**User Guide: Setting Up and Running XPerience Server on Ubuntu VM**

This guide assumes that:

* You have Ubuntu VM installed and running inside Oracle VirtualBox.
* You have the following files I provided inside a folder:
  + DonaBase.jar (Database library)
  + MySQLJDBC.jar (MySQL JDBC Connector)
  + The xperience package containing:
    - Event.java
    - XPerienceServer.java
    - XPerienceServerDB.java
    - XPerienceTestClient.java
  + event.sql (Database setup script)

**Setting Up a Shared Folder in Ubuntu VM**

To access project files from your host machine inside Ubuntu VM:

Step 1: Create the Shared Folder

1. Shutdown your Ubuntu VM
2. In VirtualBox, go to Settings > Shared Folders
3. Click Add Folder (+) and choose the folder containing your project files.
4. Check Auto-mount and Make Permanent.
5. Start the Ubuntu VM.

Step 2: Mount the Shared Folder in Ubuntu

1. Open a terminal in Ubuntu VM.
2. Add your user to the vboxsf group (only needed once):

“sudo usermod -aG vboxsf $USER”

1. Restart the VM for changes to apply:

“sudo reboot”

1. Navigate to the shared folder inside Ubuntu:

“cd /media/sf\_<SharedFolderName>”

Replace <SharedFolderName> with the actual name of your shared folder.

**Installing MySQL (If Not Installed)**

**Step 1: Install MySQL Server**

If MySQL is not installed, run:

“sudo apt update”

“sudo apt install mysql-server -y”

**Step 2: Start and Enable MySQL**

“sudo systemctl start mysql”

“sudo systemctl enable mysql”

**Step 3: Check MySQL Status**

“sudo systemctl status mysql”

You should see "active (running)".

**Configuring MySQL for Remote Access**

By default, MySQL only allows connections from 127.0.0.1. Change this to allow connections from anywhere.

Step 1: Edit MySQL Configuration

“sudo nano /etc/mysql/mysql.conf.d/mysqld.cnf”

Find this line:

bind-address = 127.0.0.1

Change it to:

bind-address = 0.0.0.0

Save the file (CTRL + X, then Y, then ENTER).

**Step 2: Restart MySQL**

“sudo systemctl restart mysql”

**Creating the Database Using event.sql**

**Step 1: Navigate to the Shared Folder**

“cd /media/sf\_<SharedFolderName>”

**Step 2: Run the SQL Script**

“mysql -u root -p < event.sql”

Enter the root password when prompted.

**Step 3: Verify the Database**

“mysql -u root -p”

Then run:

“SHOW DATABASES;

USE xperience\_db;

SHOW TABLES;

SELECT \* FROM Event;”

If you see the Event table with the sample row, MySQL is correctly set up!

**Compiling the Java Files (I have already compiled. You will need to compile again after changing the value of “dbServer” inside the “XPerienceServerDB” class)**

Navigate to the xperience package directory:

“cd /media/sf\_<SharedFolderName>/xperience”

**Step 1: Compile All Java Files**

“javac -d . -cp .:../DonaBase.jar:../MySQLJDBC.jar \*.java”

This compiles all Java files and keeps them inside the xperience package.

**Running the XPerience Servers**

Run the In-Memory Version (XPerienceServer.java)

“java -cp .:../DonaBase.jar:../MySQLJDBC.jar xperience.XPerienceServer 5555”

Expected Output:

INFO: XPerience Server (In-Memory) started on port 5555

Run the Database-Backed Version (XPerienceServerDB.java)

“java -cp .:../DonaBase.jar:../MySQLJDBC.jar xperience.XPerienceServerDB 5556”

**Testing the Program (Using Two Terminals)**

Step 1: Open a Second Terminal

1. Keep the server running in one terminal.
2. Open a new terminal and navigate to the xperience directory:

“cd /media/sf\_<SharedFolderName>/xperience”

Step 2: Run the Test Client for In-Memory Server

“java -cp .:../DonaBase.jar:../MySQLJDBC.jar xperience.XPerienceTestClient 127.0.0.1 5555”

Step 3: Run the Test Client for Database-Backed Server

“java -cp .:../DonaBase.jar:../MySQLJDBC.jar xperience.XPerienceTestClient <VM\_IP> 5556”

Replace <VM\_IP> with your actual Ubuntu VM IP.