20MCA136-NETWORKING & ADMIISTRATION

LAB EXPERIMENT

LAMP Stack-Installation

SUBMITTED BY,

VIVIN V. ABRAHAM

R MCA-2020-S2

ROLL NO : 42

SUBMITTED TO ,

Navya MISS

Installing LAMP Stack on Ubuntu

Apache Installation

Step 1: Update Package Repository Cache

sudo apt-get update

Step 2: Install Apache

sudo apt-get install apache2

Check If apache is installed correctly

sudo service apache2 status

Check if everything run correctly

By verifying, **Active:ctive (running)**

```
vivin@vivin:~$ sudo apt-get update
[sudo] password for vivin:
Hit:1 http://in.archive.ubuntu.com/ubuntu bionic InRelease
Get:2 http://in.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:3 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:4 http://in.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]
Get:5 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [2,262 kB]
Get:6 http://in.archive.ubuntu.com/ubuntu bionic-updates/main i386 Packages [1,360 kB]
Get:7 http://in.archive.ubuntu.com/ubuntu bionic-updates/main Translation-en [438 kB]
Get:8 http://in.archive.ubuntu.com/ubuntu bionic-updates/main amd64 DEP-11 Metadata [292 kB]
Get:9 http://in.archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [492 kB]
Get:10 http://in.archive.ubuntu.com/ubuntu bionic-updates/restricted Translation-en [66.7 kB]
Get:11 http://in.archive.ubuntu.com/ubuntu bionic-updates/universe i386 Packages [1,576 kB]
Get:12 http://in.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [1,750 kB]
Get:13 http://in.archive.ubuntu.com/ubuntu bionic-updates/universe Translation-en [375 kB]
Get:14 http://in.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 DEP-11 Metadata [294 kB]
Get:15 http://in.archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 DEP-11 Metadata [2,468 B]
Get:16 http://in.archive.ubuntu.com/ubuntu bionic-backports/universe amd64 DEP-11 Metadata [9,268 B]
Fetched 9,170 kB in 11s (831 kB/s)
Reading package lists... Done
vivin@vivin:~$ sudo apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.29-1ubuntu4.18).
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
vivin@vivin:~$ sudo service apache2 status
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset:
  Drop-In: /lib/systemd/system/apache2.service.d
           └─apache2-systemd.conf
   Active: active (running) since Wed 2021-09-29 00:41:22 IST; 2min 35s ago
  Process: 845 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCES
 Main PID: 936 (apache2)
    Tasks: 55 (limit: 4663)
   CGroup: /system.slice/apache2.service
           ├─936 /usr/sbin/apache2 -k start
           ├─937 /usr/sbin/apache2 -k start
           └─939 /usr/sbin/apache2 -k start

Sep 29 00:41:22 vivin systemd[1]: Starting The Apache HTTP Server...
Sep 29 00:41:22 vivin apachectl[845]: AH00558: apache2: Could not reliably deter
Sep 29 00:41:22 vivin systemd[1]: Started The Apache HTTP Server.
```

Make sure UFW firewall has an application profile

sudo ufw app list

Make sure it allows traffic on ports 80 and 443

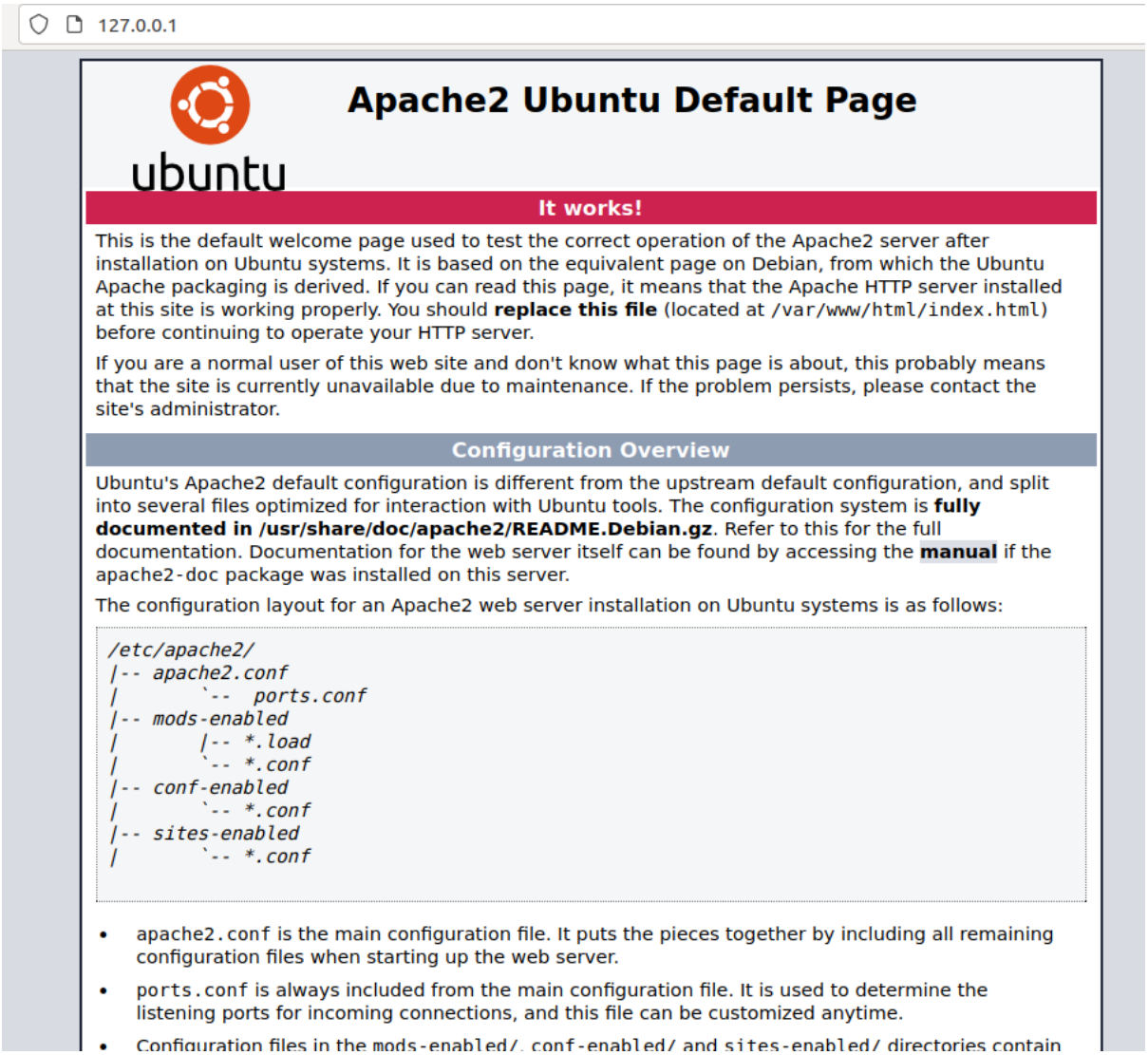
sudo ufw app info "Apache Full"

Identify the Ip address

Ifconfig

```
Sep 29 00:41:22 vivin systemd[1]: Starting The Apache HTTP Server...
Sep 29 00:41:22 vivin apachectl[845]: AH00558: apache2: Could not reliably deter
Sep 29 00:41:22 vivin systemd[1]: Started The Apache HTTP Server.

vivin@vivin:~$ sudo ufw app list
Available applications:
  Apache
  Apache Full
  Apache Secure
  CUPS
vivin@vivin:~$ sudo ufw app info "Apache Full"
Profile: Apache Full
Title: Web Server (HTTP,HTTPS)
Description: Apache v2 is the next generation of the omnipresent Apache web
server.

Ports:
  80,443/tcp
vivin@vivin:~$ ifconfig
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::34f5:79af:ce05:ed83  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:e6:f9:04  txqueuelen 1000  (Ethernet)
        RX packets 7997  bytes 11346516 (11.3 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 1895  bytes 199765 (199.7 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 450  bytes 54038 (54.0 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 450  bytes 54038 (54.0 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

Step 3: Verify Apache is running by enter ip address at browser


127.0.0.1
Apache2 Ubuntu 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

Mariadb- Installation

Step1: Install mariadb

sudo apt install mariadb-server mariadb-Client

```
vivin@vivin:~$ sudo apt install mariadb-server mariadb-client
Reading package lists... Done
Building dependency tree
Reading state information... Done
mariadb-client is already the newest version (1:10.1.48-0ubuntu0.18.04.1).
mariadb-server is already the newest version (1:10.1.48-0ubuntu0.18.04.1).
```


```
vivin@vivin:~$ sudo apt install mariadb-server mariadb-client
Reading package lists... Done
Building dependency tree
Reading state information... Done
mariadb-client is already the newest version (1:10.1.48-0ubuntu0.18.04.1).
mariadb-server is already the newest version (1:10.1.48-0ubuntu0.18.04.1).
```

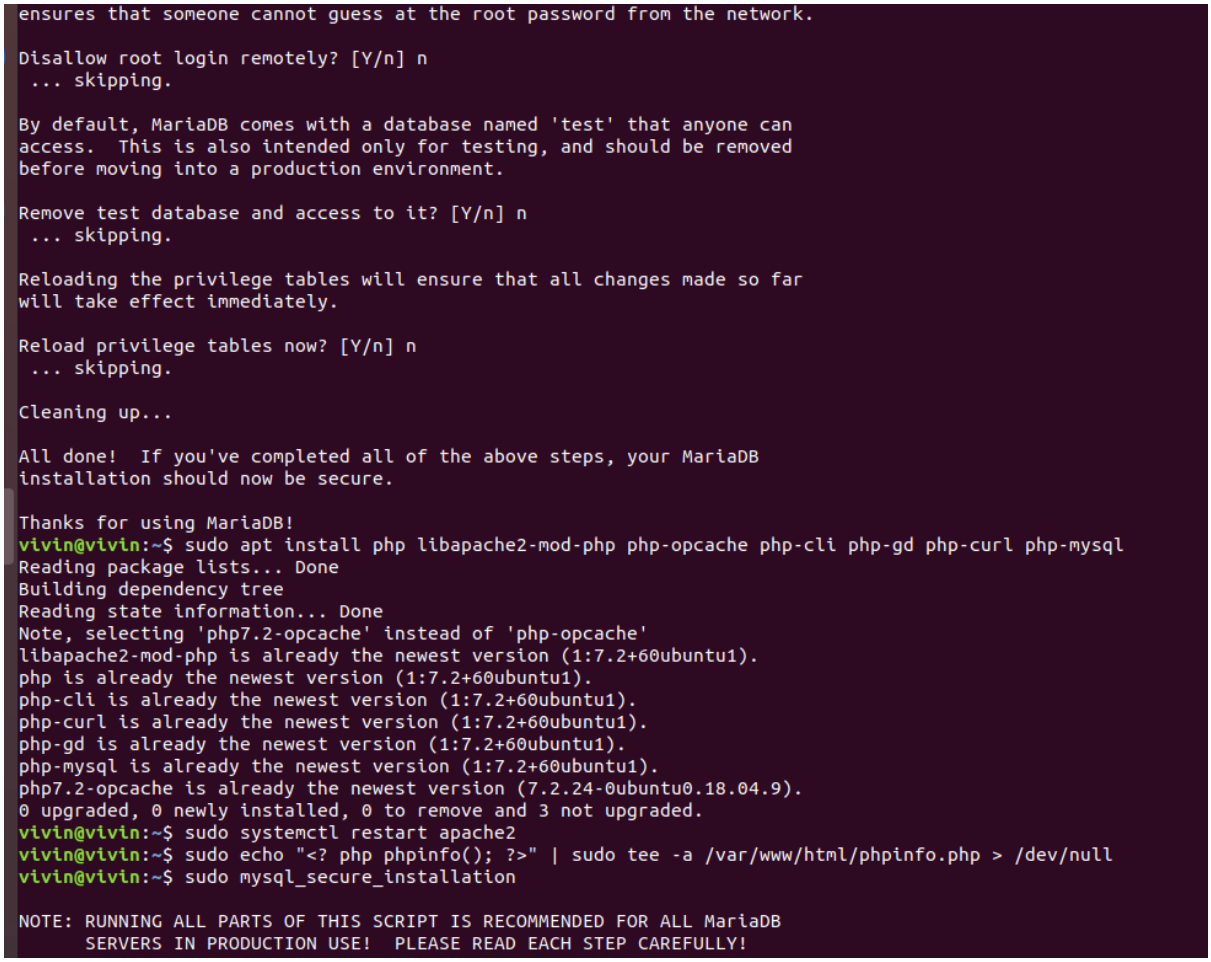

Step2: Check mariadb installation

sudo systemctl status mysql

Step3: Secure mariadb

sudo mysql_secure_installation

```
mariadb-client is already the newest version (1:10.1.48-0ubuntu0.18.04.1).
mariadb-server is already the newest version (1:10.1.48-0ubuntu0.18.04.1).
0 upgraded, 0 newly installed, 0 to remove and 3 not upgraded.
vivin@vivin:~$ sudo systemctl status mysql
● mariadb.service - MariaDB 10.1.48 database server
   Loaded: loaded (/lib/systemd/system/mariadb.service; enabled; vendor preset:
   Active: active (running) since Wed 2021-09-29 00:41:23 IST; 5min ago
     Docs: man:mysqld(8)
           https://mariadb.com/kb/en/library/systemd/
  Process: 1156 ExecStartPost=/bin/sh -c systemctl unset-environment _WSREP_STAR
  Process: 1153 ExecStartPost=/etc/mysql/debian-start (code=exited, status=0/SUC
  Process: 871 ExecStartPre=/bin/sh -c [ ! -e /usr/bin/galera_recovery ] && VAR=
  Process: 855 ExecStartPre=/bin/sh -c systemctl unset-environment _WSREP_START_
  Process: 846 ExecStartPre=/usr/bin/install -m 755 -o mysql -g root -d /var/run
 Main PID: 1055 (mysqld)
   Status: "Taking your SQL requests now..."
    Tasks: 27 (limit: 4663)
   CGroup: /system.slice/mariadb.service
           └─1055 /usr/sbin/mysqld

Sep 29 00:41:22 vivin systemd[1]: Starting MariaDB 10.1.48 database server...
Sep 29 00:41:22 vivin mysqld[1055]: 2021-09-29  0:41:22 140226726513792 [Note] /
Sep 29 00:41:23 vivin /etc/mysql/debian-start[1155]: Upgrading MySQL tables if n
Sep 29 00:41:23 vivin systemd[1]: Started MariaDB 10.1.48 database server.
Sep 29 00:41:23 vivin /etc/mysql/debian-start[1159]: /usr/bin/mysql_upgrade: the
Sep 29 00:41:23 vivin /etc/mysql/debian-start[1159]: Looking for 'mysql' as: /us
Sep 29 00:41:23 vivin /etc/mysql/debian-start[1159]: Looking for 'mysqlcheck' as

vivin@vivin:~$ sudo mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB
      SERVERS IN PRODUCTION USE!  PLEASE READ EACH STEP CAREFULLY!

In order to log into MariaDB to secure it, we'll need the current
password for the root user.  If you've just installed MariaDB, and
you haven't set the root password yet, the password will be blank,
so you should just press enter here.

Enter current password for root (enter for none):
OK, successfully used password, moving on...

Setting the root password ensures that nobody can log into the MariaDB
```



PHP and commonly used modules Installation

Step1: Install PHP

sudo apt install php libapache2-mod-php php-opcache php-cli php-gd php-curl php-mysql

Step 2: Restart apacehe2

sudo systemctl restart apache2

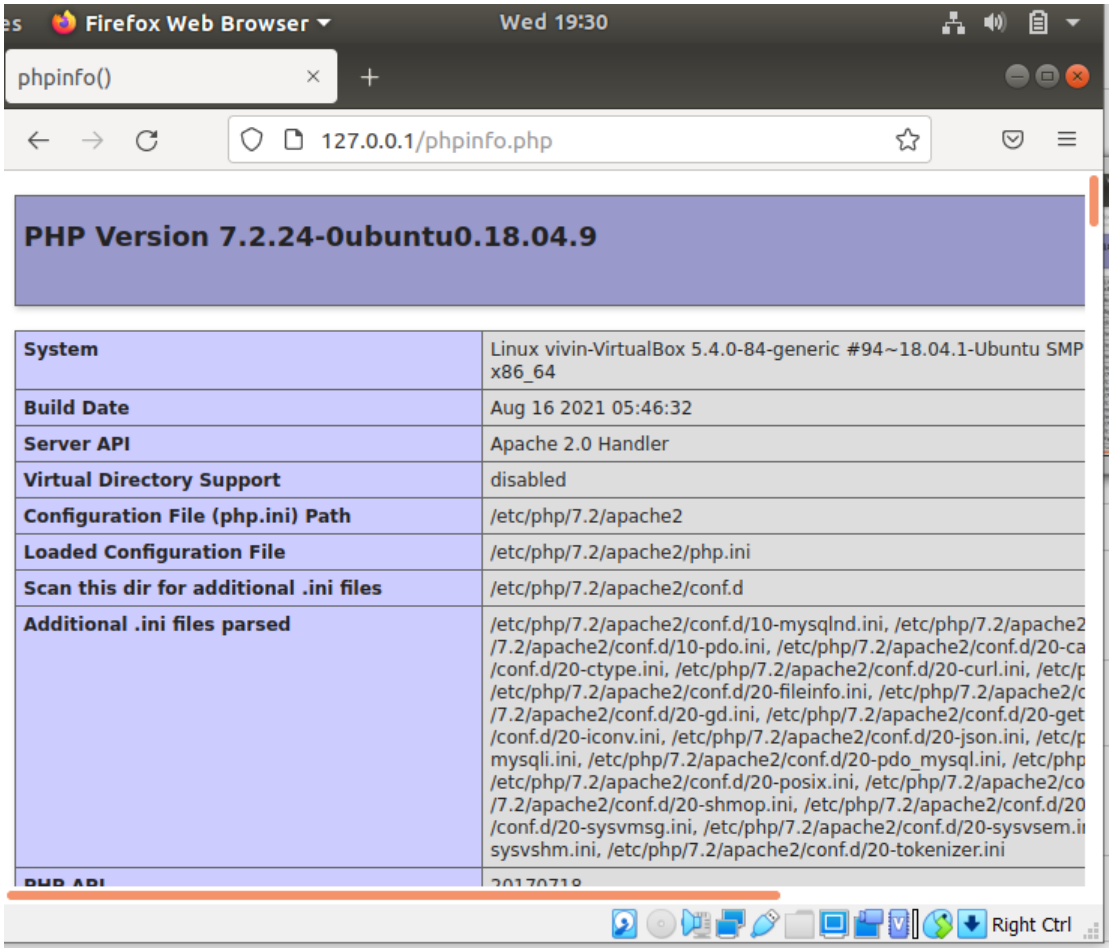
Step 3: Check PHP installation

sudo echo “<?php phpinfo(); ?>” | sudo tee -a /var/www/html/phpinfo.php >

/dev/null

Step4: Verify the php in browser

http://127.0.0.1/phpinfo.php



phpmydmin Installation

Step 1: Install phpmyadmin

sudo apt install phpmyadmin php-mbstring php-zip php-gd php-json php-curl

```
vivin@vivin-VirtualBox:~$ sudo apt install phpmyadmin php-mbstring php-zip php-
gd php-json php-curl
[sudo] password for vivin:
Reading package lists... Done
Building dependency tree
Reading state information... Done
php-curl is already the newest version (1:7.2+60ubuntu1).
php-gd is already the newest version (1:7.2+60ubuntu1).
The following additional packages will be installed:
  dbconfig-common dbconfig-mysql javascript-common libjs-jquery
  libjs-sphinxdoc libjs-underscore libzip4 php-bz2 php-pear php-php-gettext
  php-phpseclib php-tcpdf php-xml php7.2-bz2 php7.2-mbstring php7.2-xml
  php7.2-zip
Suggested packages:
  php-libsodium php-mcrypt php-gmp php-imagick
The following NEW packages will be installed:
  dbconfig-common dbconfig-mysql javascript-common libjs-jquery
  libjs-sphinxdoc libjs-underscore libzip4 php-bz2 php-json php-mbstring
  php-pear php-php-gettext php-phpseclib php-tcpdf php-xml php-zip php7.2-bz2
  php7.2-mbstring php7.2-xml php7.2-zip phpmyadmin
0 upgraded, 21 newly installed, 0 to remove and 14 not upgraded.
Need to get 13.7 MB of archives.
After this operation, 53.7 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 dbconfig-common all
 2.0.9 [601 kB]
Get:2 http://in.archive.ubuntu.com/ubuntu bionic/universe amd64 dbconfig-mysql
all 2.0.9 [1,038 B]
Get:3 http://in.archive.ubuntu.com/ubuntu bionic/main amd64 javascript-common a
```

(While asks for webserver select apache2, select db-configuration and set password)

Step 2: Restart apache2

sudo systemctl restart apache2

If phpmyadmin is not found error while run on browser

sudo -H gedit /etc/apache2/apache2.conf

Then add

Include /etc/phpmyadmin/apache.conf

On end/15 th line

Restart apache:

sudo systemctl restart apache2

Install phpadmin again

sudo apt install phpmyadmin php-mbstring php-zip php-gd php-json php-curl

Step3: Check phpmyadmin

Open a browser

http://localhost/phpmyadmin

if phpmyadmin till no code at then

```
vivin@vivin-VirtualBox:~$ sudo mysql -p -u root
[sudo] password for vivin:
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 45
Server version: 10.1.48-MariaDB-0ubuntu0.18.04.1 Ubuntu 18.04

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

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

MariaDB [(none)]> CREATE USER 'admin'@'%' IDENTIFIED BY '1234';
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> GRANT ALL PRIVILEGES ON *.* TO 'admin'@'%'WITH GRANT OPTION;
Query OK, 0 rows affected (0.00 sec)

MariaDB [(none)]> exit
Bye
vivin@vivin-VirtualBox:~$
```

Step4: repeat step 2 and 3

Login-apache