EXPIRIMENT-6:

Aim: Installation and configuration of common software frame works such as Laravel. (Student should acquire the capability to install and configure a modern framework)

Solution :-

Laravel

Laravel is an open-source PHP framework, which is robust and easy to understand. It follows a model-view-controller design pattern. Laravel reuses the existing components of different frameworks which helps in creating a web application. The web application thus designed is more structured and pragmatic.

Laravel offers a rich set of functionalities which incorporates the basic features of PHP frameworks like CodeIgniter, Yii and other programming languages like Ruby on Rails. Laravel has a very rich set of features which will boost the speed of web development.

If you are familiar with Core PHP and Advanced PHP, Laravel will make your task easier. It saves a lot time if you are planning to develop a website from scratch. Moreover, a website built in Laravel is secure and prevents several web attacks.

Composer

Composer is a tool which includes all the dependencies and libraries. It allows a user to create a project with respect to the mentioned framework (for example, those used in Laravel installation). Third party libraries can be installed easily with help of composer.

All the dependencies are noted in composer.json file which is placed in the source folder.

PHP

PHP is a server-side scripting language. that is used to develop Static websites or Dynamic websites or Web applications. PHP stands for Hypertext Pre-processor, that earlier stood for Personal Home Pages.

PHP scripts can only be interpreted on a server that has PHP installed.

The client computers accessing the PHP scripts require a web browser only.

A PHP file contains PHP tags and ends with the extension ".php".

Apache

Apache HTTP Server is a free and open-source web server that delivers web content through the internet. It is commonly referred to as Apache and after development, it quickly became the most popular HTTP client on the web. It's widely thought that Apache gets its name from

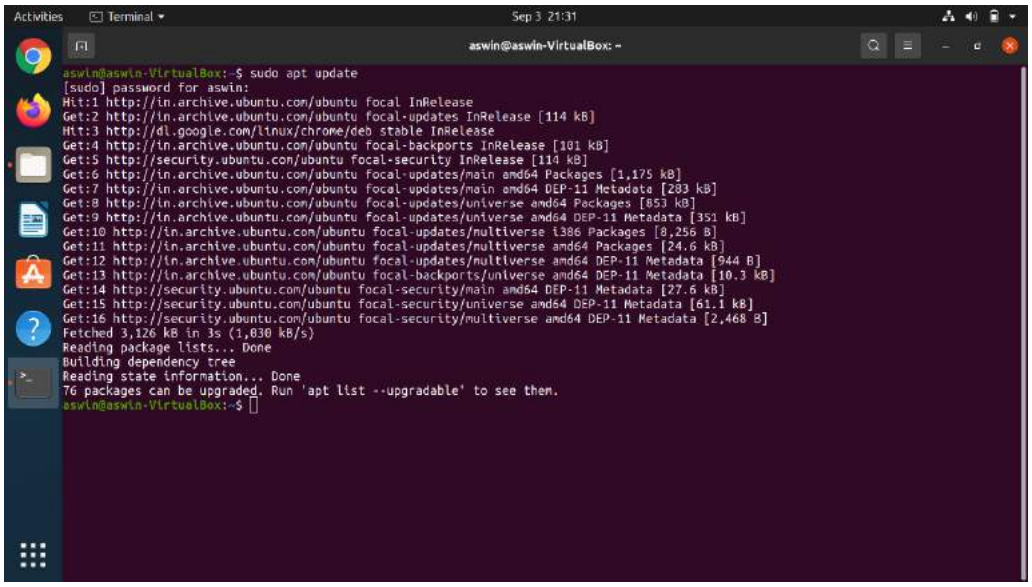
its development history and process of improvement through applied patches and modules but that was corrected back in 2000. It was revealed that the name originated from the respect of the Native American tribe for its resiliency and durability.

Now, before we get too in depth on Apache, we should first go over what a web application is and the standard architecture usually found in web apps.

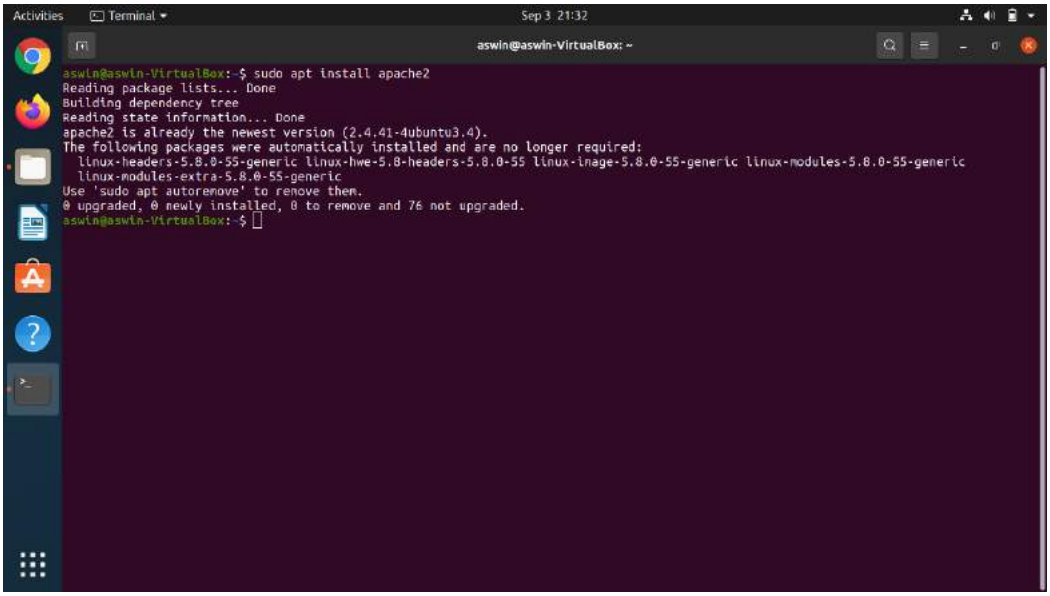
SETUP LARAVEL ON UBUNTU WITH APACHE

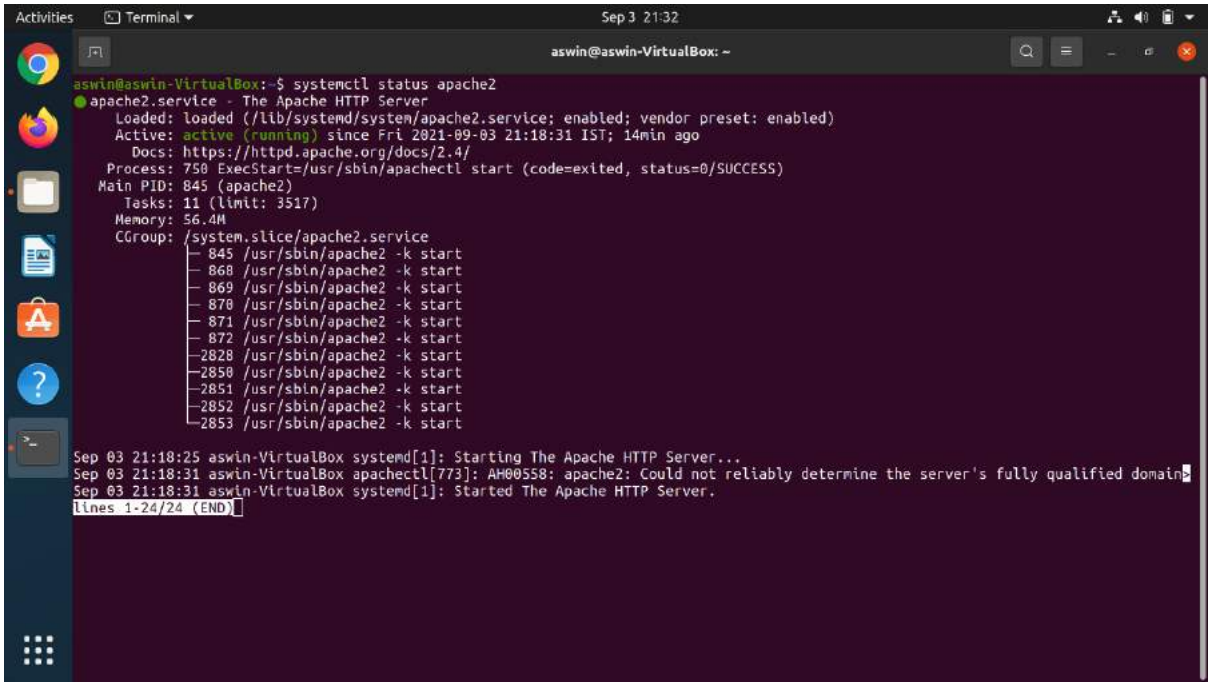
Step-1: Install Apache Web Server

- Let's open up a Terminal and do first thing first update your package list using Sudo apt update command.

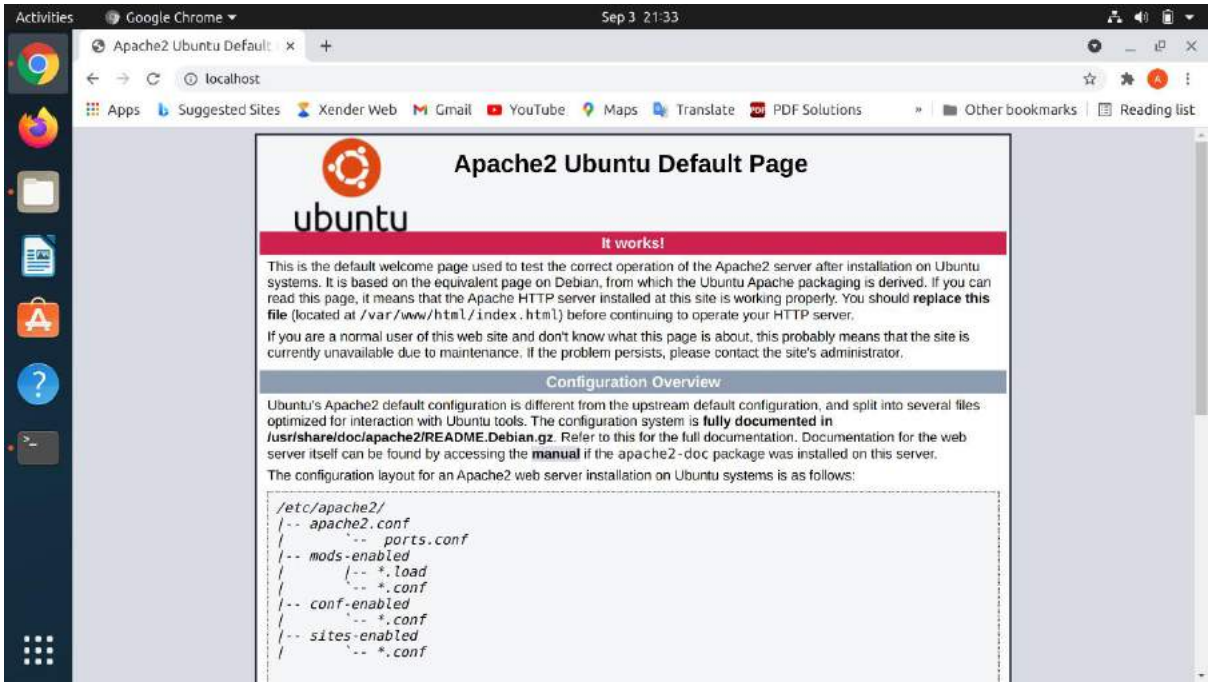


- After updating your package list install apache webserver. So, go ahead and type sudo apt install apache2 then hit the enter key. Press y key to proceed. You can also setup laravel with Nginx instead of the apache web server.



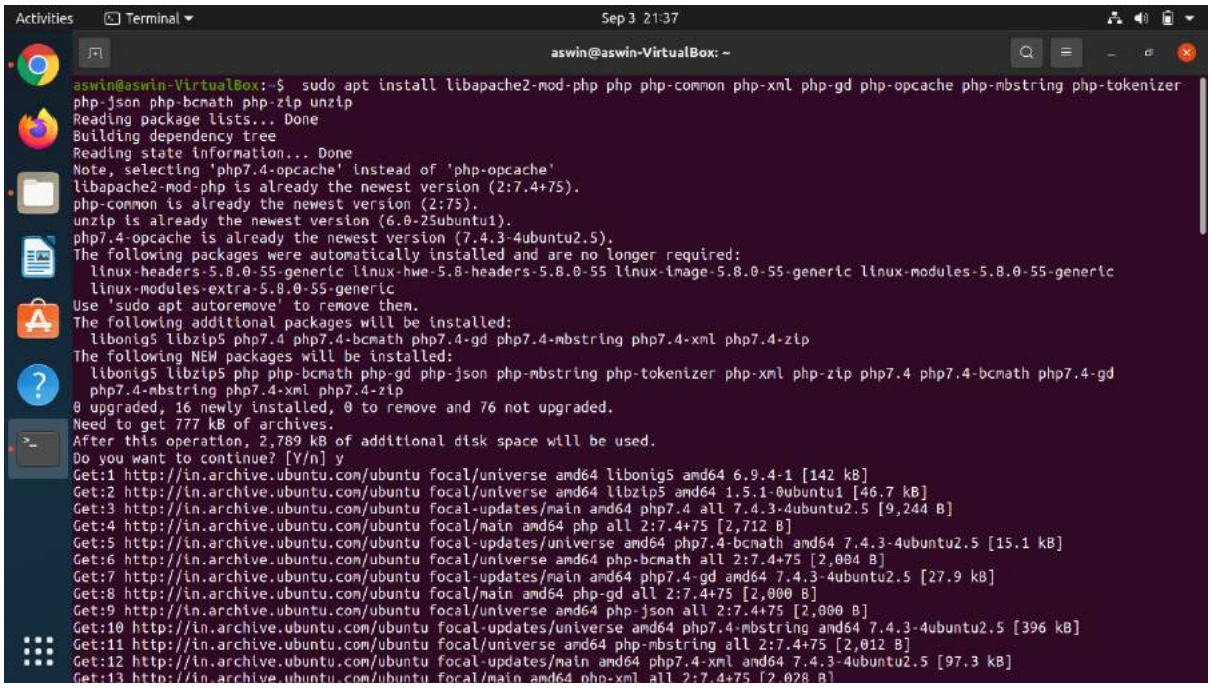


- Check Apache server is working

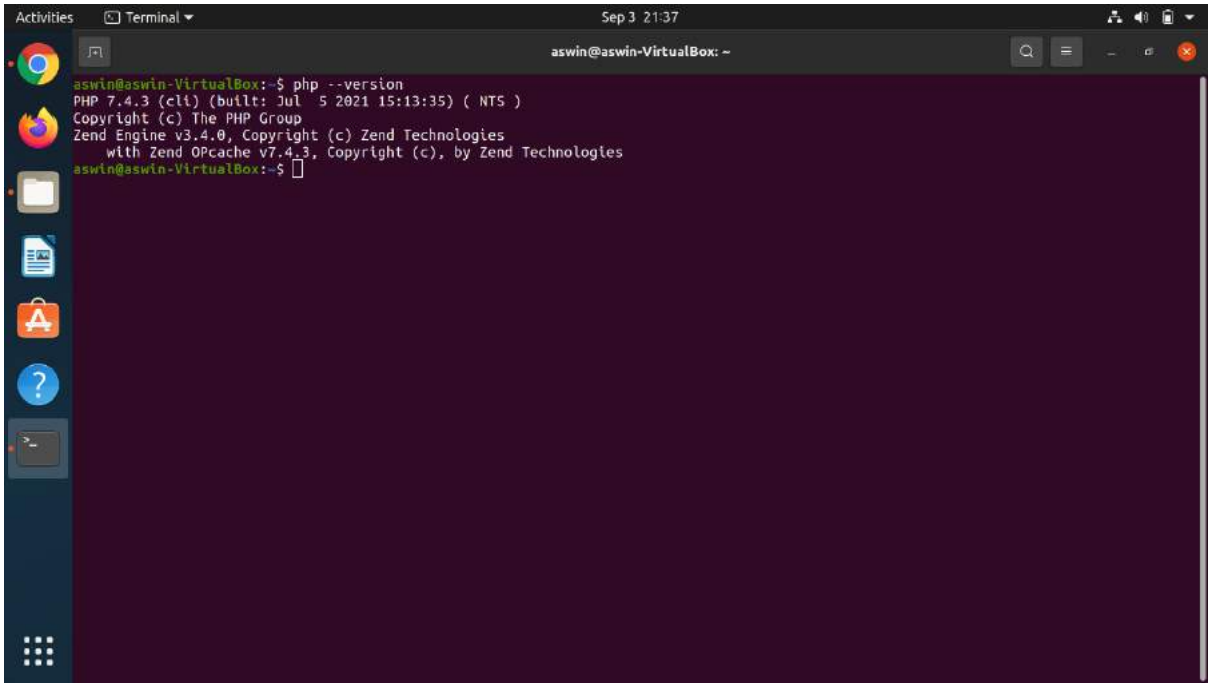


Step-2: Install and Configure PHP 7.4

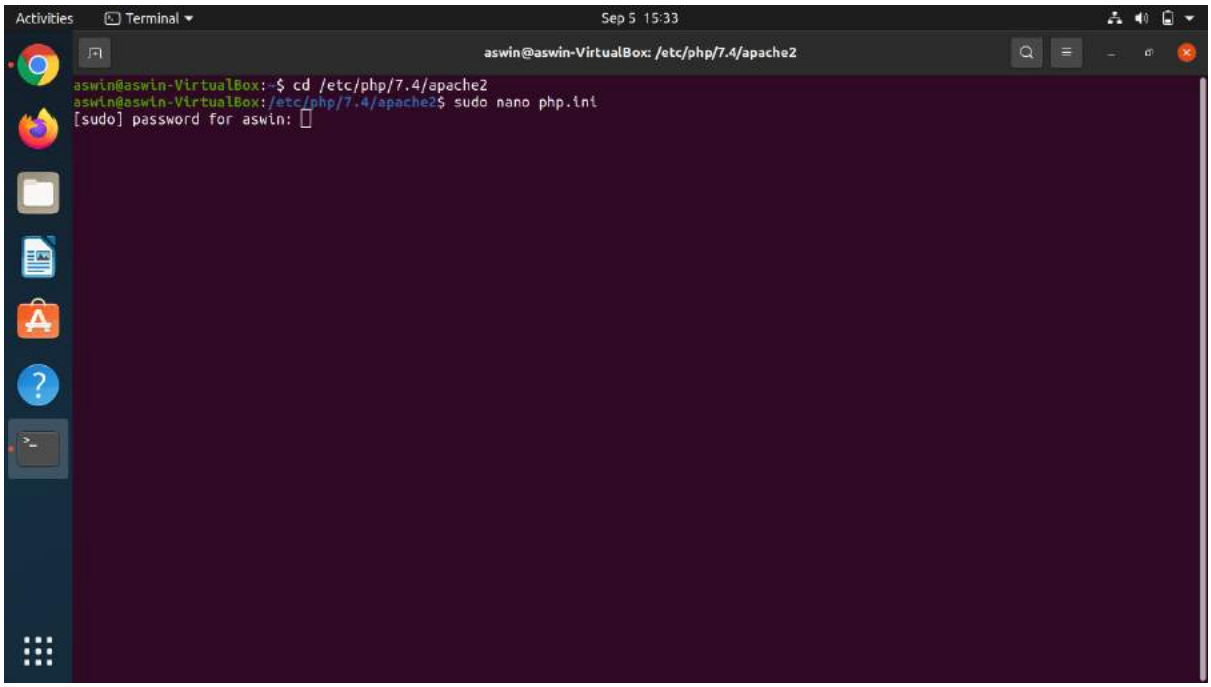
- To install Laravel 8.x, at least you must have PHP >= 7.3 on your system. And by default, the official Ubuntu 20.04 repository provides PHP 7.4 packages. Install PHP 7.4 packages using the apt command

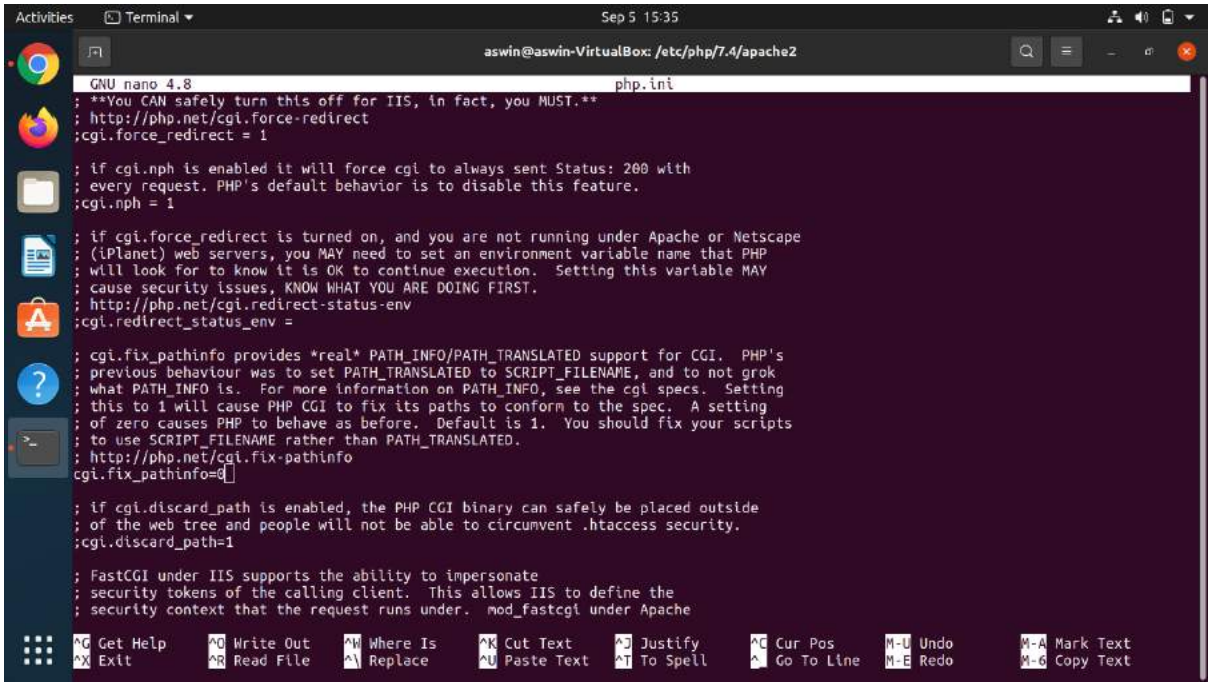


- You can check your PHP version using it.

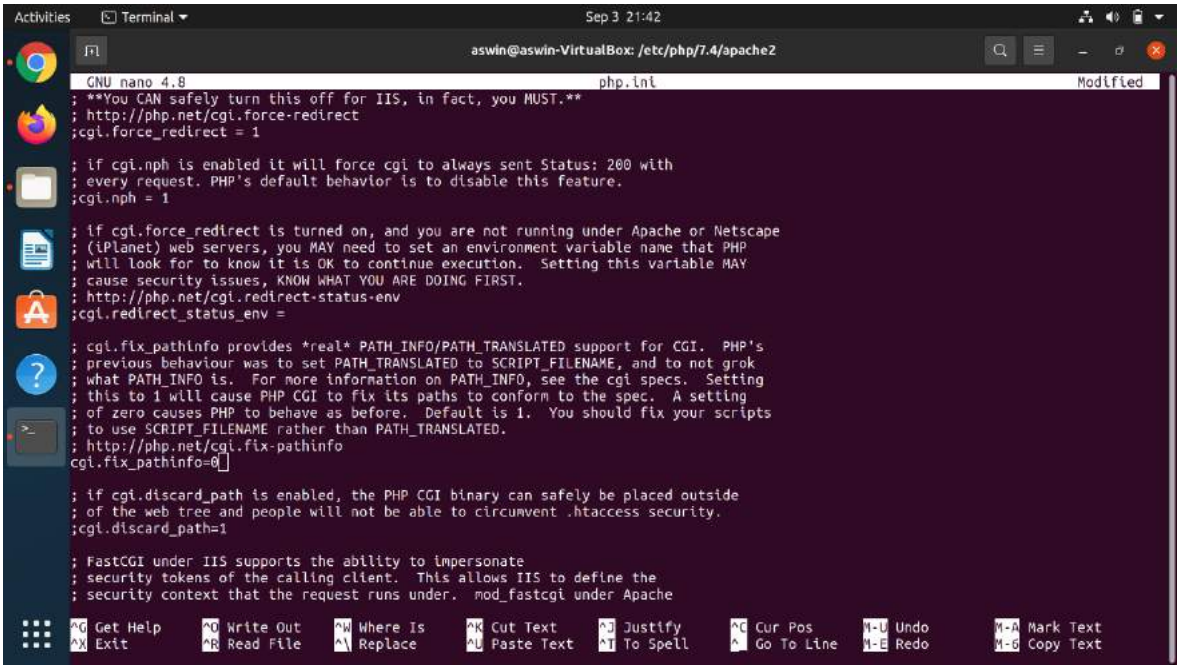


- Now go ahead and make tweak changes in PHP ini file and set cgi.fix_pathinfo set to be 0. If this number is kept as a 1, the php interpreter will do its best to process the file that is as near to the requested file as possible. This is a possible security risk. If this number is set to 0, conversely, the interpreter will only process the exact file path—a much safer alternative.



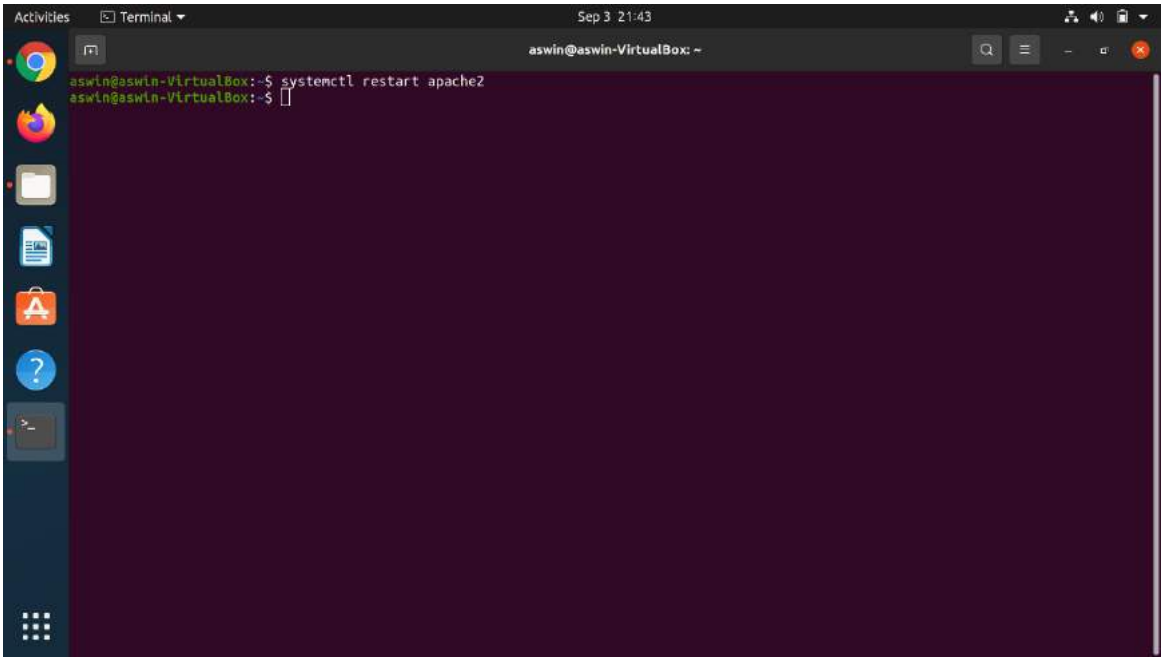


- Press ctrl+w and search for the word “cgi.fix” the uncomment the line and set it to 0.



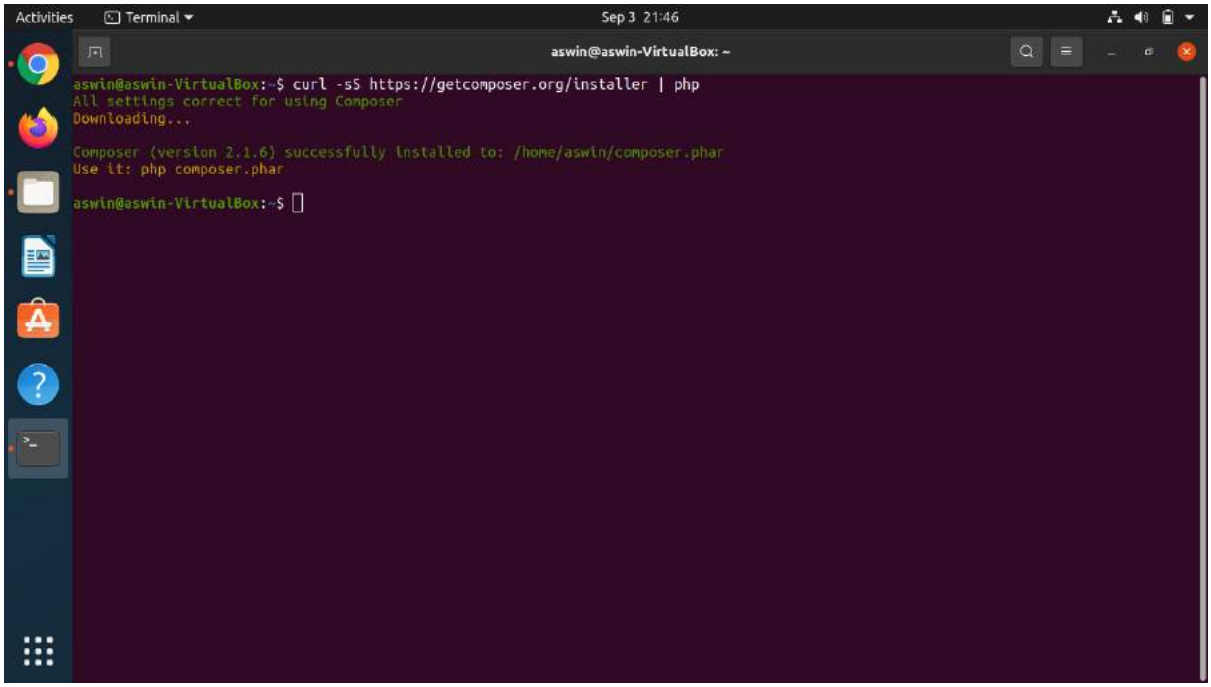
Press Ctrl + x then y to Save and Exit.

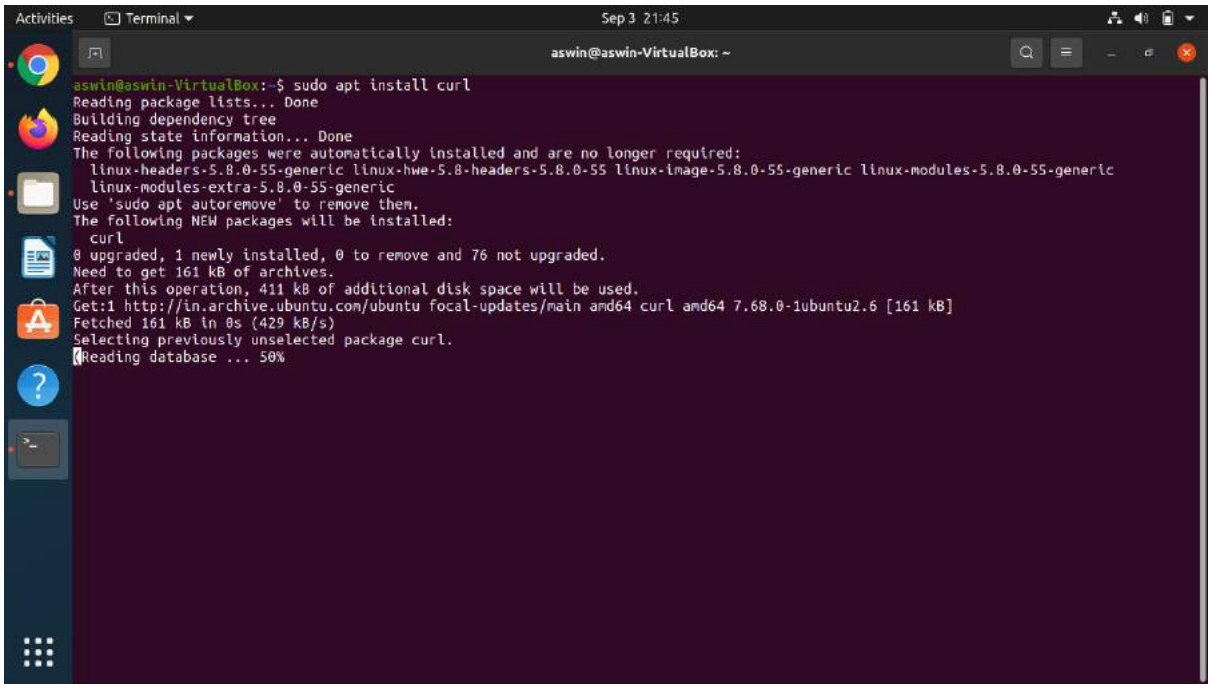
- Now Restart The apache service.

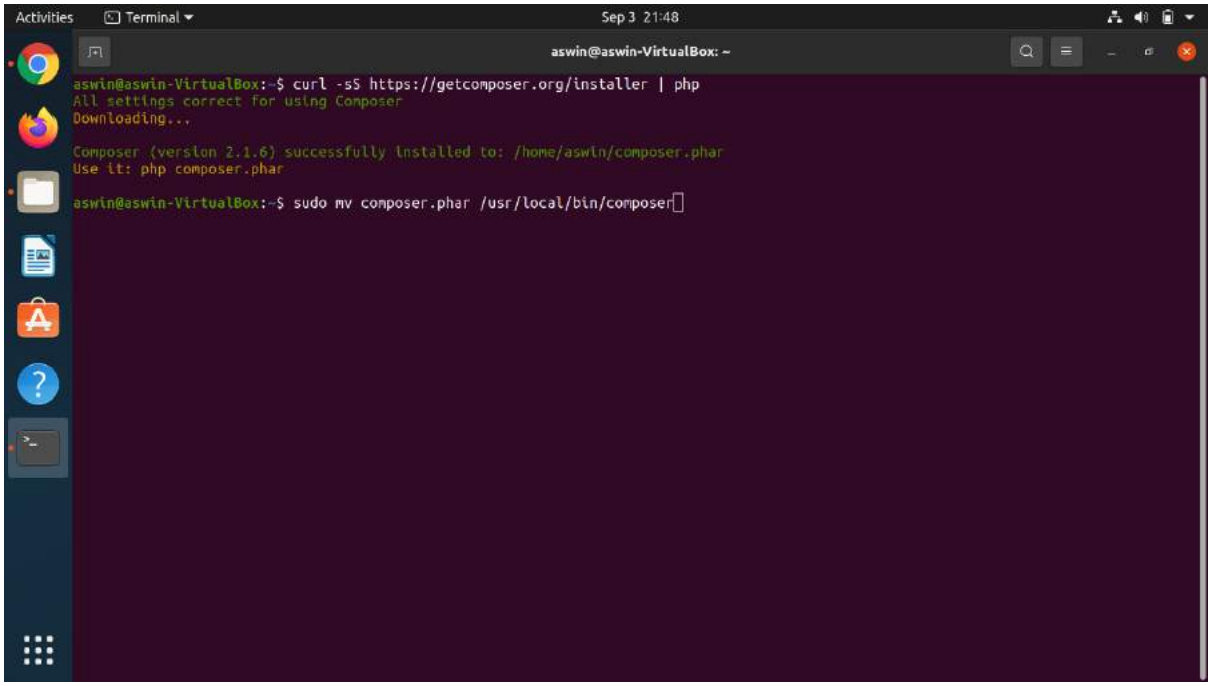


Step-3: Install Composer PHP Packages Management

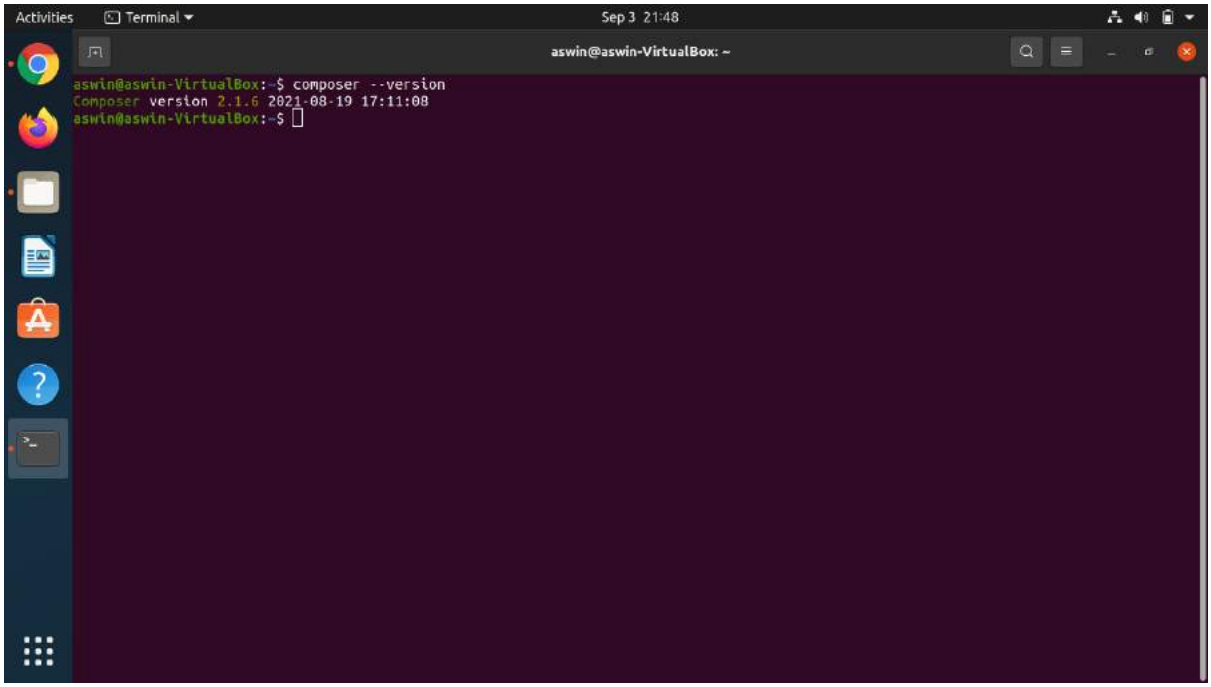
- install the composer package manager go ahead and download and install Composer. and move the composer .phar file to usr/local/bin/composer directory.





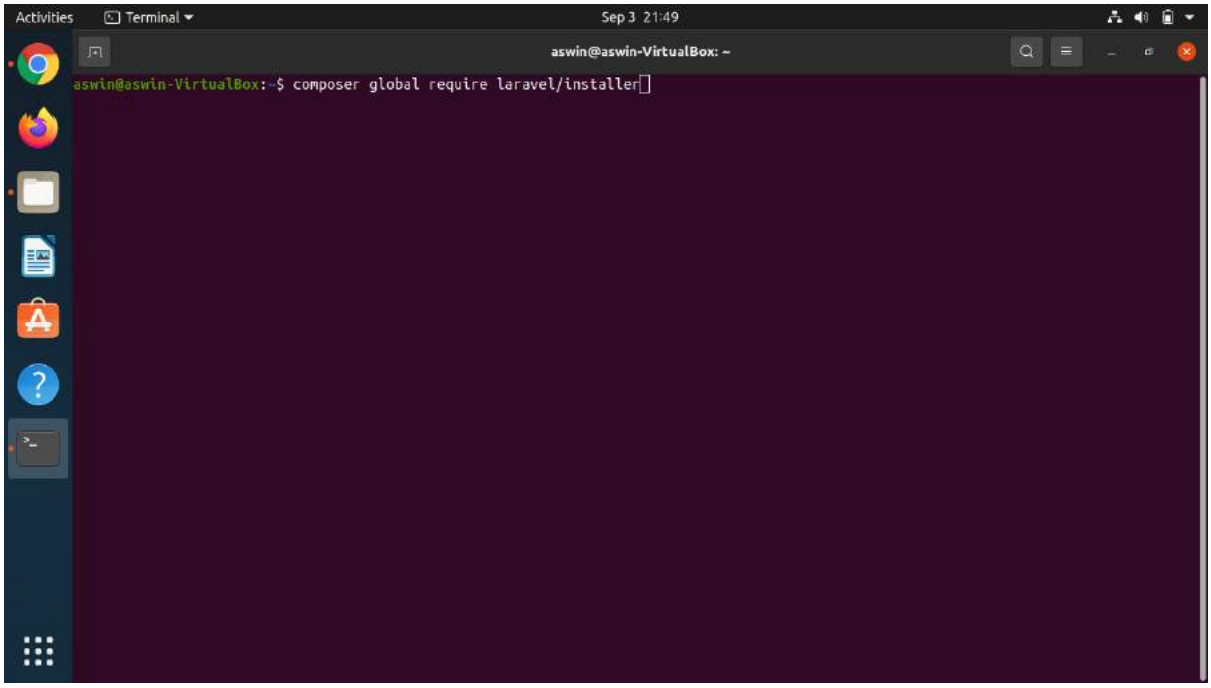


- You can check your installed composer version by typing the composer – version.

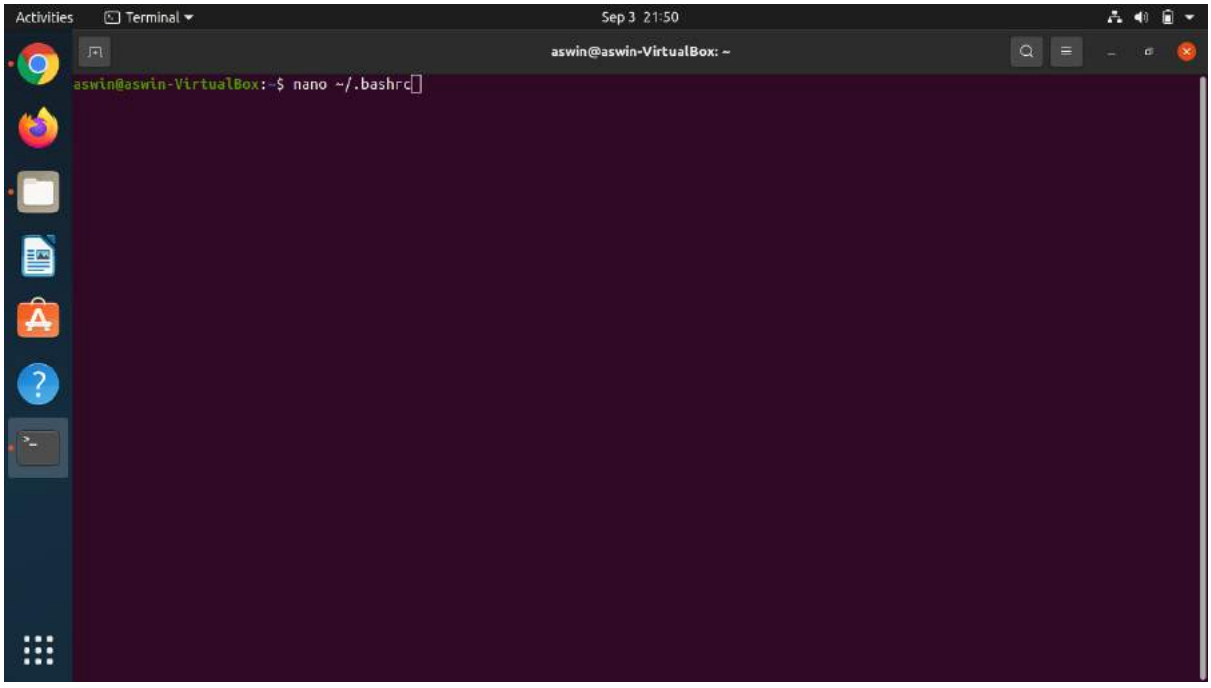


Step-4: Install Laravel 8.x on Ubuntu 20.04

- Now install Laravel Framework using composer, just type composer global require Laravel/installer It will take a while to complete download its dependencies.

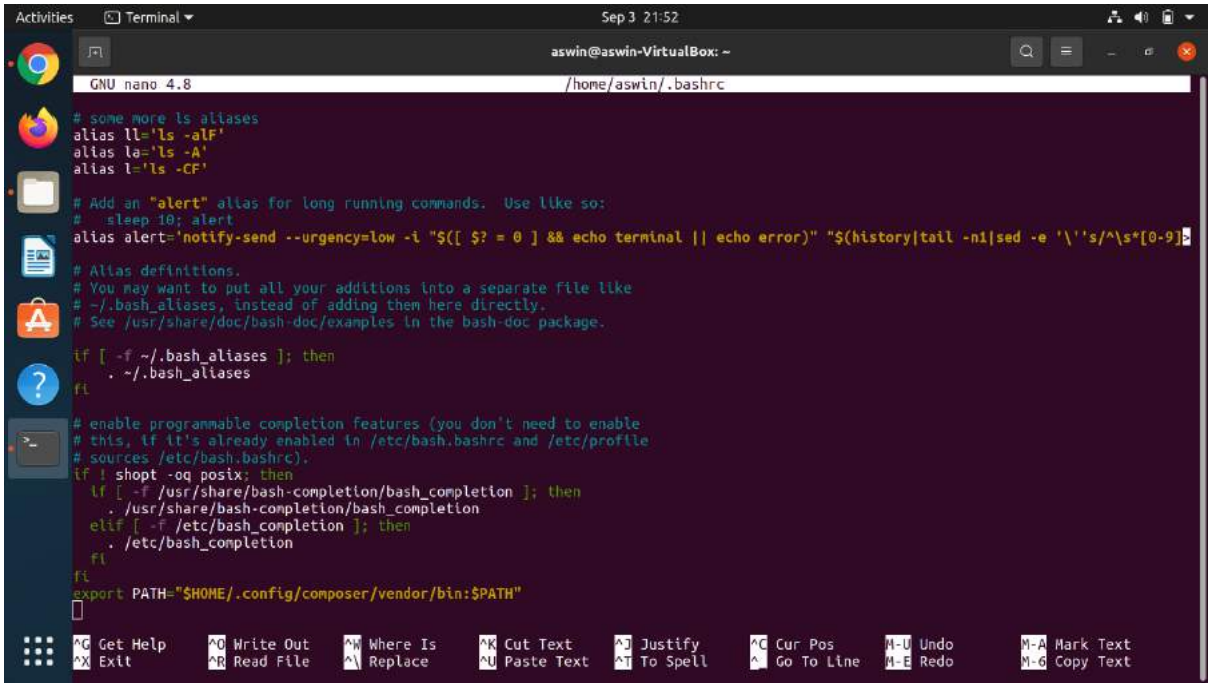


- As you had seen above image, all packages have been installed on the '~/.config/composer' directory. Next, we need to add the 'bin' directory to the PATH environment through the ~/.bashrc configuration. So Now Edit the ~/.bashrc configuration using nano command.

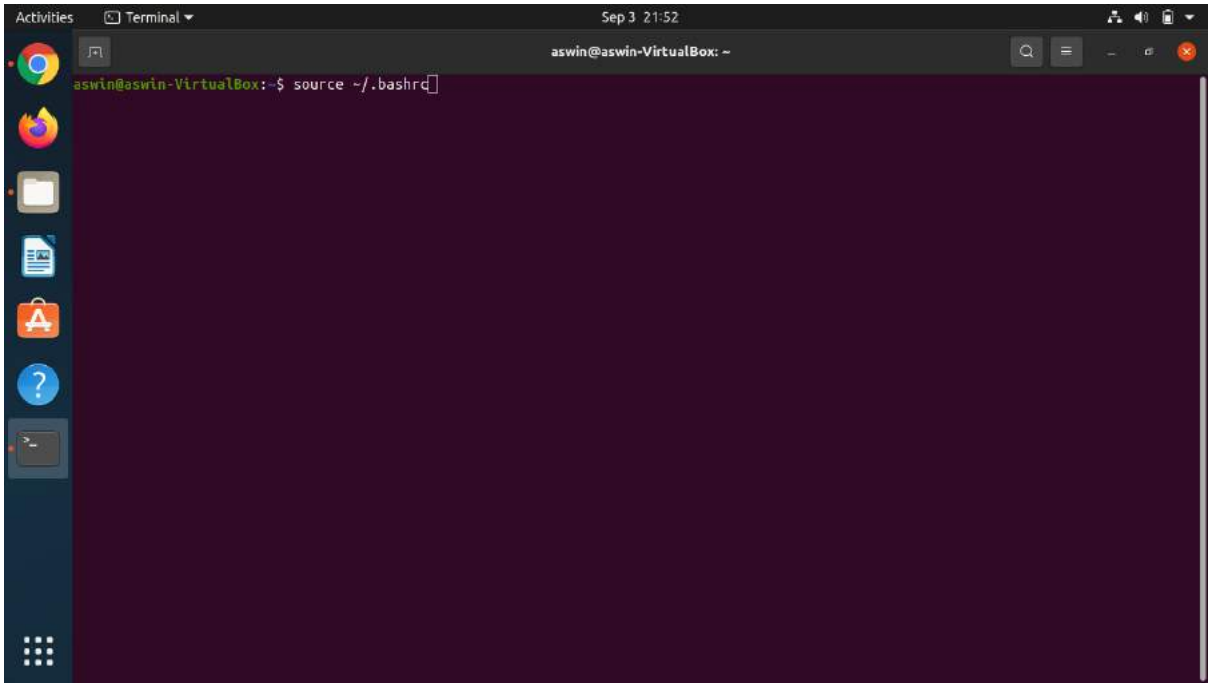


And add the following line at the end of the file.

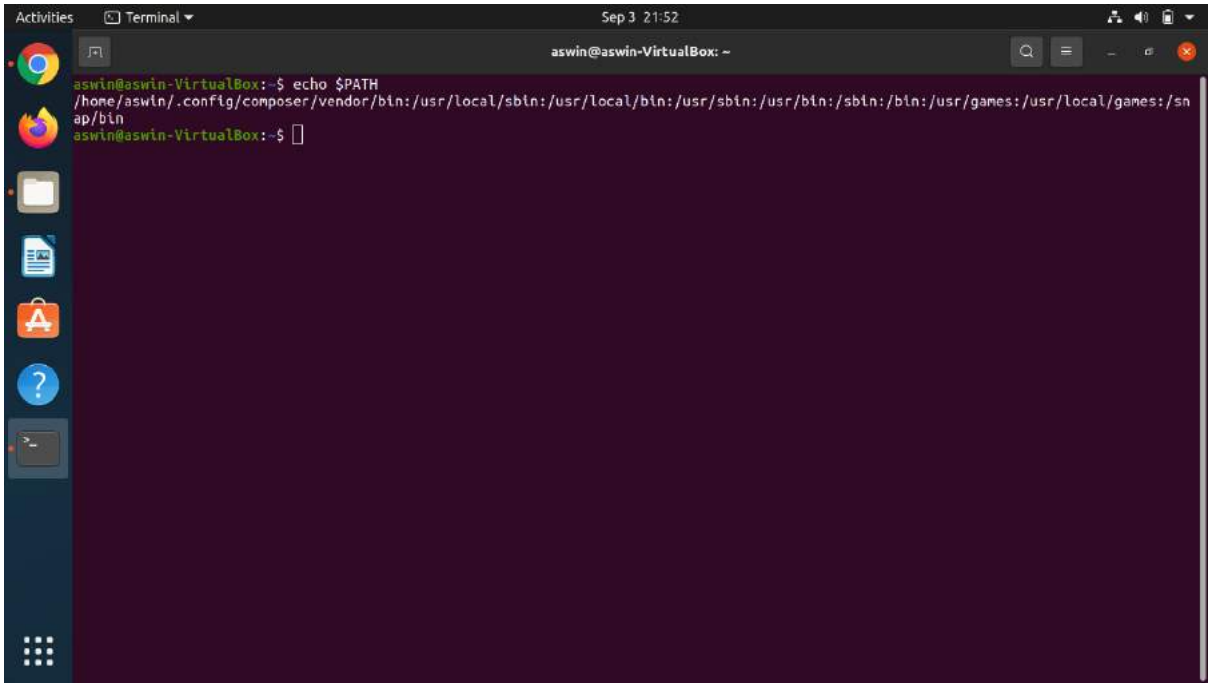
```
export PATH="$HOME/.config/composer/vendor/bin:$PATH"
```



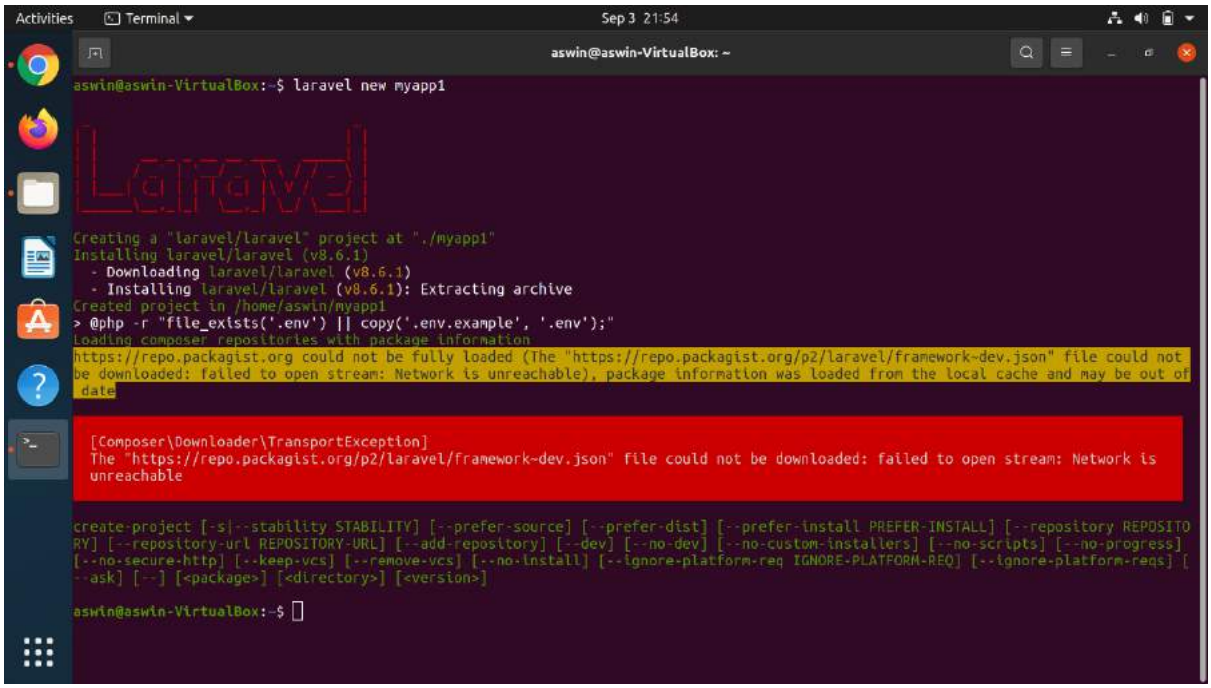
- Now reload your bashrc configuration using the source command.



- Now echo $PATH. It will return your “Bin” directory path for the Composer package.

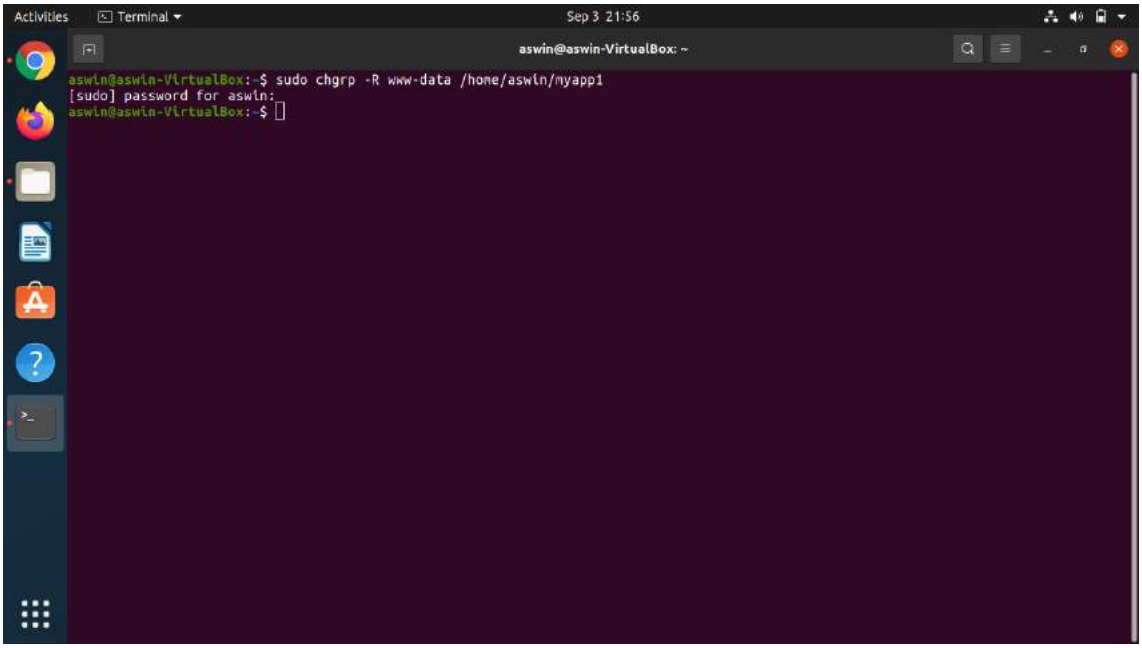


- The ‘bin’ directory for the composer packages has been added to the $PATH environment variable. And as a result, you can use the command ‘laravel’ to start and create a new project. Now go ahead and type Laravel new then your project name to start a new Laravel project.



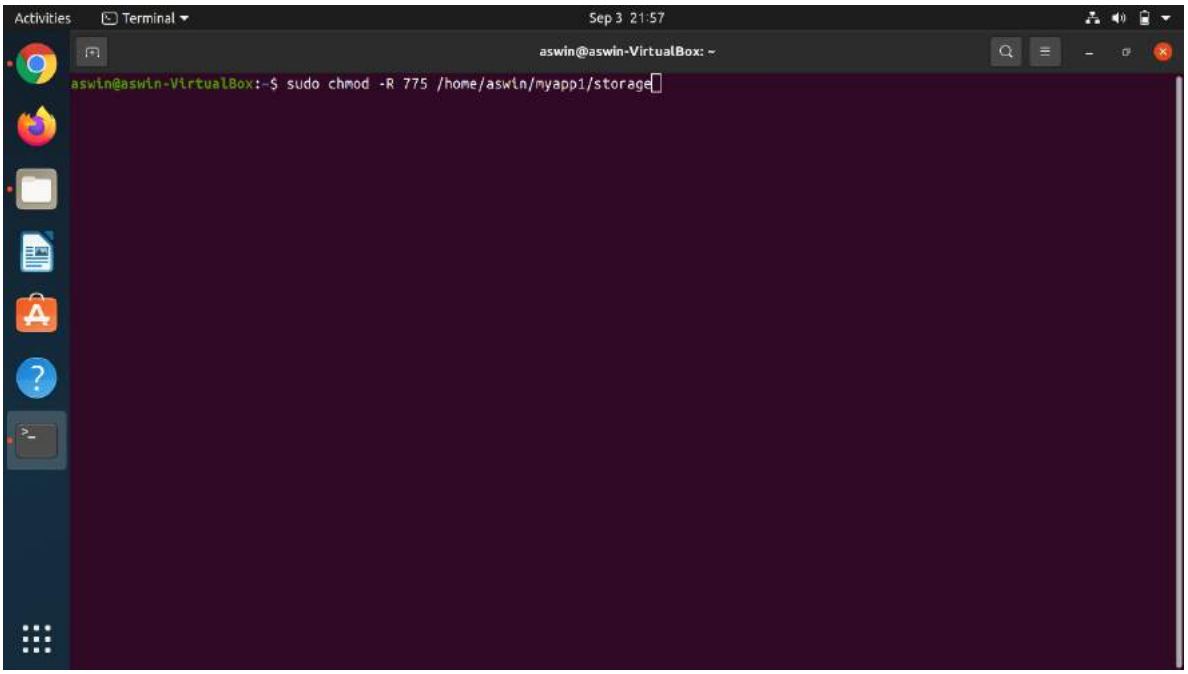
Step-5: Finally Configure Apache for Laravel and test it

- Add your project directory to www-data group use the following command

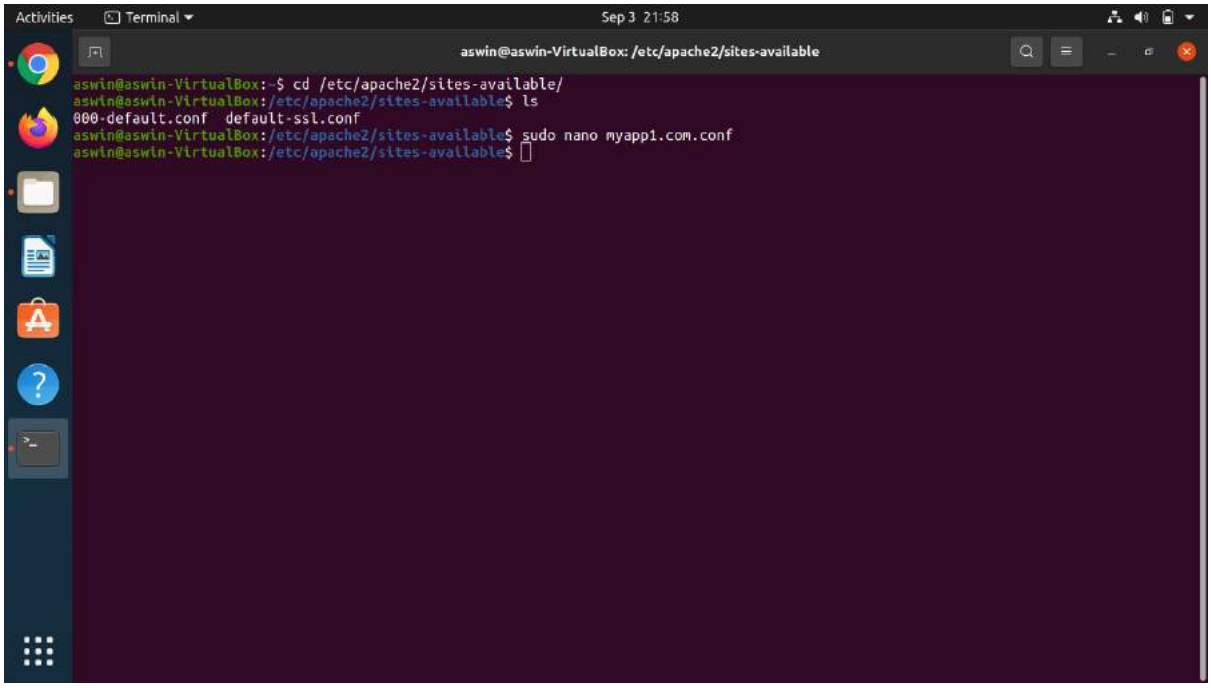


-R flag is recursive, Recursive means all subdirectory and files under your project directory become changed to the “www-data” group.

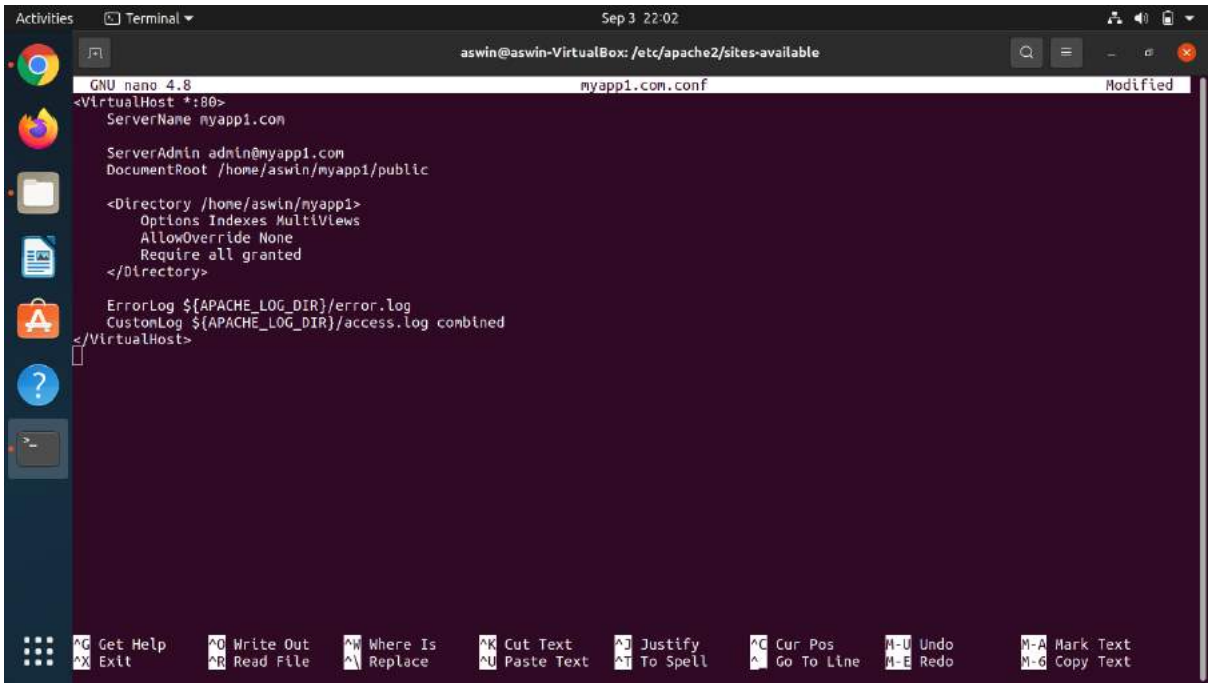
- Also, you need to change access permission 775 of the storage directory under your project. So, go ahead and use the following command.



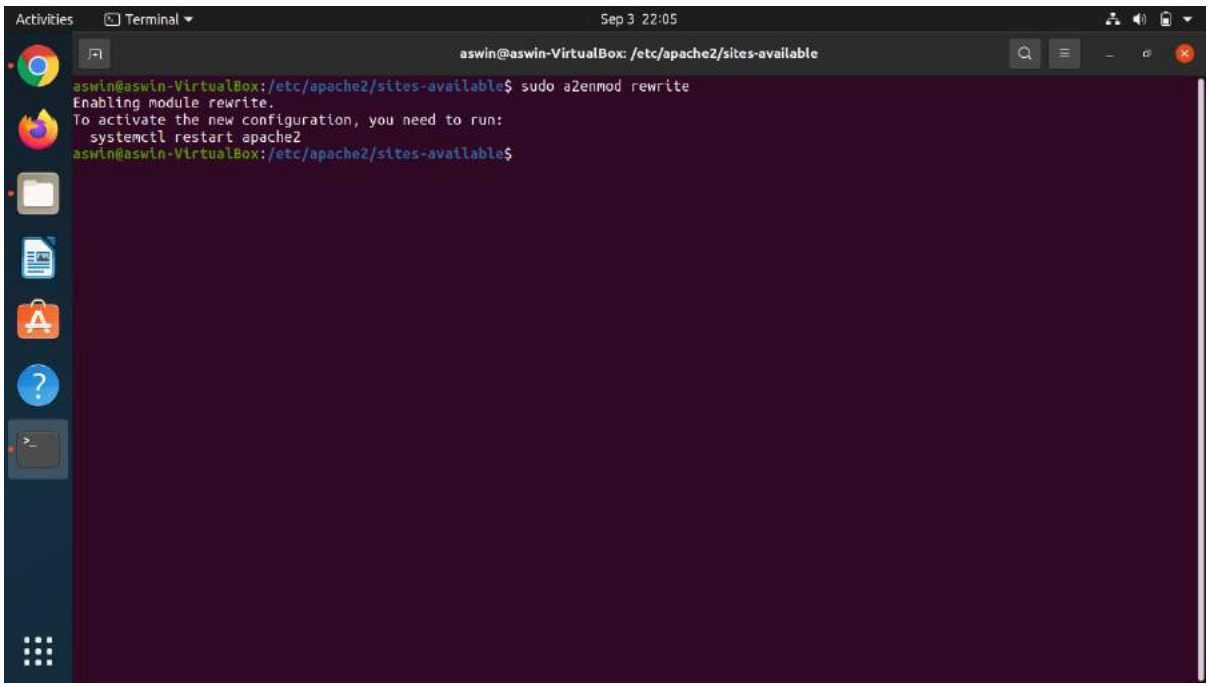
- Now create an apache vhost configuration go to the following directory and create a vhost config file using nano file editor.



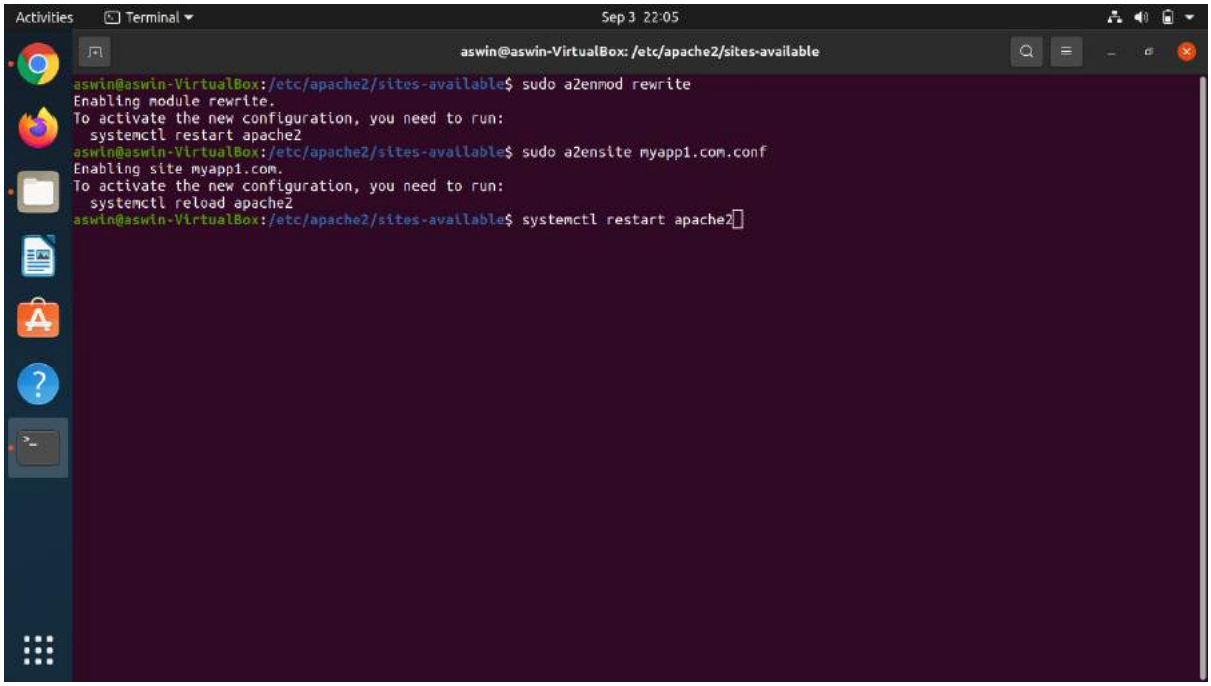
- And type the following line inside the file.



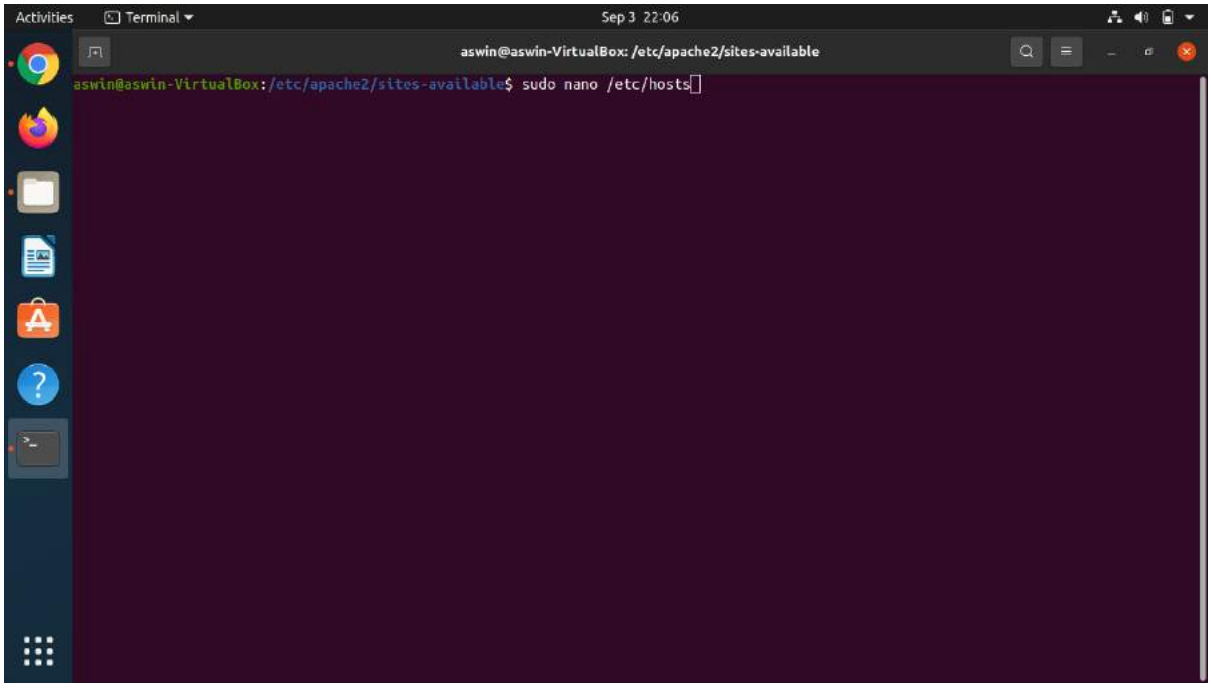
- Now enable mod rewrite for apache2 just type

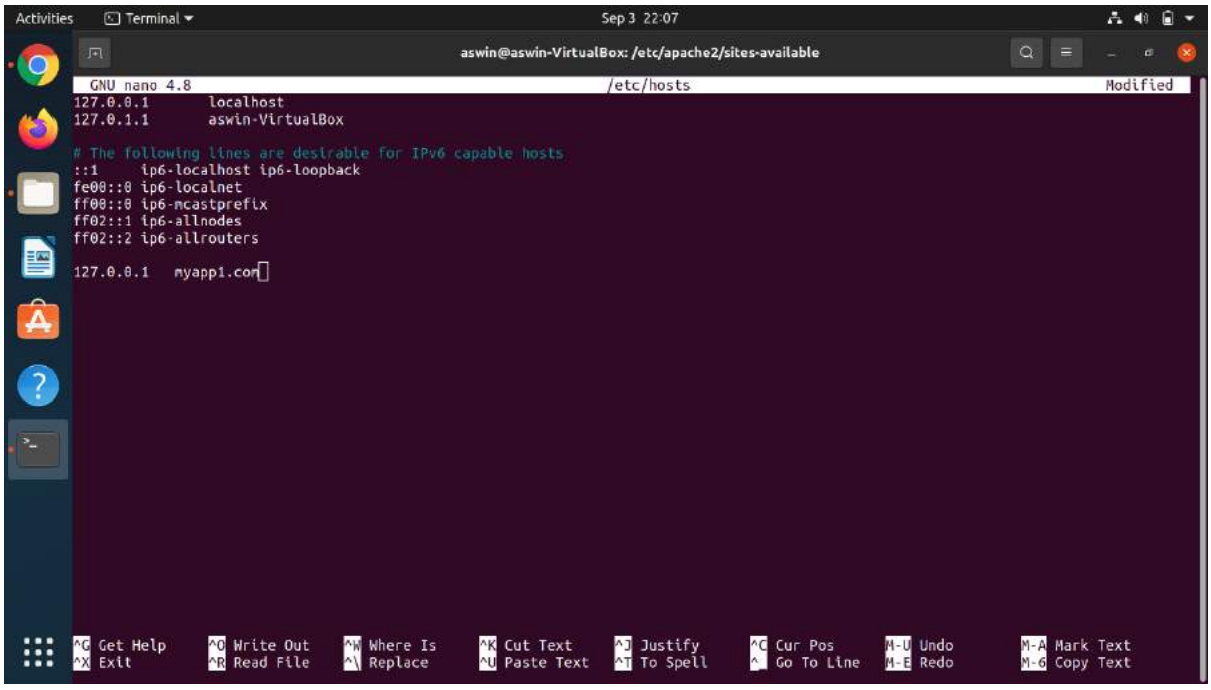


- Now enable your site, just type
  Finally, Restart the apache service, type



- As you are in a local environment you need a local dns resolver for your site. Go ahead and edit /etc/hosts file, add a dns record for your site then save the file.





- Now get back to the web browser and open a tab then type your project hostname.