

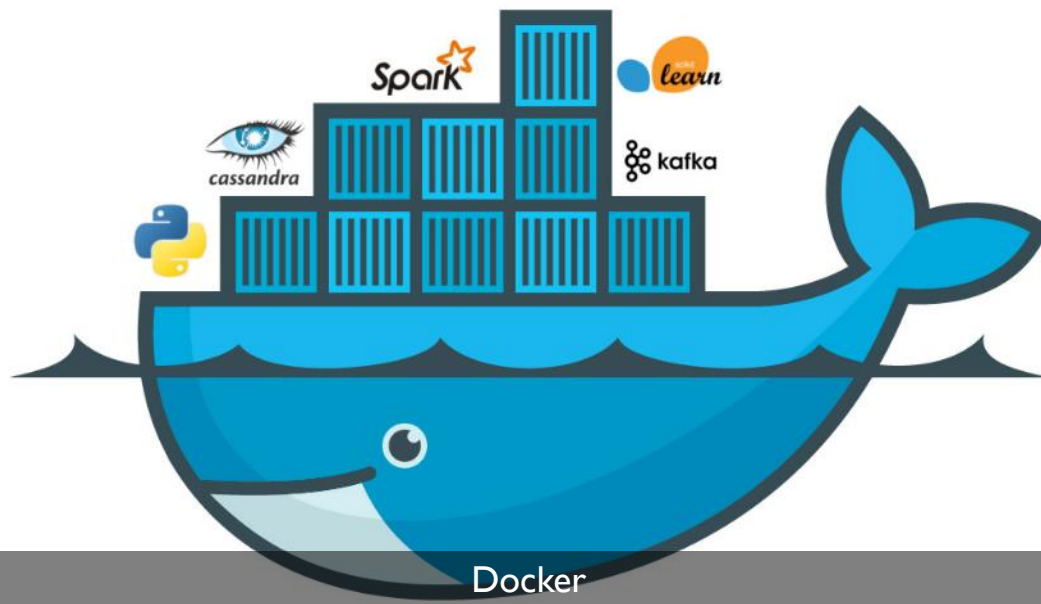
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INSTALL ORACLE DB WITH DOCKER

Source: <https://www.petefreitag.com/item/886.cfm>

CONTENT

- Preparation
- Build Docker Image
- Run Docker Image
- Oracle DB Docker Image
- Oracle SQL Developer Tool

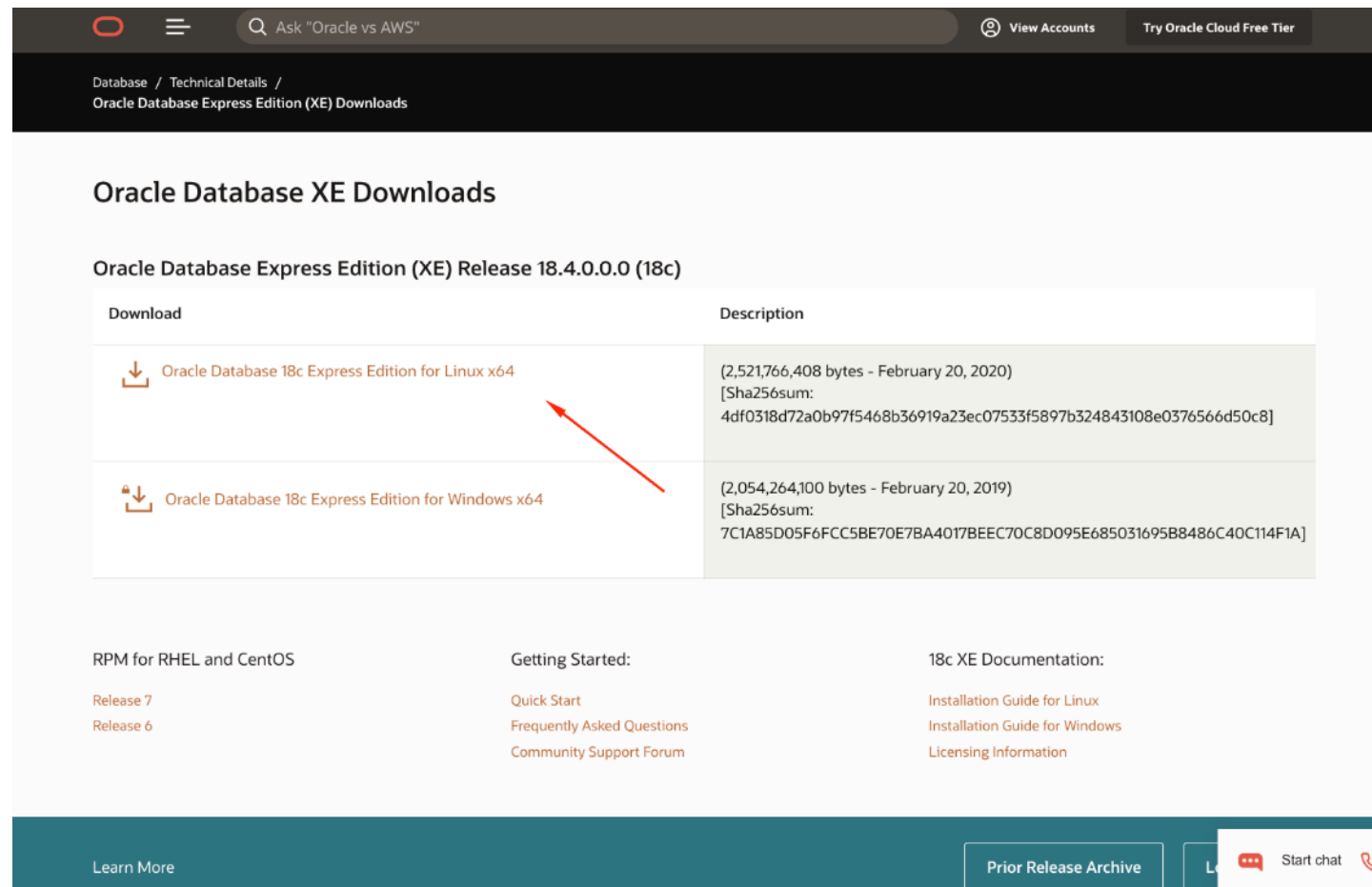


ORACLE®
D A T A B A S E

PREPARATION

ORACLE XE 21C



- Link:
<https://www.oracle.com/database/technologies/xe-downloads.html>
- Only download file



Database / Technical Details / Oracle Database Express Edition (XE) Downloads

Oracle Database XE Downloads

Oracle Database Express Edition (XE) Release 18.4.0.0.0 (18c)

Download	Description
 Oracle Database 18c Express Edition for Linux x64	(2,521,766,408 bytes - February 20, 2020) [Sha256sum: 4df0318d72a0b97f5468b36919a23ec07533f5897b324843108e0376566d50c8]
 Oracle Database 18c Express Edition for Windows x64	(2,054,264,100 bytes - February 20, 2019) [Sha256sum: 7C1A85D05F6FCC5BE70E7BA4017BEEC70C8D095E685031695B8486C40C114F1A]

RPM for RHEL and CentOS

Release 7
Release 6

Getting Started:

Quick Start
Frequently Asked Questions
Community Support Forum

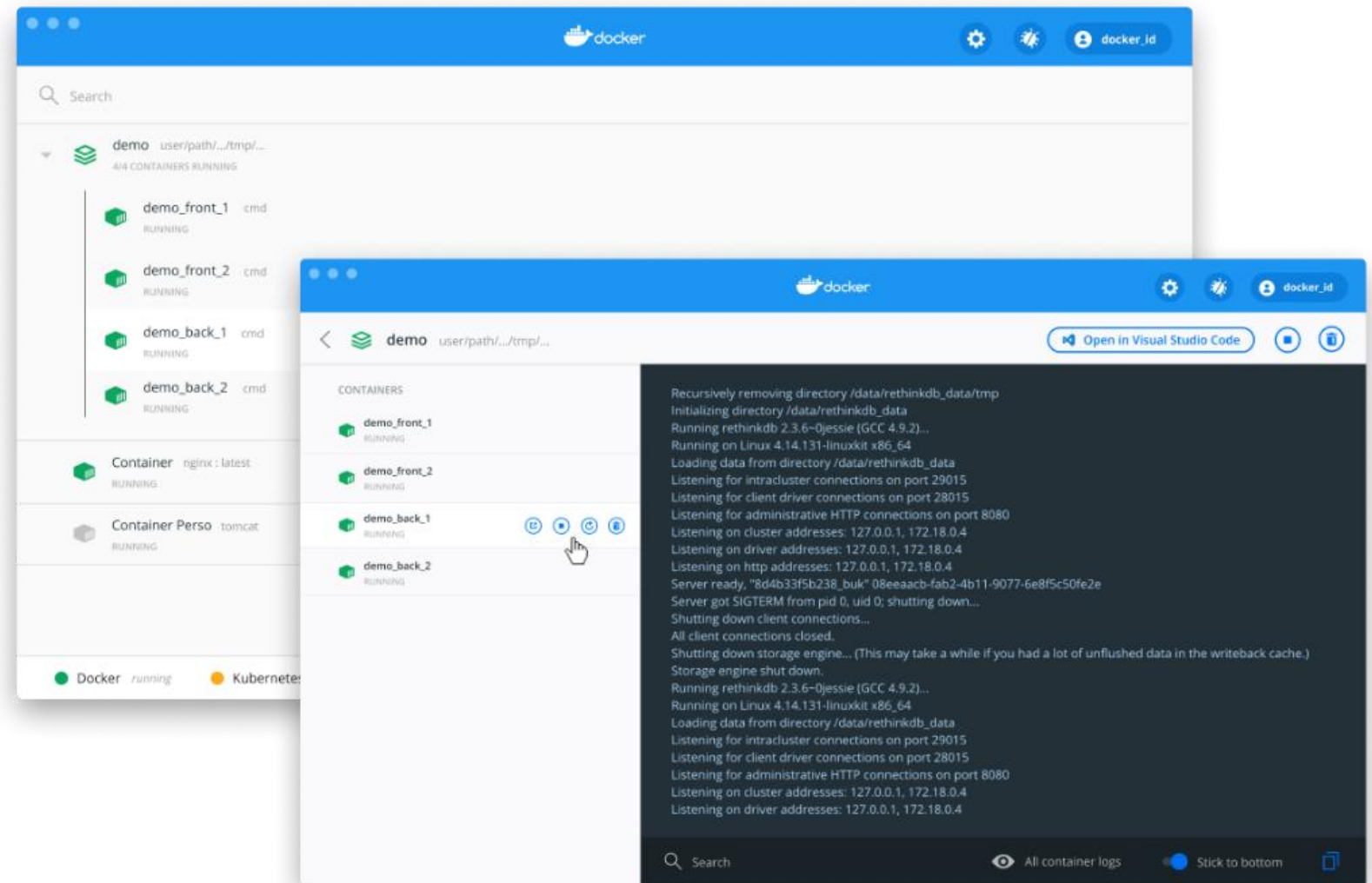
18c XE Documentation:

Installation Guide for Linux
Installation Guide for Windows
Licensing Information

[Learn More](#) [Prior Release Archive](#) [Start chat](#)

DOCKER DESKTOP

- Link:
<https://www.docker.com/products/docker-desktop>
- Version: v20.10.22 (2023)



FROM ORACLE

ORACLE DB DOCKERS IMAGE

Oracle Container Registry

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1 - 4

Repository	Description	Open Source License Text
express	Oracle Database Express Edition	The container image you have selected and all of the software that it contains is licensed under Oracle Free Use Terms and Conditions that are provided in the container image. Your use of the container is subject to the terms of those licenses.
observability-exporter	Oracle Database Observability Exporter (Metrics, Logs, and Tracing)	The container image you have selected and all of the software that it contains is licensed under UPL that are provided in the container image. Your use of the container is subject to the terms of those licenses.
operator	This image is part of and for use with the Oracle Database Operator for Kubernetes	The container image you have selected and all of the software that it contains is licensed under UPL that are provided in the container image. Your use of the container is subject to the terms of those licenses.
ords	Oracle REST Data Services (ORDS) with Application Express	The container image you have selected and all of the software that it contains is licensed under Oracle Free Use Terms and Conditions that are provided in the container image. Your use of the container is subject to the terms of those licenses.
otmm	Oracle Transaction Manager for Microservice	The container image you have selected and all of the software that it contains is licensed under Oracle Free Use Terms and Conditions that are provided in the container image. Your use of the container is subject to the terms of those licenses.

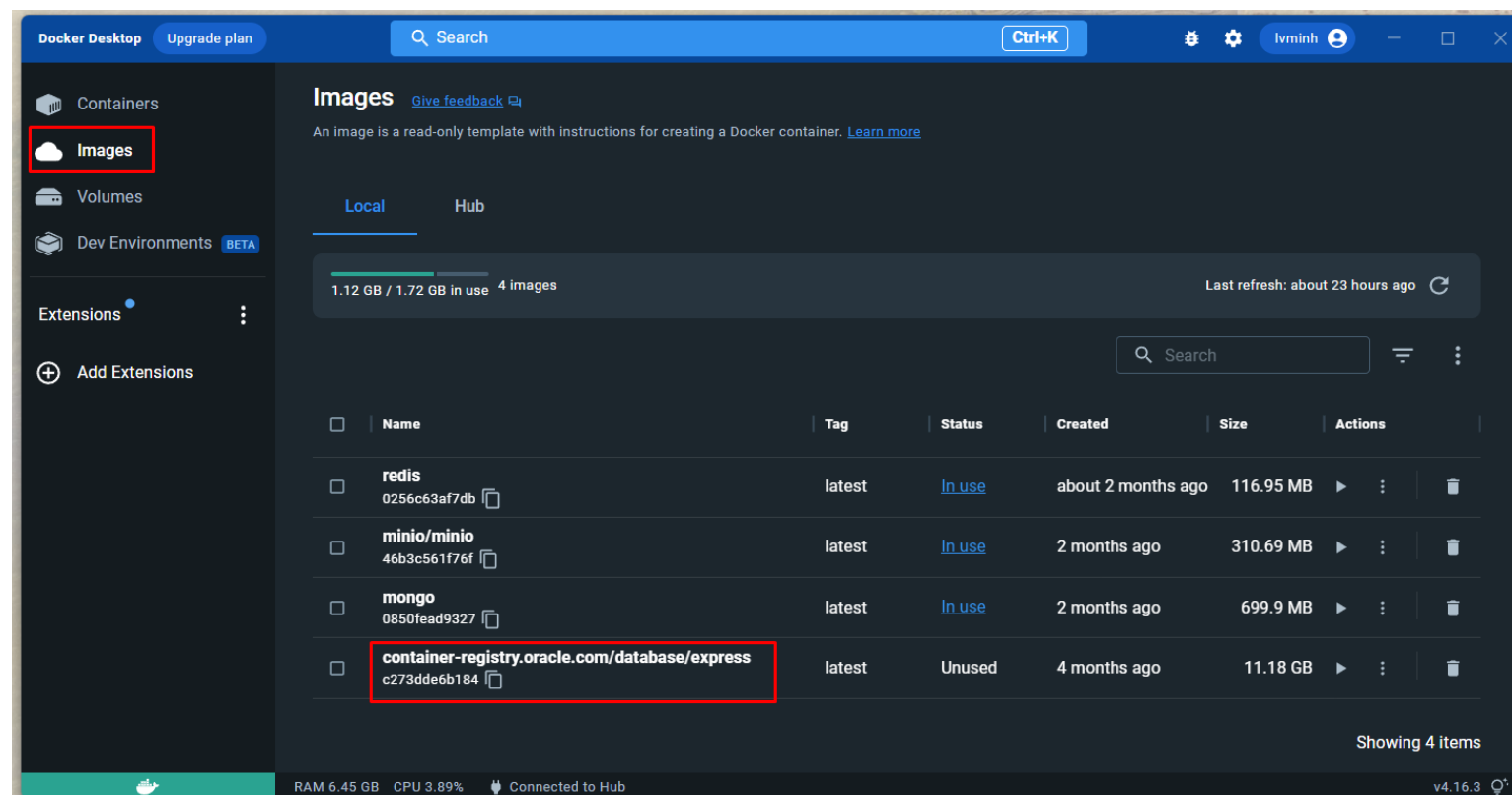
ORACLE CONTAINER REGISTRY

[HTTPS://CONTAINER-REGISTRY.ORACLE.COM/ORDS/F?P=113](https://container-registry.oracle.com/ords/f?p=113)

TERMINAL COMMANDS

1. Download Oracle Express 21c Images:

```
$ docker pull container-registry.oracle.com/database/express:latest
```



TERMINAL COMMANDS

2. Create & run the container:

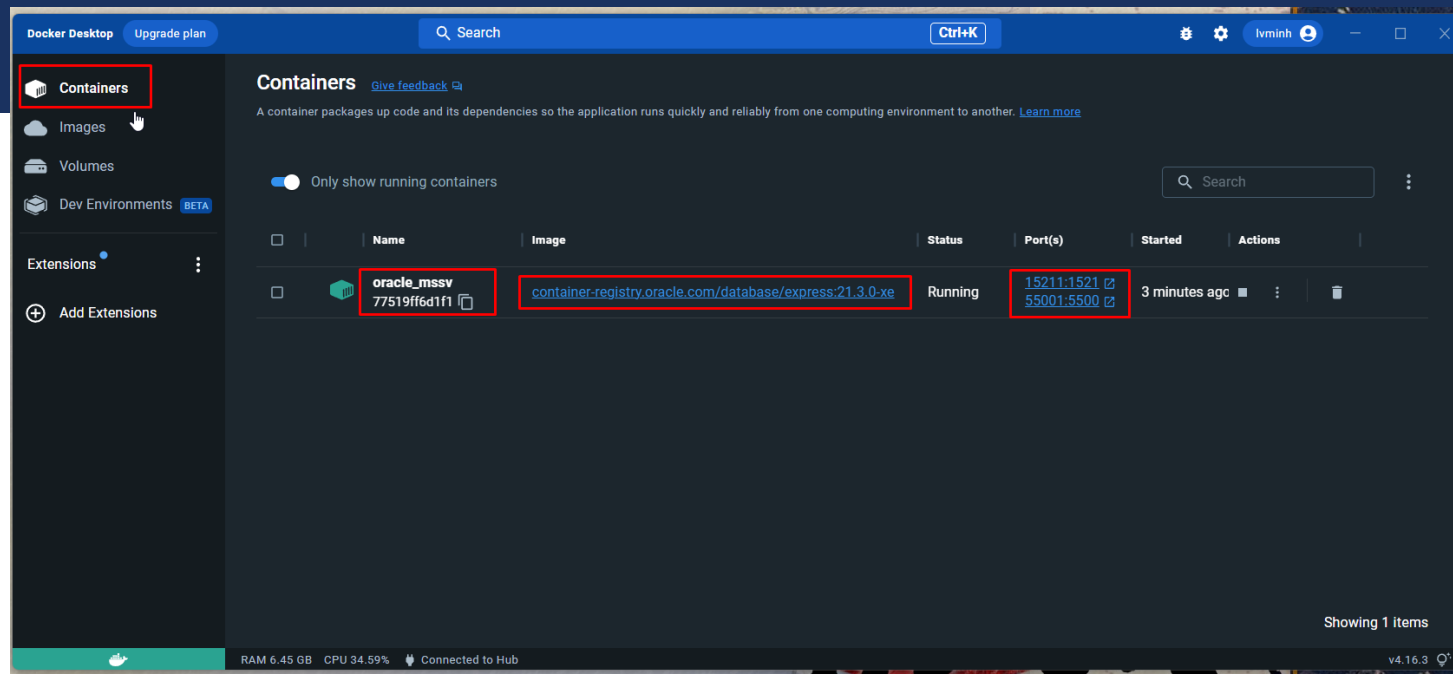
```
$ docker run -d --name <container name> \  
-p <host port>:1521 \  
-p <host port>:5500 \  
-e ORACLE_PWD=<your database passwords> \  
-e ORACLE_CHARACTERSET=<your character set> \  
-v [<host mount point>:]/opt/oracle/oradata \  
container-registry.oracle.com/database/express:21.3.0-xe
```

PARAMETERS:

- **--name:** The name of the container (default: auto generated)
- **-p:** The port mapping of the host port to the container port. Two ports are exposed: 1521 (Oracle Listener), 5500 (EM Express)
- **-e ORACLE_PWD:** The Oracle Database SYS, SYSTEM and PDB_ADMIN password (default: auto generated)
- **-e ORACLE_CHARACTERSET:** The character set to use when creating the database (default: AL32UTF8)
- **-v /opt/oracle/oradata**
 - The data volume to use for the database.
 - Has to be writable by the Unix "oracle" (uid: 54321) user inside the container!
 - If omitted the database will not be persisted over container recreation.
- **-v /opt/oracle/scripts/startup | /docker-entrypoint-initdb.d/startup**
 - Optional: A volume with custom scripts to be run after database startup.
 - For further details see the "Running scripts after setup and on startup" section below.
- **-v /opt/oracle/scripts/setup | /docker-entrypoint-initdb.d/setup**
 - Optional: A volume with custom scripts to be run after database setup.
 - For further details see the "Running scripts after setup and on startup" section below.

EXAMPLE

```
$ docker run -d --name oracle_mssv \  
-p 15211:1521 \  
-p 55001:5500 \  
-e ORACLE_PWD=1234567890 \  
-v d:/local/oracledb:/opt/oracle/oradata \  
container-registry.oracle.com/database/express:21.3.0-xe
```



NOTES

- **ORACLE_PWD:** This parameter modifies the password for the SYS, SYSTEM and PDBADMIN users. This parameter is optional, and the default value is randomly generated. Note: If you use this option, then the password will be visible as a container environment variable, and cannot be changed later on.
- **ORACLE_CHARACTERSET:** This parameter modifies the character set of the database. This parameter is optional, and the default value is set to AL32UTF8. Please Note that, this parameter will set the character set only when a new database is created i.e. a host system directory is mounted using -v option while running the image (Please refer to Mounting Docker volume/host directory for database persistence section).
- **Podman Secret Support:** This option is supported only when the Podman runtime is being used to run the Oracle Database 21c XE container image. Secret is a utility to pass secure strings of text to the container, such as ssh-keys, or passwords. To specify the password for SYS, SYSTEM and PDBADMIN users securely, create a secret named oracle_pwd. The command is as follows:

```
echo "<Your Password>" | podman secret create oracle_pwd -
```

After you create the secret, you open the container securely by using the following command:

```
podman run --name=<container_name> --secret=oracle_pwd container-registry.oracle.com/database/express:21.3.0-xe
```

NOTES

Mounting Docker volume/host directory for database persistence: To obtain database persistence, either a named Docker volume or a host system directory can be mounted at the location `/opt/oracle/oradata` inside the container. The difference between these two options are as follows:

1. If a **Docker volume** is mounted on the `/opt/oracle/oradata` location, then the volume is prepopulated with the data files already present in the image. In this case, the startup will be very fast, similar to starting the image without mount. These data files exist in the image to enable quick startup of the database. To use a Docker volume for the data volume, run the following:

```
$ docker run -d --name <oracle-db> -v  
<OracleDBData>:/opt/oracle/oradata  
container-registry.oracle.com/database/express:21.3.0-xe
```

2. If a **host system directory** is mounted on the `/opt/oracle/oradata` location, then the data files already present at this location will be overwritten, and a new database setup will begin. It takes a significant amount of time (approximately 15 minutes) to set up a fresh database. To use a directory on the host system for the data volume, run the following:

```
$ docker run -d --name <oracle-db> -v  
<writable_directory_path>:/opt/oracle/oradata  
container-registry.oracle.com/database/express:21.3.0-xe
```

NOTES

Changing the Default Password for SYS User

- On the first startup of the container, a random password is generated for the database if a password is not provided by using the -e option.
- To change the password for these accounts, use the docker exec command, to run the ***setPassword.sh*** script that is found in the container. Note that the container must be running before you run the script.

- For example:

```
$ docker exec <oracle-db> ./setPassword.sh <your_password>
```

NOTES

Database Alert Logs

- You can access the database alert log by using the following command, where <oracle-db> is the name of the container:

```
$ docker logs <oracle-db>
```

Oracle Enterprise Manager Express

- The Oracle XE Database inside the container also has Oracle Enterprise Manager (OEM) Express configured. To access OEM Express, start your browser, and enter the OEM URL:
<https://localhost:5500/em/>

NOTES

Connecting to the Oracle XE Database Server Container

- After the Oracle Database server indicates that the container has started, and the STATUS field shows (healthy), client applications can connect to the database.

NOTES

Connecting from **Within** the Container

- You can connect to the Oracle Database server by running a SQL*Plus command from within the container using one of the following commands:

```
$ docker exec -it <oracle-db> sqlplus / as sysdba
```

```
$ docker exec -it <oracle-db> sqlplus sys/<your_password>@XE as sysdba
```

```
$ docker exec -it <oracle-db> sqlplus system/<your_password>@XE
```

```
$ docker exec -it <oracle-db> sqlplus pdbadmin/<your_password>@XEPDB1
```

NOTES

Connecting from Outside the Container

- By default, Oracle Database exposes port 1521 for Oracle client connections, using Oracle's SQL*Net protocol. SQL*Plus or any Oracle Java Database Connectivity (JDBC) client can be used to connect to the database server from outside of the container. To connect from outside of the container, start the container with the -p option, as described in the detailed Docker run command in the "Custom Configurations" section.
- Discover the mapped port by running the following command:

```
$ docker port <oracle-db>
```
- To connect from outside of the container using SQL*Plus, run the following commands:
 - # To connect to the database at the CDB\$ROOT level as sysdba:

```
$ sqlplus sys/<your password>@//localhost:1521/XE as sysdba
```
 - # To connect as non sysdba at the CDB\$ROOT level:

```
$ sqlplus system/<your password>@//localhost:1521/XE
```
 - # To connect to the default Pluggable Database (PDB) within the XE Database:

```
$ sqlplus pdbadmin/<your password>@//localhost:1521/XEPDB1
```

FROM ORACLE

ORACLE SQL DEVELOPER





Database / SQL Developer / SQL Developer Downloads		
SQL Developer 22.2.1 Downloads		
Version 22.2.1.234.1810 - September 12, 2022		
<ul style="list-style-type: none"> Release Notes Documentation 		
Platform	Download	Notes
Windows 64-bit with JDK 11 included	Download (444 MB)	<ul style="list-style-type: none"> MD5: c917657ae52a31af66b3cd16f100cf56 SHA1: 9da2147bcd8a8fab4bba985ffd1d9087be16b6 Installation Notes
Windows 32-bit/64-bit	Download (490 MB)	<ul style="list-style-type: none"> MD5: 92fe45220660c178ad8656c43ea6e9e2 SHA1: b0a6e46b314bb5f976b42564c361d589cc2795a9 Installation Notes JDK 11 required
Mac OSX with JDK 11 included	Download (448 MB)	<ul style="list-style-type: none"> MD5: 24a9959888da36737768a180f351653e SHA1: 757d2adc1bdf04cc419a5cbf31d11e3cfe2a5295 Installation Notes

ORACLE SQL DEVELOPER V.22.21 (2023)

DOWNLOAD:

<https://www.oracle.com/database/sqldeveloper/technologies/download/>



INSTALLATION NOTES

Windows Installation Notes

There are two downloads available for Windows users.

Windows 64-bit with JDK 11 Included

This archive includes both SQL Developer and an embedded copy of the Java 11 Development Kit (JDK). Simply extract the zip to a fresh directory and run the sqldeveloper.exe in the top directory. The EXE is configured to run the embedded JDK by default.

Note: the Windows EXE requires a MSVCR100.dll to run. Most computers will already have this file and in the Windows PATH. However, if the first copy of the file found by the EXE is a 32-bit copy of the DLL, then SQL Developer will fail to start. You can fix this by copying a 64-bit version of the DLL into the BIN directory or updating your OS PATH such that a 64 bit copy of the DLL is found first.

Mac OS X and ARM64 Installation Notes

This download includes the Oracle JDK. SQL Developer supports Oracle JDK 11.

To install and run

- Download the file for OS X or ARM64 on the Downloads page
- Extract zip file
- Run application



Connections

- Oracle Connections
- Oracle Minh
- Oracle NoSQL Connections
- Database Schema Service Connections

Reports

- All Reports
- Analytic View Reports
- Data Dictionary Reports
- Data Modeler Reports
- OLAP Reports
- TimesTen Reports
- User Defined Reports

Welcome Page



Version: 19.4.0.354.1759

Database Connection

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Oracle Minh

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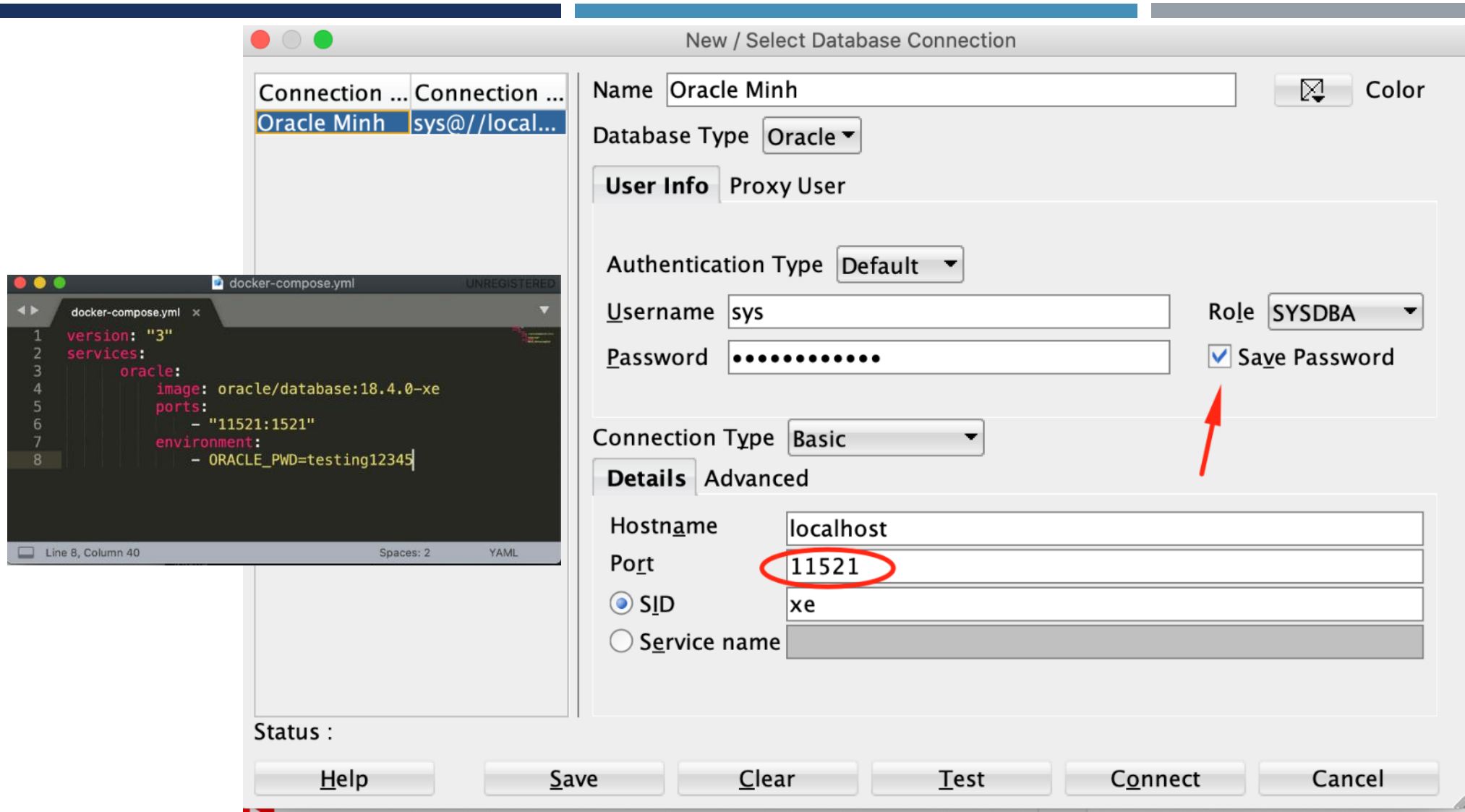
Related Tools

[Modeler](#) - Data modeling and database design [SQLcl](#) - The power of SQL Developer in a CLI [Oracle Live SQL](#) - Learn and share SQL, for free. [ORDS](#) - REST Enable the Oracle Database

Feature Screenshots

The SQL Worksheet allows you to run queries and scripts, and offers a code insight feature to help you auto-complete your code.





New / Select Database Connection

Connection ...	Connection ...
Oracle Minh	sys@//local...

Name ☐ Color

Database Type

User Info Proxy User

Authentication Type

Username Role

Password ☒ Save Password

Connection Type

Details Advanced

Hostname

Port

☒ SID

☐ Service name

Status: **Success**



Q&A



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