

# Network Security VPN's

## Assignment 1:

### OpenVPN-Client-Connection-and-IP-Verification

This assignment demonstrates setting up an OpenVPN server on a Linux machine, establishing a VPN connection from a client (same machine), and verifying the change in public IP address before and after connecting to the VPN. The goal is to create a self-hosted VPN environment for secure remote access and privacy. Since I already have an .ovpn configuration file, I can directly use it to connect to the VPN and verified my IP address before and after the connection,

### 1. Introduction

For this, I used an existing OpenVPN configuration file (.ovpn) to connect my Linux machine to a VPN. I verified the public IP address before and after the VPN connection to demonstrate secure tunneling.

### 2. Tools Used

- OpenVPN client on Linux
- curl for IP address verification

### 3. Procedure

#### Step 1: Check public IP before VPN connection

I ran the command:

```
curl ifconfig.me
```

This showed my real public IP address before the VPN connection.

#### Step 2: Connect to the VPN using .ovpn file

Using the OpenVPN client, I connected to the VPN:

```
sudo openvpn --config /vpn/client.ovpn
```

I provided the required credentials when prompted, and the connection was successfully established.

#### Step 3: Verify public IP after VPN connection

In a new terminal session, I ran:

```
curl ifconfig.me
```

This showed the VPN server's public IP address, confirming that my traffic was routed through the VPN.

### 4. Results

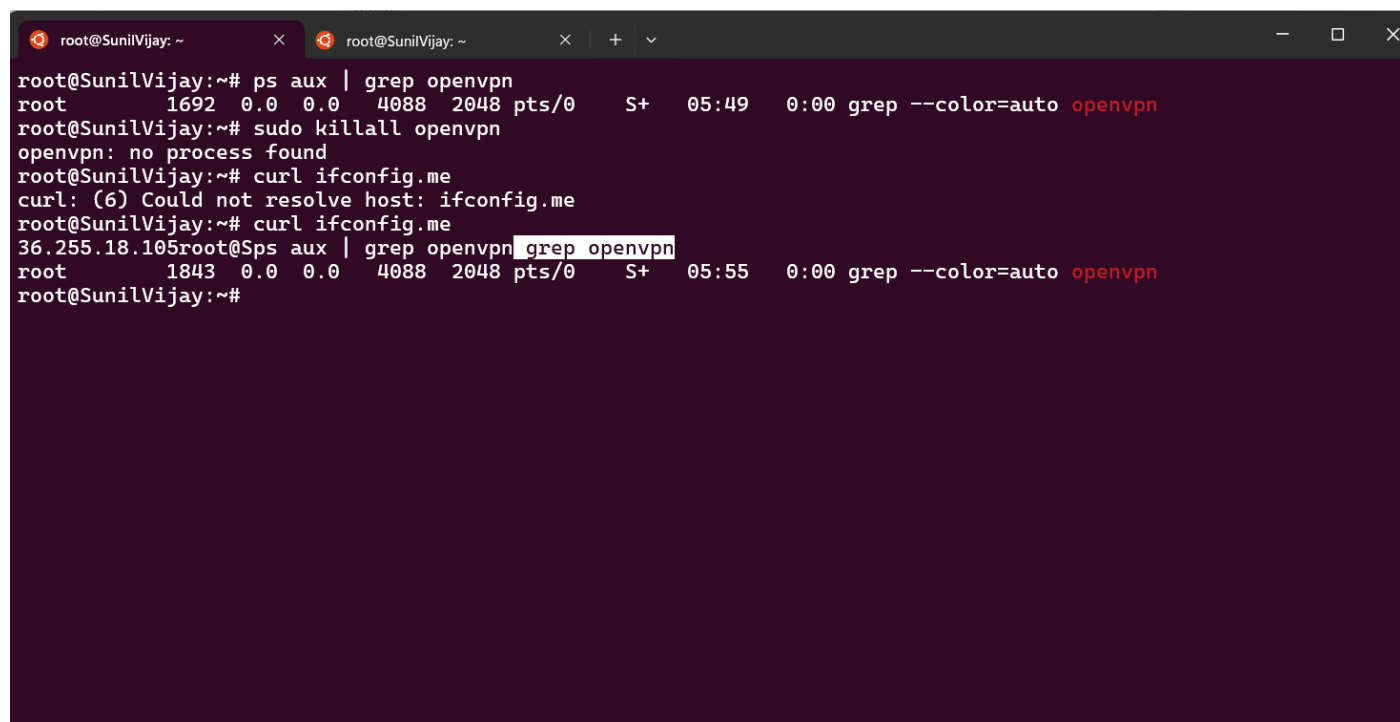
- Original IP (before connection): [36.255.18.105]
- New IP (after connection): [202.21.42.138]

## 5. Conclusion

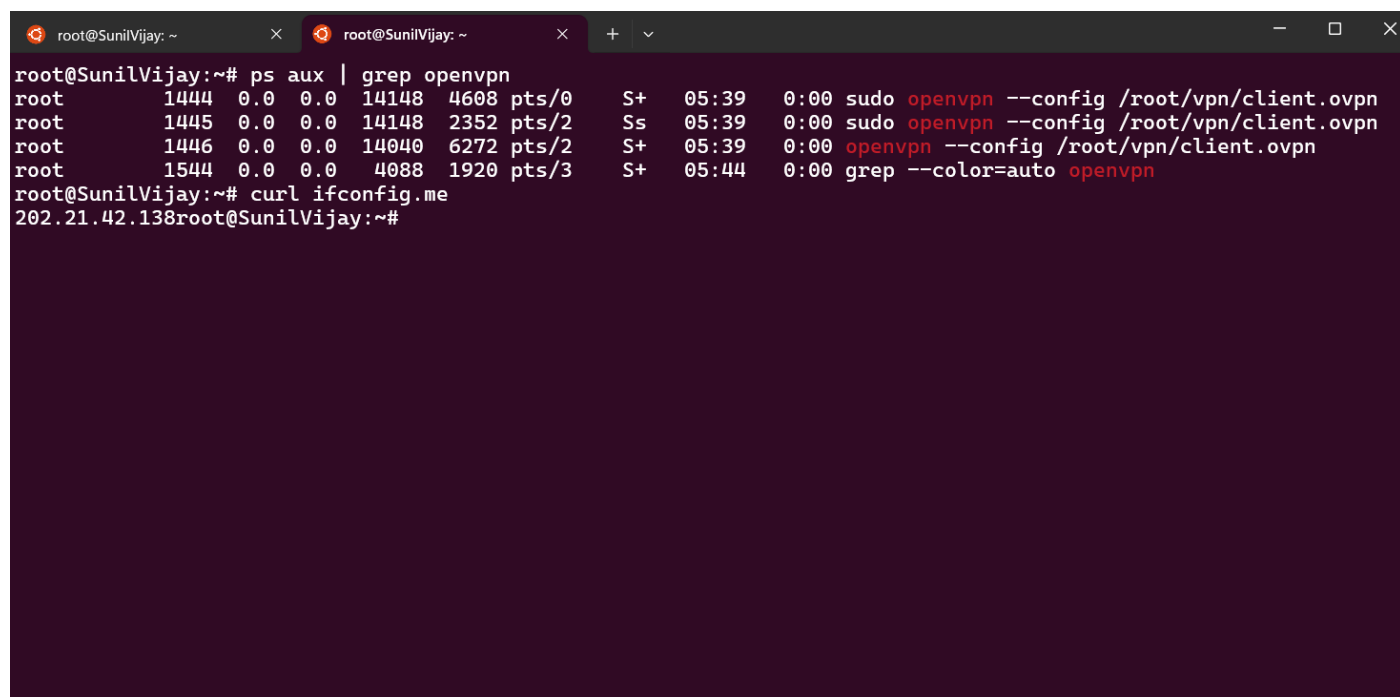
Using the provided OpenVPN configuration, I successfully connected to a VPN on my Linux system and verified that my IP address changed, indicating encrypted and private network communication.

## 6. Attachments

- configuration file
- Terminal outputs for IP before and after connection (Screenshots)



```
root@SunilVijay: ~  
root@SunilVijay:~# ps aux | grep openvpn  
root      1692  0.0  0.0   4088  2048 pts/0    S+   05:49   0:00 grep --color=auto openvpn  
root@SunilVijay:~# sudo killall openvpn  
openvpn: no process found  
root@SunilVijay:~# curl ifconfig.me  
curl: (6) Could not resolve host: ifconfig.me  
root@SunilVijay:~# curl ifconfig.me  
36.255.18.105root@SunilVijay:~# ps aux | grep openvpn  
root      1843  0.0  0.0   4088  2048 pts/0    S+   05:55   0:00 grep --color=auto openvpn  
root@SunilVijay:~#
```



```
root@SunilVijay: ~  
root@SunilVijay:~# ps aux | grep openvpn  
root      1444  0.0  0.0   14148  4608 pts/0    S+   05:39   0:00 sudo openvpn --config /root/vpn/client.ovpn  
root      1445  0.0  0.0   14148  2352 pts/2    Ss   05:39   0:00 sudo openvpn --config /root/vpn/client.ovpn  
root      1446  0.0  0.0   14040  6272 pts/2    S+   05:39   0:00 openvpn --config /root/vpn/client.ovpn  
root      1544  0.0  0.0   4088  1920 pts/3    S+   05:44   0:00 grep --color=auto openvpn  
root@SunilVijay:~# curl ifconfig.me  
202.21.42.138root@SunilVijay:~#
```