

i2i Academy

Training Document

Topic	RDBMS - Oracle
Document Name	ORACLEDB-EX-02

Document Difficulty Level			
Beginner	Junior	Senior	Expert
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Document History

Date	Author	Ver	Comments
05.03.2025	Mennan Tekbir	1.0	Initial Draft
05.03.2025	Mehmet Erdem Önal	1.1	Revisions

RDBMS – Oracle

Exercise ORACLEDB-EX-02:

Definiton: pull & run oracle express edition container from docker hub in your GCP or AWS cloud machine. (You can use oracle official repo- the link is provided below –). For being more practical, you can run in your local machine first, and then, you can switch to cloud machine. Necesarry command are provided below.

Note: If you did not get a cloud machine previously, you may simply run it on your local machine.

Docker Installation

<https://blogs.oracle.com/connect/post/deliver-oracle-database-18c-express-edition-in-containers>

<https://github.com/oracle/docker-images/tree/main/OracleDatabase/SingleInstance>

```
git clone https://github.com/oracle/docker-images.git
cd docker-images/OracleDatabase/SingleInstance/dockerfiles
./buildContainerImage.sh -v 21.3.0 -x
docker run --name oraclexe -p 1521:1521 -p 5500:5500 -e ORACLE_PWD=ORACLE
oracle/database:21.3.0-xe
```

Getting into Oracle SQL's SQLPlus CLI

```
docker exec -it oraclexe bash
bash-4.2# sqlplus sys/ORACLE@//localhost:1521/XE as sysdba
SQL> select name from v$database;
```

Please provide screenshots to show your work.

ORACLEDB-EX-02 Solution:

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\asus> git clone https://github.com/oracle/docker-images.git
Cloning into 'docker-images'...
remote: Enumerating objects: 19273, done.
remote: Counting objects: 100% (2289/2289), done.
remote: Compressing objects: 100% (351/351), done.
remote: Total 19273 (delta 2035), reused 1940 (delta 1934), pack-reused 16984 (from 3)
Receiving objects: 100% (19273/19273), 15.81 MiB | 14.45 MiB/s, done.
Resolving deltas: 100% (11311/11311), done.
PS C:\Users\asus> |

asus@LAPTOP-CES0JHSJ MINGW64 ~
$ ./buildContainerImage.sh -v 21.3.0 -x
bash: ./buildContainerImage.sh: No such file or directory

asus@LAPTOP-CES0JHSJ MINGW64 ~
$ AC

asus@LAPTOP-CES0JHSJ MINGW64 ~
$ cd docker-images/OracleDatabase/SingleInstance/dockerfiles

asus@LAPTOP-CES0JHSJ MINGW64 ~/docker-images/OracleDatabase/SingleInstance/dockerfiles (main)
$ ./buildContainerImage.sh -v 21.3.0 -x
WARNING: DOCKER_INSECURE_NO_IPTABLES_RAW is set
Checking Docker version.
Dockerfile.xe
Ignored MD5 checksum.
=====
Container runtime info:
Client:
Version:      28.2.2
Context:      desktop-linux
Debug Mode:   false
Plugins:
ai: Docker AI Agent - Ask Gordon (Docker Inc.)
  Version:    v1.4.0
  Path:       C:\Program Files\Docker\cli-plugins\docker-ai.exe
buildx: Docker Buildx (Docker Inc.)
  Version:    v0.24.0-desktop.2
  Path:       C:\Program Files\Docker\cli-plugins\docker-buildx.exe
cloud: Docker Cloud (Docker Inc.)
  Version:    v0.3.9
  Path:       C:\Program Files\Docker\cli-plugins\docker-cloud.exe
compose: Docker Compose (Docker Inc.)
  Version:    v2.23.1-desktop.1
```

```

MINGW64:/c:/Users/asus/docker-images/OracleDatabase/SingleInstance/dockerfiles
=> [5/5] WORKDIR /home/oracle                                0.6s
=> exporting to image                                         186.3s
=> => exporting layers                                         158.6s
=> => exporting manifest sha256:a1d947d34162cc719be9c31797014fc70ec47b62b484bee2aefb0bfbba8074b 0.0s
=> => exporting config sha256:6d58ad8298bd2debc1ea0afe1c0738eab155653502fd0c8e216bc320a4dd9b1f 0.1s
=> => exporting attestation manifest sha256:2db61c98d847d99f7fe3d4dd3ff367ffaa69e06efdd4a07766342be7175789d 0.1s
=> => exporting manifest list sha256:3af3dade377256091d45ed4abc5c5d81dcab9c5c73a9153ec6f6536f11530938 0.0s
=> => naming to docker.io/oracle/database:21.3.0-xe          0.0s
=> => unpacking to docker.io/oracle/database:21.3.0-xe       27.4s

1 warning found (use docker --debug to expand):
- UndefinedVar: Usage of undefined variable '$HOME' (line 38)

Oracle Database container image for 'xe' version 21.3.0 is ready to be extended:

--> oracle/database:21.3.0-xe

Build completed in 542 seconds.

sus@LAPTOP-CES0JHSJ MINGW64 ~/docker-images/OracleDatabase/SingleInstance/dockerfiles (main)
$ docker run --name oraclexe -p 1521:1521 -p 5500:5500 -e ORACLE_PWD=ORACLE oracle/database:21.3.0-xe
Specify a password to be used for database accounts. Oracle recommends that the password entered should be at least
8 characters in length, contain at least 1 uppercase character, 1 lower case character and 1 digit [0-9]. Note that
the same password will be used for SYS, SYSTEM and PDBADMIN accounts:
confirm the password:
configuring Oracle Listener.
listener configuration succeeded.
configuring Oracle Database XE.
enter SYS user password:
*****
enter SYSTEM user password:
*****
enter PDBADMIN User Password:
*****
prepare for db operation

SQL>
User altered.

SQL> SQL> Disconnected from Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

SQL*Plus: Release 21.0.0.0.0 - Production on Thu Jul 10 11:36:29 2025
Version 21.3.0.0.0

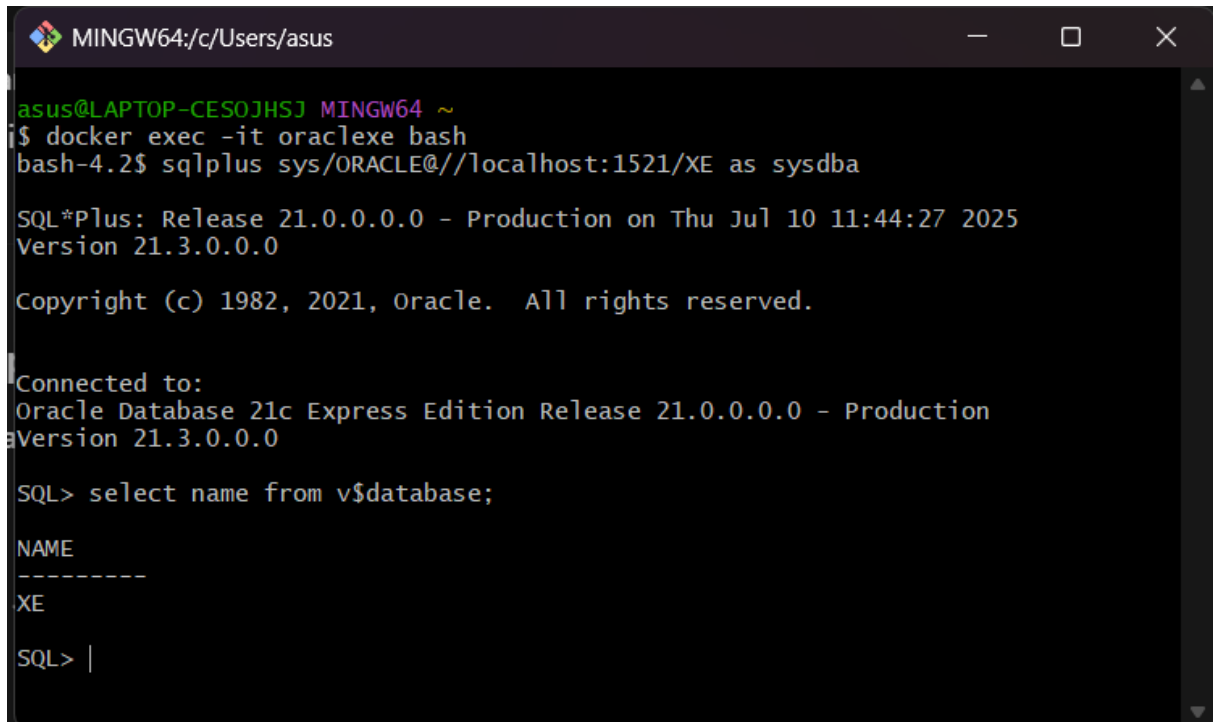
Copyright (c) 1982, 2021, Oracle. All rights reserved.

Connected to:
Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

SQL>
PL/SQL procedure successfully completed.

SQL> Disconnected from Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0
The Oracle base remains unchanged with value /opt/oracle
The Oracle base remains unchanged with value /opt/oracle
#####
DATABASE IS READY TO USE!
#####
The following output is now a tail of the alert.log:
XEPDB1(3):Completed: ALTER DATABASE DEFAULT TABLESPACE "USERS"
2025-07-10T11:36:28.330098+00:00
ALTER PLUGGABLE DATABASE XEPDB1 SAVE STATE
Completed: ALTER PLUGGABLE DATABASE XEPDB1 SAVE STATE
2025-07-10T11:36:29.188820+00:00
ALTER SYSTEM SET control_files='/opt/oracle/oradata/XE/control01.ctl' SCOPE=SPFILE;
2025-07-10T11:36:29.220384+00:00
ALTER SYSTEM SET local_listener='' SCOPE=BOTH;
ALTER PLUGGABLE DATABASE XEPDB1 SAVE STATE

```



```
MINGW64:/c/Users/asus
asus@LAPTOP-CES0JHSJ MINGW64 ~
$ docker exec -it oraclexe bash
bash-4.2$ sqlplus sys/ORACLE@//localhost:1521/XE as sysdba

SQL*Plus: Release 21.0.0.0.0 - Production on Thu Jul 10 11:44:27 2025
Version 21.3.0.0.0

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Connected to:
Oracle Database 21c Express Edition Release 21.0.0.0.0 - Production
Version 21.3.0.0.0

SQL> select name from v$database;

NAME
-----
XE

SQL> |
```