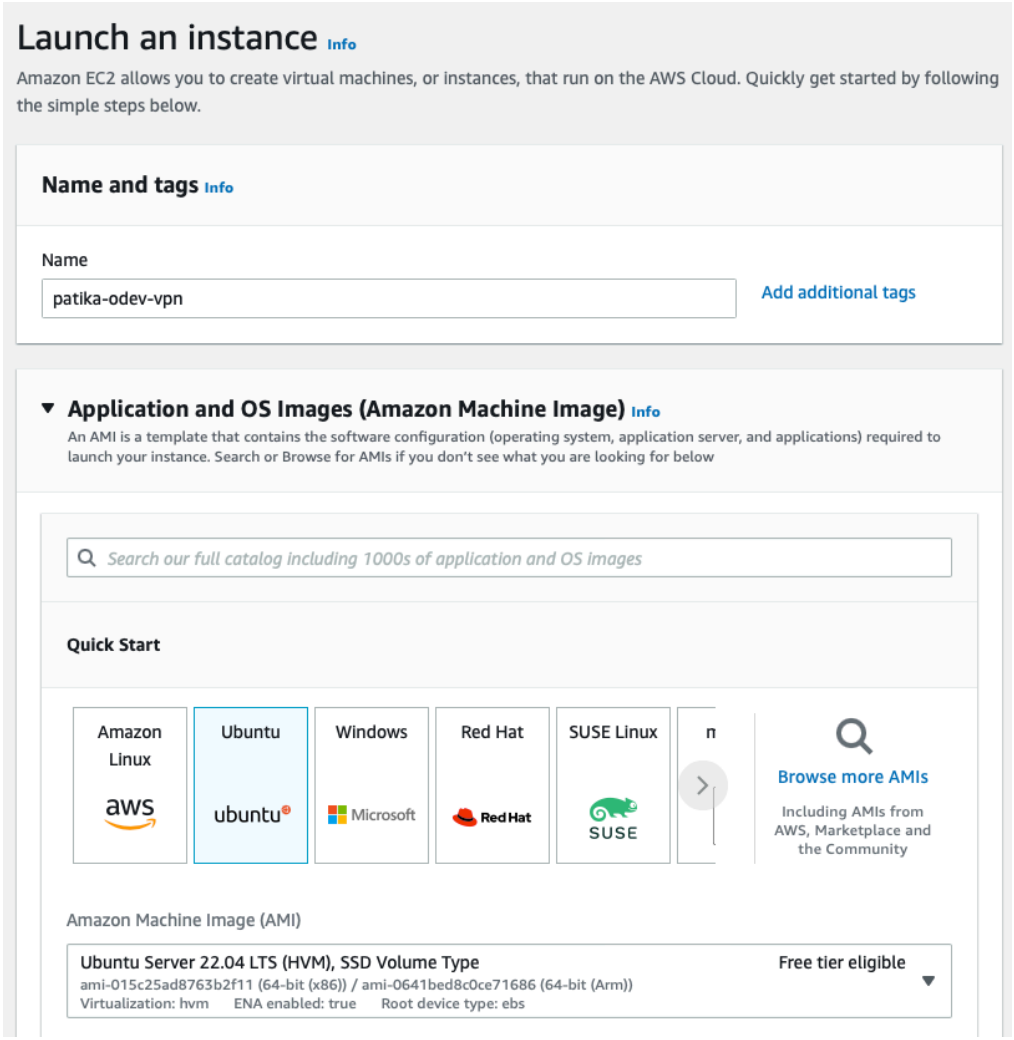
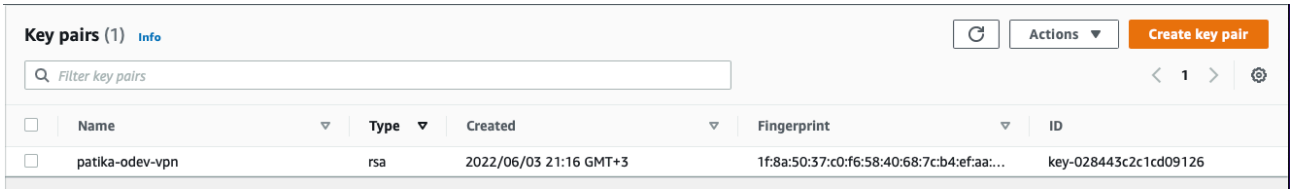
Week5-HW-2

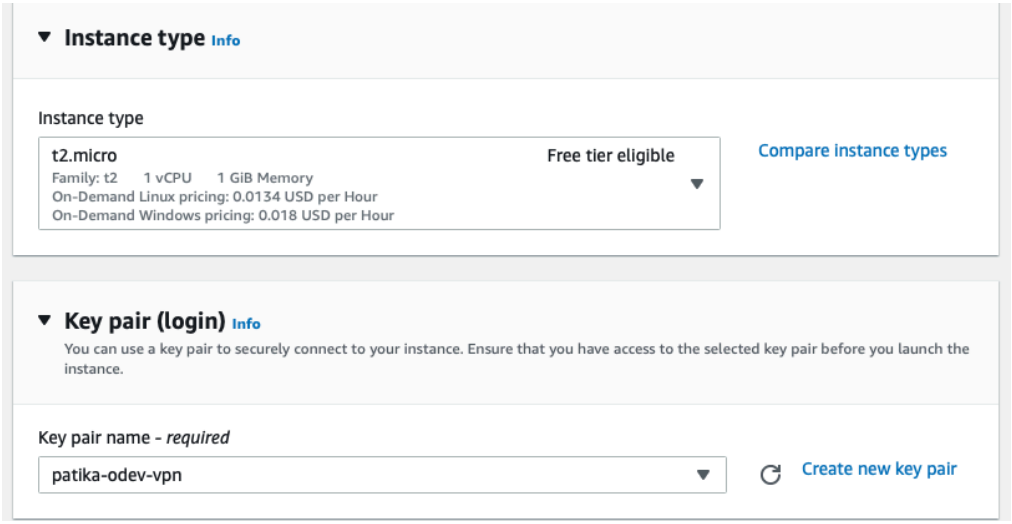
1. In EC2 instance page I launched ubuntu machine with below arrangements.



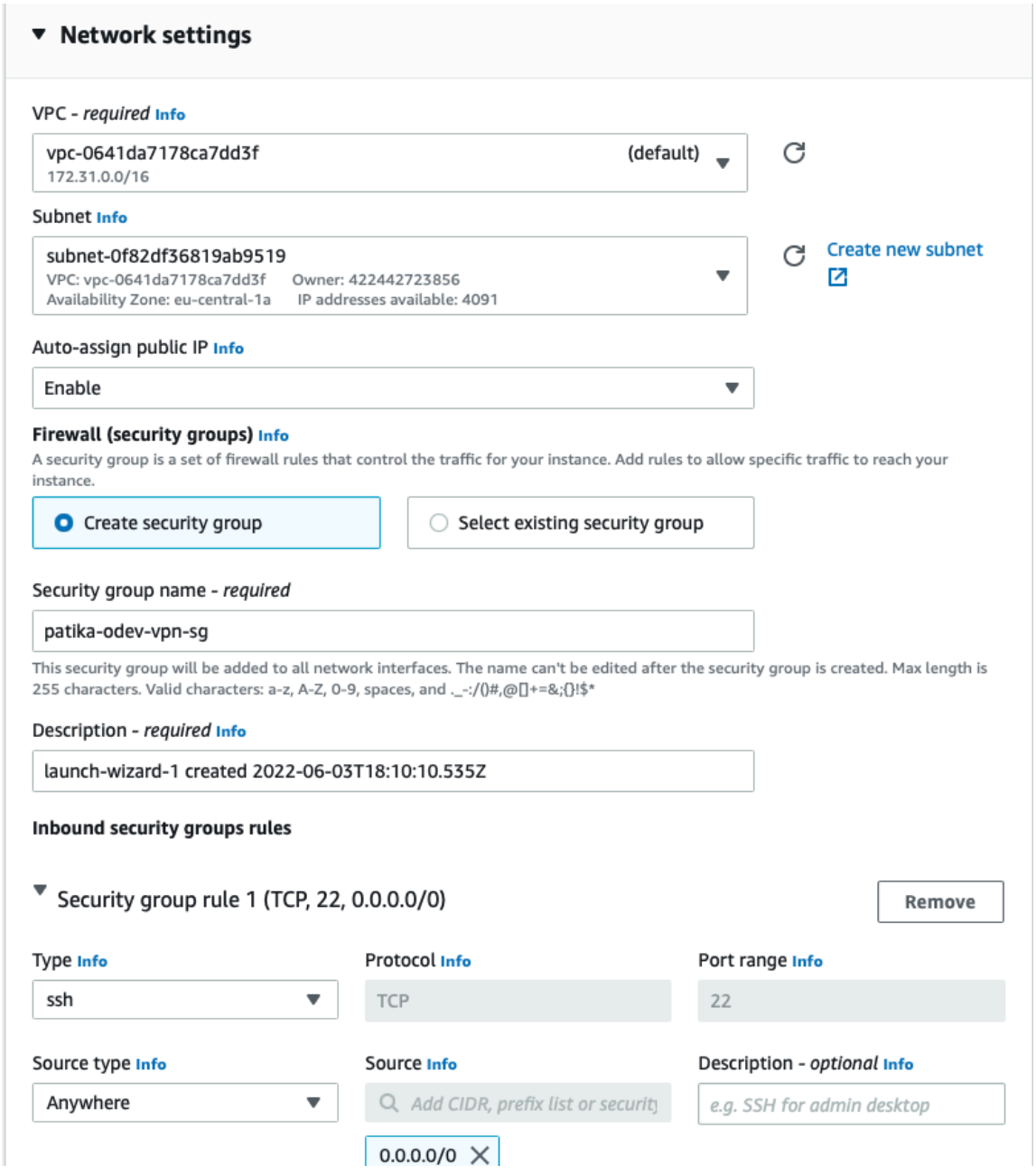
I created Key Pair which is named 'patika-odev-vpn' from Security Groups.



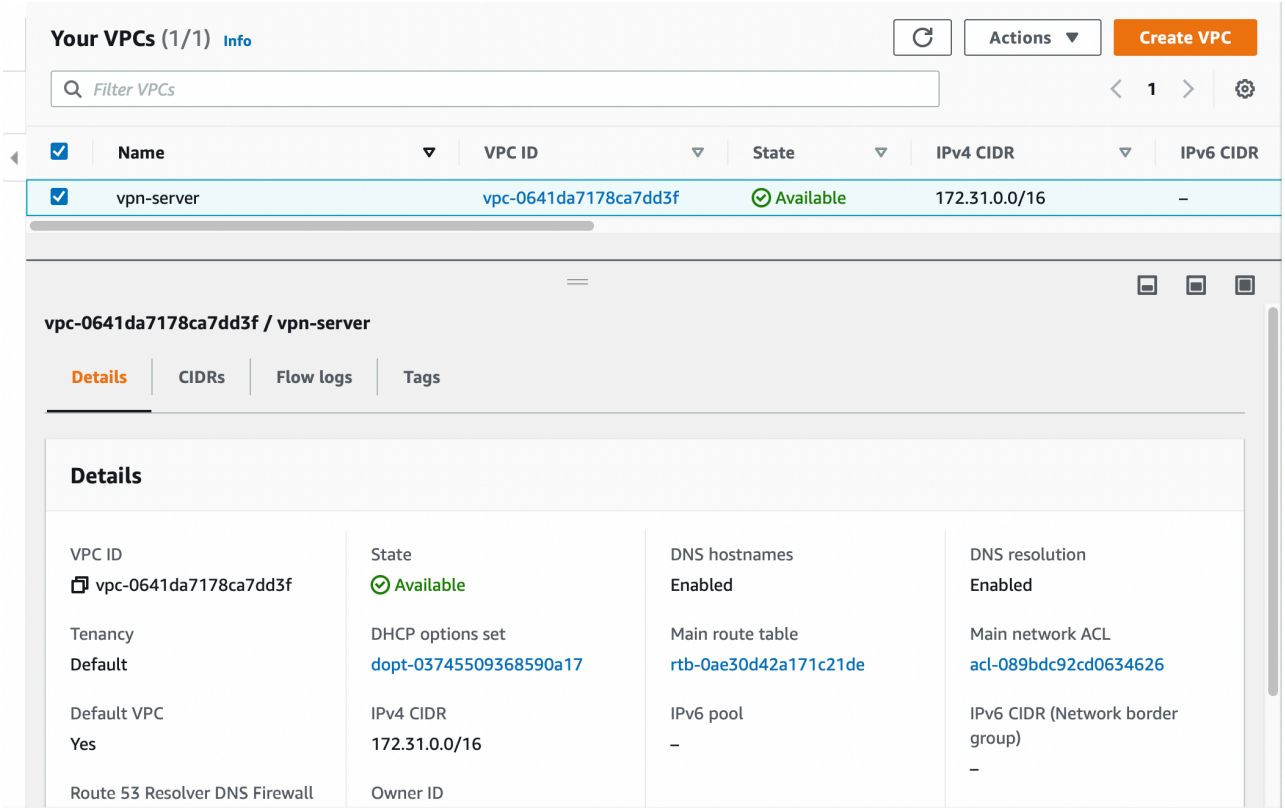
With this patika-odev-vpn the pem file is created and downloaded to host machine, and it is used for connection to EC2 instance.



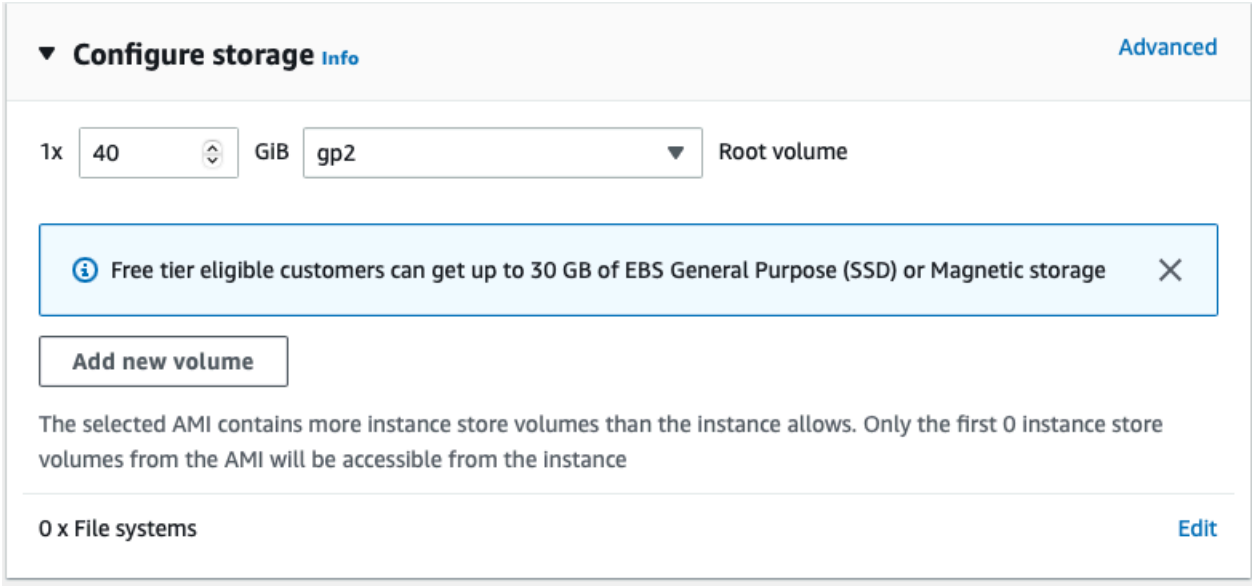
In first selection VPC create default VPC connection.



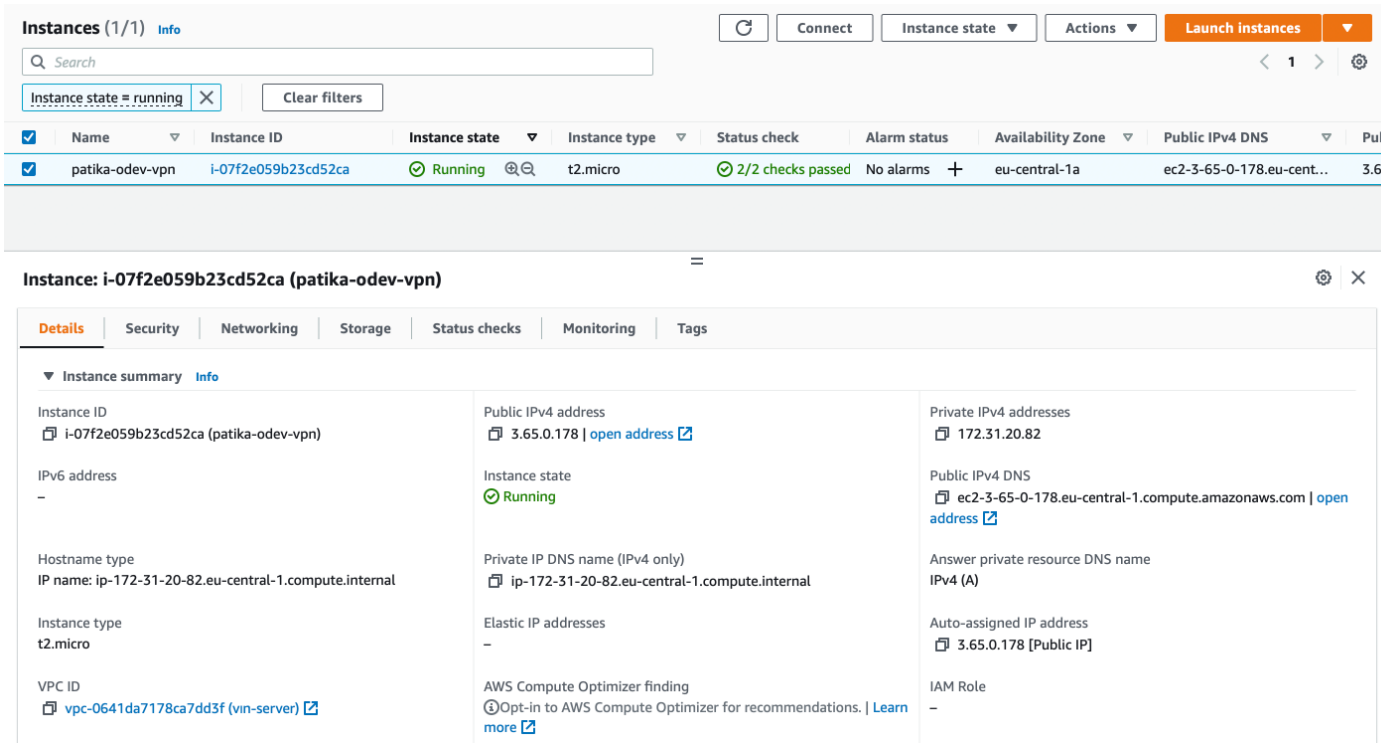
The created VPC connection which is named ‘vpn-server’.



Storage is selected as 40 GB.

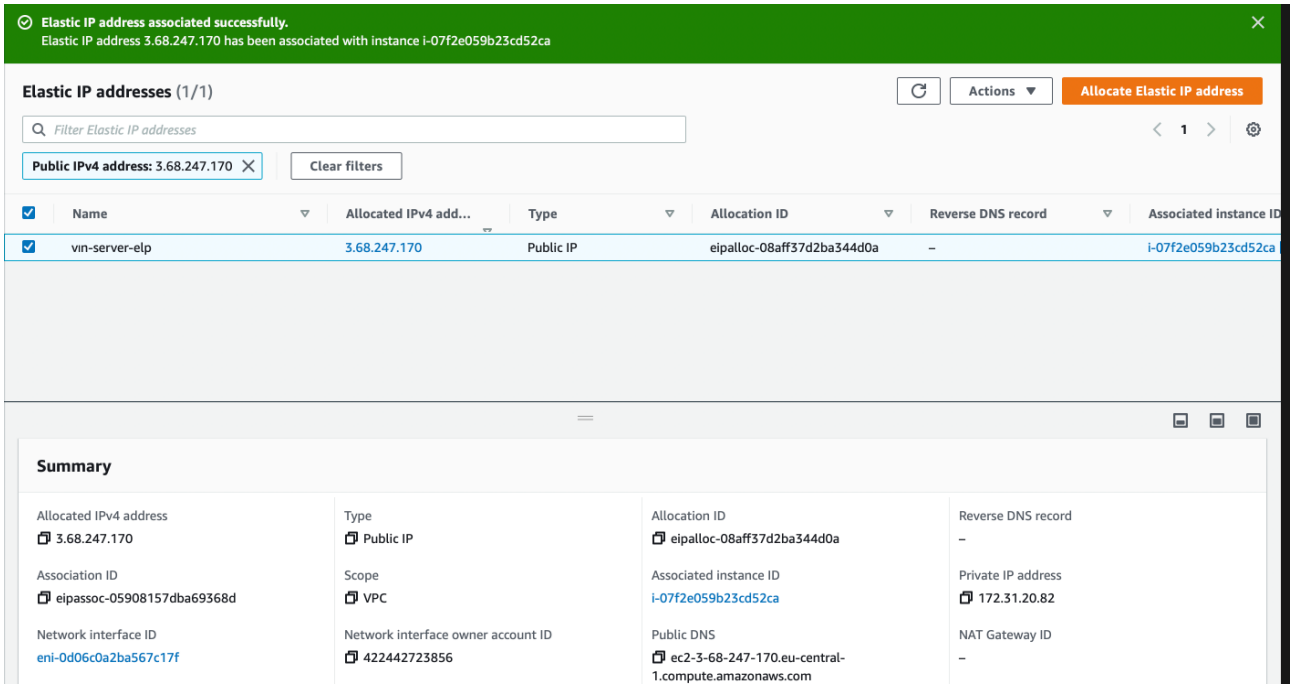


2. After configured the instance settings I launched the instance as below.

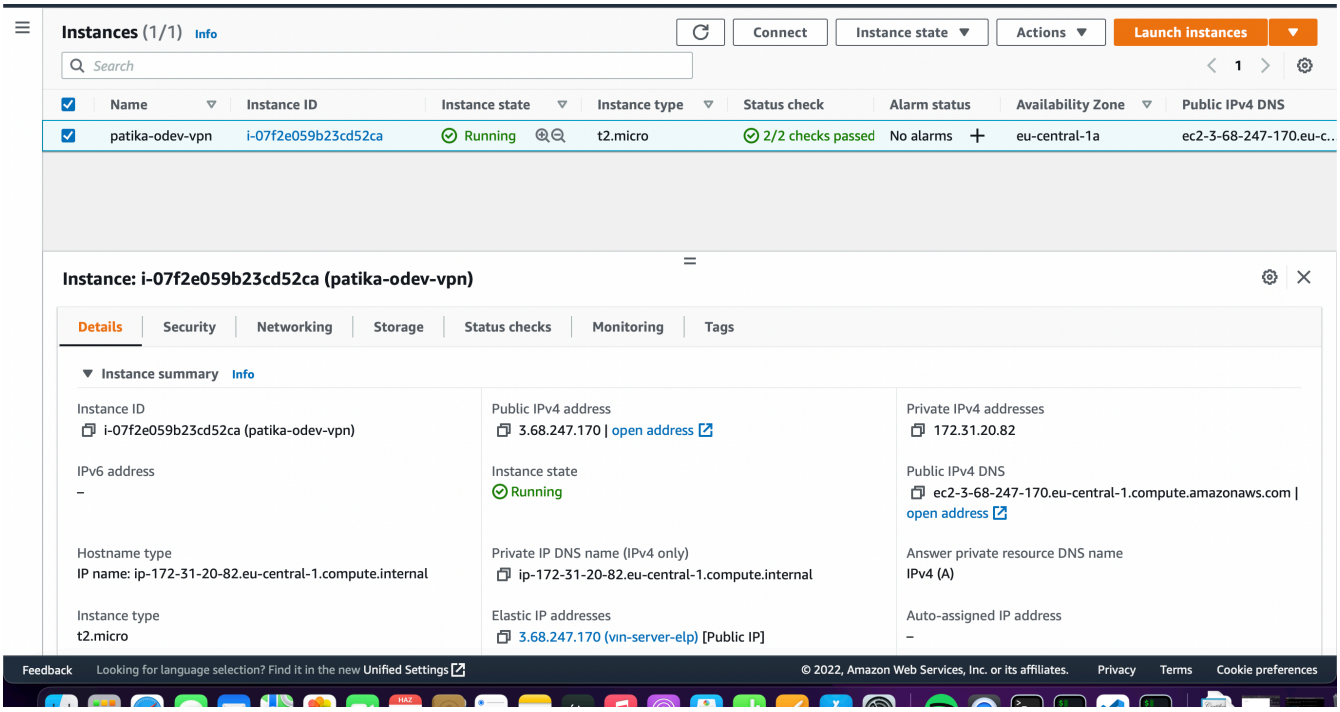


Public IPv4 Address :3.68.247.170
Private IPv4 Address :172.31.20.82

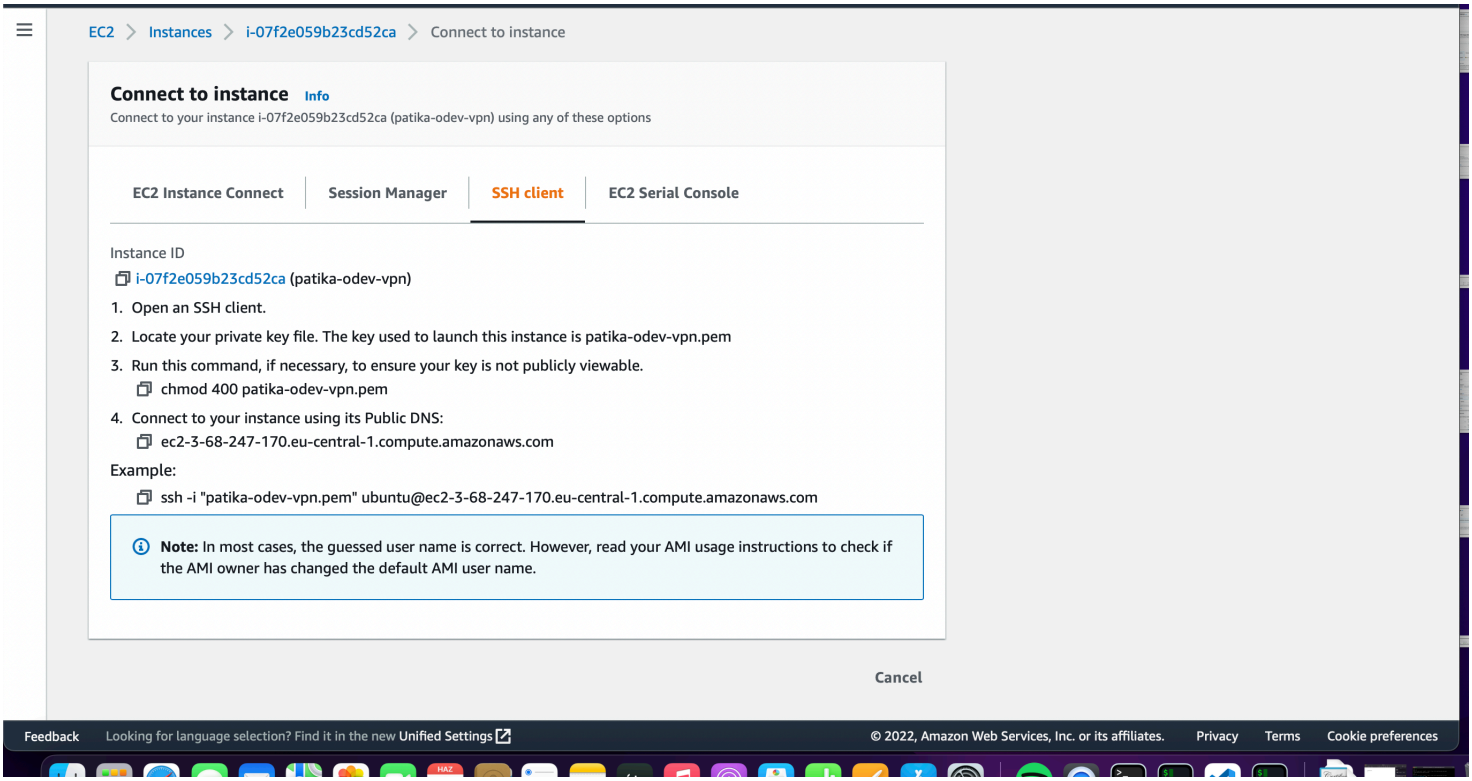
When we shutdown the machine we lost Public IPv4 Address. In order not to loose this ip address, we need to apply the Elastic IP address Allocation.



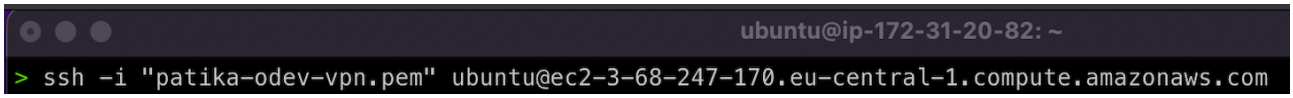
Final result of our instance is like below:

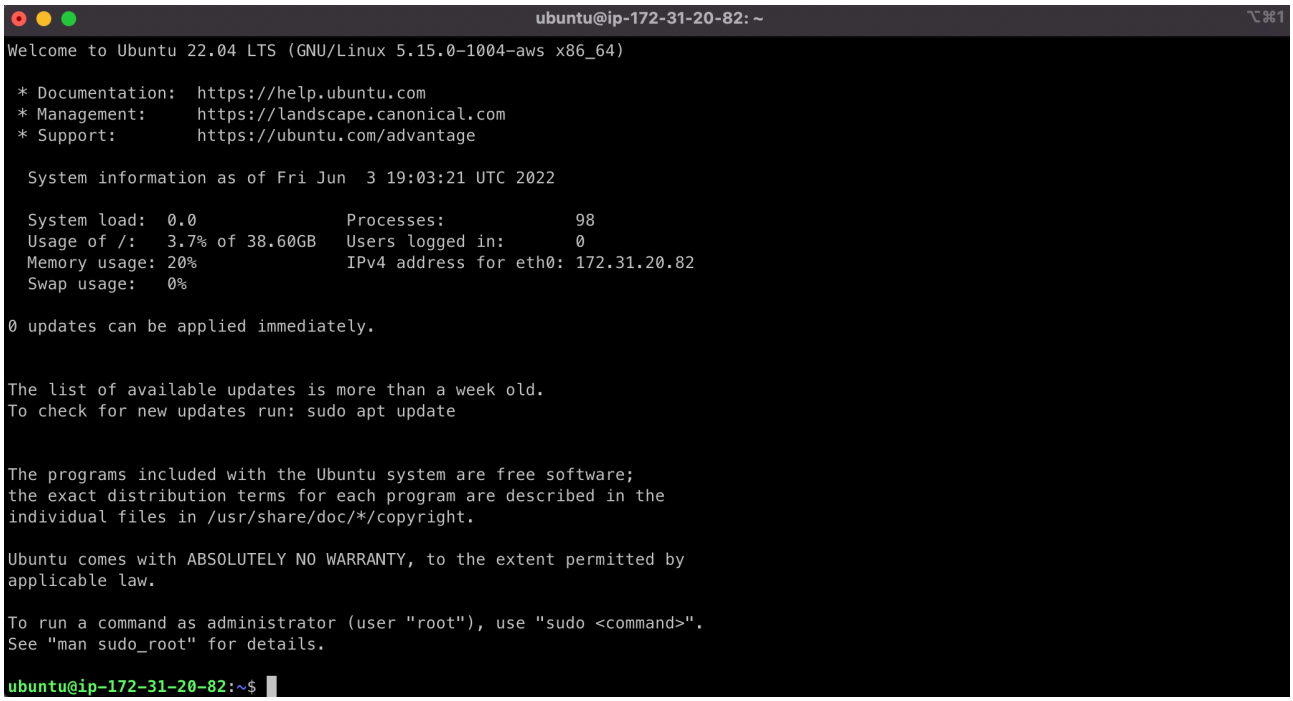


3. To connect with SSH client from host:
I changed the permission of the downloaded pem file .

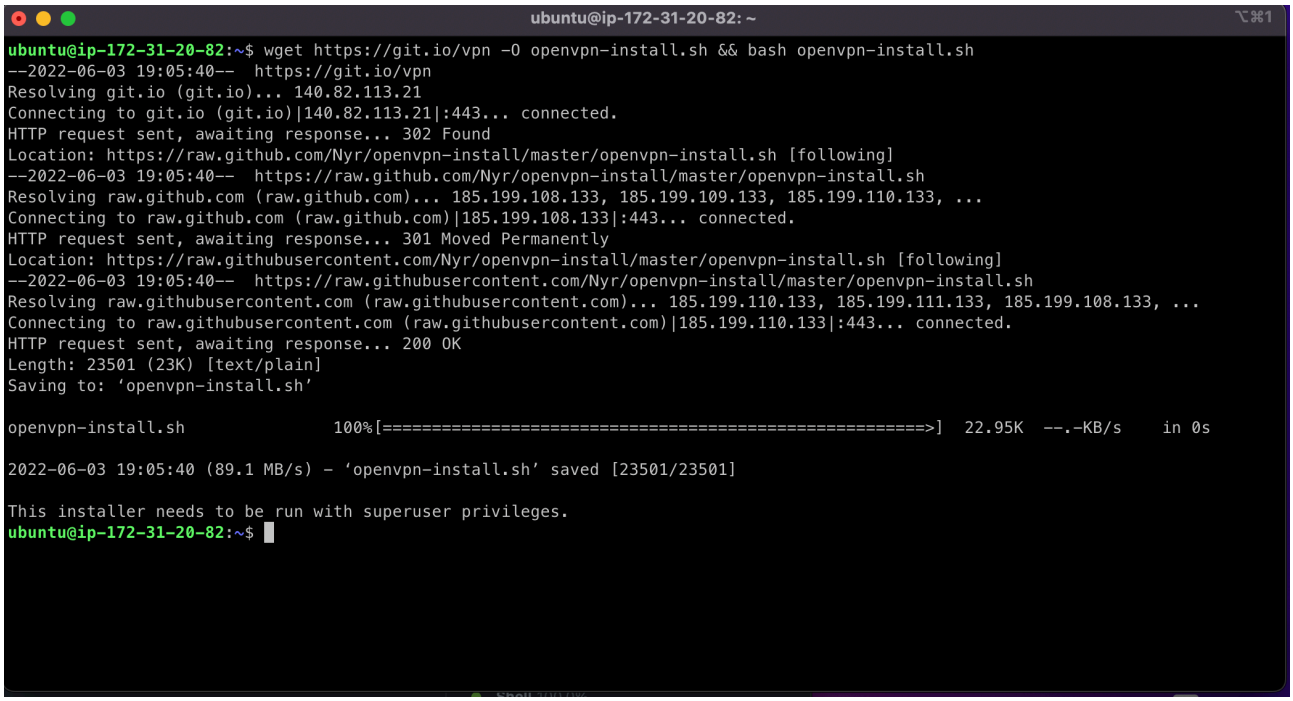


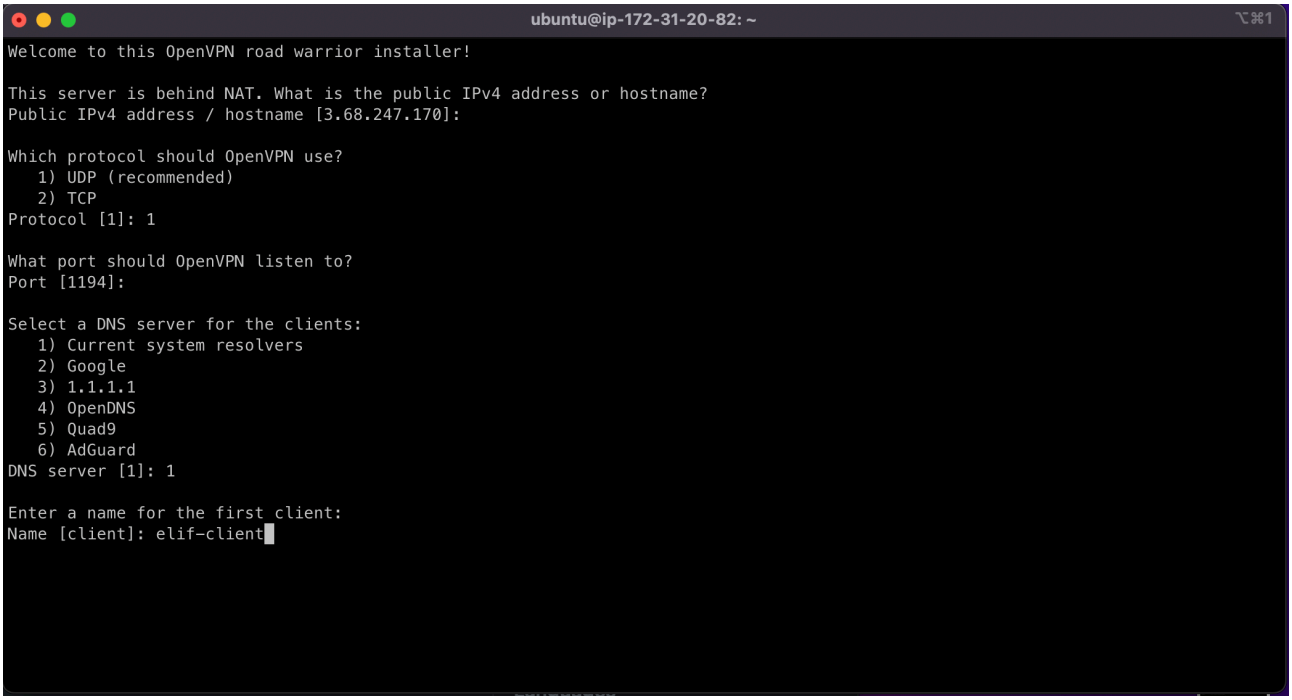
We connected the ubuntu machine with this command:

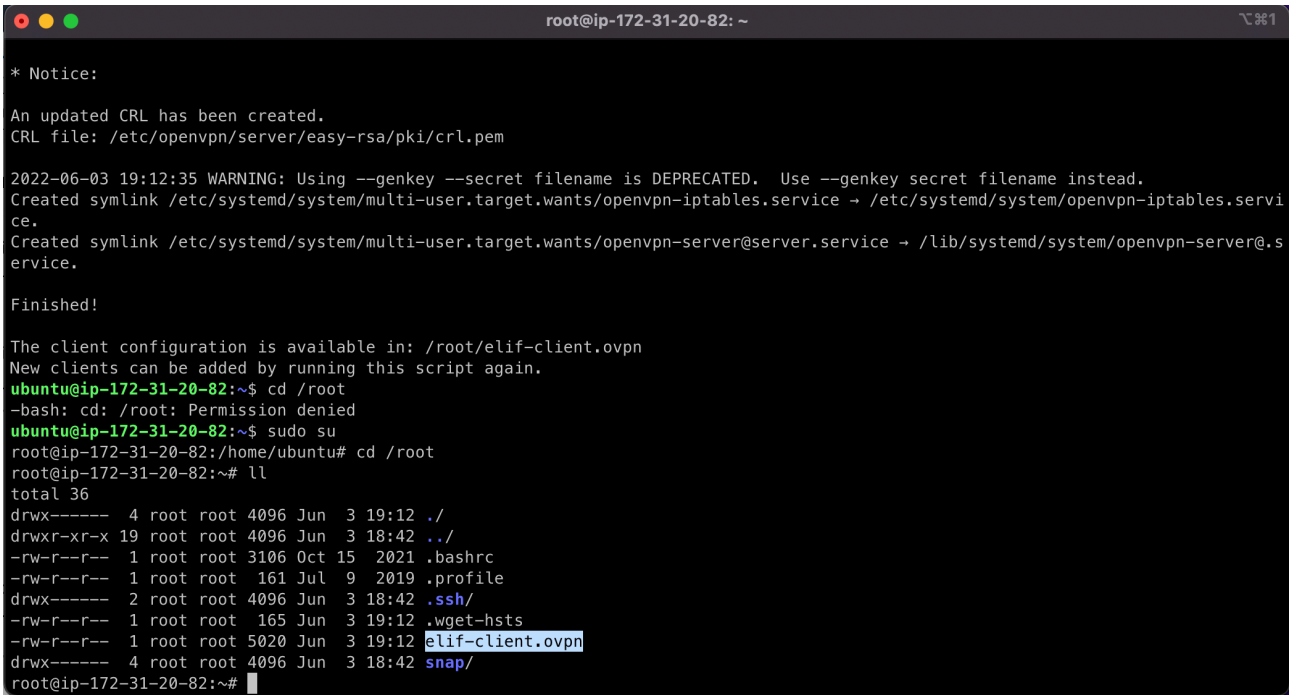




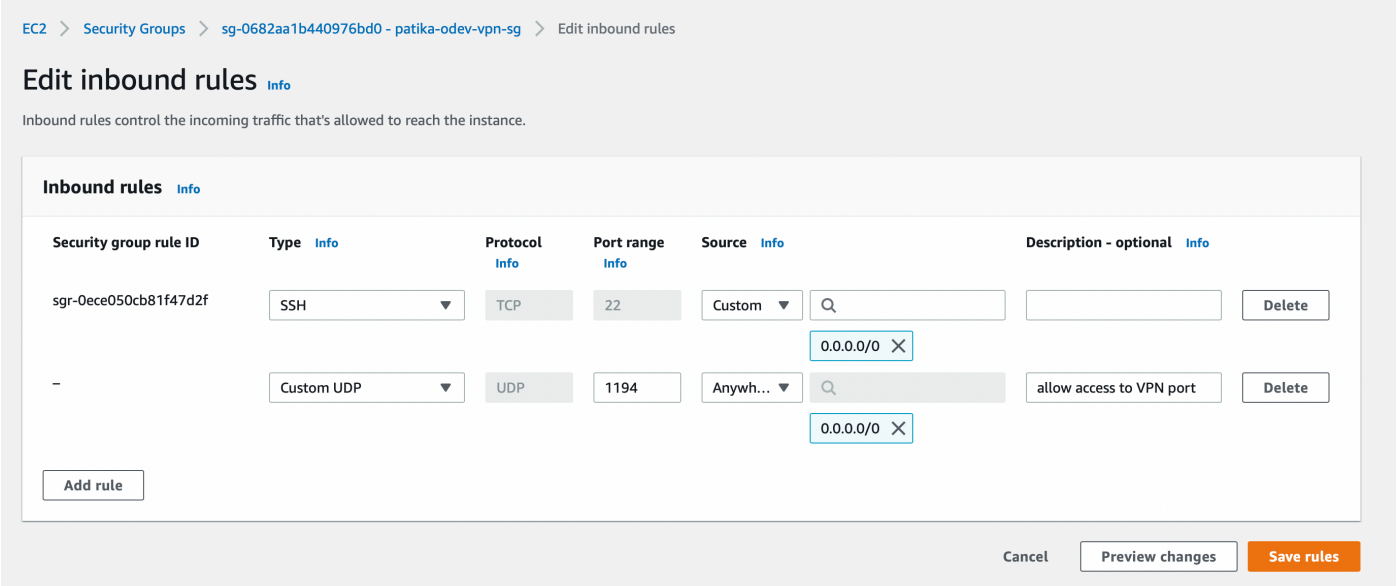
4. After connection is succeeded, in ubuntu machine I downloaded Open VPN Tool from GitHub.

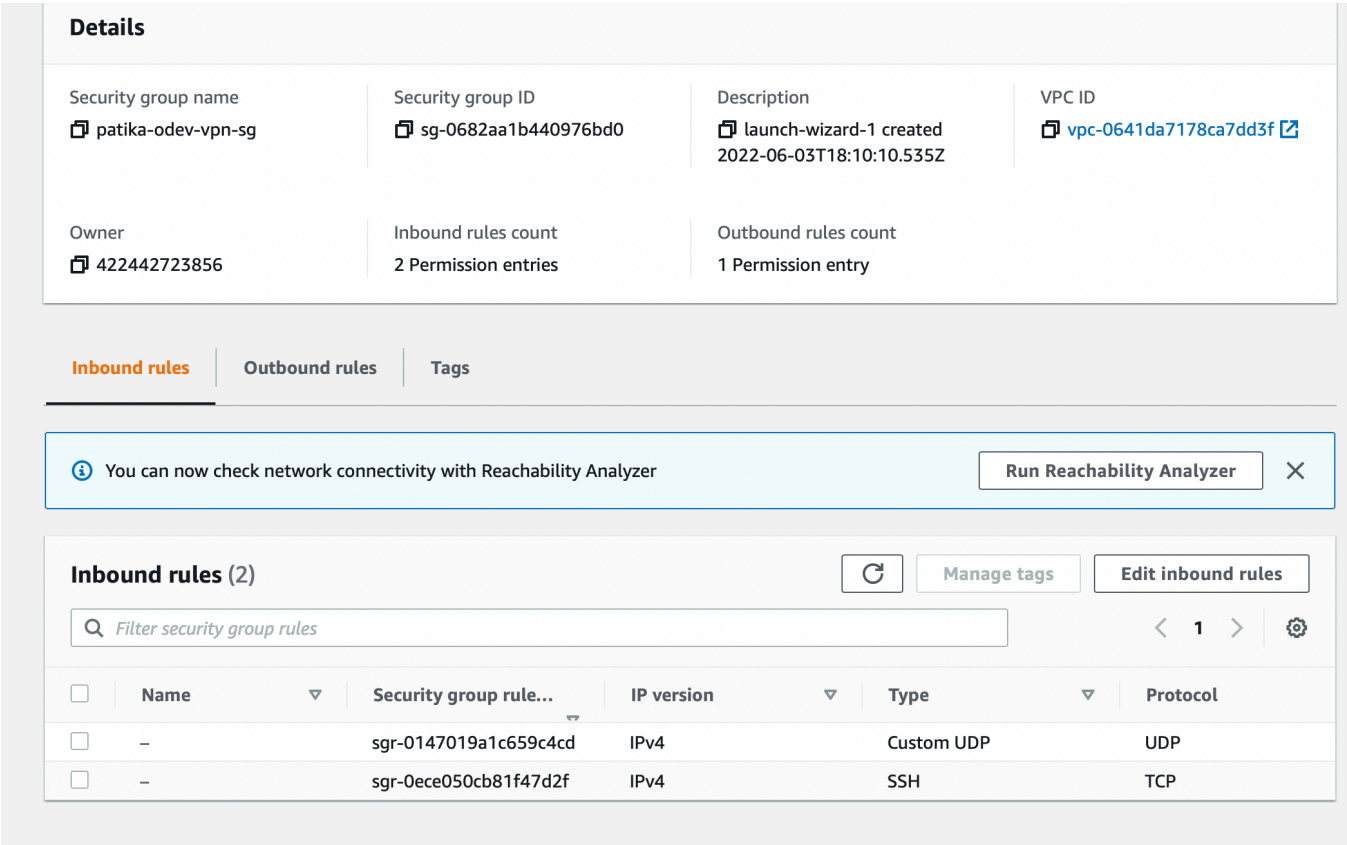



ubuntu@ip-172-31-20-82: ~
Welcome to this OpenVPN road warrior installer!
This server is behind NAT. What is the public IPv4 address or hostname?
Public IPv4 address / hostname [3.68.247.170]:
Which protocol should OpenVPN use?
1) UDP (recommended)
2) TCP
Protocol [1]: 1
What port should OpenVPN listen to?
Port [1194]:
Select a DNS server for the clients:
1) Current system resolvers
2) Google
3) 1.1.1.1
4) OpenDNS
5) Quad9
6) AdGuard
DNS server [1]: 1
Enter a name for the first client:
Name [client]: elif-client


root@ip-172-31-20-82: ~
* Notice:
An updated CRL has been created.
CRL file: /etc/openvpn/server/easy-rsa/pki/crl.pem
2022-06-03 19:12:35 WARNING: Using --genkey --secret filename is DEPRECATED. Use --genkey secret filename instead.
Created symlink /etc/systemd/system/multi-user.target.wants/openvpn-iptables.service → /etc/systemd/system/openvpn-iptables.service.
Created symlink /etc/systemd/system/multi-user.target.wants/openvpn-server@server.service → /lib/systemd/system/openvpn-server@.service.
Finished!
The client configuration is available in: /root/elif-client.ovpn
New clients can be added by running this script again.
ubuntu@ip-172-31-20-82:~$ cd /root
-bash: cd: /root: Permission denied
ubuntu@ip-172-31-20-82:~$ sudo su
root@ip-172-31-20-82:/home/ubuntu# cd /root
root@ip-172-31-20-82:~# ll
total 36
drwx------ 4 root root 4096 Jun 3 19:12 ./
drwxr-xr-x 19 root root 4096 Jun 3 18:42 ../
-rw-r--r-- 1 root root 3106 Oct 15 2021 .bashrc
-rw-r--r-- 1 root root 161 Jul 9 2019 .profile
drwx------ 2 root root 4096 Jun 3 18:42 .ssh/
-rw-r--r-- 1 root root 165 Jun 3 19:12 .wget-hsts
-rw-r--r-- 1 root root 5020 Jun 3 19:12 elif-client.ovpn
drwx------ 4 root root 4096 Jun 3 18:42 snap/
root@ip-172-31-20-82:~#

The VPN client makes a connection with 1194 UDP port and we should edit inbound rules for EC2 instance.

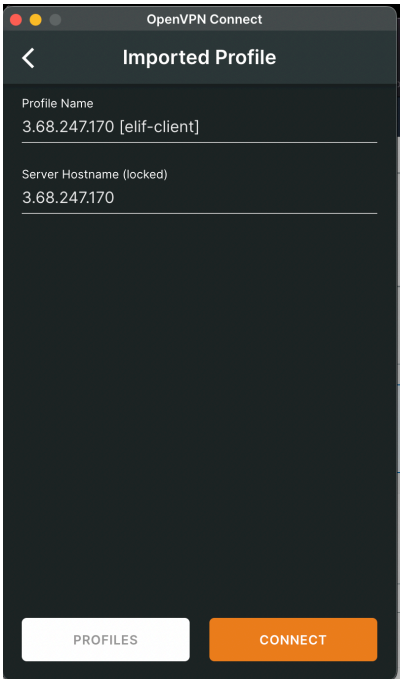


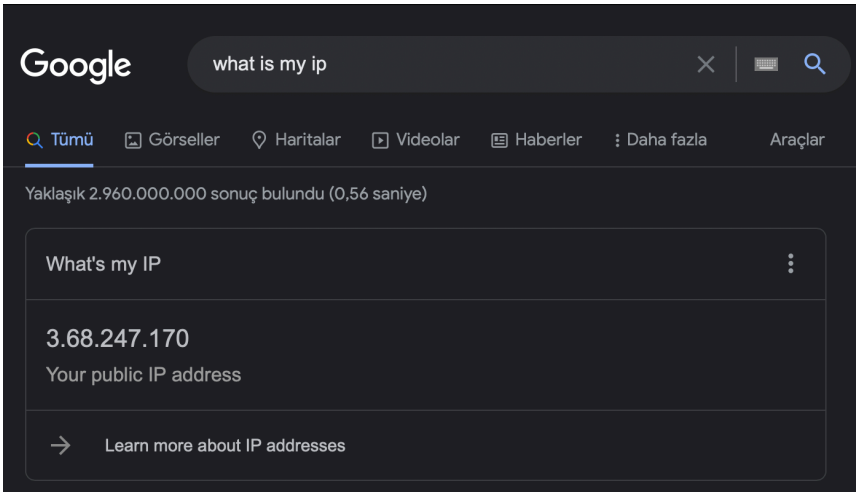


The ‘elif-client.ovpn’ file is in ubuntu machine and I moved it to host machine with scp connection:

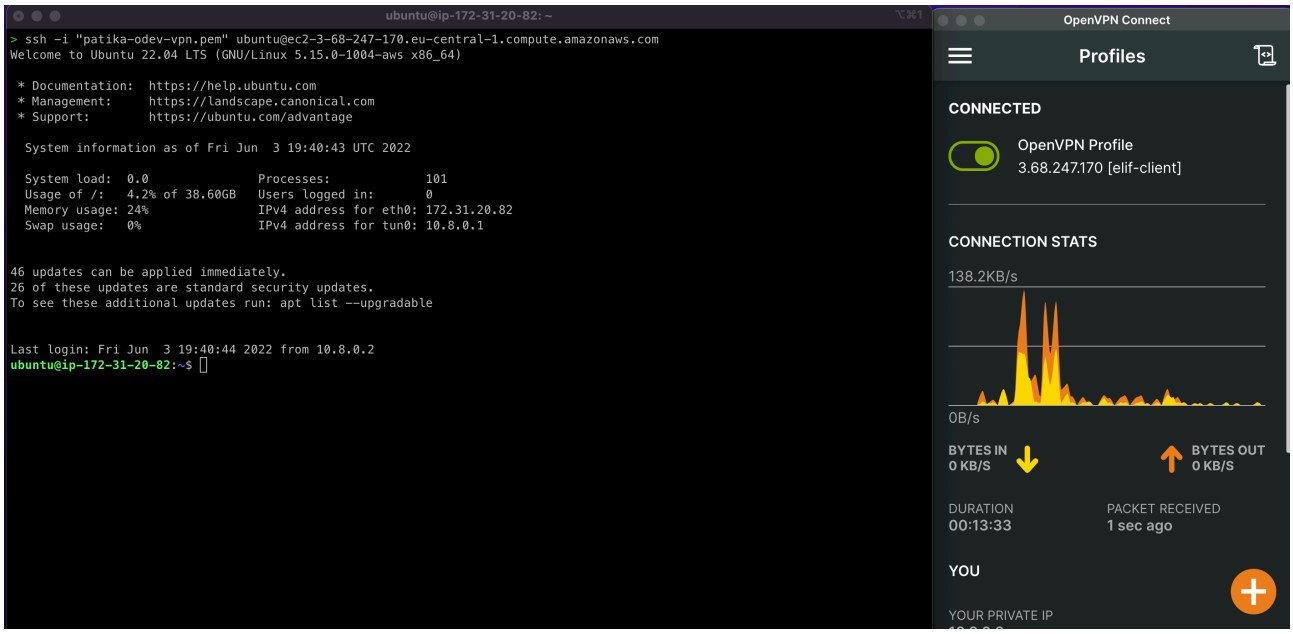
```
> scp -i "patika-odev-vpn.pem" ubuntu@ec2-3-68-247-170.eu-central-1.compute.amazonaws.com:/home/ubuntu/elif-client.o
vpn .
elif-client.ovpn                                                    100% 5020    79.7KB/s   00:00
> ll
total 24
-rw-r--r--  1 elif  staff   4,9K  3 Haz 22:18 elif-client.ovpn
-r--------@ 1 elif  staff   1,6K  3 Haz 21:19 patika-odev-vpn.pem
~/Desktop/aws/personal >
```

I downloaded OpenVPN Connect in host machine and drop the elif-client.ovpn file for VPN connection.





While VPN connection is open, to connect the ubuntu instance form host:



Ubuntu machine connected with Private IP address which is mean local connection because we are in VPN connection.