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Lesson 01 Demo 01

Setting up Basic Infrastructure Monitoring Using Zabbix

Objective: To set up basic infrastructure monitoring using the open-source monitoring tool Zabbix for tracking server performance, network devices, and application status across your IT environment

Tools required: Linux operating system

Prerequisites: Basic understanding of Linux shell commands

Steps to be followed:

1. Install Zabbix packages
2. Install the database
3. Create an initial database
4. Configure the database for the Zabbix server
5. Start Zabbix and Apache servers
6. Configure and explore the Zabbix Console

Step 1: Install Zabbix packages

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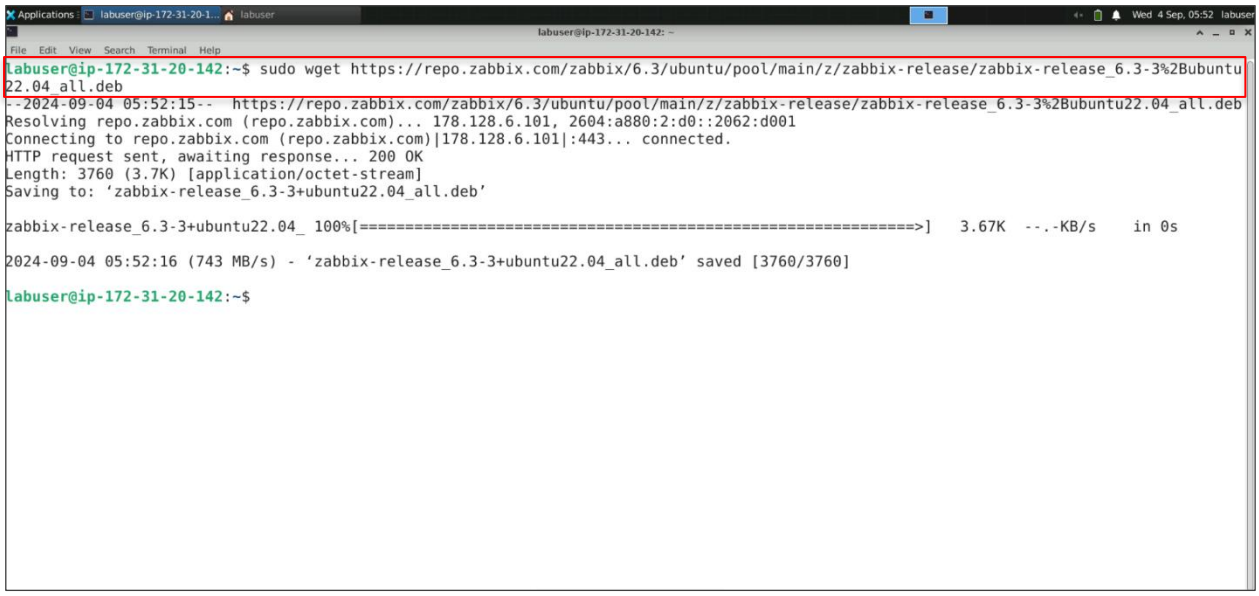
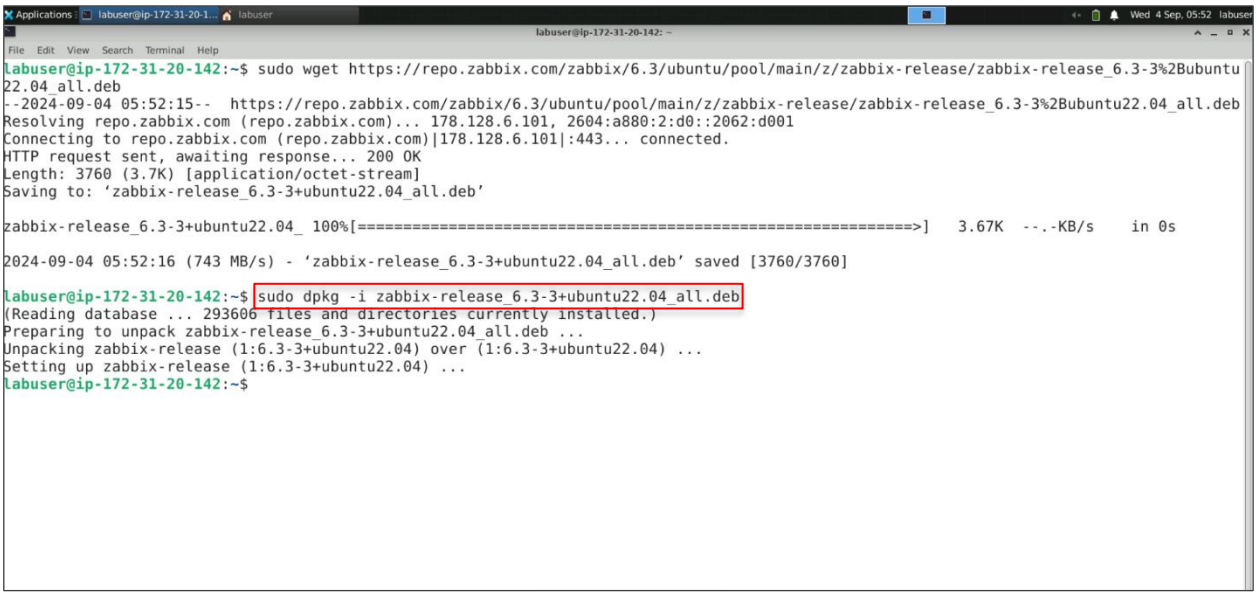
1.1 Open the terminal on the Ubuntu system and run the following command to download the Zabbix repository package:
sudo wget https://repo.zabbix.com/zabbix/6.3/ubuntu/pool/main/z/zabbix-release/zabbix-release_6.3-3%2Bubuntu22.04_all.deb



1.2 Run the following command to install the downloaded package:
sudo dpkg -i zabbix-release_6.3-3+ubuntu22.04_all.deb



1.3 Update the package lists on the system to recognize the newly added Zabbix repository by executing the following command:

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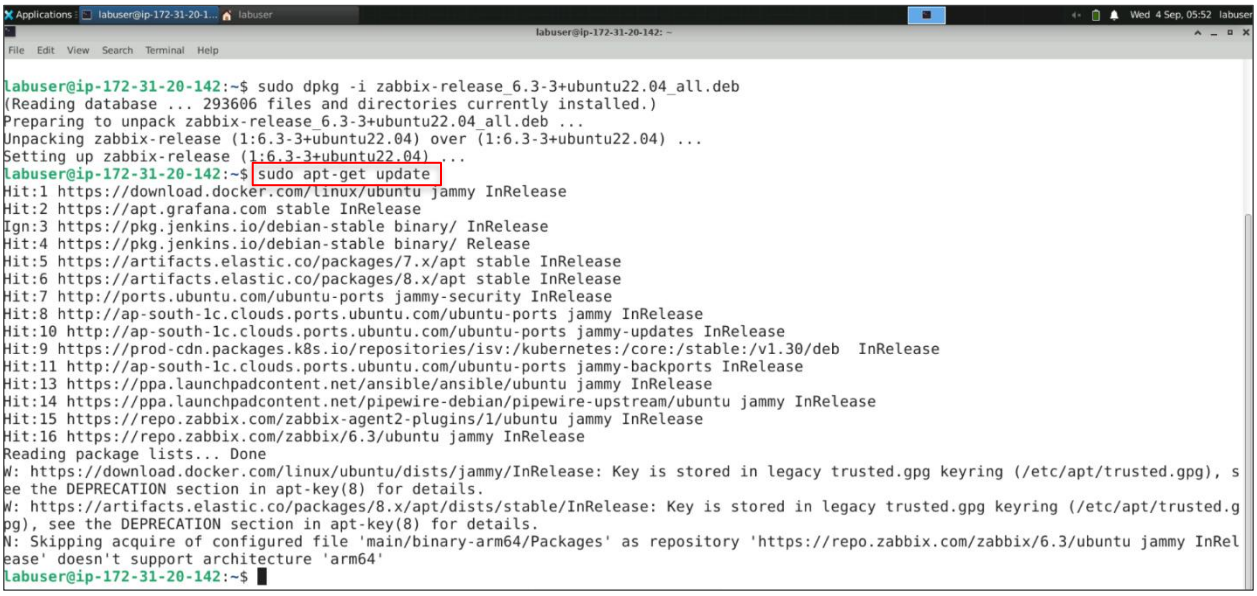
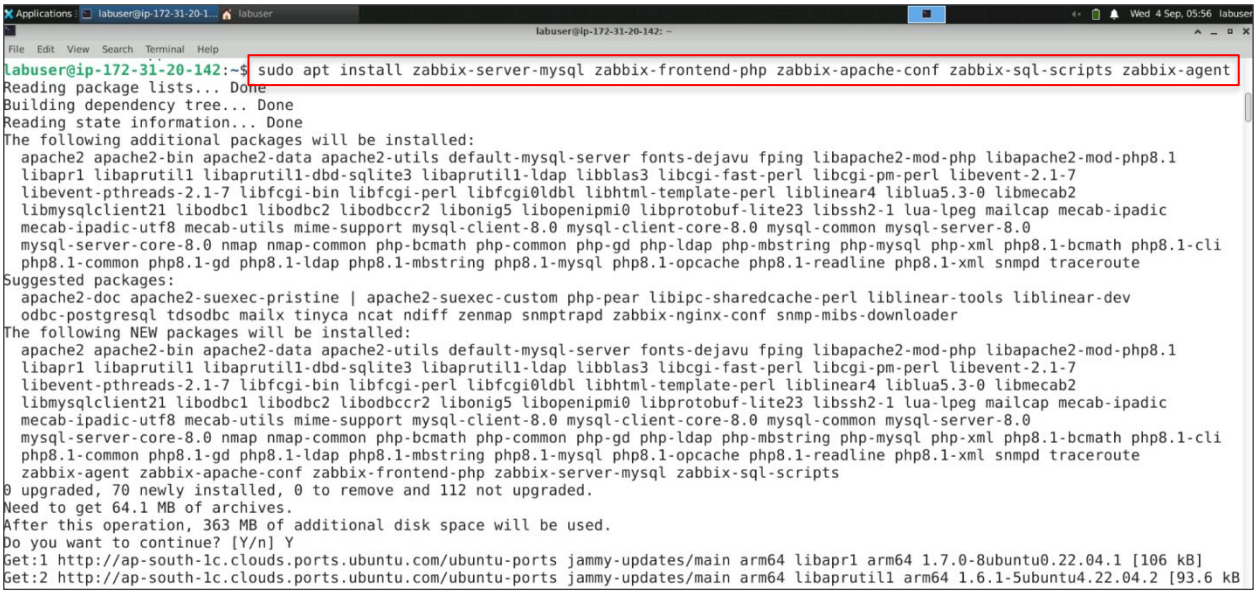
sudo apt-get update



1.4 Execute the following command to install the Zabbix server and its related components:
sudo apt install zabbix-server-mysql zabbix-frontend-php zabbix-apache-conf zabbix-sql-scripts zabbix-agent



Step 2: Install the database

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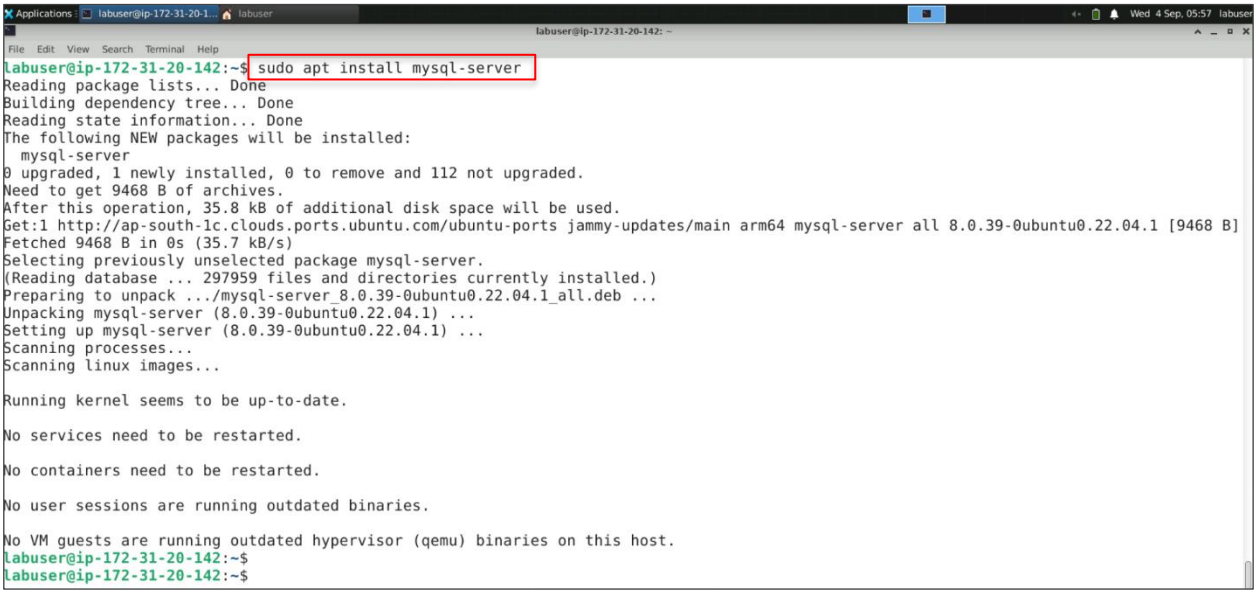
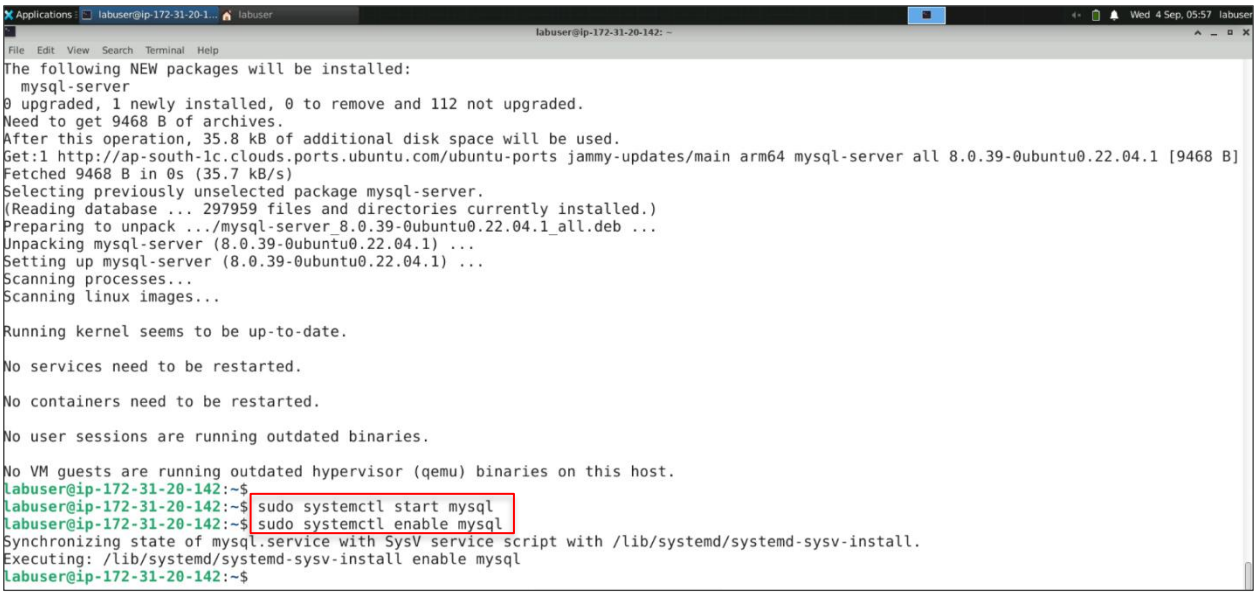
2.1 Run the following command to install the MySQL server package:
sudo apt install mysql-server



2.2 Execute the following commands to start and enable the MySQL services:
sudo systemctl start mysql
sudo systemctl enable mysql



Step 3: Create an initial database

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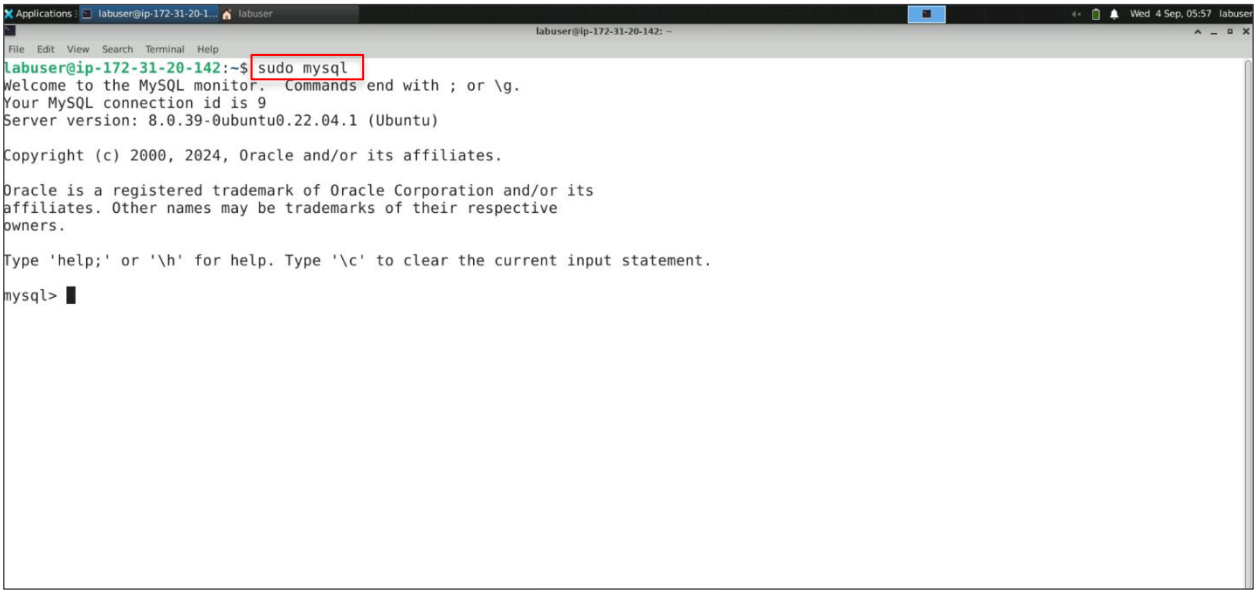
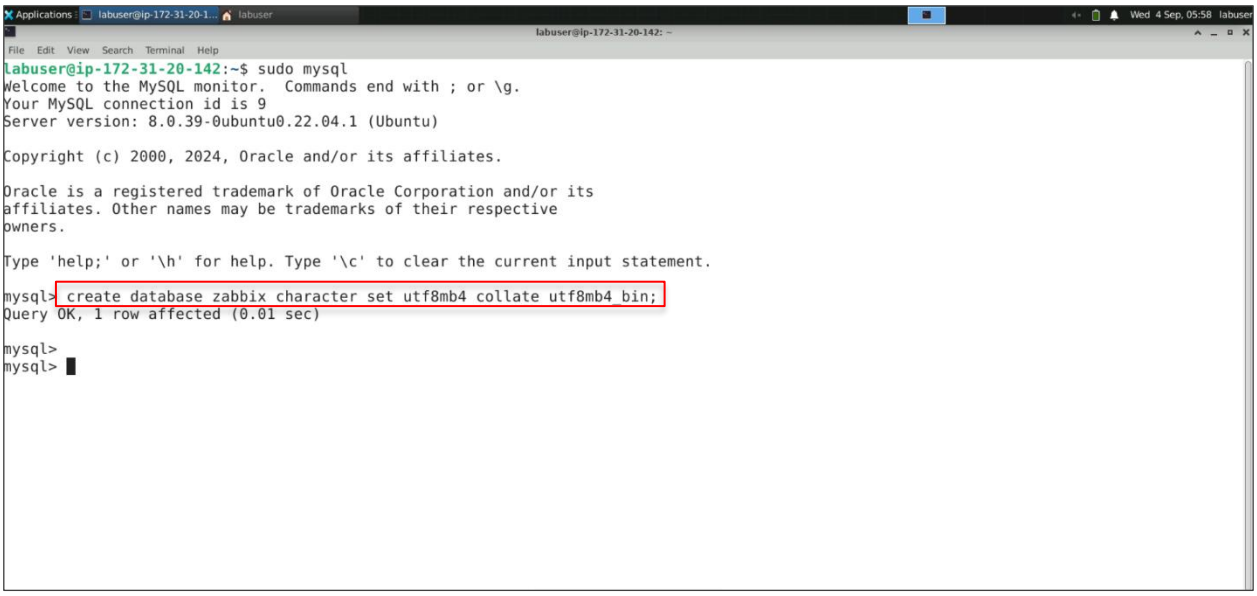
3.1 Run the following command in the terminal to switch to the MySQL database:
sudo mysql



3.2 Execute the following command to create a new database named Zabbix with the **utf8mb4** character set and **utf8mb4_bin** collation:
create database zabbix character set utf8mb4 collate utf8mb4_bin;



3.3 Create a new MySQL user named **zabbix** with access only from localhost and set the password to **pass123** using the following command:

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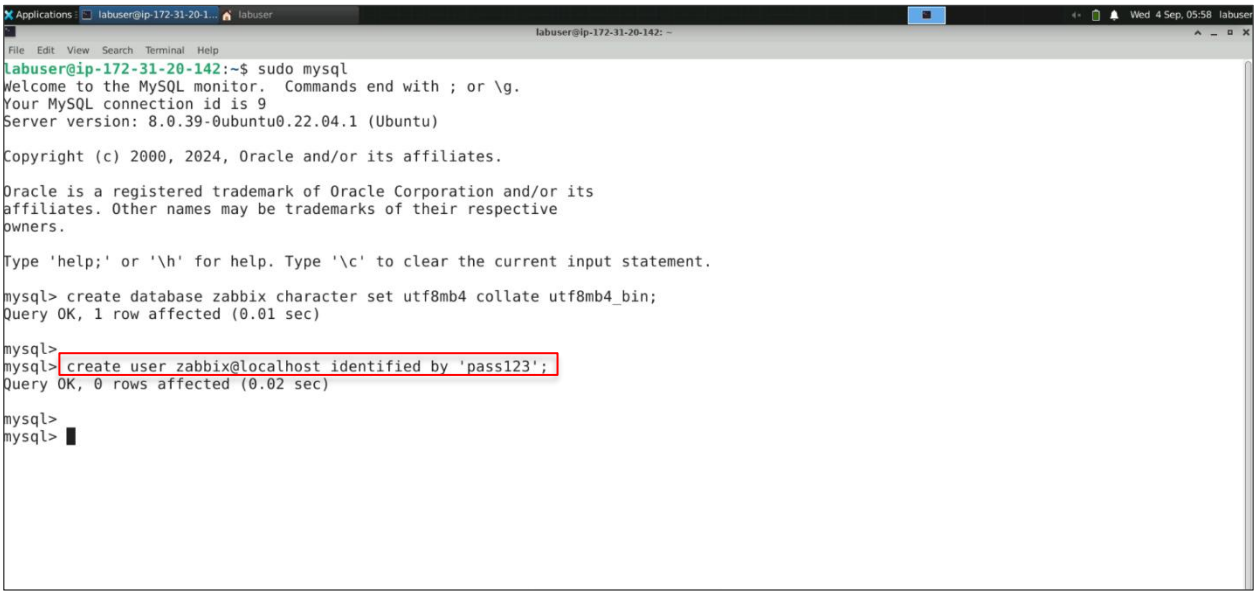
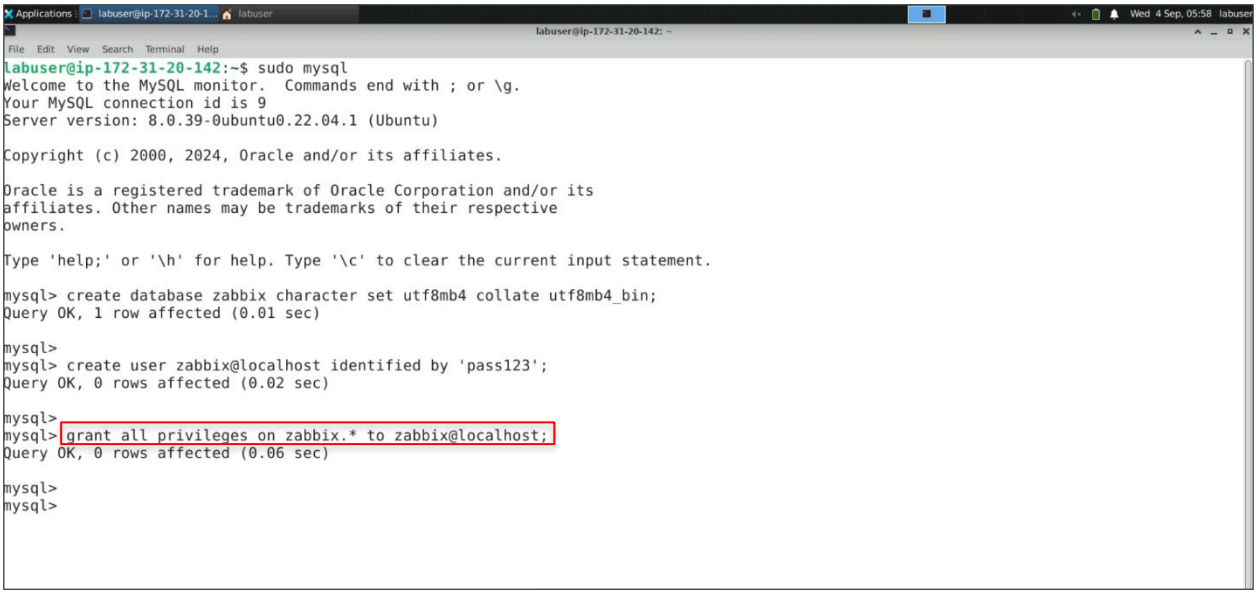
create user zabbix@localhost identified by 'pass123';



3.4 Run the following command to grant all privileges on the **Zabbix** database to the **Zabbix** user:
grant all privileges on zabbix.* to zabbix@localhost;



3.5 Run the following command to set a global MySQL system variable for allowing function creators to write binary logs, then type **quit;** to exit the MySQL as shown:
set global log_bin_trust_function_creators = 1;

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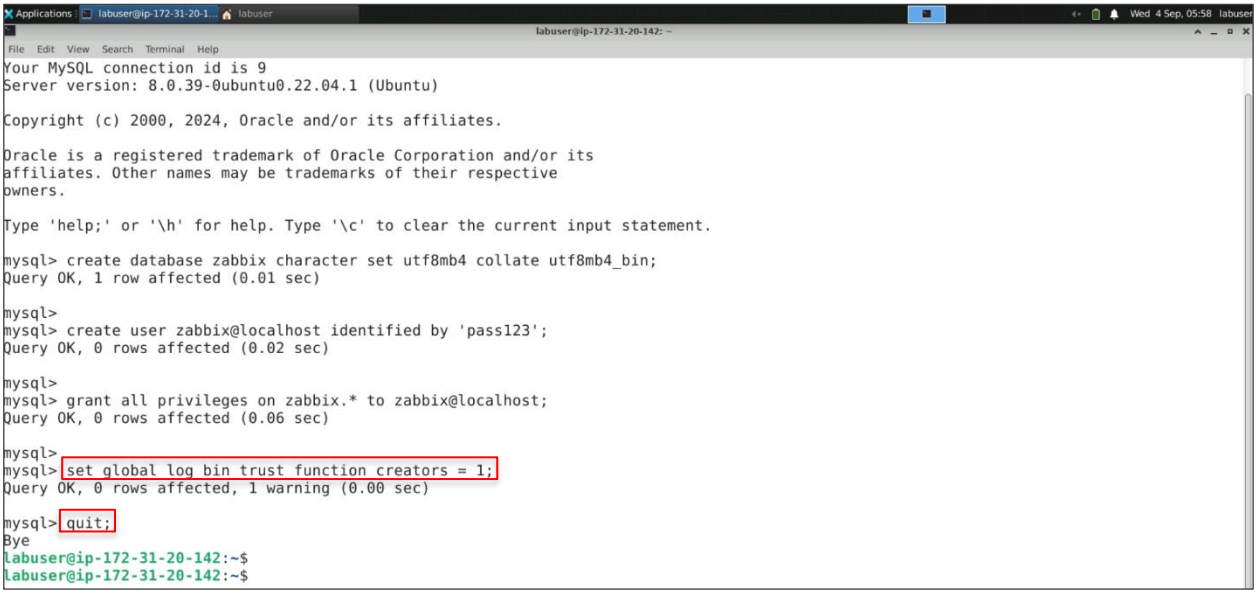

Step 4: Configure the database for the Zabbix server

4.1 Run the following command to import the Zabbix database, and then provide the password created in **Step 3.3 (pass123)**:
sudo zcat /usr/share/zabbix-sql-scripts/mysql/server.sql.gz | mysql --default-character-set=utf8mb4 -uzabbix -p zabbix

It might take some time to execute this command.

4.2 Execute the following commands for switching to MySQL in the terminal, reset the variable, and then type **quit;** to exit MySQL as shown:
sudo mysql
set global log_bin_trust_function_creators = 0;

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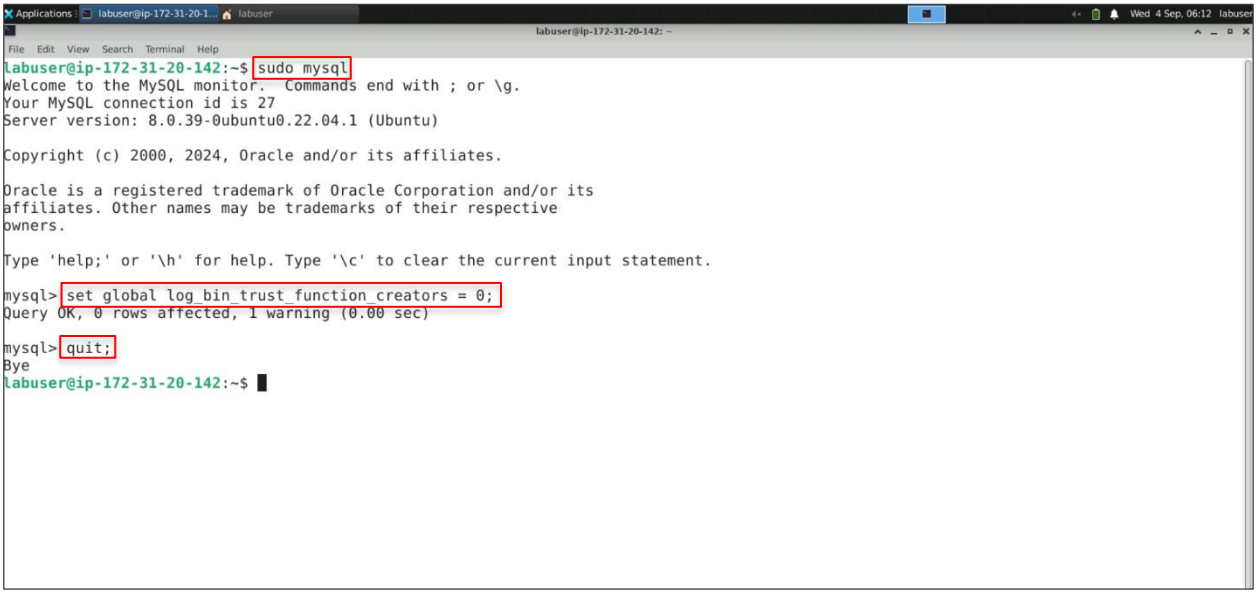
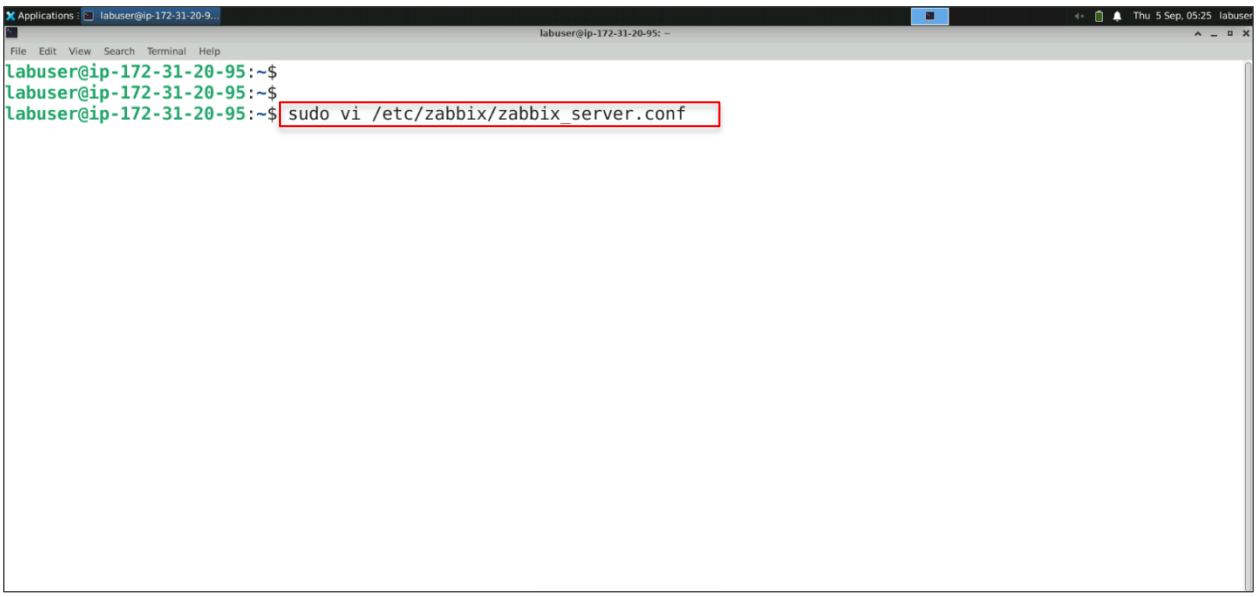


4.3 Run the following command in the terminal to open the Zabbix server configuration file in the vi editor for modification:
sudo vi /etc/zabbix/zabbix_server.conf



You will see the following interface:

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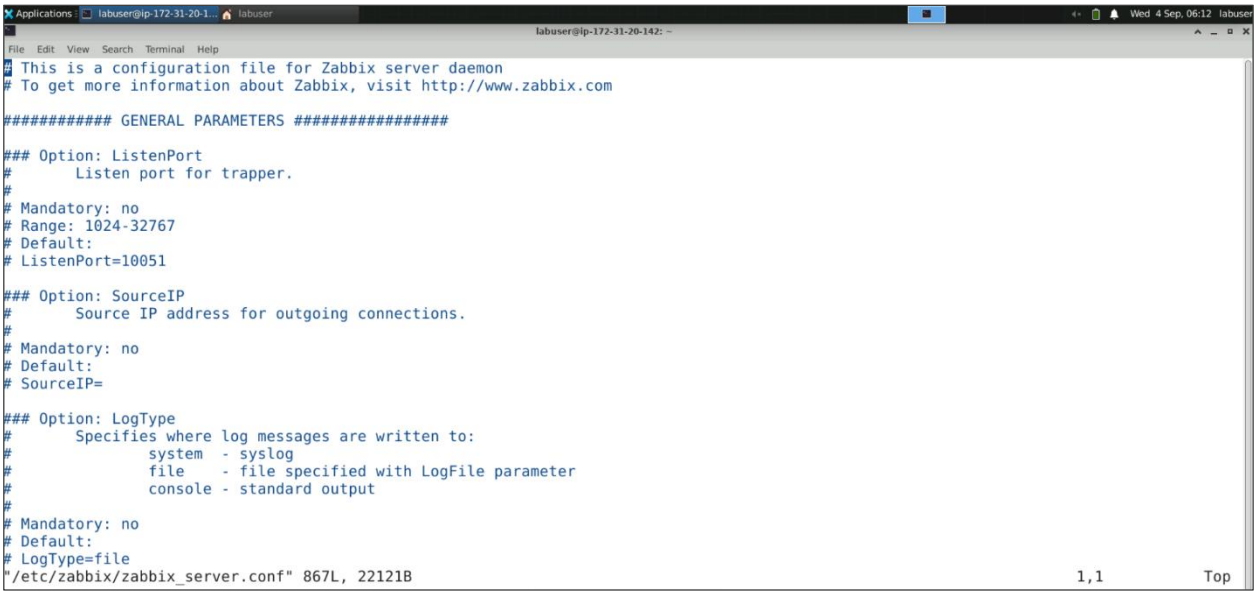
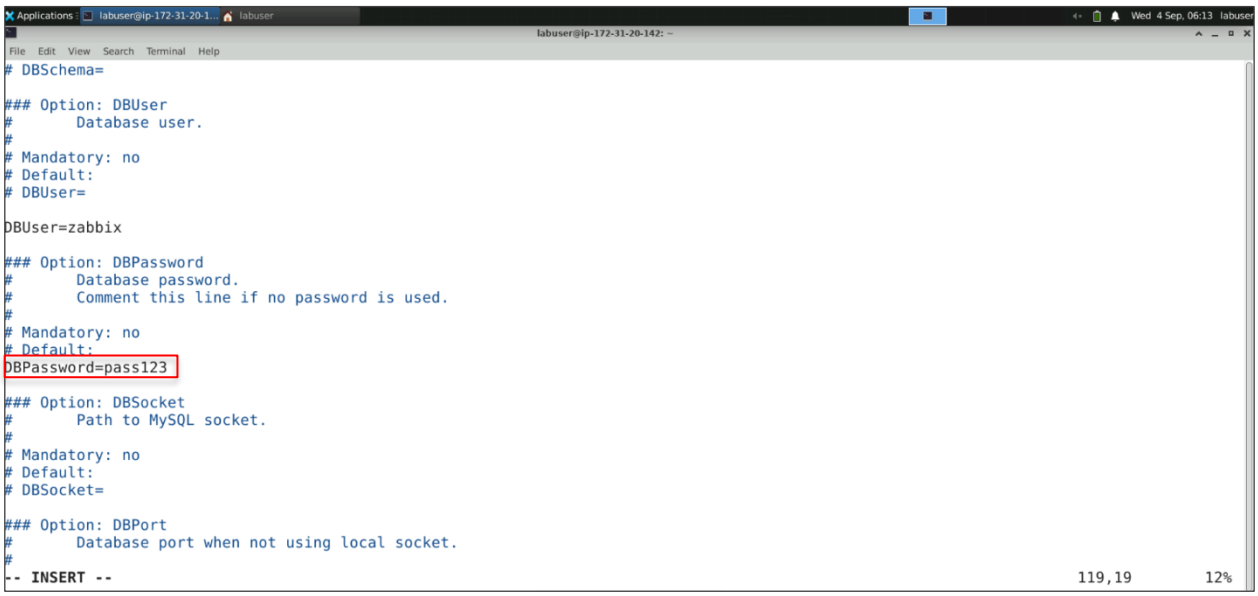


4.4 Press **I** to enter insert mode, find the DBPassword parameter, uncomment it, and set it to the MySQL password created earlier in **Step 3.3** (**pass123**) as shown below:



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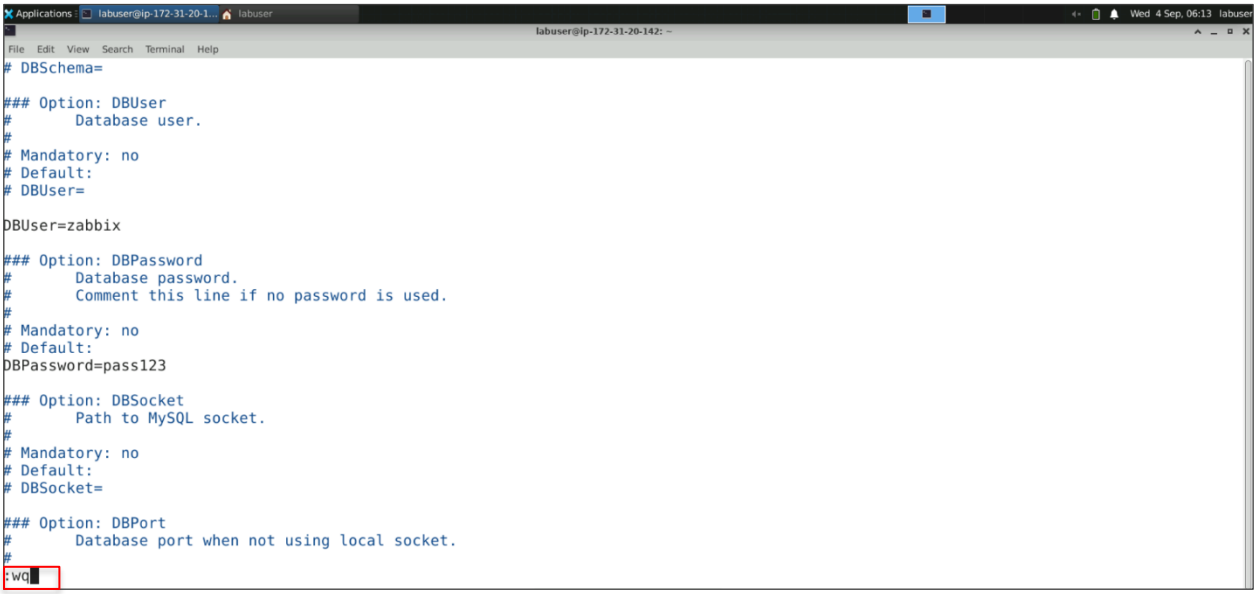
4.5 Once the changes are made, press **Esc** to exit insert mode, and then type **:wq** to save and exit the file



Step 5: Start Zabbix and Apache servers

5.1 Run the following commands to restart and enable the Zabbix server, Zabbix agent, and Apache services to apply configuration changes:
sudo systemctl restart apache2
sudo systemctl status apache2

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labuser@ip-172-31-29-123:~$ sudo systemctl restart apache2
labuser@ip-172-31-29-123:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Tue 2025-01-28 12:35:23 UTC; 2min 54s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 30255 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 30259 (apache2)
      Tasks: 6 (limit: 9361)
     Memory: 12.3M
        CPU: 67ms
     CGroup: /system.slice/apache2.service
             ├─30259 /usr/sbin/apache2 -k start
             ├─30260 /usr/sbin/apache2 -k start
             ├─30261 /usr/sbin/apache2 -k start
             ├─30262 /usr/sbin/apache2 -k start
             ├─30263 /usr/sbin/apache2 -k start
             └─30264 /usr/sbin/apache2 -k start

Jan 28 12:35:23 ip-172-31-29-123 systemd[1]: Stopped The Apache HTTP Server.
Jan 28 12:35:23 ip-172-31-29-123 systemd[1]: Starting The Apache HTTP Server...
Jan 28 12:35:23 ip-172-31-29-123 systemd[1]: Started The Apache HTTP Server.
```

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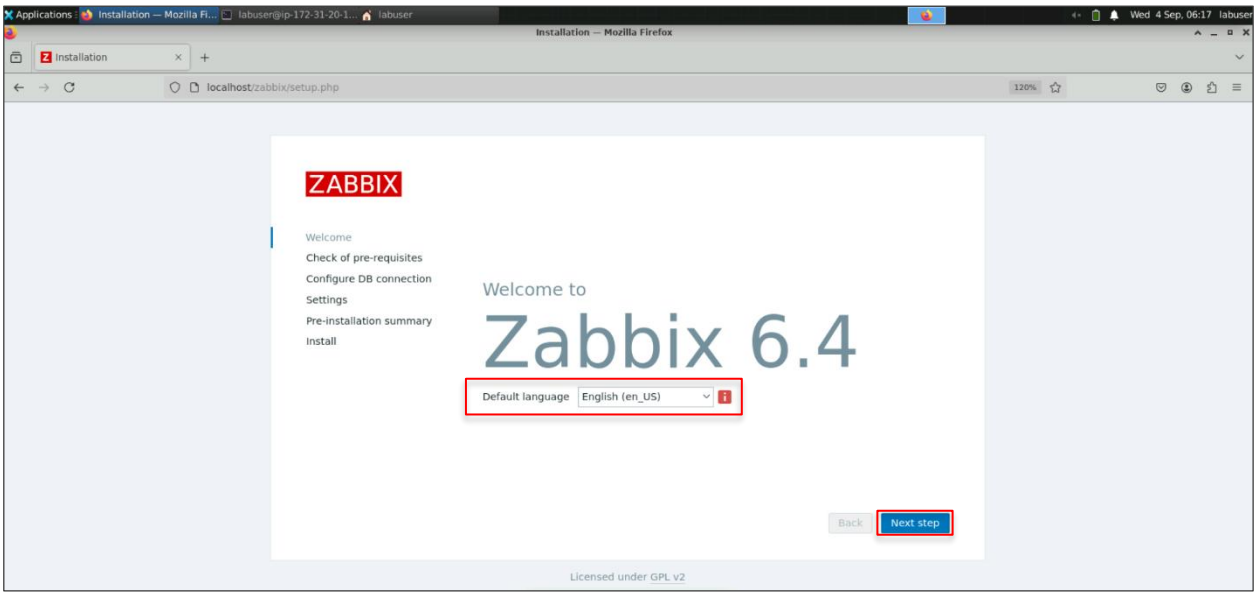
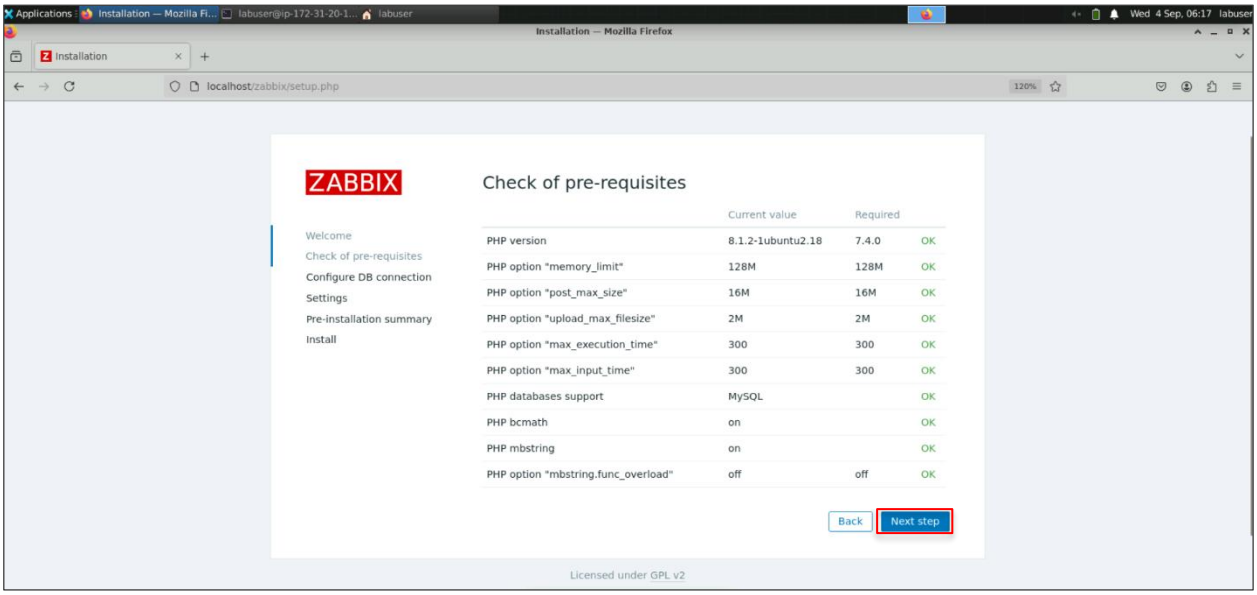
Step 6: Configure and explore the Zabbix Console

6.1 Navigate to the browser and enter the URL **http://localhost:8081/zabbix** or **http://<server-public-ip>/zabbix** to access the Zabbix console. The Zabbix setup page appears; select the language and then click on **Next step** as shown:



6.2 Ensure that all software prerequisites are met, then click on **Next step**



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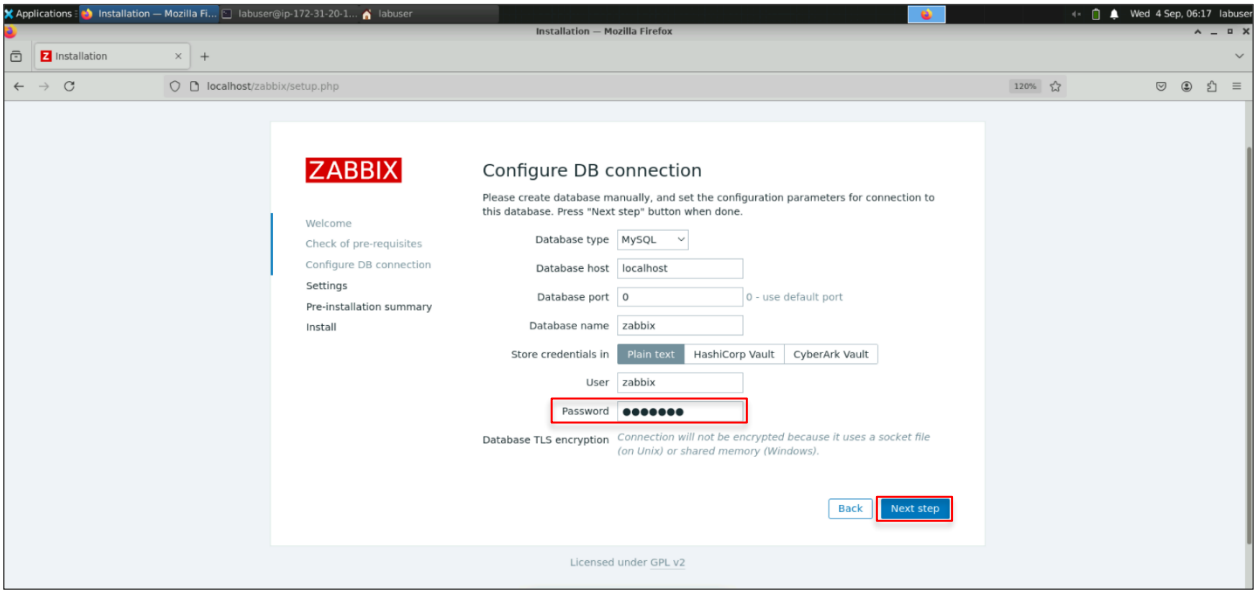
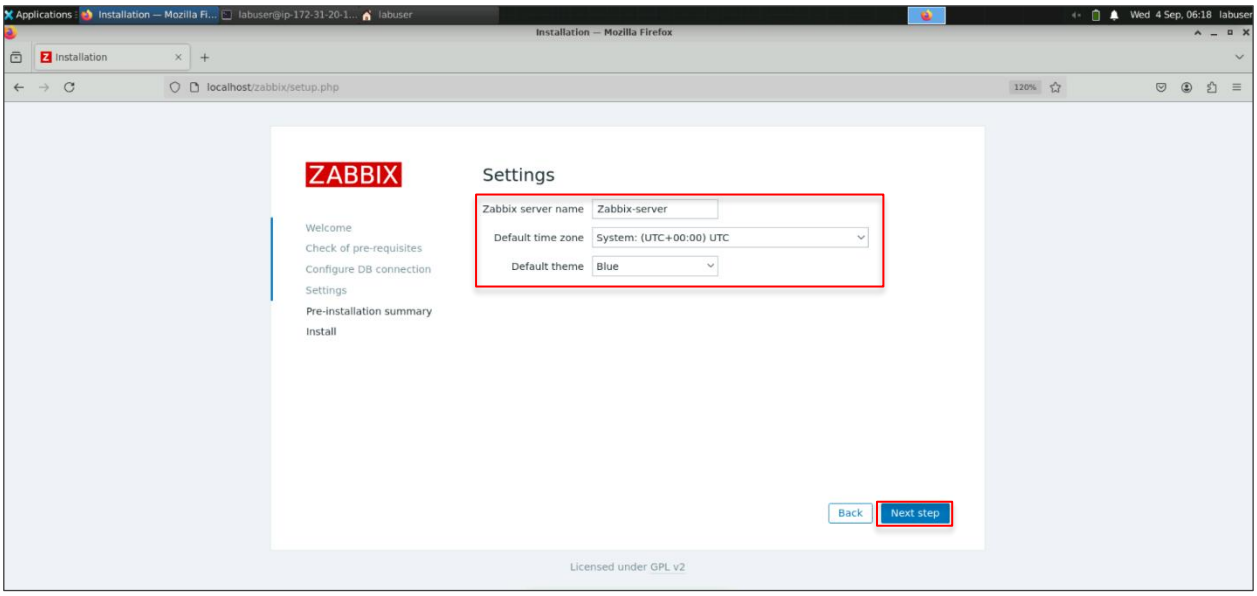
6.3 Configure the database connection by providing the Zabbix user and password created in Step 3, then click on **Next step**



6.4 Enter the Zabbix server name, set the default time zone, select a theme for the frontend, and then click on **Next step** as shown



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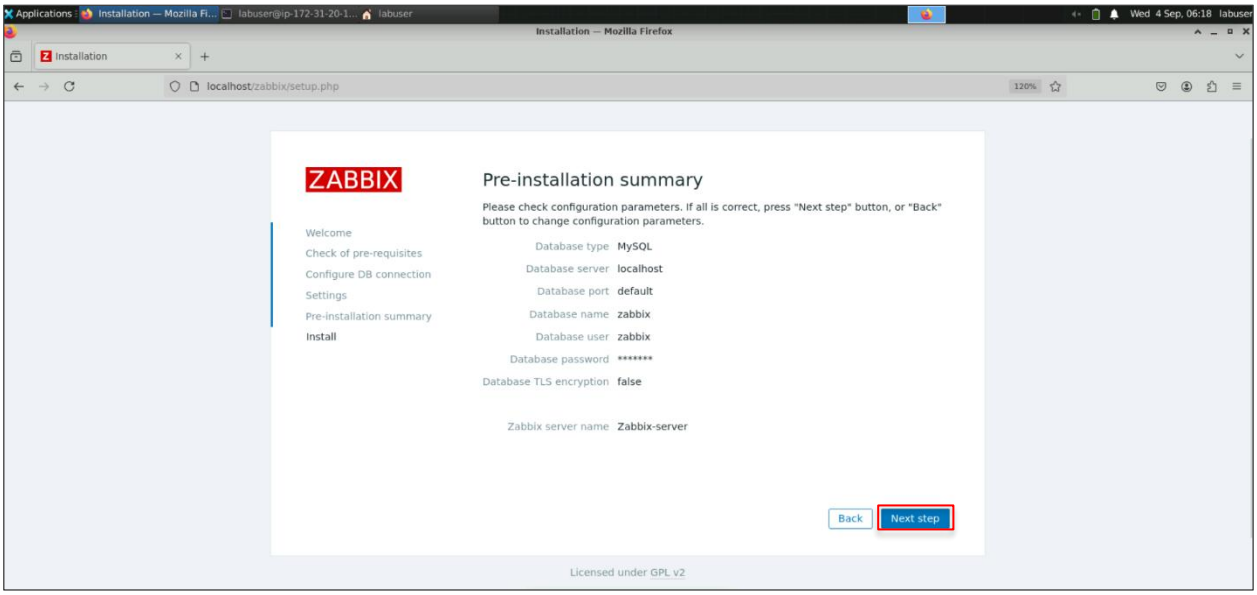
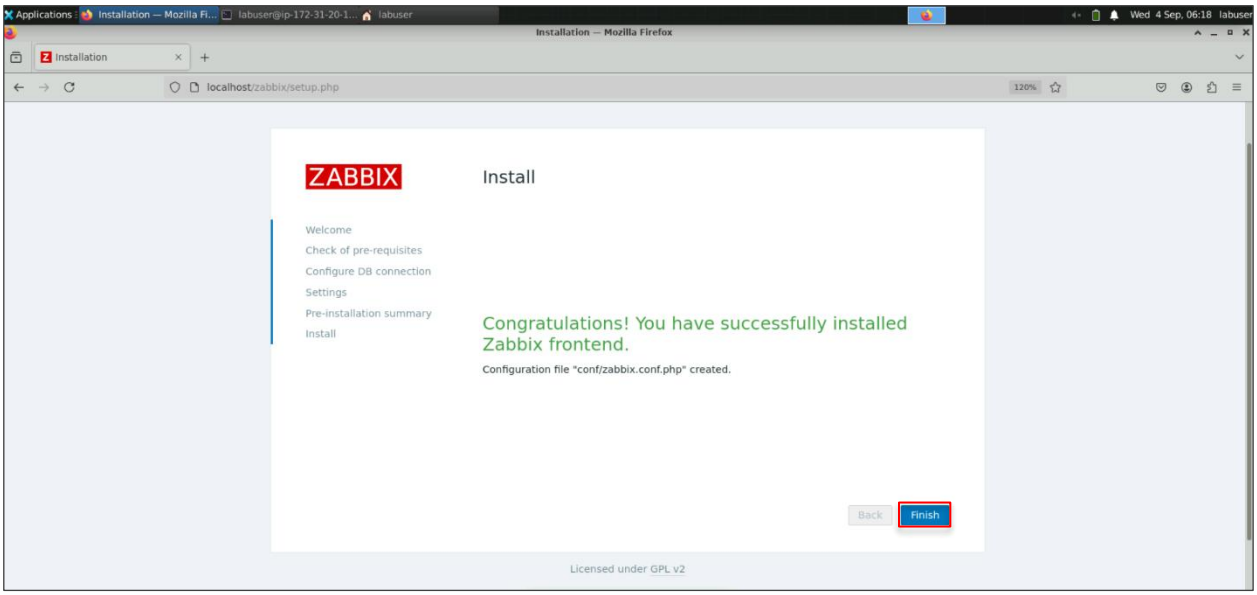
6.5 Review the summary of settings and then click on **Next step:**



6.6 Click on **Finish** to complete the configuration



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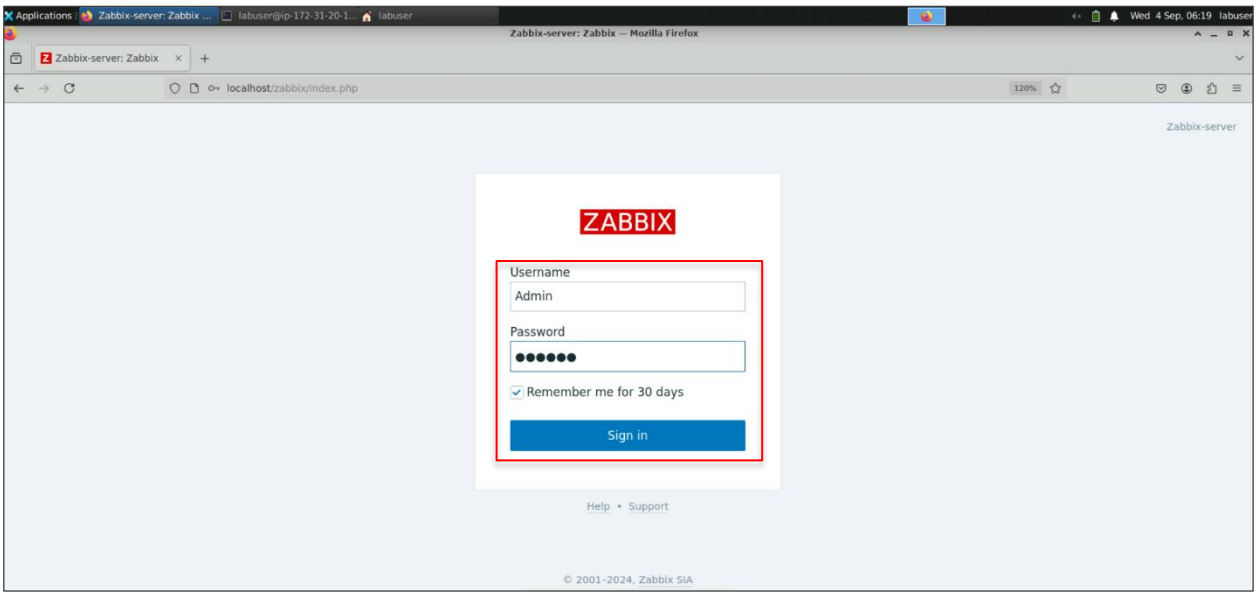
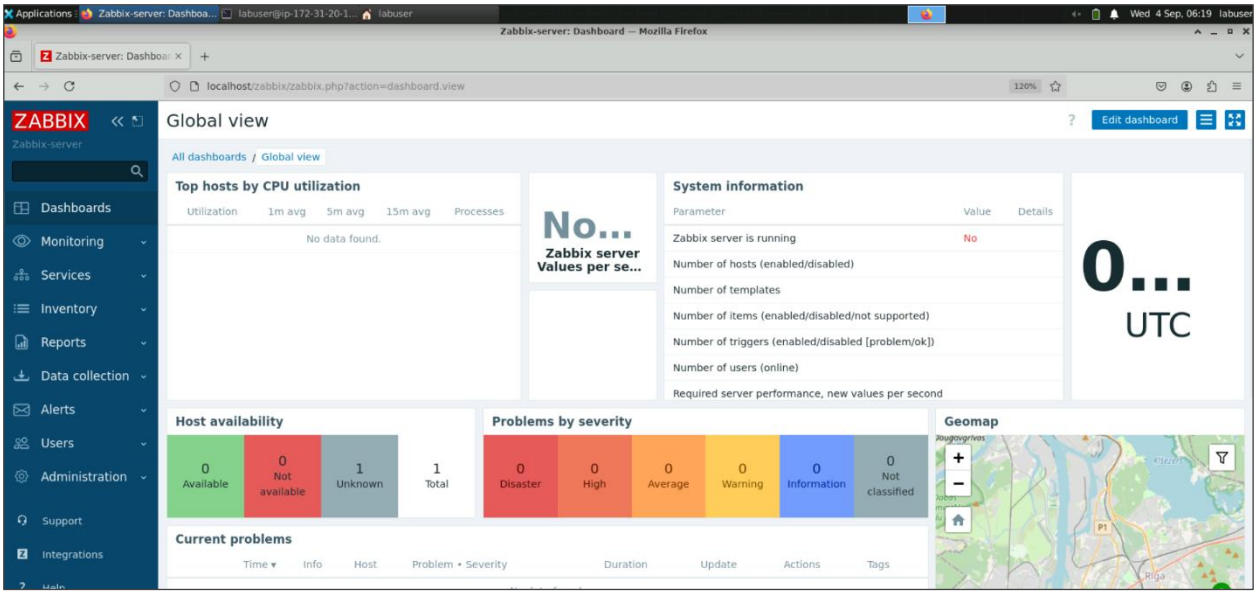
6.2 Log in to the console using the default username **Admin** and password **Zabbix**, then click on **Sign in** as shown:



The Zabbix dashboard will appear as follows:



By following these steps, you have successfully installed, configured, and explored Zabbix to effectively track and monitor your basic infrastructure.