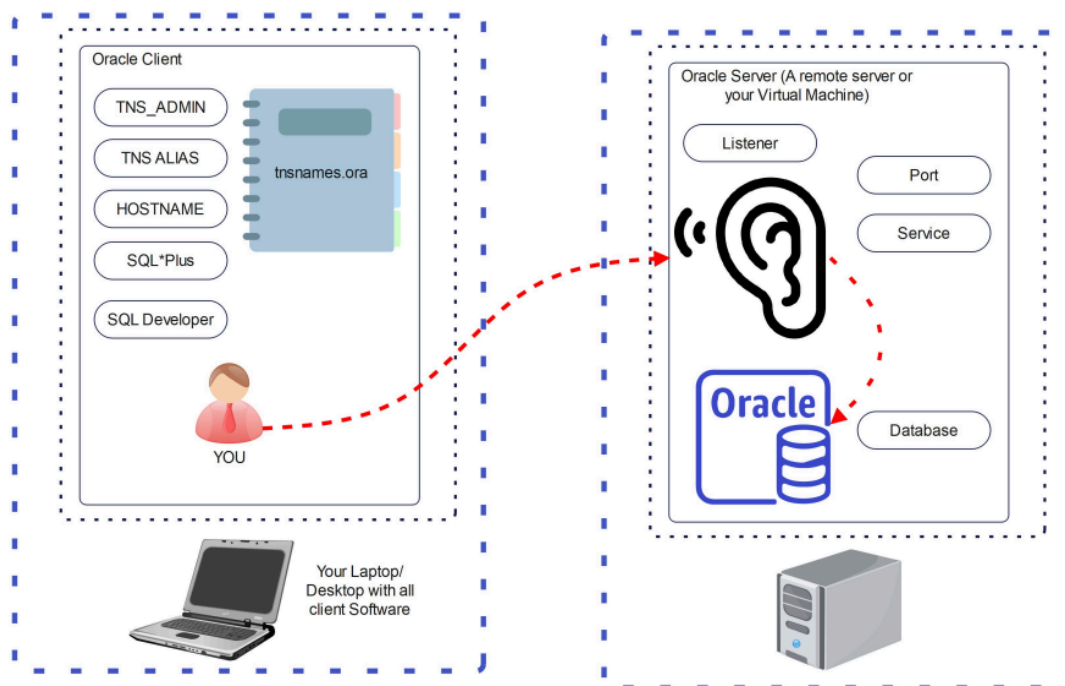# Step-by-Step Tutorial: Setting Up Oracle VirtualBox VM for SQL*Plus and SQL Developer

Before you begin, review the diagram below. It shows how your laptop connects to the Oracle Database running inside the VirtualBox virtual machine.

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1. Understanding the Oracle VirtualBox VM Template

The Oracle VirtualBox VM template represents the **database layer** of your environment.

→ It contains the **Oracle Database**
→ The database runs inside **PDB1**
→ This is the database you will connect to from your laptop

2. Starting the Database and Listener

To connect using **SQL*Plus** or **SQL Developer**, the listener and database must be running.

Step 1: Log in to the Virtual Machine

Use the following credentials:

→ **Username:** `oracle`
→ **Password:** `alunoudemy`

Step 2: Start the Listener

Run the command below:

lsnrctl start

Step 3: Start the Database

⚠️ This must be done while logged in as the **oracle** user.

sqlplus / as sysdba
startup

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3. Finding the Virtual Machine IP Address

Once the database is running, retrieve the VM's IP address:

ip address

→ Write down the **primary IP address**
→ It should be in the same network range as your laptop
→ This allows direct connectivity without port forwarding

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4. Configuring the Connection

To connect successfully, make sure the following are in place:

→ The VM IP address is added to the `tnsnames.ora` file
→ The **listener** is running
→ The **database** is started

These steps ensure that SQL tools can locate and connect to the database.

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5. Connecting with SQL*Plus and SQL Developer

Opening SQL Developer

You can open SQL Developer in one of the following ways:

Option 1: Manually

→ Navigate to the SQL Developer installation folder
→ Double-click `sqldeveloper.exe`

Option 2: Using the Command Line

→ Add the SQL Developer folder to your **PATH** environment variable
→ Launch it by typing:

sqldeveloper.exe

Connecting Using SQL*Plus

The **PDB1** database includes the **HR schema**, which is used throughout the training.

To connect:

sqlplus hr/hr@pdb1

Avoiding the SQL*Plus Username Prompt

If you prefer to start SQL*Plus without being prompted for credentials:

sqlplus /nolog

Then connect manually:

connect hr/hr@pdb1

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6. Important Notes

→ Every time you **shut down the virtual machine**, the **listener** and **database** stop
→ After restarting the VM, you must:

- Start the listener
- Start the database again

You're now ready to connect to Oracle using SQL*Plus and SQL Developer.
If you have any questions, feel free to ask 😊