VPN Configuration on VYOS

1. SITE TO SITE VPN :

```
configure
set vpn ipsec ipsec-interfaces interface eth0

set vpn ipsec ike-group IKE-1W proposal 1
set vpn ipsec ike-group IKE-1W proposal 1 encryption aes128
set vpn ipsec ike-group IKE-1W proposal 1 hash sha1
set vpn ipsec ike-group IKE-1W proposal 1 dh-group 5
set vpn ipsec ike-group IKE-1W proposal 2
set vpn ipsec ike-group IKE-1W proposal 2 encryption aes128
set vpn ipsec ike-group IKE-1W proposal 2 hash sha1
set vpn ipsec ike-group IKE-1W proposal 2 dh-group 2
set vpn ipsec ike-group IKE-1W lifetime 3600
show vpn ipsec ike-group IKE-1W

set vpn ipsec esp-group ESP-1W proposal 1
set vpn ipsec esp-group ESP-1W proposal 1 encryption aes128
set vpn ipsec esp-group ESP-1W proposal 1 hash sha1
set vpn ipsec esp-group ESP-1W proposal 2
set vpn ipsec esp-group ESP-1W proposal 2 encryption 3des
set vpn ipsec esp-group ESP-1W proposal 2 hash md5
set vpn ipsec esp-group ESP-1W lifetime 1800
set vpn ipsec esp-group ESP-1W pfs dh-group5
show vpn ipsec esp-group ESP-1W

set vpn ipsec site-to-site peer 1.103.2.42 authentication mode pre-shared-secret
edit vpn ipsec site-to-site peer 1.103.2.42
set authentication pre-shared-secret secret
```

```
set default-esp-group ESP-1W set ike-group IKE-1W
set local-address 192.168.0.5
set tunnel 1 local prefix 192.168.0.0/24
set tunnel 1 remote prefix 192.168.1.0/24
set authentication remote-id 192.169.0.3
commit
save
exit
```

2. Remote-access configuration VYOS (OpenVPN) :

a. Server side :

```
configure
set interfaces openvpn vtun0
set interfaces openvpn vtun0 mode server
set interfaces openvpn vtun0 server subnet 192.168.200.0/24

set interfaces openvpn vtun0 tls cert-file /config/auth/server.crt
set interfaces openvpn vtun0 tls dh-file /config/auth/dh.pem
set interfaces openvpn vtun0 tls key-file /config/auth/server.key
set interfaces openvpn vtun0 tls ca-cert-file /config/auth/ca.crt

set interfaces openvpn vtun0 server push-route 35.0.0.0/24
set interfaces openvpn vtun0 openvpn-option "--client-cert-not-required
--script-security 3 --auth-user-pass-verify /usr/share/vyos-oc/auth_pam.pl via-file"

commit
save
exit
```

b. Client side :

Note :

1. First install openvpn
2. Copy ca.art from server and copy to /etc/openvpn/
3. Create client.conf , and add below lines, save it to /etc/openvpn/

```
auth-user-pass
remote-cert-tls server
ca /etc/openvpn/ca.crt
remote 192.168.20.134
client
dev tun
proto udp
resolv-retry infinite
nobind
persist-key
persist-tun
verb 3
```

Now run on client side following command

```
# openvpn --config /etc/openvpn/client.conf
```

3. Remote-access configuration VYOS (L2TP/IPsec) :

a. Server side :

```
configure
set vpn ipsec ipsec-interfaces interface eth0
set vpn ipsec nat-traversal enable
```

```
set vpn ipsec nat-networks allowed-network 0.0.0.0/0
set vpn l2tp remote-access outside-address 192.168.104.27
set vpn l2tp remote-access client-ip-pool start 192.168.200.1
set vpn l2tp remote-access client-ip-pool stop 192.168.200.100
set vpn l2tp remote-access ipsec-settings authentication mode pre-shared-secret
set vpn l2tp remote-access ipsec-settings authentication pre-shared-secret
secret
set vpn l2tp remote-access authentication mode local
set vpn l2tp remote-access authentication local-users username test password
test
commit
save
show vpn l2tp remote-access
exit
```

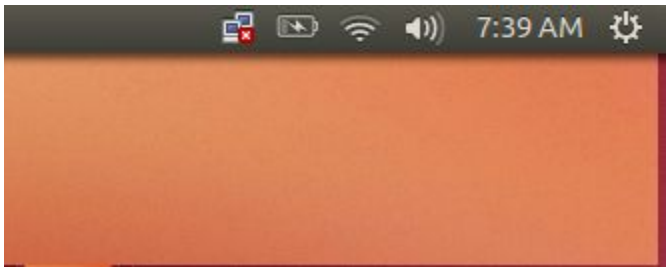
b**. Client side :**

1. Packages required:

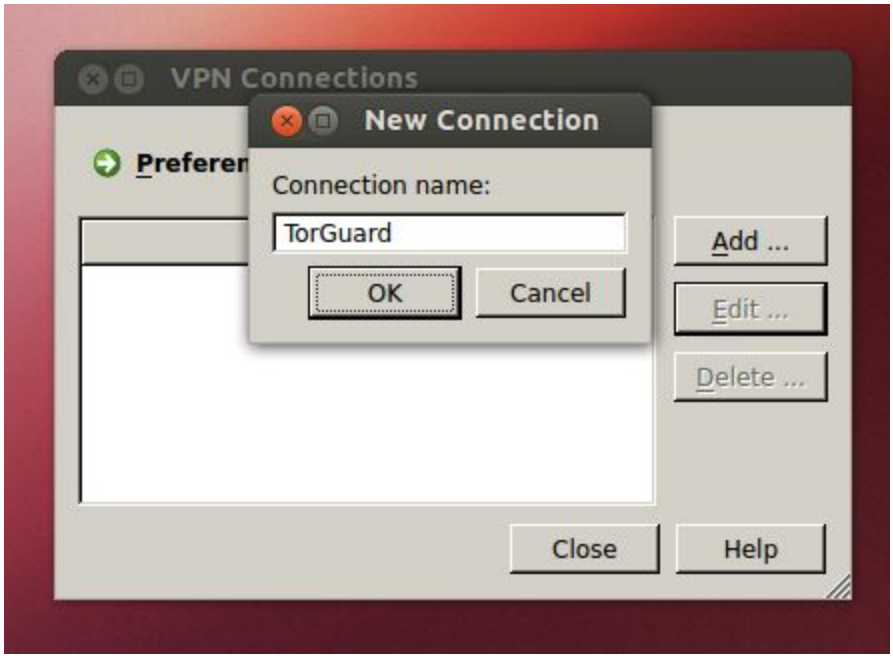
```
sudo apt-get install openswan
sudo apt-get install xl2tpd
sudo apt-get install l2tp-ipsec-vpn
```

Click on "Dash home", run the "L2TP Ipsec VPN Applet".

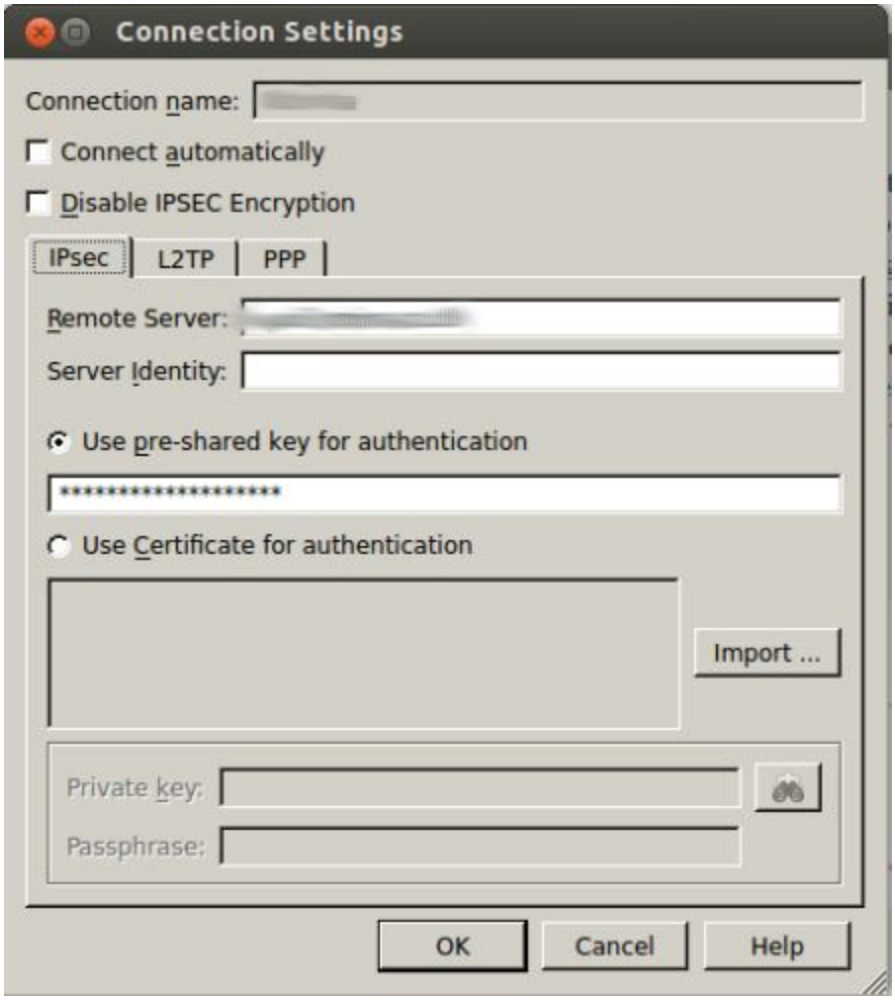
This will create an icon on your top panel with two computers. Click on that icon and choose "Edit Connections...". Provide your Ubuntu user password and click "OK".



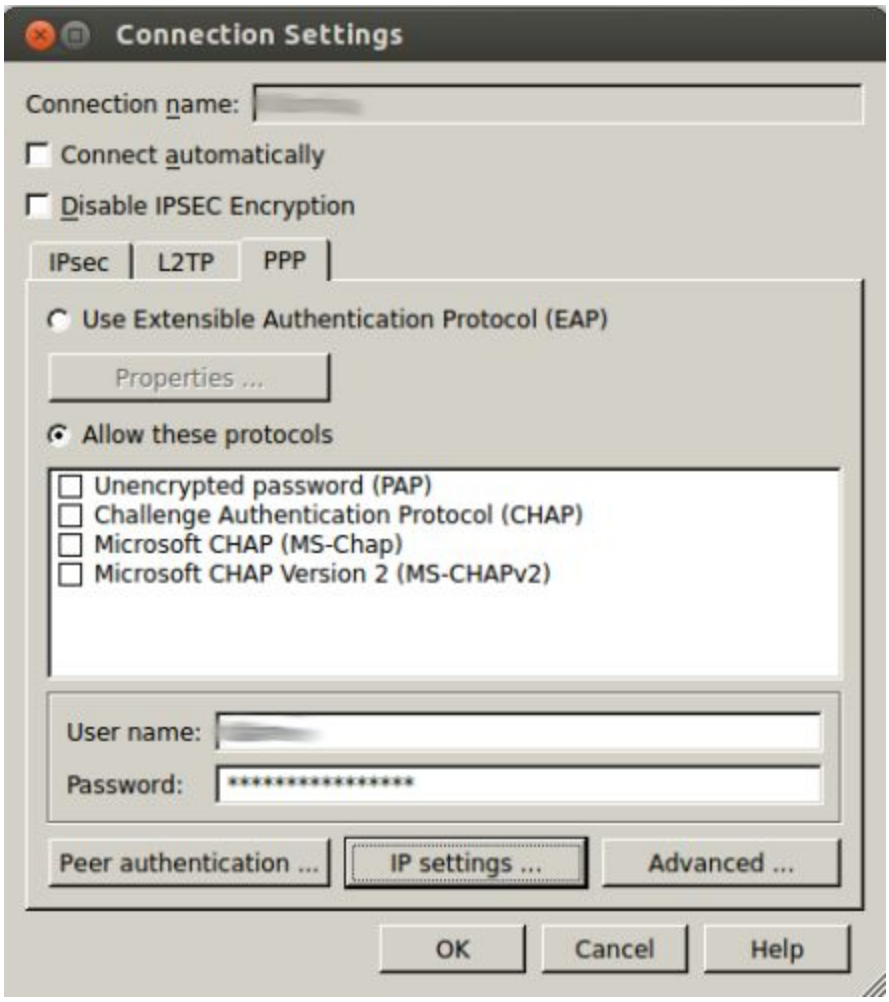
The "VPN Connections" window will appear. Click the "Add..." button. Enter the desired "Connection name" (TorGuard for example) and click "OK".


VPN Connections
New Connection
Preferen
Connection name:
TorGuard
OK
Cancel
Add ...
Edit ...
Delete ...
Close
Help

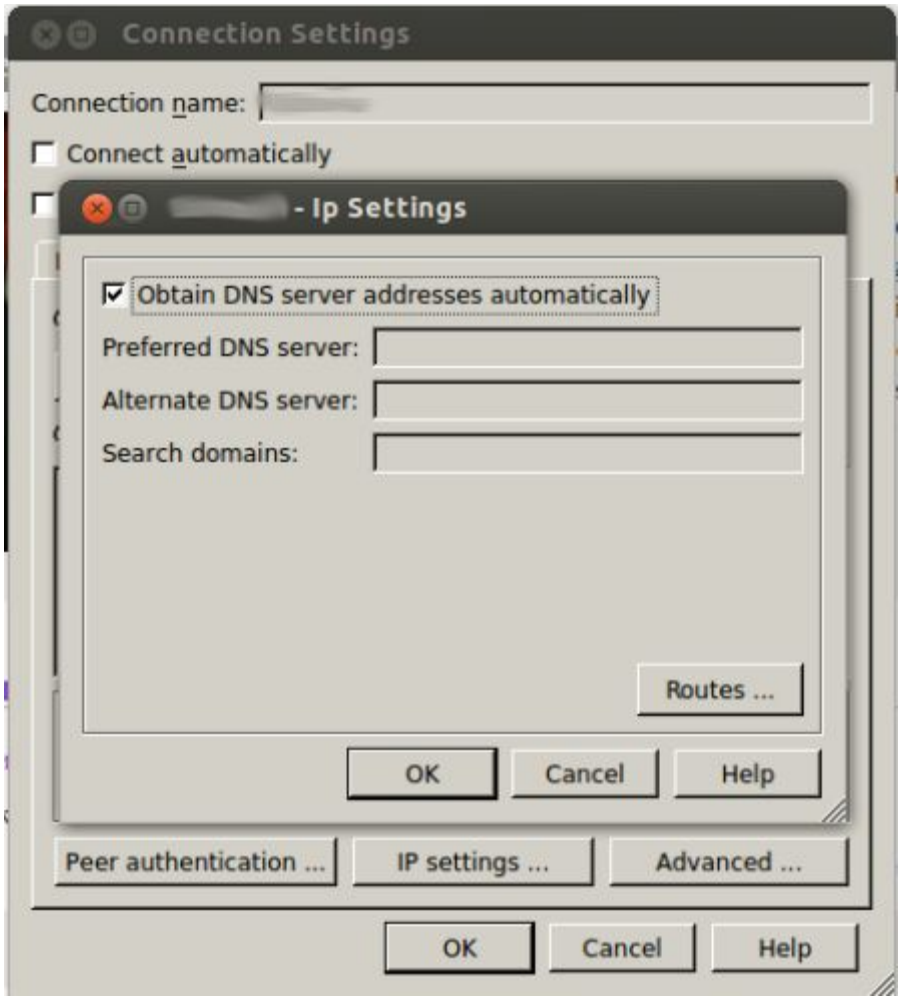
Enter the VPN server address and the pre-shared key



Go to the PPP tab and enter the username and password (you can let all the protocols checked as we will unban them later):



Click on “IP Settings” and check the box:



Close the “L2TP IPSEC VPN Manager” to apply the changes.

2. Before connecting to the VPN you need to make some more changes in the configuration files

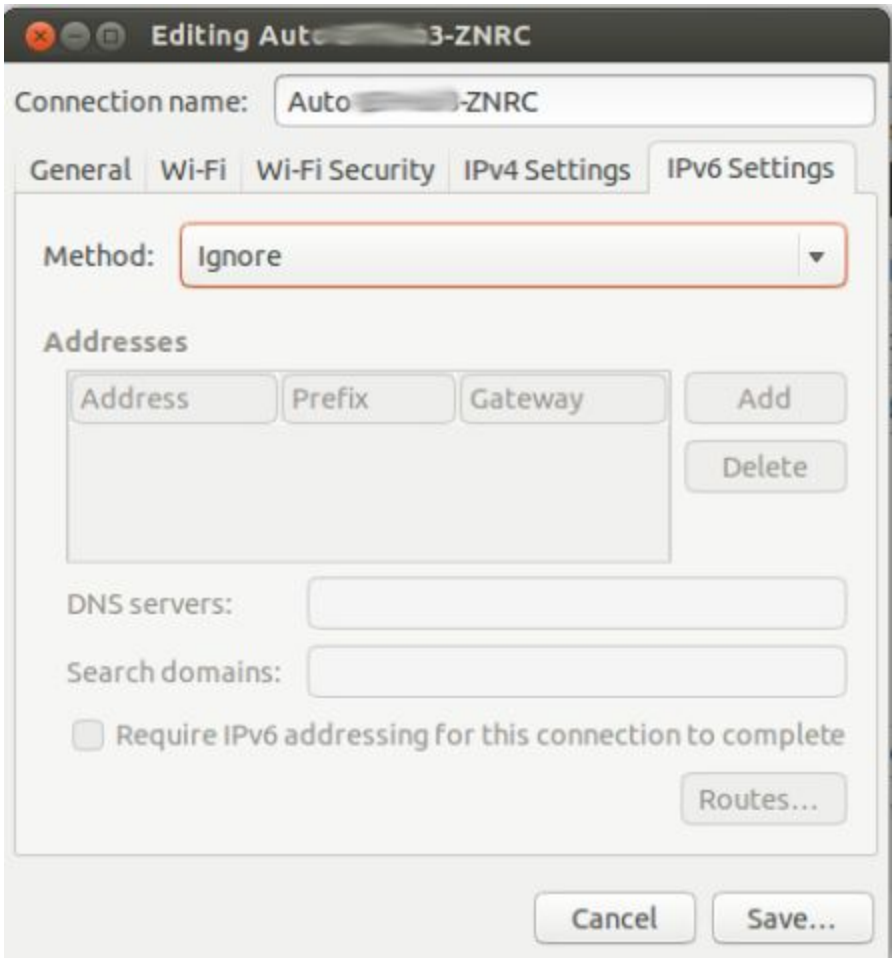
In the file **/etc/ppp/<your_vpn_connection_name>.options.xl2tpd**
– Add the password line
– Be sure the lines refuse-xxxx are commented:

```
$ sudo vi /etc/ppp/<your_vpn_connection_name>.options.xl2tpd
  #debug
  #dump
  #record /var/log/pppd

  plugin passprompt.so
  ipcp-accept-local
  ipcp-accept-remote
  idle 72000
  ktune
  noproxyarp
  asyncmap 0
  #noccp
  noauth
  crtscts
  lock
  hide-password
  modem
  noipx
  ipparam L2tpIPsecVpn-<your_connection>
  promptprog "/usr/bin/L2tpIPsecVpn"

  #refuse-eap
  #refuse-pap
  #refuse-chap
  #refuse-mschap
  #refuse-mschap-v2
  #require-mschap-v2
  remotename ""
  name "<your_username>"
  password "<your_password>"
  defaultroute
  usepeerdns
```

3. Restart xl2tp and ipsec to apply the changes

```
sudo /etc/init.d/ipsec restart
sudo /etc/init.d/xl2tp restart
```

4. Finally, go to your (home) connection settings and deactivate the IPv6:



5. You can now connect to connect to the VPN connection you just created