LAB 2

File   Machine   View   Input   Devices   Help

devuser@ubuntuserver1:~$ _

Right Ctrl
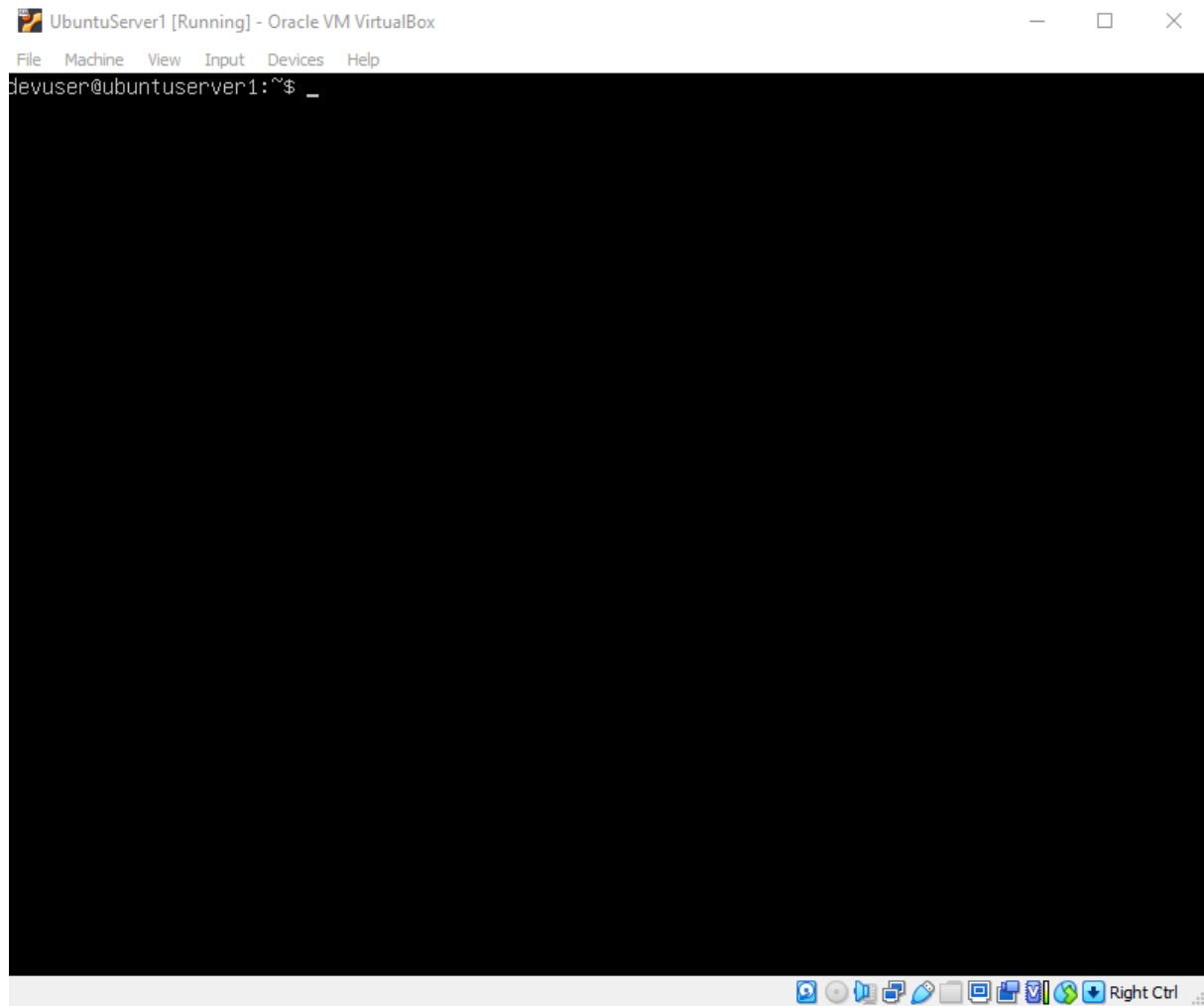
เข้า Root

```
root@server:~# sudo -i
```

สร้าง user

```
root@server:~# adduser first
Adding user `first' ...
Adding new group `first' (1003) ...
Adding new user `first' (1003) with group `first' ...
Creating home directory `/home/first' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for first
Enter the new value, or press ENTER for the default
        Full Name []: natthanan
        Room Number []:
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
```

add root user

```
root@server:~# usermod -aG sudo first
```

Setting Up a Firewall

```
root@server:~# ufw app list
Available applications:
  Apache
  Apache Full
  Apache Secure
  OpenSSH
root@server:~# ufw allow OpenSSH
Skipping adding existing rule
Skipping adding existing rule (v6)
root@server:~# ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y
Firewall is active and enabled on system startup
root@server:~# ufw status
Status: active

To                         Action      From
--                         ------      ----
OpenSSH                    ALLOW       Anywhere
Apache                     ALLOW       Anywhere
OpenSSH (v6)               ALLOW       Anywhere (v6)
Apache (v6)                ALLOW       Anywhere (v6)
```

Installing Apache and Updating the Firewall

```
root@server:~# sudo apt update
Hit:1 http://ports.ubuntu.com/ubuntu-ports jammy InRelease
Get:2 http://ports.ubuntu.com/ubuntu-ports jammy-updates InRelease [119 kB]
Hit:3 http://ports.ubuntu.com/ubuntu-ports jammy-backports InRelease
Get:4 http://ports.ubuntu.com/ubuntu-ports jammy-security InRelease [110 kB]
Get:5 http://ports.ubuntu.com/ubuntu-ports jammy-updates/main arm64 Packages [1,05
2 kB]
Get:6 http://ports.ubuntu.com/ubuntu-ports jammy-updates/restricted arm64 Packages
 [777 kB]
Get:7 http://ports.ubuntu.com/ubuntu-ports jammy-security/universe arm64 Packages
[724 kB]
Fetched 2,783 kB in 3s (842 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

Install apache2

```
root@server:~# sudo apt install apache2
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.52-1ubuntu4.7).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

```
root@server:~# sudo ufw app list
Available applications:
   Apache
   Apache Full
   Apache Secure
   OpenSSH
```

```
root@server:~# sudo ufw allow in "Apache"
Skipping adding existing rule
Skipping adding existing rule (v6)
root@server:~# sudo ufw status
Status: active

To                         Action      From
--                         ------      ----
OpenSSH                    ALLOW       Anywhere
Apache                     ALLOW       Anywhere
OpenSSH (v6)               ALLOW       Anywhere (v6)
Apache (v6)                ALLOW       Anywhere (v6)
```

Installing Mysql

```
root@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 0 not upgraded.
```

Installing PHP

```
devuser@server:~$ sudo apt install php libapache2-mod-php php-mysql
[sudo] password for devuser:
Sorry, try again.
[sudo] password for devuser:
Sorry, try again.
[sudo] password for devuser:
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 0 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
```

```
  GNU nano 6.2                                    info.php
<?php
phpinfo();
```

```
devuser@server://var/www$ sudo mkdir lab2
devuser@server://var/www$ ls
html   lab2
```

```
devuser@server://var/www$ sudo chown -R $USER:$USER /var/www/lab2
<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>
```

```
devuser@server://var/www$ sudo a2ensite lab2
Enabling site lab2.
To activate the new configuration, you need to run:
  systemctl reload apache2
devuser@server://var/www$ systecmctl reload apache2
Command 'systecmctl' not found, did you mean:
  command 'systemctl' from deb systemd (249.11-0ubuntu3.11)
  command 'systemctl' from deb systemctl (1.4.4181-1.1)
Try: sudo apt install <deb name>
devuser@server://var/www$ systemctl reload apache2
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ===
Authentication is required to reload 'apache2.service'.
Multiple identities can be used for authentication:
 1.  Natthanan Ngaojin (devuser)
 2.  natthnanan ngaojin,first,, (natthanan)
 3.  natthanan,,, (first)
Choose identity to authenticate as (1-3): 3
Password:
==== AUTHENTICATION COMPLETE ===
```

```
devuser@server://var/www$ sudo a2dissite 000_default
ERROR: Site 000_default does not exist!
devuser@server://var/www$ sudo a2dissite 000-default
Site 000-default disabled.
To activate the new configuration, you need to run:
  systemctl reload apache2
devuser@server://var/www$ 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 suppress this m
essage
Syntax OK
devuser@server://var/www$ systemctl reload apache2
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ===
Authentication is required to reload 'apache2.service'.
Multiple identities can be used for authentication:
 1.  Natthanan Ngaojin (devuser)
 2.  natthnanan ngaojin,first,, (natthanan)
 3.  natthanan,,, (first)
Choose identity to authenticate as (1-3): 3
Password:
==== AUTHENTICATION COMPLETE ===
```

```
  GNU nano 6.2                    /var/www/lab2/index.html
<html>
  <head>
    <title>lab2 website</title>
  </head>
  <body>
    <h1>Hello World! This a Book !!</h1>

    <p>This is the landing page of <strong>lab2</strong>.</p>
  </body>
</html>
```
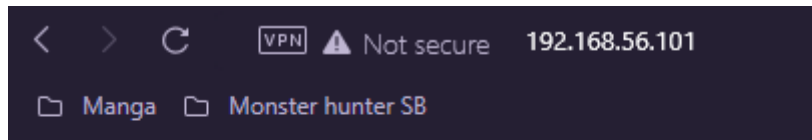
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Hello World!

This is the landing page of **lab2**.

```
devuser@ubuntuserver1:~$ sudo nano /etc/apache2/mods-enabled/dir.conf
```

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

```
devuser@ubuntuserver1:~$ nano /var/www/lab2/info.php
```

```php
<?php
phpinfo();
```

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PHP Version 8.1.2-1ubuntu2.14

System	Linux ubuntuserver1 5.15.0-89-generic #99-Ubuntu SMP Mon Oct 30 20:42:41 UTC 2023 x86_64
Build Date	Aug 18 2023 11:41:11
Build System	Linux
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.1/apache2
Loaded Configuration File	/etc/php/8.1/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/8.1/apache2/conf.d
Additional .ini files parsed	/etc/php/8.1/apache2/conf.d/10-mysqlnd.ini, /etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-mysqli.ini, /etc/php/8.1/apache2/conf.d/20-pdo_mysql.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini
PHP API	20210902
PHP Extension	20210902
Zend Extension	420210902
Zend Extension Build	API420210902,NTS
PHP Extension Build	API20210902,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled
IPv6 Support	enabled
DTrace Support	available, disabled
Registered PHP Streams	https, ftps, compress.zlib, php, file, glob, data, http, ftp, phar
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, tls, tlsv1.0, tlsv1.1, tlsv1.2, tlsv1.3
Registered Stream Filters	zlib.*, string.rot13, string.toupper, string.tolower, convert.*, consumed, dechunk, convert.iconv.*

This program makes use of the Zend Scripting Language Engine:
Zend Engine v4.1.2, Copyright (c) Zend Technologies
    with Zend OPcache v8.1.2-1ubuntu2.14, Copyright (c), by Zend Technologies

zend engine

Configuration

apache2handler

```
mysql> CREATE DATABASE test2_database;
```

```
mysql> CREATE USER 'test2_user'@'%' IDENTIFIED BY 'P@ssw0rd@2023';
```

```
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'P@ssw0rd@2023';
```

```
devuser@ubuntuserver1:~$ mysql -u test2_user -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 35
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>
```

```
mysql> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| performance_schema |
| test2_database     |
+--------------------+
3 rows in set (0.00 sec)
```
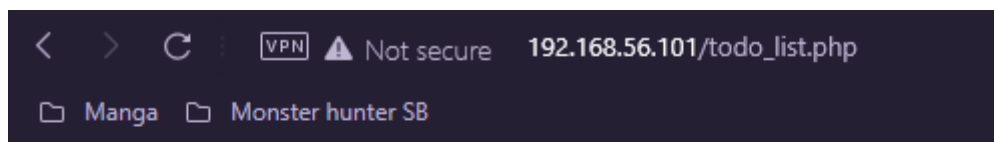
```
mysql> CREATE TABLE test2_database.todo_list (
    -> item_id INT AUTO_INCREMENT,
    -> content VARCHAR(255),
    -> PRIMARY KEY(item_id)
    -> );
```

```
mysql> INSERT INTO example_database.todo_list (content) VALUES ("My first important item");
```

```
mysql> SELECT * FROM test2_database.todo_list;
+---------+--------------------------+
| item_id | content                  |
+---------+--------------------------+
|       1 | My first important item  |
|       2 | My second important item |
|       3 | My third important item  |
|       4 | My this important item   |
+---------+--------------------------+
4 rows in set (0.00 sec)
```

```php
<?php
$user = "test2_user";
$password = "P@ssw0rd@2023";
$database = "test2_database";
$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();
}
```

< > C ⋮ VPN ⚠ Not secure   192.168.56.101/todo_list.php

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TODO

1. My first important item
2. My second important item
3. My third important item
4. My this important item

```
devuser@ubuntuserver1:~$ sudo apt install git
```

```
devuser@ubuntuserver1:~$ git config --global user.name "IAmTruffle"
devuser@ubuntuserver1:~$ git config --global user.email "first.35580@gmail.com"
```

```
devuser@ubuntuserver1:~$ git config --list
user.name=IAmTruffle
user.email=first.35580@gmail.com
```

```
devuser@ubuntuserver1:/var/www$ sudo mkdir -p /var/www/lab2-2_012
devuser@ubuntuserver1:/var/www$ sudo mkdir -p /var/www/lab2-1_012
```

```
devuser@ubuntuserver1:~$ sudo chown -R $USER:$USER /var/www/lab2-1_012/public_html
sudo chown -R $USER:$USER /var/www/lab2-2_012/public_html
```

```
devuser@ubuntuserver1:~$ sudo chmod -R 755 /var/www
```

```
devuser@ubuntuserver1:~$ nano /var/www/lab2-1_012/public_html/index.html
devuser@ubuntuserver1:~$ cp /var/www/lab2-1_012/public_html/index.html /var/www/lab2-2_012/public_html/index.html
```

```
  GNU nano 6.2                    /var/www/lab2-2_012/public_html/index.html *
<html>
  <head>
    <title>Welcome to lab2-2_012!</title>
  </head>
  <body>
    <h1>Success! The lab2-2_012 virtual host is working!</h1>
  </body>
</html>
```

```
devuser@ubuntuserver1:~$ sudo cp /etc/apache2/sites-available/000-default.conf /etc/apache2/sites-available/
lab2-1_012.conf
```

```
<VirtualHost *:80>
    ...
        ServerAdmin admin@lab2-1_012
        ServerName lab2-1_012
        ServerAlias www.lab2-1_012.com
        DocumentRoot /var/www/lab2-1_012/public_html

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

        ...
</VirtualHost>
```

```
devuser@ubuntuserver1:~$ sudo cp /etc/apache2/sites-available/lab2-1_012.conf /etc/apache2/sites-available/l
ab2-2_012.conf
```

```
  GNU nano 6.2                    /etc/apache2/sites-available/lab2-2_012.conf
<VirtualHost *:80>
  ...
    ServerAdmin admin@lab2-2_012
    ServerName lab2-2_012
    ServerAlias www.lab2-2_012.com
    DocumentRoot /var/www/lab2-2_012/public_html

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

    ...
</VirtualHost>
```

```
devuser@ubuntuserver1:~$ sudo cp /etc/apache2/sites-available/lab2-1_012.conf /etc/apache2/sites-available/l
ab2-2_012.conf
```

```
  GNU nano 6.2                        /etc/apache2/sites-available/lab2-2_012.conf
<VirtualHost *:80>
    ...
    ServerAdmin admin@lab2-2_012
    ServerName lab2-2_012
    ServerAlias www.lab2-2_012.com
    DocumentRoot /var/www/lab2-2_012/public_html
    ...
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
    ...
</VirtualHost>
```

```
devuser@ubuntuserver1:~$ sudo a2ensite lab2-1_012.conf
sudo a2ensite lab2-2_012.conf
Enabling site lab2-1_012.
To activate the new configuration, you need to run:
  systemctl reload apache2
Enabling site lab2-2_012.
To activate the new configuration, you need to run:
  systemctl reload apache2
```

```
devuser@ubuntuserver1:~$ sudo a2dissite 000-default.conf
Site 000-default already disabled
```

```
devuser@ubuntuserver1:/var/www$ sudo systemctl restart apache2
devuser@ubuntuserver1:/var/www$ 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 Wed 2023-12-06 10:27:30 UTC; 4s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 31702 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 31706 (apache2)
      Tasks: 55 (limit: 4558)
     Memory: 4.9M
        CPU: 18ms
     CGroup: /system.slice/apache2.service
             ├─31706 /usr/sbin/apache2 -k start
             ├─31708 /usr/sbin/apache2 -k start
             └─31709 /usr/sbin/apache2 -k start

Dec 06 10:27:30 ubuntuserver1 systemd[1]: Starting The Apache HTTP Server...
Dec 06 10:27:30 ubuntuserver1 apachectl[31705]: AH00558: apache2: Could not reliably determine the server
Dec 06 10:27:30 ubuntuserver1 systemd[1]: Started The Apache HTTP Server.
lines 1-17/17 (END)
```

```
# localhost name resolution is handled within DNS itself.
#    127.0.0.1       localhost
#    ::1             localhost
192.168.56.101 lab2-1_012
192.168.56.101 lab2-2_012
```

Success! The lab2-1_012 virtual host is working!

Success! The lab2-2_012 virtual host is working!