Install and Configure MySQL

MySQL will serve as the database management system for the LAMP stack. It stores and organizes data, allowing PHP scripts to query and deliver dynamic content through Apache. During installation steps, when prompted for sudo password enter your root password.

1. Install MySQL

    a. Type the following command and press enter to install MySQL:

    ```
    sudo apt install mysql-server -y
    ```

    This installs the MySQL server package and sets up the service.

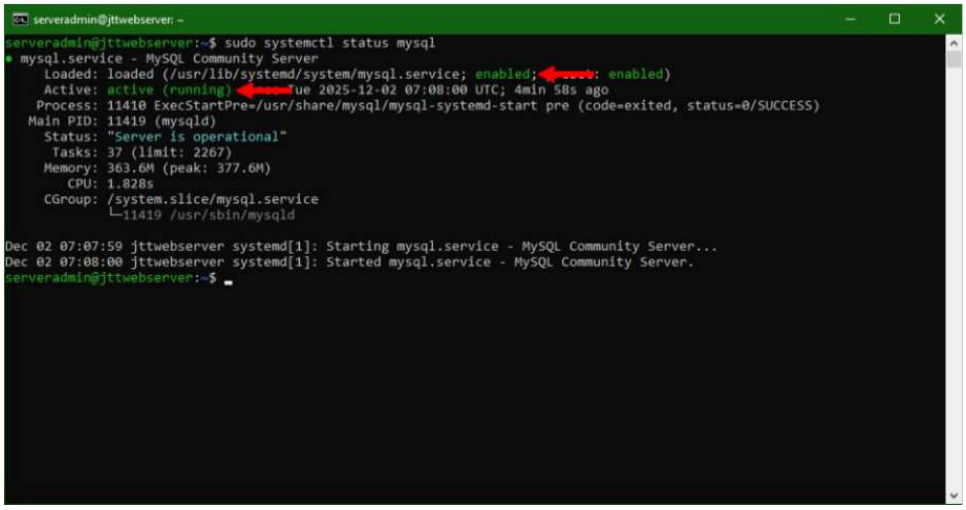
    b. Verify the MySQL service is enabled and running by typing the following command and pressing enter:

    ```
    sudo systemctl status mysql
    ```

    Just like with Apache, you should see “enabled” and “active (running)” in the output. If not, type the following commands and press enter after each line:

    ```
    sudo systemctl start mysql
    sudo systemctl enable mysql
    ```

    Check the status again to ensure the service is enabled and running.



2. Configure MySQL

    a. First, we need to login to MySQL. Type the following command and press enter to access the MySQL shell:

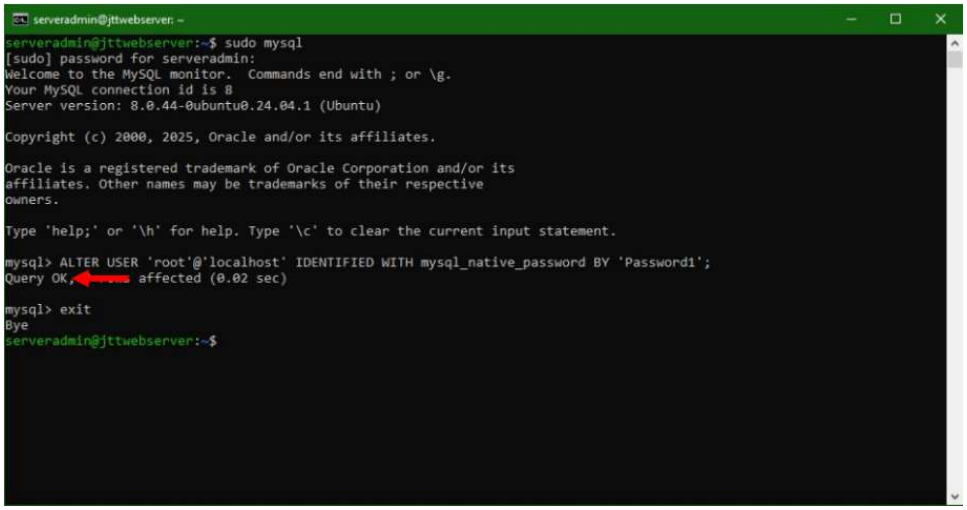
    ```
    sudo mysql
    ```

    You will notice that your command line now starts with mysql>.

    b. Now, we are going to set our root account password for MySQL. Type the following query to set the root account password and press enter:

    ```
    ALTER USER ‘root’@’localhost’ IDENTIFIED WITH mysql_native_password ‘Password1’;
    ```

    Ensure you use the single quotes and put the semi colon at the end to ensure proper syntax for executing MySQL queries. You should see “Query OK” in the output. Type exit and press enter to get out of MySQL.



3. Secure MySQL

    a. MySQL includes a security configuration script to help secure the database server from common vulnerabilities. Let’s go ahead and run this script by typing the following command and pressing enter:

    ```
    sudo mysql_secure_installation
    ```

    The script will guide you through a series of prompts:

1) Enter password for user root: (Type the password we created in the MySQL query earlier and press enter)

2) VALIDATE PASSWORD COMPONENT: (Type y and press enter)

3) You will see 3 different settings for the password policy that sets the level of password strength required for users. We want our server to be as secure as possible so let's type 2 and press enter.

4) You will now be asked if you want to change the user root password. Type either y for yes or press any other key for no and press enter. If you decide to change the password, follow the prompts on the screen.

5) Remove anonymous users: Type y and press enter.

6) Disallow root login remotely: Type y and press enter.

7) Remove test database: Type y and press enter.

8) Reload privilege tables: Type y and press enter.

b. Test access to MySQL using the following command and pressing enter:

```
sudo mysql -u root -p
```

Remember, your sudo password and user root password for MySQL are 2 different things, so be sure not to get them confused when accessing MySQL as you will more than likely be prompted to enter both passwords. You should see the command line changed to mysql> indicating successful login. Type exit and press enter to exit MySQL. Now we are ready to move on to the PHP layer of the stack.