

ref: <https://tvpsh2020.wordpress.com/2015/03/12/ubuntu-14-04-apache-mysql-php-lamp/>

## Step 0 : build work environment

Install “**VMware workstation 10.0.3**”(or later version)

Open VMware → create a virtual machined(set username and password)

→ include “**ubuntu-14.04-server-amd64.iso**”(or other version) and let it work

Type your “**username**” and “**password**” login

Type “**ifconfig**” to check your net and ip

//如果想要遠端連線可以先安裝 openssh

Type “**sudo apt-get install openssh-server**” to install openssh

Type “**sudo service ssh restart**” to restart your openssh

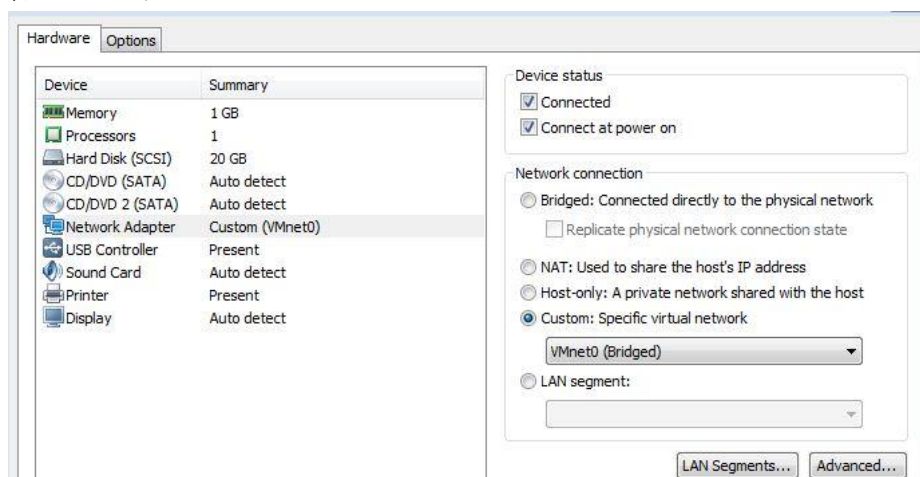
Or type “**sudo reboot**” to restart Ubuntu

//如果想試試有沒有辦法遠端連線可以用 putty 試試

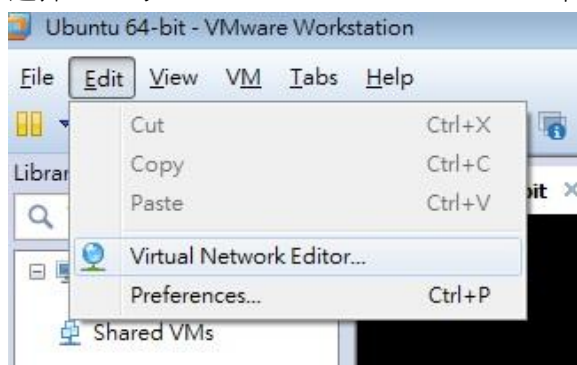
Open putty and type your ip(ip from ubuntu ifconfig)

//如果打 ifconfig 無法看到自己連結外網的 ip 的話可以這樣做

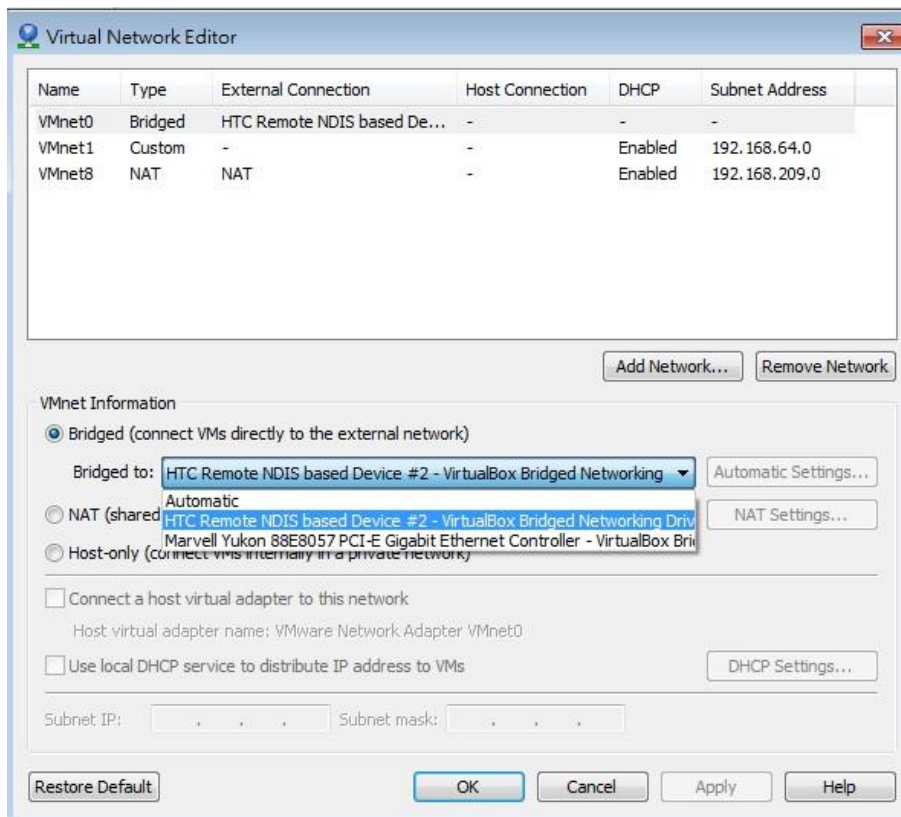
### 1. 檢查 VM 的 network



### 2. 選擇 VM 的 edit→Virtual Network Editor...來確認網路



### 3. 選擇你使用的網路(wifi 或手機外網或是其他網路) 可先用 Add Network 創立連線



以此為例 VM 所使用的是手機外網 所以可以選擇 Bridged→手機網路(HTC)

### Step 1 : Apache & Tomcat

sudo apt-get update //類似系統更新

sudo apt-get install openjdk-7-jdk -y //java 環境

sudo apt-get install apache2 -y //架網路

sudo apt-get install tomcat7 -y //web service

### Step 2 : MySQL

sudo apt-get install mysql-server php5-mysql -y

//在安裝的過程中 系統會要您輸入 帳號(預設是 root)和密碼(自己設定)

設定安全性//這邊我也不太懂要幹嘛 照做一遍吧 如果有設定好他會跟你說

sudo mysql\_install\_db //設定密碼

sudo mysql\_secure\_installation

Password:Foxconn

//db 灌完的話可以進行測試

Type "mysql -u root -p" (-u 是 user -p 是 password)

//打完後如果有的話會進入 mysql 的畫面 指令會變為 mysql>

Type "exit" to logout

### Step 3 : PHP

安裝指令

```
sudo apt-get install php5 libapache2-mod-php5 php5-mcrypt php5-curl  
-y
```

//修改一下路徑設定檔

//修改路徑之前 確定有無安裝 vim 若無請安裝

Type “**sudo apt-get install vim**”

//如果安裝成功的話繼續

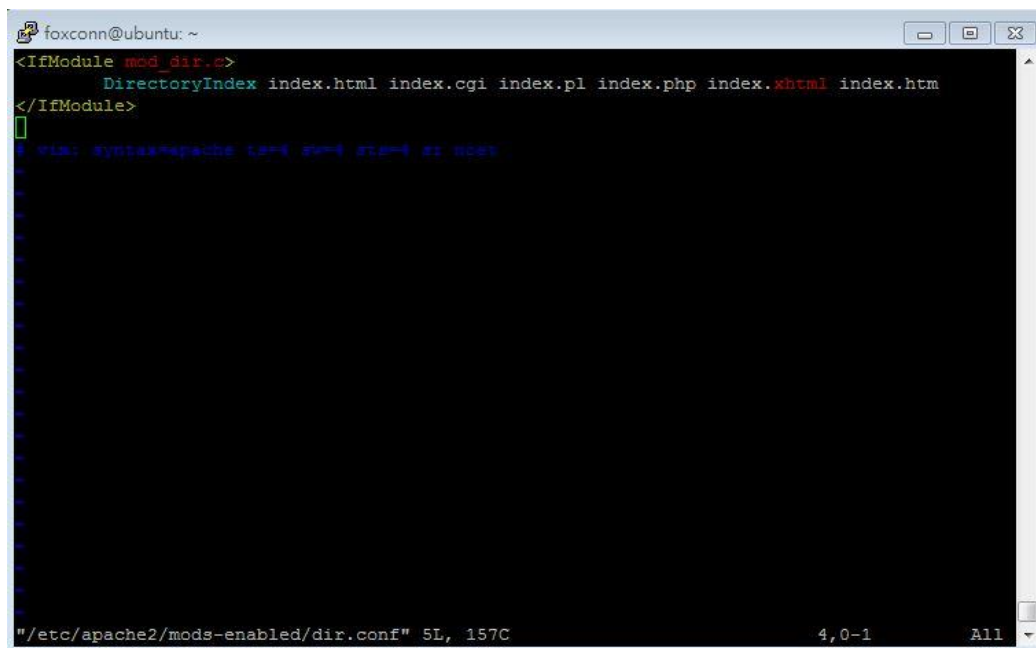
Type “**sudo vim /etc/apache2/mods-enabled/dir.conf**” //vi 是編輯這個檔案 可用 vim

裡面原本長這樣 可以看到以下的程式

```
<IfModule mod_dir.c>
```

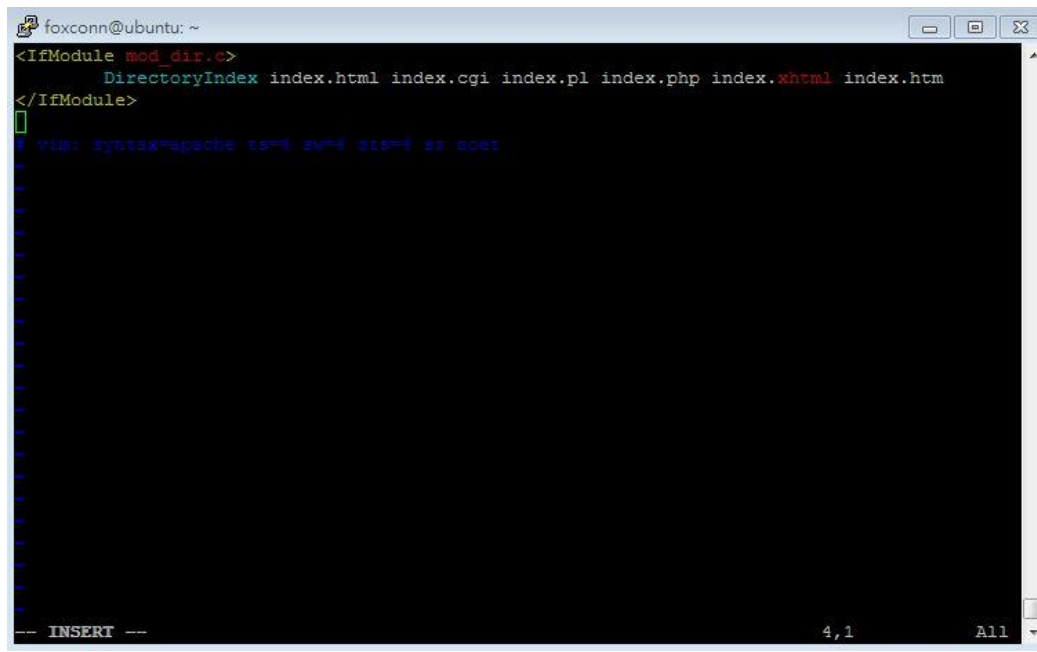
```
    DirectoryIndex index.html index.cgi index.pl index.php index.xhtml index.htm
```

```
</IfModule>
```



```
foxconn@ubuntu: ~  
<IfModule mod_dir.c>  
    DirectoryIndex index.html index.cgi index.pl index.php index.xhtml index.htm  
</IfModule>  
vim: syntax=apache (e+f sw=f si=f) si: none  
"/etc/apache2/mods-enabled/dir.conf" 5L, 157C 4,0-1 All
```

如果要編輯的話打 **i** 就會看到以下畫面



```
foxconn@ubuntu: ~  
<IfModule mod_dir.c>  
    DirectoryIndex index.html index.cgi index.pl index.php index.xhtml index.htm  
</IfModule>  
|  
vim: syntax=apache ts=4 sw=4 sts=4 si: noet  
-- INSERT -- 4,1 All
```

要離開編輯模式的話請按”**esc**” 要離開這畫面可以打:**q** 若要儲存在離開的話請打:**wq**

現在要把 index. php 往前移

```
<IfModule mod_dir.c>  
    DirectoryIndex index.php index.html index.cgi index.pl index.xhtml index.htm  
</IfModule>
```

移完之後按”**esc**” 接著打”:**wq**”

Type “**sudo service apache2 restart**”

權限設定

Type “**sudo vi /etc/apache2/apache2.conf**”

//找出下面的選項 並修改值 (跟下面一樣)

User **foxconn**

Group **foxconn**

```
foxconn@ubuntu: ~  
#  
# MaxKeepAliveRequests: The maximum number of requests to allow  
# during a persistent connection. Set to 0 to allow an unlimited amount.  
# We recommend you leave this number high, for maximum performance.  
#  
MaxKeepAliveRequests 100  
#  
# KeepAliveTimeout: Number of seconds to wait for the next request from the  
# same client on the same connection.  
#  
KeepAliveTimeout 5  
#  
# There need to be sv in /etc/apache2/envvars  
User ${APACHE_RUN_USER}  
Group ${APACHE_RUN_GROUP}  
#  
# NoNameLookups: Log the names of clients or just their IP addresses  
# e.g., www.apache.org (on) or 104.83.129.132 (off).  
# The default is off because it's be overall better for the net if people  
# had to knowingly turn this feature on, since enabling it means that  
-- INSERT --  
109,23 46%
```

設定完後請打":wq" 接著打" `sudo service apache2 restart`"重新啟動

#### Step 4 : phpMyAdmin

Type "`sudo apt-get install phpmyadmin`"

會出現畫面

- 1.選 apache2
- 2.選 yes
- 3.會要你輸入 Mysql 的密碼
- 4.請你輸入 phpMyadmin 的密碼(自行設定 我們這是設定跟 DB 一樣)
- 5.再次確定密碼

The only thing we need to do is explicitly enable the php5-mcrypt extension, which we can do by typing:

Type `sudo php5enmod mcrypt`

Type `sudo service apache2 reload`

接著打以下指令(ln -s 是指建立捷徑 前面是來源 後面是目的)

Type `sudo ln -s /usr/share/phpmyadmin /var/www/phpmyadmin`

`sudo vim /etc/phpmyadmin/apache.conf`

編輯這個檔案 把下面的程式貼上去

```
<Directory /usr/share/phpmyadmin/libraries>  
    Order Deny,Allow  
    Allow from All  
</Directory>  
<Directory /usr/share/phpmyadmin/setup/lib>  
    Order Deny,Allow  
    Allow from All
```

</Directory>

輸入 `sudo vi /etc/apache2/apache2.conf`

(o 是換下一行 shift + g 是換到會後一行 複製的東西按 ctrl+v 再加 滑鼠右鍵)

將下面三行加在 config 裡面 儲存之後離開

`ServerName maps_forntend`

`# phpMyAdmin Configuration`

`Include /etc/phpmyadmin/apache.conf`

之後重啟 `sudo service apache2 restart`

//測試連不連的到 IP(將下面網址貼到網頁測試 serverIP 請改成自己的)

`http://serverIP/phpmyadmin` (成功的話可以看到以下畫面)



## Step 5 : Upgrade to PHP 5.6

//ref: <http://joshtronic.com/2014/08/31/upgrade-to-php-56-on-ubuntu-1404-lts/>

`sudo apt-get update && sudo apt-get install python-software-properties -y`

`sudo apt-get install software-properties-common`

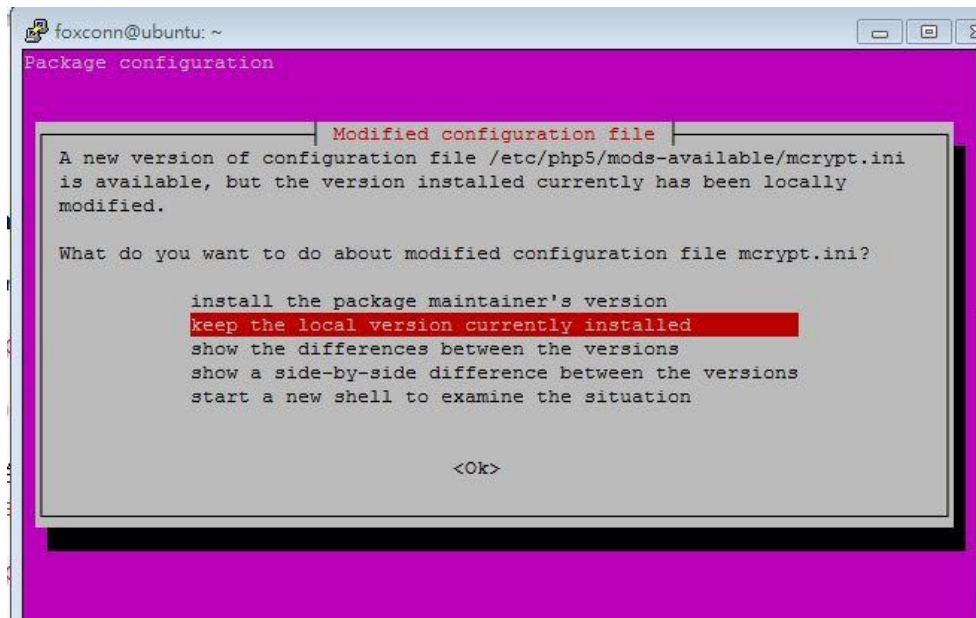
//增加安裝套件的 server 的位置

`sudo add-apt-repository ppa:ondrej/php5-5.6`

`sudo apt-get update && sudo apt-get upgrade -y`

`sudo apt-get install php5`

//會跳出以下字樣的視窗 選第一個 install the package maintainer's version (會跳視窗出來)



### Step 6 :symbolic Link (第一次製作 maps\_nfs 資料夾)

//把 update server 的資料建立捷徑到前端的目錄

```
In -s ~/maps_nfs/update_server/Android /home/foxconn/maps_nfs/frontend/Android
```

```
In -s ~/maps_nfs/update_server/iOS /home/foxconn/maps_nfs/frontend/iOS
```

//把 cms 的資料建立捷徑到前端的目錄

```
In -s /home/foxconn/maps_nfs/cms /home/foxconn/maps_nfs/frontend/cms
```

//把 css 的資料建立捷徑到前端的目錄

```
In -s /home/foxconn/maps_nfs/css/ /home/foxconn/maps_nfs/frontend/css
```

```
In -s /home/foxconn/maps_nfs/custom_apps
```

```
/home/foxconn/maps_nfs/frontend/custom_apps
```

```
In -s /home/foxconn/maps_nfs/images /home/foxconn/maps_nfs/frontend/images
```

```
In -s /home/foxconn/maps_nfs/js /home/foxconn/maps_nfs/frontend/js
```

### Step 7 : apache 目錄更改

```
sudo vim /etc/apache2/sites-available/000-default.conf
```

把 DocumentRoot **/var/www/html**

```
foxconn@ubuntu: ~
<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 URIs. 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

    # Available loglevels: trace#, ..., trace8, 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

```

改成 DocumentRoot /home/foxconn/maps\_nfs/frontend

`sudo vim /etc/apache2/apache2.conf`

新增(複製貼上在 conf 裡)

```
<Directory /home/foxconn/maps_nfs>
    Options Indexes FollowSymLinks Includes ExecCGI
    AllowOverride All
    Require all granted
    Allow from all
</Directory>
```

儲存離開後重新啟動 `sudo service apache2 restart`

## Step 8: SSL

`sudo apt-get install openssl`

`sudo a2enmod ssl`

//將 ssl.conf 建立捷徑到 sites-enabled 裡

`sudo ln -s /etc/apache2/sites-available/default-ssl.conf /etc/apache2/sites-enabled/`

`sudo service apache2 restart`

`sudo mkdir /etc/ssl/certificate`



`sudo chown -R foxconn:foxconn /etc/ssl/certificate` (chown 是權限設定 -R 是迴圈 前面是使用者(用冒號區隔)後面是群組)

`openssl genrsa -des3 -out /etc/ssl/certificate/server.key 1024` (2015/12/18 做到這)

//這時會出現要你輸入 key 的 password 如下

pwd:Foxconn88

`openssl req -new -key /etc/ssl/certificate/server.key -out /etc/ssl/certificate/server.csr`

//這裡會出現 Enter pass phrase for /etc/ssl/certificate/server.key: 要你輸入 key 的密碼

輸入完後會出現以下問句 請輸入紅字的部分

Country Name (2 letter code) [AU]:

**TW**

State or Province Name (full name) [Some-State]:

**Taiwan R.O.C**

Locality Name (eg, city) []:

**Hsinchu**

Organization Name (eg, company) [Internet Widgits Pty Ltd]:

**Cloud Application Information Service Co Ltd.**

Organizational Unit Name (eg, section) []:

**IT**

Common Name (e.g. server FQDN or YOUR name) []:

**172.20.10.10 //這個 ip 要改成現在用的 ip**

Email Address []:

**foxconn\_020018@gmail.com**

//接著會出現下面兩個輸入句 直接按 enter 跳過以下兩個

Please enter the following 'extra' attributes

to be sent with your certificate request

A challenge password []:

An optional company name []:

`cp /etc/ssl/certificate/server.key /etc/ssl/certificate/server.key.org`

`openssl rsa -in /etc/ssl/certificate/server.key.org -out /etc/ssl/certificate/server.key`

//會出現 Enter pass phrase for /etc/ssl/certificate/server.key.org: 輸入 **Foxconn88(密碼)**

`openssl x509 -req -days 18250 -in /etc/ssl/certificate/server.csr -signkey`

`/etc/ssl/certificate/server.key -out /etc/ssl/certificate/server.crt`

(如果不知道 ln 的功能 可以輸入 `ln --help` 查詢) //server 已經建立過了 所以以下兩個指令不用做 之後只要 mount 就可以了

`ln -s /etc/ssl/certificate/server.crt ~/maps_nfs/frontend/server.crt`

`ln -s /etc/ssl/certificate/server.crt`

`/home/foxconn/maps_nfs/update_server/iOS/apps/server.crt`

//修改成這裡寫的資料 預設是別的地方

DocumentRoot /home/foxconn/maps\_nfs/frontend

```
foxconn@ubuntu: ~  
<IfModule mod_ssl.c>  
    <VirtualHost _default_:443>  
        ServerAdmin webmaster@localhost  
  
        DocumentRoot /var/www/html  
  
        # Available loglevels: trace8, ..., trace1, Debug, info, notice  
        # error, warn, 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  
  
        # For most configuration files from conf-available/, which are  
        # enabled or disabled at a global level, it is possible to  
        # include a line for only one particular virtual host. For exam  
        #le the  
  
        # following line enables the CGI configuration for this host on  
        # after it has been globally disabled with "disallow".
```

```
SSLCertificateFile /etc/ssl/certificate/server.crt
```

```
SSLCertificateKeyFile /etc/ssl/certificate/server.key
```

```
foxconn@ubuntu: ~  
#  
# A self-signed (snakeoil) certificate can be created by installing  
# the ssl-cert package. See  
# /usr/share/doc/openssl/README.Debian.gz for more info.  
# If both key and certificate are stored in the same file, only  
# the  
# SSLCertificateFile directive is needed.  
SSLCertificateFile /etc/ssl/certs/ssl-cert-snakeoil.pem  
SSLCertificateKeyFile /etc/ssl/private/ssl-cert-snakeoil.key  
  
# Server Certificate Chain:  
# Point to SSLCertificateChainFile at a file consisting the  
# concatenation of PEM encoded CA certificates which form the  
# certificate chain for the server certificate. Alternatively,  
# the referenced file can be the same as SSLCertificateFile  
# when the CA certificates are directly appended to the server  
# certificate for convenience.  
#SSLCertificateChainFile /etc/openssl/ssl.crt/server-ca.txt
```

正式環境：//如果是做測試環境的話 這一步驟不用執行

## Let's Encrypt 安裝步驟

```
$git clone https://github.com/letsencrypt/letsencrypt
```

```
$cd letsencrypt
```

```
$sudo ./letsencrypt-auto #
```

## Apache2 設定 Let's Encrypt SSL 的步驟

```
$sudo vim /etc/apache2/sites-available/default-ssl.conf
```

```
<IfModule mod_ssl.c>
```

```
<VirtualHost *:443>
```

```
# ....
```

```
# Let's encrypt
```

```
SSLCertificateFile /etc/letsencrypt/live/longwin.com.tw/cert.pem
```

```
SSLCertificateKeyFile /etc/letsencrypt/live/longwin.com.tw/privkey.pem
```

```
SSLCertificateChainFile /etc/letsencrypt/live/longwin.com.tw/chain.pem
```

```
SSLCACertificateFile /etc/letsencrypt/live/longwin.com.tw/fullchain.pem
```

```
# ....
```

```
</VirtualHost>
```

```
</IfModule>
```

```
SSL Key CronTab
```

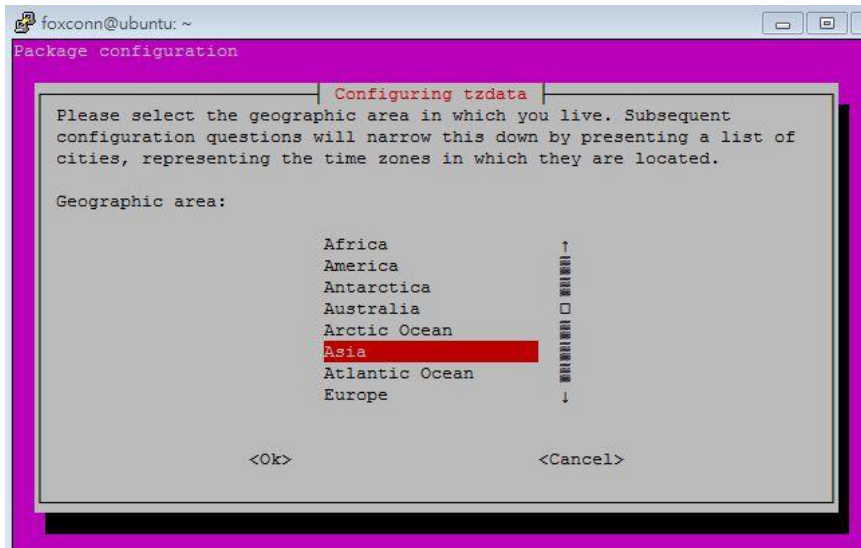
```
$crontab -e
```

```
0 0 1 * * echo Foxconn88 |sudo -S /home/foxconn/letsencrypt/letsencrypt-auto --  
apache certonly --config /home/foxconn/letsencrypt/cert.ini
```

```
5 0 1 * * echo Foxconn88 |sudo -S service apache2 restart
```

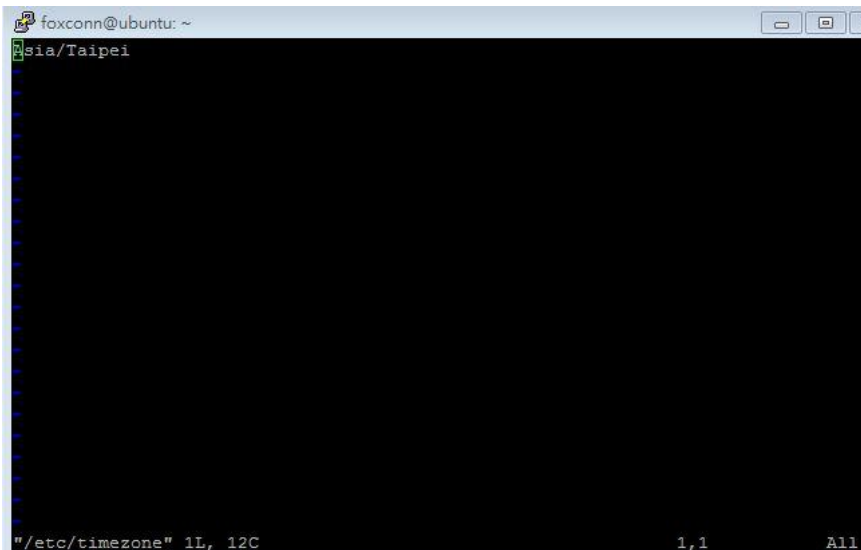
Step9: 時區調整

`sudo dpkg-reconfigure tzdata` //打完之後會跳一個視窗出來如下圖



請選 **Asia** 地區選 **Taipei**

確認時區是否正確輸入 `sudo vi /etc/timezone` 會看到下圖 "Asia/Taipei"



`sudo service ntp stop`

`sudo vi /etc/ntp.conf`

server 0 time.stdtime.gov.tw

`sudo ntpdate time.stdtime.gov.tw`

`sudo hwclock -w`

`sudo service ntp start`