



香港中文大學 · 資訊科技服務處
Information Technology Services Centre, CUHK

VPN Connection on Ubuntu Version 14.04 (Also Compatible to Version 16.04)

- For further enquiries, please write to ITSC Service Desk (<http://servicedesk.itsc.cuhk.edu.hk>)

I. Download and Install L2TP VPN Corresponding Packages

Make sure you are connecting to the Internet when downloading the packages.

Please make sure all files are extracted.

- install.sh
- vpn_connect.sh
- vpn_disconnect.sh
- Readme.txt
- /conf folder:
 - o xl2tpd.conf
 - o racoon.conf
 - o psk.txt
 - o options.xl2tpd
 - o options

1. Open the terminal,
Go the directory of your script file (e.g. `cd /xxx/yyy`), input command below for the installation of CUHK VPN:

```
sudo ./install.sh
```

```
resnet@resnet-ThinkPad-X60: ~/VPN
resnet@resnet-ThinkPad-X60:~/VPN$ ls
conf  install.sh  README.txt  vpn_connect.sh  vpn_disconnect.sh  VPN_script.zip
resnet@resnet-ThinkPad-X60:~/VPN$ sudo ./install.sh
```

(Remember: `chmod -x` to make the three files executable, i.e. `install.sh`, `vpn_connect.sh` and `vpn_disconnect.sh`. For example, make the `install.sh` file executable before running.)

Then input your user password.

2. The script will automatically check and install the dependencies packages below:

- 'racoon'
- 'ipsec-tools'
- 'xl2tpd'
- 'ppp'
- 'isc-dhcp-client'

Please select racoon IKE as direct.

If the installation of dependencies packages is fail, You can use your own method (e.g. sudo apt-get install <package-name>) to download the above packages.

```
Configuring racoon
Racoon can be configured either directly, by editing /etc/racoon/racoon.conf, or using the
racoon-tool administrative front end.

Use of the "direct" method is strongly recommended if you want to use all the racoon examples on
the Net, and if you want to use the full racoon feature set. You will have to directly edit
/etc/racoon/racoon.conf and possibly manually set up the Security Policy Database via setkey.

Racoon-tool has been updated for racoon 0.8.0, and is for use in basic configuration setups. It
gives the benefit of managing the SPD along with the IKE that strongSwan offers. IPv6,
transport/tunnel mode (ESP/AH), PSK/X509 auth, and basic "anonymous" VPN server are supported.

More information is available in /usr/share/doc/racoon/README.Debian.

Configuration mode for racoon IKE daemon:

direct
racoon-tool

<ok>
```

```

Checking whether required packaged are installed...
The following packages are missing:
- racoon
- ipsec-tools
- xl2tpd
Installing needed package...
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  ipsec-tools racoon xl2tpd
0 upgraded, 3 newly installed, 0 to remove and 207 not upgraded.
Need to get 465 kB of archives.
After this operation, 1,652 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu/ trusty/universe xl2tpd amd64 1.3.6+dfsg-1 [64.8 kB]
Get:2 http://archive.ubuntu.com/ubuntu/ trusty/universe ipsec-tools amd64 1:0.8.0-14ubuntu4 [60.4 kB]
Get:3 http://archive.ubuntu.com/ubuntu/ trusty/universe racoon amd64 1:0.8.0-14ubuntu4 [340 kB]
Fetched 465 kB in 3s (142 kB/s)
Preconfiguring packages ...
Selecting previously unselected package xl2tpd.
(Reading database ... 169556 files and directories currently installed.)
Preparing to unpack ../xl2tpd_1.3.6+dfsg-1_amd64.deb ...
Unpacking xl2tpd (1.3.6+dfsg-1) ...
Selecting previously unselected package ipsec-tools.
Preparing to unpack ../ipsec-tools_1%3a0.8.0-14ubuntu4_amd64.deb ...
Unpacking ipsec-tools (1:0.8.0-14ubuntu4) ...
Selecting previously unselected package racoon.
Preparing to unpack ../racoon_1%3a0.8.0-14ubuntu4_amd64.deb ...
Unpacking racoon (1:0.8.0-14ubuntu4) ...
Processing triggers for man-db (2.6.7.1-1) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up xl2tpd (1.3.6+dfsg-1) ...
Starting xl2tpd: xl2tpd.
Setting up ipsec-tools (1:0.8.0-14ubuntu4) ...
Processing triggers for ureadahead (0.100.0-16) ...
Setting up racoon (1:0.8.0-14ubuntu4) ...
Generating /etc/default/racoon...
Processing triggers for ureadahead (0.100.0-16) ...

```

3. The shell script will help you to set the required config files. For each computer, you need to run the script once only.
Input your SID and password, and repeat the password again.

```
resnet@resnet-ThinkPad-X60:~/VPN$ sudo ./install.sh
Checking whether required packaged are installed...
Done.

Backing up the original config files...
Copying the config files...
Done.

Please enter your CUSIS ID and password.
Exapmle:
CUSIS ID: s1155012345
Password: the_password
Repeat the password: the_password
Note that for secure reason, the password will not be shown.

ID: s1155012345
Password:
Repeat the password: █
```

4. After the installation, you can connect the CUHK VPN by using `vpn_vpnconnect.sh`

```
Changing file owner and permission...
Done.

You may now use vpn_connect.sh to connect to the VPN.
resnet@resnet-ThinkPad-X60:~/VPN$ █
```

II. [How to Make VPN Connection](#)

Open the terminal,
Go the directory of your script file (e.g.`cd /xxx/yyy`) , input command below for the connection of CUHK VPN:

```
sudo ./vpn_connect.sh
```

```

resnet@resnet-ThinkPad-X60:~/VPNS$ clear

resnet@resnet-ThinkPad-X60:~/VPNS$ ls
conf          README.txt  vpn_connect.sh  VPN_script.zip
install.sh    screenshot  vpn_disconnect.sh
resnet@resnet-ThinkPad-X60:~/VPNS$ sudo ./vpn_connect.sh
Getting default device and gateway...
Device: wlan0
Gateway: 10.6.63.254

Adding CUHK VPN Servers routes to wlan0...
RTNETLINK answers: File exists
RTNETLINK answers: File exists
RTNETLINK answers: File exists
RTNETLINK answers: File exists
RTNETLINK answers: File exists
Done.

Getting local IP...
IP: 10.6.4.213
Flushing and writing SPD...
Done.

Restarting racoon...
* Restarting IKE (ISAKMP/Oakley) server racoon          [ OK ]
Done.

Restarting xl2tpd...
Restarting xl2tpd: xl2tpd.
Done.

Connecting to the VPN...
Device ppp0 found.

Adding default route to ppp0...
Done.

The connection should be established now.
You can check that by going to http://checkip.org and check if your IP begins with 137.189.
resnet@resnet-ThinkPad-X60:~/VPNS$ █

```

III. [How to check VPN is connected](#)

Run "ifconfig", if you can see the **ppp0** connection with IP address **137.189.XXX.XXX** that means your connection is under CUHK VPN

IV. [How to Disconnect from VPN](#)

Open the terminal,
Go the directory of your script file (e.g.cd /xxx/yyy) , input command below for the Disconnecting CUHK VPN:

```
sudo ./vpn_disconnect.sh
```

```
resnet@resnet-ThinkPad-X60:~/VPN$ ls
conf  install.sh  README.txt  screenshot  vpn_connect.sh  vpn_disconnect.sh  VPN_script.zip
resnet@resnet-ThinkPad-X60:~/VPN$ sudo ./vpn_disconnect.sh
Getting original device and gateway...
Device: wlan0
Gateway: 10.6.63.254

Disconnecting VPN...
Done.

Restoring default route...
Done.
The connection should be disconnected.
You can check that by going to http://checkip.org and check if your IP has been restored.
resnet@resnet-ThinkPad-X60:~/VPN$ █
```

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