

## LAB 2

```

Changes will revert in 101 seconds
Configuration accepted.
devuser@ubuntu:~$ ifconfig -a
Command 'ifconfig' not found, did you mean:
  command 'ifconfig' from deb net-tools (1.60+git20181103.0eebece-1ubuntu5)
  command 'iwconfig' from deb wireless-tools (30~pre9-13.1ubuntu4)
  command 'iconfig' from deb ipmiutil (3.1.8-1)
Try: sudo apt install <deb name>
devuser@ubuntu:~$ ifconfig -a
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::a00:27ff:fe1e:5488 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:1e:54:88 txqueuelen 1000 (Ethernet)
    RX packets 59 bytes 12801 (12.8 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 81 bytes 9419 (9.4 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.56.102 netmask 255.255.255.0 broadcast 192.168.56.255
    inet6 fe80::a00:27ff:fe80:7c54 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:f8:7c:54 txqueuelen 1000 (Ethernet)
    RX packets 19 bytes 3740 (3.7 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 14 bytes 2192 (2.1 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 96 bytes 7740 (7.7 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 96 bytes 7740 (7.7 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

devuser@ubuntu:~$

```

เช็ค IP ที่ต้องใช้

```

Last login: Thu Dec  7 13:31:44 2023
devuser@ubuntu:~$ sudo apt install apache2
[sudo] password for devuser:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils bzip2 libapr1 libaprutil1 libaprutil1-dbd-sqlite3
  libaprutil1-ldap liblua5.3-0 mailcap mime-support ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser bzip2-doc
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils bzip2 libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.3-0 mailcap mime-support ssl-cert
0 upgraded, 13 newly installed, 0 to remove and 2 not upgraded.
Need to get 2,139 kB of archives.
After this operation, 8,518 kB of additional disk space will be used.

```

ติดตั้ง apache2

```
devuser@ubuntu:~$ ufw allow OpenSSH
ERROR: You need to be root to run this script
devuser@ubuntu:~$ sudo -i
root@ubuntu:~# ufw allow OpenSSH
Rules updated
Rules updated (v6)
root@ubuntu:~# ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y
Firewall is active and enabled on system startup
root@ubuntu:~# ufw status
Status: active

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

root@ubuntu:~#
```

เปิด OpenSSH โดย เข้า root ก่อน แล้ว enable จากนั้นเช็ค Status ของ SSH

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

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

เปิด Apache



ลองเข้าเว็บ <http://192.168.56.102/>

```
root@ubuntuserver:~# sudo apt install mysql-server
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libbcbi-fast-perl libbcbi-pm-perl libclone-perl libencode-locale-perl libevent-pthreads-2.1-7
  libfcgi-bin libfcgi-perl libfcgi0ldbl libhtml-parser-perl libhtml-tagset-perl
  libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl
  liblwp-mediatypes-perl libmecab2 libprotobuf-lite23 libtimedate-perl liburi-perl
  mecab-ipadic mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0
  mysql-common mysql-server-8.0 mysql-server-core-8.0
Suggested packages:
  libdata-dump-perl libipc-sharedcache-perl libbusiness-isbn-perl libwww-perl mailx tinyca
The following NEW packages will be installed:
  libbcbi-fast-perl libbcbi-pm-perl libclone-perl libencode-locale-perl libevent-pthreads-2.1-7
  libfcgi-bin libfcgi-perl libfcgi0ldbl libhtml-parser-perl libhtml-tagset-perl
  libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl
  liblwp-mediatypes-perl libmecab2 libprotobuf-lite23 libtimedate-perl liburi-perl
  mecab-ipadic mecab-ipadic-utf8 mecab-utils mysql-client-8.0 mysql-client-core-8.0
  mysql-common mysql-server mysql-server-8.0 mysql-server-core-8.0
0 upgraded, 28 newly installed, 0 to remove and 2 not upgraded.
Need to get 29.6 MB of archives.
After this operation, 243 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

ติดตั้ง MySQL Server

saving up to 50% or more with DigitalOcean →

```
devuser@ubuntu-server:~$ sudo mysql_secure_installation

Securing the MySQL server deployment.

Enter password for user root:

VALIDATE PASSWORD COMPONENT can be used to test passwords
and improve security. It checks the strength of password
and allows the users to set only those passwords which are
secure enough. Would you like to setup VALIDATE PASSWORD component?

Press y|Y for Yes, any other key for No: y

There are three levels of password validation policy:

LOW      Length >= 8
MEDIUM  Length >= 8, numeric, mixed case, and special characters
STRONG Length >= 8, numeric, mixed case, special characters and dictionary
e

Please enter 0 = LOW, 1 = MEDIUM and 2 = STRONG: 1
Using existing password for root.
```

Secure install และตั้งค่ารหัสผ่าน

```
devuser@ubuntu-server:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 14
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

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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>
```

เช็ค ว่า user เข้า ได้ไหม

```

devuser@ubuntu:~$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 15
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

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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> CREATE USER 'example_user'@'%' IDENTIFIED BY 'P@ssw0rd@2023';
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE USER 'Phonlapat Suanghiran'@'%' IDENTIFIED BY 'P@ssw0rd@2023';
Query OK, 0 rows affected (0.00 sec)

mysql> CREATE DATABASE lab2;
Query OK, 1 row affected (0.01 sec)

mysql> CREATE DATABASE lab2-database;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to
your MySQL server version for the right syntax to use near '-database' at line 1
mysql> CREATE DATABASE lab2_database;
Query OK, 1 row affected (0.00 sec)

mysql> GRANT ALL ON example_database.* TO 'Phonlapat Suanghiran'@'%';
Query OK, 0 rows affected (0.00 sec)

mysql> GRANT ALL ON lab2_database.* TO 'Phonlapat Suanghiran'@'%';
Query OK, 0 rows affected (0.00 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)

mysql>

```

## สร้าง Database และตั้งค่า User ใน MySQL

```

devuser@ubuntu:~$ sudo mysql -u rocket -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 24
Server version: 8.0.35-0ubuntu0.22.04.1 (Ubuntu)

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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>

```

ลอง login user ที่สร้างมาใหม่

```

devuser@ubuntu:~$ sudo apt install php libapache2-mod-php php-mysql
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-ssl
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 11.4 MB of archives.
After this operation, 42.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libapache2-mod-ssl amd64 2.4.52-1ubuntu0.5 [48.8 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 php8.1-openssl amd64 8.1.2-1ubuntu0.5 [10.5 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 php8.1-mysql amd64 8.1.2-1ubuntu0.5 [10.5 kB]
Fetched 11.4 MB in 2s (5450 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
(Reading database ... 123456789 files and directories currently installed.)
Preparing to unpack .../libapache2-mod-ssl_2.4.52-1ubuntu0.5_amd64.deb ...
Unpacking libapache2-mod-ssl (2.4.52-1ubuntu0.5) ...
Preparing to unpack .../php8.1-openssl_8.1.2-1ubuntu0.5_amd64.deb ...
Unpacking php8.1-openssl (8.1.2-1ubuntu0.5) ...
Preparing to unpack .../php8.1-mysql_8.1.2-1ubuntu0.5_amd64.deb ...
Unpacking php8.1-mysql (8.1.2-1ubuntu0.5) ...
Setting up libapache2-mod-ssl (2.4.52-1ubuntu0.5) ...
Enabling module ssl.
To see the available log levels run: `sudo systemctl restart apache2`
Setting up php8.1-openssl (8.1.2-1ubuntu0.5) ...
Setting up php8.1-mysql (8.1.2-1ubuntu0.5) ...
Setting up php (8.1.2-1ubuntu0.5) ...
Processing triggers for libapache2-mod-php (8.1.2-1ubuntu0.5) ...

```

ติดตั้งและตรวจสอบ PHP Version

```

devuser@ubuntu:~$ sudo mkdir /var/www/lab2
devuser@ubuntu:~$ sudo chown -R $USER:$USER /var/www/lab2
devuser@ubuntu:~$ sudo nano /etc/apache2/sites-available/lab2.conf
devuser@ubuntu:~$

```

สร้าง directory และตั้งให้ USER และ GROUP USER เข้าใช้งานได้

```

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

```

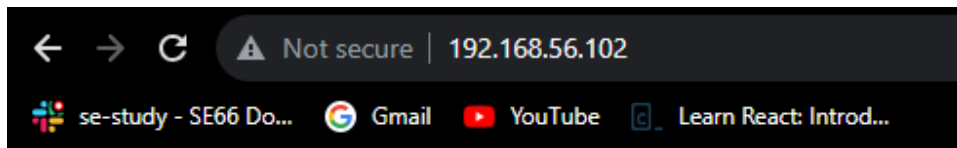
Config VirtualHost

```

devuser@ubuntuuser:~$ sudo a2ensite lab2
Enabling site lab2.
To activate the new configuration, you need to run:
  systemctl reload apache2
devuser@ubuntuuser:~$ sudo a2dissite 000-default
Site 000-default disabled.
To activate the new configuration, you need to run:
  systemctl reload apache2
devuser@ubuntuuser:~$ 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 message
Syntax OK
devuser@ubuntuuser:~$ sudo systemctl reload apache2
devuser@ubuntuuser:~$

```

ปิด Default Domain เปลี่ยนมาใช้ Domain ที่เราตั้งค่าเอง จากนั้นก็ test config และ restart apache



# Hello World!

This is the landing page of **Lab 2 66543210020-4**.

ทดสอบเข้า Domain ตัวเอง

```

mysql> CREATE TABLE lab2_database.todo_list (
  -> item_id INT AUTO_INCREMENT,
  -> content VARCHAR(255),
  -> PRIMARY KEY(item_id)
  -> );
Query OK, 0 rows affected (0.01 sec)

mysql>

```

กลับเข้ามาสร้างตารางใน Database (lab2\_database)

```
mysql> INSERT INTO lab2_database.todo_list (content) VALUES ("My first MySQL on Ubuntu Server Test eiei");
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO lab2_database.todo_list (content) VALUES ("My Second MySQL eiei two");
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO lab2_database.todo_list (content) VALUES ("My THREE MySQL eieinaja three");
Query OK, 1 row affected (0.00 sec)

mysql> SELECT * FROM lab2_database.todo_list;
+-----+-----+
| item_id | content |
+-----+-----+
| 1 | My first MySQL on Ubuntu Server Test eiei |
| 2 | My Second MySQL eiei two |
| 3 | My THREE MySQL eieinaja three |
+-----+-----+
3 rows in set (0.00 sec)
```

ลอง INSERT ข้อมูลและตรวจสอบ

```
GNU nano 6.2 /var/www/lab2/todo_list.php *
<?php
$user = "rocket";
$password = "P@ssw0rd@2023";
$database = "lab2_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();
}
```

เข้าไปใส่ PHP เชื่อมกับ Database ใน todo\_list.php

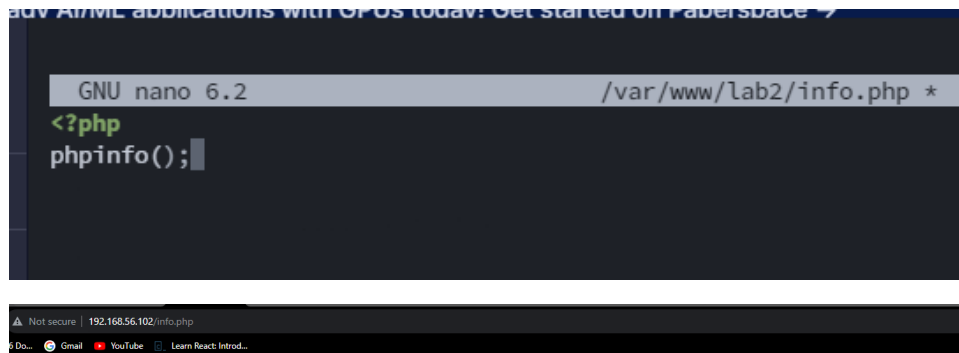




# TODO

1. My first MySQL on Ubuntu Server Test eiei
2. My Second MySQL eiei two
3. My THREE MySQL eieinaja three

ทดสอบใน Domain



PHP Version 8.1.2-1ubuntu2.14	
System	Linux ubuntu2.14
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/php8.1/apache2
Loaded Configuration File	/etc/php8.1/apache2/php.ini
Scan this dir for additional .ini files	/etc/php8.1/apache2/conf.d
Additional .ini files parsed	/etc/php8.1/apache2/conf.d/10-mysqld.ini, /etc/php8.1/apache2/conf.d/10-opcache.ini, /etc/php8.1/apache2/conf.d/10-pdo.ini, /etc/php8.1/apache2/conf.d/20-calendar.ini, /etc/php8.1/apache2/conf.d/20-curl.ini, /etc/php8.1/apache2/conf.d/20-dom.ini, /etc/php8.1/apache2/conf.d/20-fileinfo.ini, /etc/php8.1/apache2/conf.d/20-ftp.ini, /etc/php8.1/apache2/conf.d/20-gdlib.ini, /etc/php8.1/apache2/conf.d/20-gmp.ini, /etc/php8.1/apache2/conf.d/20-imagick.ini, /etc/php8.1/apache2/conf.d/20-imagick.ini, /etc/php8.1/apache2/conf.d/20-ldap.ini, /etc/php8.1/apache2/conf.d/20-libxml.ini, /etc/php8.1/apache2/conf.d/20-mcrypt.ini, /etc/php8.1/apache2/conf.d/20-mysql.ini, /etc/php8.1/apache2/conf.d/20-pdo_mysql.ini, /etc/php8.1/apache2/conf.d/20-phar.ini, /etc/php8.1/apache2/conf.d/20-posix.ini, /etc/php8.1/apache2/conf.d/20-readline.ini, /etc/php8.1/apache2/conf.d/20-shmop.ini, /etc/php8.1/apache2/conf.d/20-sockets.ini, /etc/php8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php8.1/apache2/conf.d/20-sysvsem.ini, /etc/php8.1/apache2/conf.d/20-sysvshm.ini, /etc/php8.1/apache2/conf.d/20-tokyo.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
ITrace 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.conv.*
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	

Configuration

ทดสอบ PHP และลองเปิดใน Domain