Ubuntu 18.04 & NodeJS & NuxtJS / Linux 64 & Apache

1/ reference

https://www.youtube.com/playlist?list=PL7_CawtGdTaSzNYezRZkZfkTwov2VGMR4

2/ step by step

2-1) create EC2

2-2) download file.pem

2-3) ssh

```
chmod 400 file.pem
ssh -i "file.pem" ubuntu@ec2-3-82-138-45.compute-1.amazonaws.com //
@xxx will change everytime stop/start EC2
```

2-4) create user `dotq`

UBUNTU

```
ubuntu$ sudo su
root@ passwd // set PW
root@ apt update<upgrade>
root@ adduser dotq
root@ usermod -aG sudo dotq
root@ su dotq
dotq$
```

```
ec2-user$ sudo su - // khac "sudo su" o cho se chuyen ve "/home
/username" chu KO phai "/home/ec2-user"
root@ passwd // set PW
root@ adduser yuki // OR "useradd yuki"
root@ passwd yuki
root@ su - yuki // khac "su yuki" nhu tren
yuki$ ssh-keygen -t rsa // giong voi "ssh-keygen"
$ cd /home/yuki/.ssh/
[yuki@ip-172-31-30-29 .ssh]$ mv id_rsa.pub authorized_keys // co ve KO
can!!!
[yuki@ip-172-31-30-29 .ssh]$ chmod 600 authorized_keys
[yuki@ip-172-31-30-29 .ssh]$ ll
total 8
-rw------- 1 yuki yuki  415 Nov  8 16:58 authorized_keys
-rw------- 1 yuki yuki 1679 Nov  8 16:58 id_rsa

copy "id_rsa" paste to "yuki.pem"
# chmod 400 yuki.pem
# ssh -i yuki.pem yuki@<dns>
yuki$ sudo vim /etc/ssh/sshd_config
-> NG!!!
yuki$ sudo su -
root@ nano /etc/ssh/sshd_config
add "PasswordAuthentication no"
@ service sshd restart
@ visudo
add "yuki    ALL=(ALL)      ALL"
yuki$ sudo vim /etc/ssh/sshd_config
-> OK!
@ id yuki
uid=1001(yuki) gid=1001(yuki) groups=1001(yuki)
```

2-5) install nodejs & git

```
$ sudo apt install nodejs npm git
$ node --version
v8.10.0
$ sudo npm cache clean -f
$ sudo npm i -g n
$ sudo n stable
$ sudo n rm 16.13.0
$ sudo npm uninstall -g n
$ su
root@ su dotq
$ node --version
v16.13.0
```

2-6) install nuxtjs & apache2

UBUNTU

```
/home/ubuntu/nuxtjs$ sudo npx create-nuxt-app dotq-demo-ubuntu
? Package manager: Npm // NOT "yarn" because NOT install yarn yet
$ ll dotq-demo-ubuntu/
total 1008
drwxr-xr-x   8 root root   4096 Nov  1 16:55 ./
drwxr-xr-x   3 root root   4096 Nov  1 16:54 ../
-rw-r--r--   1 root root    207 Nov  1 16:54 .editorconfig
drwxr-xr-x   7 root root   4096 Nov  1 16:54 .git/
-rw-r--r--   1 root root   1253 Nov  1 16:54 .gitignore
-rw-r--r--   1 root root   2801 Nov  1 16:54 README.md
drwxr-xr-x   2 root root   4096 Nov  1 16:54 components/
drwxr-xr-x 742 root root  24576 Nov  1 16:55 node_modules/
-rw-r--r--   1 root root   1005 Nov  1 16:54 nuxt.config.js
-rw-r--r--   1 root root 952647 Nov  1 16:55 package-lock.json
-rw-r--r--   1 root root    296 Nov  1 16:54 package.json
...
$ sudo npm run build
$ npm run start
connect "http://18.206.255.179:3000/" -> NG!!!
```

- install Apache2
- reference: https://www.digitalocean.com/community/tutorials/how-to-install-linux-apache-mysql-php-lamp-stack-ubuntu-18-04

```
$ sudo apt install apache2
$ sudo ufw app list
Available applications:
  Apache
  Apache Full
  Apache Secure
  OpenSSH
  $ sudo ufw app info "Apache Full"
Profile: Apache Full
Title: Web Server (HTTP,HTTPS)
Description: Apache v2 is the next generation of the omnipresent Apache
web
server.

Ports:
  80,443/tcp
  $ sudo ufw status
Status: inactive // FW is inactive
```

LINUX

```
$ sudo su -
root@ yum install httpd -y
@  service httpd start
@ yum install telnet -y
@ telnet localhost 80
->
Trying 127.0.0.1...
Connected to localhost.
```

- add Inbound rule (2-7)
- ACCESS   "Public IPv4 IP " → OK (view default page of Apache)

```
@ mkdir /var/www/html/tinhocthatladongian
@ chown -Rf :apache /var/www/html/tinhocthatladongian/
@ chmod 775 /var/www/html/tinhocthatladongian
@ ll /var/www/html
drwxrwxr-x 2 root apache 6 Nov 28 16:24 tinhocthatladongian
@ vim /etc/httpd/conf/httpd.conf
"User apache
Group apache"
... (cuoi cung)
NameVirtualHost *:80

<VirtualHost *:80>
    ServerAdmin info@coderhanoi.com
    DocumentRoot /var/www/html/tinhocthatladongian
    ServerName 107.21.140.244
    <Directory "/var/www/html/tinhocthatladongian">
   Order deny,allow
          Allow from all
           AllowOverride All
         Require all granted
    </Directory>
</VirtualHost>
@ vim /var/www/html/tinhocthatladongian/index.html
"DoTQ!!!"
@ service httpd restart
```

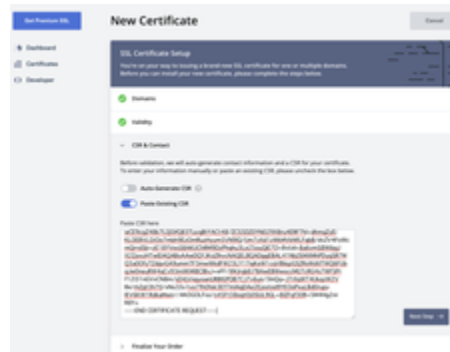- ACCESS "Public IPv4 IP " → OK (view "DoTQ!!!")

install SSL (Linux)

```
@ yum -y install mod_ssl openssl
@ mkdir -p /etc/httpd/conf/tinhocthatladongian-ssl
@ cd /etc/httpd/conf/tinhocthatladongian-ssl
@ openssl genrsa > server.key
@ ll
-rw-r--r-- 1 root root 1679 Jan 22 14:27 server.key
@ openssl req -new -key server.key > server.csr
"
Country Name (2 letter code) [XX]:jp
Common Name (eg, your name or your server's hostname) []:107.21.140.244
A challenge password []:
"
@ ll
...
-rw-r--r-- 1 root root  985 Jan 22 14:29 server.csr
```

- access http://sslforfree.com > create cert > Verify Domain > HTTP File Upload (neu chon "auto generate csr " thi KO can "server.csr ")

- download file "AA72F2E033807864E58BCAD9BDEF99B6.txt "

```
@ cd /var/www/html/tinhocthatladongian/
@ mkdir .well-known
@ cd .well-known/
@ mkdir pki-validation
@ ll
drwxr-xr-x 2 root root 6 Jan 22 14:43 pki-validation
@ vim pki-validation/AA72F2E033807864E58BCAD9BDEF99B6.txt
paste content "AA....txt"
@ wget http://172.31.87.12/.well-known/pki-validation/AA....txt
--2022-01-22 15:00:25--  http://172.31.87.12/.well-known/pki-validation
/AA....txt
Connecting to 172.31.87.12:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 94 [text/plain]
```

- click "Next step " > "Verify Domain " > will verify cert OK and send mail

- Download Certificate "107.21.140.244.zip " & extract

```
# chmod 777 107.21.140.244
# scp -i dotq_linux-64_test.pem 107.21.140.244/* ec2-user@ec2-107-21-
140-244.compute-1.amazonaws.com:/tmp
@ ll /tmp
total 12
-rw-rw-r-- 1 ec2-user ec2-user 2431 Nov 28 17:44 ca_bundle.crt
-rw-rw-r-- 1 ec2-user ec2-user 2273 Nov 28 17:44 certificate.crt
-rw-rw-r-- 1 ec2-user ec2-user 1702 Nov 28 17:44 private.key
@ cd /etc/httpd/conf/tinhocthatladongian-ssl
@ cp -f /tmp/*.crt .
@ cp -f /tmp/private.key .
@ chmod 600  ca_bundle.crt
@ chmod 600  certificate.crt
@ ll
total 20
-rw------- 1 root root 2431 Nov 28 17:48 ca_bundle.crt
-rw------- 1 root root 2273 Nov 28 17:48 certificate.crt
-rw-r--r-- 1 root root 1702 Nov 28 17:49 private.key
-rw-r--r-- 1 root root  989 Nov 28 17:06 server.csr
-rw-r--r-- 1 root root 1675 Nov 28 17:02 server.key
@ vim /etc/httpd/conf.d/ssl.conf
"
<VirtualHost _default_:443>
    SSLEngine On
    ServerAdmin info@coderhanoi.com
    DocumentRoot "/var/www/html/tinhocthatladongian/"
    ServerName 107.21.140.244
    SSLCertificateFile "/etc/httpd/conf/tinhocthatladongian-ssl
/certificate.crt"
    SSLCertificateChainFile "/etc/httpd/conf/tinhocthatladongian-ssl
/ca_bundle.crt"
    SSLCertificateKeyFile "/etc/httpd/conf/tinhocthatladongian-ssl
/server.key"
    <Directory "/var/www/html/tinhocthatladongian/">
        Order deny,allow
        Allow from all
        AllowOverride All
        Require all granted
    </Directory>
</VirtualHost>
"
@ service httpd restart
@ telnet localhost 443
```

- ACCESS "https://Public IPv4 IP " → OK (view "DoTQ!!!") (! ! !)
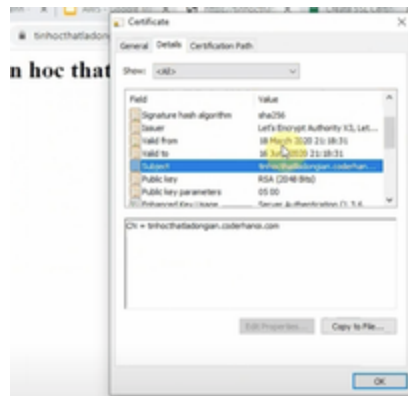
(if NG add HTTPS 443 into `Inbound rule`)

2-7) add `Inbound rule`

IP version	▽	Type	▽	Protocol	▽	Port range	▽	Source
IPv4		SSH		TCP		22		0.0.0.0/0
IPv4		HTTP		TCP		80		0.0.0.0/0

- **ACCESS** "http://18.206.255.179/ " → OK (view "**Apache2 Ubuntu Default Page** " of `/var/www/html/index.html`)

2-8) install MySQL

```
$ sudo apt install mysql-server
$ sudo mysql_secure_installation
ALL Yes, except Disallow root login remotely?=No
$ sudo mysql
mysql>
```

2-9) config MySQL

```
mysql> SELECT user,plugin,host FROM mysql.user;
+-----------------+-----------------------+-----------+
| user            | plugin                | host      |
+-----------------+-----------------------+-----------+
| root            | auth_socket           | localhost |
| mysql.session   | mysql_native_password | localhost |
| mysql.sys       | mysql_native_password | localhost |
| debian-sys-maint | mysql_native_password | localhost |
+-----------------+-----------------------+-----------+
mysql> ALTER USER 'root'@'localhost' IDENTIFIED WITH
mysql_native_password BY 'password'; // set PW='password'
Query OK, 0 rows affected (0.00 sec)
mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.00 sec)
mysql> SELECT user,plugin,host FROM mysql.user;
+-----------------+-----------------------+-----------+
| user            | plugin                | host      |
+-----------------+-----------------------+-----------+
| root            | mysql_native_password | localhost |
mysql> exit
$ sudo mysql
ERROR 1045 (28000): Access denied for user 'root'@'localhost' (using
password: NO)
```

2-10) install PHP

```
$ sudo apt install php libapache2-mod-php php-mysql
$ sudo vim /etc/apache2/mods-enabled/dir.conf
move "index.php" to the beginning
$ sudo cat /etc/apache2/mods-enabled/dir.conf
<IfModule mod_dir.c>
        DirectoryIndex index.php index.html index.cgi index.pl index.
xhtml index.htm
</IfModule>
$ sudo systemctl restart apache2
$ sudo systemctl status apache2
 apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor
preset: enabled)
  Drop-In: /lib/systemd/system/apache2.service.d
           apache2-systemd.conf
   Active: active (running) since Mon 2021-11-01 17:25:47 UTC; 30s ago

$ apt show php-cli // chi show info, chua bit da cai hay chua!!!
```

2-11) setup virtual host in Apache

```
$ sudo mkdir /var/www/dotq-wp-api
$ sudo chown -R $USER:$USER /var/www/dotq-wp-api/
$ ll
total 16
drwxr-xr-x  4 root root 4096 Nov  1 17:40 ./
drwxr-xr-x 14 root root 4096 Nov  1 17:01 ../
drwxr-xr-x  2 dotq dotq 4096 Nov  1 17:40 dotq-wp-api/ // DA change
thanh "dotq:dotq"
$ sudo chmod -R 755 /var/www/dotq-wp-api/
$ vim dotq-wp-api/index.php
<?php
echo('Hello!!!');

$ sudo nano /etc/apache2/sites-available/dotq_wp_api.conf
$ sudo cat /etc/apache2/sites-available/dotq_wp_api.conf
<VirtualHost *:80>
    ServerAdmin webmaster@localhost
    ServerName your_domain
    ServerAlias www.your_domain
    DocumentRoot /var/www/dotq-wp-api
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
```

- change /etc/apache2/sites-available/000-default.conf → dotq_wp_api.conf

```
$ sudo a2ensite dotq_wp_api.conf
$ sudo a2dissite 000-default.conf
$ sudo apache2ctl configtest
Syntax OK
$ sudo systemctl restart apache2
```

- ACCESS "http://18.206.255.179/ " → OK!

Hello!!!
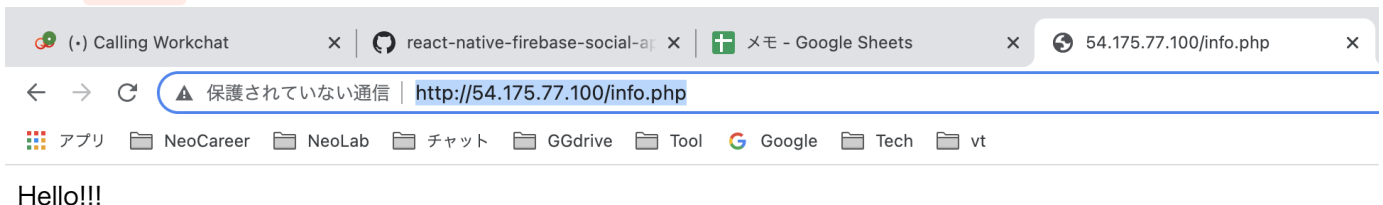
```
$ sudo nano /var/www/dotq-wp-api/info.php
$ sudo cat /var/www/dotq-wp-api/info.php
<?php
phpinfo();
```

- **ACCESS** "http://18.206.255.179/info.php " → OK!

2-12) install wordpress

- reference: https://www.digitalocean.com/community/tutorials/how-to-install-wordpress-with-lamp-on-ubuntu-18-04

```
$ mysql -u root -p
mysql> CREATE DATABASE dotq_wp_api DEFAULT CHARACTER SET utf8 COLLATE
utf8_unicode_ci; // create DB "dotq_wp_api"
mysql> GRANT ALL ON dotq_wp_api.* TO 'acc_wp_api_dotq'@'localhost'
IDENTIFIED BY 'password'; // create user "acc_wp_api_dotq" & PW
"password"
$ mysql -u acc_wp_api_dotq -p
mysql> SELECT user();
+---------------------------+
| user()                    |
+---------------------------+
| acc_wp_api_dotq@localhost |
+---------------------------+
$ sudo apt install php-curl php-gd php-mbstring php-xml php-xmlrpc php-
soap php-intl php-zip
$ sudo systemctl restart apache2
$ sudo cat /etc/apache2/sites-available/dotq_wp_api.conf
<Directory /var/www/dotq-wp-api/>
    AllowOverride All
</Directory>

<VirtualHost *:80>
    ServerAdmin webmaster@localhost
    ...
$ sudo a2enmod rewrite
$ sudo apache2ctl configtest
Syntax OK
$ sudo systemctl restart apache2
```

2-13) enable proxy

```
$ apache2ctl -M
Loaded Modules:
 core_module (static)
 ...
 $ apache2ctl -M | grep proxy // chua co "proxy"!!!
 $ sudo a2enmod proxy
 $ sudo a2enmod proxy_http
 $ sudo systemctl restart apache2
 $ apache2ctl -M | grep proxy
 proxy_module (shared)
 proxy_http_module (shared)
```

2-14) DL & config wordpress

```
$ cd /tmp
tmp$ curl -O https://wordpress.org/latest.tar.gz
$ tar xzvf latest.tar.gz
$ ll | grep wordpress
drwxr-xr-x  5 dotq  dotq      4096 Sep  9 02:20 wordpress/
$ rm -rf latest.tar.gz
$ touch /tmp/wordpress/.htaccess
$ cp /tmp/wordpress/wp-config-sample.php /tmp/wordpress/wp-config.php
$ ll /tmp/wordpress/ | grep wp-config
-rw-r--r--  1 dotq dotq  3004 May 21 10:40 wp-config-sample.php
-rw-r--r--  1 dotq dotq  3004 Nov  1 18:50 wp-config.php
$ mkdir /tmp/wordpress/wp-content/upgrade
$ sudo cp -a /tmp/wordpress/. /var/www/dotq-wp-api
$ ll /var/www/dotq-wp-api
total 228
drwxr-xr-x  5 dotq dotq  4096 Nov  7 15:09 ./
drwxr-xr-x  4 root root  4096 Nov  7 14:50 ../
-rw-rw-r--  1 dotq dotq     0 Nov  7 15:08 .htaccess
-rw-r--r--  1 dotq dotq   405 Feb  6  2020 index.php
-rw-r--r--  1 root root    24 Nov  7 14:58 info.php
-rw-r--r--  1 dotq dotq 19915 Jan  1  2021 license.txt
-rw-r--r--  1 dotq dotq  7346 Jul  6 12:23 readme.html
-rw-r--r--  1 dotq dotq  7165 Jan 21  2021 wp-activate.php
drwxr-xr-x  9 dotq dotq  4096 Sep  9 02:20 wp-admin/
...

$ sudo chown -R www-data:www-data /var/www/dotq-wp-api
$ sudo find /var/www/dotq-wp-api/ -type d -exec chmod 750 {} \;
$ sudo find /var/www/dotq-wp-api/ -type f -exec chmod 640 {} \;
/var/www$ ll | grep dotq
drwxr-x---  5 www-data www-data 4096 Nov  1 18:50 dotq-wp-api/
```

- **ACCESS** "http://18.206.255.179 " → NG!

Error establishing a database connection

```
$ curl -s https://api.wordpress.org/secret-key/1.1/salt/
define('AUTH_KEY',          'a8~0.r...');
...
-> copy paste to "wp-config.php"
$ sudo vim dotq-wp-api/wp-config.php
edit:
define( 'DB_NAME', 'dotq_wp_api' );
define( 'DB_USER', 'acc_wp_api_dotq' );
define( 'DB_PASSWORD', 'password' );
...
define('FS_METHOD', 'direct');
```

- **ACCESS** "http://18.206.255.179 " → OK!

2-15) config proxy

```
$ sudo vim /etc/apache2/sites-available/dotq_wp_api.conf
<VirtualHost *:80>
 ProxyPass /dotq-wp-api/ http://127.0.0.1:9999/dotq-wp-api/
 ProxyPassReverse /dotq-wp-api/ http://127.0.0.1:9999/dotq-wp-api/

 ProxyPass / http://127.0.0.1:3000/ // neu KO install NUXT, KO xai 3000
ma cho nay KO set port (VD: http://127.0.0.1/) thi KO chay luon!
 ProxyPassReverse / http://127.0.0.1:3000/

 ProxyRequests On
 ProxyPreserveHost On
</VirtualHost>

<VirtualHost *:9999>
    ServerAdmin webmaster@localhost
    ServerName your_domain
    ServerAlias www.your_domain
    DocumentRoot /var/www
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined

 <Directory /var/www/>
    AllowOverride All
 </Directory>
</VirtualHost>

$ sudo vim ../ports.conf
add "Listen 9999"
$ sudo apache2ctl configtest
Syntax OK
$ sudo systemctl restart apache2
$ cd /home/ubuntu/nuxtjs/dotq-demo-ubuntu
$ npm run start
```
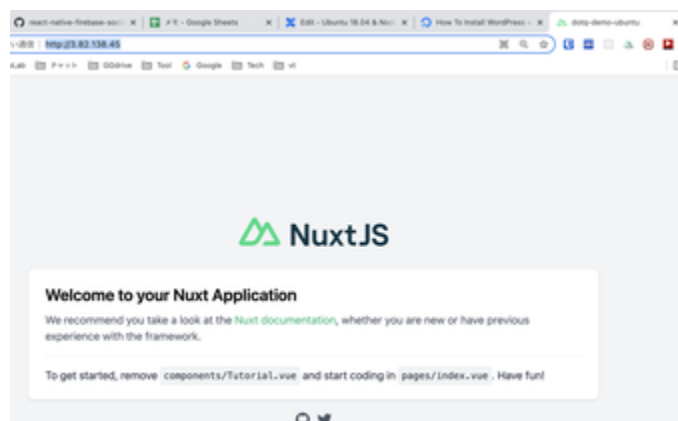
- **ACCESS** "http://18.206.255.179 " → OK!

- Note: without " / ", **ACCESS** "http://18.206.255.179/dotq-wp-api " → NG!

http://3.82.138.45/dotq-wp-api

チャット　　GGdrive　　Tool　　G Google　　Tech　　vt

This page could not be found

Back to the home page

- ACCESS "http://18.206.255.179/dotq-wp-api/ " → OK!

2-16) process with wordpress

- Media > upload picture "do_tranquang.jpg "
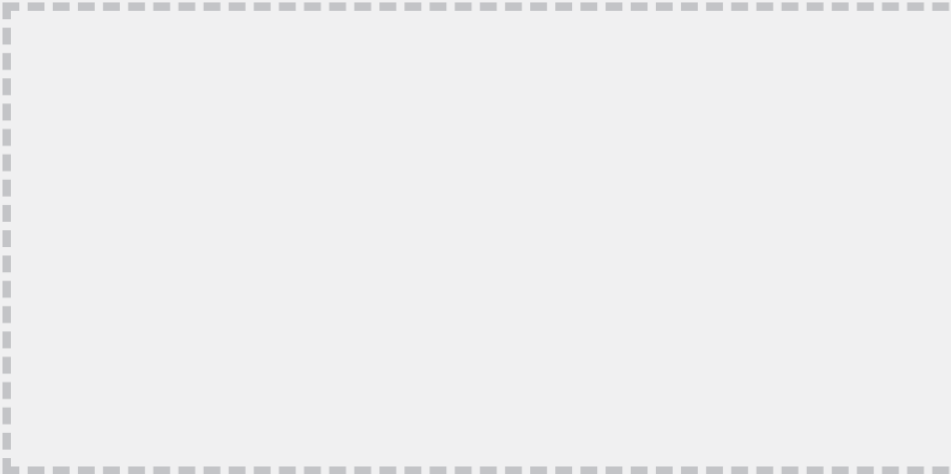
- will see this picture in:

```
$ sudo ls -la /var/www/dotq-wp-api/wp-content/uploads/2021/11
total 36
drwxr-x--- 2 www-data www-data  4096 Nov  3 16:15 .
drwxr-x--- 3 www-data www-data  4096 Nov  3 16:11 ..
-rw-r----- 1 www-data www-data  9206 Nov  3 16:15 do_tranquang-150x150.
jpg
-rw-r----- 1 www-data www-data 14955 Nov  3 16:15 do_tranquang.jpg
```

- Plugins > install "post views counter "
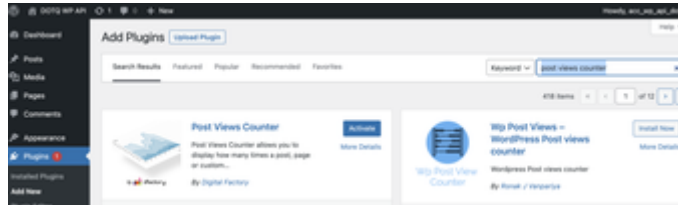
- will see this plugin in:

```
$ sudo ls -la /var/www/dotq-wp-api/wp-content/plugins
total 24
drwxr-x--- 4 www-data www-data 4096 Nov  3 16:25 .
drwxr-x--- 6 www-data www-data 4096 Nov  3 16:11 ..
drwxr-x--- 4 www-data www-data 4096 Sep  9 02:20 akismet
-rw-r----- 1 www-data www-data 2578 Mar 18  2019 hello.php
-rw-r----- 1 www-data www-data   28 Jun  5  2014 index.php
drwxr-xr-x 7 www-data www-data 4096 Nov  3 16:25 post-views-counter
```

2-17) install pm2

```
$ sudo npm i -g pm2
/home/ubuntu/nuxtjs/dotq-demo-ubuntu$ sudo vim ecosystem.config.js
module.exports = {
  apps: [
    {
      name: 'DoTQNuxtAppName',
      exec_mode: 'cluster',
      instances: 'max', // Or a number of instances
      script: './node_modules/nuxt/bin/nuxt.js',
      args: 'start'
    }
  ]
}

$ pm2 start

 id    name                namespace     version   mode       pid        uptime
       status      cpu        mem         user       watching

 0     DoTQNuxtAppName       default      2.15.8    cluster   3453
0s     0       online        0%          31.4mb    dotq       disabled
```

2-18) install phpmyadmin

- reference: https://www.digitalocean.com/community/tutorials/how-to-install-and-secure-phpmyadmin-on-ubuntu-18-04

```
$ sudo apt update
$ sudo apt install phpmyadmin php-mbstring php-gettext
NOTE: PW must complicate, include special char (Ex: Tgdd61mevado@...)
$ sudo phpenmod mbstring
$ sudo systemctl restart apache2
$ mysql -u root -p
mysql> SELECT user,plugin,host FROM mysql.user; // will see "phpmyadmin"
+------------------+-----------------------+-----------+
| user             | plugin                | host      |
+------------------+-----------------------+-----------+
| root             | mysql_native_password | localhost |
| mysql.session    | mysql_native_password | localhost |
| mysql.sys        | mysql_native_password | localhost |
| debian-sys-maint | mysql_native_password | localhost |
| acc_wp_api_dotq  | mysql_native_password | localhost |
| phpmyadmin       | mysql_native_password | localhost |
+------------------+-----------------------+-----------+
mysql> CREATE USER 'dotq'@'localhost' IDENTIFIED BY 'Tgdd61mevado@';
Query OK, 0 rows affected (0.00 sec)
mysql> GRANT ALL PRIVILEGES ON *.* TO 'dotq'@'localhost' WITH GRANT
OPTION;
```

- revert "dotq_wp_api.conf "

```
$ sudo cp /etc/apache2/sites-available/dotq_wp_api.conf /etc/apache2
/sites-available/dotq_wp_api_proxy.conf
$ sudo cat /etc/apache2/sites-available/dotq_wp_api.conf
<Directory /var/www/dotq-wp-api/>
    AllowOverride All
</Directory>

<VirtualHost *:80>
    ServerAdmin webmaster@localhost
    ServerName your_domain
    ServerAlias www.your_domain
    DocumentRoot /var/www/dotq-wp-api
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>
$ sudo apache2ctl configtest
Syntax OK
$ sudo systemctl restart apache2
```

- ACCESS "http://18.206.255.179/phpmyadmin " → login with user "root " (simple PW) or "dotq " (complicate PW) → OK!

2-19) secure phpmyadmin

```
$ sudo nano /etc/apache2/conf-available/phpmyadmin.conf
add "AllowOverride All"
$ sudo systemctl restart apache2
$ sudo nano /usr/share/phpmyadmin/.htaccess
AuthType Basic
AuthName "Restricted Files"
AuthUserFile /etc/phpmyadmin/.htpasswd
Require valid-user

$ sudo htpasswd -c /etc/phpmyadmin/.htpasswd dotq // for 2nd time,
remove "-c"
$ cat /etc/phpmyadmin/.htpasswd
dotq:$apr1$RBWImlTa$uFVvm0pAiQKtsw4pAD2F..
```

- **ACCESS** "http://18.206.255.179/phpmyadmin " → OK!