

1 Introduction :

This guide aims to help users easily download and set up Oracle Database using Docker on Linux.

2 Requirements :

2.1 Installing git

Arch Based

```
sudo pacman -Sy git
```

Debian And Ubuntu Based

```
sudo apt install git
```

2.2 Installing Docker

Arch Based

```
sudo pacman -S docker
```

Debian and Ubuntu Based

```
sudo apt install apt-transport-https ca-certificates curl software-properties-common  
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -  
sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"  
sudo apt update  
sudo apt install docker-ce
```

2.3 Installing SqlDeveloper

While installing sqldeveloper is optional , it allows for a better experience since sqlplus prompt terminal has issues with arrow keys not functioning

Arch Based

Requirement: we need to install the yay package

```
git clone https://aur.archlinux.org/yay.git
cd yay/
makepkg -si
yay -S oracle-sqldeveloper
```

Debian and Ubuntu Based

Requirements

- wget (optional) : To download sqldeveloper rpm file in the terminal to download :

```
sudo apt install wget
```

- alien : To convert the rpm into a deb file to download :

```
sudo apt install alien
```

- java : To be able to run sqldeveloper we need a java jdk ≥ 17

```
sudo apt install openjdk-21-jdk
```

```
sudo wget https://download.oracle.com/otn_software/java/sqldeveloper/sqldeveloper-24.3.0-284.2209.noarch.rpm
sudo alien -k sqldeveloper-24.3.0-284.2209.noarch.rpm
sudo dpkg -i sqldeveloper_24.3.0-284.2209_all.deb
```

Running Sqldeveloper

```
sqldeveloper
```

3 Docker :

3.1 Start Docker :

starting docker

```
sudo systemctl start docker
sudo systemctl enable docker
```

3.2 Building Oracle Container Image :

Pulling oracle-xe

Clone the docker oracle images into your local folder then navigate to the docker-images/OracleDatabase/SingleInstance/dockerfiles/ folder use ls to print all the available versions and run the shell script and give it the version as parameter

```
git clone https://github.com/oracle/docker-images.git
cd docker-images/OracleDatabase/SingleInstance/dockerfiles/
ls
11.2.0.2 12.1.0.2 12.2.0.1 18.3.0 18.4.0 19.3.0 21.3.0 23.5.0 buildContainerImage.sh
sudo ./buildContainerImage.sh -v <version> -x
sudo ./buildContainerImage.sh -v 18.4.0 -x
```

Note

When running the buildContainerImage.sh make sure no docker container is running as it can lead to the script not running

```
sudo docker ps
sudo docker stop <container_id>
```

3.3 Starting Oracle Container And Executing It :

We will create an instance of the oracle image we built by using the run command , and give it a host and container name then we will fetch the sysdba password using the logs command after that we can either execute sql oracle in terminal by running sqlplus inside the minimalistic docker terminal or use sqldeveloper for better experience

Container Instance Creation

```
sudo docker run -i -t -d --hostname <hostName> --name <containerName> -p 1521:1521  
-v ~/Docker/shared/./shared oracle/database:<version>-xe  
sudo docker run -i -t -d --hostname ora18xe --name ora18xe -p 1521:1521  
-v ~/Docker/shared/./shared oracle/database:18.4.0-xe
```

Initialize Data Base And Fetch Logs

We have to initialize the oracle data base by running the logs command it will set up the data base and give the logs (password , username) , just make sure to let the command finish as it takes some time , you can stop the process with ctrl+c after you see "Completed: ALTER PLUGGABLE DATABASE XEPDB1 SAVE STATE"

```
sudo docker logs <containerName> -f  
sudo docker logs ora18xe -f
```

ORACLE PASSWORD FOR SYS AND SYSTEM: 22cc7d22227cdd38

Connecting As SYSDBA and Creating PDB

We will first connect to XE as sysdba to be able to create and mount the PDB note that all of that can be done within sqldeveloper

```
sudo docker exec -i -t <containerName> /bin/bash
sudo docker exec -i -t ora18xe /bin/bash
```

inside docker bash terminal :

```
sqlplus sys/<password>@//<hostName>:<port>/XE as sysdba
sqlplus sys/22cc7d22227cdd38@//ora18xe:1521/XE as sysdba
```

inside sqlplus prompt :

```
create pluggable database <pdbName> admin user <userName> identified by <password> file_name_convert=('/opt
/opt/oracle/oradata/XE/', '/opt/oracle/oradata/XE/<pdbName>');
alter pluggable database <pdbName> open;
alter pluggable database <pdbName> save state;

create pluggable database tp_3bdd admin user rabah identified by 1234 file_name_convert=('/opt/oracle/oradata
/XE/', '/opt/oracle/oradata/XE/tp_3bdd');
alter pluggable database tp_3bdd open;
alter pluggable database tp_3bdd save state;
exit;

sqlplus rabah/1234@//ora18xe:1521/tp_3bdd
```

Note

We create the instance of the docker oracle image once then we can start and stop the instance as much as we want :

```
sudo docker start <containerName>
sudo docker stop <containerName>

sudo docker start ora18xe
sudo docker stop ora18xe
```