

## Project 1: LAMP Stack

### Step 1: Apache Install

In this step I created an Ubuntu instance Azure and I connected with PowerShell via password and username. You can see how to here: [Azure Vm](#)

I ran the following cmd to install Apache on the ubuntu

sudo apt update

```
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1035-azure x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/advantage

System information as of Wed Mar 29 19:06:47 UTC 2023

System load:  0.4          Processes:    121
Usage of /:   5.2% of 28.89GB   Users logged in:  0
Memory usage: 3%          IPv4 address for eth0: 10.0.0.6
Swap usage:  0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

Uncledennis@DennisLinux: ~$
Uncledennis@DennisLinux: ~$
Uncledennis@DennisLinux: ~$ #update a list of packages in package manager
Uncledennis@DennisLinux: ~$
Uncledennis@DennisLinux: ~$ sudo apt update
Hit:1 http://azure.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://azure.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://azure.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:4 http://azure.archive.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:5 http://azure.archive.ubuntu.com/ubuntu focal/universe amd64 Packages [8628 kB]
Get:6 http://azure.archive.ubuntu.com/ubuntu focal/universe Translation-en [5124 kB]
Get:7 http://azure.archive.ubuntu.com/ubuntu focal/universe amd64 c-n-f Metadata [265 kB]
Get:8 http://azure.archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [144 kB]
Get:9 http://azure.archive.ubuntu.com/ubuntu focal/multiverse Translation-en [104 kB]
Get:10 http://azure.archive.ubuntu.com/ubuntu focal/multiverse amd64 c-n-f Metadata [9136 B]
Get:11 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [2463 kB]
Get:12 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [16.4 kB]
Get:13 http://azure.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [1713 kB]
Get:14 http://azure.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [1045 kB]
Get:15 http://azure.archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [246 kB]
Get:16 http://azure.archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [24.1 kB]
Get:17 http://azure.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [25.1 kB]
Get:18 http://azure.archive.ubuntu.com/ubuntu focal-updates/multiverse Translation-en [7408 B]
Get:19 http://azure.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 c-n-f Metadata [592 B]
Get:20 http://azure.archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [45.7 kB]
Get:21 http://azure.archive.ubuntu.com/ubuntu focal-backports/main Translation-en [16.3 kB]
Get:22 http://azure.archive.ubuntu.com/ubuntu focal-backports/main amd64 c-n-f Metadata [1420 B]
Get:23 http://azure.archive.ubuntu.com/ubuntu focal-backports/restricted amd64 c-n-f Metadata [116 B]
Get:24 http://azure.archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [24.9 kB]
Get:25 http://azure.archive.ubuntu.com/ubuntu focal-backports/universe Translation-en [16.3 kB]
```

sudo apt install apache2

```

Fetched 23.7 MB in 5s (4951 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
3 packages can be upgraded. Run 'apt list --upgradable' to see them.
Uncledennis@Dennislinux: $
Uncledennis@Dennislinux: $ # run apache2 package installation
Uncledennis@Dennislinux: $
Uncledennis@Dennislinux: $ sudo apt install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libjansson4 liblua5.2-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser openssl-blacklist
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libjansson4 liblua5.2-0 ssl-cert
0 upgraded, 11 newly installed, 0 to remove and 3 not upgraded.
Need to get 1867 kB of archives.
After this operation, 8098 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://azure.archive.ubuntu.com/ubuntu focal/main amd64 libapr1 amd64 1.6.5-1ubuntu1 [91.4 kB]
Get:2 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 libaprutil1 amd64 1.6.1-4ubuntu2.1 [84.9 kB]
Get:3 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-4ubuntu2.1 [10.6 kB]
Get:4 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 libaprutil1-ldap amd64 1.6.1-4ubuntu2.1 [8756 B]
Get:5 http://azure.archive.ubuntu.com/ubuntu focal/main amd64 libjansson4 amd64 2.12-1build1 [28.9 kB]
Get:6 http://azure.archive.ubuntu.com/ubuntu focal/main amd64 liblua5.2-0 amd64 5.2.4-1.1build3 [106 kB]
Get:7 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-bin amd64 2.4.41-4ubuntu3.14 [1182 kB]
Get:8 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-data all 2.4.41-4ubuntu3.14 [158 kB]
Get:9 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2-utils amd64 2.4.41-4ubuntu3.14 [84.4 kB]
Get:10 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 apache2 amd64 2.4.41-4ubuntu3.14 [95.6 kB]
Get:11 http://azure.archive.ubuntu.com/ubuntu focal/main amd64 ssl-cert all 1.0.39 [17.0 kB]
Fetched 1867 kB in 0s (13.5 MB/s)
Preconfiguring packages ...
Selecting previously unselected package libapr1:amd64.
(Reading database ... 58689 files and directories currently installed.)
Preparing to unpack .../00-libapr1_1.6.5-1ubuntu1_amd64.deb ...
Unpacking libapr1:amd64 (1.6.5-1ubuntu1) ...
Selecting previously unselected package libaprutil1:amd64.
Preparing to unpack .../01-libaprutil1_1.6.1-4ubuntu2.1_amd64.deb ...
Unpacking libaprutil1:amd64 (1.6.1-4ubuntu2.1) ...

```

sudo systemctl status apache2

```
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...
Uncledennis@dennislinux: $
Uncledennis@dennislinux:~$ 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 2023-03-29 19:12:11 UTC; 31s ago
     Docs: https://httpd.apache.org/docs/2.4/
    Main PID: 2821 (apache2)
      Tasks: 55 (limit: 9531)
     Memory: 9.1M
    CGroup: /system.slice/apache2.service
            └─2821 /usr/sbin/apache2 -k start
              └─2823 /usr/sbin/apache2 -k start
                └─2824 /usr/sbin/apache2 -k start

Mar 29 19:12:11 DennisLinux systemd[1]: Starting The Apache HTTP Server...
Mar 29 19:12:11 DennisLinux systemd[1]: Started The Apache HTTP Server.
Uncledennis@dennislinux:~$
Uncledennis@dennislinux:~$
Uncledennis@dennislinux:~$ curl http://localhost:80

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <!--
    Modified from the Debian original for Ubuntu
    Last updated: 2016-11-16
    See: https://launchpad.net/bugs/1288690
  -->
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <title>Apache2 Ubuntu Default Page: It works</title>
    <style type="text/css" media="screen">
      * {
        margin: 0px 0px 0px 0px;
        padding: 0px 0px 0px 0px;
      }

      body, html {
        padding: 3px 3px 3px 3px;

        background-color: #D8DBE2;

        font-family: Verdana, sans-serif;
        font-size: 11pt;
        text-align: center;
      }

      div.main_page {
```

```
curl -s http://74.235.184.124/meta-data/public-ipv4
```

```
</div>
</div>
<div class="validator">
</div>
</body>
</html>

Uncledennis@DennisLinux: $ curl -s http://74.235.184.124

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <!--
    Modified from the Debian original for Ubuntu
    Last updated: 2016-11-16
    See: https://launchpad.net/bugs/1288690
  -->
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <title>Apache2 Ubuntu Default Page: It works</title>
    <style type="text/css" media="screen">

* {
  margin: 0px 0px 0px 0px;
  padding: 0px 0px 0px 0px;
}

body, html {
  padding: 3px 3px 3px 3px;

  background-color: #D8DBE2;

  font-family: Verdana, sans-serif;
  font-size: 11pt;
  text-align: center;
}

div.main_page {
  position: relative;
  display: table;

  width: 800px;

  margin-bottom: 3px;
  margin-left: auto;
  margin-right: auto;
  padding: 0px 0px 0px 0px;

  border-width: 2px;
  border-color: #212738;
  border-style: solid;

  background-color: #FFFFFF;

  text-align: center;
}
```

```
</div>
</body>
</html>

Uncledennis@Dennislinux: $ curl -s http://74.235.184.124/latest/meta-data/public-ipv4
<!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
<html><head>
<title>404 Not Found</title>
</head><body>
<h1>Not Found</h1>
<p>The requested URL was not found on this server.</p>
<hr>
<address>Apache/2.4.41 (Ubuntu) Server at 74.235.184.124 Port 80</address>
</body></html>
Uncledennis@Dennislinux: $
Uncledennis@Dennislinux:~$
Uncledennis@Dennislinux: $
Uncledennis@Dennislinux: $ curl -s -H Metadata:true --no-proxy "*" "http://169.254.169.254/metadata/instance?api-version=2021-02-01" | jq

Command 'jq' not found, but can be installed with:

sudo apt install jq
```

## Step 2: MySql Install

```
sudo apt install mysql-server
```

```
mc@idepadm160mmjgplnrm1:~$ sudo apt install mysql-server  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
libgc1-fast-perl libgc1-perl libc-locale-perl libevent-core-2.1-7 libevent-threaded-2.1-7 libfclm1-parser-perl libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl liblingua-mediatypes-perl  
libmagic2 libmediatag-perl libperl-perl mecab-ipadic mecab-ipadic-utf8 mecab-util5 mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server-8.0 mysql-server-core-8.0  
Suggested packages:  
libdb-dump-perl libdpc-sharedcache-perl libdpkg-dev perl mailx tinymce  
The following NEW packages will be installed:  
libgc1-fast-perl libgc1-perl libc-locale-perl libevent-core-2.1-7 libevent-threaded-2.1-7 libfclm1-parser-perl libhtml-tagset-perl libhtml-template-perl libhttp-date-perl libhttp-message-perl libio-html-perl liblingua-mediatypes-perl  
libmagic2 libmediatag-perl libperl-perl mecab-ipadic mecab-ipadic-utf8 mecab-util5 mysql-client-8.0 mysql-client-core-8.0 mysql-common mysql-server-8.0 mysql-server-core-8.0  
0 upgraded, 25 newly installed, 0 to remove and 3 not upgraded.  
Need to get 36.7 MB of archives.  
After this operation, 319 MB of additional disk space will be used.  
Do you want to continue? [Y/n] y
```

```
sudo mysql
```

```
sudo mysql_secure_installation
```

```
Uncledennis@dennislinux: $ sudo mysql
Uncledennis@dennislinux: $ sudo mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.32-0ubuntu0.20.04.2 (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> ALTER USER 'root'@'localhost' IDENTIFIED WITH mysql_native_password BY 'XXXXXXXXXX';
Query OK, 0 rows affected (0.01 sec)

mysql> exit
Bye
Uncledennis@dennislinux: $
Uncledennis@dennislinux: $ 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 file

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

Estimated strength of the password: 50
Change the password for root ? ((Press y|Y for Yes, any other key for No) : n

... skipping.
By default, a MySQL installation has an anonymous user,
allowing anyone to log into MySQL without having to have
a user account created for them. This is intended only for
testing, and to make the installation go a bit smoother.
You should remove them before moving into a production
environment.

Remove anonymous users? (Press y|Y for Yes, any other key for No) : n

... skipping.

Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.

Disallow root login remotely? (Press y|Y for Yes, any other key for No) : n
```

sudo mysql -p

```
Remove anonymous users? (Press y|Y for Yes, any other key for No) : n
... skipping.

Normally, root should only be allowed to connect from
'localhost'. This ensures that someone cannot guess at
the root password from the network.

Disallow root login remotely? (Press y|Y for Yes, any other key for No) : n
... skipping.
By default, MySQL comes with a database named 'test' that
anyone can access. This is also intended only for testing,
and should be removed before moving into a production
environment.

Remove test database and access to it? (Press y|Y for Yes, any other key for No) : n
... skipping.
Reloading the privilege tables will ensure that all changes
made so far will take effect immediately.

Reload privilege tables now? (Press y|Y for Yes, any other key for No) : y
Success.

All done!
Uncledennis@DennisLinux: $
Uncledennis@DennisLinux: $
Uncledennis@DennisLinux: $ sudo mysql -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 11
Server version: 8.0.32-0ubuntu0.20.04.2 (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> exit
Bye
Uncledennis@DennisLinux: $
Uncledennis@DennisLinux: $
```

### STEP 3: Installing PHP

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

```
php -v
```

```
Uncledennis@DennisLinux:~$  
Uncledennis@DennisLinux:~$ sudo apt install php libapache2-mod-php php-mysql  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
  libapache2-mod-php7.4 php-common php7.4 php7.4-cli php7.4-common php7.4-json php7.4-mysql php7.4-opcache php7.4-readline  
Suggested packages:  
  php-pear  
The following NEW packages will be installed:  
  libapache2-mod-php libapache2-mod-php7.4 php php-common php-mysql php7.4 php7.4-cli php7.4-common php7.4-json php7.4-mysql php7.4-opcache php7.4-readline  
0 upgraded, 12 newly installed, 0 to remove and 3 not upgraded.  
Need to get 4158 kB of archives.  
After this operation, 18.5 MB of additional disk space will be used.  
Do you want to continue? [Y/n] y  
Get:1 http://azure.archive.ubuntu.com/ubuntu focal/main amd64 php-common all 2:75 [11.9 kB]  
Get:2 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 php7.4-common amd64 7.4.3-4ubuntu2.18 [982 kB]  
Get:3 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 php7.4-json amd64 7.4.3-4ubuntu2.18 [19.2 kB]  
Get:4 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 php7.4-opcache amd64 7.4.3-4ubuntu2.18 [198 kB]  
Get:5 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 php7.4-readline amd64 7.4.3-4ubuntu2.18 [12.6 kB]  
Get:6 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 php7.4-cli amd64 7.4.3-4ubuntu2.18 [1427 kB]  
Get:7 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 libapache2-mod-php7.4 amd64 7.4.3-4ubuntu2.18 [1369 kB]  
Get:8 http://azure.archive.ubuntu.com/ubuntu focal/main amd64 libapache2-mod-php all 2:7.4+75 [2836 B]  
Get:9 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 php7.4 all 7.4.3-4ubuntu2.18 [9240 B]  
Get:10 http://azure.archive.ubuntu.com/ubuntu focal/main amd64 php all 2:7.4+75 [2712 B]  
Get:11 http://azure.archive.ubuntu.com/ubuntu focal-updates/main amd64 php7.4-mysql amd64 7.4.3-4ubuntu2.18 [121 kB]  
Get:12 http://azure.archive.ubuntu.com/ubuntu focal/main amd64 php-mysql all 2:7.4+75 [2000 B]  
Fetched 4158 kB in 0s (18.8 MB/s)  
Selecting previously unselected package php-common.  
(Reading database ... 59995 files and directories currently installed.)  
Preparing to unpack .../00-php-common_2%3a75_all.deb ...  
Unpacking php-common (2:75) ...  
Selecting previously unselected package php7.4-common.  
Preparing to unpack .../01-php7.4-common_7.4.3-4ubuntu2.18_amd64.deb ...  
Unpacking php7.4-common (7.4.3-4ubuntu2.18) ...  
Selecting previously unselected package php7.4-json.  
Preparing to unpack .../02-php7.4-json_7.4.3-4ubuntu2.18_amd64.deb ...  
Unpacking php7.4-json (7.4.3-4ubuntu2.18) ...  
Selecting previously unselected package php7.4-opcache.  
Preparing to unpack .../03-php7.4-opcache_7.4.3-4ubuntu2.18_amd64.deb ...  
Unpacking php7.4-opcache (7.4.3-4ubuntu2.18) ...  
Selecting previously unselected package php7.4-readline.  
Preparing to unpack .../04-php7.4-readline_7.4.3-4ubuntu2.18_amd64.deb ...  
Unpacking php7.4-readline (7.4.3-4ubuntu2.18) ...  
Selecting previously unselected package php7.4-cli.  
Preparing to unpack .../05-php7.4-cli_7.4.3-4ubuntu2.18_amd64.deb ...  
Unpacking php7.4-cli (7.4.3-4ubuntu2.18) ...  
Selecting previously unselected package libapache2-mod-php7.4.  
Preparing to unpack .../06-libapache2-mod-php7.4_7.4.3-4ubuntu2.18_amd64.deb ...  
Unpacking libapache2-mod-php7.4 (7.4.3-4ubuntu2.18) ...  
Setting up php7.4 (7.4.3-4ubuntu2.18) ...  
Setting up libapache2-mod-php (2:7.4+75) ...  
Setting up php (2:7.4+75) ...  
Processing triggers for man-db (2.9.1-1) ...  
Processing triggers for php7.4-cli (7.4.3-4ubuntu2.18) ...  
Processing triggers for libapache2-mod-php7.4 (7.4.3-4ubuntu2.18) ...  
Uncledennis@DennisLinux:~$  
Uncledennis@DennisLinux:~$ php -v  
PHP 7.4.3-4ubuntu2.18 (cli) (built: Feb 23 2023 12:43:23) ( NTS )  
Copyright (c) The PHP Group  
Zend Engine v3.4.0, Copyright (c) Zend Technologies  
with Zend OPcache v7.4.3-4ubuntu2.18, Copyright (c), by Zend Technologies  
Uncledennis@DennisLinux:~$  
Uncledennis@DennisLinux:~$
```

```
Setting up php7.4 (7.4.3-4ubuntu2.18) ...  
Setting up libapache2-mod-php (2:7.4+75) ...  
Setting up php (2:7.4+75) ...  
Processing triggers for man-db (2.9.1-1) ...  
Processing triggers for php7.4-cli (7.4.3-4ubuntu2.18) ...  
Processing triggers for libapache2-mod-php7.4 (7.4.3-4ubuntu2.18) ...  
Uncledennis@DennisLinux:~$  
Uncledennis@DennisLinux:~$ php -v  
PHP 7.4.3-4ubuntu2.18 (cli) (built: Feb 23 2023 12:43:23) ( NTS )  
Copyright (c) The PHP Group  
Zend Engine v3.4.0, Copyright (c) Zend Technologies  
with Zend OPcache v7.4.3-4ubuntu2.18, Copyright (c), by Zend Technologies  
Uncledennis@DennisLinux:~$  
Uncledennis@DennisLinux:~$
```

```
Processing triggers for php7.4-cli (7.4.3-4ubuntu2.18) ...
Processing triggers for libapache2-mod-php7.4 (7.4.3-4ubuntu2.18) ...
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ php -v
PHP 7.4.3-4ubuntu2.18 (cli) (built: Feb 23 2023 12:43:23) ( NTS )
Copyright (c) The PHP Group
Zend Engine v3.4.0, Copyright (c) Zend Technologies
    with Zend OPcache v7.4.3-4ubuntu2.18, Copyright (c), by Zend Technologies
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo mkdir /var/www/projectlamp
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo chown -R $USER:$USER /var/www/projectlamp
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo vi /etc/apache2/sites-available/projectlamp.conf
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo ls /etc/apache2/sites-available
000-default.conf default-ssl.conf projectlamp.conf
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo a2ensite projectlamp
Enabling site projectlamp.
To activate the new configuration, you need to run:
    systemctl reload apache2
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo a2dissite 000-default
Site 000-default disabled.
To activate the new configuration, you need to run:
    systemctl reload apache2
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo apache2ctl configtest
Syntax OK
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo systemctl reload apache2
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo echo 'Hello LAMP from hostname' $(curl -s http://)
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo cd /var/www/projectlamp
sudo: cd: command not found
Uncledennis@DennisLinux:~$ cd /var/www/projectlamp
Uncledennis@DennisLinux:/var/www/projectlamp$
Uncledennis@DennisLinux:/var/www/projectlamp$ ls
index.html
Uncledennis@DennisLinux:/var/www/projectlamp$ vim index.html
Uncledennis@DennisLinux:/var/www/projectlamp$
```



#### STEP 4: Create a Virtual Host

```
sudo mkdir /var/www/projectlamp
```

```
sudo chown -R $USER:$USER /var/www/projectlamp
```

```
sudo vi /etc/apache2/sites-available/projectlamp.conf
```

```
<VirtualHost *:80>
```

```
    ServerName projectlamp
```

```
    ServerAlias www.projectlamp
```

```
    ServerAdmin webmaster@localhost
```

```
    DocumentRoot /var/www/projectlamp
```

```
    ErrorLog ${APACHE_LOG_DIR}/error.log
```

```
    CustomLog ${APACHE_LOG_DIR}/access.log combined
```

```
</VirtualHost>
```

```
sudo ls /etc/apache2/sites-available
```

```
sudo a2ensite projectlamp
```

```
sudo a2dissite 000-default
```

```
sudo apache2ctl configtest
```

```
sudo systemctl reload apache2
```

```
sudo echo 'Hello LAMP from hostname' $(curl -s http://localhost/latest/meta-data/public-hostname)
```

```
'with public IP' $(curl -s http://localhost/latest/meta-data/public-ipv4) >  
/var/www/projectlamp/index.html
```

input `http://<Public-IP-Address>:80` on a browser to see the output

```
Processing triggers for php7.4-cli (7.4.3-4ubuntu2.18) ...
Processing triggers for libapache2-mod-php7.4 (7.4.3-4ubuntu2.18) ...
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ php -v
PHP 7.4.3-4ubuntu2.18 (cli) (built: Feb 23 2023 12:43:23) ( NTS )
Copyright (c) The PHP Group
Zend Engine v3.4.0, Copyright (c) Zend Technologies
    with Zend OPcache v7.4.3-4ubuntu2.18, Copyright (c), by Zend Technologies
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo mkdir /var/www/projectlamp
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo chown -R $USER:$USER /var/www/projectlamp
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo vi /etc/apache2/sites-available/projectlamp.conf
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo ls /etc/apache2/sites-available
000-default.conf default-ssl.conf projectlamp.conf
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo a2ensite projectlamp
Enabling site projectlamp.
To activate the new configuration, you need to run:
    systemctl reload apache2
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo a2dissite 000-default
Site 000-default disabled.
To activate the new configuration, you need to run:
    systemctl reload apache2
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo apache2ctl configtest
Syntax OK
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo systemctl reload apache2
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo echo 'Hello LAMP from hostname' $(curl -s http://)
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo cd /var/www/projectlamp
sudo: cd: command not found
Uncledennis@DennisLinux:~$ cd /var/www/projectlamp
Uncledennis@DennisLinux:/var/www/projectlamp$
Uncledennis@DennisLinux:/var/www/projectlamp$ ls
index.html
Uncledennis@DennisLinux:/var/www/projectlamp$ vim index.html
Uncledennis@DennisLinux:/var/www/projectlamp$
```

## Step 5 Enable PHP on Website

```
sudo vim /etc/apache2/mods-enabled/dir.conf
```

```
<IfModule mod_dir.c>
```

```
#Change this:
```

```
#DirectoryIndex index.html index.cgi index.pl index.php index.xhtml index.htm
```

```
#To this:
```

```
DirectoryIndex index.php index.html index.cgi index.pl index.xhtml index.htm
```

```
</IfModule>
```

```
sudo systemctl reload apache2
```

```
run : vim /var/www/projectlamp/index.php
```

```
<?php
```

```
phpinfo();
```

Goto page on browser <http://<public ip>> and see how it display the php page

```
sudo rm /var/www/projectlamp/index.php
```

```

Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ cd /etc/apache2/mods-enabled/dir.conf
-bash: cd: /etc/apache2/mods-enabled/dir.conf: Not a directory
Uncledennis@DennisLinux:~$ cd /etc/apache2/mods-enabled
Uncledennis@DennisLinux:~$ cd /etc/apache2/mods-enabled$ ls -al
total 8
drwxr-xr-x 2 root root 4096 Mar 29 20:34 .
drwxr-xr-x 8 root root 4096 Mar 29 19:12 ..
lrwxrwxrwx 1 root root 36 Mar 29 19:12 access_compat.load -> ../mods-available/access_compat.load
lrwxrwxrwx 1 root root 28 Mar 29 19:12 alias.conf -> ../mods-available/alias.conf
lrwxrwxrwx 1 root root 28 Mar 29 19:12 alias.load -> ../mods-available/alias.load
lrwxrwxrwx 1 root root 33 Mar 29 19:12 auth_basic.load -> ../mods-available/auth_basic.load
lrwxrwxrwx 1 root root 33 Mar 29 19:12 authn_core.load -> ../mods-available/authn_core.load
lrwxrwxrwx 1 root root 33 Mar 29 19:12 authn_file.load -> ../mods-available/authn_file.load
lrwxrwxrwx 1 root root 33 Mar 29 19:12 authz_core.load -> ../mods-available/authz_core.load
lrwxrwxrwx 1 root root 33 Mar 29 19:12 authz_host.load -> ../mods-available/authz_host.load
lrwxrwxrwx 1 root root 33 Mar 29 19:12 authz_user.load -> ../mods-available/authz_user.load
lrwxrwxrwx 1 root root 32 Mar 29 19:12 autoindex.conf -> ../mods-available/autoindex.conf
lrwxrwxrwx 1 root root 32 Mar 29 19:12 autoindex.load -> ../mods-available/autoindex.load
lrwxrwxrwx 1 root root 30 Mar 29 19:12 deflate.conf -> ../mods-available/deflate.conf
lrwxrwxrwx 1 root root 30 Mar 29 19:12 deflate.load -> ../mods-available/deflate.load
lrwxrwxrwx 1 root root 26 Mar 29 19:12 dir.conf -> ../mods-available/dir.conf
lrwxrwxrwx 1 root root 26 Mar 29 19:12 dir.load -> ../mods-available/dir.load
lrwxrwxrwx 1 root root 26 Mar 29 19:12 env.load -> ../mods-available/env.load
lrwxrwxrwx 1 root root 29 Mar 29 19:12 filter.load -> ../mods-available/filter.load
lrwxrwxrwx 1 root root 27 Mar 29 19:12 mime.conf -> ../mods-available/mime.conf
lrwxrwxrwx 1 root root 27 Mar 29 19:12 mime.load -> ../mods-available/mime.load
lrwxrwxrwx 1 root root 34 Mar 29 19:42 mpm_prefork.conf -> ../mods-available/mpm_prefork.conf
lrwxrwxrwx 1 root root 34 Mar 29 19:42 mpm_prefork.load -> ../mods-available/mpm_prefork.load
lrwxrwxrwx 1 root root 34 Mar 29 19:12 negotiation.conf -> ../mods-available/negotiation.conf
lrwxrwxrwx 1 root root 34 Mar 29 19:12 negotiation.load -> ../mods-available/negotiation.load
lrwxrwxrwx 1 root root 29 Mar 29 19:42 php7.4.conf -> ../mods-available/php7.4.conf
lrwxrwxrwx 1 root root 29 Mar 29 19:42 php7.4.load -> ../mods-available/php7.4.load
lrwxrwxrwx 1 root root 33 Mar 29 19:12 reqtimeout.conf -> ../mods-available/reqtimeout.conf
lrwxrwxrwx 1 root root 33 Mar 29 19:12 reqtimeout.load -> ../mods-available/reqtimeout.load
lrwxrwxrwx 1 root root 31 Mar 29 19:12 setenvif.conf -> ../mods-available/setenvif.conf
lrwxrwxrwx 1 root root 31 Mar 29 19:12 setenvif.load -> ../mods-available/setenvif.load
lrwxrwxrwx 1 root root 29 Mar 29 19:12 status.conf -> ../mods-available/status.conf
lrwxrwxrwx 1 root root 29 Mar 29 19:12 status.load -> ../mods-available/status.load
Uncledennis@DennisLinux:~$ cd /etc/apache2/mods-enabled$
Uncledennis@DennisLinux:~$ cd /etc/apache2/mods-enabled$ vim dir.conf
Uncledennis@DennisLinux:~$ cd /etc/apache2/mods-enabled$ cd
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo systemctl apache2
Unknown operation apache2.
Uncledennis@DennisLinux:~$ sudo systemctl reload apache2
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ cd /var/www/projectlamp
Uncledennis@DennisLinux:~$ cd /var/www/projectlamp$
Uncledennis@DennisLinux:~$ cd /var/www/projectlamp$ ls -al
total 12
drwxr-xr-x 2 Uncledennis Uncledennis 4096 Mar 29 20:35 .
drwxr-xr-x 4 root root 4096 Mar 29 19:47 ..
-rw-rw-r-- 1 Uncledennis Uncledennis 216 Mar 29 20:35 index.html
Uncledennis@DennisLinux:~$ cd /var/www/projectlamp$
Uncledennis@DennisLinux:~$ cd /var/www/projectlamp$ cd
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ vim /var/www/projectlamp/index.php
Uncledennis@DennisLinux:~$ Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$ sudo rm /var/www/projectlamp/index.php
Uncledennis@DennisLinux:~$
Uncledennis@DennisLinux:~$

```