Lab 6 Nginx - back-end server for Tier1

สร้าง user labadmin **และให้สิทธิ์** root

```
sudo adduser labadmin
sudo usermod -aG sudo labadmin
```

และเช็ค firewall

```
sudo ufw app list
sudo ufw allow OpenSSH
sudo ufw enable
sudo ufw status
```

```
white@white: ~/coding-project                                    —    □    ×

white@white:~/coding-project$ sudo adduser labadmin
info: Adding user `labadmin' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group `labadmin' (1001) ...
info: Adding new user `labadmin' (1001) with group `labadmin (1001)' ...
suinfo: Creating home directory `/home/labadmin' ...
info: Copying files from `/etc/skel' ...
dNew password:
Retype new password:
No password has been supplied.
New password:
Retype new password:
No password has been supplied.
New password:
Retype new password:
Sorry, passwords do not match.
passwd: Authentication token manipulation error
passwd: password unchanged
Try again? [y/N] y
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for labadmin
Enter the new value, or press ENTER for the default
        Full Name []: Lab Admin
        Room Number []: Lab
        Work Phone []:
        Home Phone []:
        Other []:
Is the information correct? [Y/n] y
info: Adding new user `labadmin' to supplemental / extra groups `users' ...
info: Adding user `labadmin' to group `users' ...
white@white:~/coding-project$ sudo usermod -aG sudo labadmin
white@white:~/coding-project$ sudo ufw app list
Available applications:
  Apache
  Apache Full
  Apache Secure
  OpenSSH
white@white:~/coding-project$ ▮
```

Step 1 Remove Apache Web Server ที่อาจจะติดตั้งไว้ก่อนหน้า

```
sudo apt-get remove apache2*
sudo apt-get autoremove
sudo apt-get autoclean
sudo rm -rf /etc/apache2 /var/lib/apache2
```

```
white@white: ~/coding-project                                                        —    □    ×
php8.3 depends on libapache2-mod-php8.3 | php8.3-fpm | php8.3-cgi; however:
  Package libapache2-mod-php8.3 is to be removed.
  Package php8.3-fpm is not configured yet.
  Package php8.3-cgi is not installed.

Removing libapache2-mod-php8.3 (8.3.6-0ubuntu0.24.04.1) ...
Removing apache2-bin (2.4.58-1ubuntu8.1) ...
dpkg: warning: while removing apache2-bin, directory '/var/lib/apache2' not empty so not removed
Setting up php8.3-fpm (8.3.6-0ubuntu0.24.04.1) ...

Creating config file /etc/php/8.3/fpm/php.ini with new version
Created symlink /etc/systemd/system/multi-user.target.wants/php8.3-fpm.service → /usr/lib/systemd/system/php8.3-fpm.s
ervice.
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for ufw (0.36.2-6) ...
Rules updated for profile 'Apache'
Skipped reloading firewall
Processing triggers for php8.3-fpm (8.3.6-0ubuntu0.24.04.1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
white@white:~/coding-project$ .
-bash: .: filename argument required
.: usage: . filename [arguments]
white@white:~/coding-project$ .
-bash: .: filename argument required
.: usage: . filename [arguments]
white@white:~/coding-project$ sudo apt-get autoremove.
E: Invalid operation autoremove.
white@white:~/coding-project$ sudo apt-get autoremove
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages will be REMOVED:
  libaprlt64 libaprutill-dbd-sqlite3 libaprutill-ldap libaprutillt64 liblua5.4-0 ssl-cert
0 upgraded, 0 newly installed, 6 to remove and 36 not upgraded.
After this operation, 1,302 kB disk space will be freed.
Do you want to continue? [Y/n] y
(Reading database ... 84341 files and directories currently installed.)
Removing libaprutill-dbd-sqlite3:amd64 (1.6.3-1.1ubuntu7) ...
Removing libaprutill-ldap:amd64 (1.6.3-1.1ubuntu7) ...
Removing libaprutillt64:amd64 (1.6.3-1.1ubuntu7) ...
Removing libaprlt64:amd64 (1.7.2-3.1build2) ...
Removing liblua5.4-0:amd64 (5.4.6-3build2) ...
Removing ssl-cert (1.1.2ubuntu1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.2) ...
white@white:~/coding-project$ sudo apt-get autoclean
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
white@white:~/coding-project$ sudo rm -rf /etc/apache2 /var/lib/apache2
white@white:~/coding-project$ █
```

Step2: Setting Up New Document Root Directories

```
sudo mkdir -p /var/www/lab6.com/html
ls -l /var/www/lab6.com/
```

```
white@white: ~/coding-project                                    —    □    ✕

white@white:~/coding-project$ sudo mkdir -p /var/www/lab6.com/html
white@white:~/coding-project$ ls -l /var/www/lab6.com/
total 4
drwxr-xr-x 2 root root 4096 Sep 26 06:38 html
white@white:~/coding-project$ 
```

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จากนั้นให้เปลี่ยน ownership ทั้ง directory ที่สร้างใหม่ให้เป็น user ปัจจุบันที่เราใช้งาน และเปลี่ยนสิทธิการเข้าถึง permissions

```
sudo chown -R $USER:$USER /var/www/lab6.com
sudo chmod -R 755 /var/www
```

```
white@white: ~/coding-project                                    —   □   ✕

white@white:~/coding-project$
sudo chown -R $USER:$USER /var/www/lab6.com
sudo chmod -R 755 /var/www
white@white:~/coding-project$ █
```

ให้สร้าง ไฟล์ index.html ตัวอย่างสำหรับ web app ของเราCreating Sample Pages for Each Site

```
vim /var/www/lab6.com/html/index.html
```

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```html
<html>
    <head>
        <title>Welcome to lab6.com!</title>
    </head>
    <body>
        <h1>Success! The lab6.com server block is working! (https)</h1>
    </body>
</html>
```

```
white@white: ~                                                    —    □    ✕

white@white:~/coding-project$
sudo chown -R $USER:$USER /var/www/lab6.com
sudo chmod -R 755 /var/www
white@white:~/coding-project$ nano /var/www/lab6.com/html/index.html
white@white:~/coding-project$ ls
README.md
white@white:~/coding-project$ cd
white@white:~$ ls
coding-project
white@white:~$ wim /var/www/lab6.com/html/index.html
Command 'wim' not found, did you mean:
  command 'wip' from snap wip (1.5.0)
  command 'wdm' from deb wdm (1.28-27)
  command 'zim' from deb zim (0.75.2-1)
  command 'vim' from deb vim (2:9.1.0016-1ubuntu7.1)
  command 'vim' from deb neovim (0.7.2-8)
  command 'vim' from deb vim-gtk3 (2:9.1.0016-1ubuntu7.1)
  command 'vim' from deb vim-motif (2:9.1.0016-1ubuntu7.1)
  command 'vim' from deb vim-nox (2:9.1.0016-1ubuntu7.1)
  command 'nim' from deb nim (1.6.14-1)
  command 'w3m' from deb w3m (0.5.3+git20230121-2)
  command 'aim' from deb abinit (9.10.4-2)
  command 'wig' from deb wig (0.6-2)
  command 'wit' from deb wit (3.01a-4.1)
  command 'fim' from deb fim (0.6~rc2-1)
  command 'win' from deb wily (0.13.42-1)
See 'snap info <snapname>' for additional versions.
white@white:~$ vim /var/www/lab6.com/html/index.html
white@white:~$ cat /var/www/lab6.com/html/index.html
<html>
    <head>
        <title>Welcome to lab6.com!</title>
    </head>
    <body>
        <h1>Success! The lab6.com server block is working! (https)</h1>
    </body>
</html>

white@white:~$ ▮
```

Step3: Nginx (web server) - Backend Server for **Tier1**

```
– Update your system
sudo apt update && sudo apt upgrade


– Install Nginx, Certbot and Python3-Certbot-Nginx
sudo apt install nginx certbot python3-certbot-nginx


– UFW Firewall Configuration
sudo ufw allow 'Nginx Full'
```

```
white@white: ~                                                    —  □  ✕

Preparing to unpack .../06-python3-parsedatetime_2.6-3_all.deb ...
Unpacking python3-parsedatetime (2.6-3) ...
Selecting previously unselected package python3-certbot.
Preparing to unpack .../07-python3-certbot_2.9.0-1_all.deb ...
Unpacking python3-certbot (2.9.0-1) ...
Selecting previously unselected package certbot.
Preparing to unpack .../08-certbot_2.9.0-1_all.deb ...
Unpacking certbot (2.9.0-1) ...
Selecting previously unselected package python3-certbot-nginx.
Preparing to unpack .../09-python3-certbot-nginx_2.9.0-1_all.deb ...
Unpacking python3-certbot-nginx (2.9.0-1) ...
Selecting previously unselected package python3-icu.
Preparing to unpack .../10-python3-icu_2.12-1build2_amd64.deb ...
Unpacking python3-icu (2.12-1build2) ...
Setting up python3-configargparse (1.7-1) ...
Setting up python3-parsedatetime (2.6-3) ...
Setting up python3-icu (2.12-1build2) ...
Setting up python3-josepy (1.14.0-1) ...
Setting up python3-rfc3339 (1.1-4) ...
Setting up python3-acme (2.9.0-1) ...
Setting up python3-certbot (2.9.0-1) ...
Setting up certbot (2.9.0-1) ...
Created symlink /etc/systemd/system/timers.target.wants/certbot.timer → /usr/lib/systemd/system/certbot.timer.
Setting up nginx (1.24.0-2ubuntu7.1) ...
Setting up python3-certbot-nginx (2.9.0-1) ...
Setting up nginx-common (1.24.0-2ubuntu7.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /usr/lib/systemd/system/nginx.service.
Processing triggers for ufw (0.36.2-6) ...
Rules updated for profile 'Apache'
Skipped reloading firewall
Processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Pending kernel upgrade!
Running kernel version:
  6.8.0-36-generic
Diagnostics:
  The currently running kernel version is not the expected kernel version 6.8.0-45-generic.

Restarting the system to load the new kernel will not be handled automatically, so you should consider rebooting.

Restarting services...

Service restarts being deferred:
 /etc/needrestart/restart.d/dbus.service
 systemctl restart systemd-logind.service
 systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
 white @ session #2: login[931]
 white @ session #4: sshd[1213,1262]
 white @ user manager service: systemd[1152]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
white@white:~$ sudo ufw allow 'Nginx Full'
Rule added
Rule added (v6)
white@white:~$
```

Step4: Create Self-Signed SSL Certificate for https (on Local) SSL Certificate กับ NGINX

```
ls /etc/ssl

cd /etc
sudo mkdir ssl

cd ssl
sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout server.key -out server.crt
```

```
white@white: /etc/ssl                                                          —   □   ✕

credstore.encrypted      hosts.deny          modprobe.d          rc2.d           timezone
cron.d                   init                modules             rc3.d           tmpfiles.d
cron.daily               init.d              modules-load.d      rc4.d           ubuntu-advantage
cron.hourly              initramfs-tools     mtab                rc5.d           ucf.conf
cron.monthly             inputrc             multipath           rc6.d           udev
crontab                  iproute2            multipath.conf      rcS.d           udisks2
cron.weekly              iscsi               mysql               resolv.conf     ufw
cron.yearly              issue               nanorc              rmt             update-manager
cryptsetup-initramfs     issue.net           needrestart         rpc             update-motd.d
crypttab                 kernel              netconfig           rsyslog.conf    update-notifier
dbus-1                   landscape           netplan             rsyslog.d       UPower
debconf.conf             ldap                network             screenrc        usb_modeswitch.conf
debian_version           ld.so.cache         networkd-dispatcher security        usb_modeswitch.d
default                  ld.so.conf          networks            selinux         vconsole.conf
deluser.conf             ld.so.conf.d        newt                sensors3.conf   vim
depmod.d                 legal               nftables.conf       sensors.d       vmware-tools
dhcp                     letsencrypt         nginx               services        vtrgb
dhcpcd.conf              libaudit.conf       nsswitch.conf       sgml            wgetrc
dpkg                     libblockdev         opt                 shadow          X11
e2scrub.conf             libibverbs.d        os-release          shadow-         xattr.conf
environment              libnl-3             overlayroot.conf    shells          xdg
ethertypes               locale.alias        PackageKit          skel            xml
fonts                    locale.conf         pam.conf            sos             zsh_command_not_found
white@white:/etc$ cd ssl/
white@white:/etc/ssl$ ls
certs   openssl.cnf   private
white@white:/etc/ssl$ sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout server.key -out server.crt
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-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:TH
State or Province Name (full name) [Some-State]:
Locality Name (eg, city) []:
Organization Name (eg, company) [Internet Widgits Pty Ltd]:RMUTL
Organizational Unit Name (eg, section) []:
Common Name (e.g. server FQDN or YOUR name) []:192.168.56.101
Email Address []:
white@white:/etc/ssl$ ls -al
total 56
drwxr-xr-x   4 root root       4096 Sep 26 07:25 .
drwxr-xr-x 113 root root       4096 Sep 26 07:17 ..
drwxr-xr-x   2 root root      20480 Jul  8 04:17 certs
-rw-r--r--   1 root root      12324 Mar 31 06:42 openssl.cnf
drwx--x---   2 root ssl-cert   4096 Jul  8 04:17 private
-rw-r--r--   1 root root       1261 Sep 26 07:25 server.crt
-rw-------   1 root root       1704 Sep 26 07:24 server.key
white@white:/etc/ssl$ ■
```

```
sudo openssl dhparam -out /etc/nginx/dhparam.pem 4096
```

Step5: Configuring Nginx to Use SSL

```
sudo vim /etc/nginx/snippets/self-signed.conf
```

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```
ssl_certificate /etc/ssl/server.crt;
ssl_certificate_key /etc/ssl/server.key;
```

```
white@white: /etc/ssl                                                    —   □   ×
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white@white:/etc/ssl$ sudo nano /etc/nginx/snippets/self-signed.conf
white@white:/etc/ssl$ sudo vim /etc/nginx/snippets/self-signed.conf
white@white:/etc/ssl$ sudo cat /etc/nginx/snippets/self-signed.conf
ssl_certificate /etc/ssl/server.crt;
ssl_certificate_key /etc/ssl/server.key;
white@white:/etc/ssl$ []
```

```
sudo vim /etc/nginx/snippets/ssl-params.conf
```

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```
ssl_protocols TLSv1.3;
ssl_prefer_server_ciphers on;
ssl_dhparam /etc/nginx/dhparam.pem;
ssl_ciphers EECDH+AESGCM:EDH+AESGCM;
ssl_ecdh_curve secp384r1;
ssl_session_timeout  10m;
ssl_session_cache shared:SSL:10m;
ssl_session_tickets off;
ssl_stapling on;
ssl_stapling_verify on;
resolver 8.8.8.8 8.8.4.4 valid=300s;
resolver_timeout 5s;
# Disable strict transport security for now. You can uncomment the following
```

```
# line if you understand the implications.
#add_header Strict-Transport-Security "max-age=63072000; includeSubDomains; preload";
add_header X-Frame-Options DENY;
add_header X-Content-Type-Options nosniff;
add_header X-XSS-Protection "1; mode=block";
```

```
white@white: /etc/ssl                                                    —   □   ×
white@white:/etc/ssl$ sudo nano /etc/nginx/snippets/self-signed.conf
white@white:/etc/ssl$ sudo vim /etc/nginx/snippets/self-signed.conf
white@white:/etc/ssl$ sudo cat /etc/nginx/snippets/self-signed.conf
ssl_certificate /etc/ssl/server.crt;
ssl_certificate_key /etc/ssl/server.key;
white@white:/etc/ssl$ sudo vim /etc/nginx/snippets/ssl-params.conf
white@white:/etc/ssl$ sudo cat /etc/nginx/snippets/ssl-params.conf
ssl_protocols TLSv1.3;
ssl_prefer_server_ciphers on;
ssl_dhparam /etc/nginx/dhparam.pem;
ssl_ciphers EECDH+AESGCM:EDH+AESGCM;
ssl_ecdh_curve secp384r1;
ssl_session_timeout  10m;
ssl_session_cache shared:SSL:10m;
ssl_session_tickets off;
ssl_stapling on;
ssl_stapling_verify on;
resolver 8.8.8.8 8.8.4.4 valid=300s;
resolver_timeout 5s;
# Disable strict transport security for now. You can uncomment the following
# line if you understand the implications.
#add_header Strict-Transport-Security "max-age=63072000; includeSubDomains; preload";
add_header X-Frame-Options DENY;
add_header X-Content-Type-Options nosniff;
add_header X-XSS-Protection "1; mode=block";

white@white:/etc/ssl$
```

Step6: Adjusting the Nginx Configuration to Use SSL

```
cd /etc/nginx/
ls -l

cd sites-available

sudo vim /etc/nginx/sites-available/lab6.com
```

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```
server {
    listen 443 ssl;
    listen [::]:443 ssl;
    include snippets/self-signed.conf;
    include snippets/ssl-params.conf;

    server_name lab6.com www.lab6.com;

    root /var/www/lab6.com/html;
    index index.html index.htm index.nginx-debian.html;
}

server {
    listen 80;
    listen [::]:80;

    server_name lab6.com www.lab6.com;

    return 302 https://$server_name$request_uri;
}
```

Step7: Enabling your Server Blocks and Restart Nginx

```
sudo ln -s /etc/nginx/sites-available/lab6.com /etc/nginx/sites-enabled/
```

```
white@white: /etc/nginx/sites-available                                    —    □    ✕

white@white:~$ cd /etc/nginx/
white@white:/etc/nginx$ ls -al
total 80
drwxr-xr-x   8 root root 4096 Sep 26 07:26 .
drwxr-xr-x 113 root root 4096 Sep 26 07:17 ..
drwxr-xr-x   2 root root 4096 Sep 10 13:27 conf.d
-rw-r--r--   1 root root  769 Sep 26 07:30 dhparam.pem
-rw-r--r--   1 root root 1125 Nov 30  2023 fastcgi.conf
-rw-r--r--   1 root root 1055 Nov 30  2023 fastcgi_params
-rw-r--r--   1 root root 2837 Nov 30  2023 koi-utf
-rw-r--r--   1 root root 2223 Nov 30  2023 koi-win
-rw-r--r--   1 root root 5465 Nov 30  2023 mime.types
drwxr-xr-x   2 root root 4096 Sep 10 13:27 modules-available
drwxr-xr-x   2 root root 4096 Sep 10 13:27 modules-enabled
-rw-r--r--   1 root root 1446 Nov 30  2023 nginx.conf
-rw-r--r--   1 root root  180 Nov 30  2023 proxy_params
-rw-r--r--   1 root root  636 Nov 30  2023 scgi_params
drwxr-xr-x   2 root root 4096 Sep 26 07:17 sites-available
drwxr-xr-x   2 root root 4096 Sep 26 07:17 sites-enabled
drwxr-xr-x   2 root root 4096 Sep 26 07:34 snippets
-rw-r--r--   1 root root  664 Nov 30  2023 uwsgi_params
-rw-r--r--   1 root root 3071 Nov 30  2023 win-utf
white@white:/etc/nginx$ cd sites-available/
white@white:/etc/nginx/sites-available$ sudo vim ^[[200~

^[[201~white@white:/etc/nginx/sites-available$ ls
default
white@white:/etc/nginx/sites-available$ sudo vim /etc/nginx/sites-available/lab6.com
white@white:/etc/nginx/sites-available$ ls
default  lab6.com
white@white:/etc/nginx/sites-available$ sudo ln -s /etc/nginx/sites-available/lab6.com /etc/nginx/sites-enabled/
white@white:/etc/nginx/sites-available$ []
```

Step8: Adjusting the Firewall

```
sudo ufw app list
sudo ufw status
sudo ufw allow 'Nginx Full'
sudo ufw delete allow 'Nginx HTTP'
sudo ufw status

sudo nginx -t
sudo systemctl restart nginx
```

```
white@white: /etc/nginx/sites-available                                    —    □    ✕

white@white:/etc/nginx/sites-available$ sudo nginx -t
2024/09/26 07:41:00 [warn] 24875#24875: "ssl_stapling" ignored, issuer certificate not found for certificate "/etc/ss
l/server.crt"
nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
nginx: configuration file /etc/nginx/nginx.conf test is successful
white@white:/etc/nginx/sites-available$ sudo systemctl restart nginx
white@white:/etc/nginx/sites-available$ █
```

Step9: Testing http และ https

```
https://192.168.56.101/
```
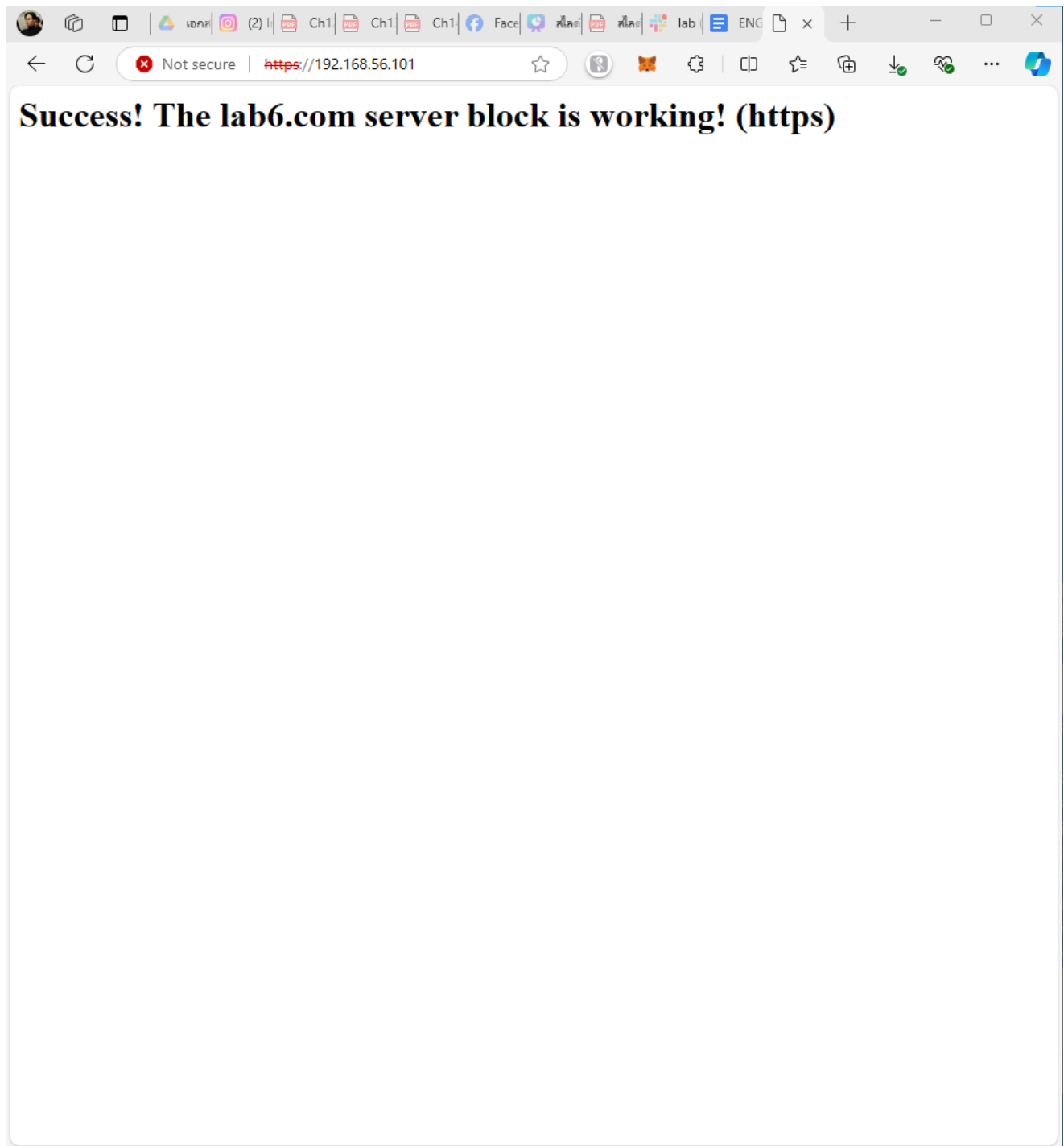
Step10: Deploy React.js template to Nginx web server

git clone มาที่เครื่อง local

```
Command Prompt - git  clone https://github.com/Jiraphat-DEV/coreui-free-react-admin-template.git        —   □   ✕

Microsoft Windows [Version 10.0.19045.4957]
(c) Microsoft Corporation. All rights reserved.

C:\Users\jiraphat_ja64>cd
C:\Users\jiraphat_ja64

C:\Users\jiraphat_ja64>cd Desktop

C:\Users\jiraphat_ja64\Desktop>dir
 Volume in drive C has no label.
 Volume Serial Number is 441D-A9B8

 Directory of C:\Users\jiraphat_ja64\Desktop

09/26/2024  12:48 PM    <DIR>          .
09/26/2024  12:48 PM    <DIR>          ..
06/05/2024  01:25 AM             2,369 Arduino IDE.lnk
06/06/2024  10:39 AM             1,123 command_upload.txt
09/07/2024  11:06 PM             2,071 Discord.lnk
04/08/2024  03:02 PM               989 Gowin_V1.9.9 (64-bit).lnk
07/02/2024  11:27 PM         4,871,171 Large Language Models A Survey.pdf
06/17/2024  10:12 AM    <DIR>          NARAKA
09/23/2024  08:07 AM    <DIR>          notebookimages
07/21/2024  12:18 AM    <DIR>          paper
07/07/2024  11:26 PM               800 Parsec.lnk
06/17/2024  04:57 PM               428 save.txt
04/04/2024  01:28 AM            51,429 Screenshot 2024-04-04 012809.png
09/26/2024  01:35 PM    <DIR>          SD
07/12/2024  08:53 AM                62 server_pal.txt
09/26/2024  12:48 PM    <DIR>          Speac
07/13/2024  10:12 AM             2,004 Zenless Zone Zero.lnk
05/25/2024  12:56 PM             1,955 Zoom Workplace.lnk
09/12/2024  11:31 PM    <DIR>          ▨▨▨▨▨▨ data
07/11/2024  11:15 PM            33,461 ▨▨▨▨▨▨▨▨▨▨▨▨▨ GPT.html
07/11/2024  11:14 PM             9,208 ▨▨▨▨▨▨▨▨▨▨▨▨▨ GPT.md
07/11/2024  11:15 PM         1,730,351 ▨▨▨▨▨▨▨▨▨▨▨▨▨ GPT.pdf
07/06/2024  11:40 AM            66,633 ▨▨▨▨▨▨▨▨▨▨1-67.pdf
09/04/2024  11:10 PM    <DIR>          ▨▨▨▨▨▨▨
09/17/2024  09:44 PM    <DIR>          ▨▨▨▨▨▨▨
08/01/2024  07:39 PM    <DIR>          ▨▨▨ project
06/29/2024  07:34 PM         2,578,250 ▨▨▨▨▨▨▨▨▨▨▨ project BCI ▨▨▨▨▨.pdf
              16 File(s)      9,352,304 bytes
              11 Dir(s)  138,036,506,624 bytes free

C:\Users\jiraphat_ja64\Desktop>cd SD

C:\Users\jiraphat_ja64\Desktop\SD>cd LAB6

C:\Users\jiraphat_ja64\Desktop\SD\LAB6>git clone https://github.com/Jiraphat-DEV/coreui-free-react-admin-template.git

Cloning into 'coreui-free-react-admin-template'...
```

```
cd coreui-free-react-admin-template/
npm install
```

```
07/11/2024  11:15 PM           33,461 □□□□□□□□□□□□□□ GPT.html
07/11/2024  11:14 PM            9,208 □□□□□□□□□□□□□□ GPT.md
07/11/2024  11:15 PM        1,730,351 □□□□□□□□□□□□□□ GPT.pdf
07/06/2024  11:40 AM           66,633 □□□□□□□□□□□1-67.pdf
09/04/2024  11:10 PM    <DIR>          □□□□□□□□
09/17/2024  09:44 PM    <DIR>          □□□□□□□□□
08/01/2024  07:39 PM    <DIR>          □□□□ project
06/29/2024  07:34 PM        2,578,250 □□□□□□□□□□□□ project BCI □□□□□□.pdf
              16 File(s)     9,352,304 bytes
              11 Dir(s) 138,036,506,624 bytes free

C:\Users\jiraphat_ja64\Desktop>cd SD

C:\Users\jiraphat_ja64\Desktop\SD>cd LAB6

C:\Users\jiraphat_ja64\Desktop\SD\LAB6>git clone https://github.com/Jiraphat-DEV/coreui-free-react-admin-template.git

Cloning into 'coreui-free-react-admin-template'...
remote: Enumerating objects: 6195, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (7/7), done.
remote: Total 6195 (delta 3), reused 8 (delta 3), pack-reused 6185 (from 1)
Receiving objects: 100% (6195/6195), 4.35 MiB | 873.00 KiB/s, done.
Resolving deltas: 100% (2769/2769), done.

C:\Users\jiraphat_ja64\Desktop\SD\LAB6>dir
 Volume in drive C has no label.
 Volume Serial Number is 441D-A9B8

 Directory of C:\Users\jiraphat_ja64\Desktop\SD\LAB6

09/26/2024  02:46 PM    <DIR>          .
09/26/2024  02:46 PM    <DIR>          ..
09/26/2024  02:45 PM    <DIR>          assets
09/26/2024  02:45 PM    <DIR>          coreui-free-react-admin-template
09/26/2024  02:46 PM            5,439 Lab 6 Nginx - back-end server for Tier1.md
               1 File(s)         5,439 bytes
               4 Dir(s) 138,027,745,280 bytes free

C:\Users\jiraphat_ja64\Desktop\SD\LAB6>cd coreui-free-react-admin-template

C:\Users\jiraphat_ja64\Desktop\SD\LAB6\coreui-free-react-admin-template>npm install
npm warn deprecated inflight@1.0.6: This module is not supported, and leaks memory. Do not use it. Check out lru-cach
e if you want a good and tested way to coalesce async requests by a key value, which is much more comprehensive and p
owerful.
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm warn deprecated rimraf@3.0.2: Rimraf versions prior to v4 are no longer supported
npm warn deprecated @humanwhocodes/object-schema@2.0.3: Use @eslint/object-schema instead
npm warn deprecated @humanwhocodes/config-array@0.13.0: Use @eslint/config-array instead

added 309 packages, and audited 310 packages in 1m

113 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
npm notice
npm notice New minor version of npm available! 10.7.0 -> 10.8.3
npm notice Changelog: https://github.com/npm/cli/releases/tag/v10.8.3
npm notice To update run: npm install -g npm@10.8.3
npm notice

C:\Users\jiraphat_ja64\Desktop\SD\LAB6\coreui-free-react-admin-template>
```

ทดสอบการทำงาน local

```
npm start
```

```
C:\Windows\system32\cmd.exe                                                    —    □    ✕

C:\Users\jiraphat_ja64\Desktop\SD>cd LAB6

C:\Users\jiraphat_ja64\Desktop\SD\LAB6>git clone https://github.com/Jiraphat-DEV/coreui-free-react-admin-template.git

Cloning into 'coreui-free-react-admin-template'...
remote: Enumerating objects: 6195, done.
remote: Counting objects: 100% (10/10), done.
remote: Compressing objects: 100% (7/7), done.
remote: Total 6195 (delta 3), reused 8 (delta 3), pack-reused 6185 (from 1)
Receiving objects: 100% (6195/6195), 4.35 MiB | 873.00 KiB/s, done.
Resolving deltas: 100% (2769/2769), done.

C:\Users\jiraphat_ja64\Desktop\SD\LAB6>dir
 Volume in drive C has no label.
 Volume Serial Number is 441D-A9B8

 Directory of C:\Users\jiraphat_ja64\Desktop\SD\LAB6

09/26/2024  02:46 PM    <DIR>          .
09/26/2024  02:46 PM    <DIR>          ..
09/26/2024  02:45 PM    <DIR>          assets
09/26/2024  02:45 PM    <DIR>          coreui-free-react-admin-template
09/26/2024  02:46 PM             5,439 Lab 6 Nginx - back-end server for Tier1.md
               1 File(s)          5,439 bytes
               4 Dir(s)  138,027,745,280 bytes free

C:\Users\jiraphat_ja64\Desktop\SD\LAB6>cd coreui-free-react-admin-template

C:\Users\jiraphat_ja64\Desktop\SD\LAB6\coreui-free-react-admin-template>npm install
npm warn deprecated inflight@1.0.6: This module is not supported, and leaks memory. Do not use it. Check out lru-cach
e if you want a good and tested way to coalesce async requests by a key value, which is much more comprehensive and p
owerful.
npm warn deprecated glob@7.2.3: Glob versions prior to v9 are no longer supported
npm warn deprecated rimraf@3.0.2: Rimraf versions prior to v4 are no longer supported
npm warn deprecated @humanwhocodes/object-schema@2.0.3: Use @eslint/object-schema instead
npm warn deprecated @humanwhocodes/config-array@0.13.0: Use @eslint/config-array instead

added 309 packages, and audited 310 packages in 1m

113 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities
npm notice
npm notice New minor version of npm available! 10.7.0 -> 10.8.3
npm notice Changelog: https://github.com/npm/cli/releases/tag/v10.8.3
npm notice To update run: npm install -g npm@10.8.3
npm notice

C:\Users\jiraphat_ja64\Desktop\SD\LAB6\coreui-free-react-admin-template>npm start

> @coreui/coreui-free-react-admin-template@5.2.0 start
> vite

Forced re-optimization of dependencies

  VITE v5.4.8  ready in 444 ms

  ➜  Local:   http://localhost:3000/
  ➜  Network: use --host to expose
  ➜  press h + enter to show help
```
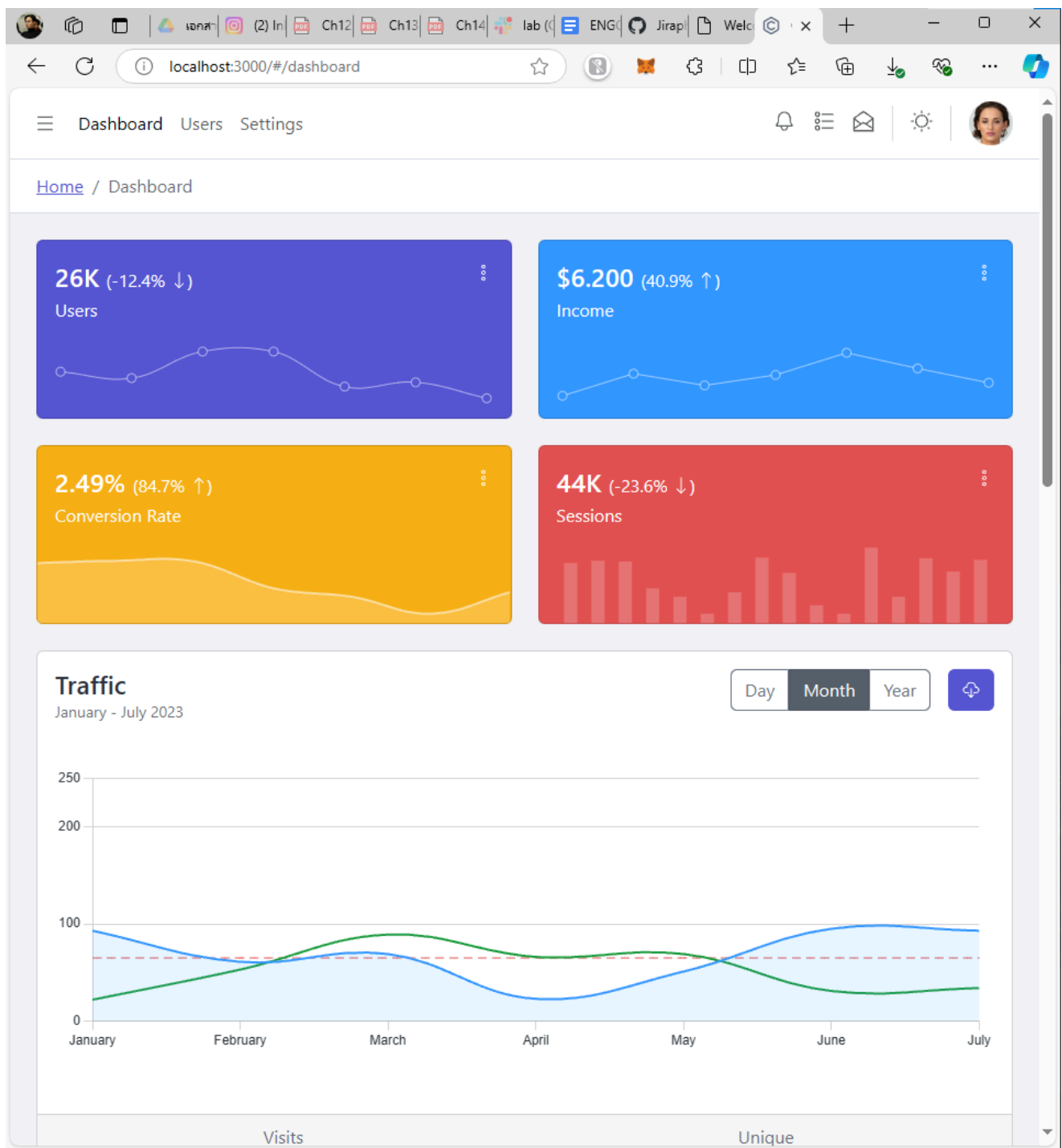
build เอาไปรันบน VM

```
npm run build
```

```
Command Prompt                                                              —  □  ×

build/assets/CFormCheck-Da7t0F1o.js                    2.22 kB │ gzip:     0.94 kB
build/assets/Colors-CCUTHuuy.js                        2.61 kB │ gzip:     1.02 kB
build/assets/Tooltips-DypGm9iE.js                      2.64 kB │ gzip:     1.00 kB
build/assets/cil-user-follow-B8UWl23a.js               2.72 kB │ gzip:     0.83 kB
build/assets/CTooltip-YkOYxsCO.js                      2.73 kB │ gzip:     1.25 kB
build/assets/CPopover-2_rrjkHN.js                      2.81 kB │ gzip:     1.27 kB
build/assets/Charts-DxWQ7AdQ.js                        3.25 kB │ gzip:     0.99 kB
build/assets/Collapses-B-WrMnB8.js                     3.34 kB │ gzip:     1.00 kB
build/assets/Range-DWUvMn76.js                         3.41 kB │ gzip:     1.09 kB
build/assets/Select-Dy_IiuWt.js                        3.52 kB │ gzip:     0.82 kB
build/assets/cil-people-BKgPdOQQ.js                    3.74 kB │ gzip:     0.91 kB
build/assets/Badges-BjSG1ujB.js                        3.80 kB │ gzip:     1.01 kB
build/assets/Spinners-lYMXOk8E.js                      3.88 kB │ gzip:     1.05 kB
build/assets/CCollapse-DOjBy2qC.js                     4.47 kB │ gzip:     1.70 kB
build/assets/CTable-CNWZE8si.js                        5.44 kB │ gzip:     1.52 kB
build/assets/Progress-Ci7QjcJ3.js                      5.60 kB │ gzip:     1.18 kB
build/assets/FloatingLabels-CsSgjrV6.js                5.72 kB │ gzip:     1.50 kB
build/assets/Placeholders-D0PSvig-.js                  6.04 kB │ gzip:     1.91 kB
build/assets/Alerts-BgdZZVpv.js                        6.21 kB │ gzip:     1.89 kB
build/assets/index.esm-Cv8t-tx3.js                     6.51 kB │ gzip:     2.69 kB
build/assets/FormControl-8G82ZMq5.js                   6.58 kB │ gzip:     1.52 kB
build/assets/Typography-D8PavTy-.js                    6.84 kB │ gzip:     1.61 kB
build/assets/Paginations-C85G07Qk.js                   6.90 kB │ gzip:     1.89 kB
build/assets/Tabs-BaQZCzV1.js                          9.19 kB │ gzip:     2.03 kB
build/assets/Accordion-CYUPScHI.js                     9.66 kB │ gzip:     1.70 kB
build/assets/WidgetsDropdown-CaeUNLAc.js               9.75 kB │ gzip:     2.35 kB
build/assets/Navs-BV8edT_m.js                          9.92 kB │ gzip:     1.85 kB
build/assets/ChecksRadios-wgD5T-xx.js                 10.14 kB │ gzip:     2.20 kB
build/assets/Dropdowns-DzyXghP2.js                    10.15 kB │ gzip:     1.66 kB
build/assets/ListGroups-6iF4REtq.js                   10.62 kB │ gzip:     2.11 kB
build/assets/Toasts-BJGFrZuZ.js                       10.86 kB │ gzip:     2.94 kB
build/assets/Buttons-BdbFvpsQ.js                      10.94 kB │ gzip:     2.28 kB
build/assets/Dashboard-DXEucQz_.js                    11.22 kB │ gzip:     3.22 kB
build/assets/ButtonGroups-ggT6NWQA.js                 12.16 kB │ gzip:     2.10 kB
build/assets/Layout-DTL9dQ_r.js                       12.51 kB │ gzip:     2.64 kB
build/assets/Carousels-De5lD68w.js                    13.44 kB │ gzip:     3.52 kB
build/assets/InputGroup-BRsq1BfF.js                   13.90 kB │ gzip:     2.18 kB
build/assets/Validation-Cd6KH5Fu.js                   14.32 kB │ gzip:     2.60 kB
build/assets/Widgets-CP5bV-o5.js                      15.19 kB │ gzip:     2.39 kB
build/assets/cib-google-C6akqOlX.js                   15.67 kB │ gzip:     5.42 kB
build/assets/Tables-D1PAKQZf.js                       25.08 kB │ gzip:     2.19 kB
build/assets/Cards-Bri26hrf.js                        26.73 kB │ gzip:     3.90 kB
build/assets/Modals-pJtWL5WU.js                       26.78 kB │ gzip:     4.33 kB
build/assets/DefaultLayout-B1Ebizh2.js               114.30 kB │ gzip:    35.86 kB
build/assets/cif-us-DcptizC8.js                      157.00 kB │ gzip:    30.47 kB
build/assets/index.esm-DZ2KrQFR.js                   235.59 kB │ gzip:    82.48 kB
build/assets/CoreUIIcons-XTFOEUp1.js                 379.92 kB │ gzip:    92.63 kB
build/assets/index-3__kQBOF.js                       409.85 kB │ gzip:   149.66 kB
build/assets/Brands-CsWVp9UX.js                    1,406.59 kB │ gzip:   486.02 kB
build/assets/Flags-BpfVmnBg.js                     3,307.36 kB │ gzip: 1,001.77 kB

(!) Some chunks are larger than 500 kB after minification. Consider:
- Using dynamic import() to code-split the application
- Use build.rollupOptions.output.manualChunks to improve chunking: https://rollupjs.org/configuration-options/#output
-manualchunks
- Adjust chunk size limit for this warning via build.chunkSizeWarningLimit.
✓ built in 18.64s

C:\Users\jiraphat_ja64\Desktop\SD\LAB6\coreui-free-react-admin-template>ls
'ls' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\jiraphat_ja64\Desktop\SD\LAB6\coreui-free-react-admin-template>
```

ย้ายจาก `./build/*` ไปยัง VM

```
scp -r ./build/* labadmin@192.168.56.101:/var/www/lab6.com/html
```

```
cil-user-follow-B8UWl23a.js                                    100% 2722       1.3MB/s   00:00
CInputGroupText-B5qstfhW.js                                    100%  739     740.3KB/s   00:00
CListGroupItem-wVD_EUV5.js                                     100% 1266     632.4KB/s   00:00
Collapses-B-WrMnB8.js                                          100% 3343       1.6MB/s   00:00
Colors-CCUTHuuy.js                                             100% 2609       2.6MB/s   00:00
CoreUIIcons-XTFOEUp1.js                                        100%  371KB    74.2MB/s   00:00
CPopover-2_rrjkHN.js                                           100% 2806       1.4MB/s   00:00
CProgress-DZssay5A.js                                          100% 1977       1.9MB/s   00:00
CRow-f_SW96as.js                                               100% 2042       2.0MB/s   00:00
CTable-CNWZE8si.js                                             100% 5440       2.7MB/s   00:00
CTooltip-YkOYxsCO.js                                           100% 2729       2.7MB/s   00:00
Dashboard-DXEucQz_.js                                          100%   11KB     5.5MB/s   00:00
DefaultLayout-B1Ebizh2.js                                      100%  112KB    37.2MB/s   00:00
DefaultLayout-DIKJ0DAD.css                                     100% 3046       1.5MB/s   00:00
Dropdowns-DzyXghP2.js                                          100%   10KB     9.9MB/s   00:00
Flags-BpfVmnBg.js                                              100% 3230KB    19.3MB/s   00:00
FloatingLabels-CsSgjrV6.js                                     100% 5720       5.6MB/s   00:00
FormControl-8G82ZMq5.js                                        100% 6578       6.6MB/s   00:00
getRTLPlacement-Ma4OeZPy.js                                    100%  605     302.2KB/s   00:00
getTransitionDurationFromElement-Cpu4p4hx.js                   100%  273     191.1KB/s   00:00
index-3__kQBOF.js                                              100%  400KB    67.1MB/s   00:00
index-Bj8xmw-b.js                                              100%  792     816.7KB/s   00:00
index-gOEnV6CO.css                                             100%  288KB    63.2MB/s   00:00
index.esm-Cv8t-tx3.js                                          100% 6513       6.4MB/s   00:00
index.esm-DZ2KrQFR.js                                          100%  230KB    57.7MB/s   00:00
InputGroup-BRsq1BfF.js                                         100%   14KB     6.9MB/s   00:00
Layout-DTL9dQ_r.js                                             100%   12KB    12.2MB/s   00:00
ListGroups-6iF4REtq.js                                         100%   10KB     8.5MB/s   00:00
Login-oTedBSqa.js                                              100% 1985     991.1KB/s   00:00
Modals-pJtWL5WU.js                                             100%   26KB    13.1MB/s   00:00
Navs-BV8edT_m.js                                               100% 9922       9.4MB/s   00:00
Page404-Ctrc43rk.js                                            100% 1147     573.9KB/s   00:00
Page500-Dp2PwfvH.js                                            100% 1161     262.4KB/s   00:00
Paginations-C85G07Qk.js                                        100% 6901      11.2MB/s   00:00
Placeholders-D0PSvig-.js                                       100% 6036       3.0MB/s   00:00
Popovers-CFS6LlT5.js                                           100% 2052       2.0MB/s   00:00
Progress-Ci7QjcJ3.js                                           100% 5599       5.5MB/s   00:00
Range-DWUvMn76.js                                              100% 3410       1.6MB/s   00:00
react-DmxSGVXA.jpg                                             100%  195KB    49.1MB/s   00:00
react-DOh6XfOk.js                                              100%   78      39.7KB/s   00:00
Register-CIyKvVxL.js                                           100% 1623       1.6MB/s   00:00
Select-Dy_IiuWt.js                                             100% 3524       3.4MB/s   00:00
Spinners-lYMXOk8E.js                                           100% 3879       1.9MB/s   00:00
Tables-D1PAKQZf.js                                             100%   24KB    12.3MB/s   00:00
Tabs-BaQZCzV1.js                                               100% 9189       9.0MB/s   00:00
Toasts-BJGFrZuZ.js                                             100%   11KB    10.6MB/s   00:00
Tooltips-DypGm9iE.js                                           100% 2635       1.3MB/s   00:00
Typography-D8PavTy-.js                                         100% 6849       6.7MB/s   00:00
Validation-Cd6KH5Fu.js                                         100%   14KB     7.1MB/s   00:00
vue-Ces23Jk5.jpg                                               100%  167KB    55.3MB/s   00:00
Widgets-CP5bV-o5.js                                            100%   15KB    14.9MB/s   00:00
WidgetsDropdown-CaeUNLAc.js                                    100% 9746       9.5MB/s   00:00
favicon.ico                                                    100% 1150       1.1MB/s   00:00
index.html                                                     100% 1255       1.2MB/s   00:00
manifest.json                                                  100%  299     149.3KB/s   00:00

C:\Users\jiraphat_ja64\Desktop\SD\LAB6\coreui-free-react-admin-template>
```

กลับไปที่ VM ไปดูสิ่งที่ย้ายมา

```
cd /var/www/lab6.com/html/
ls -al
```

```
white@white: /var/www/lab6.com/html                               —    □    ✕

white@white:/var/www/lab6.com/html$ cd /var/www/lab6.com/html/
white@white:/var/www/lab6.com/html$ ls -al
total 24
drwxr-xr-x 3 white white 4096 Sep 26 07:54 .
drwxr-xr-x 3 white white 4096 Sep 26 06:38 ..
drwxrwxr-x 2 white white 4096 Sep 26 07:54 assets
-rw-rw-r-- 1 white white 1150 Sep 26 07:54 favicon.ico
-rw-rw-r-- 1 white white 1255 Sep 26 07:54 index.html
-rw-rw-r-- 1 white white  299 Sep 26 07:54 manifest.json
white@white:/var/www/lab6.com/html$
```

ลองเข้าไปดูทดสอบ

```
https://192.168.56.101/
```

Dashboard   Users   Settings

Home / Dashboard

26K (-12.4% ↓)
Users

$6.200 (40.9% ↑)
Income

2.49% (84.7% ↑)
Conversion Rate

44K (-23.6% ↓)
Sessions

Traffic
January - July 2023

Day   Month   Year

250

200

100

0

January   February   March   April   May   June   July

Visits   Unique