SESSION 7   ORACLE NETWORKING plus TOOLS → NETMGR, NETCA

```
The Oracle base remains unchanged with value /opt/oracle
[oracle@oracloud12c ~]$ pwd
/home/oracle
[oracle@oracloud12c ~]$ cd $ORACLE_HOME/network/admin
[oracle@oracloud12c ~]$ pwd
/opt/oracle/product/12.1.0/dbhome_1/network/admin

[oracle@oracloud12c admin]$ ls -l *ora
-rw-r--r--. 1 oracle dba 773 Feb 15 11:43 listener.ora
-rw-r--r--. 1 oracle dba 191 Dec  8 14:13 sqlnet.ora
-rw-r-----. 1 oracle dba 916 Feb 15 11:47 tnsnames.ora
```

 *** Let's use NET MANAGER GUI TOOL to ADD new LISTENER to our Network, that will listen
on a different port (from default Port 1521). You need to open Another Moba session to
keep using command line and check the results ***

```
[oracle@oracloud12c admin]$ netmgr
```

Expand LOCAL, select LISTENERS and click on +

```
Enter field value for Listener name   LISTENER2    →   OK
```

Click on **ADD ADDRESS and enter 3 fields**

Protocol	**TCP/IP**
Host	**oracloud12c**
Port#	**1561**

Click on **FILE   → SAVE NETWORK CONFIG to save your changes**

 *** Let's use NET MANAGER to perform STATIC REGISTRATION of database "student" with
our new Listener2 ***

Now **Expand LOCAL, expand LISTENERS and select LISTENER2**

Switch the pick list from **LISTENING LOCATIONS** to **DATABASE SERVICES**

Click on **ADD DATABASE and enter 3 fields**

Global DB Name	**student**
Oracle Home Dir	**/opt/oracle/product/12.1.0/dbhome_1**
SID	**student**

Click on **FILE   → SAVE NETWORK CONFIG to save your changes**
 * Let's see how these changes affected our Listener file. That is shown in bold font below *

```
[oracle@oracloud12c admin]$ cat listener.ora
# listener.ora Network Configuration File:
/opt/oracle/product/12.1.0/dbhome_1/network/admin/listener.ora
```

```
# Generated by Oracle configuration tools.

LISTENER2 =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = oracloud12c)(PORT = 1561))
  )

SID_LIST_LISTENER =
  (SID_LIST =
    (SID_DESC =
      (SID_NAME = student)
      (GLOBAL_DBNAME = student)
      (ORACLE_HOME = /opt/oracle/product/12.1.0/dbhome_1)
    )
  )

SID_LIST_LISTENER2 =
  (SID_LIST =
    (SID_DESC =
      (GLOBAL_DBNAME = student)
      (ORACLE_HOME = /opt/oracle/product/12.1.0/dbhome_1)
      (SID_NAME = student)
    )
  )

ADR_BASE_LISTENER2 = /opt/oracle

LISTENER =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = oracloud12c)(PORT = 1521))
  )

ADR_BASE_LISTENER = /opt/oracle
```

 * Let's use NET MANAGER to ADD new NET ALIAS (NET SERVICE NAME) to our Network (related to our database or service name "student") *

Expand LOCAL, select SERVICE NAMING and click on +

Enter field value for **Net Service name   MYTEST**   →   **NEXT**

Now, **enter 4 fields**
      Protocol   TCP/IP
      Host   oracloud12c
      Port#   1521
      Service Name   student   →   **NEXT**

You may Test your Net Service name or just press on **FINISH**

Click on **FILE** → **SAVE NETWORK CONFIG to save your changes** and then
close your Net Manager tool

* Let's see how these changes affected our TNSNAMES file. That is shown in bold font below *

```
[oracle@oracloud12c admin]$ cat tnsnames.ora
# tnsnames.ora Network Configuration File:
/opt/oracle/product/12.1.0/dbhome_1/network/admin/tnsnames.ora
# Generated by Oracle configuration tools.

MYTEST =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = oracloud12c)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = student)
    )
  )

STUDENT =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = oracloud12c)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = student)
    )
  )

LISTENER_STUDENT =
  (ADDRESS = (PROTOCOL = TCP)(HOST = oracloud12c)(PORT = 1521))
```

* Let's use NET CONFIGURATION ASSISTANT to ADD new NET ALIAS that will use our second Listener LISTENER2 (that is using port 1561) *

```
[oracle@oracloud12c admin]$ netca
```

You will see 5 buttons (options) and **Choose the Third one**

       LOCAL NET SERVICE NAME CONFIGURATION   →   **NEXT**

and **Choose the First button**   **ADD**   →   **NEXT**

Enter field value for **Service name**   **student**   →   **NEXT**

Now, enter 3 fields

```
        Protocol                 TCP/IP
        Host name                oracloud12c
        Use another port#        1561                    →    NEXT

You may Test your Connection or just                      →    NEXT

Enter field value for Net Service name     TEST61         →    NEXT

Choose NO (for adding another net name)                   →    NEXT
```

and then press **FINISH, and netca will perform AUTO SAVE.**
Close now netca.

   * Let's see how these changes affected our TNSNAMES file. That is shown in bold font below *

```
[oracle@oracloud12c admin]$ cat tnsnames.ora
# tnsnames.ora Network Configuration File:
/opt/oracle/product/12.1.0/dbhome_1/network/admin/tnsnames.ora
# Generated by Oracle configuration tools.

TEST61 =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = oracloud12c)(PORT = 1561))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = student)
    )
  )

MYTEST =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = oracloud12c)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVICE_NAME = student)
    )
  )

STUDENT =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = TCP)(HOST = oracloud12c)(PORT = 1521))
    )
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = student)
    )
  )
```

```
LISTENER_STUDENT =
  (ADDRESS = (PROTOCOL = TCP)(HOST = oracloud12c)(PORT = 1521))

[oracle@oracloud12c admin]$ sqlplus / as sysdba

SQL*Plus: Release 12.1.0.2.0 Production on Thu Feb 15 11:50:31 2018

Copyright (c) 1982, 2014, Oracle.  All rights reserved.

Connected to:
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 120
SQL> set linesize 120

SQL> conn scott/tiger
Connected.

SQL> conn scott/tiger@mytest
Connected.

SQL> ALTER USER SYSTEM IDENTIFIED BY seneca;

User altered.

SQL> conn system/SENECA@mytest          ← Password is case sensitive

ORA-12154: TNS:could not resolve the connect identifier specified

Warning: You are no longer connected to ORACLE.

SQL> conn system/seneca@mytest
Connected.

SQL> show user
USER is "SYSTEM"

SQL> conn scott/tiger@oracloud12c:1521/student
Connected

SQL> conn scott/tiger@oracloud12c/student
Connected.
```

* Both these connections were with EASY METHOD, where we must submit HOST NAME and SERVICE NAME, but Port# may be skipped (if it is default value 1521) *

```
SQL> conn scott/tiger@oracloud12c
ERROR:
ORA-12504: TNS:listener was not given the SERVICE_NAME in CONNECT_DATA
```

* We did NOT provide SERVICE NAME, which is mandatory with EASY METHOD *

```
SQL>  conn scott/tiger@oracloud12c:1561/student
ERROR:
ORA-12514: TNS:listener does not currently know of service requested
in connect descriptor

Warning: You are no longer connected to ORACLE.
```

* Easy method did NOT work -- it should use LISTENER2 on Port 1561. It is explained later how can we use different Port# than the default one *

```
SQL> conn scott/tiger@test61
ERROR:
ORA-12154: TNS:could not resolve the connect identifier specified


Warning: You are no longer connected to ORACLE.
.
SQL> host lsnrctl status listener2

LSNRCTL for Linux: Version 12.1.0.2.0 - Production on 15-FEB-2018
12:21:48

Copyright (c) 1991, 2014, Oracle.  All rights reserved.

Connecting to
(DESCRIPTION=(ADDRESS=(PROTOCOL=TCP)(HOST=oracloud12c)(PORT=1561)))
STATUS of the LISTENER
------------------------
Alias                     LISTENER2
Version                   TNSLSNR for Linux: Version 12.1.0.2.0 -
Production
Start Date                15-FEB-2018 11:35:58
Uptime                    0 days 0 hr. 45 min. 50 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/listener2/alert/log.xml
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=oracloud12c)(PORT=1561)))
The listener supports no services
The command completed successfully
```

```
SQL> CONN / AS SYSDBA
Connected.
SQL> SHOW PARAMETER local

NAME                                     TYPE        VALUE
------------------------------------    -----------  ----------------------
local_listener                           string
parallel_force_local                     boolean     FALSE

SQL> ALTER SYSTEM SET LOCAL_LISTENER=test61 ;

System altered.

SQL> SHOW PARAMETER local

NAME                                     TYPE        VALUE
------------------------------------    -----------  ----------------------
local_listener                           string      TEST61
parallel_force_local                     boolean     FALSE

SQL> conn scott/tiger@test61
Connected.

SQL> conn scott/tiger@oracloud12c:1561/student
Connected.
```

   * Well, we fixed our problem of listening on non-default Port# 1561. So, both TEST61 alias (that uses only that Port) and EASY METHOD with that Port will work now *

```
SQL> conn scott/tiger@mytest
Connected.
SQL>
SQL> conn scott/tiger
Connected.

SQL> CONN / AS SYSDBA
Connected.
SQL>  ALTER SYSTEM RESET LOCAL_LISTENER;
 ALTER SYSTEM RESET LOCAL_LISTENER
 *
ERROR at line 1:
ORA-32029: resetting with SCOPE=MEMORY or SCOPE=BOTH is currently not
supported

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 admin]$ exit
```