

# Using TU Eindhoven's VPN with Ubuntu 14.04 or 16.04

TU Eindhoven's Virtual Private Networking (VPN) service can be used on Linux computers.

This document describes how to do it using Ubuntu 14.04 or 16.04 with its default GUI environment (Unity).

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## Installing VPN client software on Ubuntu

We need to be sure software is installed is for *Cisco AnyConnect Compatible VPN (openconnect)*. To do this, install the Ubuntu package named `network-manager-openconnect-gnome` (with its dependencies).

One way to do this is by opening a terminal (e.g. by typing *Ctrl-Alt-T*), then typing

```
sudo apt-get -y install network-manager-openconnect-gnome
```

and supplying your password. Another way is using the *Ubuntu Software Center*.

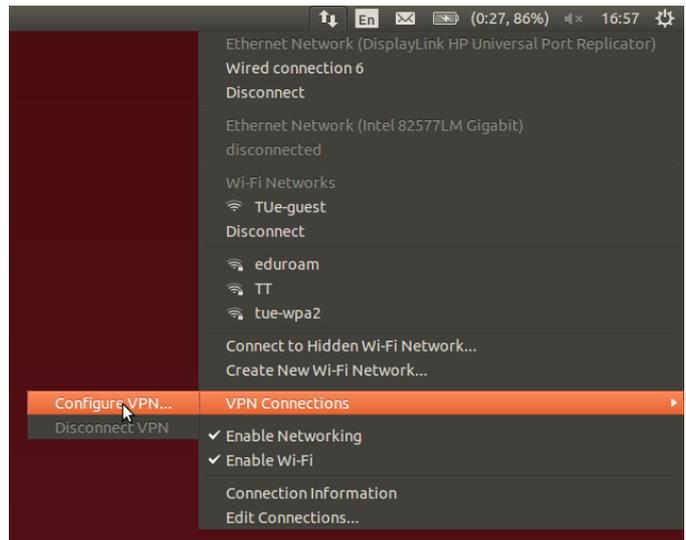
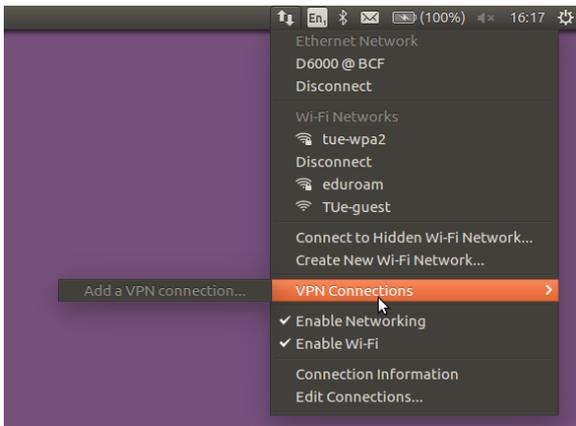
Once this is done, you can create a VPN connection of the right type.

## Configuring VPN to TU/e on Ubuntu using the GUI

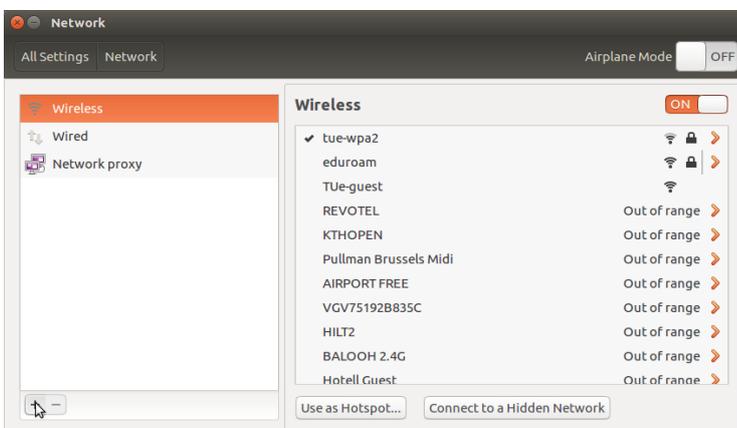
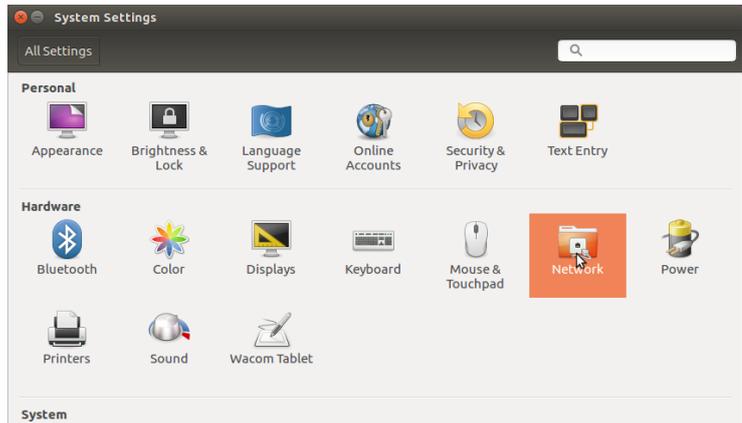
To configure a VPN connection, on your Ubuntu desktop, click on the networking icon in the top right-hand menu (the icon shape varies depending on the state of your networking connections).

A menu will open. In that menu, *Enable Networking* and *Enable Wi-Fi* can be enabled or disabled by clicking on them. Of course, *Enable Networking* must be enabled, and you need a working Internet connection (by cable or Wi-Fi) before you can use a VPN connection.

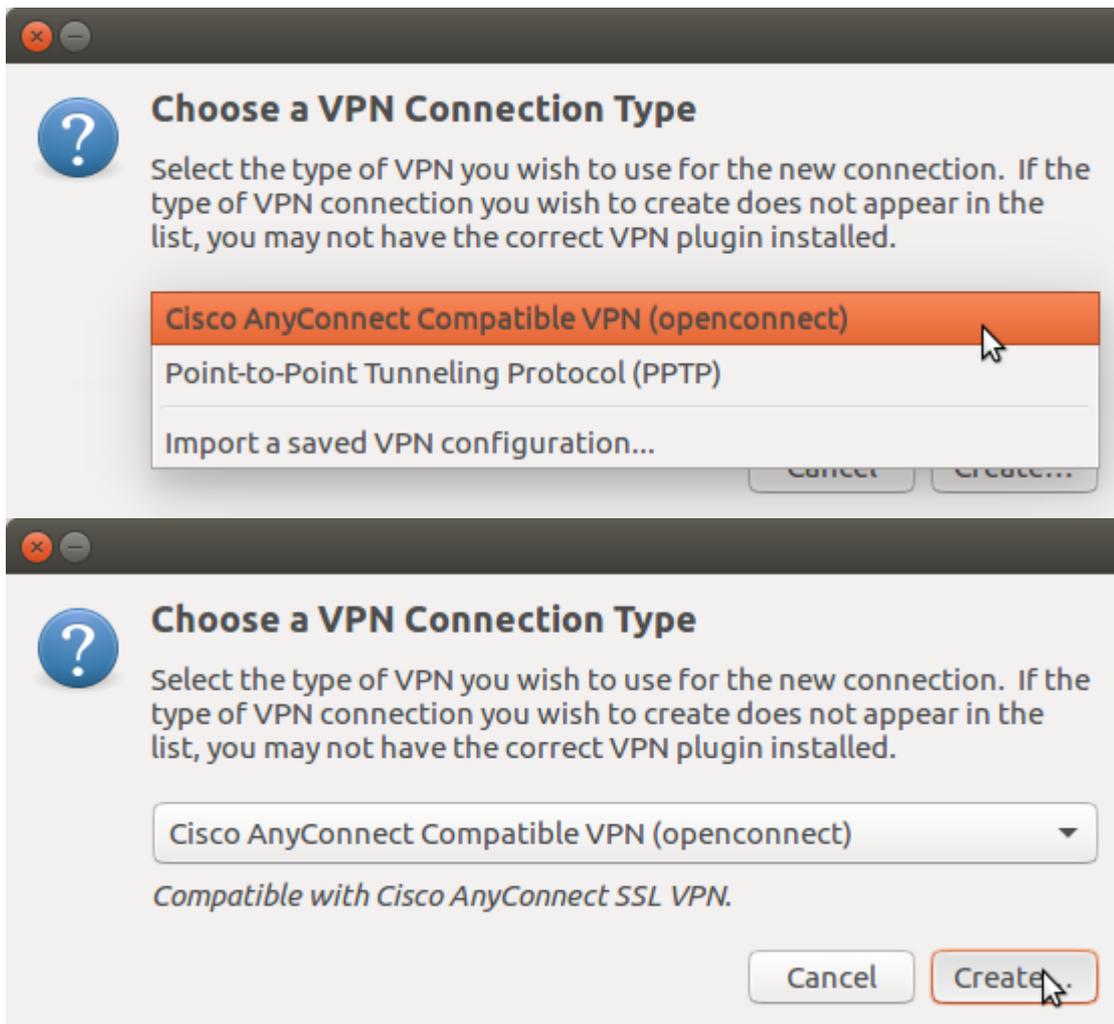
Now, select *VPN Connections*. Initially, no VPN connection will be shown.



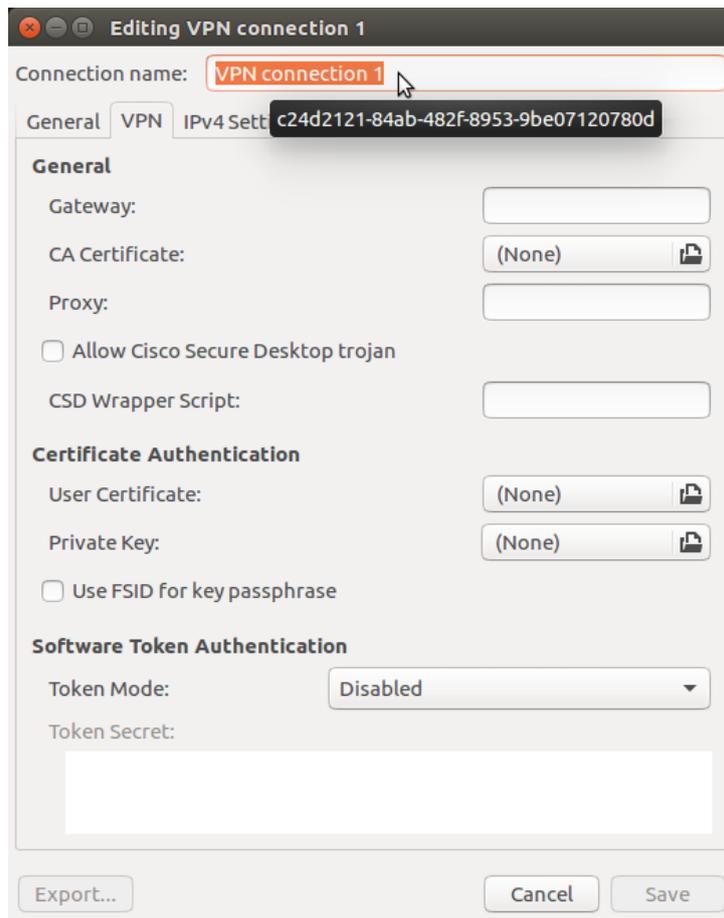
Depending on which software you have installed, a menu item *Configure VPN...* may be shown. If present, you can use this to configure the TU/e VPN connection. An alternative is to go to *System Settings* → *Network*, then click +, select *VPN* and press *Create ...*:



You will be asked to choose a connection type. Select *Cisco AnyConnect Compatible VPN (openconnect)*:

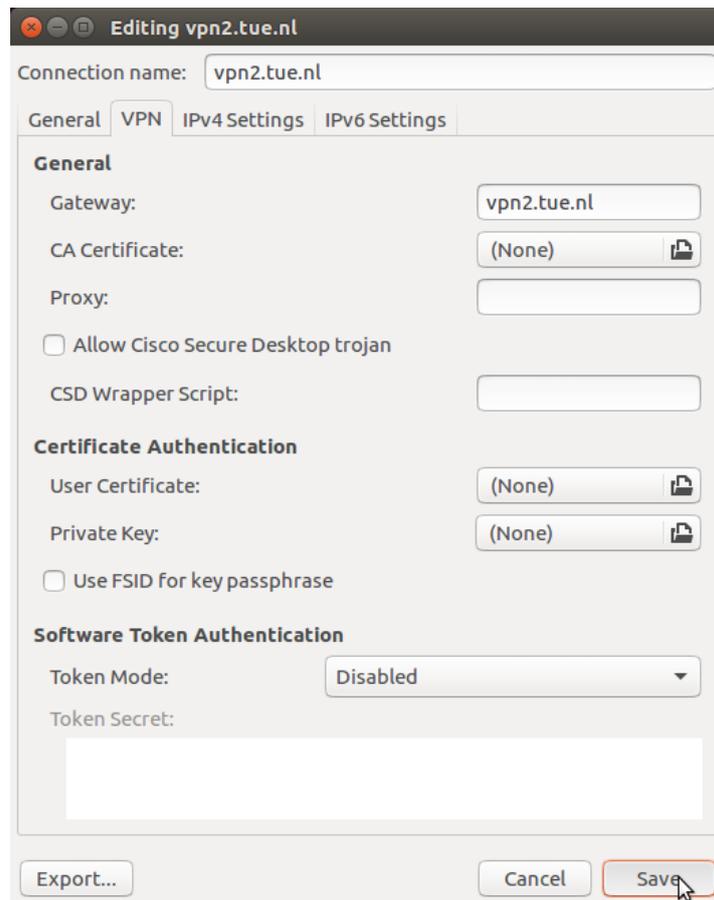


Click *Create ...*. The following dialog appears:

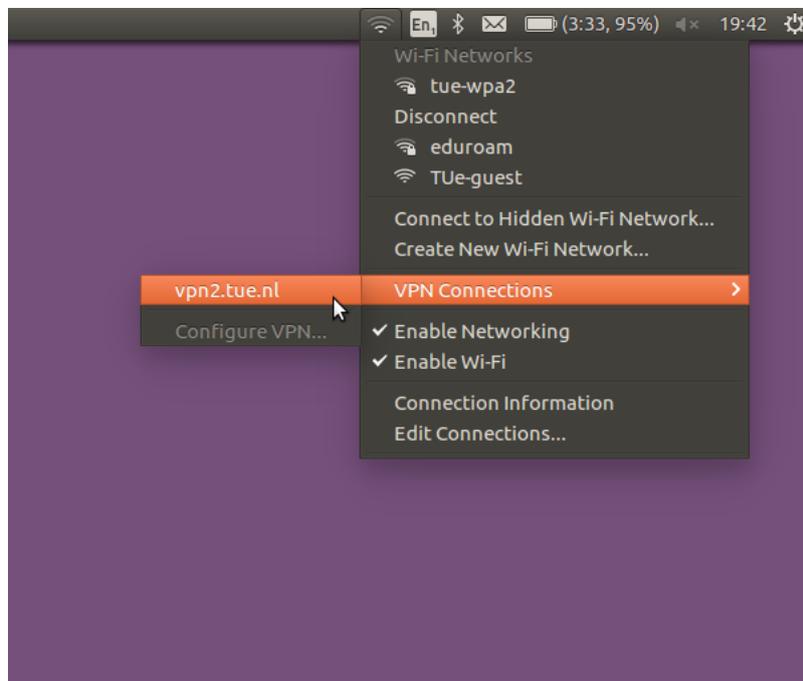


(On Ubuntu 14.04, the Software Token Authentication part is missing.)

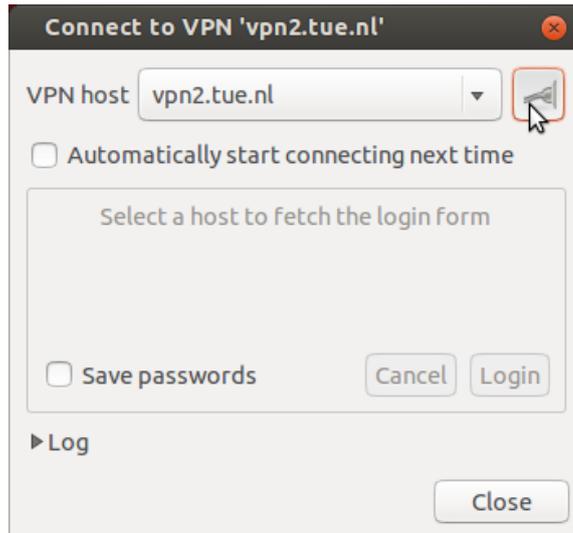
Fill in a connection name of your preference. As the gateway, fill in **vpn2.tue.nl**. You don't need to specify a certificate. Click *Save* ....



You now have a new item in the *VPN Connections* submenu. Select it to enable it:



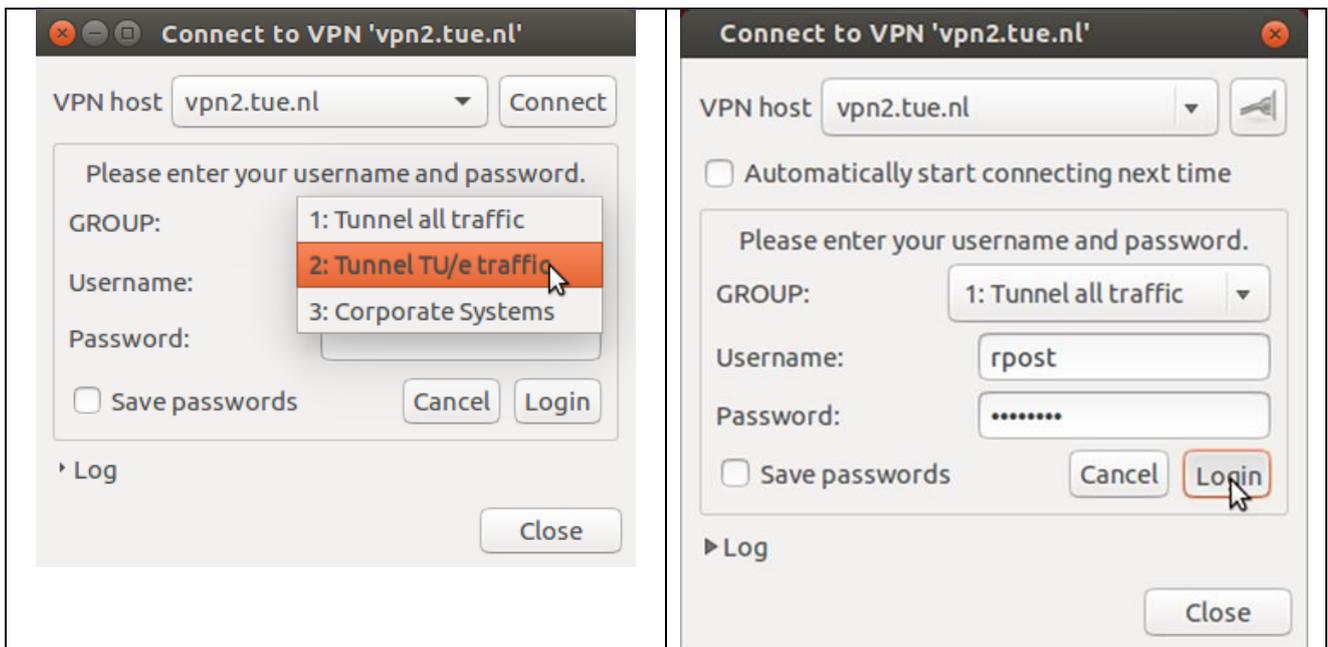
The dialog below will pop up:



Press the icon (or, if on Ubuntu 16.04, the *Connect* button) at the top right. The first time, you will be asked to accept the certificate:



Click *OK*. The previous dialog will pop up, but with more options:



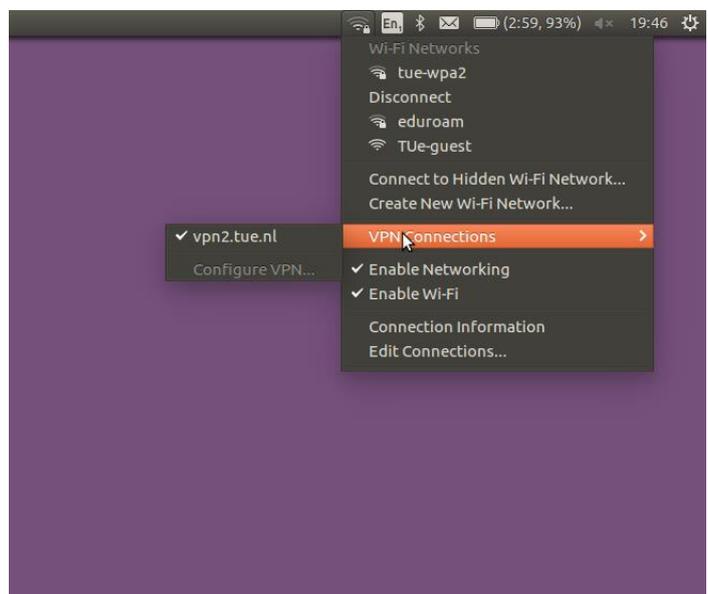
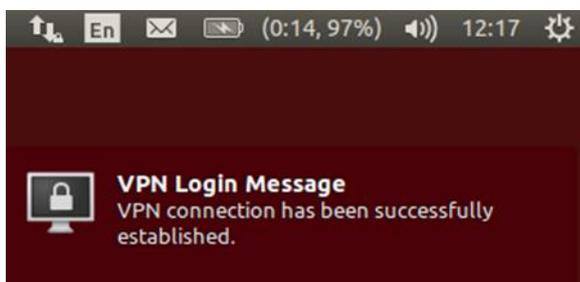
(Note: Ubuntu 16.04 on the left, Ubuntu 14.04 on the right.)

Next to GROUP, select the range of traffic you want to go through the VP connection.

Specify your TUE domain username and password.

It is safer to leave *Save passwords* unchecked. Then, click *Login*.

If your credentials are correct, the connection will be established:



To break the VPN connection, select the `vpn2.tue.nl` menu item to uncheck it.

The low-level VPN connection name is **vpn0**:

```
rp@nbwin1120: ~/Pictures/vpn
rp@nbwin1120:~/Pictures/vpn$ ifconfig
enx001fb5242047 Link encap:Ethernet HWaddr 00:1f:b5:24:20:47
  inet addr:131.155.145.126 Bcast:131.155.145.255 Mask:255.255.254.0
  inet6 addr: fe80::da08:b626:96c6:e71e/64 Scope:Link
  UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
  RX packets:374940 errors:0 dropped:0 overruns:0 frame:0
  TX packets:209662 errors:0 dropped:0 overruns:0 carrier:0
  collisions:0 txqueuelen:1000
  RX bytes:261885831 (261.8 MB) TX bytes:40299614 (40.2 MB)

lo
  Link encap:Local Loopback
  inet addr:127.0.0.1 Mask:255.0.0.0
  inet6 addr: ::1/128 Scope:Host
  UP LOOPBACK RUNNING MTU:65536 Metric:1
  RX packets:679 errors:0 dropped:0 overruns:0 frame:0
  TX packets:679 errors:0 dropped:0 overruns:0 carrier:0
  collisions:0 txqueuelen:1000
  RX bytes:82649 (82.6 KB) TX bytes:82649 (82.6 KB)

vpn0
  Link encap:UNSPEC HWaddr 00-00-00-00-00-00-00-00-00-00-00-00-00-00-00-00
  inet addr:131.155.212.3 P-t-P:131.155.212.3 Mask:255.255.252.0
  inet6 addr: fe80::a84c:ae3f:32f7:7c0d/64 Scope:Link
  UP POINTOPOINT RUNNING NOARP MULTICAST MTU:1406 Metric:1
  RX packets:157559 errors:0 dropped:0 overruns:0 frame:0
  TX packets:143029 errors:0 dropped:0 overruns:0 carrier:0
  collisions:0 txqueuelen:500
  RX bytes:132415406 (132.4 MB) TX bytes:19642801 (19.6 MB)

wlp1s0
  Link encap:Ethernet HWaddr 3c:77:e6:52:b9:3f
  inet addr:131.155.255.141 Bcast:131.155.255.255 Mask:255.255.255.0
  inet6 addr: 2001:610:1108:12ff:99ce:8a9b:491a:29b3/64 Scope:Global
  inet6 addr: fe80::ccb9:4b51:fe72:78f1/64 Scope:Link
  UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
  RX packets:1427 errors:0 dropped:0 overruns:0 frame:0
  TX packets:1093 errors:0 dropped:0 overruns:0 carrier:0
  collisions:0 txqueuelen:1000
  RX bytes:185531 (185.5 KB) TX bytes:142636 (142.6 KB)

rp@nbwin1120:~/Pictures/vpn$
```

## Configuring VPN to TU/e on Ubuntu using the command line

Instead of using GUI configuration, you can connect and disconnect using the `openconnect` command line application, which is installed by installing Ubuntu's `openconnect` package. A script to automate connecting to `vpn2.win.tue.nl` using this command can be found at

<http://www.win.tue.nl/~rp/bin/vpn2>

To use it:

1. download it
2. make it executable
3. inspect its contents (in case it has been tampered with)
4. run it from the command line:  
`vpn2 start # to create a VPN connection to vpn2.tue.nl`
5. `vpn2 stop # to break it if it exists`
6. `vpn2 restart # to stop, then start`

It creates a networking interface called **tun0** rather than **vpn0**. Other than that, the effect appears to be the same as by using the GUI.