how to install oracle database on ubuntu wsl

Installing Oracle Database on Ubuntu running under Windows Subsystem for Linux (WSL) can be a bit tricky because Oracle Database is traditionally designed to run on Unix-like systems like Oracle Linux, Red Hat, or Solaris. WSL (specifically WSL 2) brings a closer experience to a real Linux kernel, but it still has some limitations.

Here’s a step-by-step guide to install Oracle Database on Ubuntu WSL, using Oracle Database Express Edition (XE), which is a lightweight version of the Oracle database suitable for development and learning purposes.

**1. Prerequisites**

* **WSL 2:** Make sure you have WSL 2 installed. You can check your WSL version using:

bash

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wsl --list --verbose

If you're using WSL 1, upgrade to WSL 2 by following the [official guide](https://docs.microsoft.com/windows/wsl/install).

* **Update and Upgrade Ubuntu** Open your WSL terminal and update your system:

bash

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sudo apt update && sudo apt upgrade -y

**2. Download Oracle XE Docker Image**

Since Oracle officially does not support Ubuntu for direct installation, the easiest way to get it running is to use Docker. We'll use an Oracle Database XE image available in Docker containers.

1. **Install Docker on Ubuntu WSL**

To install Docker on WSL, run the following commands:

bash

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sudo apt install -y 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 -y docker-ce

1. **Configure Docker to work with WSL**
   * Set up Docker to run without sudo:

bash

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sudo usermod -aG docker $USER

* + Restart your WSL session to apply changes:

bash

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exit

1. Then open WSL again.
   * Start the Docker service:

bash

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sudo service docker start

1. **Pull the Oracle XE Docker Image** Pull the Oracle XE Docker image using:

bash

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docker pull gvenzl/oracle-xe

**3. Running Oracle Database XE**

1. **Run the Oracle XE Container** Start the container with the following command:

bash

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docker run -d --name oracle-xe -p 1521:1521 -p 5500:5500 -e ORACLE\_PASSWORD=YourPasswordHere gvenzl/oracle-xe

* + Replace YourPasswordHere with a secure password of your choice.
  + This command runs the Oracle XE database on port 1521 (database port) and 5500 (Enterprise Manager port).

1. **Verify the Running Container** Check if the container is running:

bash

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docker ps

You should see the Oracle XE container listed.

**4. Connecting to Oracle Database**

* **Connect using SQL\*Plus or Other Clients**

To connect using SQL\*Plus from within the Docker container:

bash

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docker exec -it oracle-xe sqlplus system/YourPasswordHere@localhost/XEPDB1

Alternatively, you can use a graphical client like Oracle SQL Developer from your Windows environment. Connect using the following details:

* + **Hostname:** localhost
  + **Port:** 1521
  + **Service name:** XEPDB1
  + **Username:** system
  + **Password:** YourPasswordHere

**5. Post-Installation Tips**

* **Auto-start Docker on WSL:** To make sure Docker starts automatically with WSL, you can add the following to your ~/.profile or ~/.bashrc file:

bash

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sudo service docker start

* **Container Management:** You can stop, start, or remove the Oracle container using:

bash

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docker stop oracle-xe

docker start oracle-xe

docker rm oracle-xe

**6. Configuring WSL Network (if needed)**

Occasionally, Docker containers in WSL might face network-related issues. If that's the case, you can manage networking using the docker commands or by ensuring that Docker Desktop (if installed) has proper integration with WSL 2.

**Additional Notes**

* **Resource Usage:** Make sure your WSL 2 environment has enough memory and CPU allocated for running Oracle Database. You can configure this by creating a .wslconfig file in your Windows home directory (C:\Users\<YourUsername>\) with suitable resource limits:

ini

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[wsl2]

memory=8GB # Maximum amount of memory

processors=4 # Number of processors

This method using Docker simplifies the installation process, and it’s also a cleaner way to manage dependencies, which can be tricky on WSL.

how to install graphical client ? "you can use a graphical client like Oracle SQL Developer from your Windows environment."

To install a graphical client like **Oracle SQL Developer** on your Windows environment, follow these steps:

**Step 1: Download Oracle SQL Developer**

1. Go to the [Oracle SQL Developer download page](https://www.oracle.com/tools/downloads/sqldev-downloads.html).
2. Download the version that says **"Windows with JDK included"** (if you don't have Java already installed). If you have Java installed, you can download the version without the JDK.

**Step 2: Extract and Install SQL Developer**

Oracle SQL Developer does not require an installer; it's simply a ZIP file that needs to be extracted.

1. **Extract the ZIP file:** Unzip the downloaded file to a location on your computer (like C:\Program Files\Oracle\SQLDeveloper).
2. **Run SQL Developer:** Navigate to the extracted folder and double-click on sqldeveloper.exe (or sqldeveloper if the file extensions are hidden). This will launch the application.

**Step 3: Initial Setup**

1. **Set the Java Path (if needed):** If you didn't download the version with the JDK included, SQL Developer might prompt you to provide the path to your Java Development Kit (JDK). You can download the JDK from [Oracle's website](https://www.oracle.com/java/technologies/javase-downloads.html) if you don't have it installed.
2. **Accept Oracle License Agreement:** You may be asked to accept the Oracle license agreement when running SQL Developer for the first time.

**Step 4: Connect to the Oracle Database on WSL**

1. **Create a New Database Connection:**
   * Click on the **"New Connection"** button or go to **File > New**.
   * In the **New / Select Database Connection** window, fill in the following details:
     + **Connection Name:** Any name you like (e.g., WSL-OracleDB).
     + **Username:** system
     + **Password:** The password you set when you started the Oracle Docker container.
     + **Hostname:** localhost
     + **Port:** 1521
     + **Service name:** XEPDB1
   * Click on the **Test** button to check the connection. If everything is correct, you should see a message saying Success.
2. **Save and Connect:**
   * Once the connection is successful, click on the **Connect** button.
   * SQL Developer will now open a new tab where you can start running SQL queries and manage your Oracle database.

**Additional Tips**

* **Firewall Settings:** Make sure that Windows Firewall or any other security software on your system is not blocking the ports that the Oracle database is using (1521).
* **Docker Setup:** Ensure that your Docker container running Oracle is up and running before trying to connect from SQL Developer.

**Alternative Graphical Clients**

In case you prefer another tool, here are a few alternative database clients that also work well with Oracle databases:

* **DBeaver**: A free and open-source database tool that supports multiple databases, including Oracle.
  + Download from <https://dbeaver.io/>
* **HeidiSQL**: Mostly used for MySQL but also supports Oracle through ODBC connections.
  + Download from <https://www.heidisql.com/>

These tools are more lightweight compared to SQL Developer and can be easier to set up for basic database management tasks.