Setup WG_VPN client App on Android phone and connect to WG_VPN server [20/10/2020]

This document will show the detail steps about how to install the WireGuard VPN client on an Android phone/pad and config the VPN client to connect a WG_VPN server. The setup process contents three main steps:

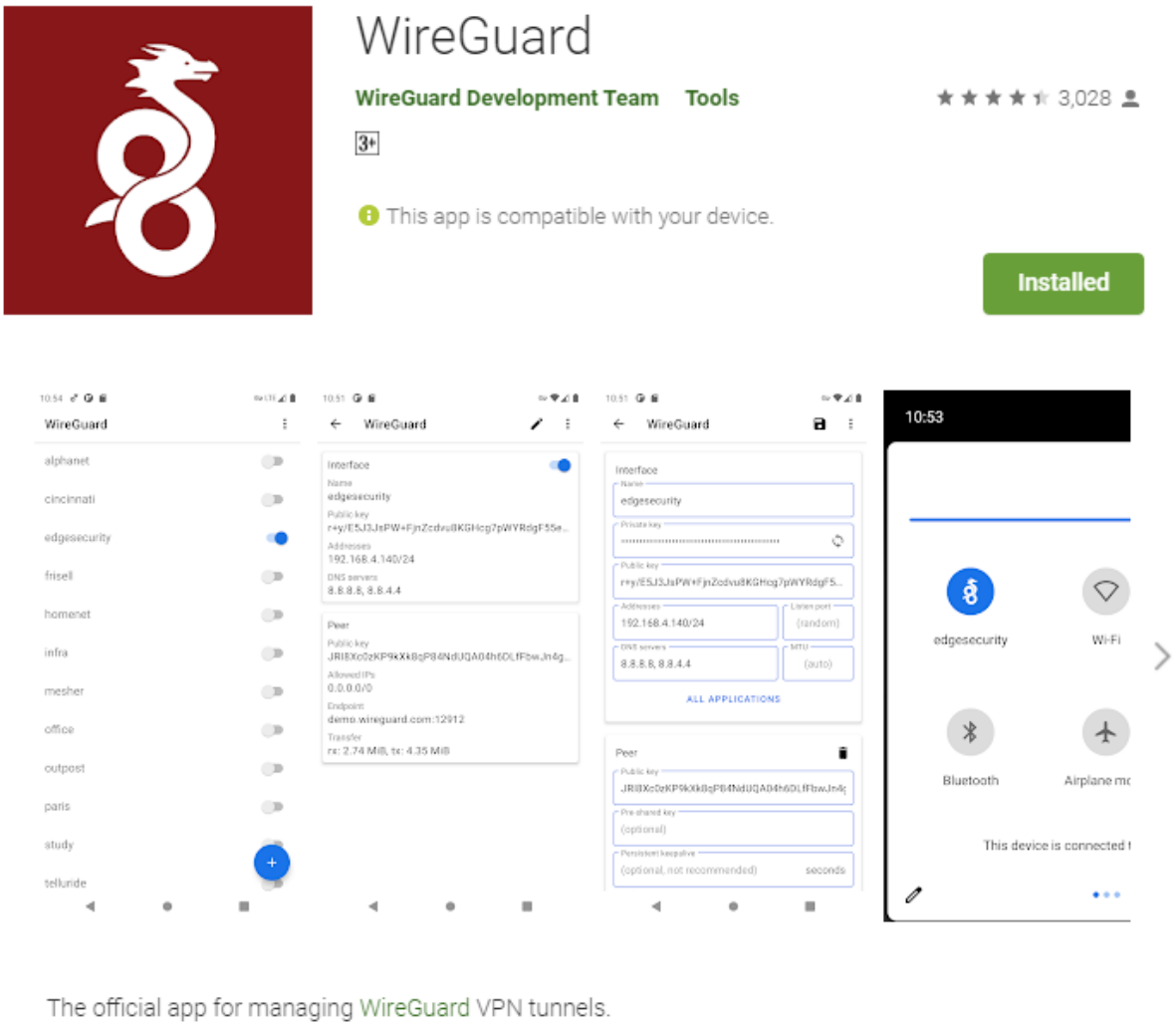
1. Install WireGuard and create a key-pair in WireGuard client.

2. Add the Android client peer information in the WireGuard server's config file.

3. Config the Android WireGuard client to connect to the server.

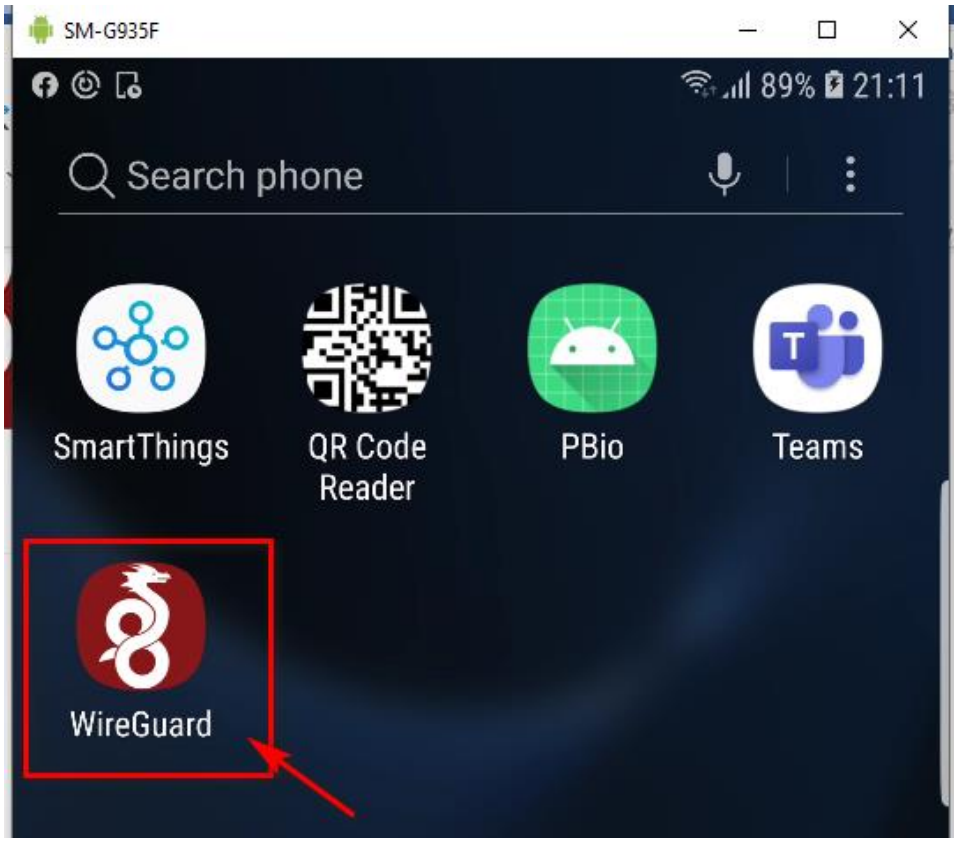
Step 1. Install WireGuard App and create a key-pair in WireGuard client.

Open the Android phone/pad Google App Play Store and search "WireGuard", then install the WireGuard VPN client App on the Android phone:

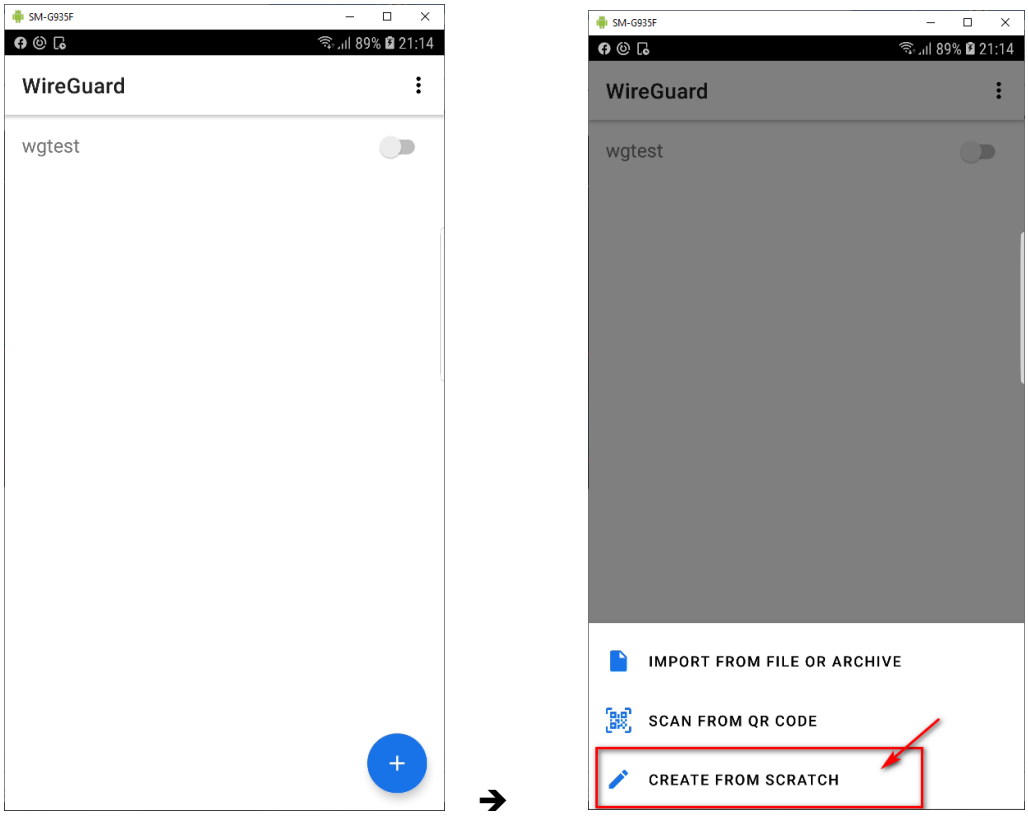


The official app for managing WireGuard VPN tunnels.

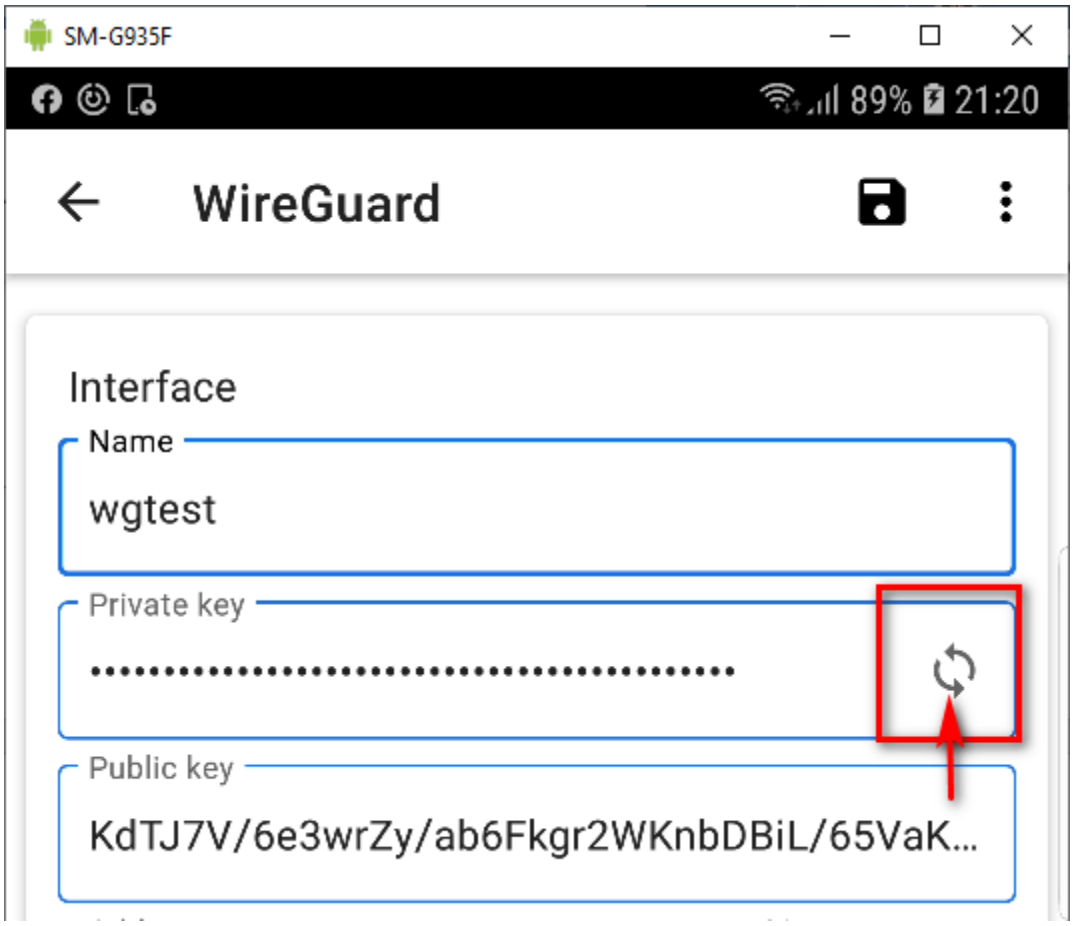
After the installation process finished, open the WireGuard client App:



Click the '**+**' button at the bottom right corner and select the "CREATE FORM SCRATCH" to add a new interface:



When the setup page popup, type in an interface name and press the “refresh button” once, the encryption key paire will be filled with public key and private key.



⇨ Record the public key down in a file. In this example record the key string “KdTJ7V/6e3wrZy/ab6Fkgr2WKnbDBiL/65VaKc2F8AE=”

Step 2. Add the Android client peer information in the server’s config file.

At the Ubuntu server computer side, stop the WireGuard server by cmd:

```
sudo systemctl stop wg-quick@wg0
```

Edit the WireGurad config file by cmd:

```
sudo vim /etc/wireguard/wg0.conf
```

Append below client config line in the file:

```
[Peer]
## Desktop/client VPN public key ##
PublicKey = KdTJ7V/6e3wrZy/ab6Fkgr2WKnbDBiL/65VaKc2F8AE=

## client VPN IP address (note  the /32 subnet) ##
AllowedIPs = 192.168.6.2/32
```

- ⇨ The **PublicKey** is the string we recorded from the Android app in the step 1(as shown below): “KdTJ7V/6e3wrZy/ab6Fkgr2WKnbDBiL/65VaKc2F8AE=”
- ⇨ The **AllowedIPs** is the IP we want to assign to the VPN client when it has connected.

```
yc@yc-VirtualBox: ~
## Set Up WireGuard VPN on Ubuntu By Editing/Creating wg0.conf File ##
[Interface]
## My VPN server private IP address ##
Address = 192.168.6.1/24

## My VPN server port ##
ListenPort = 41194

## VPN server's private key i.e. /etc/wireguard/privatekey ##
PrivateKey = 8MkKCe2Go1GEp2lzvZRrY12HSZ0SrTkVJbDFHLsj+WQ=

[Peer]
## Desktop/client VPN public key ##
PublicKey = KdTJ7V/6e3wrZy/ab6Fkgr2WKnbDBiL/65VaKc2F8AE=

## client VPN IP address (note  the /32 subnet) ##
AllowedIPs = 192.168.6.2/32
```

Save the changes and restart the WireGuard server by cmd:

```
sudo systemctl start wg-quick@wg0
```

Step 3. Config the Android WireGuard client to connect to the server.

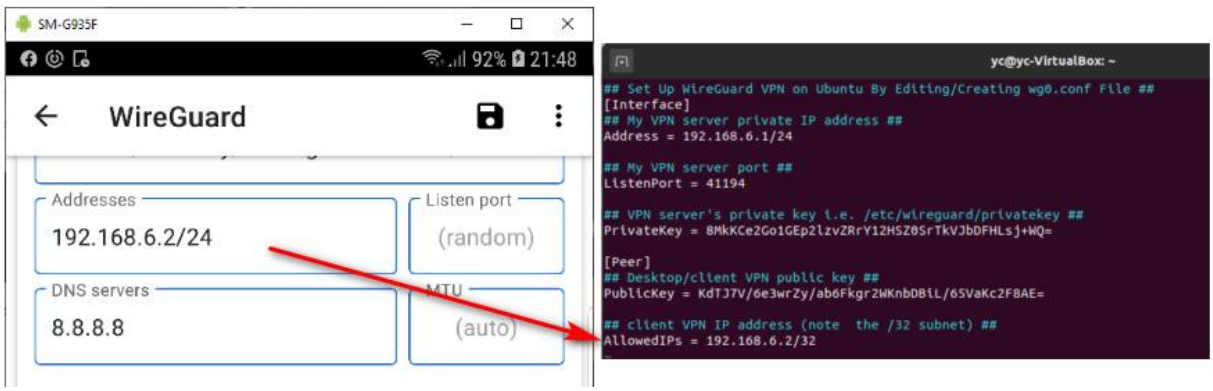
On the server side get the public key by these two cmds:

```
umask 077; wg genkey | tee privatekey | wg pubkey > publickey
```

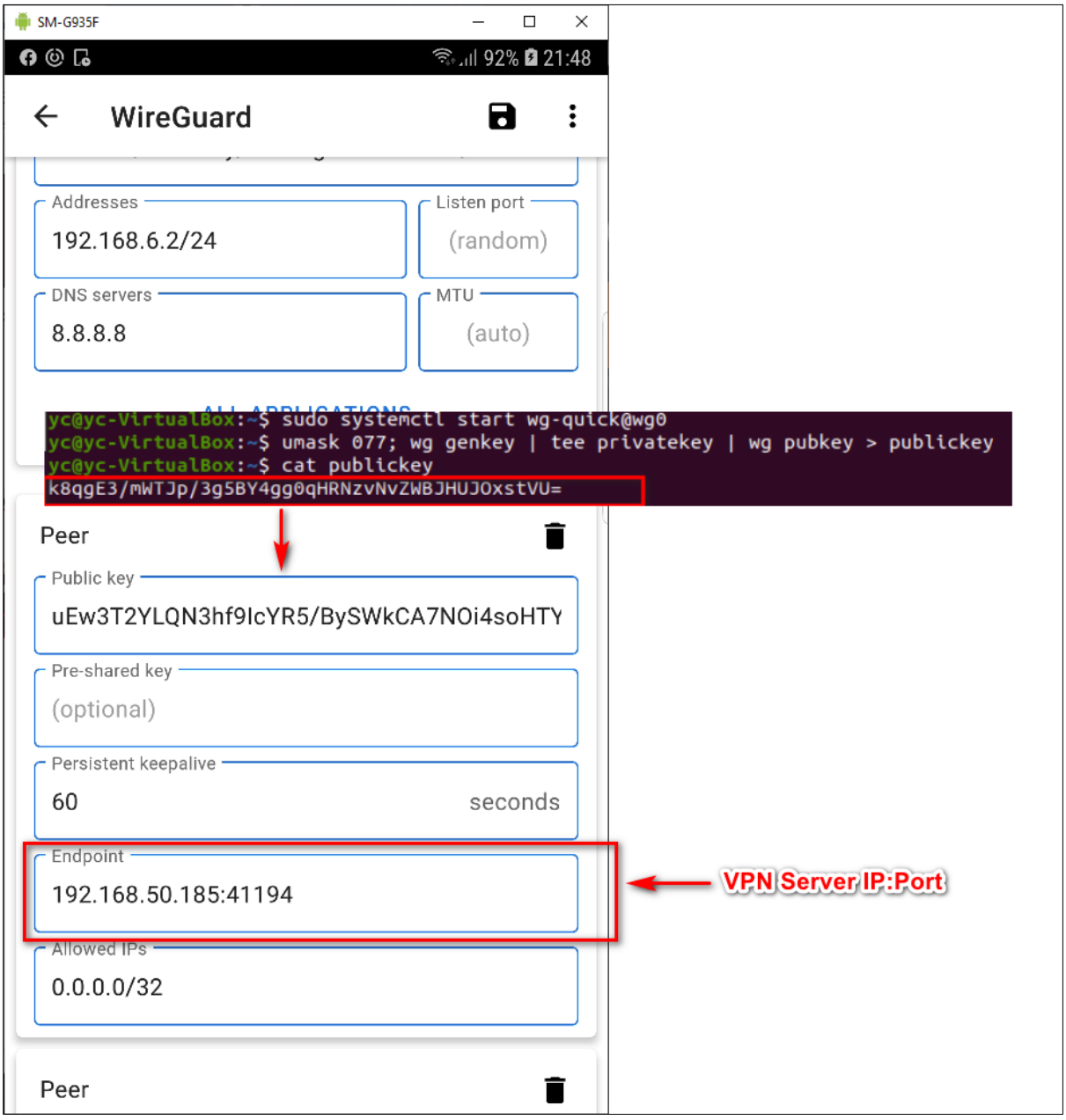
```
cat publickey
```

```
yc@yc-VirtualBox:~$ sudo systemctl start wg-quick@wg0
yc@yc-VirtualBox:~$ umask 077; wg genkey | tee privatekey | wg pubkey > publickey
yc@yc-VirtualBox:~$ cat publickey
k8qgE3/mWTJp/3g5BY4gg0qHRNzvNvZWBJHUJOxstVU=
```

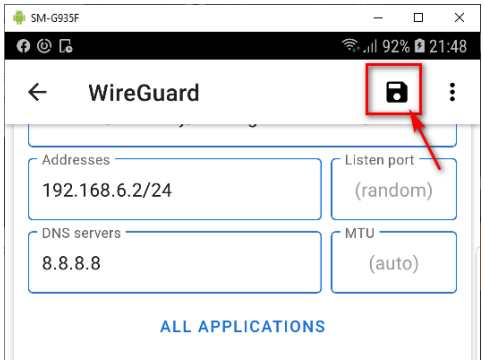
Record the server’s public key. In the Android WireGuard App set the interface IP with the same value as the **AllowedIPs** in the step 2.



In the Android WireGuard client App side, fill in the Server's public key, public IP and the port as below. "Allowed IPs" set to "0.0.0.0/32":

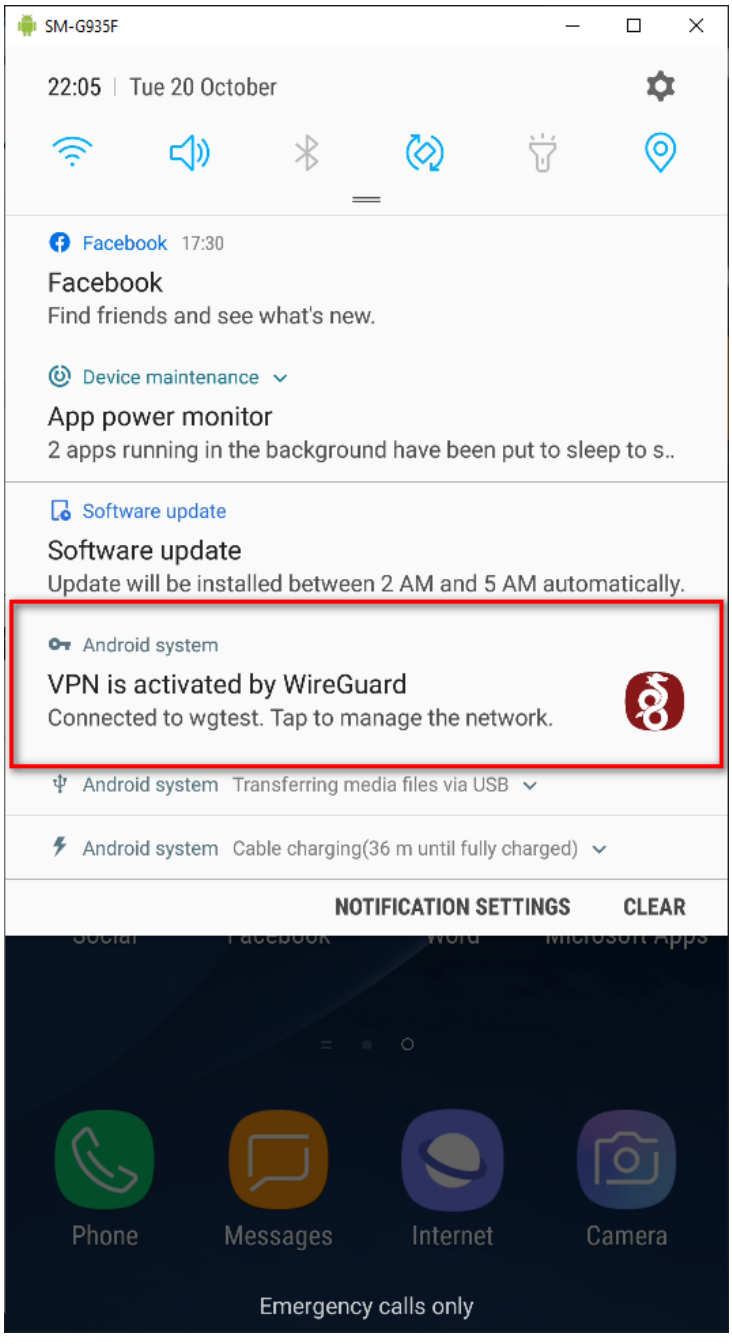


Press the save button to save the changes:

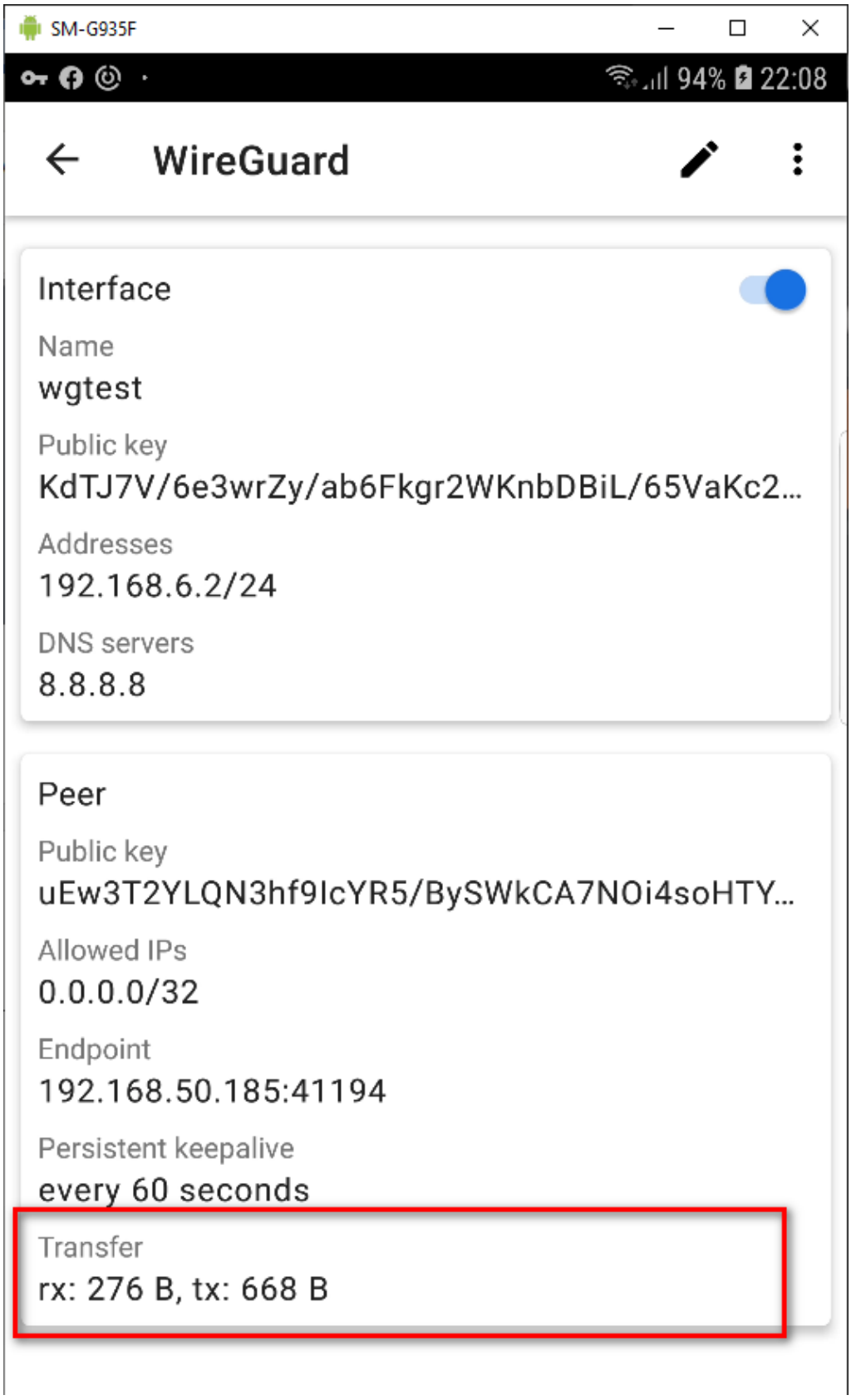


Turn on the connection by press the slider bar:

(Optional)Open the Android control centre to check whether the WireGuard VPN client try to connect the server:



When we see both the data transfer **rx** and **tx** shown, which means the client has connected to the server correctly:



At server side we can also double confirm the connection by cmd:

sudo wg show wg0

```
yc@yc-VirtualBox:~$ sudo wg show wg0
[sudo] password for yc:
interface: wg0
  public key: uEw3T2YLQN3hf9IcYR5/BySWkCA7NOi4soHTYPwL2nI=
  private key: (hidden)
  listening port: 41194

peer: KdTJ7V/6e3wrZy/ab6Fkgr2WKnbDBiL/65VaKc2F8AE=
  endpoint: 192.168.50.157:49474
  allowed ips: 192.168.6.2/32
  latest handshake: 1 minute, 51 seconds ago
  transfer: 700 B received, 276 B sent
yc@yc-VirtualBox:~$
```