

Thông tin sinh viên
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Bài làm

Yêu cầu 1.1. Sinh viên hãy tìm hiểu và trả lời 2 câu hỏi sau:

1. LAMP/LEMP Stack là gì?

-LAMP là viết tắt của Linux, Apache, MySQL và PHP, mỗi thành phần trong đó là một gói phần mềm riêng lẻ được kết hợp và hỗ trợ lẫn nhau để tạo thành stack của phần mềm, các ứng dụng website chạy trên nền tảng của các stack cơ bản này.

Linux là lớp đầu tiên trong stack, là cơ sở nền tảng cho các lớp phần mềm khác.

Apache là lớp thứ hai, bao gồm phần mềm web server thường là Apache Web (HTTP) Server.

Web server chịu trách nhiệm chuyển đổi các web browser sang các website chính xác của chúng.

MySQL là lớp thứ ba, nơi lưu trữ cơ sở database. Chứa các chi tiết có thể được truy vấn bằng script để xây dựng một website.

PHP là lớp trên cùng của stack. Lớp script bao gồm PHP và các ngôn ngữ lập trình web khác.

-LEMP Stack:

Các thành phần tạo nên LEMP stack gần tương tự với LAMP, khác ở chỗ là nginx (Engine-x) thay thế cho apache ở lớp thứ 2. Ưu điểm của nginx là cho phép sử dụng tốc độ tải cao hơn đối với các HTTP request.

2. So sánh LAMP Stack và LEMP Stack .

Sự khác biệt cơ bản giữa LAMP stack và LEMP stack chính là sự khác biệt giữa apache và nginx đem lại.

| LAMP stack (Apache) | LEMP stack (nginx) |
|---|---|
| <ul style="list-style-type: none">-Được sử dụng từ 1995, có rất nhiều module được viết để mở rộng hệ chức năng cho apache-Phương pháp process/ thread-oriented, khi tải nặng sẽ chậm lại, cần tạo ra các quy trình mới dẫn đến tiêu thụ nhiều RAM hơn, bên cạnh đó, cũng tạo ra các thread mới cạnh tranh các tài nguyên CPU và RAM.=>Phải thiết lập giới hạn để tài nguyên không bị quá tải | <ul style="list-style-type: none">-Ứng dụng web server mã nguồn mở được viết để giải quyết các vấn đề về hiệu suất và khả năng mở rộng có liên quan đến Apache.-Phương pháp Event-driven, không đồng bộ và không bị chặn, không tạo các process mới cho mỗi request từ web.-Có thể đặt số lượng cho các worker process và mỗi worker có thể xử lý đồng thời hàng nghìn kết nối. |

Yêu cầu 1.2. Triển khai dịch vụ Web Sinh viên triển khai LAMP Stack theo các bước bên dưới.
Ghi nhận lại kết quả của từng bước triển khai (chụp hình kết quả).

Update apt

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ sudo apt update
[sudo] password for ubuntu:
Get:1 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:2 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [1818 kB]
Get:3 http://security.ubuntu.com/ubuntu focal-security/main Translation-en [300 kB]
Get:4 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [40
.7 kB]
Get:5 http://security.ubuntu.com/ubuntu focal-security/main amd64 c-n-f Metadata [11.
2 kB]
Get:6 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [128
2 kB]
Get:7 http://security.ubuntu.com/ubuntu focal-security/restricted Translation-en [182
kB]
```

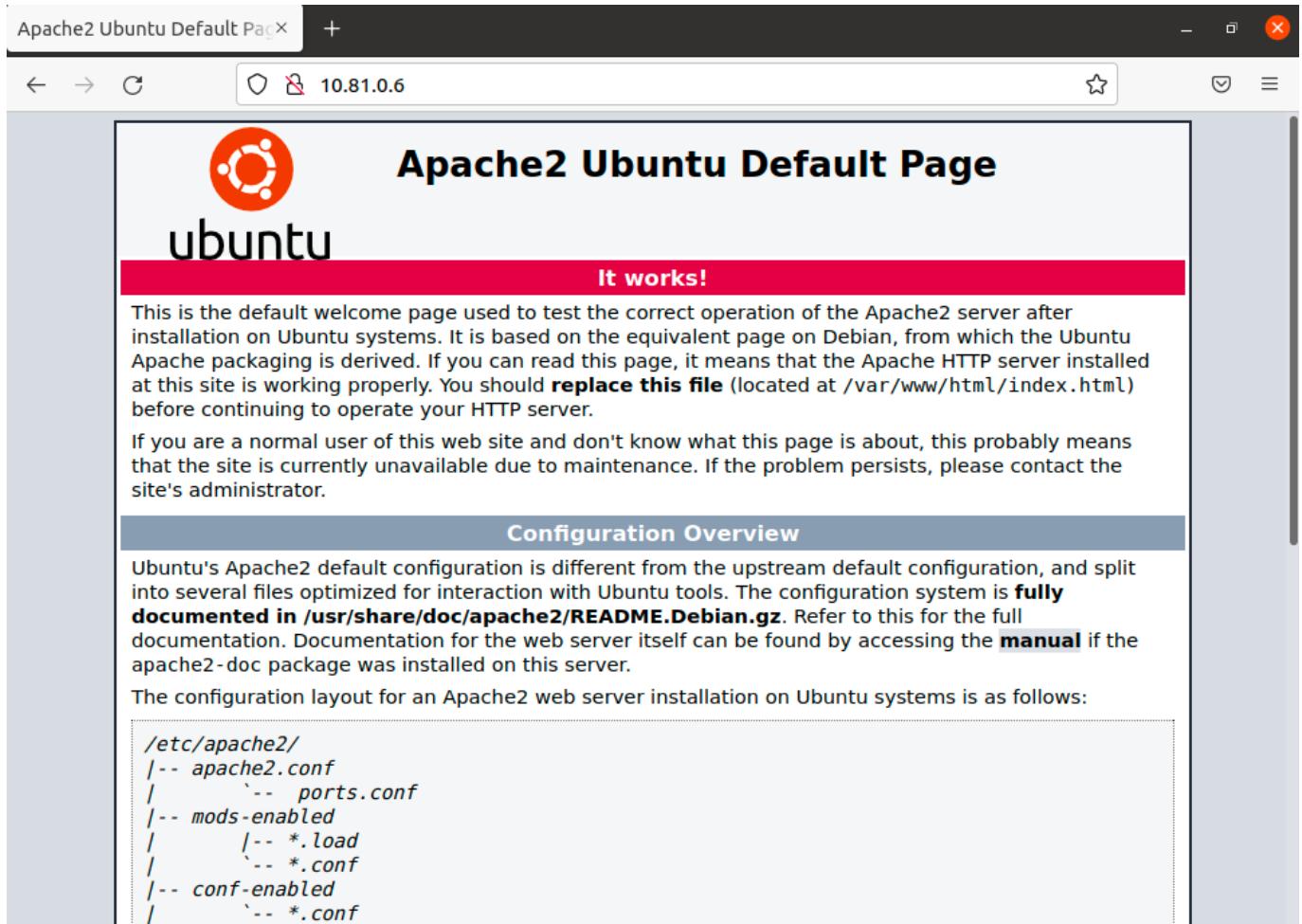
Thực hiện tải apache2

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ 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 liblua5.2-0
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap liblua5.2-0
0 upgraded, 9 newly installed, 0 to remove and 151 not upgraded.
```

Cấu hình tường lửa

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ sudo ufw allow ssh
Rules updated
Rules updated (v6)
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ sudo ufw allow http
Rules updated
Rules updated (v6)
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ sudo ufw allow https
Rules updated
Rules updated (v6)
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ sudo service apache2
tus
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor prese>
   Active: active (running) since Tue 2022-10-25 07:38:04 +07; 2min 5s ago
     Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 6156 (apache2)
      Tasks: 55 (limit: 7082)
     Memory: 5.8M
      CGroup: /system.slice/apache2.service
              ├─6156 /usr/sbin/apache2 -k start
              ├─6157 /usr/sbin/apache2 -k start
              ├─6158 /usr/sbin/apache2 -k start
```

Cuối cùng ta sẽ mở browser để check lại



Vậy là ta đã cài thành công

Ta sẽ install mysql-server

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ sudo apt install mysql-server
[sudo] password for ubuntu:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libcgi-fast-perl libcgi-pm-perl libevent-core-2.1-7 libevent-pthreads-2.1-7
  libfcgi-perl libhtml-template-perl libmecab2 mecab-ipadic mecab-ipadic-utf8
  mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-server-8.0
  mysql-server-core-8.0
Suggested packages:
  libipc-sharedcache-perl mailx tinyca
The following NEW packages will be installed:
  libcgi-fast-perl libfcgi-perl libhtml-template-perl libmecab2 mecab-ipadic mecab-ipadic-utf8
  mecab-utils mysql-client-8.0 mysql-client-core-8.0 mysql-server-8.0
  mysql-server-core-8.0
libevent-core-2.1-7 libevent-pthreads-2.1-7
```

Thực hiện cấu hình cho mysql

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ sudo mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 9
Server version: 8.0.31-0ubuntu0.20.04.1 (Ubuntu)

Copyright (c) 2000, 2022, 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 'nhom07lab3'
;
Query OK, 0 rows affected (0.01 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.01 sec)

mysql> exit
Bye
```

Sau đó ta sẽ install php

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ 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 151 not upgraded.
Need to get 4155 kB of archives.
After this operation, 18.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
```

Chạy file cấu hình dir

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~/Desktop$ sudo nano /etc/apache2/mods-enabled/dir.conf
```

Ta sẽ thực hiện cấu hình như bên dưới

```
GNU nano 4.8          /etc/apache2/mods-enabled/dir.conf
IfModule mod_dir.c>
  DirectoryIndex index.php index.html index.cgi index.pl index.php index.xhtml >
'IfModule>

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

Và cuối cùng check lại thông tin để xem đã cài đặt thành công

PHP 7.4.3 - phpinfo()

← → ⌂ 10.81.0.6/info.php

PHP Version 7.4.3

| | |
|--|--|
| System | Linux s-afd8700a724e40b09915ef6ed0d12c646-server 5.4.0-122-generic #22 15:00:31 UTC 2022 x86_64 |
| Build Date | Aug 17 2022 13:29:56 |
| Server API | Apache 2.0 Handler |
| Virtual Directory Support | disabled |
| Configuration File (php.ini) Path | /etc/php/7.4/apache2 |
| Loaded Configuration File | /etc/php/7.4/apache2/php.ini |
| Scan this dir for additional .ini files | /etc/php/7.4/apache2/conf.d |
| Additional .ini files parsed | /etc/php/7.4/apache2/conf.d/10-mysqlnd.ini, /etc/php/7.4/apache2/conf.d/10/7.4/apache2/conf.d/10-pdo.ini, /etc/php/7.4/apache2/conf.d/20-calendar.ini, /conf.d/20-ctype.ini, /etc/php/7.4/apache2/conf.d/20-exif.ini, /etc/php/7.4/apa/etc/php/7.4/apache2/conf.d/20-fileinfo.ini, /etc/php/7.4/apache2/conf.d/20-f/7.4/apache2/conf.d/20-gettext.ini, /etc/php/7.4/apache2/conf.d/20-iconv.ini, /conf.d/20-json.ini, /etc/php/7.4/apache2/conf.d/20-mysqli.ini, /etc/php/7.4/ap pdo_mysql.ini, /etc/php/7.4/apache2/conf.d/20-phar.ini, /etc/php/7.4/apache /etc/php/7.4/apache2/conf.d/20-readline.ini, /etc/php/7.4/apache2/conf.d/20-/7.4/apache2/conf.d/20-sockets.ini, /etc/php/7.4/apache2/conf.d/20-sysvmsg /7.4/apache2/conf.d/20-sysvsem.ini, /etc/php/7.4/apache2/conf.d/20-sysvsh /7.4/apache2/conf.d/20-tokenizer.ini |
| PHP API | 20190902 |
| PHP Extension | 20190902 |
| Zend Extension | 320190902 |
| Zend Extension Build | API320190902,NTS |
| PHP Extension Build | API20190902,NTS |
| Debug Build | no |

Yêu cầu 3.1. Cấu hình dịch vụ domain cho website vừa cài đặt

Ta sẽ check thử thông tin của service

Tiếp theo ta sẽ tạo 2 file tương ứng

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:/etc/apache2/sites-available$ sudo cp 000-default.conf Nhom06.local.conf
```

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:/etc/apache2/sites-available$ sudo nano Nho  
m06local.conf
```

Ta sẽ thực hiện cấu hình cho file

The screenshot shows a terminal window with two tabs open. The active tab is titled 'Nhom06local.conf' and contains the configuration for a virtual host on port 80. The configuration includes directives for ServerName, ServerAdmin, DocumentRoot, and error logs. The terminal interface includes a status bar at the bottom with various keyboard shortcuts.

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server: /etc/apache2/sites-available$ nano Nhom06local.conf
GNU nano 4.8
<VirtualHost *:80>
    # The ServerName directive sets the request scheme, hostname and port that
    # 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 to
    # match this virtual host. For the default virtual host (this file) this
    # value is not decisive as it is used as a last resort host regardless.
    # However, you must set it for any further virtual host explicitly.
    #ServerName www.example.com

    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/html
    ServerName www.Nhom06.local
    ServerAlias Nhom06.local

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

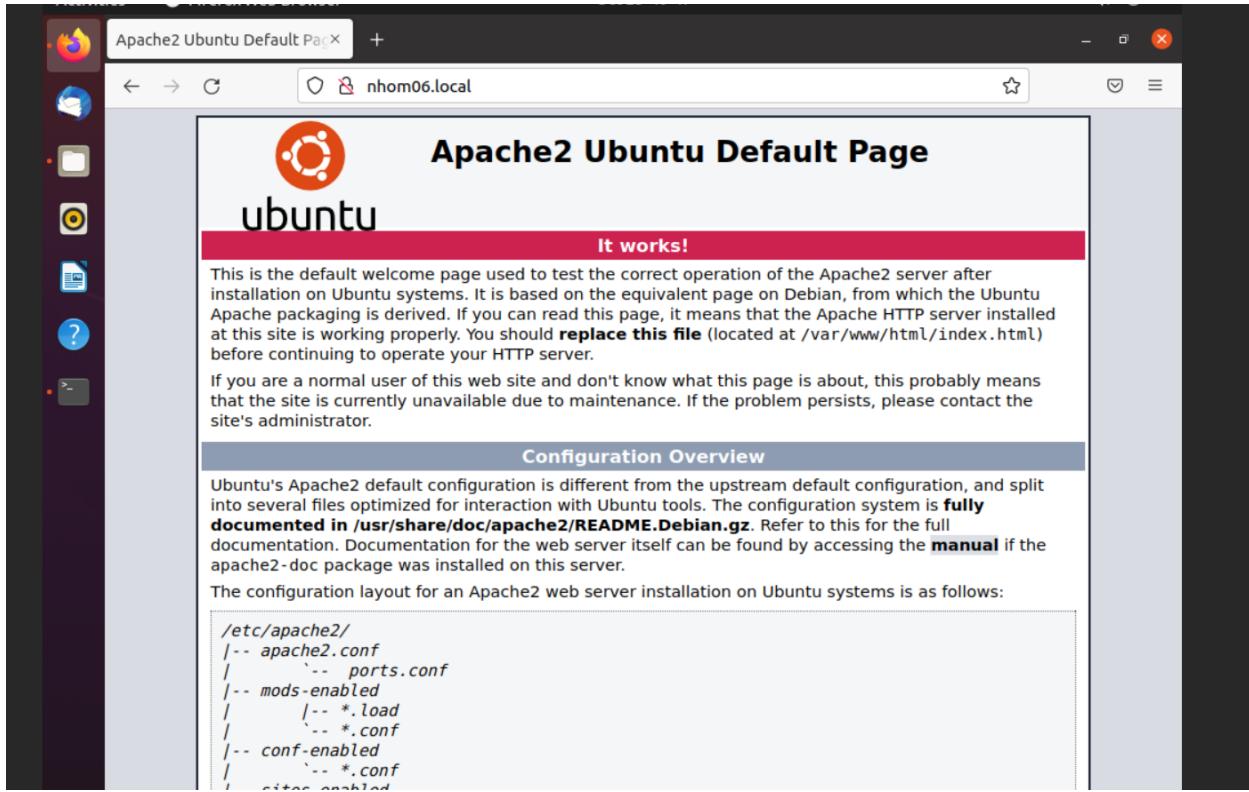
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
    [ Read 33 lines ]
^G Get Help      ^O Write Out     ^W Where Is     ^K Cut Text      ^J Justify      ^C Cur Pos
^X Exit          ^R Read File     ^\ Replace      ^U Paste Text    ^T To Spell      ^_ Go To Line
```

Sau khi cấu hình xong ta sẽ a2ensite vào vào, và restart lại

The screenshot shows a terminal window with several commands run sequentially to enable and restart the Apache service. The user first lists the available sites, then enables the 'Nhom06local.conf' site, activates the new configuration, reloads the Apache service, and finally restarts it.

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server: /etc/apache2/sites-available$ ls
000-default.conf  Nhom06local.conf  default-ssl.conf
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server: /etc/apache2/sites-available$ sudo a2ensite
Nhom06local.conf
Enabling site Nhom06local.
To activate the new configuration, you need to run:
  systemctl reload apache2
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server: /etc/apache2/sites-available$ systemctl rel
oad apache2
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server: /etc/apache2/sites-available$ sudo service
apache2 restart
[ ok ]
```

Vậy là ta có thể chạy được nhom06.local



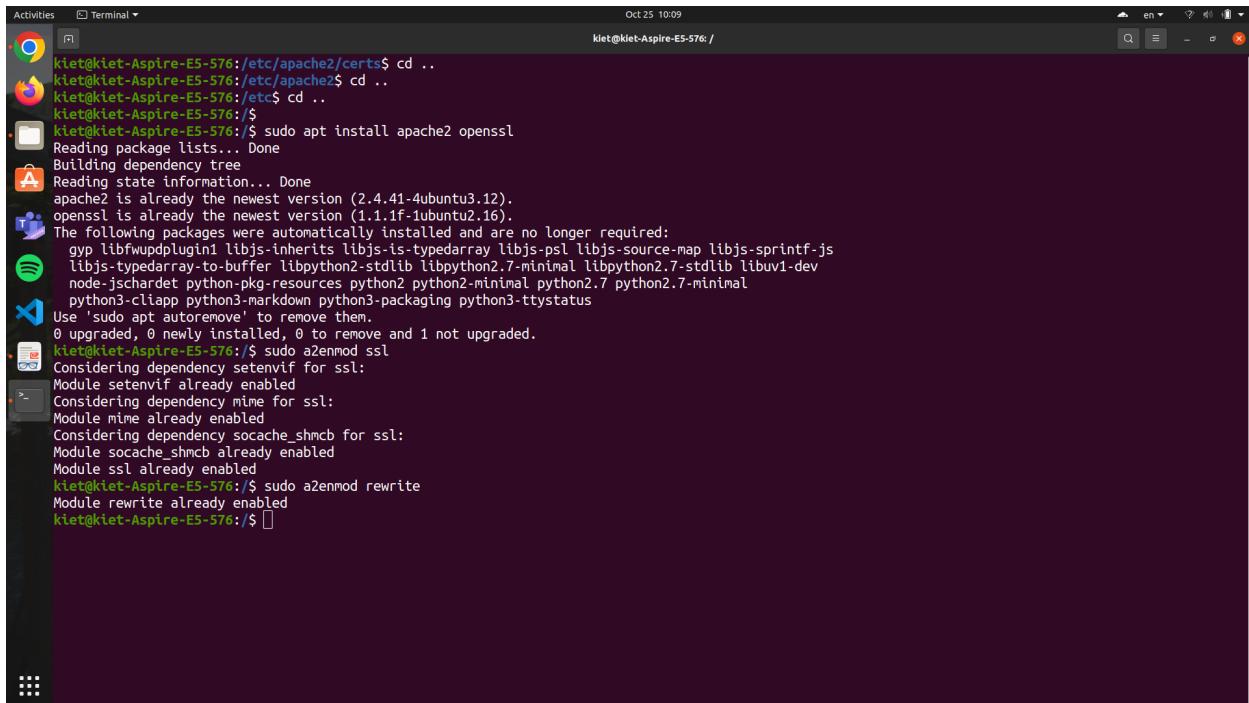
Yêu cầu 3.2:

Triển khai tạo key

A screenshot of a terminal window titled "Terminal". The command "sudo apt install apache2 openssl" is run, and the output shows the installation process. The terminal window has a dark background with light-colored text. The output includes:

```
Oct 25 10:08
klet@klet-Aspire-E5-576: / 
```

```
klet@klet-Aspire-E5-576: /etc/apache2/certs$ cd ..
klet@klet-Aspire-E5-576: /etc/apache2$ cd ..
klet@klet-Aspire-E5-576: /etc$ cd ..
klet@klet-Aspire-E5-576: /$ sudo apt install apache2 openssl
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.12).
openssl is already the newest version (1.1.1f-1ubuntu2.16).
The following packages were automatically installed and are no longer required:
  gyp libfwpudppugin1 libjs-inherits libjs-is-typedarray libjs-psl libjs-source-map libjs-sprintf.js
  libjs-typedarray-to-buffer libpython2.7-stdlib libpython2.7-minimal libpython2.7-stdlib libuv1-dev
  node-jschardet python-pkg-resources python2 python2-minimal python2.7 python2.7-minimal
  python3-clapp python3-markdown python3-packaging python3-ttystatus
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 1 not upgraded.
klet@klet-Aspire-E5-576: /$ 
```



```
Activities Terminal Oct 25 10:09 kiet@kiet-Aspire-E5-576:/
```

```
kiet@kiet-Aspire-E5-576:/etc/apache2/certs$ cd ..
kiet@kiet-Aspire-E5-576:/etc/apache2$ cd ..
kiet@kiet-Aspire-E5-576:/etc$ cd ..
kiet@kiet-Aspire-E5-576:$ sudo apt install apache2 openssl
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.12).
openssl is already the newest version (1.1.1f-1ubuntu2.16).
The following packages were automatically installed and are no longer required:
  gyp libfwupdplugin1 libjs-inherits libjs-is-typedarray libjs-psl libjs-source-map libjs-sprintf-js
  libjs-typedarray-to-buffer libpython2.7-dev libpython2.7-minimal libpython2.7-stdlib libuv1-dev
  nodejs-chardet python-pkg-resources python2 python2-minimal python2.7 python2.7-minimal
  python3-clapp python3-markdown python3-packaging python3-ttystatus
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 1 not upgraded.
kiet@kiet-Aspire-E5-576:$ sudo a2enmod ssl
Considering dependency setenvif for ssl:
Module setenvif already enabled
Considering dependency mime for ssl:
Module mime already enabled
Considering dependency socache_shmcb for ssl:
Module socache_shmcb already enabled
Module ssl already enabled
kiet@kiet-Aspire-E5-576:$ sudo a2enmod rewrite
Module rewrite already enabled
kiet@kiet-Aspire-E5-576:$
```

Cấu hình override

```
kiet@kiet-Aspire-E5-576:$ cat /etc/apache2/nhom06ver2.conf
<Directory /var/www/html>

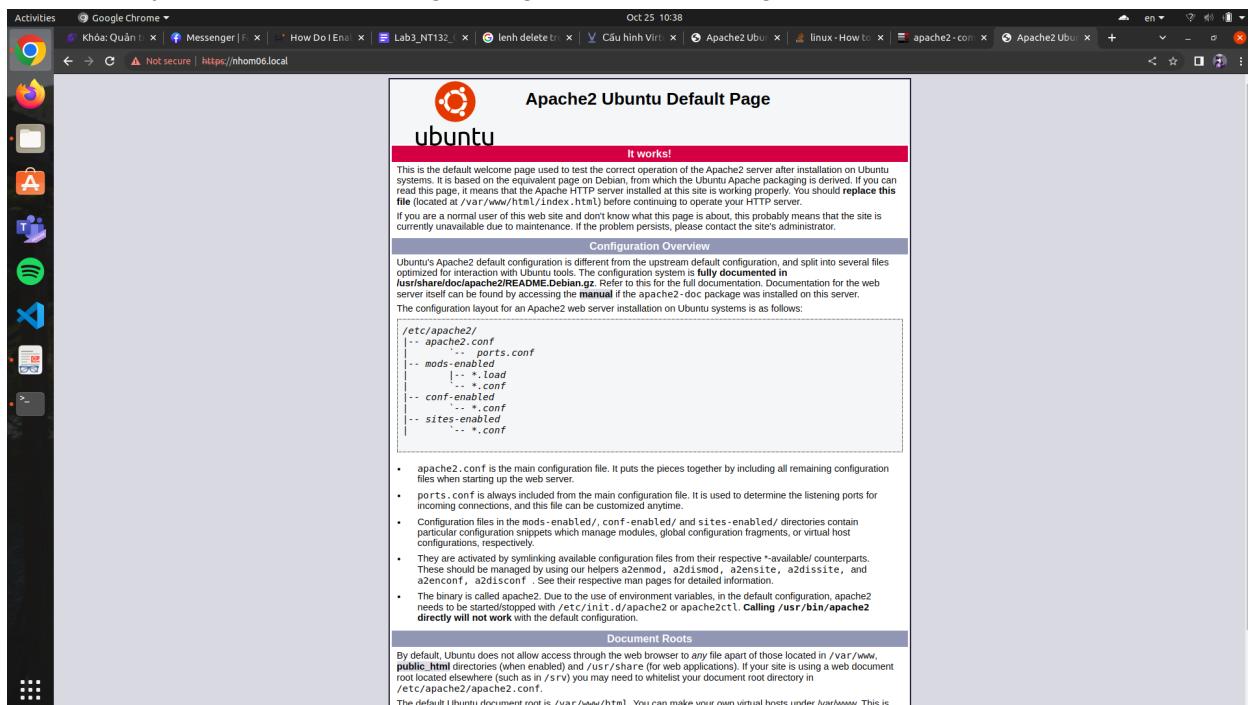
    AllowOverride ALL

</Directory>
```

Cấu hình điều hướng

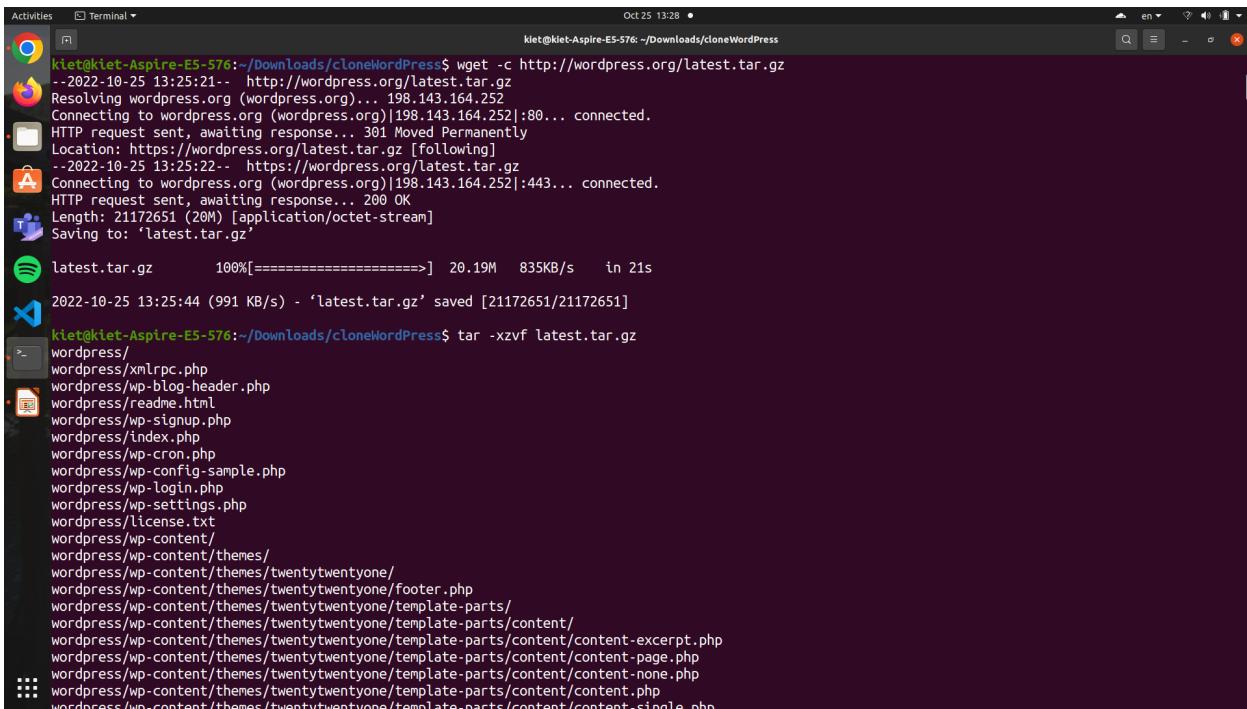
```
klet@klet-Aspire-E5-576:/etc/apache2/certs$ cd ..
klet@klet-Aspire-E5-576:/etc/apache2$ cd ..
klet@klet-Aspire-E5-576:/etc$ cd ..
klet@klet-Aspire-E5-576:$ sudo apt install apache2 openssl
Reading package lists... Done
Building dependency tree... Done
apache2 is already the newest version (2.4.41-4ubuntu3.12).
openssl is already the newest version (1.1.1f-1ubuntu2.16).
The following packages were automatically installed and are no longer required:
  gyp libfwupdplugin1 libjs-inherits libjs-is-typedarray libjs-psl libjs-source-map libjs-sprintf-js
  libjs-typedarray-to-buffer libpython2.7-stdlib libpython2.7-minimal libpython2.7-stdlib libuv1-dev
  node-jscardet python-pkg-resources python2.7 python2.7-minimal python2.7 python2.7-minimal
  python3-clapp python3-markdown python3-packaging python3-ttystatus
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 1 not upgraded.
klet@klet-Aspire-E5-576:$ sudo a2enmod ssl
Considering dependency setenvif for ssl:
Module setenvif already enabled
Considering dependency mime for ssl:
Module mime already enabled
Considering dependency socache_shmcb for ssl:
Module socache_shmcb already enabled
Module ssl already enabled
klet@klet-Aspire-E5-576:$ sudo a2enmod rewrite
Module rewrite already enabled
klet@klet-Aspire-E5-576:$
```

Sau đó chạy thử ta đã thành công (bao gồm cả điều hướng)



Yêu cầu 3.3

Tải chương trình wordpress



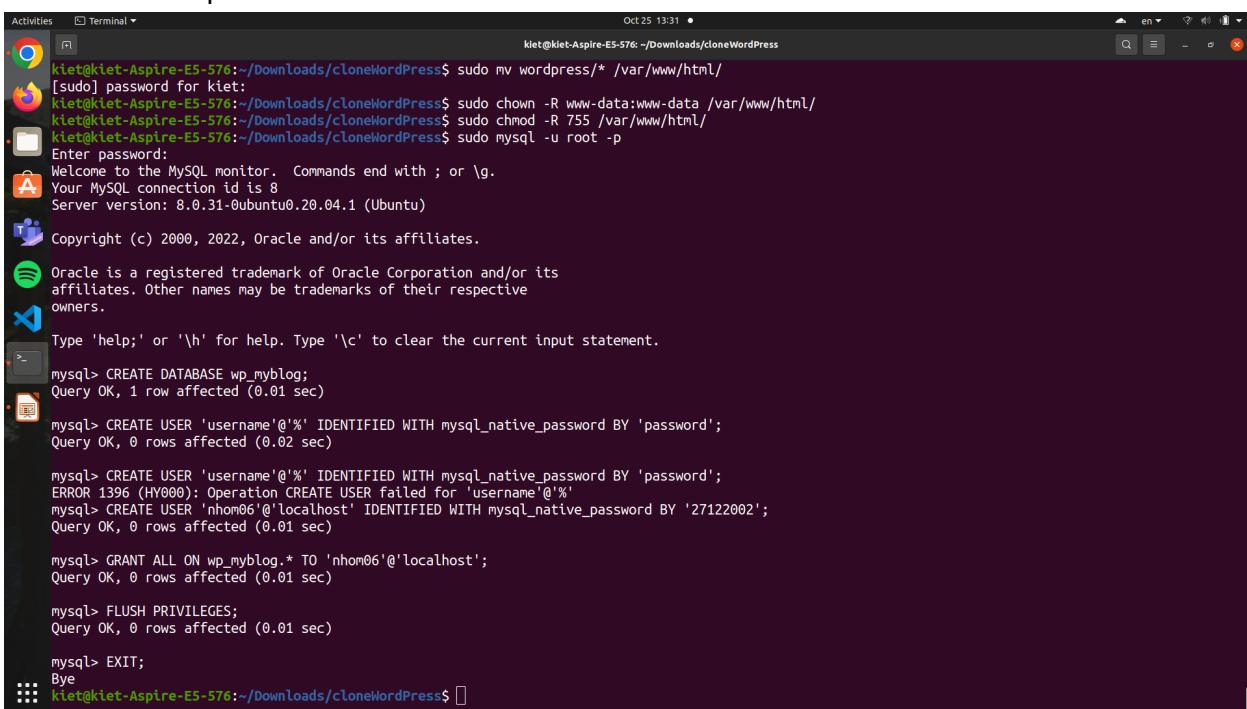
```
Activities Terminal Oct 25 13:28 ● klet@klet-Aspire-E5-576: ~/Downloads/cloneWordPress$ wget -c http://wordpress.org/latest.tar.gz --2022-10-25 13:25:21-- http://wordpress.org/latest.tar.gz Resolving wordpress.org (wordpress.org)... 198.143.164.252 Connecting to wordpress.org (wordpress.org)|198.143.164.252|:80... connected. HTTP request sent, awaiting response... 301 Moved Permanently Location: https://wordpress.org/latest.tar.gz [following] --2022-10-25 13:25:22-- https://wordpress.org/latest.tar.gz Connecting to wordpress.org (wordpress.org)|198.143.164.252|:443... connected. HTTP request sent, awaiting response... 200 OK Length: 21172651 (20M) [application/octet-stream] Saving to: 'latest.tar.gz'

latest.tar.gz    100%[=====] 20.19M 835KB/s   in 21s

2022-10-25 13:25:44 (991 KB/s) - 'latest.tar.gz' saved [21172651/21172651]

klet@klet-Aspire-E5-576:~/Downloads/cloneWordPress$ tar -xvf latest.tar.gz
wordpress/
wordpress/xmlrpc.php
wordpress/wp-blog-header.php
wordpress/readme.html
wordpress/wp-signup.php
wordpress/index.php
wordpress/wp-cron.php
wordpress/wp-config-sample.php
wordpress/wp-login.php
wordpress/wp-settings.php
wordpress/license.txt
wordpress/wp-content/
wordpress/wp-content/themes/
wordpress/wp-content/themes/twentytwentyone/
wordpress/wp-content/themes/twentytwentyone/footer.php
wordpress/wp-content/themes/twentytwentyone/template-parts/
wordpress/wp-content/themes/twentytwentyone/template-parts/content/
wordpress/wp-content/themes/twentytwentyone/template-parts/content/excerpt.php
wordpress/wp-content/themes/twentytwentyone/template-parts/content/page.php
wordpress/wp-content/themes/twentytwentyone/template-parts/content/none.php
wordpress/wp-content/themes/twentytwentyone/template-parts/content.php
wordpress/wp-content/themes/twentytwentyone/template-parts/content-single.php
```

Cấu hình cho sql



```
Activities Terminal Oct 25 13:31 ● klet@klet-Aspire-E5-576: ~/Downloads/cloneWordPress$ sudo mv wordpress/* /var/www/html/
[sudo] password for klet:
klet@klet-Aspire-E5-576:~/Downloads/cloneWordPress$ sudo chown -R www-data:www-data /var/www/html/
klet@klet-Aspire-E5-576:~/Downloads/cloneWordPress$ sudo chmod -R 755 /var/www/html/
klet@klet-Aspire-E5-576:~/Downloads/cloneWordPress$ sudo mysql -u root -p
Enter password:
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.31-0ubuntu0.20.04.1 (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 DATABASE wp_myblog;
Query OK, 1 row affected (0.01 sec)

mysql> CREATE USER 'username'@'%' IDENTIFIED WITH mysql_native_password BY 'password';
Query OK, 0 rows affected (0.02 sec)

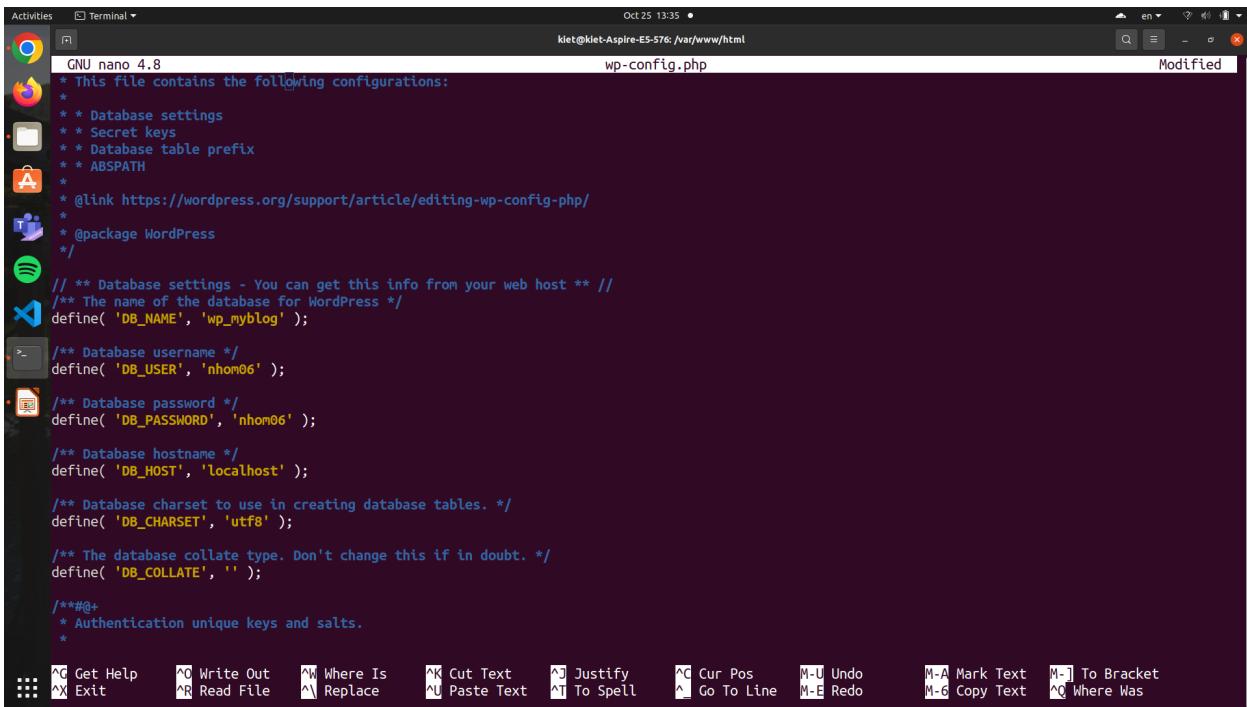
mysql> CREATE USER 'username'@'%' IDENTIFIED WITH mysql_native_password BY 'password';
ERROR 1396 (HY000): Operation CREATE USER failed for 'username'@'%'
mysql> CREATE USER 'nhom06'@'localhost' IDENTIFIED WITH mysql_native_password BY '27122002';
Query OK, 0 rows affected (0.01 sec)

mysql> GRANT ALL ON wp_myblog.* TO 'nhom06'@'localhost';
Query OK, 0 rows affected (0.01 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.01 sec)

mysql> EXIT;
Bye
klet@klet-Aspire-E5-576:~/Downloads/cloneWordPress$
```

tiếp tục chỉnh trong file



```
GNU nano 4.8          Oct 25 13:35 •          kiet@kiet-Aspire-ES-576: /var/www/html          Modified
* This file contains the following configurations:
*
* * Database settings
* * Secret keys
* * Database table prefix
* * ABSPATH
*
* @link https://wordpress.org/support/article/editing-wp-config-php/
*
* @package WordPress
*/
// ** Database settings - You can get this info from your web host ** //
/** The name of the database for WordPress */
define( 'DB_NAME', 'wp_myblog' );

/** Database username */
define( 'DB_USER', 'nhom06' );

/** Database password */
define( 'DB_PASSWORD', 'nhom06' );

/** Database hostname */
define( 'DB_HOST', 'localhost' );

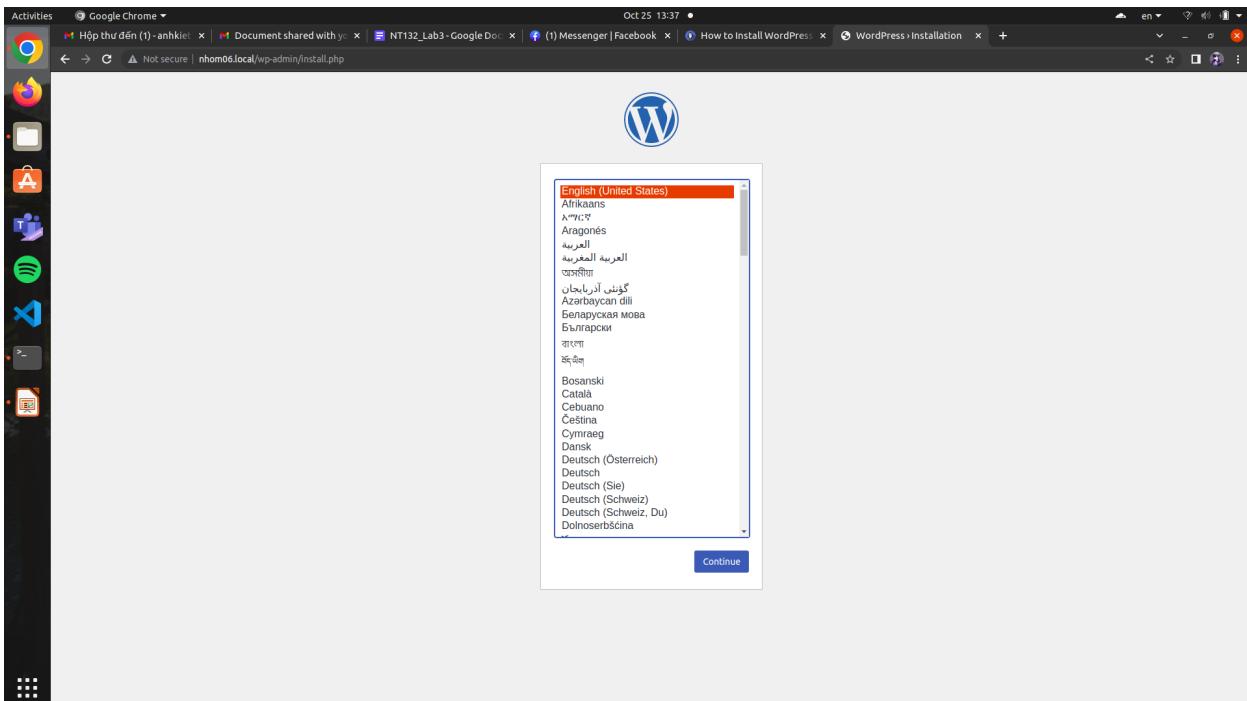
/** Database charset to use in creating database tables. */
define( 'DB_CHARSET', 'utf8' );

/** The database collate type. Don't change this if in doubt. */
define( 'DB_COLLATE', '' );

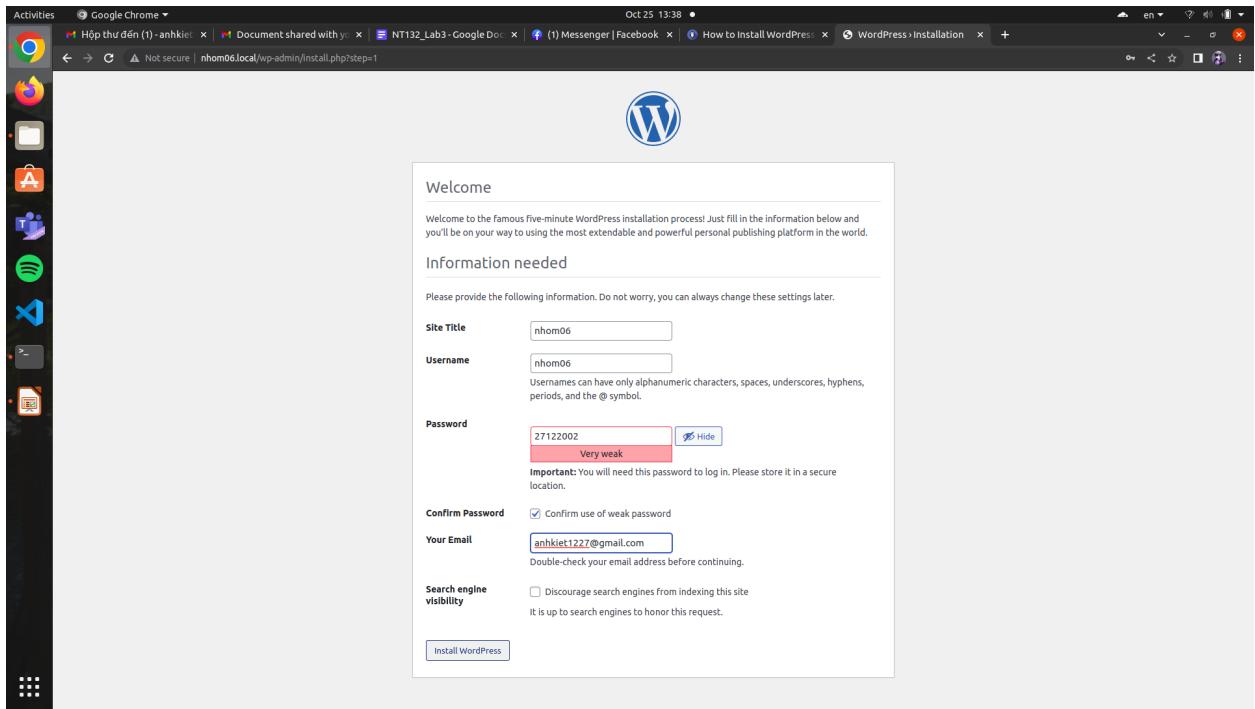
/**#@+
 * Authentication unique keys and salts.
 */

^Q Get Help      ^W Write Out     ^K Where Is      ^C Cut Text      ^J Justify      ^C Cur Pos      M-U Undo      M-A Mark Text      M-] To Bracket
^X Exit          ^R Read File     ^W Replace       ^U Paste Text    ^T To Spell      ^G Go To Line    M-B Redo      M-G Copy Text      ^Q Where Was
```

Chọn ngôn ngữ



Thêm các trường thông tin



Cuối cùng ta sẽ chạy thử để xem kết quả

Activities Google Chrome Oct 25 13:39 en

Dashboard

Welcome to WordPress!

Learn more about the 6.0.3 version.

6.0

Author rich content with blocks and patterns

Customize your entire site with block themes

Switch up your site's look & feel with Styles

Site Health Status

No information yet...

At a Glance

1 Post 1 Page 1 Comment

WordPress 6.0.3 running Twenty Twenty-Two theme.

Quick Draft

Title Content What's on your mind? Save Draft

Drag boxes here Drag boxes here

Open site editor Edit styles

Screen Options Help

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WordPress 6.0.3 running Twenty Twenty-Two theme.

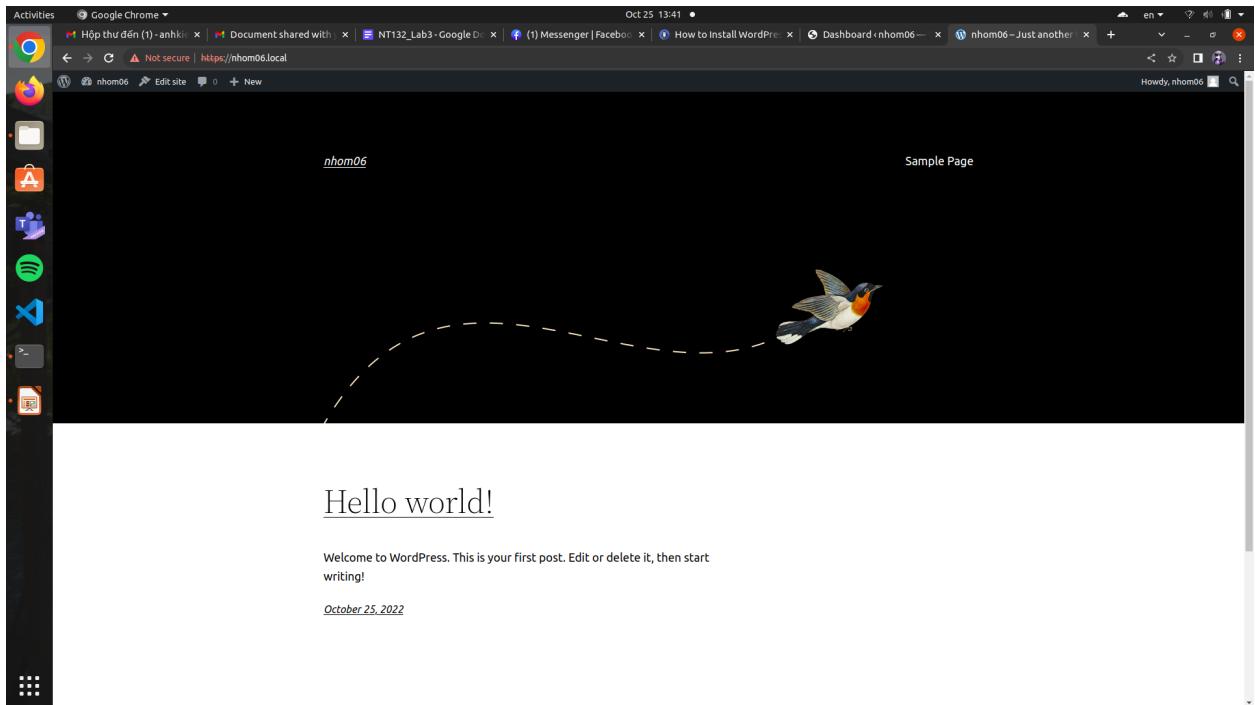
Quick Draft

Title Content What's on your mind? Save Draft

Drag boxes here Drag boxes here

Open site editor Edit styles

Screen Options Help



Yêu cầu 4.1:

Tạo 2 user u1, u2

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ sudo adduser u1
[sudo] password for ubuntu:
Adding user `u1' ...
Adding new group `u1' (1001) ...
Adding new user `u1' (1001) with group `u1' ...
Creating home directory `/home/u1' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for u1
Enter the new value, or press ENTER for the default
    Full Name []: nhom07
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
```

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ sudo adduser u2
Adding user `u2' ...
Adding new group `u2' (1002) ...
Adding new user `u2' (1002) with group `u2' ...
Creating home directory `/home/u2' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for u2
Enter the new value, or press ENTER for the default
      Full Name []: nhom07
      Room Number []:
      Work Phone []:
      Home Phone []:
      Other []:
Is the information correct? [Y/n]
```

Password: nhom07

Tạo thư mục folder1, phân quyền cho u1, chặc mọi quyền của nhóm và user khác trên folder1.

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ ls -l
total 728
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Desktop
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Documents
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Downloads
-rw----- 1 ubuntu ubuntu 707672 Oct 25 08:07 'Lab 3 - Trien khai dich vu tren Linux.pdf'
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Music
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Pictures
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Public
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Templates
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Videos
drwx----- 2 u1      ubuntu 4096 Oct 25 09:35 folder1
```

Tạo thư mục folder2, phân quyền cho u2 và nhóm u2, chặc mọi quyền từ user khác trên folder2.

Ta sẽ thực hiện thêm ls -l để xem chi tiết

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ ls -l
total 732
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Desktop
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Documents
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Downloads
-rw----- 1 ubuntu ubuntu 707672 Oct 25 08:07 'Lab 3 - Trien khai dich vu tren Linux.pdf'
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Music
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Pictures
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Public
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Templates
drwxr-xr-x 2 ubuntu ubuntu 4096 Jul 27 21:21 Videos
drwx----- 2 u1      ubuntu 4096 Oct 25 09:35 folder1
drwxrwx--- 2 u2      u2     4096 Oct 25 09:38 folder2
```

Đăng nhập vào user 1. Truy cập và tạo file trong folder1 và folder2.

```
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ su - u1
Password:
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ pwd
/home/u1
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ cd ..
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home$ cd ubuntu
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu$ ls
Desktop      'Lab 3 - Trien khai dich vu tren Linux.pdf'  Public      folder1
Documents    Music                                Templates   folder2
Downloads   Pictures                             Videos
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu$ cd folder1
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu/folder1$ touch test
1.txt
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu/folder1$ cd ..
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu$ cd folder2
-bash: cd: folder2: Permission denied
```

Đăng nhập vào user 2. Truy cập và tạo file trong folder1 và folder2.

```
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ su - u2
Password:
u2@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ pwd
/home/u2
u2@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ cd ..
u2@s-afd8700a724e40b09915ef6ed0d12c646-server:/home$ cd ubuntu
u2@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu$ ls
Desktop      'Lab 3 - Trien khai dich vu tren Linux.pdf'  Public      folder1
Documents    Music                                Templates   folder2
Downloads   Pictures                             Videos
u2@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu$ cd folder1
-bash: cd: folder1: Permission denied
u2@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu$ cd folder2
u2@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu/folder2$ touch test
.txt
```

Thêm u1 vào group u2. Truy cập, tạo và sửa file trong folder2.

```
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ sudo usermod -g u2 u1
[sudo] password for ubuntu:
ubuntu@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ su - u1
Password:
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:~$ cd ..
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home$ cd ubuntu
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu$ ls
Desktop      'Lab 3 - Trien khai dich vu tren Linux.pdf'  Public      folder1
Documents    Music                           Templates   folder2
Downloads   Pictures                         Videos
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu$ cd folder2
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu/folder2$ touch helloabc.txt
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu/folder2$ echo "hello world!" > helloabc.txt
u1@s-afd8700a724e40b09915ef6ed0d12c646-server:/home/ubuntu/folder2$ cat helloabc.txt
hello world!
```

Yêu cầu 5.1:

Ở yêu cầu này ta sẽ thực hiện cài đặt các lệnh trên file sh để thực hiện show tốc độ tải lên và tải về của interface, với hàm getbyte ta sẽ get như data trong traffice và hàm get_myVelocityocity ta sẽ tính giá trị trung bình cho việc tải lên và tải về dưới 2 dạng Kbytes/s và bytes/s

```
1#!/bin/bash
2
3 interface=$1
4 receivedBytes=""
5 oldReceivedBytes=""
6 transBytes=""
7 oldTransBytes=""
8
9 get_bytes()
10 {
11     line=$(cat /proc/net/dev | grep $interface | cut -d ':' -f 2 | awk '{print "receivedBytes=\"$1, \"transBytes=\"$9\""}')
12     eval $line
13 }
14
15 get_myVelocityocity()
16 {
17     value=$1
18     oldValue=$2
19
20     let myVelocity=($value-$oldValue)
21     let myVelocityKB=$myVelocity/1024
22     if [ $myVelocityKB != 0 ];
23     then
24         echo -n "$myVelocityKB Kbytes/s";
25     else
26         echo -n "$myVelocity bytes/s";
27     fi
28 }
29
30 get_bytes
31 oldReceivedBytes=$receivedBytes
32 oldTransBytes=$transBytes
```

Tiếp tục thực hiện ta sẽ thực hiện vòng lặp luôn đúng và ngắt chương trình bằng ctrl C để thực hiện ngắt vòng lặp và trong vòng lặp ta sẽ thực hiện in ra kết quả tốc độ

```
get_bytes
oldReceivedBytes=$receivedBytes
oldTransBytes=$transBytes

while true;
do
    get_bytes

    myVelocity_recv=$(get_myVelocityocity $receivedBytes $oldReceivedBytes)
    myVelocity_trans=$(get_myVelocityocity $transBytes $oldTransBytes)

    echo -en "$interface RX:$myVelocity_recv\t | TX:$myVelocity_trans\r\n"

    oldReceivedBytes=$receivedBytes
    oldTransBytes=$transBytes

    sleep 3;

done
```

Kiểm tra kết quả ta sẽ được như hình bên dưới

```
__(kali㉿kali)-[~/UIT/NT132]
└─$ ./bai5_1_2.sh eth0
eth0 RX:0 bytes/s      | TX:0 bytes/s
eth0 RX:20 bytes/s     | TX:2 Kbytes/s
eth0 RX:2 Kbytes/s     | TX:3 Kbytes/s
eth0 RX:329 Kbytes/s   | TX:38 Kbytes/s
eth0 RX:577 Kbytes/s   | TX:34 Kbytes/s
eth0 RX:115 Kbytes/s   | TX:35 Kbytes/s
eth0 RX:310 Kbytes/s   | TX:37 Kbytes/s
eth0 RX:211 Kbytes/s   | TX:29 Kbytes/s
eth0 RX:276 Kbytes/s   | TX:27 Kbytes/s
eth0 RX:329 Kbytes/s   | TX:74 Kbytes/s
eth0 RX:269 Kbytes/s   | TX:39 Kbytes/s
eth0 RX:14 Kbytes/s    | TX:78 Kbytes/s
eth0 RX:15 Kbytes/s    | TX:54 Kbytes/s
eth0 RX:14 Kbytes/s    | TX:7 Kbytes/s
eth0 RX:217 bytes/s    | TX:3 Kbytes/s
eth0 RX:333 bytes/s    | TX:4 Kbytes/s
eth0 RX:33 Kbytes/s    | TX:8 Kbytes/s
eth0 RX:90 Kbytes/s    | TX:18 Kbytes/s
eth0 RX:93 Kbytes/s    | TX:9 Kbytes/s
eth0 RX:232 Kbytes/s    | TX:14 Kbytes/s
eth0 RX:368 Kbytes/s    | TX:33 Kbytes/s
```