0378D96\DATA
FILE\O1_MF_SYSTEM_M7OQ8T7R_.DBF
input datafile file number=00016
name=D:\APP\PDAHAL\ORADATA\BCA\61E63737ECC54BA18E5EF3EDD0378D96\DATA
FILE\O1_MF_UNDOTBS1_M7OQ8TBR_.DBF
channel ORA_DISK_1: starting piece 1 at 25-JUN-24
channel ORA_DISK_1: finished piece 1 at 25-JUN-24
piece
handle=D:\APP\PDAHAL\FAST_RECOVERY_AREA\BCA\61E63737ECC54BA18E5EF3ED
D0378D96\BACKUPSET\2024_06_25\O1_MF_NNND_FTAG20240625T220834_M7OVW67
M_.BKP tag=TAG20240625T220834 comment=NONE
channel ORA_DISK_1: backup set complete, elapsed time: 00:08:11
Finished backup at 25-JUN-24

```

Starting Control File and SPFILE Autobackup at 25-JUN-24

piece
handle=D:\APP\PDAHAL\FAST_RECOVERY_AREA\BCA\AUTOBACKUP\2024_06_25\O1
_MF_S_1172614733_M7OWCLNO_.BKP comment=NONE
Finished Control File and SPFILE Autobackup at 25-JUN-24

Restoring and Recovery

RMAN> shutdown immediate

database closed
database dismounted
Oracle instance shut down

RMAN> STARTUP MOUNT;

connected to target database (not started)
Oracle instance started
database mounted

Total System Global Area 2516579496 bytes

Fixed Size	9270440 bytes
Variable Size	553648128 bytes
Database Buffers	1946157056 bytes
Redo Buffers	7503872 bytes

RMAN> RESTORE DATABASE
2> ;

Starting restore at 25-JUN-24
allocated channel: ORA_DISK_1
channel ORA_DISK_1: SID=130 device type=DISK

skipping datafile 5; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_SYSTEM_M7ODSJ6M_.DBF
skipping datafile 6; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_SYSAUX_M7ODSJ8L_.DBF
skipping datafile 8; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_UNDOTBS1_M7ODSJ9K_.DBF
skipping datafile 9; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\91A52D17D4E94165BFD41C62988B7D79\DATAFILE\
O1_MF_SYSTEM_M7OFL2J2_.DBF
skipping datafile 10; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\91A52D17D4E94165BFD41C62988B7D79\DATAFILE\
O1_MF_SYSAUX_M7OFL2MJ_.DBF
skipping datafile 11; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\91A52D17D4E94165BFD41C62988B7D79\DATAFILE\
O1_MF_UNDOTBS1_M7OFL2MV_.DBF

```

skipping datafile 12; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\91A52D17D4E94165BFD41C62988B7D79\DATAFILE\
O1_MF_USERS_M7OFM8D3_.DBF
skipping datafile 13; already restored to file
D:\DATAFILES\TBS0101.DBF
skipping datafile 14; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\61E63737ECC54BA18E5EF3EDD0378D96\DATAFILE\
O1_MF_SYSTEM_M7OQ8T7R_.DBF
skipping datafile 15; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\61E63737ECC54BA18E5EF3EDD0378D96\DATAFILE\
O1_MF_SYSAUX_M7OQ8TB3_.DBF
skipping datafile 16; already restored to file
D:\APP\PDAHAL\ORADATA\BCA\61E63737ECC54BA18E5EF3EDD0378D96\DATAFILE\
O1_MF_UNDOTBS1_M7OQ8TBR_.DBF
channel ORA_DISK_1: starting datafile backup set restore
channel ORA_DISK_1: specifying datafile(s) to restore from backup
set
channel ORA_DISK_1: restoring datafile 00001 to
D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_SYSTEM_M7ODFDQ2_.DBF
channel ORA_DISK_1: restoring datafile 00003 to
D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_SYSAUX_M7ODGT7N_.DBF
channel ORA_DISK_1: restoring datafile 00004 to
D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_UNDOTBS1_M7ODHMQM_.DBF
channel ORA_DISK_1: restoring datafile 00007 to
D:\APP\PDAHAL\ORADATA\BCA\DATAFILE\O1_MF_USERS_M7ODHO4Z_.DBF
channel ORA_DISK_1: reading from backup piece
D:\APP\PDAHAL\FAST_RECOVERY_AREA\BCA\BACKUPSET\2024_06_25\O1_MF_NNND
F_TAG20240625T220834_M7OVR6QW_.BKP
channel ORA_DISK_1: piece
handle=D:\APP\PDAHAL\FAST_RECOVERY_AREA\BCA\BACKUPSET\2024_06_25\O1_
MF_NNND F_TAG20240625T220834_M7OVR6QW_.BKP tag=TAG20240625T220834
channel ORA_DISK_1: restored backup piece 1
channel ORA_DISK_1: restore complete, elapsed time: 00:00:36
Finished restore at 25-JUN-24

```

```

RMAN> RECOVER DATABASE

```

```

2> ;

```

```

Starting recover at 25-JUN-24
using channel ORA_DISK_1

```

```

starting media recovery
media recovery complete, elapsed time: 00:00:03
Finished recover at 25-JUN-24

```

```

RMAN> alter database open

```

```

2> ;

```

```

Statement processed

```