ORACLE 19c New Features DataBase Creation

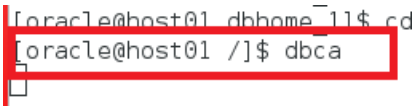
STEPS TO CREATE THE CONTAINER DATABASE NAMED ORCL AND ITS PDB NAMED pdb1

Note:

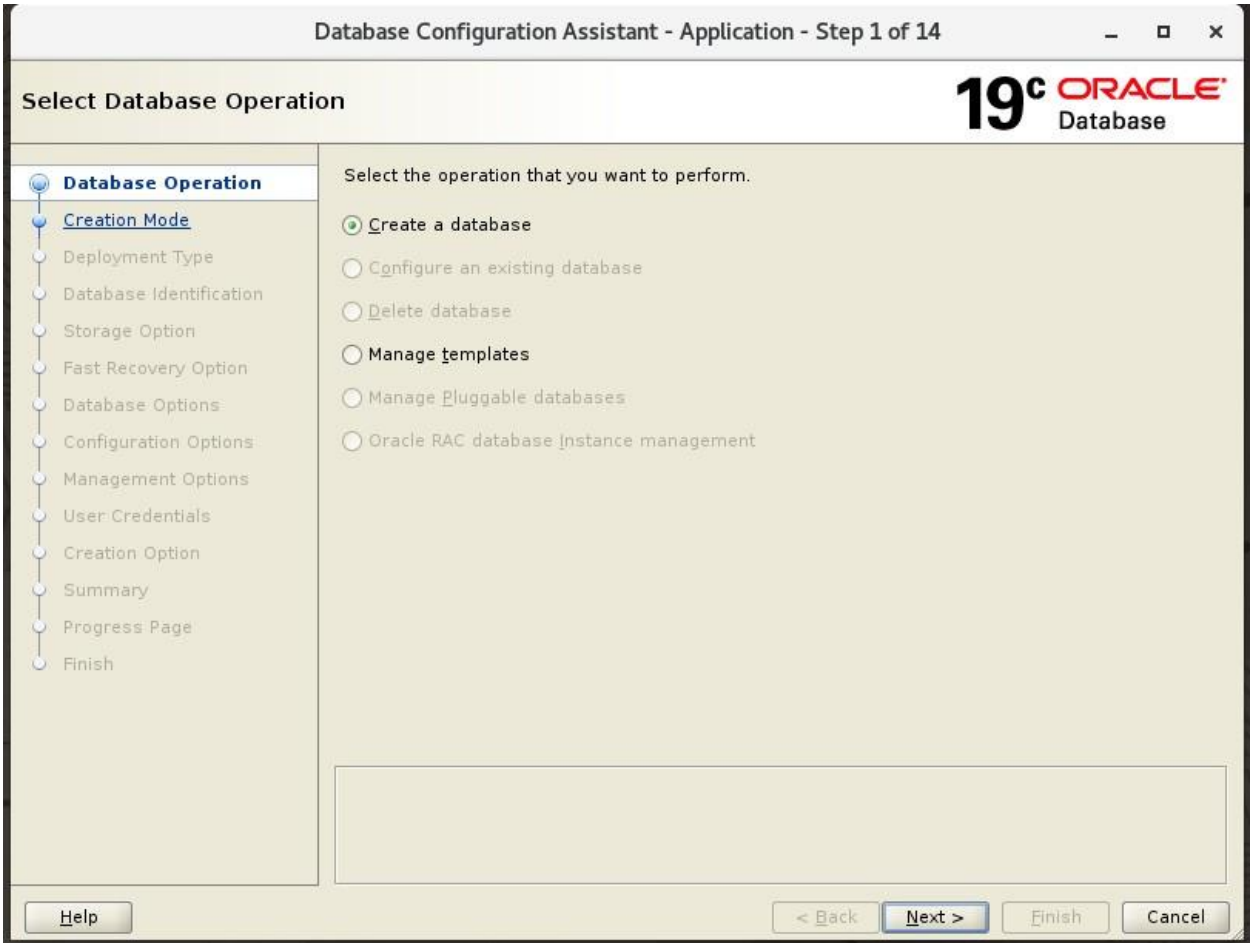
- Execute xhost + command as root.
- Login as oracle user using the su – oracle command.
- Create the directories and grant required privileges to the oracle user (for Oracle software)
  - mkdir -p /u03/app/oracle/fast_recovery_area/ORCL
  - chown -R oracle:oinstall /u03
  - chmod -R 775 /u03
  - mkdir -p /u04/app/oracle/redo/ORCL
  - chown -R oracle:oinstall /u04
  - chmod -R 775 /u04
- If the LISTENER is down then start using this command:

```
[oracle@host01 ~]$ lsnrctl status
[oracle@host01 ~]$ lsnrctl start
```

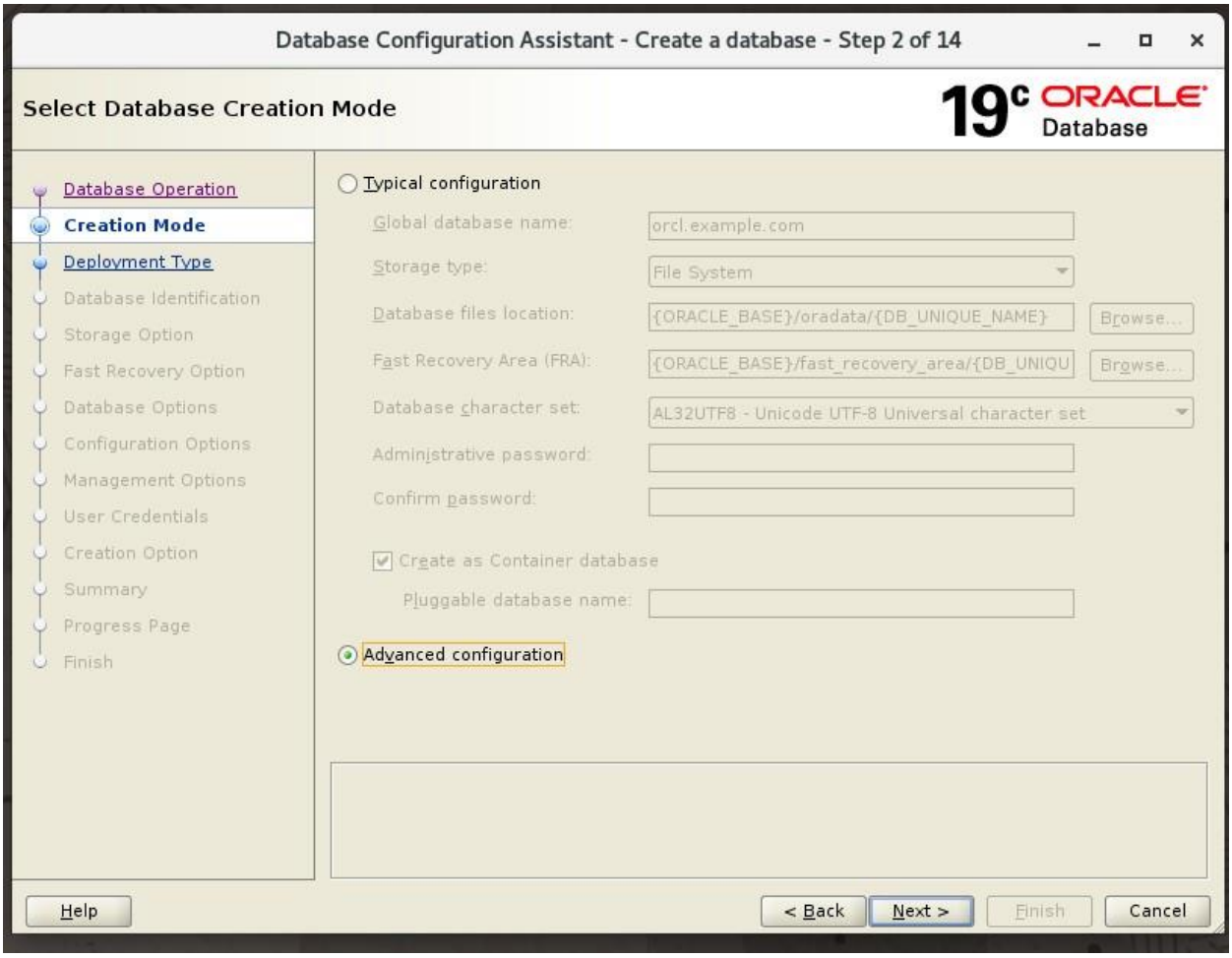
1. Open a terminal window and invoke **dbca**.



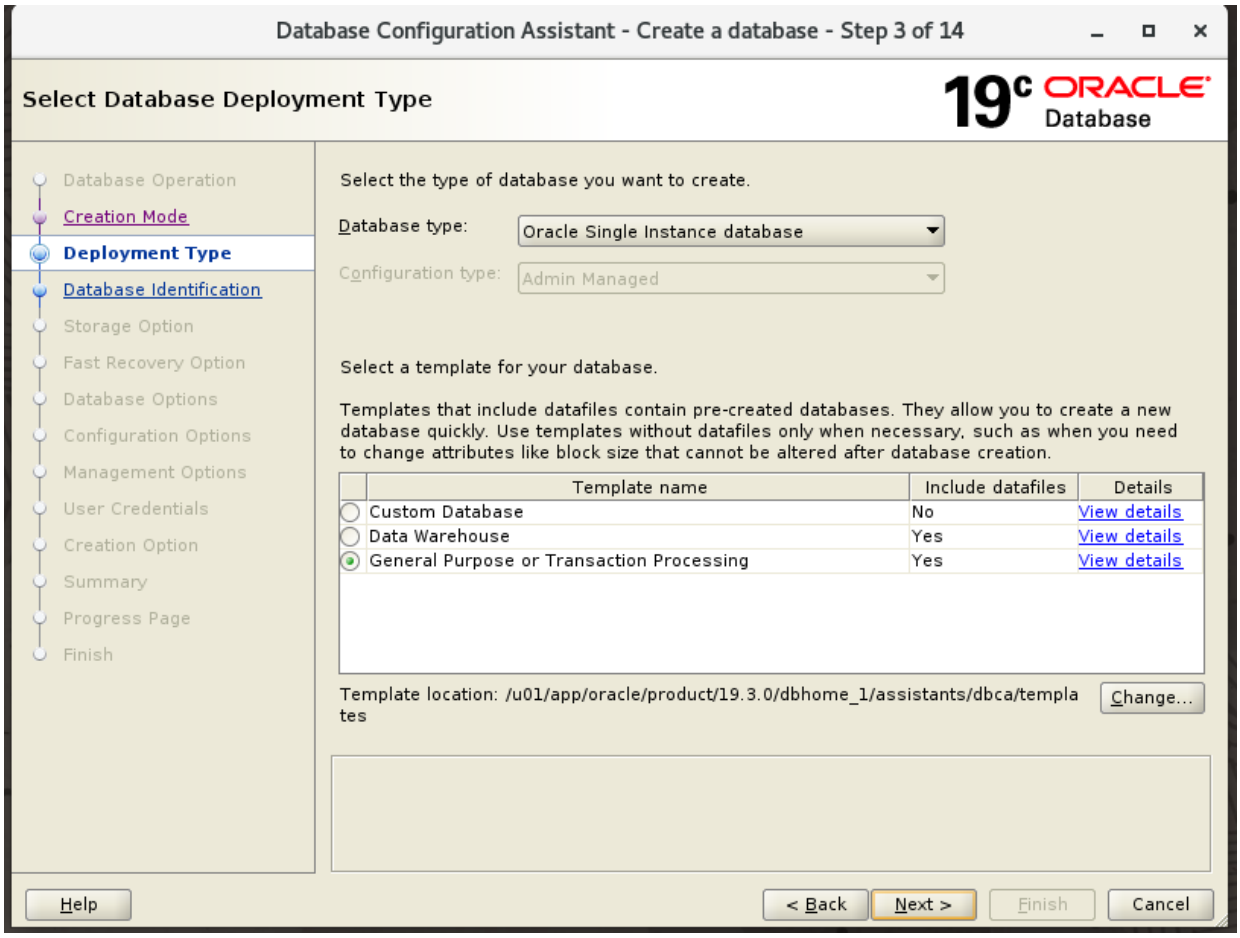
2. Select **Create Database** and click next.


Database Configuration Assistant - Application - Step 1 of 14
Select Database Operation
19c ORACLE Database
Database Operation
Creation Mode
Deployment Type
Database Identification
Storage Option
Fast Recovery Option
Database Options
Configuration Options
Management Options
User Credentials
Creation Option
Summary
Progress Page
Finish
Select the operation that you want to perform.
Create a database
Configure an existing database
Delete database
Manage templates
Manage Pluggable databases
Oracle RAC database Instance management
Help
< Back
Next >
Finish
Cancel

3. Select **Advanced Configuration** and click **Next**.

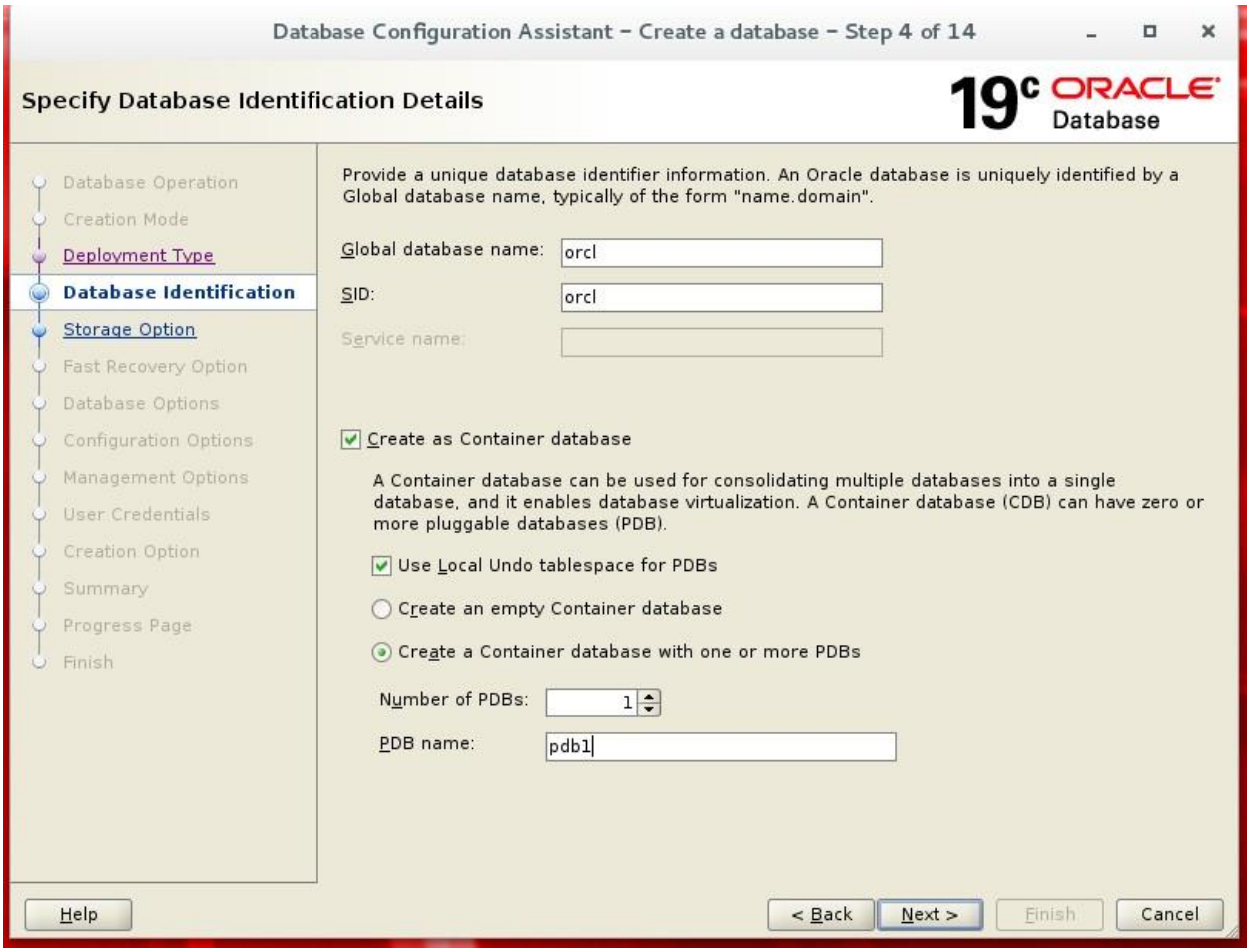


4. Choose **Oracle Single Instance database** as the Database Type. Choose **General Purpose or Transaction Processing** template. Click **Next**.

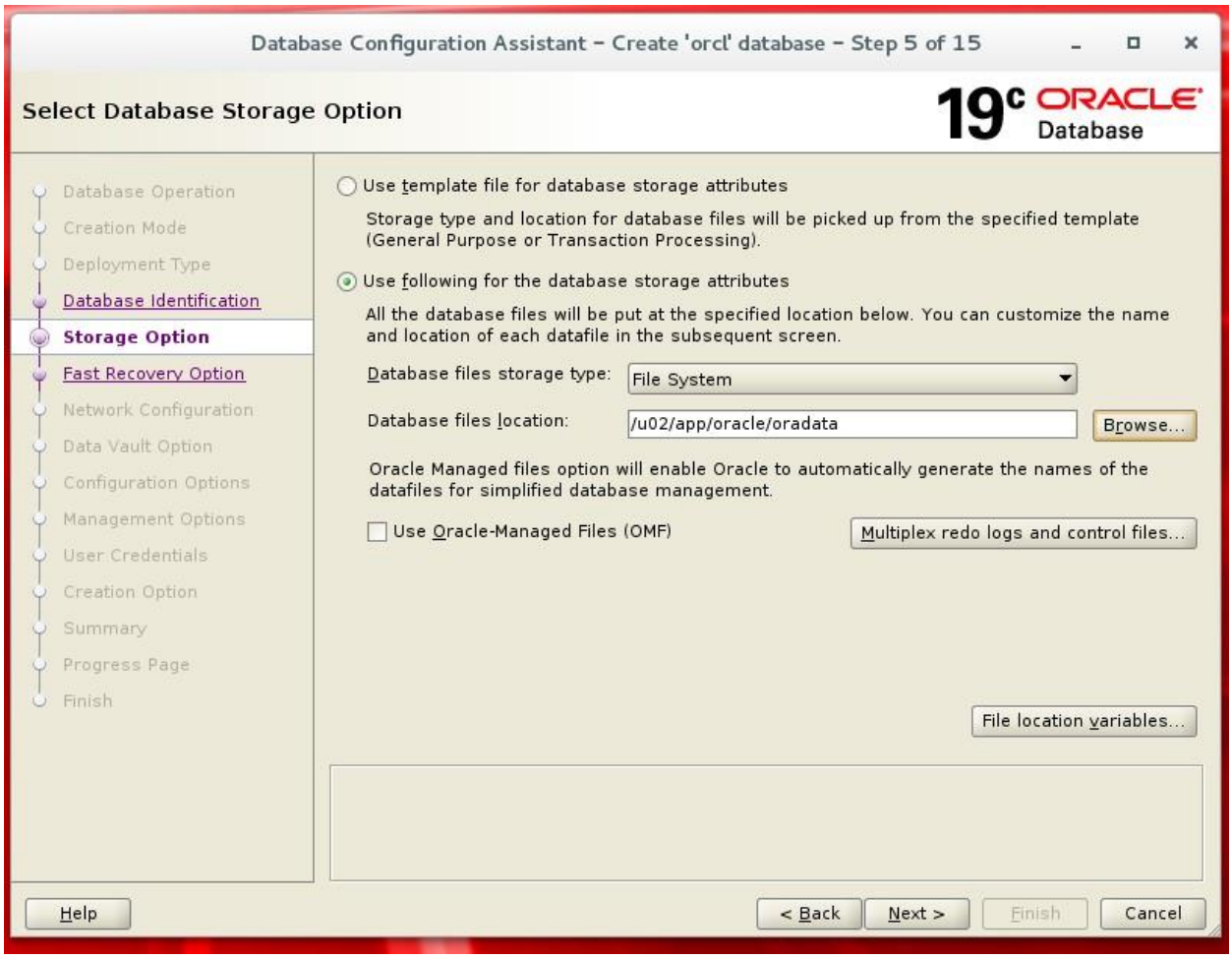


5. Verify and update these entries as per screen shot and click **Next**:

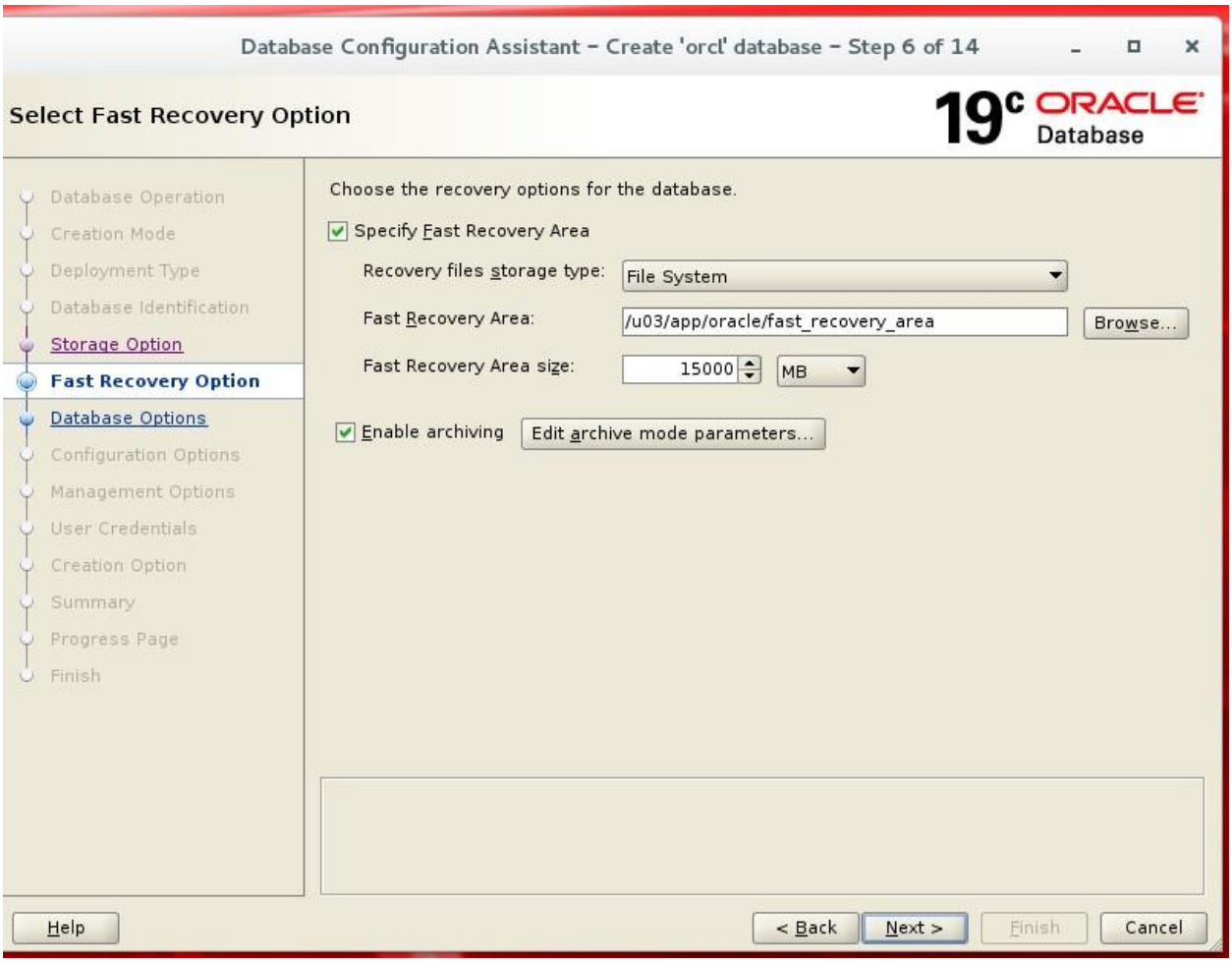
- Global database name: **orcl**
- SID: **orcl**
- Check **Create as Container database**
- Check **Use Local Undo Tablespace for PDBs**
- Choose **Create a Container database with one or more PDBs**
- Number of PDBS: **1**
- PDB name : **pdb1**



6. Choose/update **Use following for the database storage attributes**, verify values as per the screenshot and click **Next**.



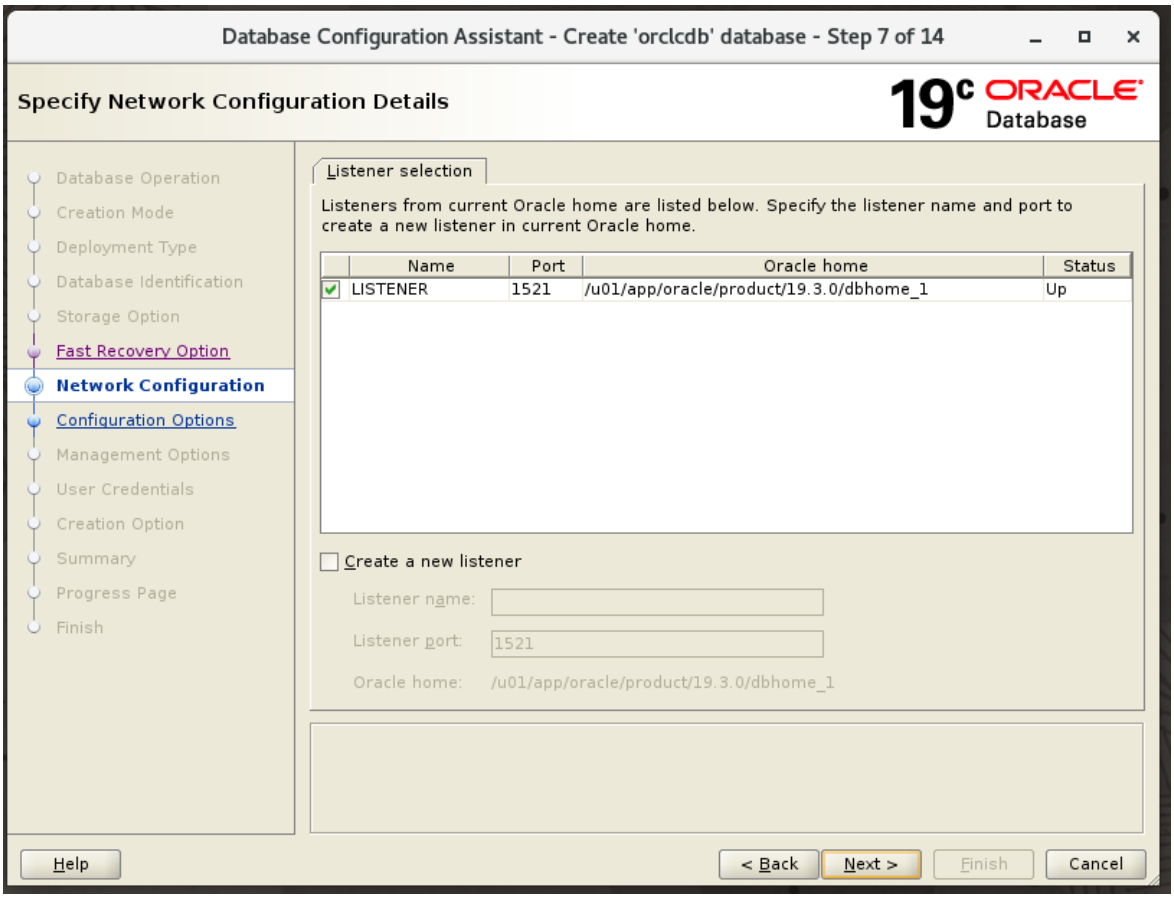
7. Choose **Specify Fast Recovery**, in **Fast Recovery Area** attribute enter the location as per the screenshot, and check **Enable Archiving** as shown in the screenshot, and click **Next**.



8. Choose settings as per the screenshots and click **Next**.
   Note: If you do not see LISTENER listed, please verify LISTENER is up and running or check **Create a new listener** to create a listener and provide the listener name as **LISTENER** and **Port 1521 or 1522.**

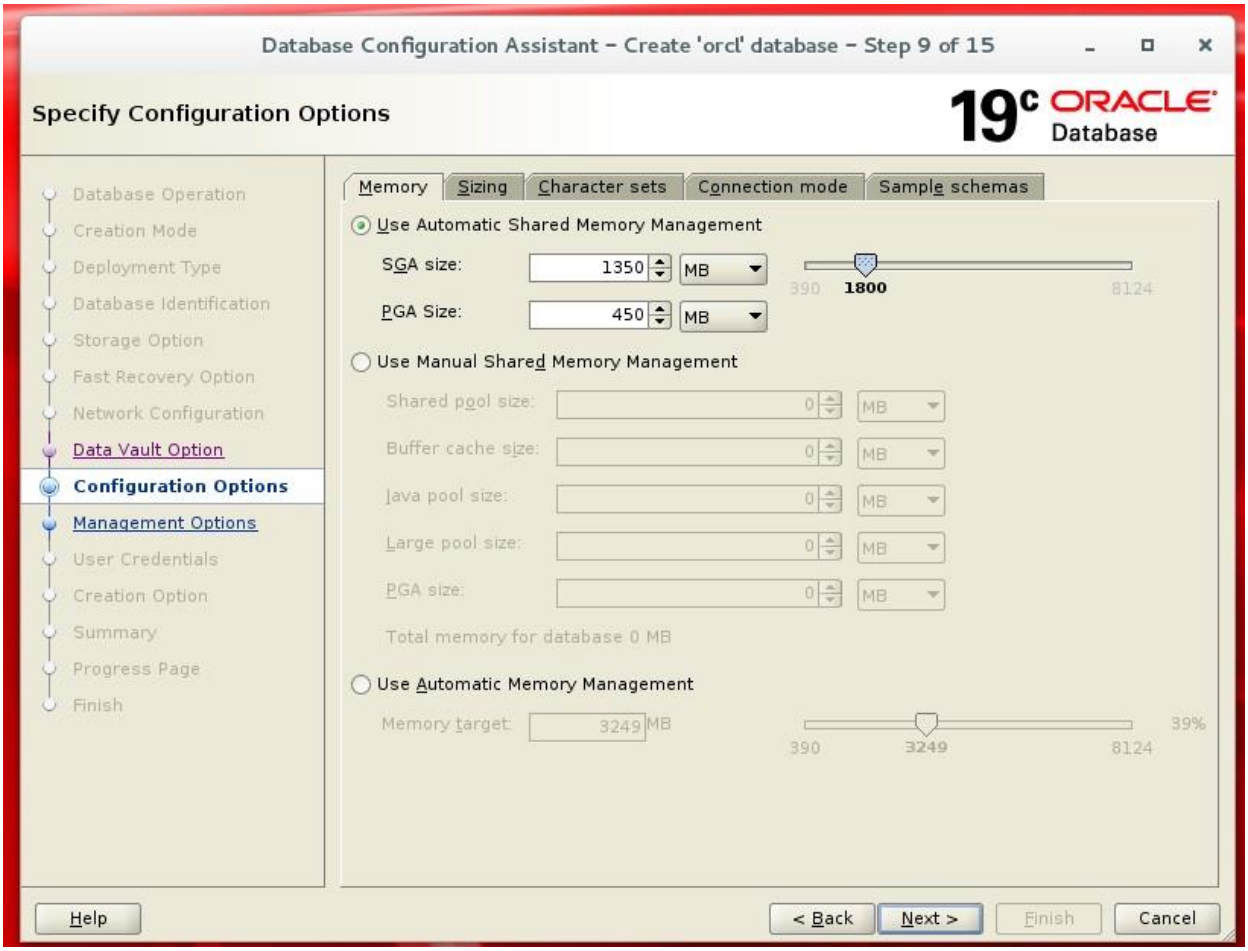
Note: If the LISTENER is down then start using this command:

```
[oracle@host01 ~]$ lsnrctl start
```

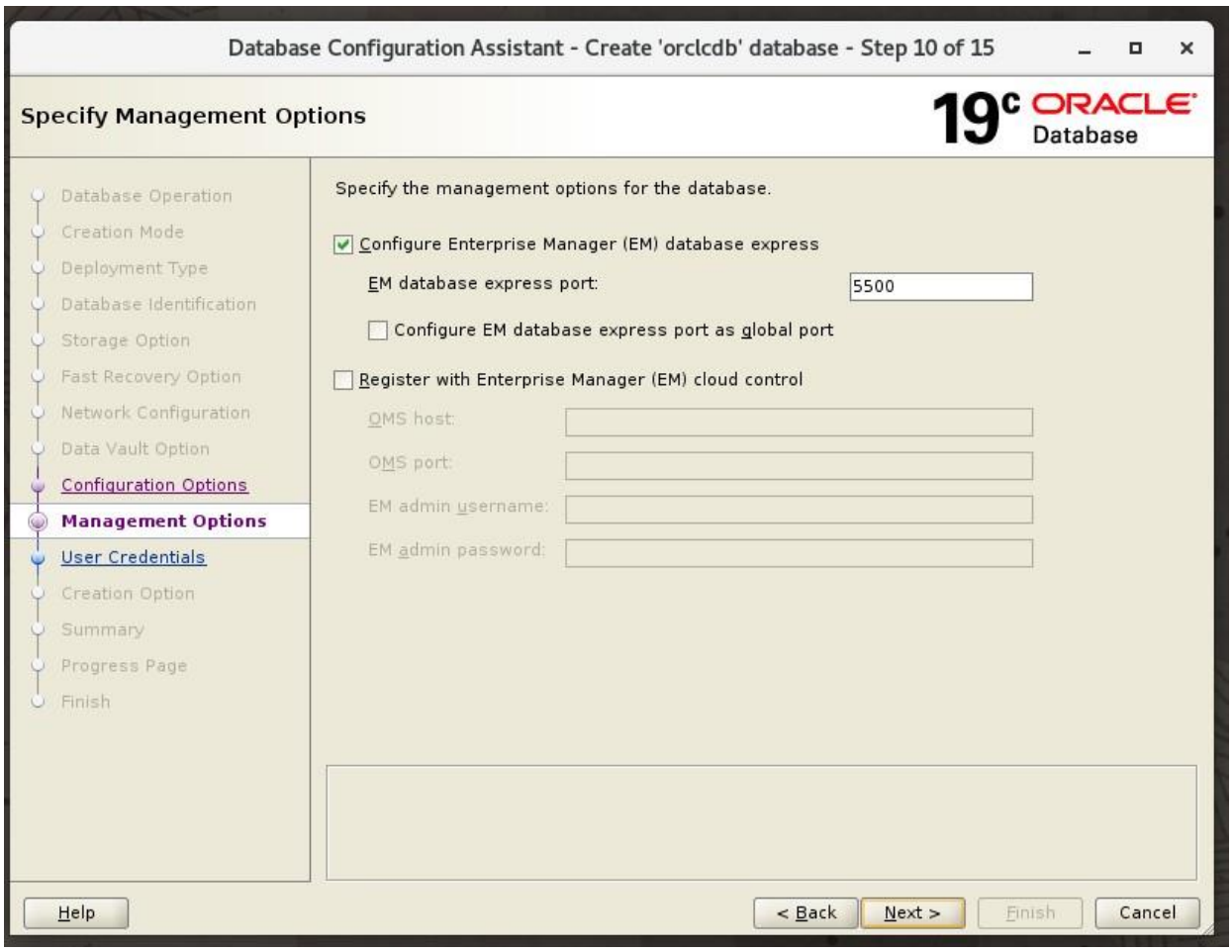


9. No changes on Database Vault or Label Security. Click **Next.**

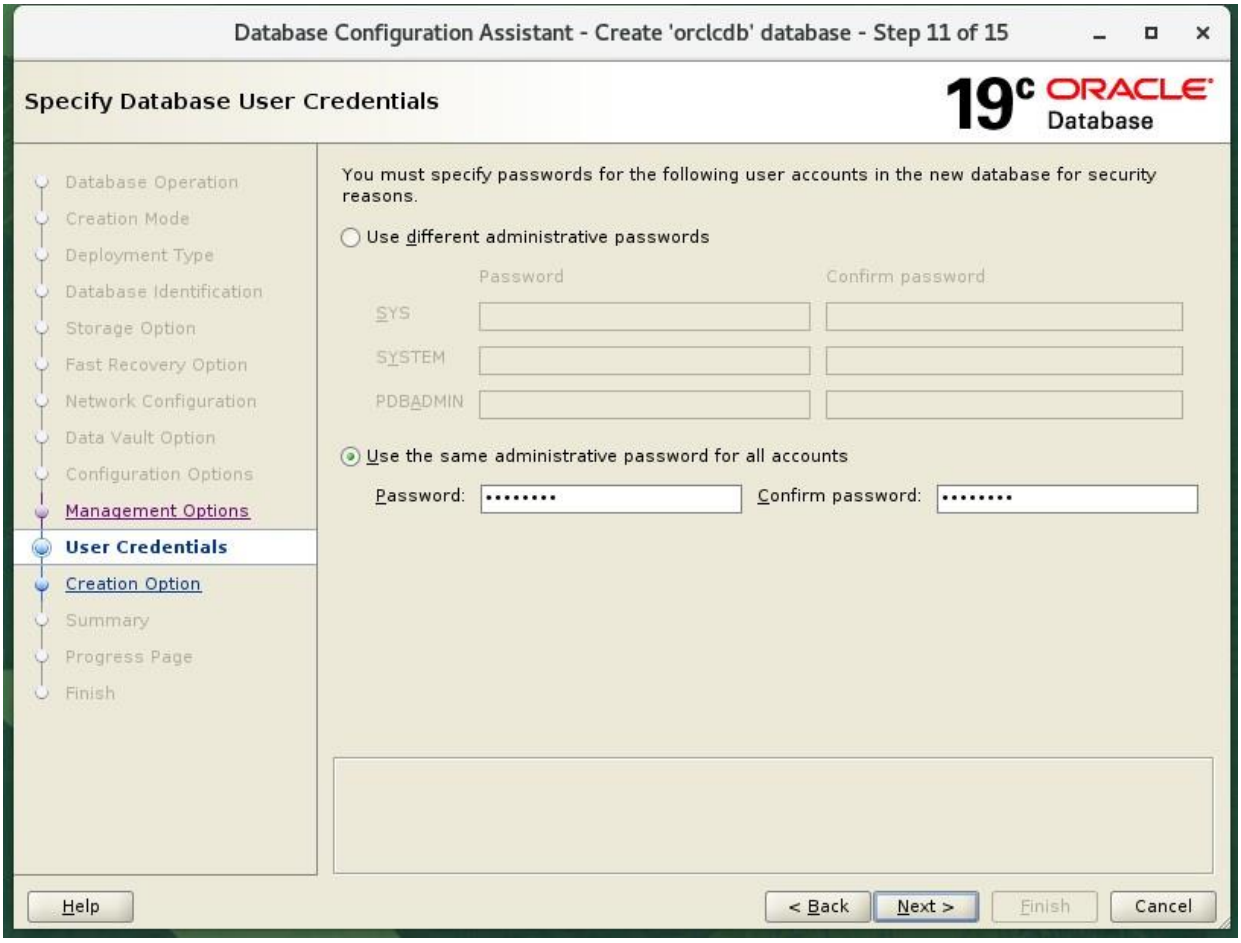
10. In the **Specify Configuration Options** screen, under the **Memory** tab, enter settings as per the screenshot. Click **Next**.



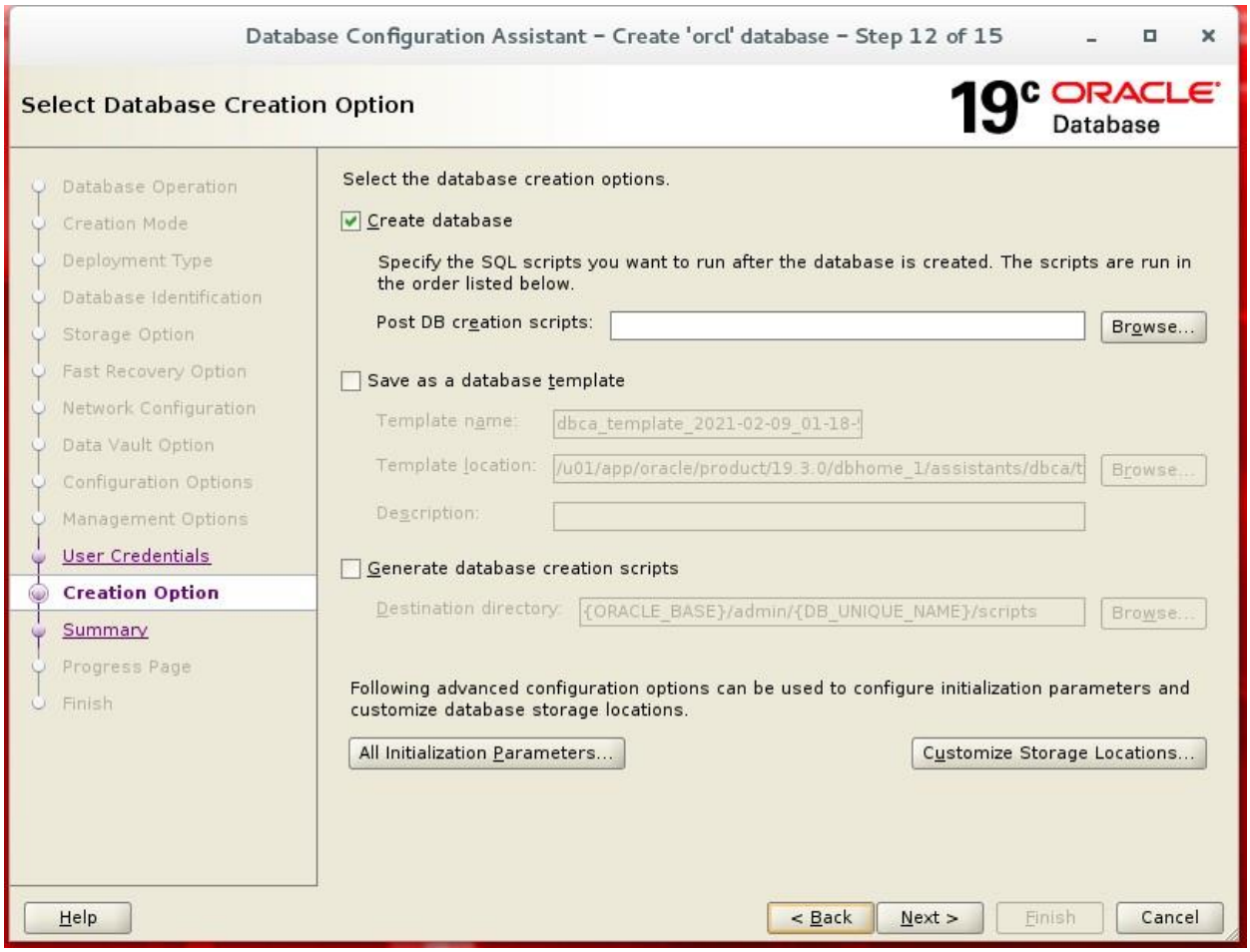
11. Check **Configure Enterprise Manager (EM) database express**. Specify the port **5500** and click **Next .**



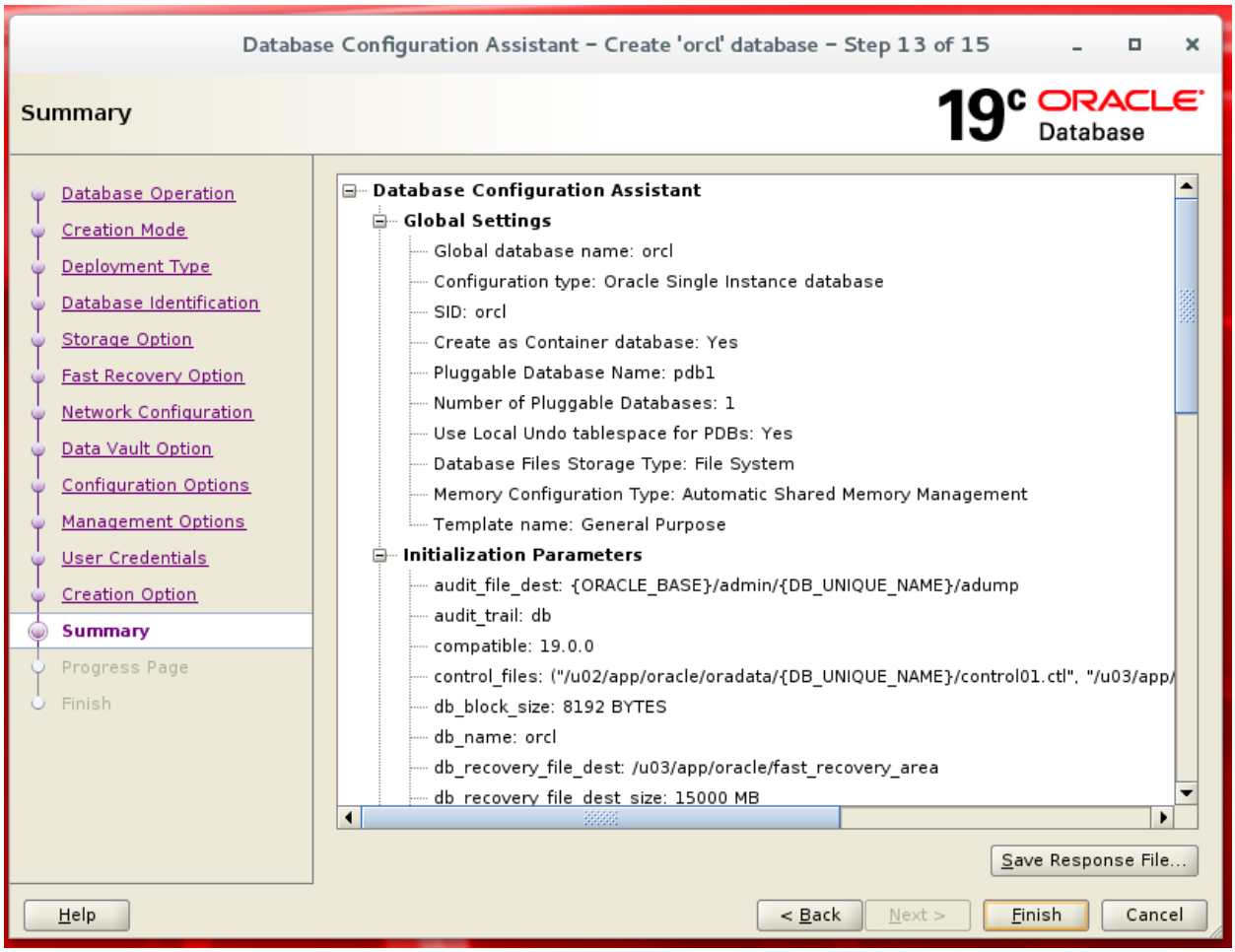
12. Check **Use the same administrative password for all accounts** Password: **Welcome_1.** Click **Next.**



13. Choose settings as per the screenshot. Click **Next**.



14. Click **Finish**.



Click **Close** once database creation is complete.

This competes the **ORCL** database creation.

15. Verify that the instance is started by checking whether the PMON background process is running.

```
$ ps -ef|grep pmon
```

```
[oracle@Host01 Desktop]$ ps -ef|grep pmon
oracle    7461     1  0 11:38 ?        00:00:00 ora_pmon_orcl
oracle    7998  3486  0 11:42 pts/0    00:00:00 grep --color=auto pmon
```

16. Change to the `$HOME` directory.

```
[oracle@host01 /]$
[oracle@host01 /]$ cd $HOME
[oracle@host01 ~]$ pwd
/home/oracle
[oracle@host01 ~]$
```

17. Connect to the `orcl` database instance as the `SYS` user with `SYSDBA` privilege.

```
[oracle@host01 ~]$ . oraenv
  ORACLE_SID = [oracle] ? orcl
  The Oracle base remains unchanged with value /u01/app/oracle
  [oracle@host01 ~]$ sqlplus

  SQL*Plus: Release 19.0.0.0.0
  …
  Version 19.3.0.0.0

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

  Enter user-name: /as sysdba

  Connected to:
  Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 -
  Production
  Version 19.3.0.0.0
SQL>
```

18. Check the current state of `PDB`.

```
SQL> SHOW PDBS;

    CON_ID CON_NAME                       OPEN MODE  RESTRICTED
---------- ------------------------------ ---------- ----------
         2 PDB$SEED                       READ ONLY  NO
         3 PDB1                           READ WRITE NO
```

a. If the PDBs are not open, open `them`. If it is open, you can skip this step.
Note**: Do not run this command if your PDB is already opened.**

```
SQL> ALTER PLUGGABLE DATABASE PDB1 OPEN;

Pluggable database altered.
```

b. Save the state so that `PDB1` is opened every time the CDB is opened. Exit SQL*Plus.

```
SQL> ALTER PLUGGABLE DATABASE pdb1 SAVE STATE;

Pluggable database altered.

SQL> exit
```

19. Check whether the listener is started and if not, start the listener.

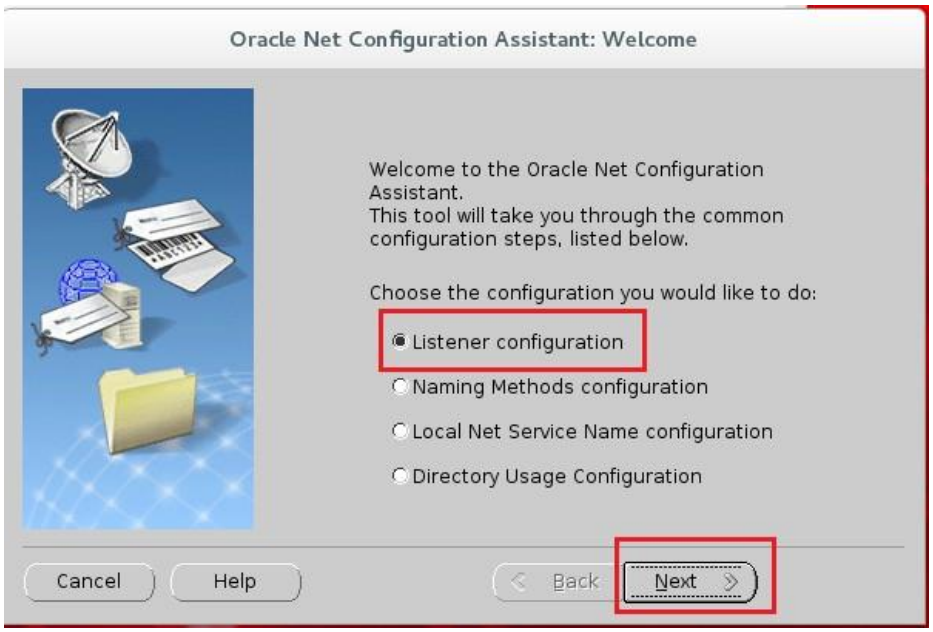
```
[oracle@host01 ~]$ lsnrctl status
[oracle@host01 ~]$ lsnrctl start
```

If `LISTENER` fails to start then execute these steps else skip them:

a. Invoke `netca (Oracle Net Configuration Assistant).`

```
$ netca
```

Choose settings as per the screenshot and click **Next**.

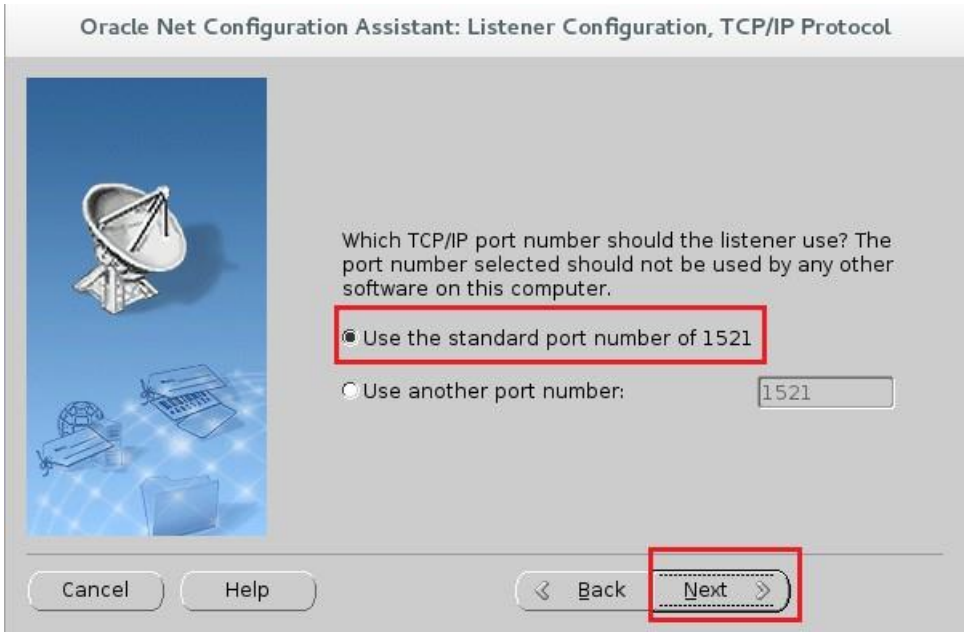


b. Choose settings as per the screenshot and click **Next.**

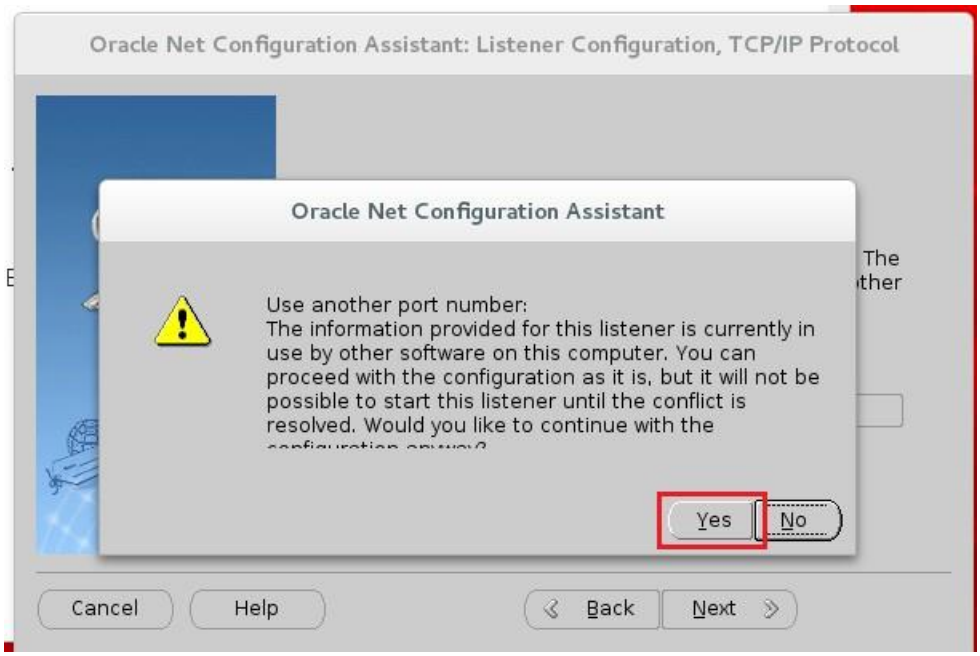
c. Choose the settings as per the screenshot and click **Next.**

d. Choose settings as per the screenshot and click **Next**:

e. Choose settings as per the screenshot and click **Next.**



f. Click **Yes** if you get this warning:



g. Click No and then **Next**.

h. Click **Next** and **Finish**.

This completes your LISTENER configuration.

Verify that you can connect to the `pdb1` PDB by using the service name.

Note: If you get an error then proceed to the next step.

```
[oracle@host01 ~]$ . oraenv
ORACLE_SID = [orcl] ?
The Oracle base remains unchanged with value /u01/app/oracle
[oracle@host01 ~]$
[oracle@host01 ~]$ sqlplus system/Welcome_1@pdb1


…
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…
Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 -
Production
Version 19.3.0.0.0

SQL>
SQL> exit;
```

20. If you are unable to connect to `pdb1` using the service name then add these lines to `tnsnames.ora`, else skip these steps.

    a. Navigate to `$ORACLE_HOME/network/admin` and open `tnsnames.ora` :

```
[oracle@host01 /]$ cd $ORACLE_HOME
[oracle@host01 dbhome_1]$ cd network/admin/
[oracle@host01 dbhome_1]$ vi tnsnames.ora
```

    b. Add these lines to `tnsnames.ora`, if not already present:

```
ORCL =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST =
host01.example.com)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = ORCL)
    )
  )
```

```
PDB1 =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST =
host01.example.com)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = PDB1)
    )
  )
```

c. Save the file and quit the vi editor (`:wq`).

21. Verify that the `HR` (sample schemas) user was created and there is data in the database.

```
[oracle@host01 /]$ . oraenv
 ORACLE_SID = [orcl] ? orcl
The Oracle base remains unchanged with value /u01/app/oracle
[oracle@host01 /]$ sqlplus

SQL*Plus: Release 19.0.0.0.0
…
Version 19.3.0.0.0

Copyright (c) 1982, 2018, Oracle.  All rights reserved.

Enter user-name: /as sysdba

Connected to:
Oracle Database 19c Enterprise Edition Release 19.0.0.0.0 -
Production
Version 19.3.0.0.0

SQL> conn sys/Welcome_1@pdb1 as sysdba
Connected.

SQL> ALTER USER hr IDENTIFIED BY Welcome_1 account unlock;

User altered.

Note: If you encounter an error “ORA-01918: user 'HR' does not
exist” then follow these steps to install HR schema.
```

```
SQL> conn sys/Welcome_1@pdb1
Connected.

SQL> @?/demo/schema/human_resources/hr_main.sql

specify password for HR as parameter 1:
Enter value for 1:
SP2-0137: DEFINE requires a value following equal sign

specify default tablespeace for HR as parameter 2:
Enter value for 2: users

specify temporary tablespace for HR as parameter 3:
Enter value for 3: temp

specify log path as parameter 4:
Enter value for 4: $ORACLE_HOME/demo/schema/log


PL/SQL procedure successfully completed.

Enter value for pass: Welcome_1

SQL> Select count(*) from employees;

  COUNT(*)
----------
       107
```

This completes the network and schema configuration.

22. Execute these SQL commands in ORCL

$ORACLE_HOME/bin/sqlplus / AS SYSDBA

SQL> ALTER USER dbsnmp IDENTIFIED BY Welcome_1 ACCOUNT UNLOCK CONTAINER=ALL;

```
SQL> ALTER SYSTEM SWITCH LOGFILE;
SQL> ALTER SYSTEM SWITCH LOGFILE;
SQL> ALTER SYSTEM SWITCH LOGFILE;
SQL> ALTER PROFILE DEFAULT LIMIT
        PASSWORD_LIFE_TIME UNLIMITED
        PASSWORD_GRACE_TIME UNLIMITED
        PASSWORD_REUSE_TIME UNLIMITED
        PASSWORD_REUSE_MAX UNLIMITED
        FAILED_LOGIN_ATTEMPTS UNLIMITED
        PASSWORD_LOCK_TIME UNLIMITED
        INACTIVE_ACCOUNT_TIME UNLIMITED
        IDLE_TIME UNLIMITED
        PASSWORD_VERIFY_FUNCTION NULL;

SQL> ALTER PROFILE ORA_STIG_PROFILE LIMIT
        PASSWORD_LIFE_TIME UNLIMITED
        PASSWORD_GRACE_TIME UNLIMITED
        PASSWORD_REUSE_TIME UNLIMITED
        PASSWORD_REUSE_MAX UNLIMITED
        FAILED_LOGIN_ATTEMPTS UNLIMITED
        PASSWORD_LOCK_TIME UNLIMITED
        INACTIVE_ACCOUNT_TIME UNLIMITED
        IDLE_TIME UNLIMITED
        PASSWORD_VERIFY_FUNCTION NULL;

SQL>  Exit;
```

23. Execute these SQL commands in PDB1

```
$ORACLE_HOME/bin/sqlplus SYS/Welcome_1@pdb1 AS SYSDBA
SQL> ALTER PROFILE DEFAULT LIMIT
        PASSWORD_LIFE_TIME UNLIMITED
        PASSWORD_GRACE_TIME UNLIMITED
        PASSWORD_REUSE_TIME UNLIMITED
        PASSWORD_REUSE_MAX UNLIMITED
        FAILED_LOGIN_ATTEMPTS UNLIMITED
        PASSWORD_LOCK_TIME UNLIMITED
        INACTIVE_ACCOUNT_TIME UNLIMITED
```

```
        IDLE_TIME UNLIMITED
        PASSWORD_VERIFY_FUNCTION NULL;

SQL> ALTER PROFILE ORA_STIG_PROFILE LIMIT
        PASSWORD_LIFE_TIME UNLIMITED
        PASSWORD_GRACE_TIME UNLIMITED
        PASSWORD_REUSE_TIME UNLIMITED
        PASSWORD_REUSE_MAX UNLIMITED
        FAILED_LOGIN_ATTEMPTS UNLIMITED
        PASSWORD_LOCK_TIME UNLIMITED
        INACTIVE_ACCOUNT_TIME UNLIMITED
        IDLE_TIME UNLIMITED
        PASSWORD_VERIFY_FUNCTION NULL;

SQL>  Exit;
```

24. Move into `labs` directory as shown below:

```
[oracle@host01 /]$ cd /home/oracle/
[oracle@host01 ~]$ cd labs
[oracle@host01 ~]$ ls
```

This completes the setup