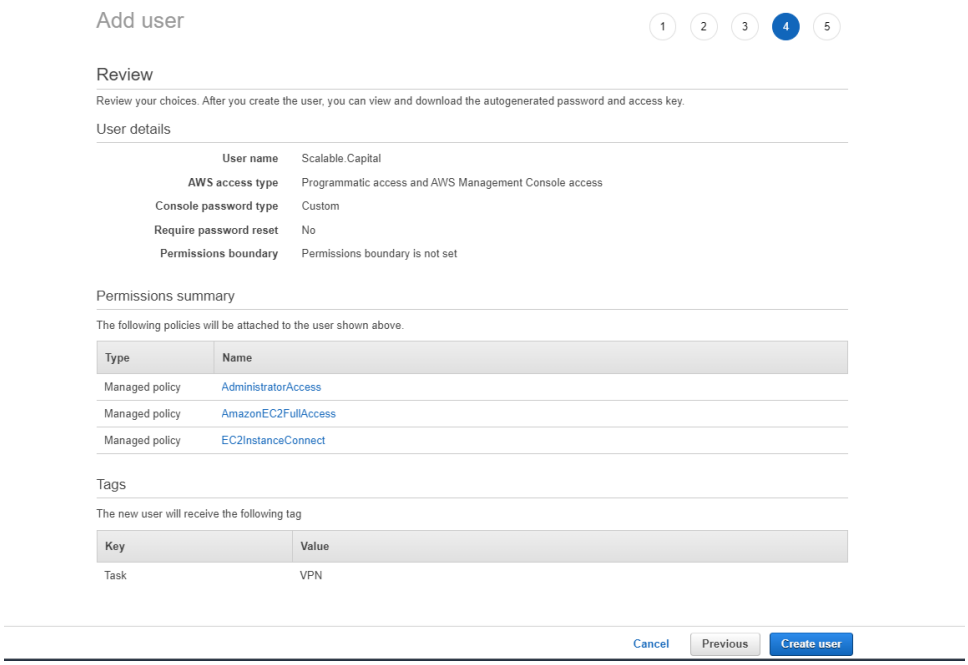
OpenVPN Server via AWS

The following steps below are documented as part of the Task for Scalable Capital, the aim of the steps below is to setup a VPN server via AWS Ec2 which has openvpn installed (the used OS for the ec2 instance is Ubuntu 20.04). And the testing/connection is via windows client openvpn. For other OS such as Macos , Tunnelblick can be used. But for this demo openvpn windows client is installed.

The github repo which contains the clients .ovpn files and the screenshots is here: https://github.com/helwazery/VPN-Server-via-AWS

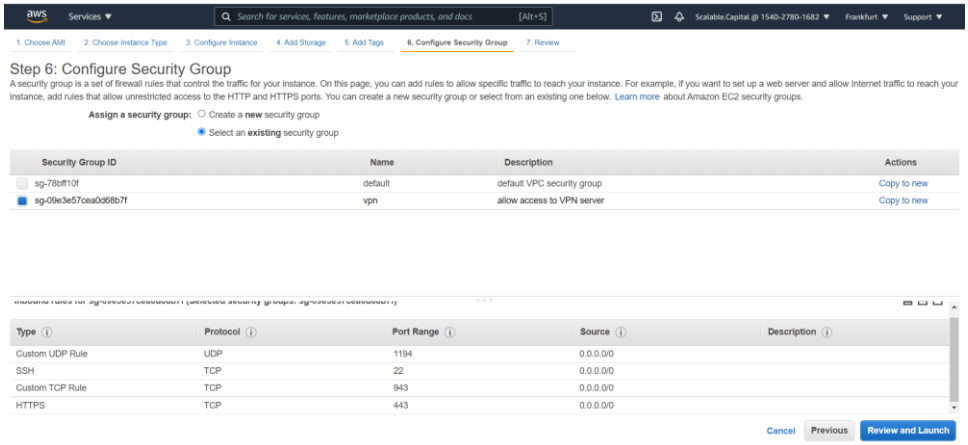
Step-1: **Creating IAM user : Scalable Capital**

As shown in the screenshot below , a IAM user is needed with the correct permissions to Ec2 for accomplishing this task, usually using the root account is limited to the billing and the administrative tasks. In this case the user name is : Scalable Capital and the permissions are summarized in the screenshot below.



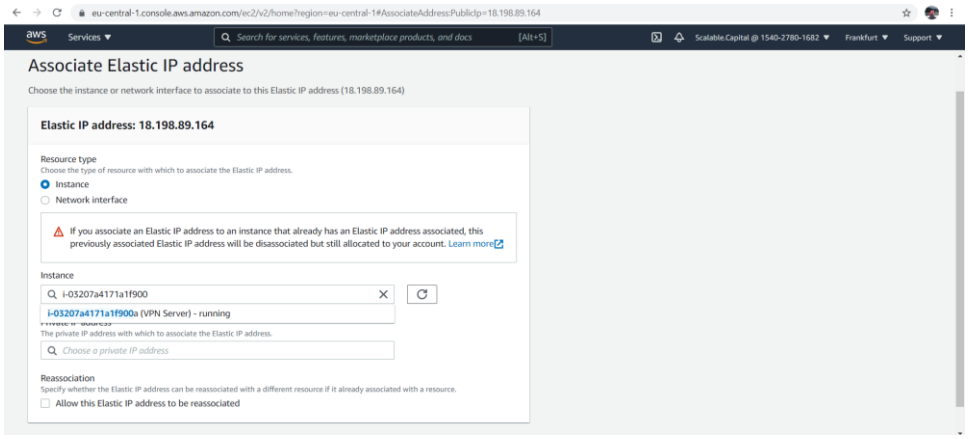
Step-2: **Creating Ec2 Security Group: VPN**

As shown in the screenshot below, this step is necessary for allowing the traffic to the Ec2 instance where the VPN server exists. Without allowing these rules the network traffic from the client to the Ec2 instance is prohibited and not possible, According to the requirements of openvpn the ports shown below are needed.



Step-3: **Associating ELP for Ec2 instance: VPN**

As shown in the screenshot below, and as discussued above. A new Ec2 instance is needed with any opensource OS, for this task Ubuntu 20.04 free tier is used. And to have a fixed IP address (static IP address) , Elastic Ip address service is used by simply creating a new IP and associating it to this Ec2 instance to gurantee having the public IP fixed for all clients, for further information the screenshot is shown below.



Step-4: Installing/ Configuring **OpenVPN for Ec2 instance: VPN**

First of all, the system was updated via the following commands :

sudo apt update
sudo apt upgrade

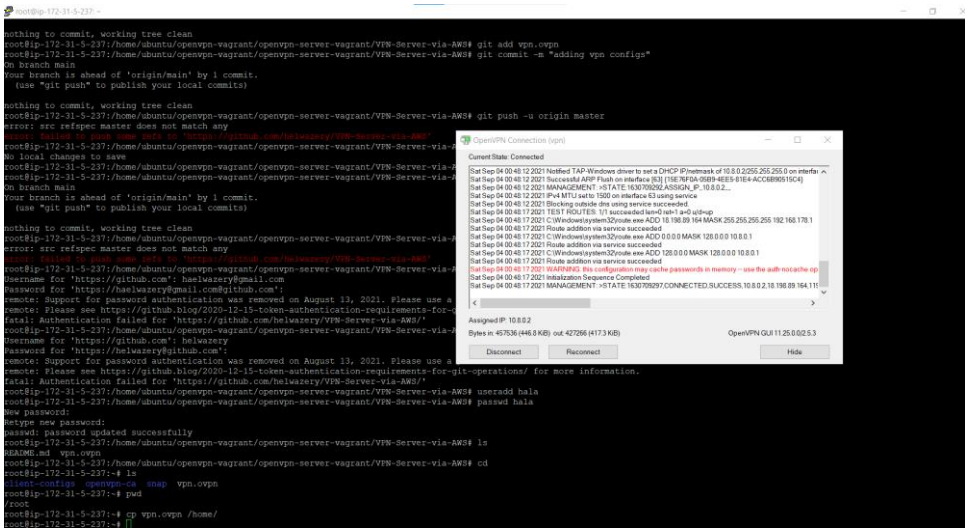
Then for setting this Ec2 instance as a VPN server openvpn was installed, there are many ways to do so, the most efficient way was found is via the mentioned repository, the command is :

wget https://git.io/vpn -O openvpn-ubuntu-install.sh

It provides a very smart script for installing and configuring openvpn, and for sure the public ip of the ec2 instance VPN was used (which is the same as the elastic ip) , the first username

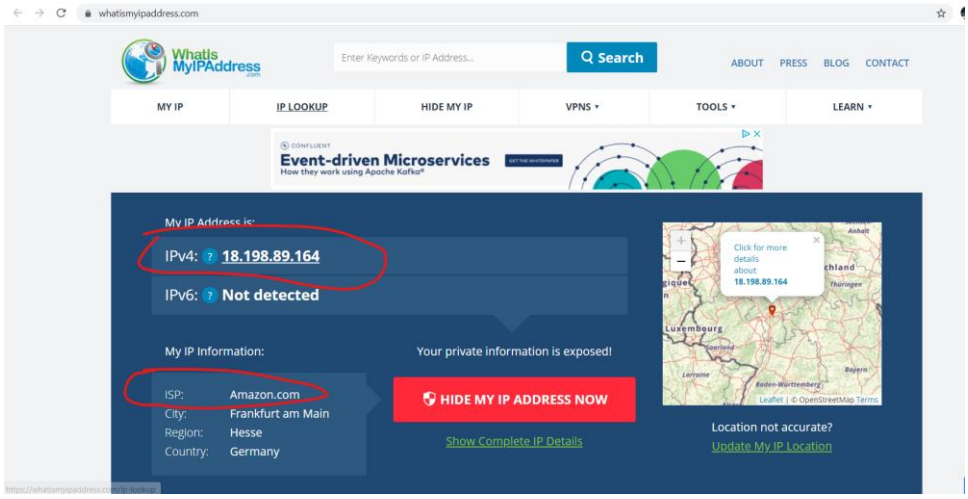
would be vpn (this is very important step as it creates a .ovpn file with the same username given) and the port is 1194. for checking the status of the service this command was used :
sudo systemctl status openvpn-server@server.service

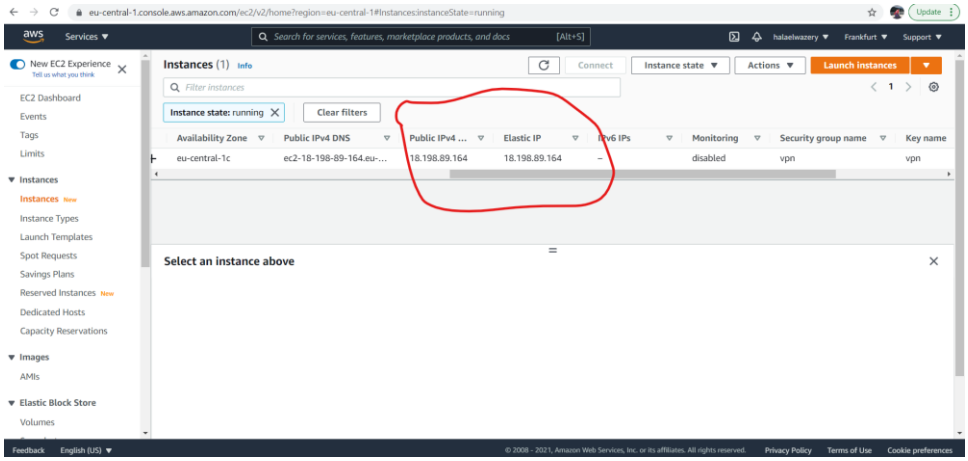
once this file vpn.ovpn is created openvpn as a client on the windows machine was installed and the file was imported to the client , pressed connected. The screenshot is shown below.



Step-5: Testing Windows client connection to vpn server

To ensure the connectivity is working as expected and the windows client programm (in this case it is openvon windows client)is connected to the VPN server on ec2 instance. this website : whatismyipaddress.com is used and ensured that this is connected with the same IP address as ec2 instance. For further details the screenshots are shown below.





Step-6: Adding a new user/client to vpn server ec2 instance: VPN

To add a new client and get a new .ovpn file , this command was used :
sudo ./openvpn-ubuntu-install.sh

Once executed it shows that the openvpn is already installed and shows the option to add a new user which is needed for this step. Once a new user is added a new file with the client/username.ovpn is created and can be exported via winscp or any other file transfer programms , once the file is imported for the windows client the connection can be established., for further information the screenshot is shown below.