Inventory:

- TP-Link wireless router
- Ubuntu machine (18.04)
- Ethernet cable
- Iphone

Ubuntu machine:

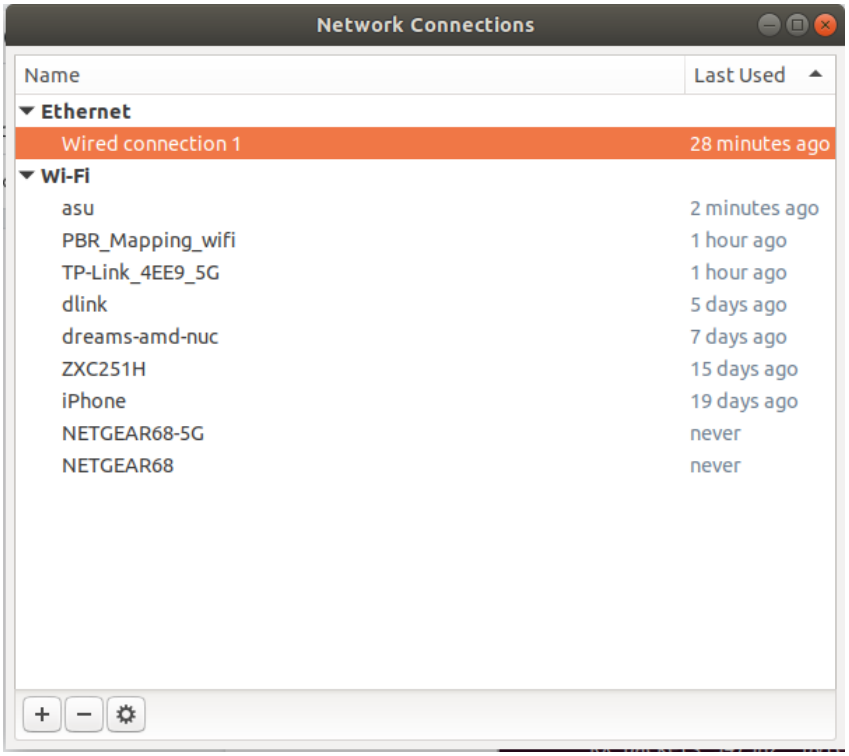
- Connect to asu wifi
    - Check IP address

```
wlp0s20f3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 10.153.61.215  netmask 255.255.192.0  broadcast 10.153.63.255
        inet6 fe80::ffbc:3fc6:11f7:8dfe  prefixlen 64  scopeid 0x20<link>
        ether 64:5d:86:6e:0f:b9  txqueuelen 1000  (Ethernet)
        RX packets 547382  bytes 622862740 (622.8 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 227824  bytes 93692992 (93.6 MB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

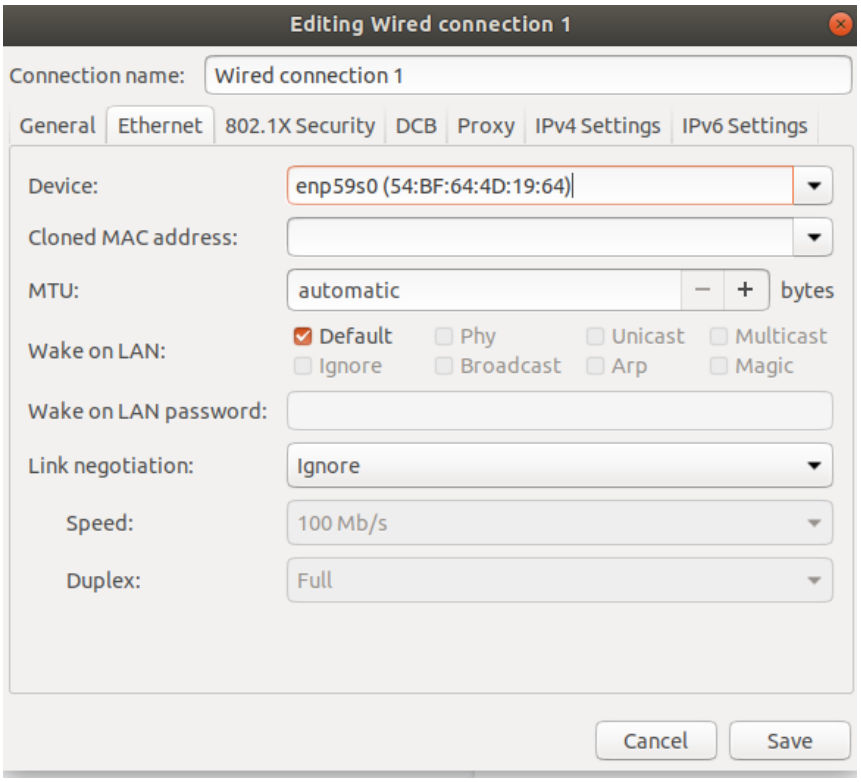
- Connect ubuntu machine and TP-Link router via ethernet cable
    - Check IP address

```
enp59s0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet6 fe80::8768:8c67:8011:a47c  prefixlen 64  scopeid 0x20<link>
        ether 54:bf:64:4d:19:64  txqueuelen 1000  (Ethernet)
        RX packets 9114  bytes 1338172 (1.3 MB)
        RX errors 0  dropped 3  overruns 0  frame 0
        TX packets 9175  bytes 1016798 (1.0 MB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
        device interrupt 17
```

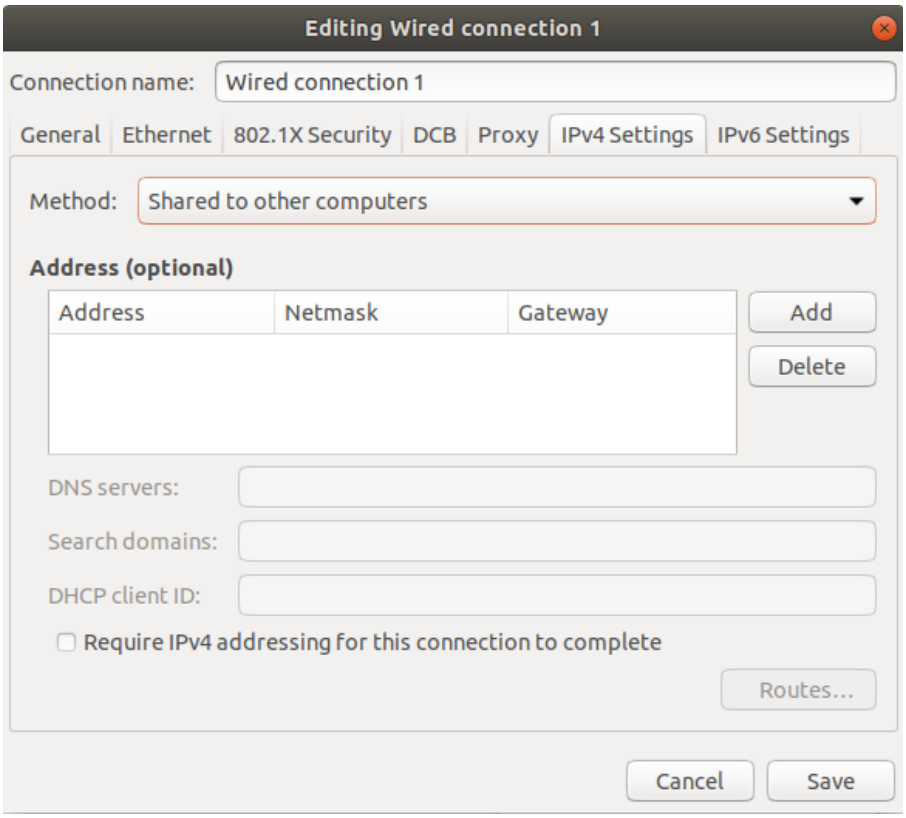
    - Install network GUI: sudo apt-get install net-tools
        - Run GUI: nm-connection-editor



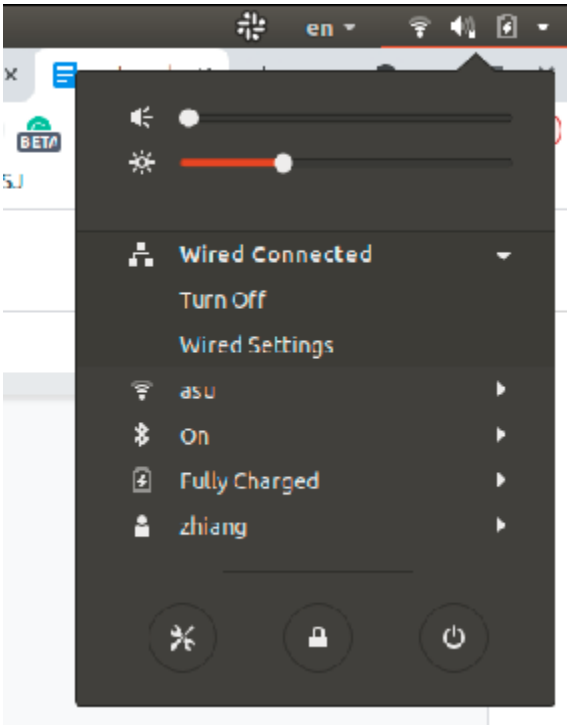
- Double click “wired connection 1” for setting
- Under “Ethernet”, device should be selected to the router ethernet (the Mac address in ethernet connection)



- Under IPv4 and IPv6 Settings, “Method” should be selected to be “Shared to other computers”

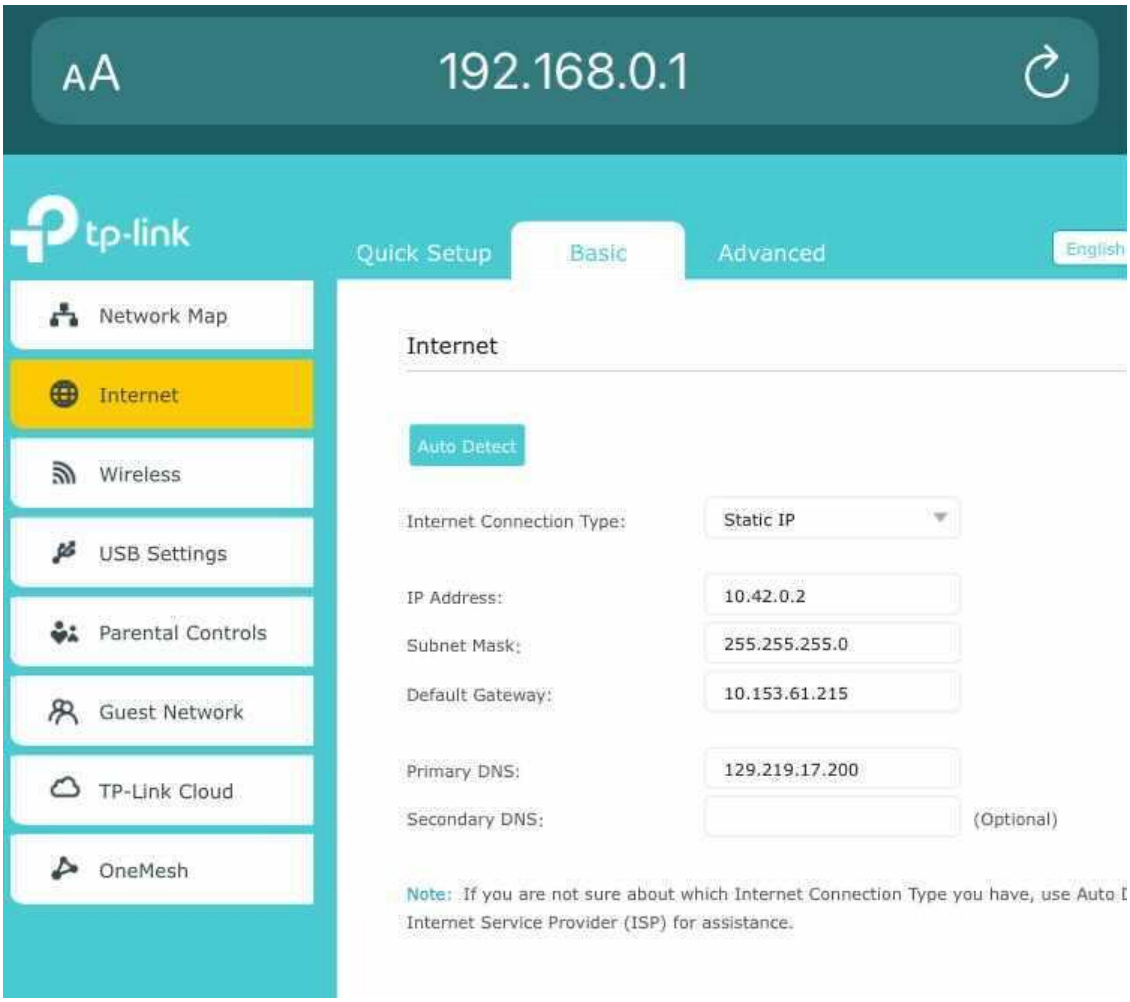


- Make sure TP-Link router is connected to Ubuntu machine



TP-Link router:

- Using IPhone to connect TP-Link router wifi
- http://tplinkwifi.net
    - Finish basic setting and ignore the internet connection error
    - Under “Internet”,



a) Change “Internet connection type” to “Static IP”
b) “IP address” should be consistent with ethernet IP address. For example, the ethernet IP address is “10.42.0.1”, so the IP address should be 10.42.0.x (10.42.0.2)
c) “Subnet Mask” should be the netmask on ethernet connection
d) “Default Gateway” should be asu wifi IP address
e) “Primary DNS” can be found by the following.
    - Bash command (wlp0s20f3 is the name of asu wifi connection): nmcli device show wlp0s20f3 | grep IP4.DNS
    - Use the first address
    -

```
IP4.DNS[1]:                             129.219.17.200
IP4.DNS[2]:                             129.219.17.5
IP4.DNS[3]:                             129.219.13.81
```

Now IPhone connected to TP-Link router should be able to use ethernet.