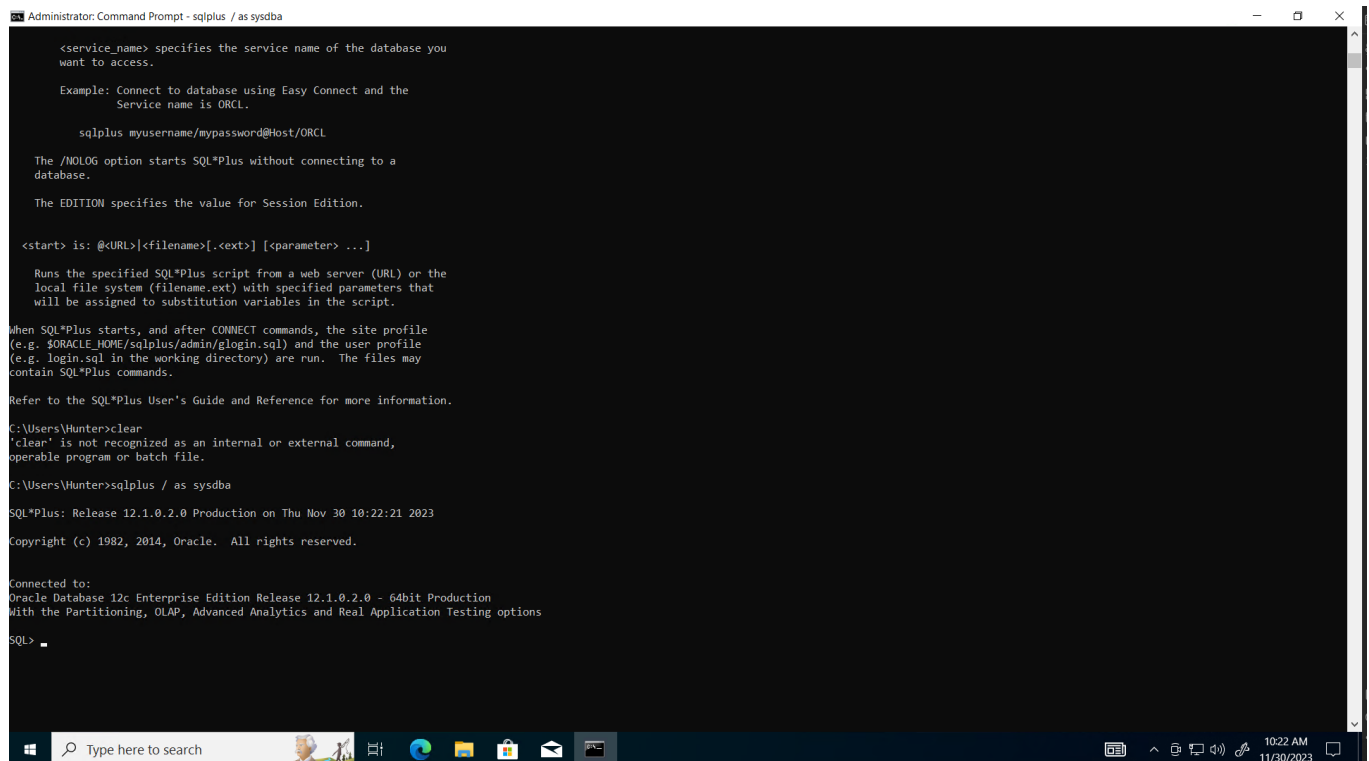


# Preparation

## Changing the Port of CDB

connect to System Database

```
sqlplus / as sysdba
```



The screenshot shows a Windows Command Prompt window titled "Administrator: Command Prompt - sqlplus / as sysdba". The window contains the following text:

```
<service_name> specifies the service name of the database you
want to access.

Example: Connect to database using Easy Connect and the
Service name is ORCL.

sqlplus myusername/mypassword@Host/ORCL

The /NOLOG option starts SQL*Plus without connecting to a
database.

The EDITION specifies the value for Session Edition.

<start> is: @<URL>|<filename>[.<ext>] [<parameter> ...]

Runs the specified SQL*Plus script from a web server (URL) or the
local file system (filename.ext) with specified parameters that
will be assigned to substitution variables in the script.

When SQL*Plus starts, and after CONNECT commands, the site profile
(e.g. $ORACLE_HOME/sqlplus/admin/glogin.sql) and the user profile
(e.g. login.sql in the working directory) are run. The files may
contain SQL*Plus commands.

Refer to the SQL*Plus User's Guide and Reference for more information.

C:\Users\Hunter>clear
'clear' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\Hunter>sqlplus / as sysdba

SQL*Plus: Release 12.1.0.2.0 Production on Thu Nov 30 10:22:21 2023
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>
```

get Database details

```
select name , cdb,con_id from v$database;
```

check instance [CDB]

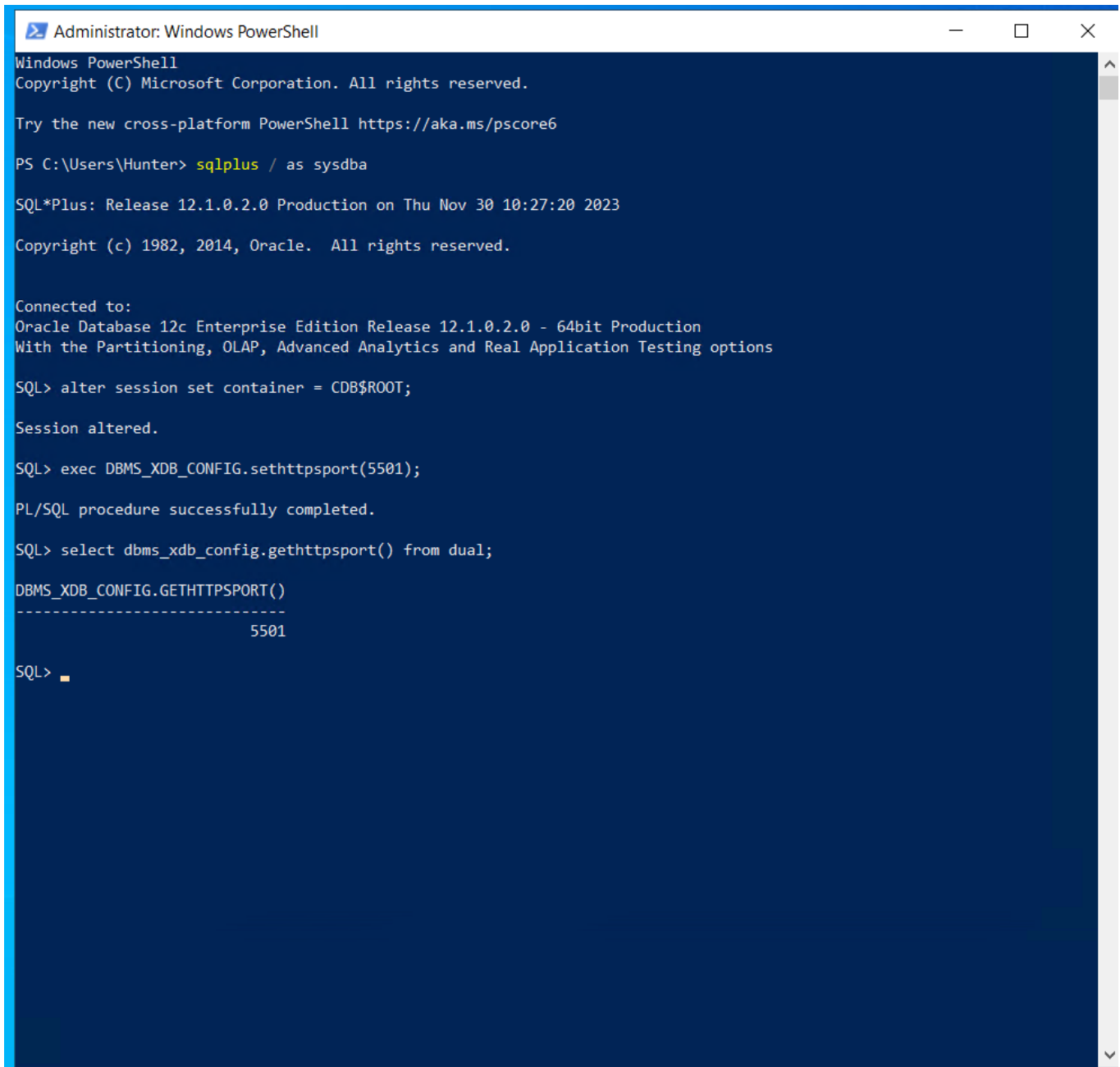
```
select instance_name, Status, con_id from v$instance;
```

Get port **#getport**

```
select dbms_xdb_config.gethttpsport() from dual;
```

## Access CDB and Change port

```
alter session set container = CDB$ROOT;  
exec DBMS_XDB_CONFIG.sethttpsport(5501);
```



```
Administrator: Windows PowerShell  
Windows PowerShell  
Copyright (C) Microsoft Corporation. All rights reserved.  
  
Try the new cross-platform PowerShell https://aka.ms/pscore6  
  
PS C:\Users\Hunter> sqlplus / as sysdba  
  
SQL*Plus: Release 12.1.0.2.0 Production on Thu Nov 30 10:27:20 2023  
  
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> alter session set container = CDB$ROOT;  
  
Session altered.  
  
SQL> exec DBMS_XDB_CONFIG.sethttpsport(5501);  
  
PL/SQL procedure successfully completed.  
  
SQL> select dbms_xdb_config.gethttpsport() from dual;  
  
DBMS_XDB_CONFIG.GETHTTPSPT()   
-----  
5501  
  
SQL> ■
```

## Changing PDB Access port

Display available PDBs

```
select con_id, name, open_mode from v$pdb;
```

open PDB if closed

```
alter pluggable database pdborcl open;
```

## Access PDB and Change access port

```
alter session set container = PDBORCL;  
exec dbms_xdb_config.sethttpsport(5505)  
exec DBMS_XDB_CONFIG.sethttpsport(5502);
```

check if Altered port is correct with `#getport`

```
SQL> alter pluggable database PDBORCL open ;  
  
Pluggable database altered.  
  
SQL> select dbms_xdb_config.gethttpsport() from dual;  
  
DBMS_XDB_CONFIG.GETHTTPS  
-----  
0  
  
SQL> exec dbms_xdb_config.sethttpsport(5502)  
  
PL/SQL procedure successfully completed.  
  
SQL> select dbms_xdb_config.gethttpsport() from dual;  
  
DBMS_XDB_CONFIG.GETHTTPS  
-----  
5502
```

```
SQL> alter pluggable database PDBORCL open ;  
Pluggable database altered.  
SQL> select dbms_xdb_config.gethttpsport() from dual;  
DBMS_XDB_CONFIG.GETHTTPS  
-----  
0  
SQL> exec dbms_xdb_config.sethttpsport(5502)  
PL/SQL procedure successfully completed.  
SQL> select dbms_xdb_config.gethttpsport() from dual;  
DBMS_XDB_CONFIG.GETHTTPS  
-----  
5502  
SQL>
```

```
Select Administrator: Windows PowerShell

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Hunter> sqlplus / as sysdba

SQL*Plus: Release 12.1.0.2.0 Production on Thu Nov 30 10:27:20 2023

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> alter session set container = CDB$ROOT;

Session altered.

SQL> exec DBMS_XDB_CONFIG.sethttpsport(5501);

PL/SQL procedure successfully completed.

SQL> select dbms_xdb_config.gethttpsport() from dual;

DBMS_XDB_CONFIG.GETHTTPS()
-----
5501

SQL> select con_id, name, open_mode from v$pdb;

  CON_ID NAME                OPEN_MODE
-----
2 PDB$SEED                  READ ONLY
3 PDBORCL                   MOUNTED

SQL> alter session set container = PDBORCL;

Session altered.
```

# User Creation

## Create PDB

dbca

PDB NAME : IT22169730

Administrator: Command Prompt - dbca  
Microsoft Windows [Version 10.0.19045.3693]  
(c) Microsoft Corporation. All rights reserved.  
C:\Users\Hunter>dbca

Database Configuration Assistant - Welcome - Step 1 of 6

**Database Operation**

Select the operation that you want to perform.

☒ Create Database

☐ Configure Database Options

☐ Delete Database

☐ Manage Templates

☐ Manage Pluggable Databases

Help < Back Next > Finish Cancel

## Database Operation



ORACLE<sup>®</sup> 12<sup>c</sup>  
DATABASE

### Database Operation

#### Creation Mode

Prerequisite Checks

Summary

Progress Page

Finish

Select the operation that you want to perform.

- ☐ Create Database
- ☐ Configure Database Options
- ☐ Delete Database
- ☐ Manage Templates
- ☒ Manage Pluggable Databases

Help

< Back

Next >

Finish

Cancel

Administrator: Command Prompt - dbca

Microsoft Windows [Version 10.0.19045.3693]  
(c) Microsoft Corporation. All rights reserved.

C:\Users\Hunter>dbca

Database Configuration Assistant - Manage Pluggable Databases - Step 2 of 8

**Manage Pluggable Databases**

Select an operation that you want to perform in container database:

- ☒ Create a Pluggable Database
- ☐ Unplug a Pluggable Database
- ☐ Delete a Pluggable Database
- ☐ Configure a Pluggable Database

Database Operation

Manage Pluggable Databases

Database List

Create Pluggable Database

Pluggable Database Options

Summary

Progress Page

Finish

Help

< Back Next > Finish Cancel



Administrator: Command Prompt - dbca

Microsoft Windows [Version 10.0.19045.3693]  
(c) Microsoft Corporation. All rights reserved.

C:\Users\Hunter>dbca

Database Configuration Assistant - Manage Pluggable Databases - Step 3 of 8

**Database List**

Select a container database in which the pluggable database can be created. Also, specify SYSDBA credentials that could be used to connect to the database. If OS authentication is enabled, these credentials will be ignored.

Select	Database
<input checked="" type="radio"/>	GOLB

Specify SYSDBA credentials that could be used to connect to the database.

Username:

Password:

Administrator: Command Prompt - dbca

Microsoft Windows [Version 10.0.19045.3693]  
(c) Microsoft Corporation. All rights reserved.

C:\Users\Hunter>dbca

Database Configuration Assistant - Manage Pluggable Databases - Step 4 of 8

**Create Pluggable Database**

☒ Create a new Pluggable Database

☐ Create Pluggable Database From PDB Archive

Pluggable Database Archive:

☐ Create Pluggable Database using PDB File Set

Pluggable Database Metadata File:

Pluggable Database Datafile Backup:



## Summary

- [Database Operation](#)
- [Manage Pluggable Databases](#)
- [Database List](#)
- [Create Pluggable Database](#)
- [Pluggable Database Options](#)
- Summary**
- [Progress Page](#)
- [Finish](#)

## Database Configuration Assistant: Summary

## Create Pluggable Database

Container Database:	GOLB
Pluggable Database:	IT22169730
Pluggable database source:	Default
Datafile location:	C:\APP\HOME\ORADATA\GOLB\IT22169730
Configure Database Vault:	No
Configure Label Security:	No
Configure with OID:	No

[Customize Storage Locations...](#)[Help](#)

&lt; Back

Next &gt;

Finish

Cancel

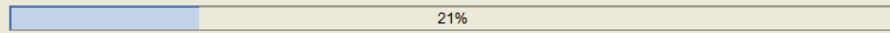


## Progress Page

- Database Operation
- Manage Pluggable Databases
- Database List
- Create Pluggable Database
- Pluggable Database Options
- Summary
- Progress Page**
- Finish

## Progress

Creating Pluggable Database in progress...



Steps		Status
Creating Pluggable Database	Completing Pluggable Database Creation	In Progress

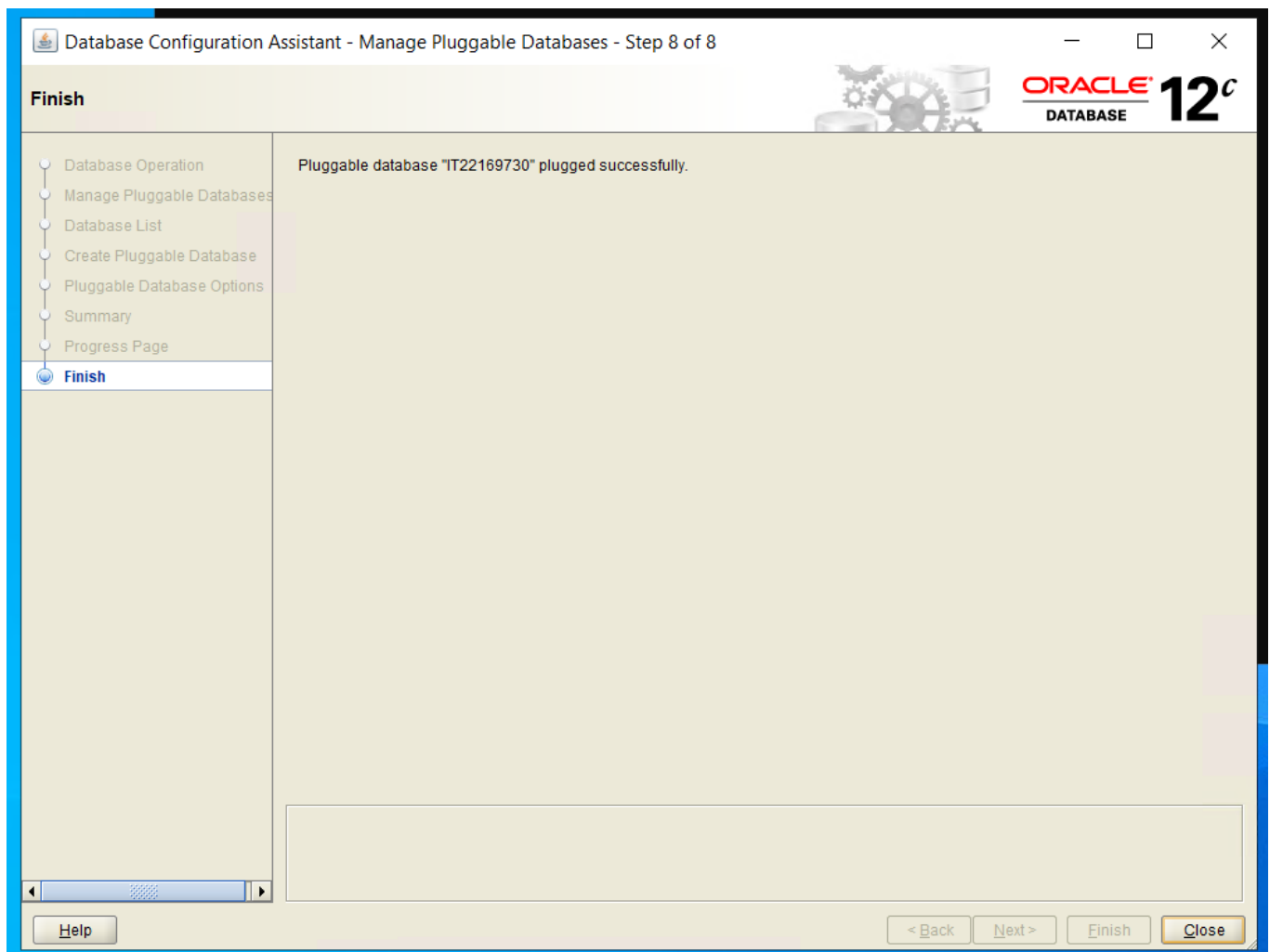
[Activity Log](#)[Alert Log](#)[Help](#)

&lt; Back

Next &gt;

Finish

Cancel



Username: admin

Password: Content1@

## Alt to PDB

## Create a profile Accountant

```
alter pluggable database IT22169730 open;
alter session set container = IT22169730;
exec dbms_xdb_config.sethttpsport(5502)
select dbms_xdb_config.gethttpsport() from dual;
```

```
Administrator: Windows PowerShell
SQL> alter session set container = IT22169730;

Session altered.

SQL> exec dbms_xdb_config.sethttpsport(5502)

PL/SQL procedure successfully completed.

SQL> select dbms_xdb_config.gethttpsport() from dual;

DBMS_XDB_CONFIG.GETHTTPSPT()
-----
                           5502

SQL>
```

```
CREATE PROFILE Accountant LIMIT
SESSIONS_PER_USER UNLIMITED
CPU_PER_SESSION UNLIMITED
CPU_PER_CALL 3000
CONNECT_TIME 40
LOGICAL_READS_PER_SESSION DEFAULT
LOGICAL_READS_PER_CALL 1000
PRIVATE_SGA 25K
COMPOSITE_LIMIT 5000000
FAILED_LOGIN_ATTEMPTS 3
PASSWORD_LIFE_TIME 180
PASSWORD_REUSE_TIME 30
PASSWORD_REUSE_MAX 7
PASSWORD_LOCK_TIME 1/24
PASSWORD_GRACE_TIME 7
PASSWORD_VERIFY_FUNCTION NULL;
```

```
DBMS_XDB_CONFIG.GETHTTPSPT()
-----
                           5502

SQL> CREATE PROFILE Accountant LIMIT SESSIONS_PER_USER UNLIMITED CPU_PER_SESSION UNLIMITED CPU_PER_CALL 3000 CONNECT
TIME 40 LOGICAL_READS_PER_SESSION DEFAULT LOGICAL_READS_PER_CALL 1000 PRIVATE_SGA 25K COMPOSITE_LIMIT 5000000 FAIL
ED_LOGIN_ATTEMPTS 3 PASSWORD_LIFE_TIME 180 PASSWORD_REUSE_TIME 30 PASSWORD_REUSE_MAX 7 PASSWORD_LOCK_TIME 1/24 PASS
WORD_GRACE_TIME 7 PASSWORD_VERIFY_FUNCTION NULL;

Profile created.

SQL> █
```

## Default Table Space

```
CREATE TABLESPACE ThimiraTS
DATAFILE 'Thimira_perm.dat' SIZE 100M
REUSE
```

```
AUTOEXTEND ON  
NEXT 10M MAXSIZE 200M;
```

```
SQL> CREATE TABLESPACE ThimiraTS DATAFILE 'Thimira_perm.dat' SIZE 100M REUSE AUTOEXTEND ON NEXT 10M MAXSIZE 200M;  
Tablespace created.
```

## Create Temporary Table Space

```
CREATE TEMPORARY TABLESPACE ThimiraTEMP  
TEMPFILE 'Thimra_temp.dbf' SIZE 10M  
AUTOEXTEND ON;
```

```
SQL> CREATE TEMPORARY TABLESPACE ThimiraTEMP TEMPFILE 'Thimra_temp.dbf' SIZE 10M AUTOEXTEND ON;  
Tablespace created.
```

## Create Role

```
CREATE ROLE Accountant;  
GRANT CONNECT, RESOURCE, DBA TO Accountant;  
GRANT CREATE SESSION TO Accountant;  
GRANT CREATE TABLE, CREATE VIEW, CREATE PROCEDURE, CREATE SESSION, CREATE TRIGGER,  
CREATE SYNONYM TO Accountant;
```

```
SQL> CREATE ROLE Accountant;  
Role created.  
SQL> GRANT CONNECT, RESOURCE, DBA TO Accountant;  
Grant succeeded.  
SQL> GRANT CREATE SESSION TO Accountant;  
Grant succeeded.  
SQL> GRANT CREATE TABLE, VIEW, PROCEDURE, SESSION, TRIGGER, SYNONYM TO Accountant;  
GRANT CREATE TABLE, VIEW, PROCEDURE, SESSION, TRIGGER, SYNONYM TO Accountant  
*  
ERROR at line 1:  
ORA-01919: role 'PROCEDURE' does not exist  
SQL> GRANT CREATE TABLE, CREATE VIEW, CREATE PROCEDURE, CREATE SESSION, CREATE TRIGGER, CREATE SYNONYM TO Accountant;  
Grant succeeded.  
SQL>
```

# Create User

```
CREATE USER Thimira IDENTIFIED BY 200129203657
DEFAULT TABLESPACE ThimiraTS
TEMPORARY TABLESPACE ThimiraTEMP
QUOTA 50M ON ThimiraTS
PROFILE Accountant;
ALTER USER Thimira DEFAULT ROLE ALL;
```

```
SQL> CREATE USER Thimira IDENTIFIED BY 200129203657 DEFAULT TABLESPACE ThimiraTS TEMPORARY TABLESPACE ThimiraTEMP QUOTA 50M ON ThimiraTS PROFILE Accountant;

User created.

SQL> ALTER USER Thimira DEFAULT ROLE ALL;

User altered.

SQL> _
```

## Listener configuration

It is necessary to configure the listener and unlock the user in order for us to connect to the pdb using sql plus

```
sqlplus / as sysdba
select name ,con_id from v$pdb;
select name as "Service" from v$active_services where con_id=4;
```

Service name = it22169730

Listener configuration

```
IT22169730 =
(DESCRIPTION =
(AADDRESS = (PROTOCOL = TCP)(HOST = localhost)(PORT = 1521))
(CONNECT_DATA =
(SERVER = DEDICATED)
(SERVICE_NAME = it22169730)
)
)
```

Stop listener

```
lsnrctl stop
```

```
SQL> alter user Thimira account unlock;
```

```
User altered.
```

```
SQL> alter user admin account unlock;
```

```
User altered.
```

```
SQL> select name as "Service" from v$active_services where con_id=4;
```

```
Service
```

```
-----  
it22169730
```

```
SQL> alter session set container = it22169730;
```

```
Session altered.
```

```
SQL> select name , open_mode from v$pdb;
```

NAME	OPEN_MODE
IT22169730	READ WRITE

```
SQL> alter user Thimira identified by 200129203657 account unlock;
```

```
alter user Thimira identified by 200129203657 account unlock
```

```
*
```

```
ERROR at line 1:
```

```
ORA-28007: the password cannot be reused
```

```
SQL> alter user Thimira account unlock;
```

```
User altered.
```

```
SQL> _
```

Start Listener

```
lsnrctl start
```

## Managing Schema Objects with SQL Developer



# Create Database connection in SQL developer.[Use new PDB]

check SID

## New Connections in SQL PLUS

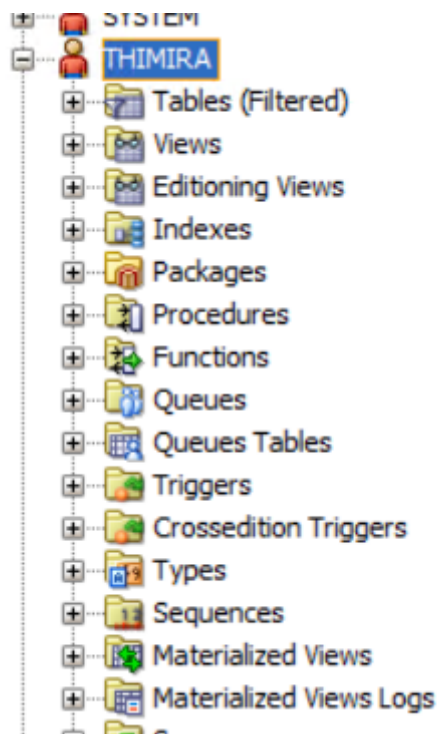
```
select con_id, name , open_mode from v$pdb; -- PDB_ID is enough but whatever
```

```
SQL> select con_id, name , open_mode from v$pdb;
```

CON_ID	NAME	OPEN_MODE
2	PDB\$SEED	READ ONLY
3	PDBORCL	READ WRITE
4	IT22169730	READ WRITE

```
SQL> █
```

Check whether the user created in part C is available in the users list.



# Create a new table to save the “OnlineRetail” dataset given in the courseweb.

Import data from existing xl sheet

**Create Table**

Schema: THIMIRA

Name: OnlineRetail

Table Type: ☒ Normal ☐ External ☐ Index Organized ☐ Temporary (Transaction) ☐ Temporary (Session)

**Columns:**

- INVOICE
- STOCKCODE
- DESCRIPTION
- QUANTITY
- INVOICEDATE
- PRICE
- CUSTOMER\_ID
- COUNTRY

**Column Properties**

Name: INVOICE

Datatype: ☒ Simple ☐ Complex

Type: NUMBER

Precision: 7

Scale:

Default:

☒ Cannot be NULL

Comment:

## Create the new table under the user you have created in Part C above.

- a. Table/ schema name: OnlineRetail

	COLUMN_NAME	DATA_TYPE	NULLABLE	DATA_DEFAULT	COLUMN_ID	COMMENTS
1	INVOICE	NUMBER (7, 0)	Yes	(null)	1 (null)	
2	STOCKCODE	NUMBER (7, 0)	Yes	(null)	2 (null)	
3	DESCRIPTION	VARCHAR2 (35 BYTE)	Yes	(null)	3 (null)	
4	QUANTITY	NUMBER (4, 0)	Yes	(null)	4 (null)	
5	INVOICEDATE	VARCHAR2 (25 BYTE)	Yes	(null)	5 (null)	
6	PRICE	FLOAT	Yes	(null)	6 (null)	
7	CUSTOMER_ID	NUMBER (7, 0)	Yes	(null)	7 (null)	
8	COUNTRY	VARCHAR2 (20 BYTE)	Yes	(null)	8 (null)	

- b. Column names: refer to the column names available in the data sheet

- c. Data types: Identify the data types referring the data sheet

## Load the OnlineRetail data into the newly created table.

Import the data and make sure you can see everything in the data sheet. Use logical iduction to verify if all data is

**Data Import Wizard - Step 1 of 5**

**Data Preview**

☒ Header      Skip Rows: 0

Format: **xlsx**      ☒ Preview Row Limit: 104

INVOICE	STOCKCODE	DESCRIPTION	QUANTITY	INVOICEDATE	PRICE
536377	22632	HAND WAR...	6	12/01/2010 ...	1.85
536377	22633	HAND WAR...	6	12/01/2010 ...	1.85
536378	22386	JUMBO BAG ...	10	12/01/2010 ...	1.95
536378	85099	JUMBO BAG...	10	12/01/2010 ...	1.95
536378	21033	JUMBO BAG ...	10	12/01/2010 ...	2.95
536378	20723	STRAWBER...	10	12/01/2010 ...	0.85
536378	84997	RED 3 PIEC...	12	12/01/2010 ...	3.75
536378	84997	BLUE 3 PIEC...	6	12/01/2010 ...	3.75
536378	21094	SET/6 RED S...	12	12/01/2010 ...	0.85
536378	20725	LUNCH BAG ...	10	12/01/2010 ...	1.65
536378	21559	STRAWBER...	6	12/01/2010 ...	2.55
536378	22352	LUNCH BOX ...	6	12/01/2010 ...	2.55
536378	21212	PACK OF 72...	120	12/01/2010 ...	0.42
536378	21975	PACK OF 60...	24	12/01/2010 ...	0.55
536378	21977	PACK OF 60...	24	12/01/2010 ...	0.55
536378	84991	60 TEATIME...	24	12/01/2010 ...	0.55

Help      < Back      Next >      Finish      Cancel

Import essentials only

Data Import Wizard - Step 3 of 5

Data Preview

Import Method

Choose Columns

Column Definition

Finish

Select the columns to import from the data set and arrange them in the order you want.

Available Columns

COLUMN9

COLUMN10

Selected Columns

INVOICE

STOCKCODE

DESCRIPTION

QUANTITY

INVOICEDATE

PRICE

CUSTOMER\_ID

COUNTRY

Help


< Back


Next >

Finish


Cancel


## Check dataTypes


 Data Import Wizard - Step 4 of 5





### Column Definition

 Data Preview

 Import Method

 Choose Columns

 **Column Definition**

 Finish

To Map Source Data to existing Table, for each column on left, select the column in the database table to import this data into.

Match By Name ▼

Source Data Columns

INVOICE  
STOCKCODE  
DESCRIPTION  
QUANTITY  
INVOICEDATE  
PRICE  
CUSTOMER\_ID  
**COUNTRY**

Target Table Columns

Name COUNTRY ▼

Data Type VARCHAR2

Size/Precision 20

Scale 0

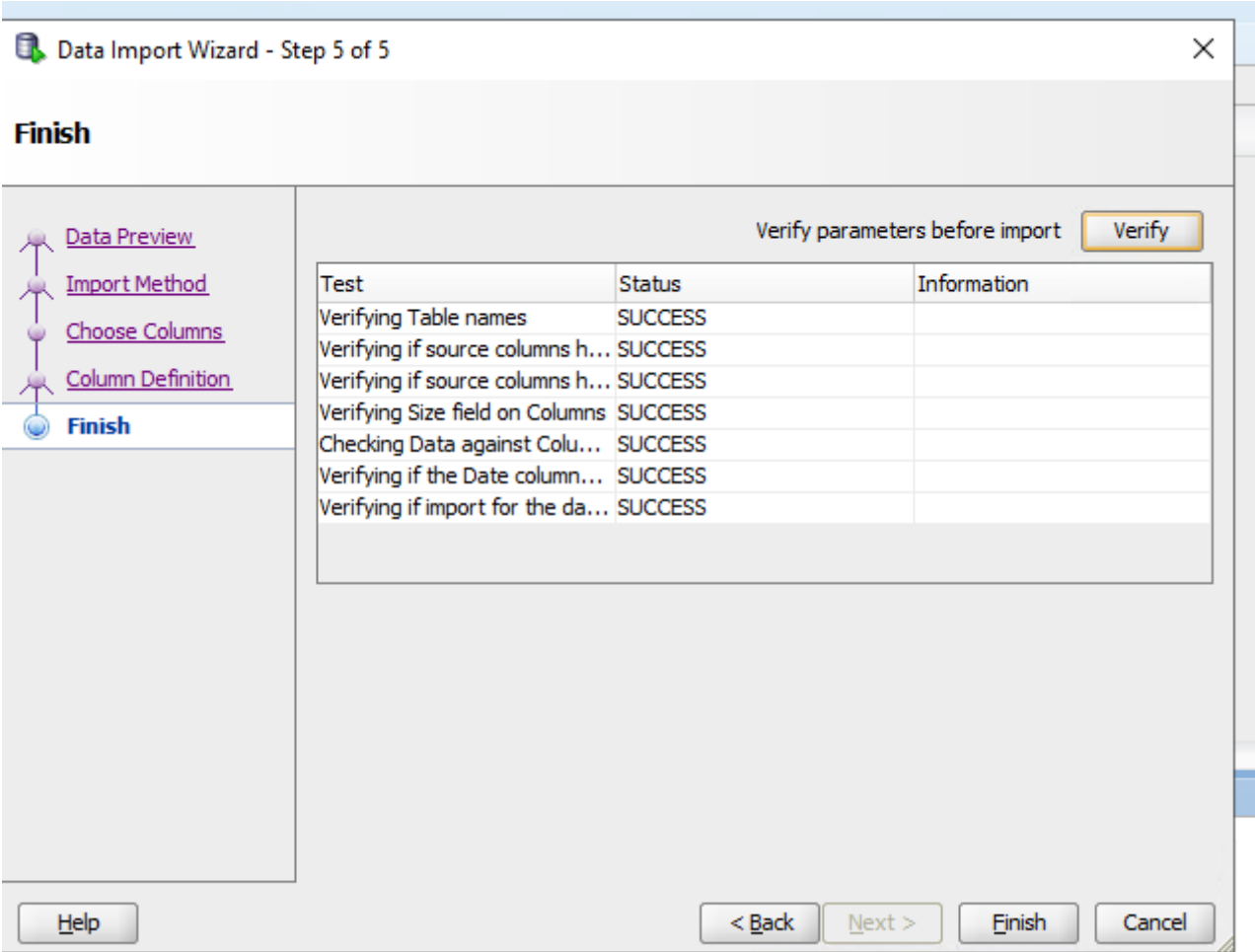
☒ Nullable? Default

Comment

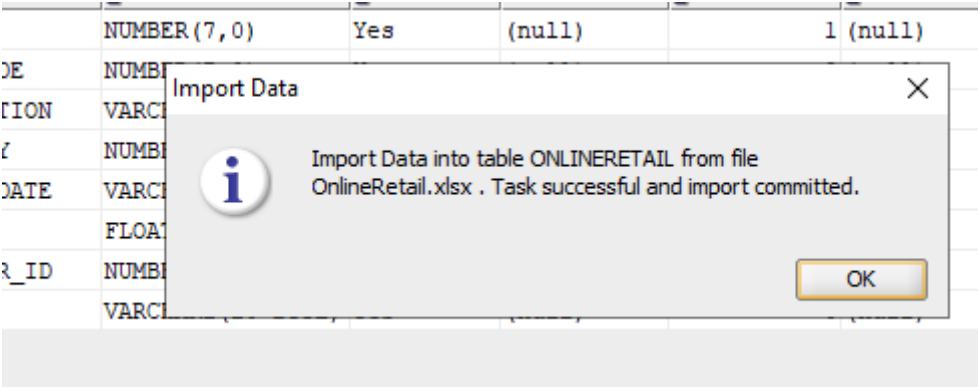
Help

< Back Next > Finish Cancel

Verify



\*\*




**Create an index to the table based on the “Price” column in the data sheet.]**

- a. Index name: Price\_IX

SQL Server Enterprise Manager

### Create Index

Schema: THIMIRA      ☐ Advanced 

Name: Price\_IX

Definition: **DDL**

Schema: THIMIRA

Table: ONLINERETAIL

Type: ☒ Normal ☐ Domain

☒ Non-unique ☐ Unique ☐ Bitmap

Index:

Index Name	Column Name or Expression	Order
PRICE ASC	PRICE	ASC

Column Name or Expression: PRICE      Order: ASC

Help      OK      Cancel