

EXPIRIMENT NO : 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)

SETUP LARAVEL ON UBUNTU WITH APACHE

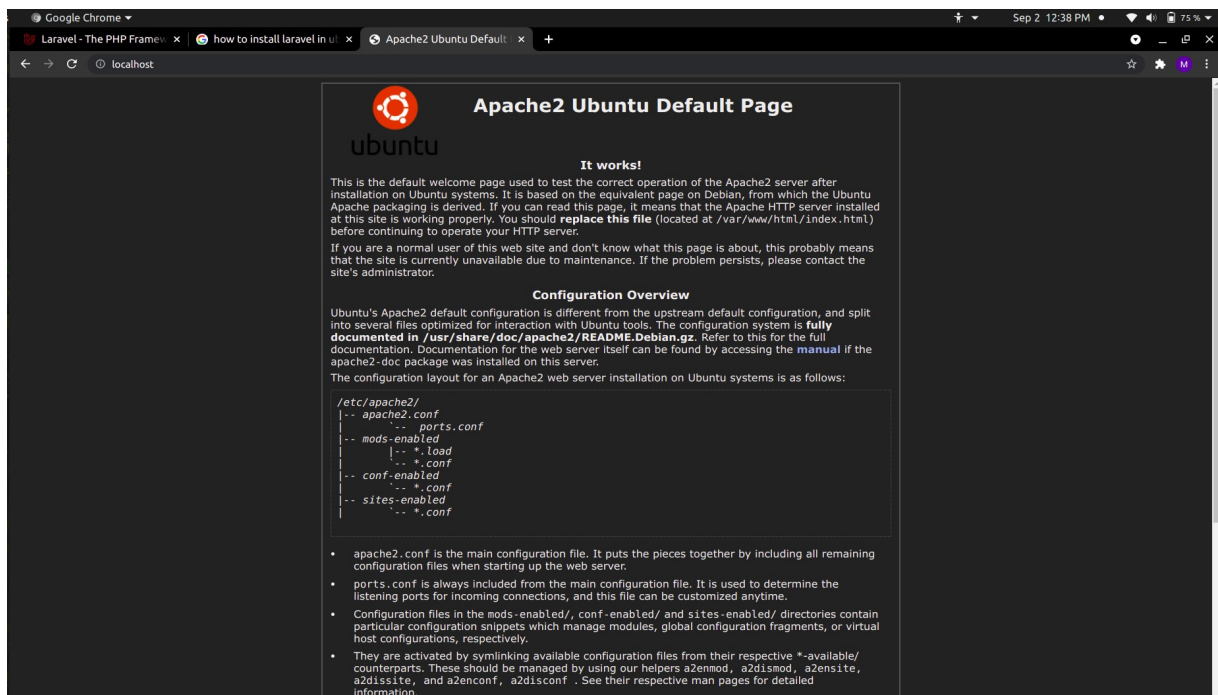
Step-1: Install Apache Web Server

- 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.

```
user@murshid-tp:~$ sudo apt install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.41-4ubuntu3.4).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
user@murshid-tp:~$ systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2021-08-28 10:56:27 IST; 5 days ago
     Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 1043 (apache2)
     Tasks: 6 (limit: 4548)
    Memory: 11.3M
    CGroup: /system.slice/apache2.service
            └─ 1043 /usr/sbin/apache2 -k start
               19643 /usr/sbin/apache2 -k start
               19644 /usr/sbin/apache2 -k start
               19645 /usr/sbin/apache2 -k start
               19646 /usr/sbin/apache2 -k start
               19647 /usr/sbin/apache2 -k start

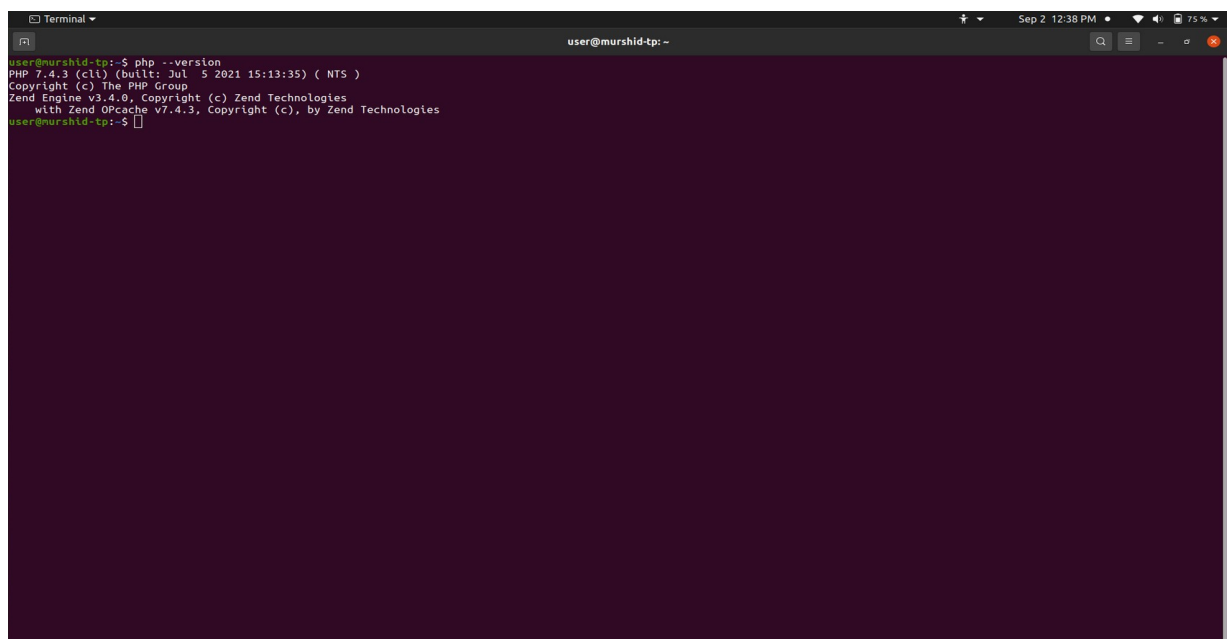
Aug 28 10:56:16 murshid-tp systemd[1]: Starting The Apache HTTP Server...
Aug 28 10:56:27 murshid-tp apachectl[942]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using ::1. Set the 'ServerName' directive global
Aug 28 10:56:27 murshid-tp systemd[1]: Started The Apache HTTP Server.
Aug 31 09:15:02 murshid-tp systemd[1]: Reloading The Apache HTTP Server.
Aug 31 09:15:05 murshid-tp apachectl[19611]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 2409:4073:38d:2741:a797:d527:ea9c:e08e. S
Aug 31 09:15:05 murshid-tp systemd[1]: Reloaded The Apache HTTP Server.
lines 1-21/21 (END)
```

- 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.

```
GNU nano 4.8                                php.ini
; properly in multithreaded servers, such as IIS or Zeus, and is automatically
; disabled on then.
; http://php.net/enable-dl
enable_dl = Off

; cgi.force_redirect is necessary to provide security running PHP as a CGI under
; most web servers. Left undefined, PHP turns this on by default. You can
; turn it off here AT YOUR OWN RISK
; **You CAN safely turn this off for IIS, in fact, you MUST.**
; http://php.net/cgi.force-redirect
;cgi.force_redirect = 1

; if cgi.nph is enabled it will force cgi to always sent Status: 200 with
; every request. PHP's default behavior is to disable this feature.
;cgi.nph = 1

; if cgi.force_redirect is turned on, and you are not running under Apache or Netscape
; ((Planet) web servers, you MAY need to set an environment variable name that PHP
; will look for to know it is OK to continue execution. Setting this variable MAY
; cause security issues, KNOW WHAT YOU ARE DOING FIRST.
; http://php.net/cgi.redirect-status-env
;cgi.redirect_status_env =

; cgi.fix_pathinfo provides "real" PATH_INFO/PATH_TRANSLATED support for CGI. PHP's
; previous behaviour was to set PATH_TRANSLATED to SCRIPT_FILENAME, and to not grok
; what PATH_INFO is. For more information on PATH_INFO, see the cgi specs. Setting
; this to 1 will cause PHP CGI to fix its paths to conform to the spec. A setting
; of zero causes PHP to behave as before. Default is 1. You should fix your scripts
; to use SCRIPT_FILENAME rather than PATH_TRANSLATED.
; http://php.net/cgi.fix-pathinfo
;cgi.fix_pathinfo=1

; if cgi.discard_path is enabled, the PHP CGI binary can safely be placed outside
; of the web tree and people will not be able to circumvent .htaccess security.
;cgi.discard_path=1

; FastCGI under IIS supports the ability to impersonate
; security tokens of the calling client. This allows IIS to define the
; security context that the request runs under. mod_fastcgi under Apache
; does not currently support this feature (03/17/2002)
; Set to 1 if running under IIS. Default is zero.
; http://php.net/fastcgi.impersonate
;fastcgi.impersonate = 1

; Disable logging through FastCGI connection. PHP's default behavior is to enable
; this feature.
Search [cgi.fix]: |
^C Get Help      ^M Case Sens    ^M Backwards    ^M Older        ^M Go To Line
^C Cancel        ^M Regexp       ^M Replace       ^M Newer        ^M FullJustify
```

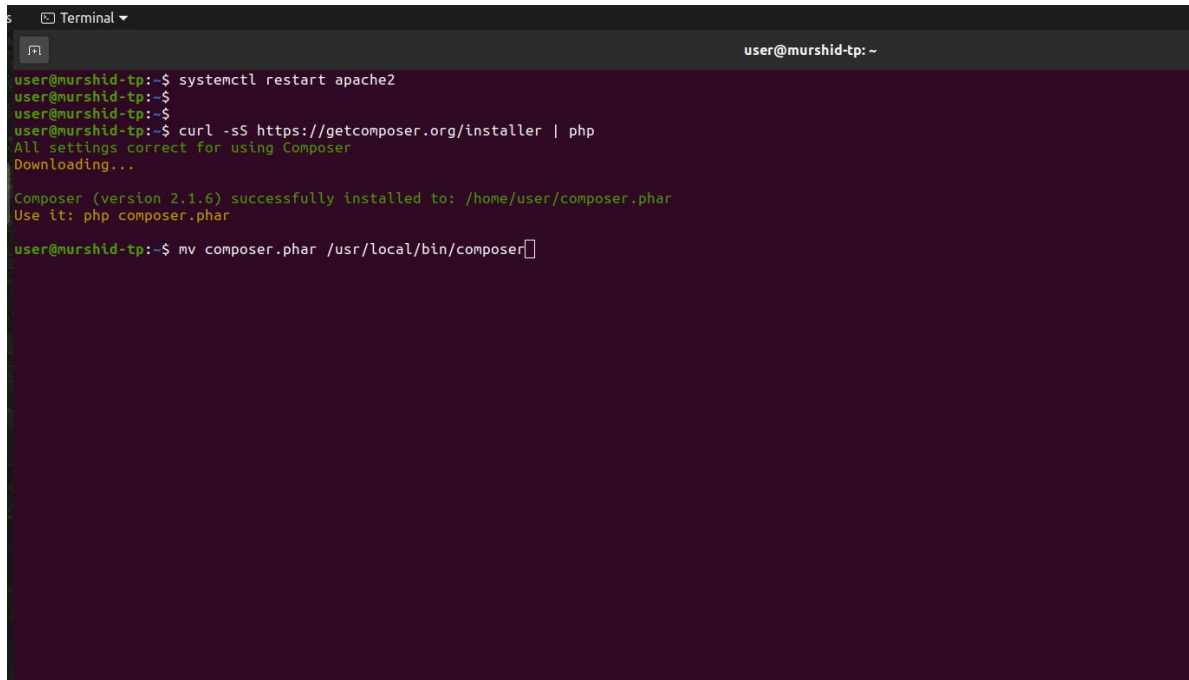
Press `Ctrl + x` then `y` to Save and Exit.

Now Restart The apache service.

```
user@murshid-tp:/etc/php/7.4/apache2$
user@murshid-tp:/etc/php/7.4/apache2$
user@murshid-tp:/etc/php/7.4/apache2$ systemctl restart apache2
```

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.

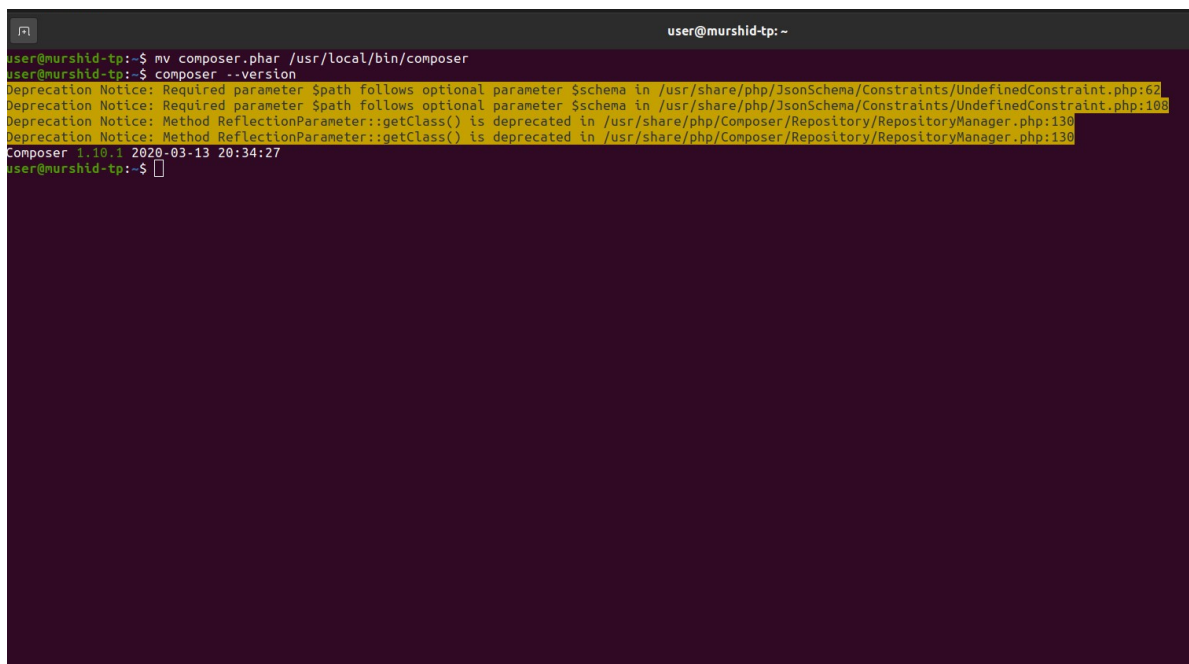
A terminal window titled 'Terminal' with a dark background. The prompt is 'user@murshid-tp: ~'. The user enters 'systemctl restart apache2', followed by two empty prompts. Then they enter 'curl -sS https://getcomposer.org/installer | php'. The output shows 'All settings correct for using Composer' and 'Downloading...'. Then 'Composer (version 2.1.6) successfully installed to: /home/user/composer.phar' and 'Use it: php composer.phar'. Finally, the user enters 'mv composer.phar /usr/local/bin/composer' and the prompt returns.

```
user@murshid-tp:~$ systemctl restart apache2
user@murshid-tp:~$
user@murshid-tp:~$
user@murshid-tp:~$ curl -sS https://getcomposer.org/installer | php
All settings correct for using Composer
Downloading...

Composer (version 2.1.6) successfully installed to: /home/user/composer.phar
Use it: php composer.phar

user@murshid-tp:~$ mv composer.phar /usr/local/bin/composer
```

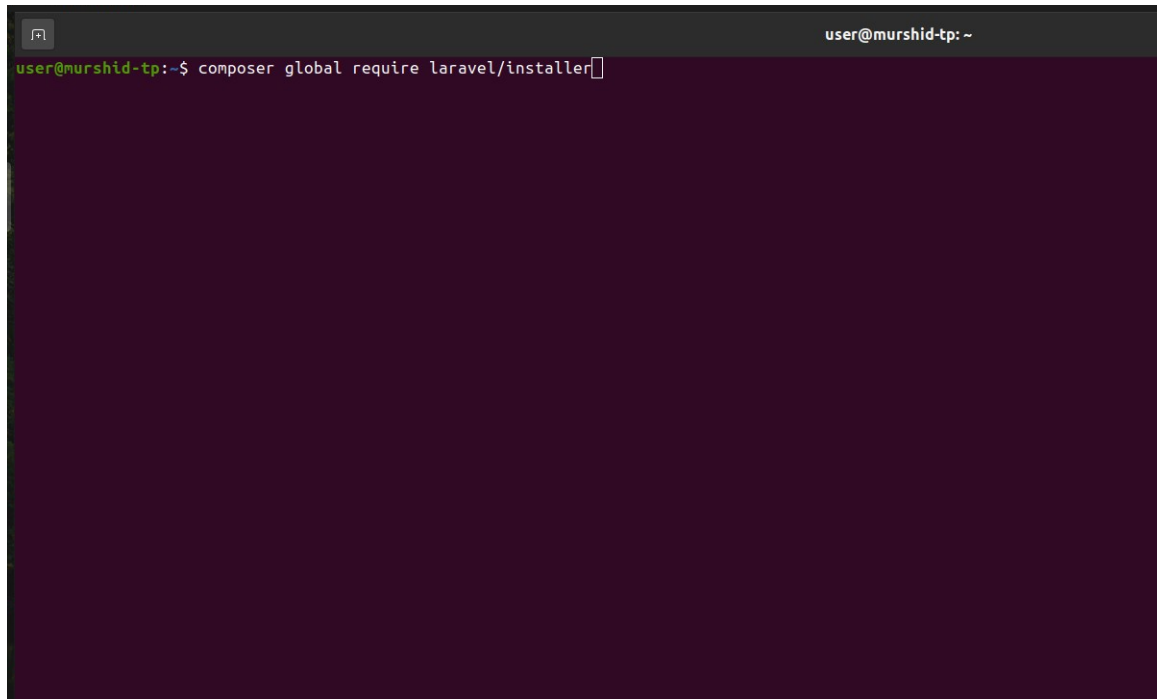
You can check your installed composer version by typing the composer – version.

A terminal window titled 'Terminal' with a dark background. The prompt is 'user@murshid-tp: ~'. The user enters 'mv composer.phar /usr/local/bin/composer'. Then they enter 'composer --version'. The output shows several deprecation notices about parameters and methods, followed by 'Composer 1.10.1 2020-03-13 20:34:27'.

```
user@murshid-tp:~$ mv composer.phar /usr/local/bin/composer
user@murshid-tp:~$ composer --version
Deprecation Notice: Required parameter $path follows optional parameter $schema in /usr/share/php/JsonSchema/Constraints/UndefinedConstraint.php:62
Deprecation Notice: Required parameter $path follows optional parameter $schema in /usr/share/php/JsonSchema/Constraints/UndefinedConstraint.php:108
Deprecation Notice: Method ReflectionParameter::getClass() is deprecated in /usr/share/php/Composer/Repository/RepositoryManager.php:130
Deprecation Notice: Method ReflectionParameter::getClass() is deprecated in /usr/share/php/Composer/Repository/RepositoryManager.php:130
Composer 1.10.1 2020-03-13 20:34:27
user@murshid-tp:~$
```

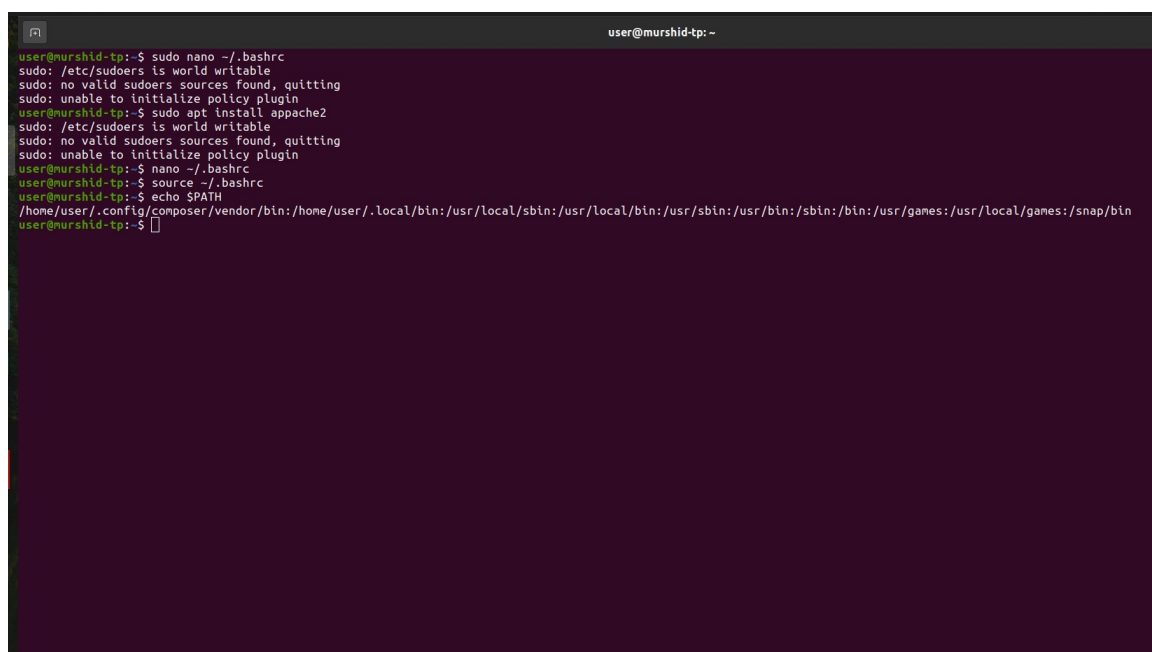
Step-4: Install Laravel 8.x on Ubuntu 20.04

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



```
user@murshid-tp: ~  
user@murshid-tp:~$ composer global require laravel/installer
```

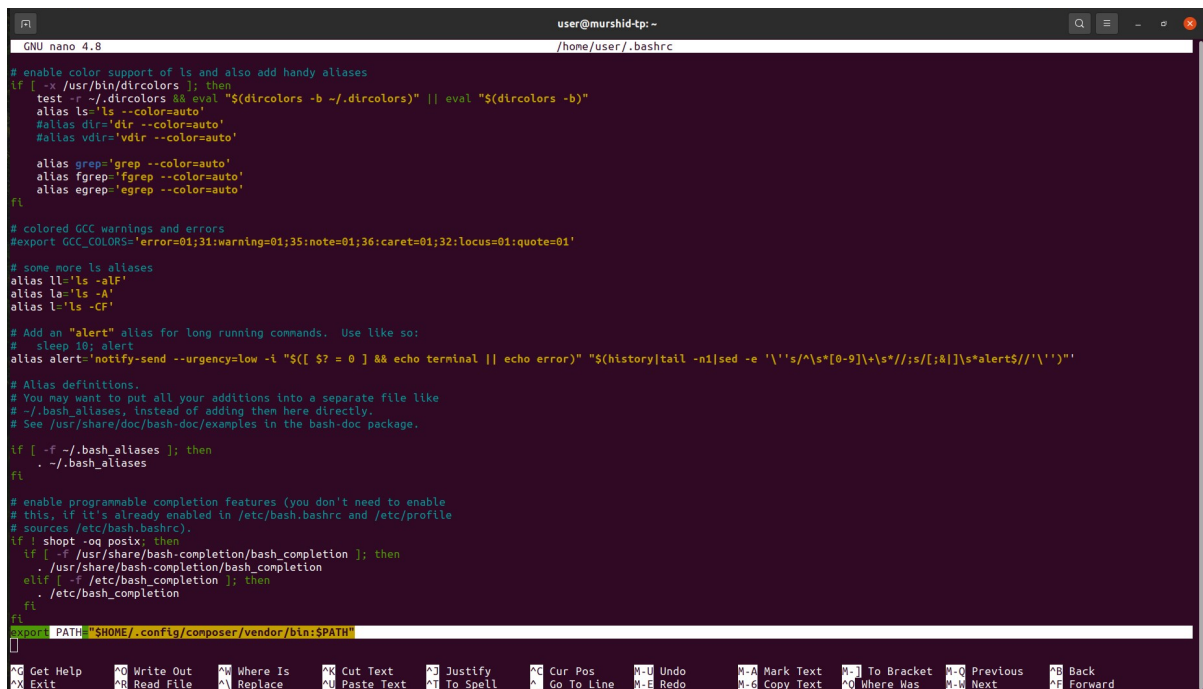
As you had seen above image, all packages have been installed on the ‘~/.config/composer’ directory. Next, we need to add the ‘bin’ directory to the PATH environment through the ~/.bashrc configuration. So Now Edit the ~/.bashrc configuration using nano command.



```
user@murshid-tp:~$ sudo nano ~/.bashrc  
sudo: /etc/sudoers is world writable  
sudo: no valid sudoers sources found, quitting  
sudo: unable to initialize policy plugin  
user@murshid-tp:~$ sudo apt install apache2  
sudo: /etc/sudoers is world writable  
sudo: no valid sudoers sources found, quitting  
sudo: unable to initialize policy plugin  
user@murshid-tp:~$ nano ~/.bashrc  
user@murshid-tp:~$ source ~/.bashrc  
user@murshid-tp:~$ echo $PATH  
/home/user/.config/composer/vendor/bin:/home/user/.local/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin  
user@murshid-tp:~$
```

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

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



```
GNU nano 4.8 /home/user/.bashrc
# enable color support of ls and also add handy aliases
if [ -x /usr/bin/dircolors ]; then
    test -r ~/.dircolors && eval "$(dircolors -b ~/.dircolors)" || eval "$(dircolors -b)"
    alias ls='ls --color=auto'
    alias dir='dir --color=auto'
    #alias vdir='vdir --color=auto'

    alias grep='grep --color=auto'
    alias fgrep='fgrep --color=auto'
    alias egrep='egrep --color=auto'
fi

# colored GCC warnings and errors
#export GCC_COLORS='error=01;31:warning=01;35:note=01;36:caret=01;32:locus=01:quote=01'

# some more ls aliases
alias ll='ls -alF'
alias la='ls -A'
alias l='ls -CF'

# Add an "alert" alias for long running commands.  Use like so:
# sleep 10; alert
alias alert='notify-send --urgency=low -i "${?} = 0" && echo terminal || echo error' "$("${history}|tail -n1|sed -e '\s/^s*[0-9]*\s*//;s/[:;#]\s*alert$/\s*')'"

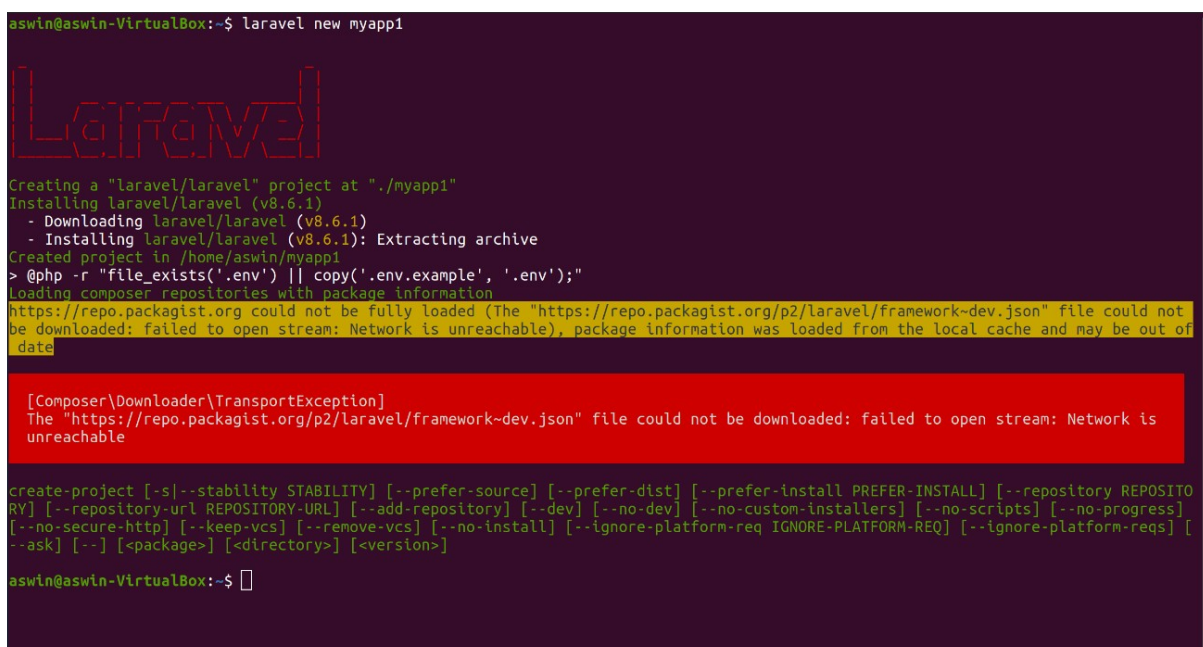
# Alias definitions.
# You may want to put all your additions into a separate file like
# ~/.bash_aliases, instead of adding them here directly.
# See /usr/share/doc/bash-doc/examples in the bash-doc package.

if [ -f ~/.bash_aliases ]; then
    . ~/.bash_aliases
fi

# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
    if [ -f /usr/share/bash-completion/bash_completion ]; then
        . /usr/share/bash-completion/bash_completion
    elif [ -f /etc/bash_completion ]; then
        . /etc/bash_completion
    fi
fi

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

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.



```
aswin@aswin-VirtualBox:~$ laravel new myapp1

Laravel

Creating a "laravel/laravel" project at "./myapp1"
Installing laravel/laravel (v8.6.1)
 - Downloading laravel/laravel (v8.6.1)
 - Installing laravel/laravel (v8.6.1): Extracting archive
Created project in /home/aswin/myapp1
> @php -r "file_exists('.env') || copy('.env.example', '.env');"
Loading composer repositories with package information
https://repo.packagist.org could not be fully loaded (The "https://repo.packagist.org/p2/laravel/framework-dev.json" file could not
be downloaded: failed to open stream: Network is unreachable), package information was loaded from the local cache and may be out of
date

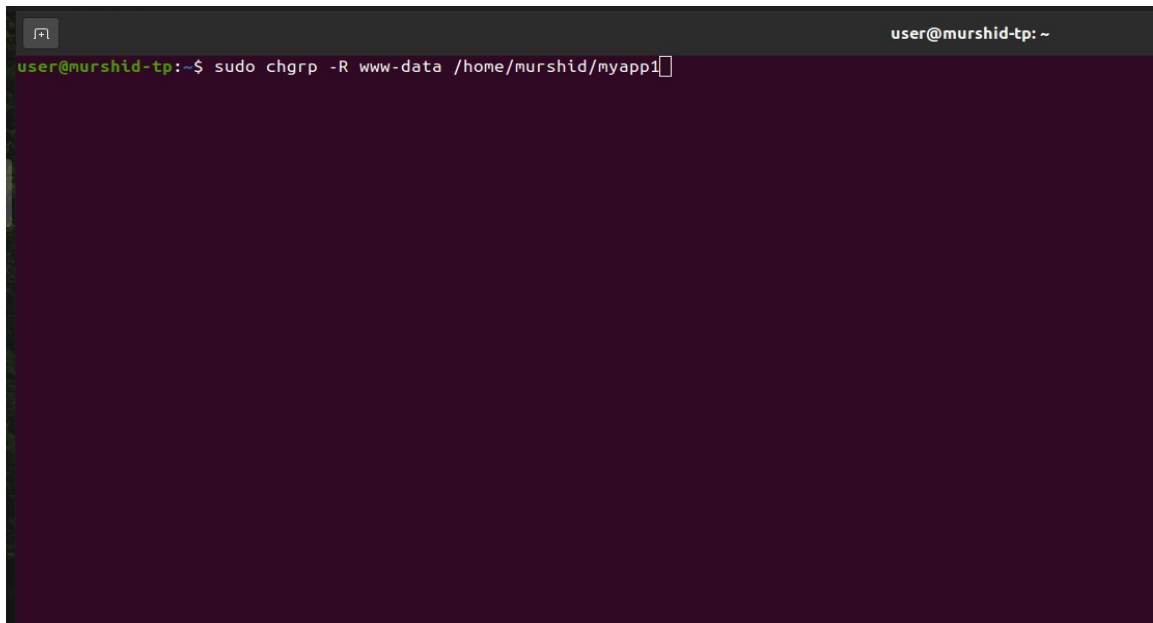
[Composer\Downloader\TransportException]
The "https://repo.packagist.org/p2/laravel/framework-dev.json" file could not be downloaded: failed to open stream: Network is
unreachable

create-project [-s|--stability STABILITY] [--prefer-source] [--prefer-dist] [--prefer-install PREFER-INSTALL] [--repository REPOSITO
RY] [--repository-url REPOSITORY-URL] [--add-repository] [--dev] [--no-dev] [--no-custom-installers] [--no-scripts] [--no-progress]
[--no-secure-http] [--keep-vcs] [--remove-vcs] [--no-install] [--ignore-platform-req IGNORE-PLATFORM-REQ] [--ignore-platform-reqs] [
--ask] [--] [<package>] [<directory>] [<version>]

aswin@aswin-VirtualBox:~$
```

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

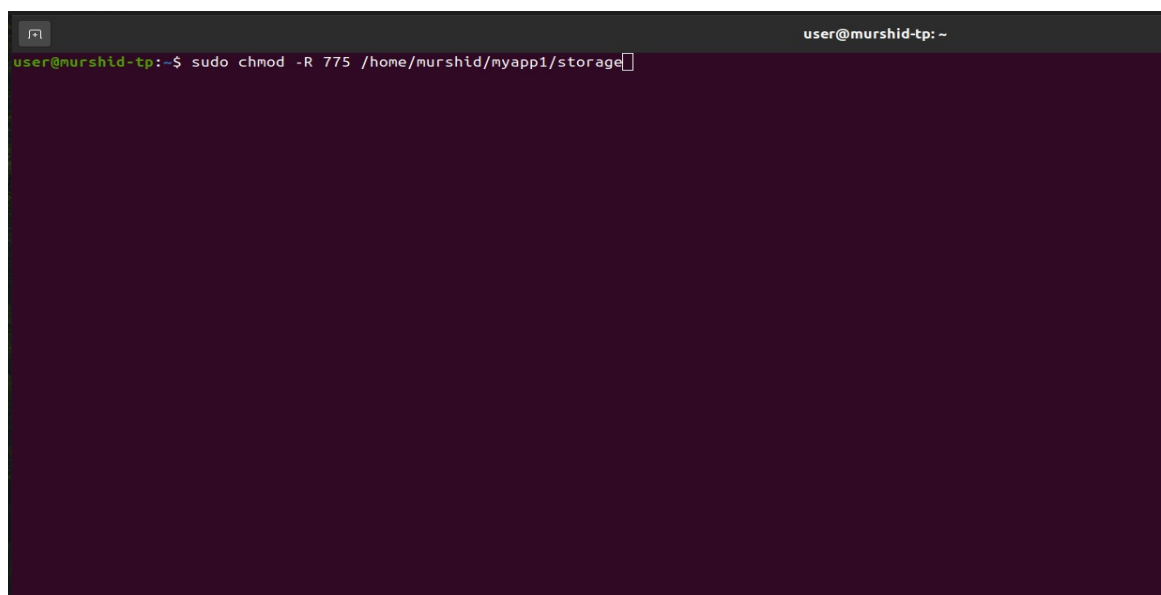
- Add your project directory to www-data group use the following command



```
user@murshid-tp: ~  
user@murshid-tp:~$ sudo chgrp -R www-data /home/murshid/myapp1
```

-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.

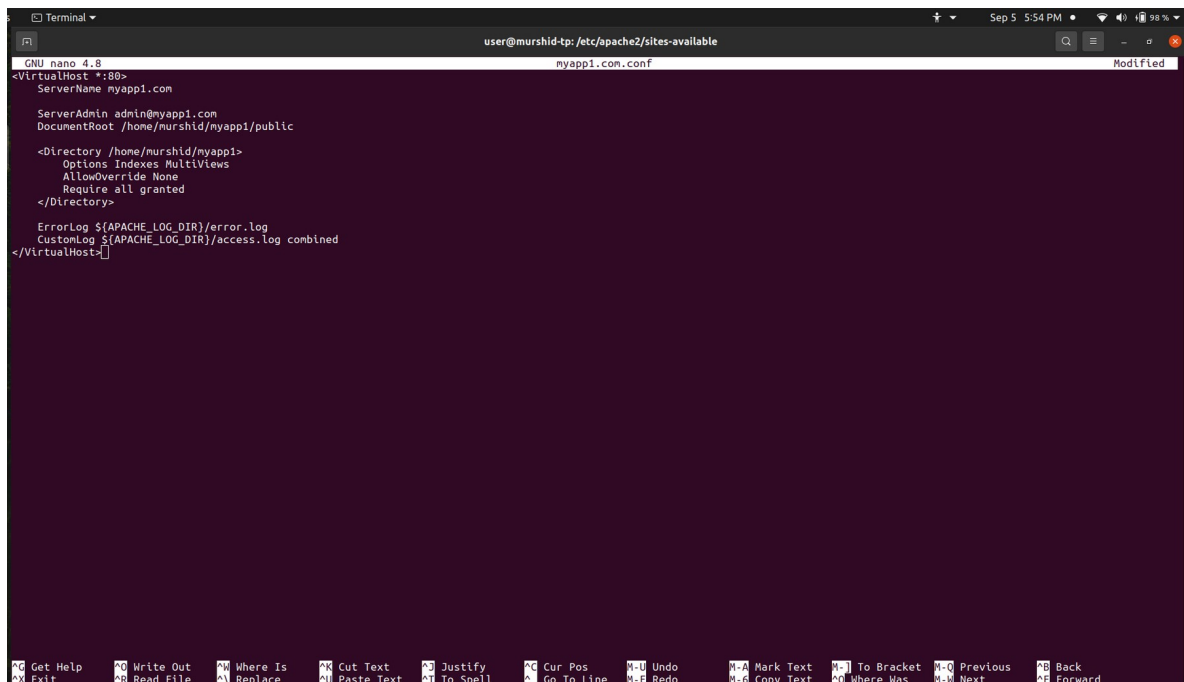


```
user@murshid-tp: ~  
user@murshid-tp:~$ sudo chmod -R 775 /home/murshid/myapp1/storage
```


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

```
user@murshid-tp:~$ cd /etc/apache2/sites-available/  
user@murshid-tp:/etc/apache2/sites-available$ ls  
000-default.conf default-ssl.conf  
user@murshid-tp:/etc/apache2/sites-available$ sudo nano myapp1.com.conf
```

And type the following line inside the file.



```
GNU nano 4.8 myapp1.com.conf Modified  
<VirtualHost *:80>  
  ServerName myapp1.com  
  
  ServerAdmin admin@myapp1.com  
  DocumentRoot /home/murshid/myapp1/public  
  
  <Directory /home/murshid/myapp1>  
    Options Indexes MultiViews  
    AllowOverride None  
    Require all granted  
  </Directory>  
  
  ErrorLog ${APACHE_LOG_DIR}/error.log  
  CustomLog ${APACHE_LOG_DIR}/access.log combined  
</VirtualHost>
```


Now enable mod rewrite for apache2 just type

Now enable your site, just type

Finally, Restart the apache service, type

Type the following 3 command

sudo a2enmod rewrite.

sudo a2ensite myapp1.com.conf.

systemctl restart apache2

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.

