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APEX DEVELOPMENT DATABASE DEVELOPMENT FOR SOFTWARE DEVELOPERS

Oracle 23c Free Docker, APEX & ORDS – all in one simple guide

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Using Oracle APEX with the 23c version of free Docker is quite easy if you know how to set things up correctly. This 25-step guide will take you through everything you

[Oracle 23c Free Database](#)

[ORDS latest](#) (23.1 at time of writing)

[Open JAVA 17 JDK](#)

latest [Oracle APEX](#) version (22.2 at the time of writing)

However, you don't really need to download anything now – I'll tell you how to do that quickly via the command line.

Also, if you already have Docker running, you can skip the first section about installation and get to the steps that follow (the Getting Docker to work section).

Install and run Docker

If you don't have Docker installed, just get through the steps outlined below. Details will differ depending on your platform/OS of choice.

For Mac, you first need to install Brew/Colima/Docker – you can follow the instructions in [this guide](#) by my colleague Rafał Grzegorzczak

For Windows, [the process is really straightforward](#), so simply make sure Docker is running and start Docker Desktop

For Unix, install it by using the following commands in your terminal:

```
1  docker version
2  sudo yum install docker -y
```

Once you've downloaded Docker, you'll need to unpack the data. Drop into the command line (i.e. terminal or windows+r, cmd) and type the following command. It'll take about 15 mins to complete and unpack to 10.5GB on your HDD.

This is what it'll look like once it completes:

```
C:\Users\pretius>docker pull container-registry.oracle.com/database/free:latest
latest: Pulling from database/free
def8df68f6e5: Pull complete
4f739c567988: Pull complete
579d0ff24aa5: Pull complete
480f5079c729: Pull complete
Digest: sha256:73ecc82314a625122bb283e2cb3d6778899e62d9e21792da03ac4fea74c017b9
Status: Downloaded newer image for container-registry.oracle.com/database/free:latest
container-registry.oracle.com/database/free:latest
C:\Users\pretius>
```

Now, all that's left is to run Docker. You can do this by using the following command. Please note, that I've changed ports to 8xxx to avoid conflicts with my other docker images.

```
1 docker run -d -it --name 23cfree -p 8521:1521 -p 8500:5500 -p 80
```

Get Docker to work with Oracle APEX

Now, here are the 25 steps you'll need to follow to get everything working. The process is quite straightforward.

1. Enter bash

Just type the following command:

```
1 docker exec -it 23cfree /bin/bash
```

2. Get APEX

Use this command (it'll take around 1 minute):

3. Unpack and enter APEX

You can use these commands:

```
1  unzip apex-latest.zip
2  rm apex-latest.zip
3  cd apex
```

4. Let your database settle for at least a few minutes

It's best to let things settle a bit before you continue, so give it a few minutes. You can grab a coffee while you wait!

5. Open SQL*Plus with *sqlplus / as sysdba*

The exact command looks like this:

```
1  bash-4.4$ sqlplus / as sysdba
2  SQL*Plus: Release 23.0.0.0.0 - Developer-Release on Wed Apr 5 13
3  Copyright (c) 1982, 2023, Oracle. All rights reserved.
4  Connected to: Oracle Database 23c Free, Release 23.0.0.0.0 - Dev
```

6. Run the APEX installer

Use the following command:

```
1  ALTER SESSION SET CONTAINER = FREEPDB1;
2  @apexins.sql SYS AUX SYS AUX TEMP /i/
```

It'll settle down after a while.

7. Unlock the public user account

Here's the command:

```
1 ALTER USER APEX_PUBLIC_USER ACCOUNT UNLOCK;  
2 ALTER USER APEX_PUBLIC_USER IDENTIFIED BY E;
```

8. Change the password

Run the following command and follow the outlined steps:

```
1 @apxchpwd.sql
```

It's worth noting you must use a complex password for this purpose, so come up with something adequate.

9. Exit SQL*Plus

Simply type the following word:

```
1 exit
```

10. Create the following folders

To make things quick and simple, you can copy-paste the commands outlined below:

```
1 mkdir /home/oracle/software  
2 mkdir /home/oracle/software/apex  
3 mkdir /home/oracle/software/ords
```

11. Copy the APEX images & change the folder

Simply type in the following:

```
1 cp -r /home/oracle/apex/images /home/oracle/software/apex
2 cd /home/oracle/
```

12. Install sudo

Use the following commands:

```
1 su
2 dnf update
3 dnf install sudo -y
```

13. Install nano

Type in the following:

```
1 dnf install nano -y
```

14. Edit the sudo list

Now, you'll need to quickly edit the sudo list. First, type in this command:

```
1 nano /etc/sudoers
```

In the **Defaults** section, add the following:

Now, at the very end of the file you also need to add this:

```
1  oracle ALL=(ALL) NOPASSWD: ALL
```

After that just click Ctrl+X and save the file.

15. Install Java

You can use this command:

```
1  dnf install java-17-openjdk -y
```


16. Setup ORDS folders & check JAVA

Here are the commands to use to set everything up quickly:

```
1  mkdir /etc/ords
2  mkdir /etc/ords/config
3  mkdir /home/oracle/logs
4  chmod -R 777 /etc/ords
5  java -version
```

If everything is as it should be, you will get the following result in return:

```
1  openjdk version "17.0.6" 2023-01-17 LTS
2  OpenJDK Runtime Environment (Red_Hat-17.0.6.0.10-3.el8_7) (build
3  OpenJDK 64-Bit Server VM (Red_Hat-17.0.6.0.10-3.el8_7) (build 17
```



17. Whilst still as su, install ORDS

```
1 yum-config-manager --add-repo=http://yum.oracle.com/repo/OracleL
2 dnf install ords -y
```

18. Configure ORDS

Type in the following:

```
1 export _JAVA_OPTIONS="-Xms512M -Xmx512M"
2 ords --config /etc/ords/config install
```

The configuration you should use looks like this:

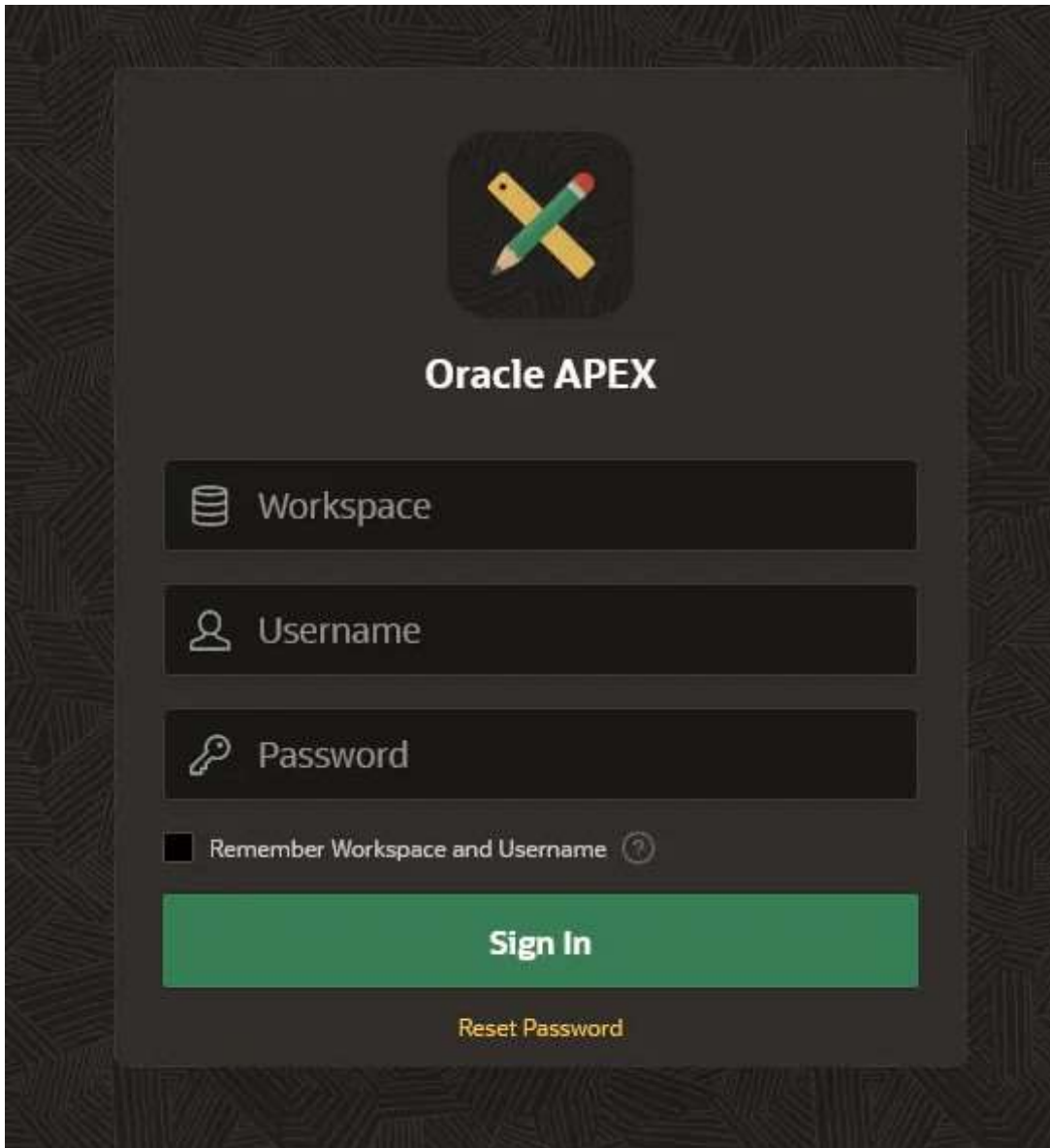
```
1 Installation Type > Choose option [2] Enter
2 Connection Type > Choose option [1] Enter
3 host name > Enter
4 listen port > Enter
5 service name > Enter
6 administrator username > SYS
7 password > E
8 default tablespace > Enter
9 temp tablespace > Enter
10 features > Enter
11 Start ORDS > [1] Enter <-- Standalone Mode
12 protocol > [1] < http
13 port > [1] <-- 8080
14 Static Resources > /home/oracle/software/apex/images
```

The ORDS configuration will only take a couple of minutes. Once it completes, it should display the following message:

```
1 Oracle REST Data Services version : 23.1.0.r0861423
2 Oracle REST Data Services server info: jetty/10.0.12
```


19. Do a quick test and close ORDS

Run <http://localhost:8023/ords/> in a different browser tab – if everything was configured correctly you should see the APEX log-in visible on the screenshot below.



You can close the tab after that. You'll also need to quit ORDS for now by using Ctrl+C.

20. Create a *start_ords.sh* file

Use the following command:

And then paste in this:

```
1 export ORDS_HOME=/usr/local/bin/ords
2 export _JAVA_OPTIONS="-Xms512M -Xmx512M"
3 LOGFILE=/home/oracle/logs/ords-`date +%Y"%m"%d"`.log
4 nohup ${ORDS_HOME} --config /etc/ords/config serve >> $LOGFILE 2
```

21. Create a *stop_ords.sh* file

Start with this command:

```
1 nano /home/oracle/scripts/stop_ords.sh
```

And then type in the following:

```
1 kill `ps -ef | grep [o]rds.war | awk '{print $2}'`
```

If you ever need to use these scripts manually, you can run them via the following commands. However, don't do this now!

```
1 sh /home/oracle/scripts/start_ords.sh
2 sh /home/oracle/scripts/stop_ords.sh
```

22. Create an ORDS startup script

Use the following command:

Then paste this in:

```
1 sudo sh /home/oracle/scripts/start_ords.sh
```

23. If you are using Docker on Unix, enable linger

This step isn't required for Windows/Mac installations but you need it on Unix to prevent user processes from being killed once the session is completed. To do this, run:

```
1 loginctl enable-linger $UID
```

24. Stop your Docker container, and then start it again

You can simply use the graphical interface or run this command:

```
1 docker restart 23cfree
```

You do this to activate the ORDS auto-starter script you've created in one of the previous steps.

25. Wait a moment, and try logging in

Wait at least 60 seconds and try logging in at <http://localhost:8023/ords>. Use the following data:

```
1 Workspace > INTERNAL
2 Username > ADMIN
3 Password > Your Complex Password
```

Summary

Welcome to Oracle APEX!

Before you get started, please take a moment to create a workspace. A workspace is a shared work area where multiple developers can build applications.

Once created, sign in to your workspace to begin building applications. Return to Administration Services to create additional workspaces or to manage this Oracle APEX instance.

Create Workspace

And that's it! As you can see, the process was quite easy and not very time-consuming. It probably took you, what... around 30 minutes total? If everything was configured properly, you should be able to get into APEX without any issues. If you've got any questions, you can always reach me at mmulvaney@pretius.com. Also, if you're interested in Oracle APEX, check out some of my other articles on this blog:

1. [Oracle APEX tutorial: Uncover Oracle's best-kept low-code secret](#)
2. [Interactive Grid duplicate values – Learn How to prevent a common problem using a Zero-JavaScript approach](#)
3. [Oracle APEX new features – the low-code platform keeps evolving](#)
4. [How the Oracle APEX community helps shape the platform's future](#)
5. [Oracle APEX Global Notification messages: An easy way to make them look better](#)



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ABOUT THE AUTHOR

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