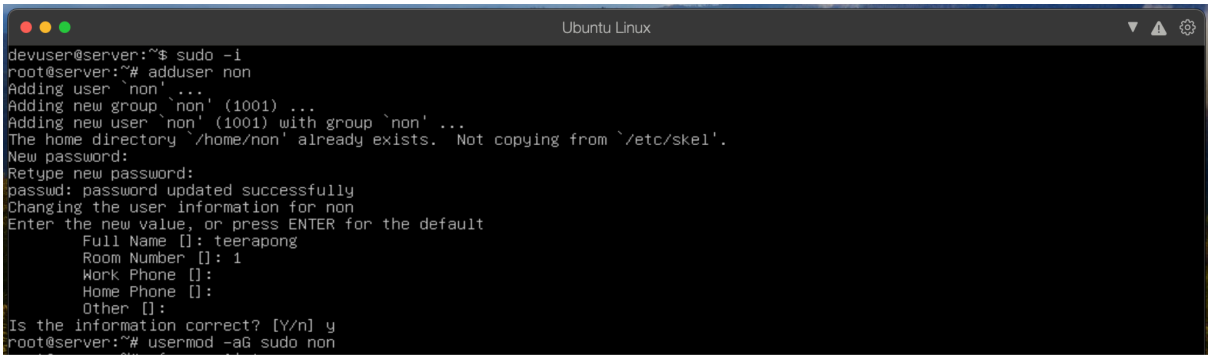
linux

sudo -i

adduser poom

usermod -aG sudo poom

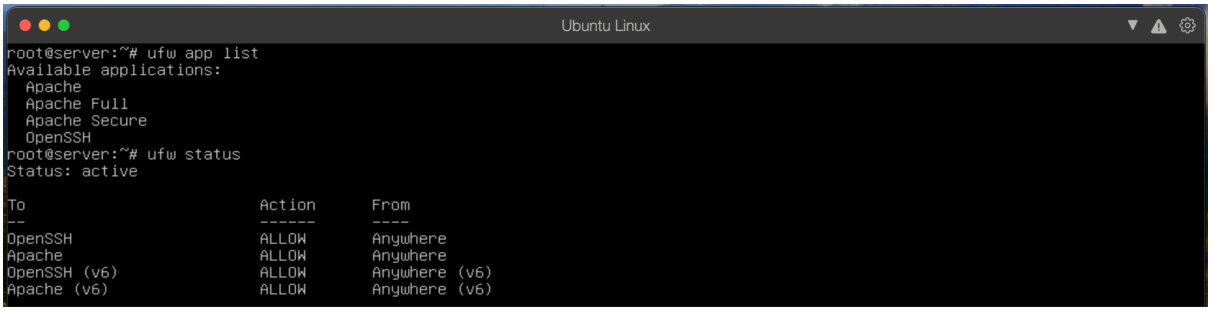


ufw allow OpenSSH

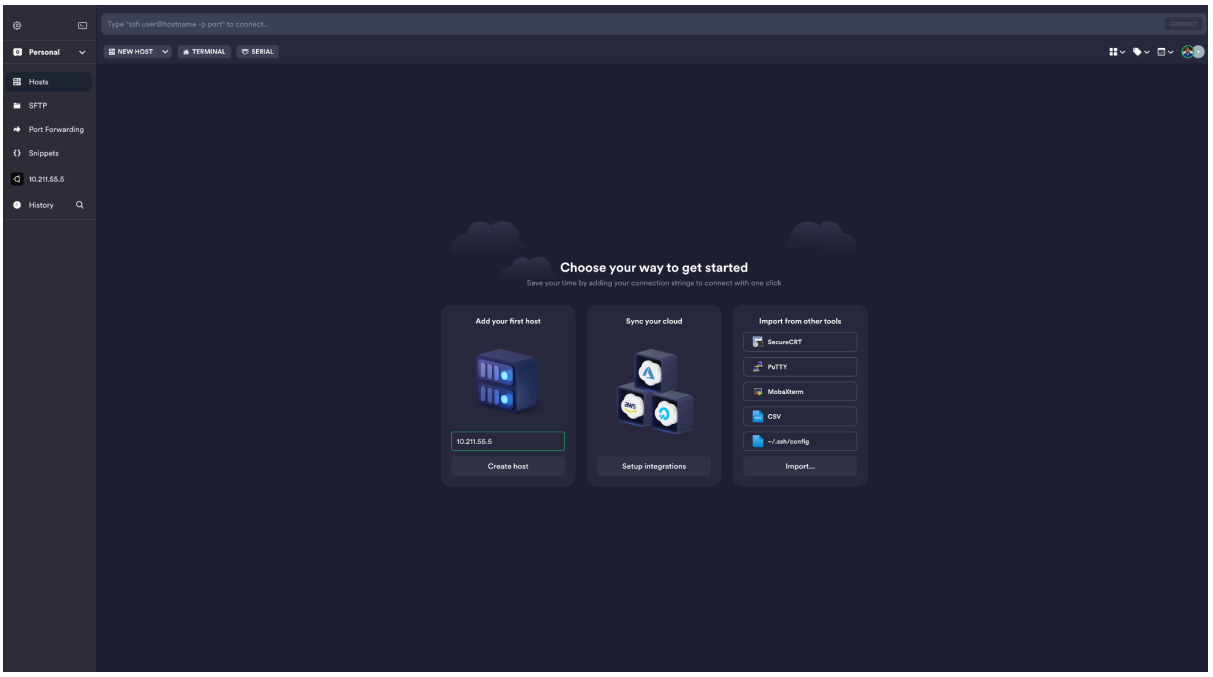
ufw enable

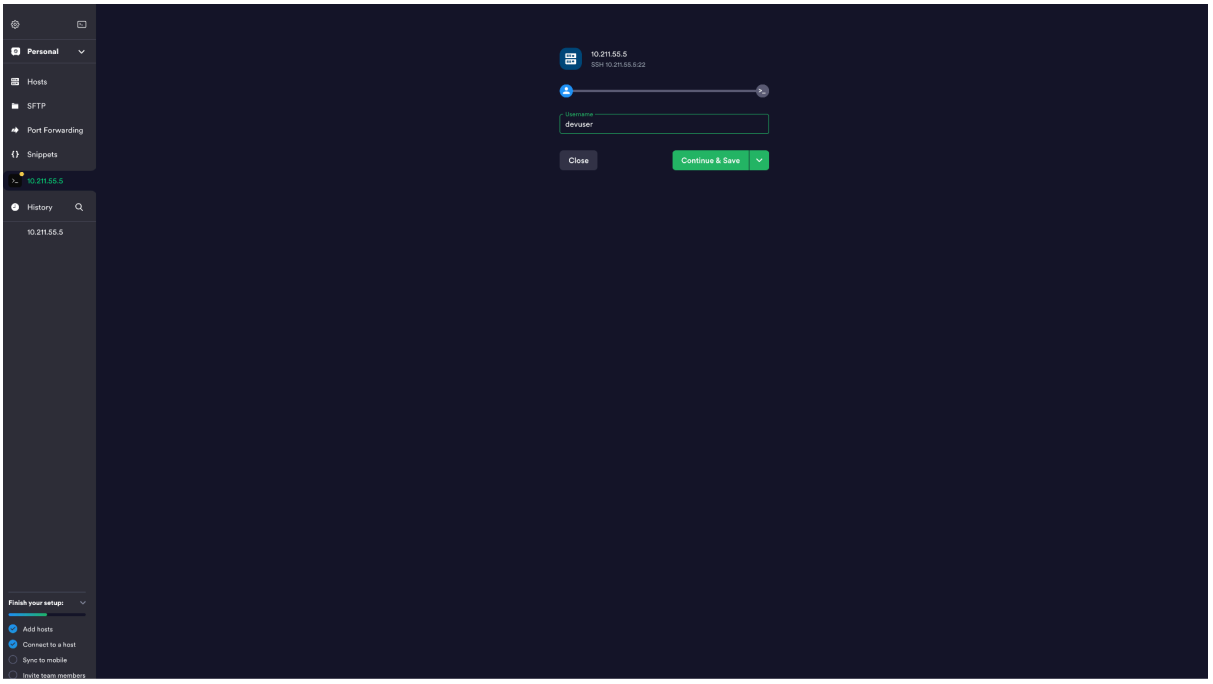
ufw app list

ufw status



Terminus


Type "ssh user@hostname -p port" to connect...
CONNECT
Personal
NEW HOST
TERMINAL
SERIAL
Hosts
SFTP
Port Forwarding
Snippets
10.211.55.5
History
Choose your way to get started
Save your time by adding your connection strings to connect with one click
Add your first host
10.211.55.5
Create host
Sync your cloud
Setup integrations
Import from other tools
SecureCRT
PuTTY
MobaXterm
CSV
~/.ssh/config
Import...

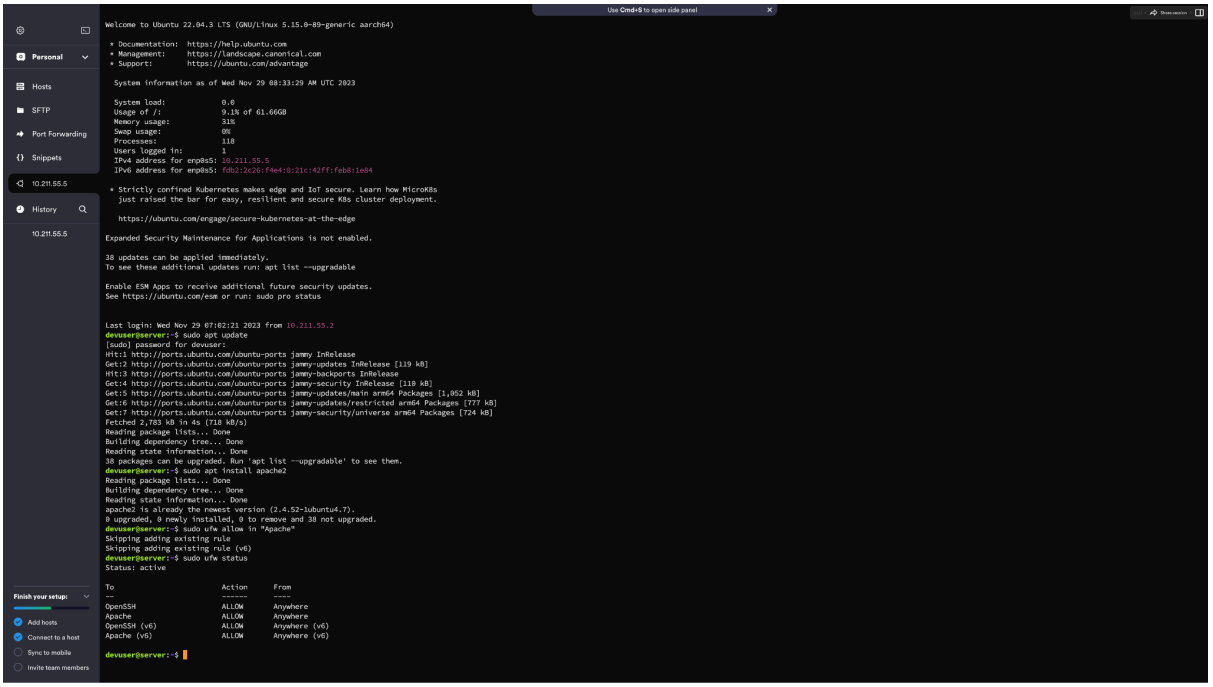

Personal
Hosts
SFTP
Port Forwarding
Snippets
10.211.55.5
History
10.211.55.5
Finish your setup:
Add hosts
Connect to a host
Sync to mobile
Invite team members
10.211.55.5
SSH 10.211.55.5:22
Username
devuser
Close
Continue & Save

sudo apt update

sudo apt install apache2

sudo ufw allow in “Apache”

sudo ufw status



Check Apache2 : http:// < ip >

Apache2 Default Page

Ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in /usr/share/doc/apache2/README.Debian.gz**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|       `--  ports.conf
|-- mods-enabled
|       |-- *.load
|       `-- *.conf
|-- conf-enabled
|       `-- *.conf
|-- sites-enabled
|       `-- *.conf
```

- `apache2.conf` is the main configuration file. It puts the pieces together by including all remaining configuration files when starting up the web server.
- `ports.conf` is always included from the main configuration file. It is used to determine the listening ports for incoming connections, and this file can be customized anytime.
- Configuration files in the `mods-enabled/`, `conf-enabled/` and `sites-enabled/` directories contain particular configuration snippets which manage modules, global configuration fragments, or virtual host configurations, respectively.
- They are activated by symlinking available configuration files from their respective *-available/ counterparts. These should be managed by using our helpers `a2enmod`, `a2dismod`, `a2ensite`, `a2dissite`, and `a2enconf`, `a2disconf` . See their respective man pages for detailed information.
- The binary is called apache2 and is managed using systemd, so to start/stop the service use `systemctl start apache2` and `systemctl stop apache2`, and use `systemctl status apache2` and `journalctl -u apache2` to check status. `system` and `apache2ctl` can also be used for service management if desired. **Calling `/usr/bin/apache2` directly will not work** with the default configuration.

Document Roots

By default, Ubuntu does not allow access through the web browser to *any* file outside of those located in `/var/www`, **public_html** directories (when enabled) and `/usr/share` (for web applications). If your site is using a web document root located elsewhere (such as in `/srv`) you may need to whitelist your document root directory in

sudo apt install mysql-server

sudo mysql

ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'P@ssw0rd';

exit

```
devuser@server:~$ sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
mysql-server is already the newest version (8.0.35-0ubuntu0.22.04.1).
0 upgraded, 0 newly installed, 0 to remove and 38 not upgraded.
devuser@server:~$ sudo mysql
```

```
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 13
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

Copyright (c) 2000, 2023, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'P@ssw0rd';
Query OK, 0 rows affected (0.02 sec)

mysql> exit
Bye
devuser@server:~$
```

login mysql : sudo mysql -u root -p

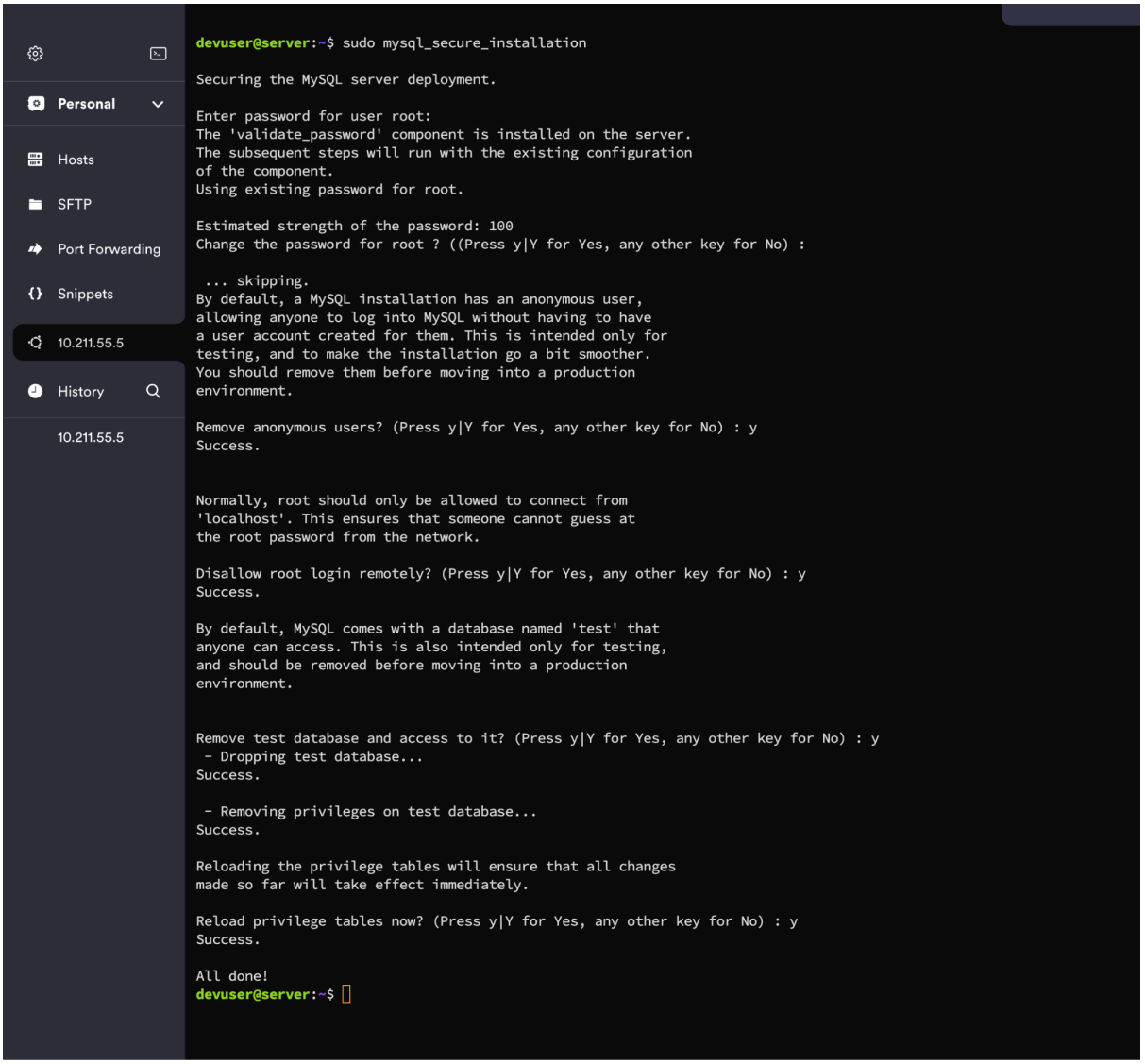
```
devuser@server:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 13
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

Copyright (c) 2000, 2023, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

sudo mysql_secure_installation



sudo apt install php libapache2-mod-php php-mysql

php -v

```
devuser@server:~$ sudo apt install php libapache2-mod-php php-mysql
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
libapache2-mod-php is already the newest version (2:8.1+92ubuntu1).
php is already the newest version (2:8.1+92ubuntu1).
php-mysql is already the newest version (2:8.1+92ubuntu1).
0 upgraded, 0 newly installed, 0 to remove and 38 not upgraded.
devuser@server:~$ php -v
PHP 8.1.2-1ubuntu2.14 (cli) (built: Aug 18 2023 11:41:11) (NTS)
Copyright (c) The PHP Group
Zend Engine v4.1.2, Copyright (c) Zend Technologies
    with Zend OPcache v8.1.2-1ubuntu2.14, Copyright (c), by Zend Technologies
devuser@server:~$
```

cd /var/www/

sudo mkdir Lab2

sudo chown -R $USER:$USER Lab2

sudo nano info.php

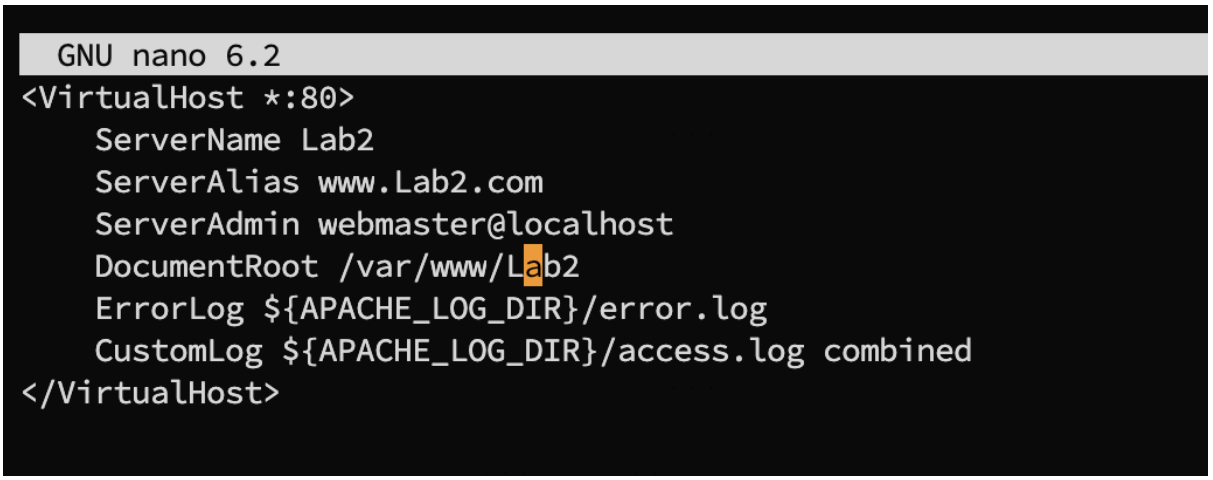
more info.php

```
devuser@server:~$ cd /var/www/
devuser@server:/var/www$ sudo mkdir Lab2
devuser@server:/var/www$ sudo chown -R $USER:$USER Lab2
devuser@server:/var/www$ sudo nano info.php
devuser@server:/var/www$ more info.php
<?php
phpinfo();
devuser@server:/var/www$
```

sudo nano /etc/apache2/sites-available/your_domain.conf

```
devuser@server:~$ sudo nano /etc/apache2/sites-available/Lab2.conf
devuser@server:~$
```

```
<VirtualHost *:80>
    ServerName Lab2
    ServerAlias www.Lab2.com
    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/Lab2
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```




```
sudo a2ensite lab2
sudo nano /etc/apache2/sites-available/000-default.conf (don't edit)
sudo a2dissite 000-default
sudo apache2ctl configtest
systemctl reload apache2
```

nano /var/www/lab2/index.html

```
devuser@server:~$ nano /var/www/Lab2/index.html
devuser@server:~$
```

```
<html>
 <head>
  <title>your_domain website</title>
 </head>
 <body>
  <h1>Hello World!</h1>

  <p>This is the landing page of
<strong>your_domain</strong>.</p>
 </body>
</html>
```

```
  GNU nano 6.2
<html>
  <head>
    <title>Lab2 website</title>
  </head>
  <body>
    <h1>Hello World!</h1>

    <p>This is the landing page of <strong>Lab2</strong>.</p>
  </body>
</html>
```

sudo nano /etc/apache2/mods-enabled/dir.conf

```
devuser@server:~$ sudo nano /etc/apache2/mods-enabled/dir.conf
devuser@server:~$
```

```
  GNU nano 6.2
<IfModule mod_dir.c>
        DirectoryIndex index.php index.html index.cgi index.pl index.php index.xhtml index.htm
</IfModule>

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
```

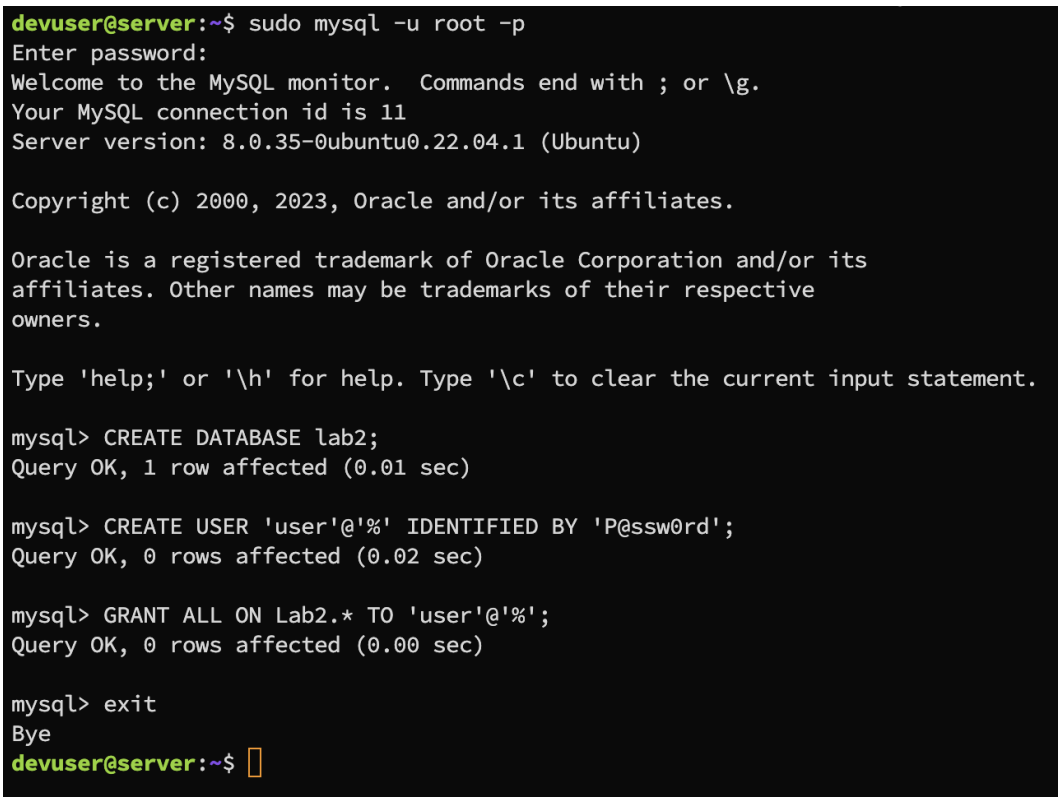
sudo mysql -u root -p

CREATE DATABASE Lab2;

CREATE USER 'user'@'%' IDENTIFIED BY 'P@ssw0rd';

GRANT ALL ON Lab2.* TO 'user'@'%';

exit



mysql -u user -p

“SHOW DATABASE”

CREATE TABLE Lab2.todo_list (item_id INT AUTO_INCREMENT,content VARCHAR(255),PRIMARY KEY(item_id));

INSERT INTO example_database.todo_list (content) VALUES ("My 1 important item");

INSERT INTO example_database.todo_list (content) VALUES ("My 2 important item");

INSERT INTO example_database.todo_list (content) VALUES ("My 3 important item");

SELECT * FROM Lab2.todo_list;

exit

nano /var/www/Lab2/todo_list.php

```
devuser@server:~$ mysql -u user -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 18
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

Copyright (c) 2000, 2023, Oracle and/or its affiliates.

Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| Lab2               |
| information_schema |
| performance_schema |
+--------------------+
3 rows in set (0.01 sec)

mysql> CREATE TABLE Lab2.todo_list ( item_id INT AUTO_INCREMENT, content VARCHAR(255), PRIMARY KEY(item_id) );
Query OK, 0 rows affected (0.02 sec)

mysql> INSERT INTO Lab2.todo_list (content) VALUES ("My 1 important item");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Lab2.todo_list (content) VALUES ("My 2 important item");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Lab2.todo_list (content) VALUES ("My 3 important item");
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM Lab2.todo_list;
+---------+--------------------+
| item_id | content            |
+---------+--------------------+
|       1 | My 1 important item |
|       2 | My 2 important item |
|       3 | My 3 important item |
+---------+--------------------+
3 rows in set (0.00 sec)

mysql> exit
Bye
devuser@server:~$ nano /var/www/Lab2/todo_list.php
devuser@server:~$
```

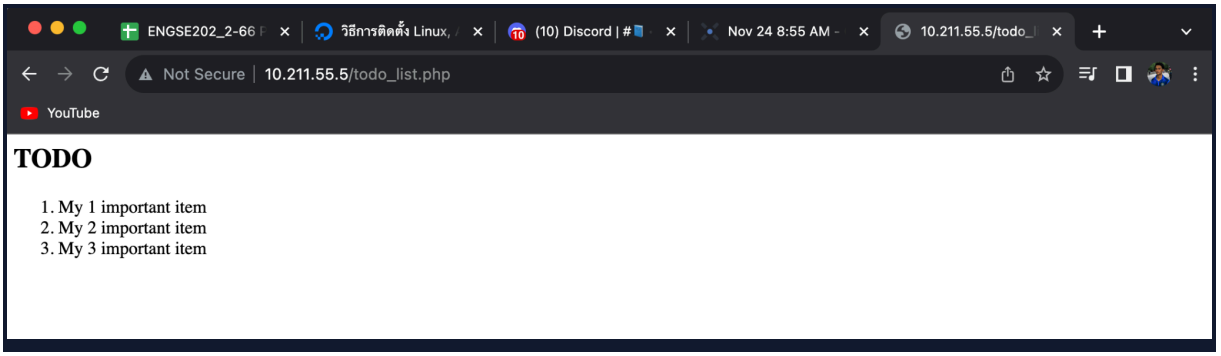
```php
<?php
$user = "user";
$password = "P@ssw0rd";
$database = "Lab2";
$table = "todo_list";

try {
  $db = new PDO("mysql:host=localhost;dbname=$database",
$user, $password);
  echo "<h2>TODO</h2><ol>";
  foreach($db->query("SELECT content FROM $table") as
$row) {
    echo "<li>" . $row['content'] . "</li>";
  }
  echo "</ol>";
} catch (PDOException $e) {
    print "Error!: " . $e->getMessage() . "<br/>";
    die();
}
```

```
  GNU nano 6.2
<?php
$user = "user";
$password = "P@ssw0rd";
$database = "Lab2";
$table = "todo_list";

try {
  $db = new PDO("mysql:host=localhost;dbname=$database", $user, $password);
  echo "<h2>TODO</h2><ol>";
  foreach($db->query("SELECT content FROM $table") as $row) {
    echo "<li>" . $row['content'] . "</li>";
  }
  echo "</ol>";
} catch (PDOException $e) {
    print "Error!: " . $e->getMessage() . "<br/>";
    die();
}
```

http://10.211.55.5/todo_list.php



สร้างไฟล์ Lab2-1_xxx และ Lab2-2_xxx และตรวจเช็ค

```
devuser@ubuntusever:~$ sudo mkdir -p /var/www/lab2-1_008/public_html
[sudo] password for devuser:
devuser@ubuntusever:~$ sudo mkdir -p /var/www/lab2-2_008/public_html
devuser@ubuntusever:~$ ls /var/www
html  lab2  lab2-1_008  lab2-2_008
devuser@ubuntusever:~$
```

เปลี่ยน Owner ของ Domainที่สร้างให้เป็น user

```
devuser@ubuntusever:~$ sudo mkdir -p /var/www/lab2-1_008/public_html
[sudo] password for devuser:
devuser@ubuntusever:~$ sudo mkdir -p /var/www/lab2-2_008/public_html
devuser@ubuntusever:~$ ls /var/www
html  lab2  lab2-1_008  lab2-2_008
devuser@ubuntusever:~$ sudo chown -R $USER:$USER /var/www/lab2-1_008/public_
html
devuser@ubuntusever:~$ sudo chown -R $USER:$USER /var/www/lab2-2_008/public_
html
devuser@ubuntusever:~$ sudo chmod -R 755 /var/www
```

```
  GNU nano 6.2      /var/www/lab2-2_008/public_html/index.html
<html>
  <head>
    <title>Welcome to lab2-1!</title>
  </head>
  <body>
    <h1>Success! The lab2-1 virtual host is working!</h1>
  </body>
</html>
```

สร้างไฟล์ Nano ชื่อ index.html แล้วก๊อปปี้ไป Lab2-2

```
devuser@ubuntusever:~$ nano /var/www/lab2-1_008/public_html/index.html
devuser@ubuntusever:~$ cp /var/www/lab2-1_008/public_html/index.html /var/ww
w/lab2-2_008/public_html/index.html
```

Nano index.html ในไฟล์ lab2-2

```
<html>
  <head>
    <title>Welcome to lab2-2!</title>
  </head>
  <body>
    <h1>Success! The lab2-2 virtual host is working!</h1>
  </body>
</html>
```

เข้าไปที่ lab2-1 แล้วเข้าไปแก้ไข lab2-1.conf

```
devuser@ubuntusever:~$ sudo cp /etc/apache2/sites-available/000-default.conf
 /etc/apache2/sites-available/lab2-1_008.conf
devuser@ubuntusever:~$ sudo nano /etc/apache2/sites-available/lab2-1_008.con
f
```

```
  GNU nano 6.2     /etc/apache2/sites-available/lab2-1_008.conf *
<VirtualHost *:80>
        # The ServerName directive sets the request scheme, hostname and po>
        # the server uses to identify itself. This is used when creating
        # redirection URLs. In the context of virtual hosts, the ServerName
        # specifies what hostname must appear in the request's Host: header>
        # match this virtual host. For the default virtual host (this file)>
        # value is not decisive as it is used as a last resort host regardl>
        # However, you must set it for any further virtual host explicitly.
        #ServerName www.example.com

        ServerAdmin admin@lab2-1_008
         ServerName lab2-1_008
         ServerAlias www.lab2-1_008
        DocumentRoot /var/www/lab2-1_008/public_html

        # Available loglevels: trace8, ..., trace1, debug, info, notice, wa>
        # error, crit, alert, emerg.
        # It is also possible to configure the loglevel for particular
        # modules, e.g.
        #LogLevel info ssl:warn

        ErrorLog ${APACHE_LOG_DIR}/error.log
        CustomLog ${APACHE_LOG_DIR}/access.log combined

        # For most configuration files from conf-available/, which are
        # enabled or disabled at a global level, it is possible to
        # include a line for only one particular virtual host. For example >
        # following line enables the CGI configuration for this host only
        # after it has been globally disabled with "a2disconf".
        #Include conf-available/serve-cgi-bin.conf
</VirtualHost>
```

ก๊อปปี้ ไฟล์จาก config lab2-1 ไป lab2-2 แล้วแก้ไข

```
devuser@ubuntusever:~$ sudo cp /etc/apache2/sites-available/lab2-1_008.conf
/etc/apache2/sites-available/lab2-2_008.conf
[sudo] password for devuser:
devuser@ubuntusever:~$ sudo nano /etc/apache2/sites-available/lab2-2_008.con
f
```

```
  GNU nano 6.2     /etc/apache2/sites-available/lab2-2_008.conf *
<VirtualHost *:80>
        # The ServerName directive sets the request scheme, hostname and po>
        # the server uses to identify itself. This is used when creating
        # redirection URLs. In the context of virtual hosts, the ServerName
        # specifies what hostname must appear in the request's Host: header>
        # match this virtual host. For the default virtual host (this file)>
        # value is not decisive as it is used as a last resort host regardl>
        # However, you must set it for any further virtual host explicitly.
        #ServerName www.example.com

        ServerAdmin admin@lab2-2_008
         ServerName lab2-2_008
         ServerAlias www.lab2-2_008
        DocumentRoot /var/www/lab2-2_008/public_html

        # Available loglevels: trace8, ..., trace1, debug, info, notice, wa>
        # error, crit, alert, emerg.
        # It is also possible to configure the loglevel for particular
        # modules, e.g.
        #LogLevel info ssl:warn

        ErrorLog ${APACHE_LOG_DIR}/error.log
        CustomLog ${APACHE_LOG_DIR}/access.log combined

        # For most configuration files from conf-available/, which are
        # enabled or disabled at a global level, it is possible to
        # include a line for only one particular virtual host. For example >
        # following line enables the CGI configuration for this host only
        # after it has been globally disabled with "a2disconf".
        #Include conf-available/serve-cgi-bin.conf
</VirtualHost>
```

เปิดใช้งาน Visaulhost files

```
devuser@ubuntusever:~$ sudo a2ensite lab2-1_008.conf
Enabling site lab2-1_008.
To activate the new configuration, you need to run:
  systemctl reload apache2
devuser@ubuntusever:~$ sudo a2ensite lab2-2_008.conf
Enabling site lab2-2_008.
To activate the new configuration, you need to run:
  systemctl reload apache2
devuser@ubuntusever:~$
```

testconfig

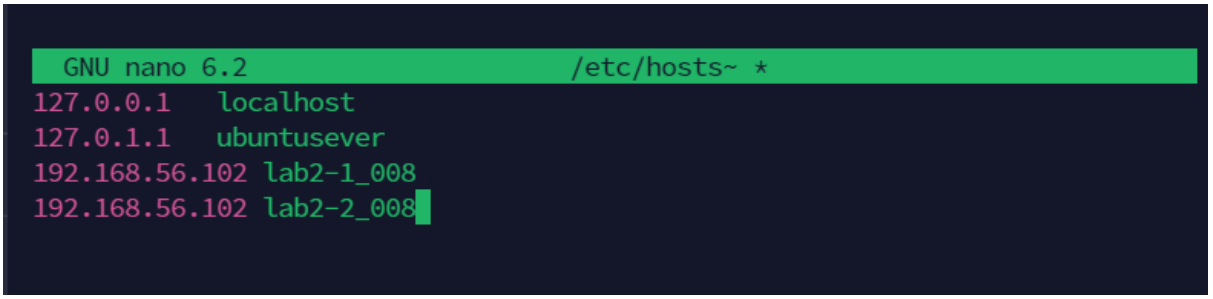
```
devuser@ubuntusever:~$ sudo a2dissite 000-default.conf
Site 000-default already disabled
devuser@ubuntusever:~$ sudo apache2ctl configtest
AH00558: apache2: Could not reliably determine the server's fully qualified
domain name, using 127.0.1.1. Set the 'ServerName' directive globally to sup
press this message
Syntax OK
```

Restart apache และเช็ค status

```
devuser@ubuntusever:~$ sudo systemctl restart apache2
devuser@ubuntusever:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor p>
     Active: active (running) since Wed 2023-12-06 12:55:53 UTC; 10s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 1854 ExecStart=/usr/sbin/apachectl start (code=exited, status=>
   Main PID: 1859 (apache2)
      Tasks: 6 (limit: 4558)
     Memory: 10.2M
        CPU: 40ms
     CGroup: /system.slice/apache2.service
             ├─1859 /usr/sbin/apache2 -k start
             ├─1860 /usr/sbin/apache2 -k start
             ├─1861 /usr/sbin/apache2 -k start
             ├─1862 /usr/sbin/apache2 -k start
             ├─1863 /usr/sbin/apache2 -k start
             └─1864 /usr/sbin/apache2 -k start

Dec 06 12:55:53 ubuntusever systemd[1]: Starting The Apache HTTP Server...
Dec 06 12:55:53 ubuntusever apachectl[1857]: AH00558: apache2: Could not re>
Dec 06 12:55:53 ubuntusever systemd[1]: Started The Apache HTTP Server.
lines 1-20/20 (END)
```

sudo nano /etc/hosts



test