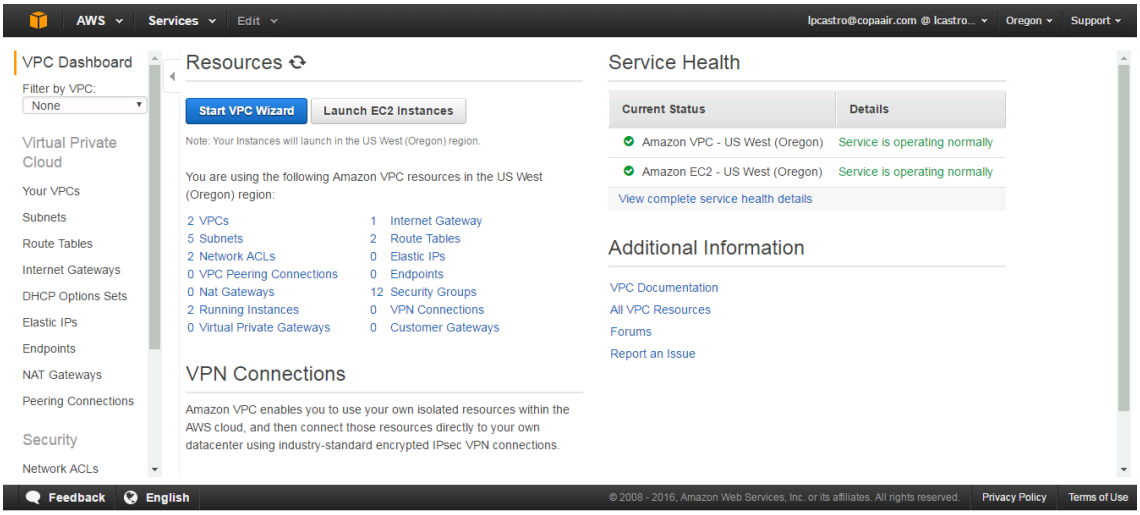
Step 1

Access the AWS console through the following link:

https://450006219561.signin.aws.amazon.com/console

Step 2

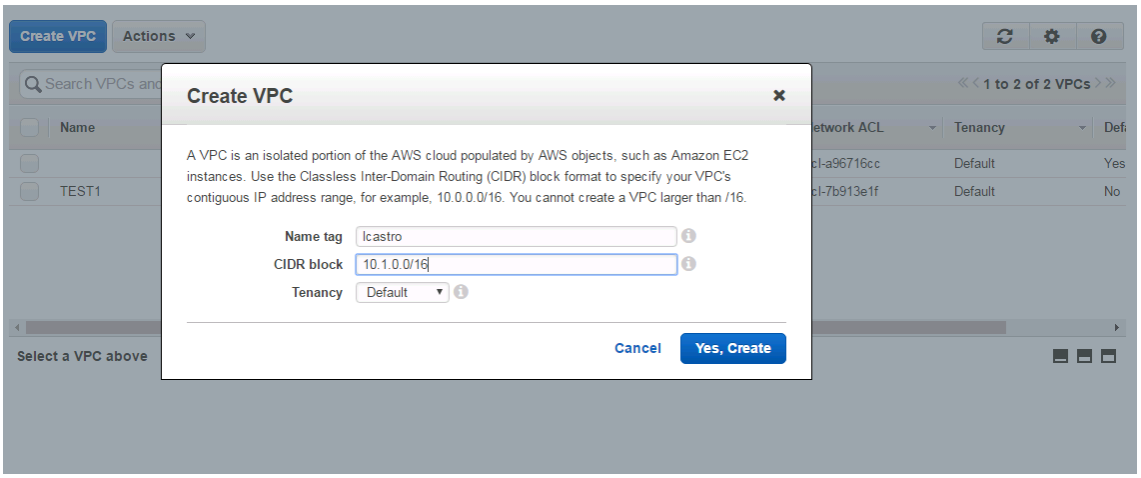
Access the VPC service

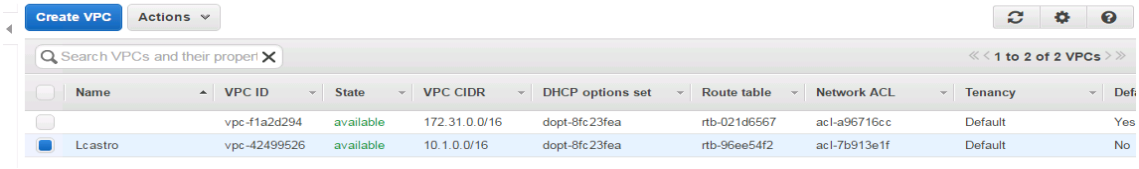


Step 3

Click on **Your VPCs & Create VPC**

1. **Name Tag:**
    a. Username
2. **CIDR block:**
    a. According Excel File, ex:
        i. 10.1.0.0/16
3. **Tenancy:**
    a. Default





Step 4

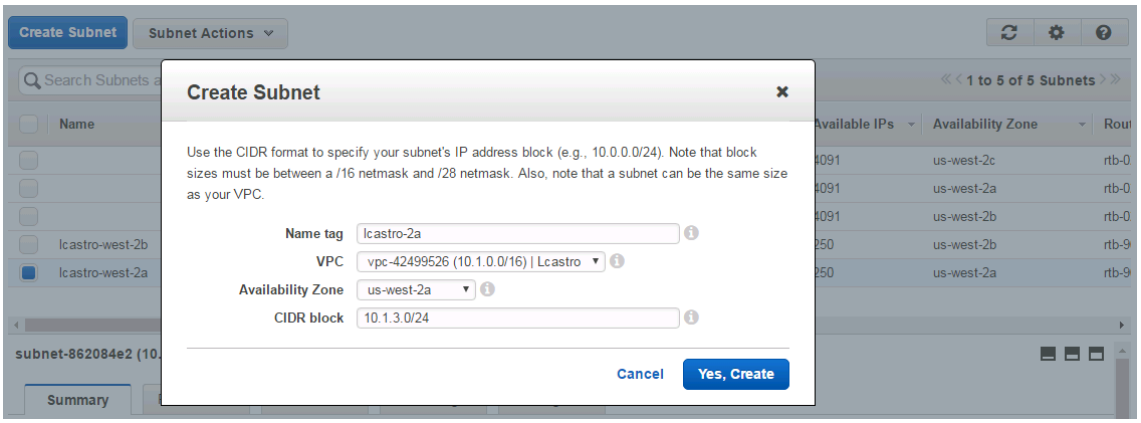
Make click en **Subnets** & **Create Subnet**

Create two subnets:

- **10.X.1.0/24**
- **10.X.2.0/24**

The "X" corresponds to the associated CIDR according to Excel

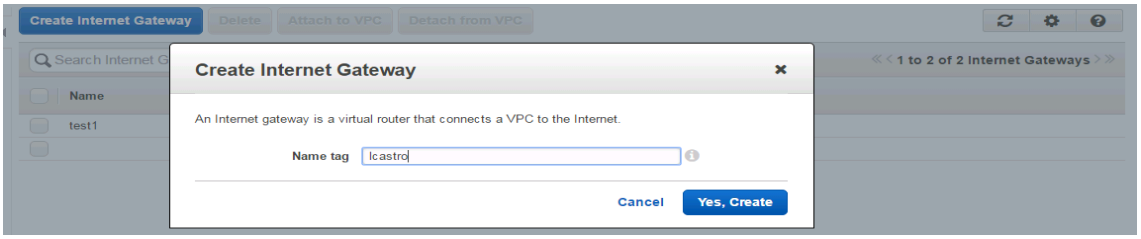
1. **Name tag:**
    a. Lcastro-1a (Primer Availability Zone)
    b. Lcastro-1b
2. **VPC**
    a. VPC with your username
3. **Availability Zone**
    a. Example: Us-west 2a
4. **CIDR block**
    a. Example: 10.1.1.0/24



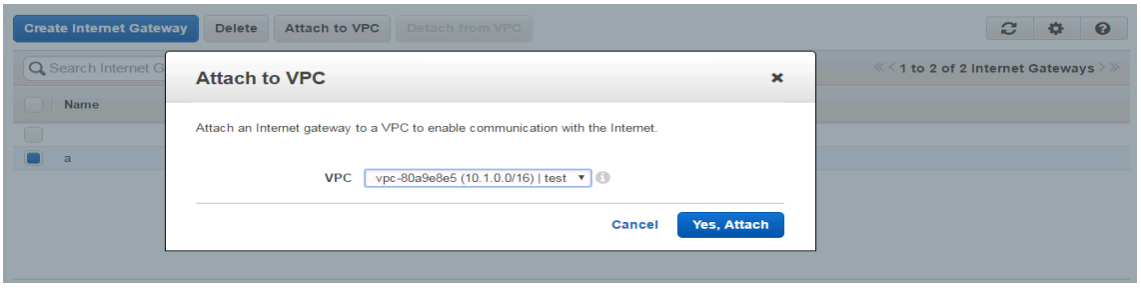
Step 5

Click on Internet Gateways and Create Internet Gateways

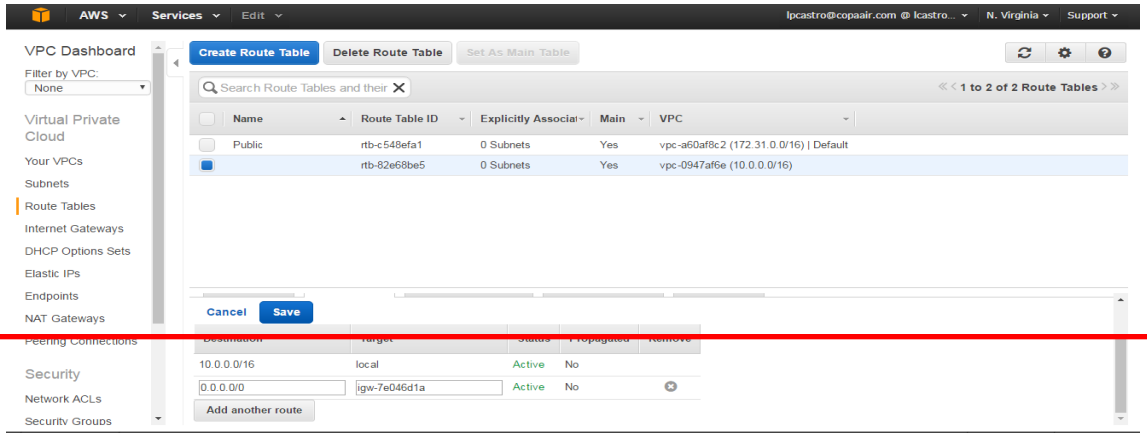
Create the Internet Gateway with the username



Once created, mark it and click Attach to VPC

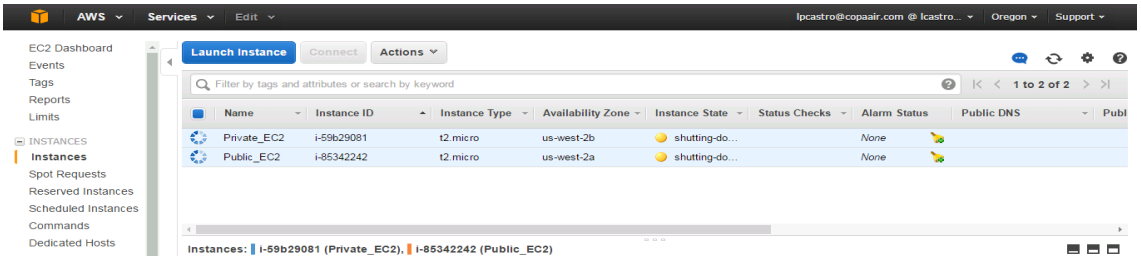


Go to the Route Table of the created VPC (10.X.0.0 / 16) and in Routes click on edit and add the created Internet Gateway with a default route, as shown in the following figure:



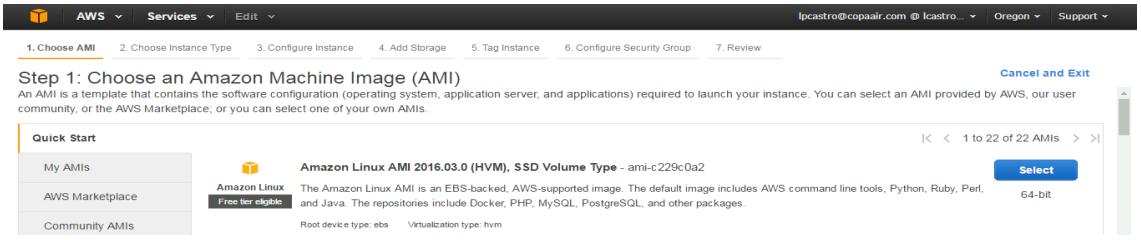
Step 6

Enter Compute> EC2 to create public and private EC2 machines

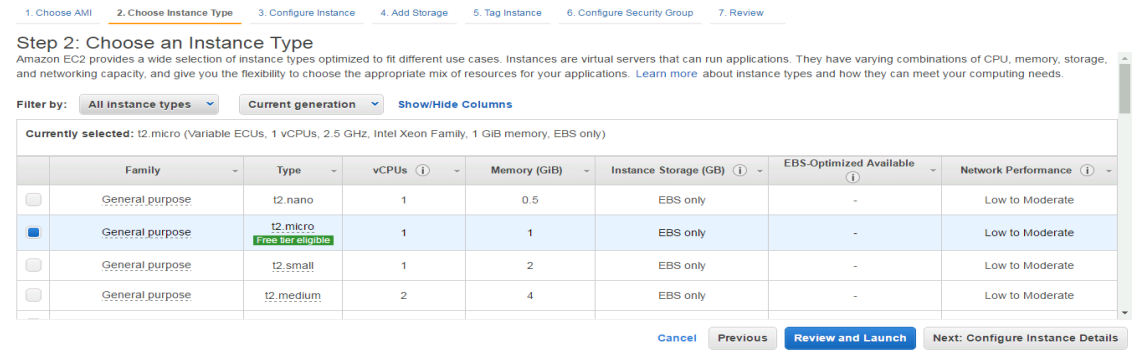


1. **Public Instance**

a. Launch instance choose Amazon Linux



b. Choose General Purpose, next



c. Select

i. Network

1. Choose VPC with username

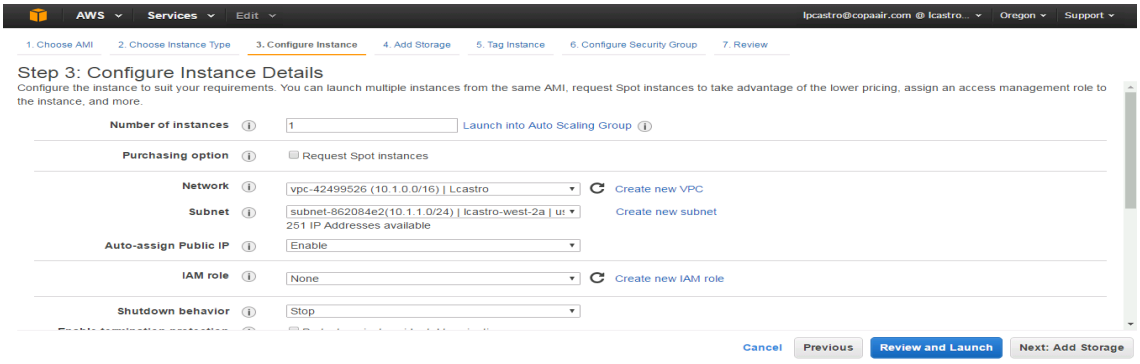
ii. Subnet

1. Starts with 10.X.1.0/24

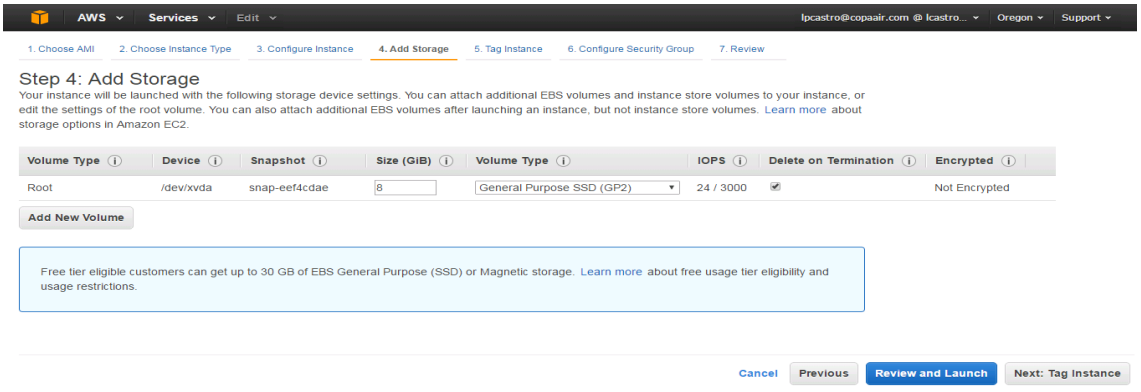
iii. Auto-assign Public IP

1. Enable

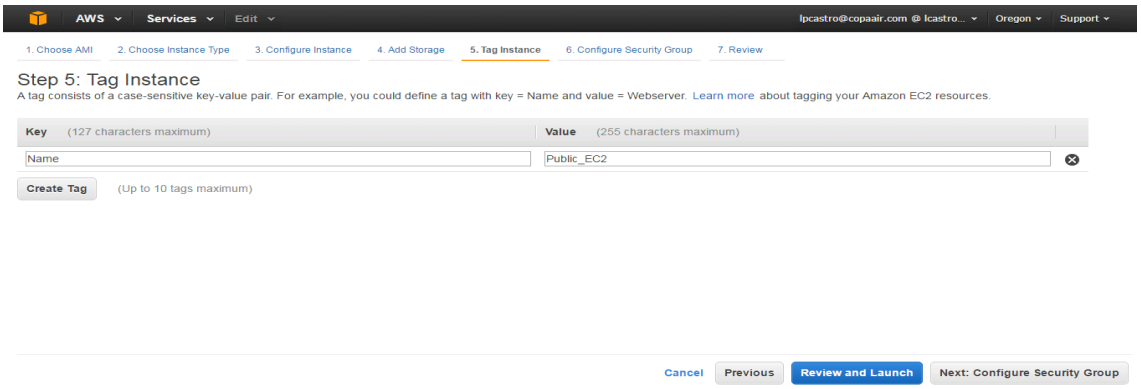
iv. Next, add storage



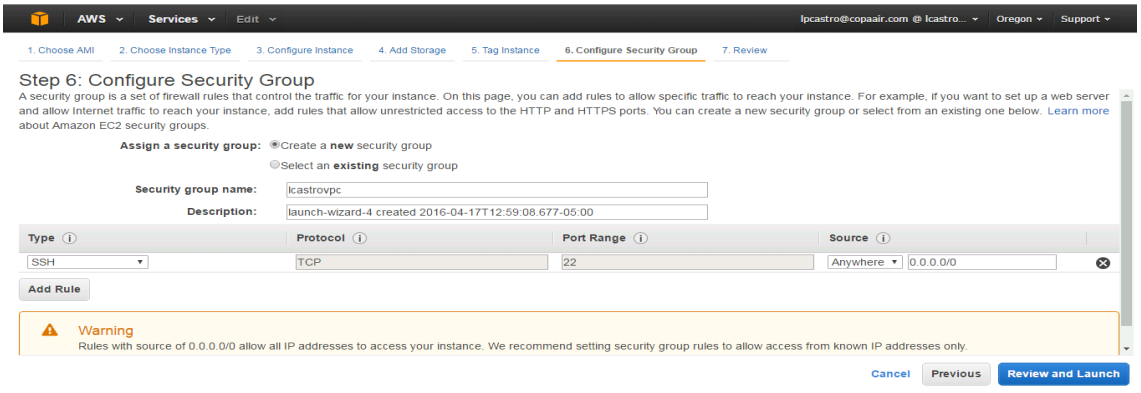
d. Dejar configuración default en **Add Storage**



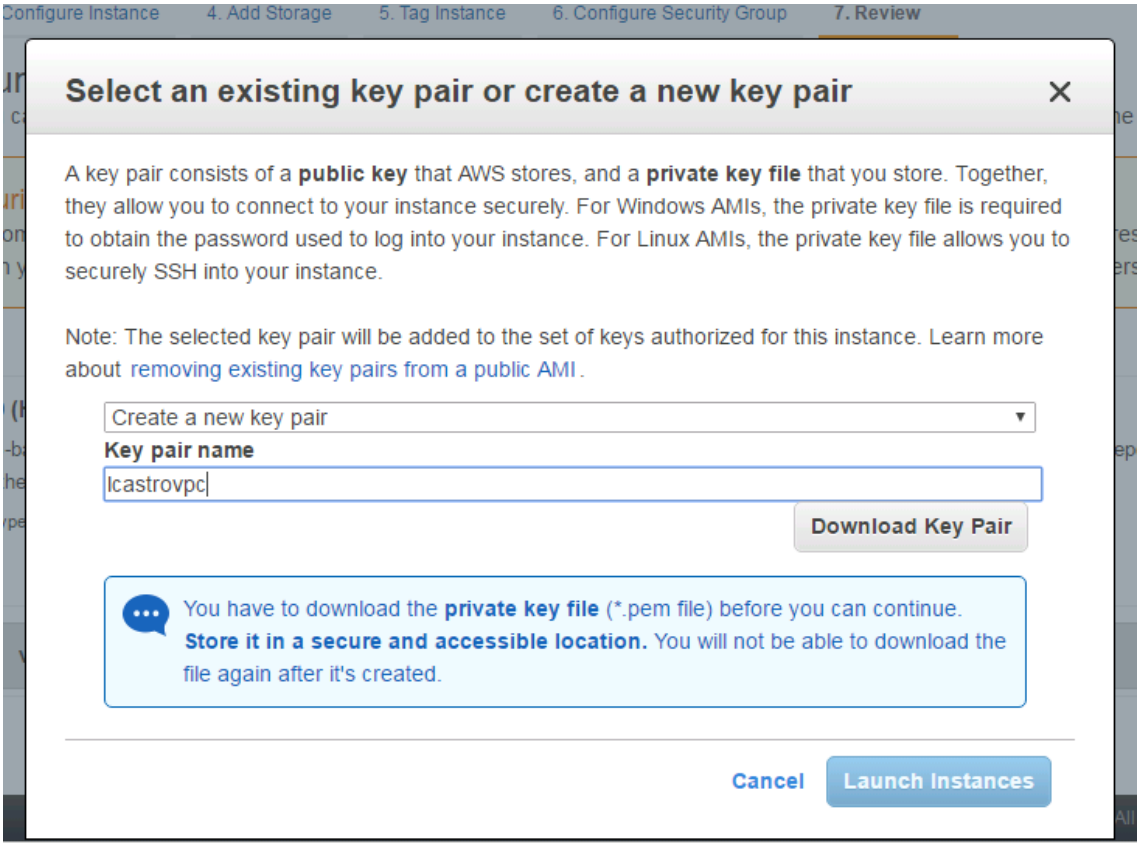
e. Put tag name **Public_EC2**



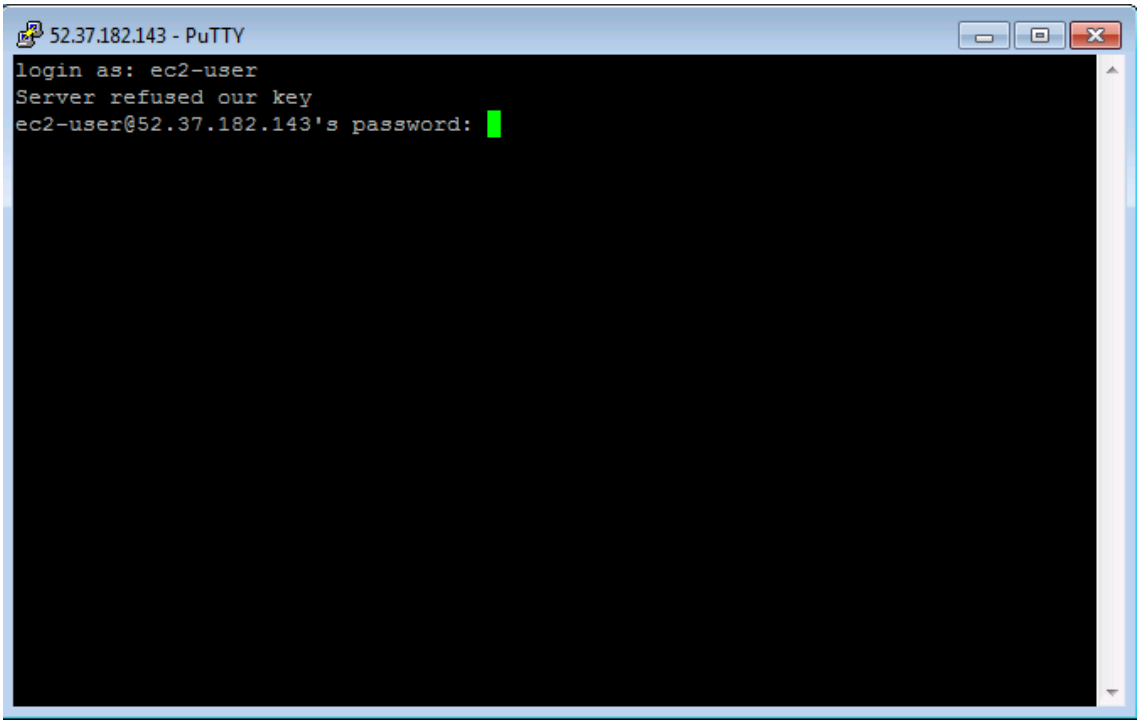
f. Create a new Security Group with the default configuration with the username plus VPC: eg; lcastrovpc



g. Create a new key pair with the username plus vpc, eg: lcastrovpc

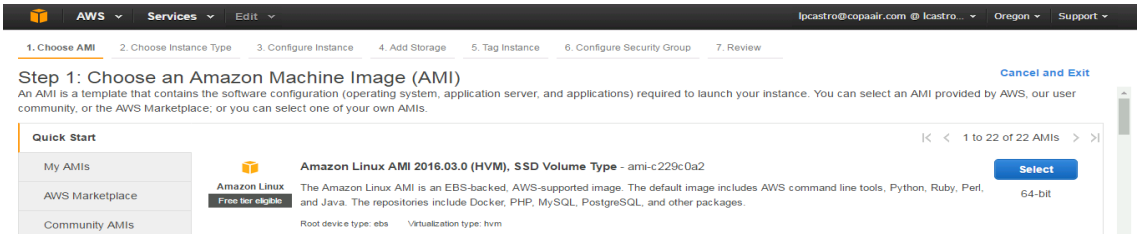


h. Enter the machine via ssh and leave the session open to use it in the next Step

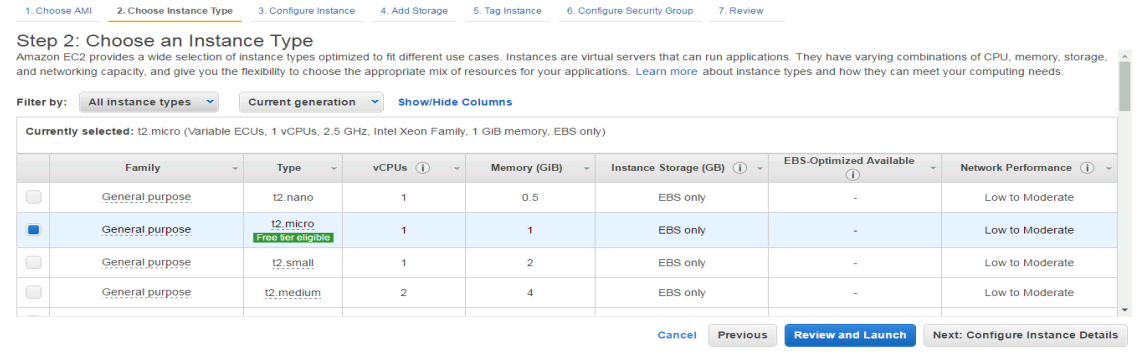


2. Private Instance

a. Launch instance choose Amazon Linux



b. Choose General Purpose, next



c. Select

i. **Network**

1. VPC created with username

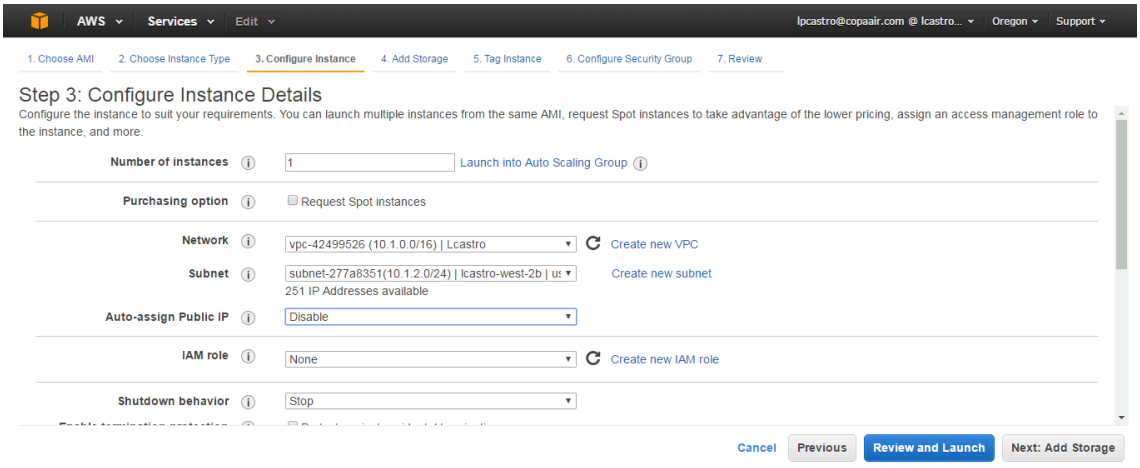
ii. **Subnet**

1. Stars with 10.X.2.0/24

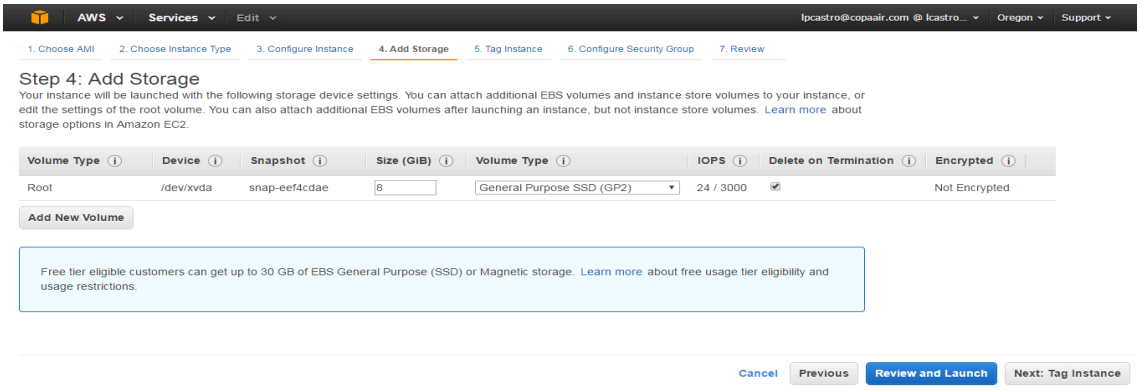
iii. **Auto-assign Public IP**

1. Disable

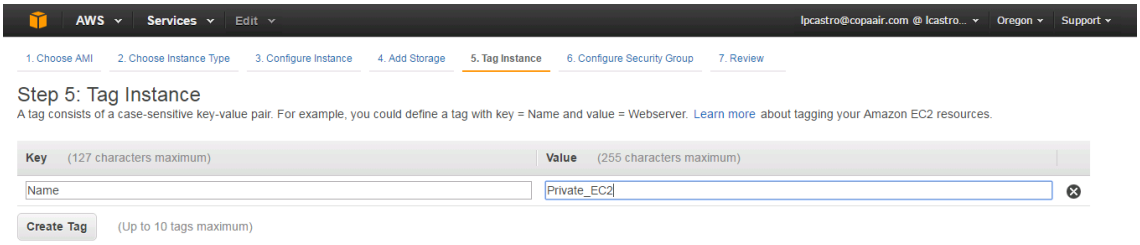
iv. **Next, add storage**



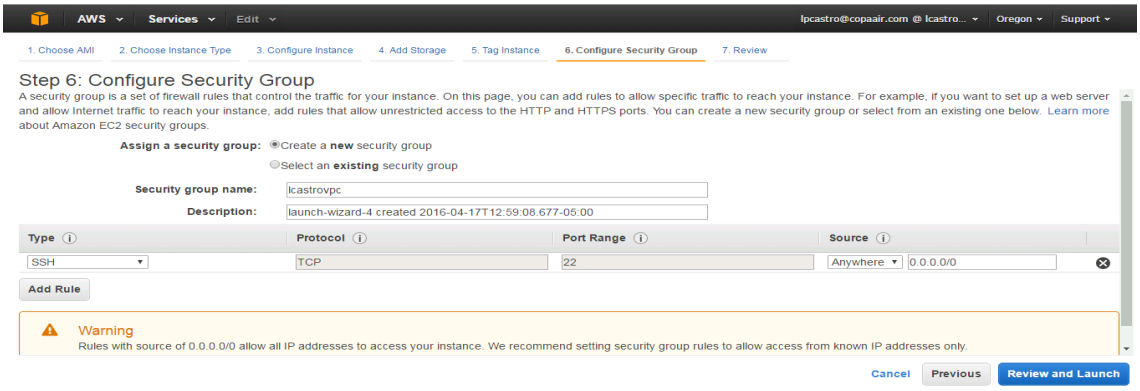
d. Leave default configuration in Add Storage



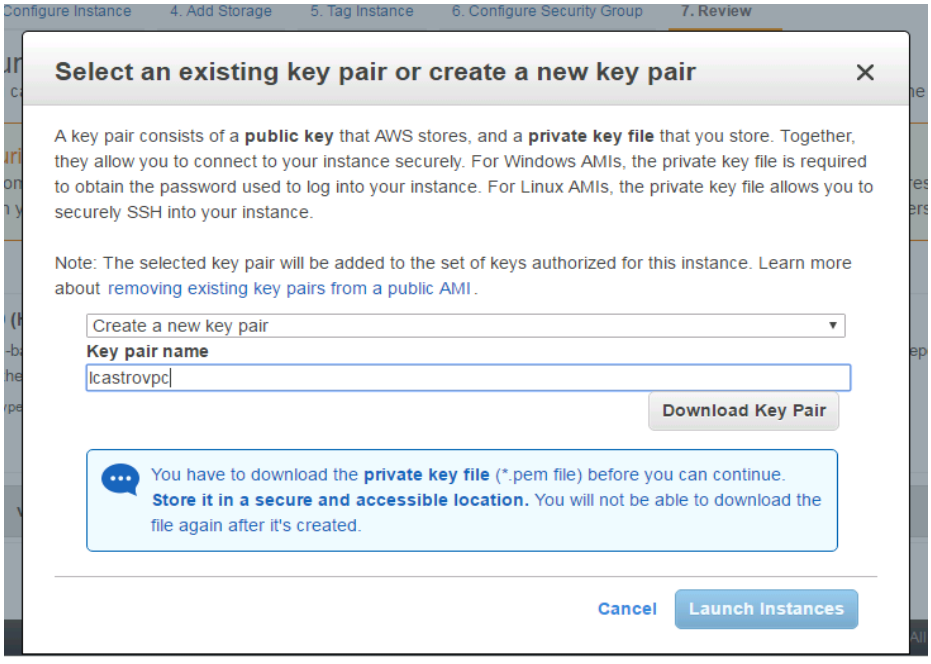
e. Put tag name **Private_EC2**



f. Use the Security Group created in the previous step: eg; lcastrovpc



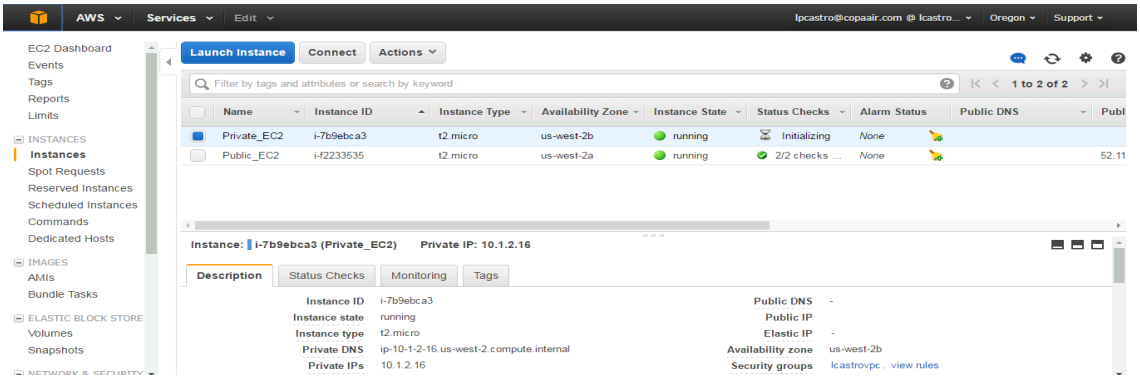
g. Create a new key pair with the username plus vpc, eg: lcastrovpc



h. Enter the machine through the SSH session of the machine Publica_EC2

i. Check the private address assigned to this machine

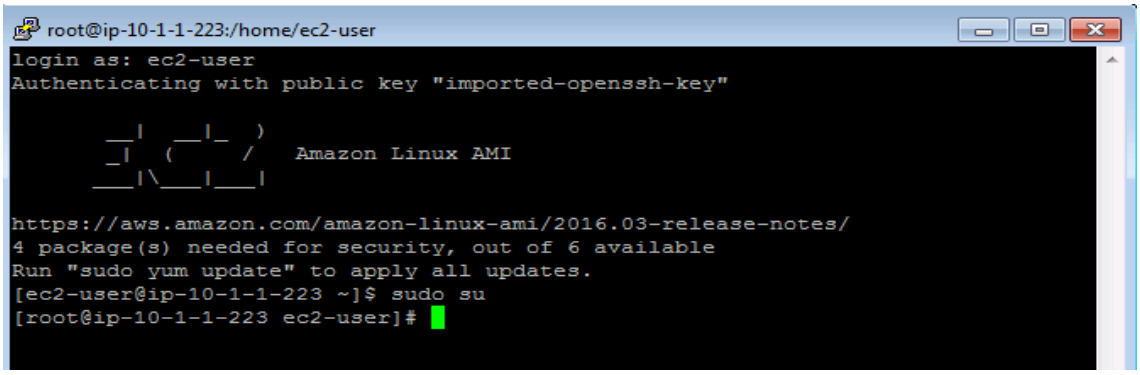
1. Example: 10.1.1.16



ii. Open the SSH session of the machine Public_EC2

1. Elevate privileges using the command

a. #sudo su

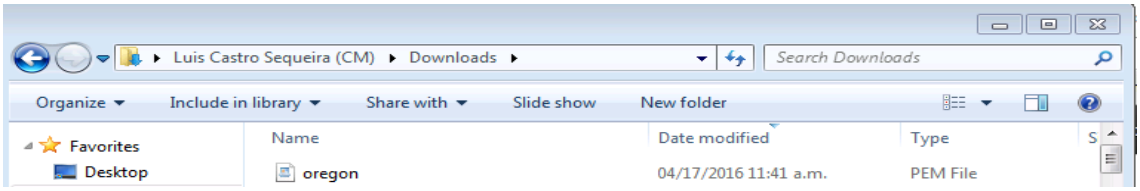


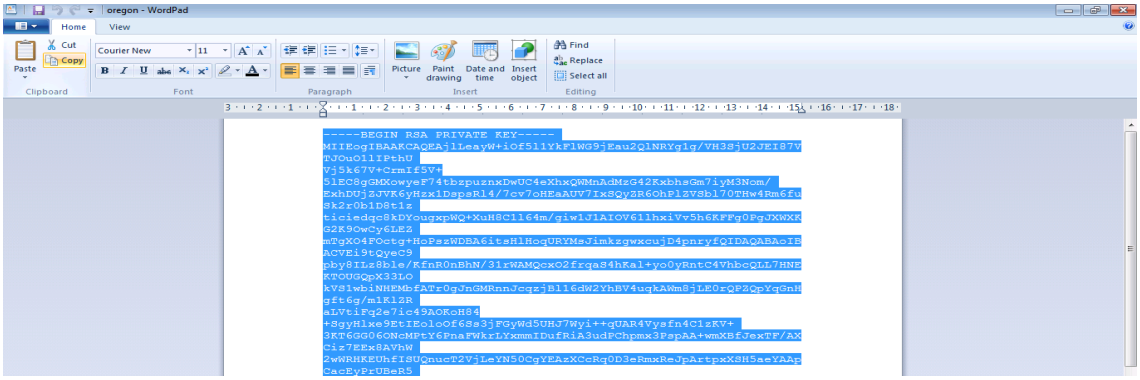
iii. Create a .pem file directly on this EC2 machine

1. Use the command

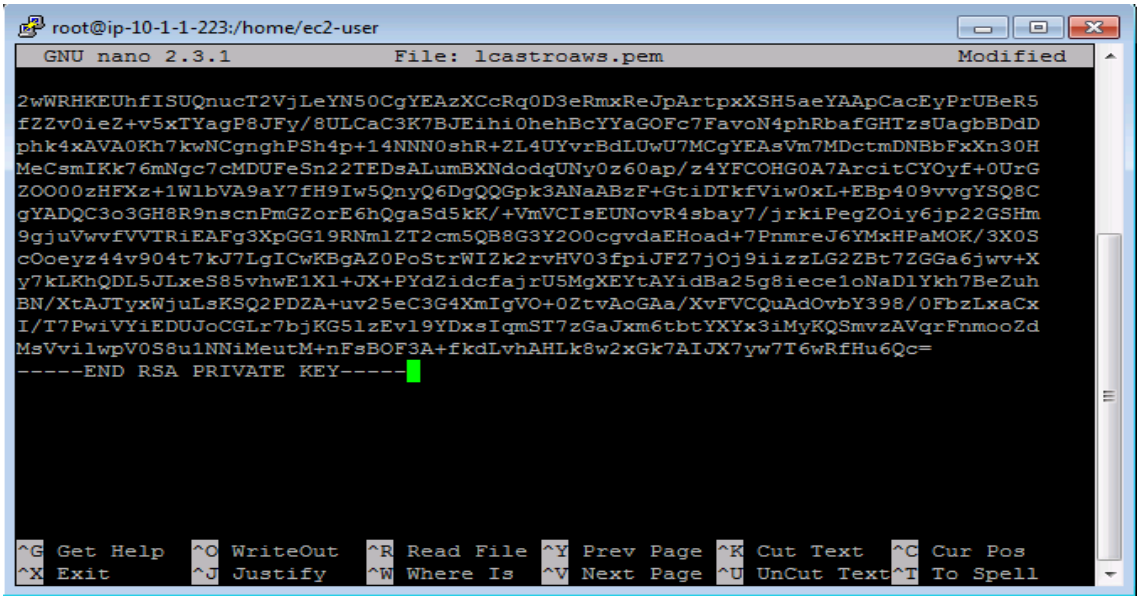
a. # nano lcastrovpc.pem (use your username)

b. Open the downloaded .pem file, copy it with ctrl + c

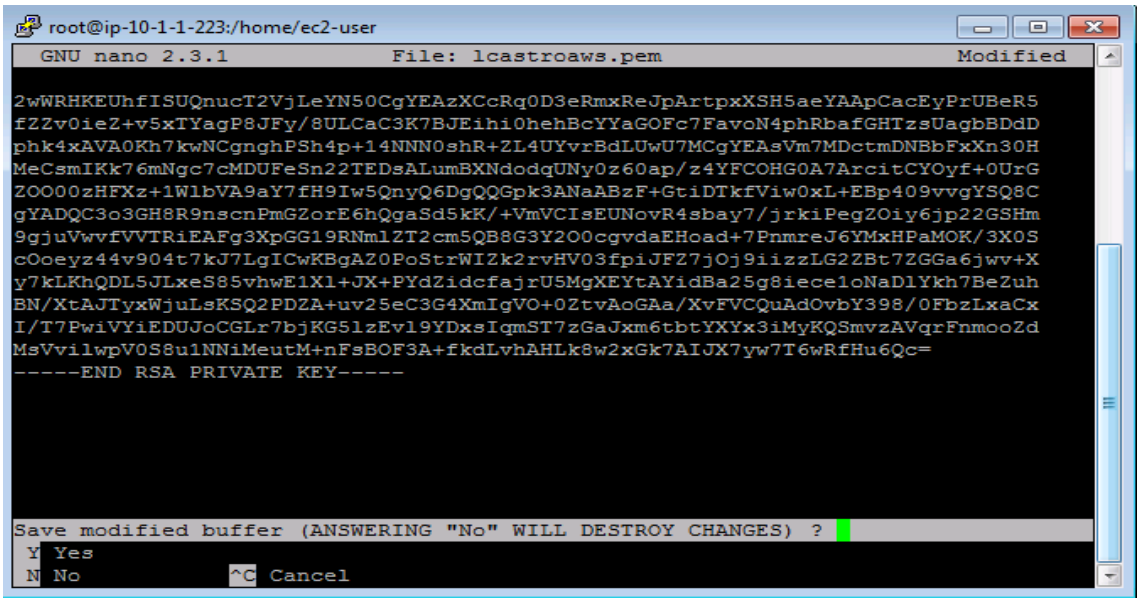




c. Paste it into the Public_EC2 machine with right mouse button

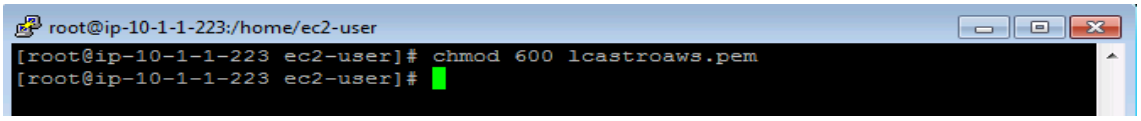


d. Exit with Ctrl + x and save the changes with “y”



e. **Change file privileges using the following command**

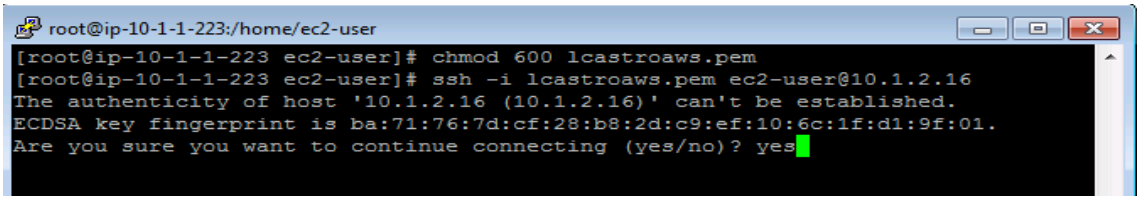
   i. # chmod 600 lcastroaws.pem



f. **Access the Private_EC2 machine via SSH from the Public EC2 machine with the following command**

   i. **#ssh -i lcastroaws.pem ec2-user@10.1.2.16**

   (This IP Address depends on the one that has been designated in your case)

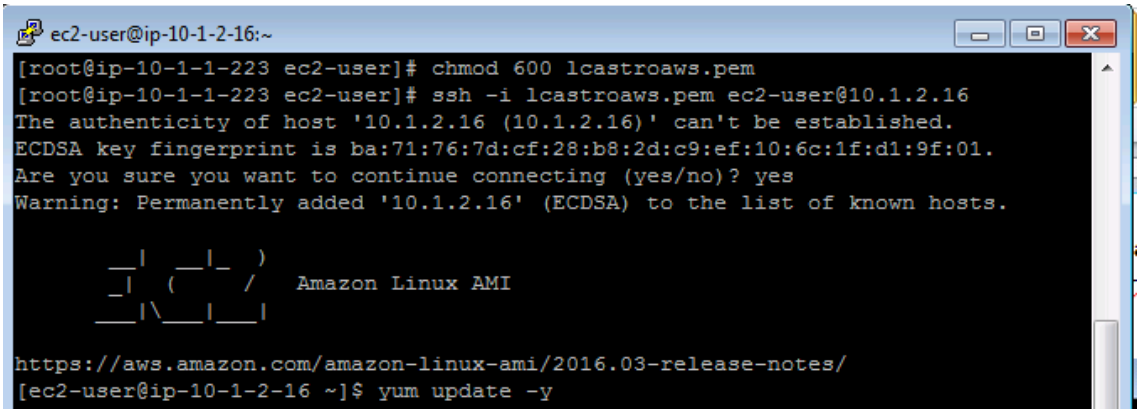


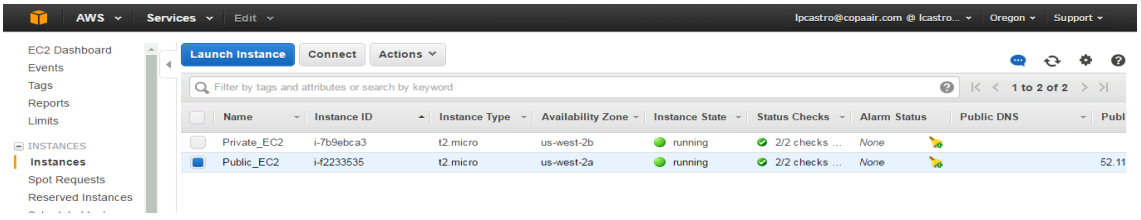
g. **Run the following command**

   i. **#sudo su**

   ii. **#yum update -y**

1. Check if it is valid to carry out the Update
2. Use the command
    a. **#ping 4.2.2.2** – To validate that you have internet access
    b. **The ping should not be successful since the machine does not have an associated internet**

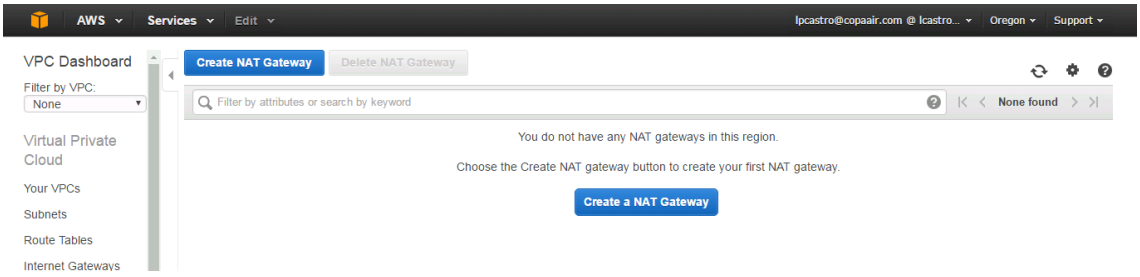




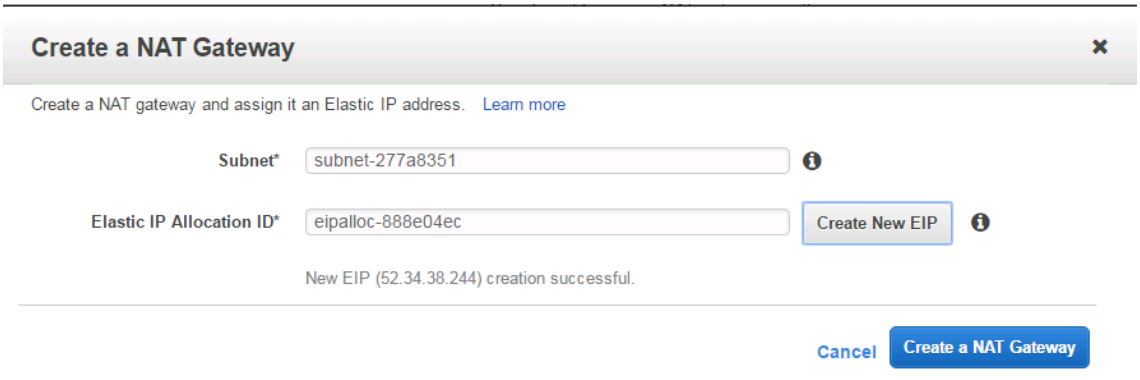
Step 7

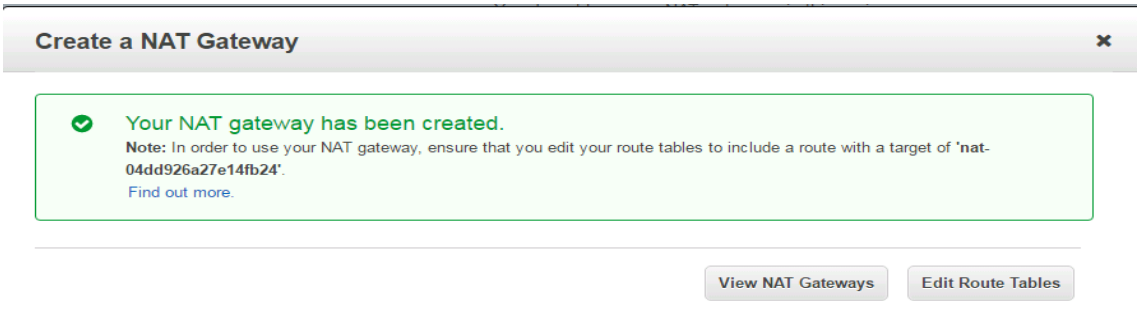
Give you access to the private machine so you can access the Internet through a NAT Gateway

- Go to **VPC>NAT Gateways>Create NAT Gateways**



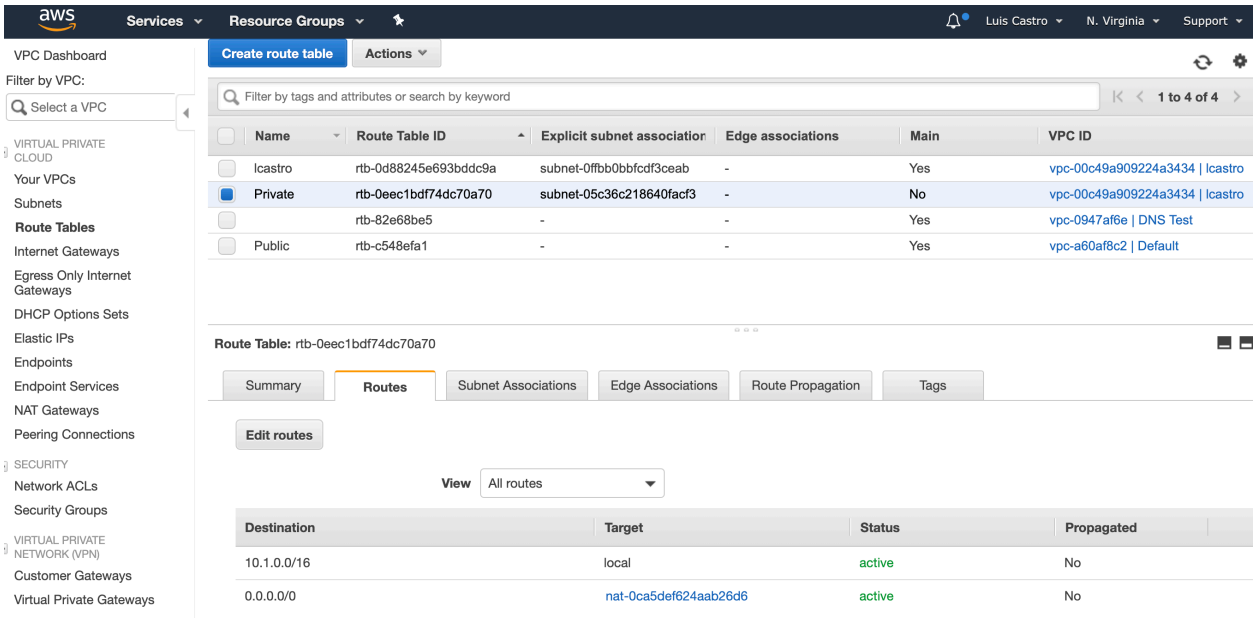
1. Choose public subnet 10.X.1.0
2. Create New Elastic IP
3. Create NAT Gateway





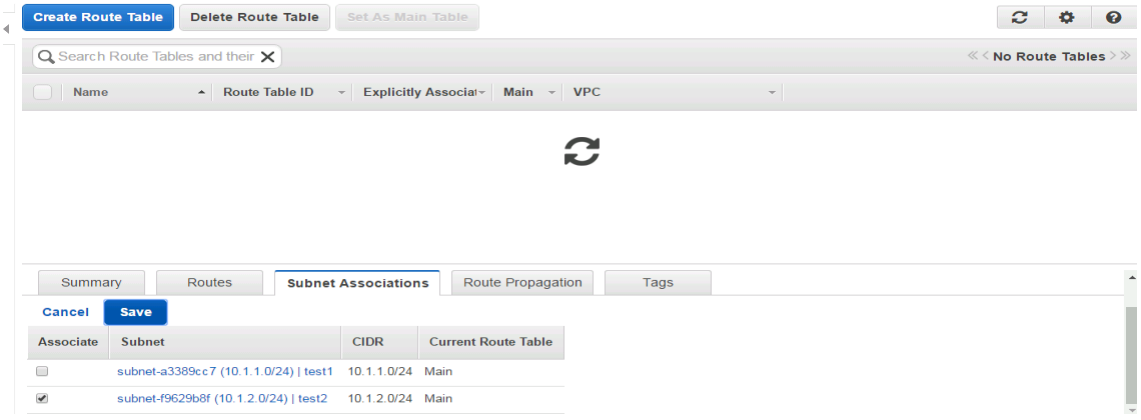
Step 8

- **Create a Route Table for the Private Subnet called user + private**
    - **Ex: lcastro-private**
- Edit the Route Table of the private subnet
    - Create a default route to the Created NAT Gateway



- Click on **Routes** & **Edit**
- Add a default route
    - **Destination**
        - 0.0.0.0/0
    - **Target**
        - Nat Gateway – Created
    - **Save**

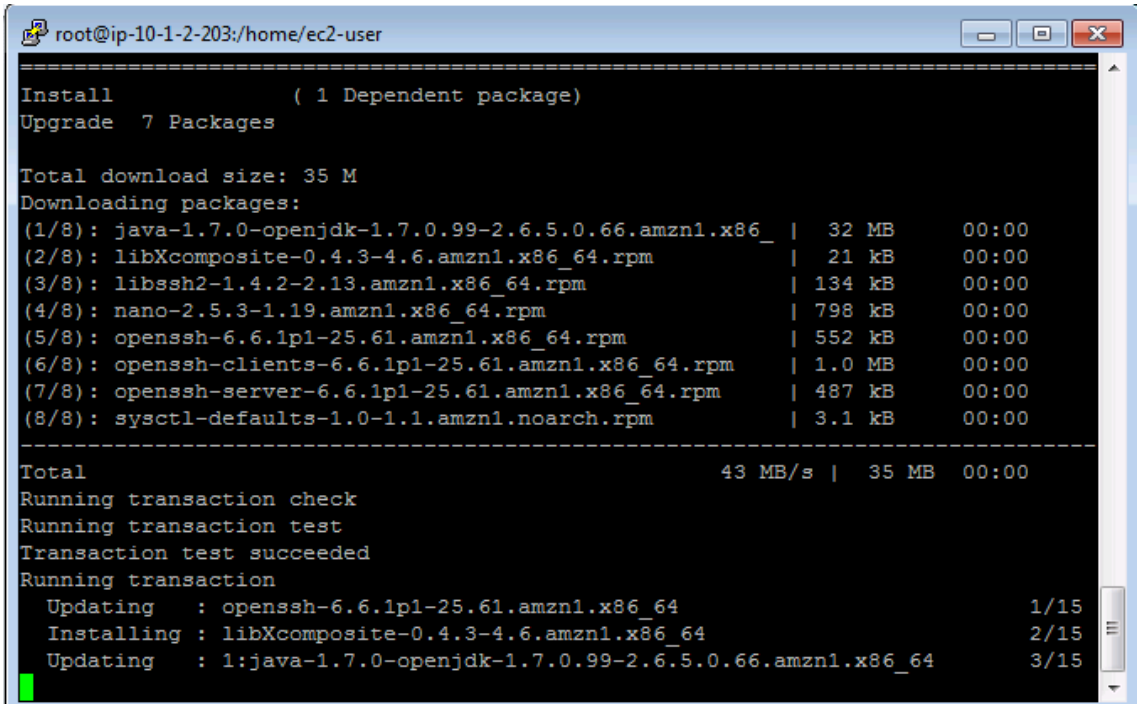
- Then associate the subnet 10.X.2.0 / 24
    - **Subnet Associations**
    - **Save**



Step 9

From the Private machine execute the following commands

- #sudo su
- #yum Update -y



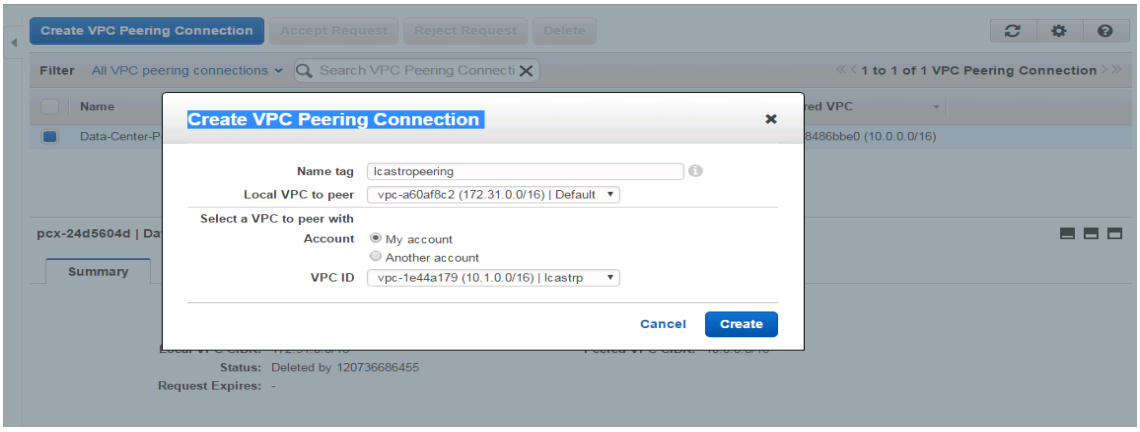
Step 10

From the private machine ping the IP Address according to your Region - It should not be successful:

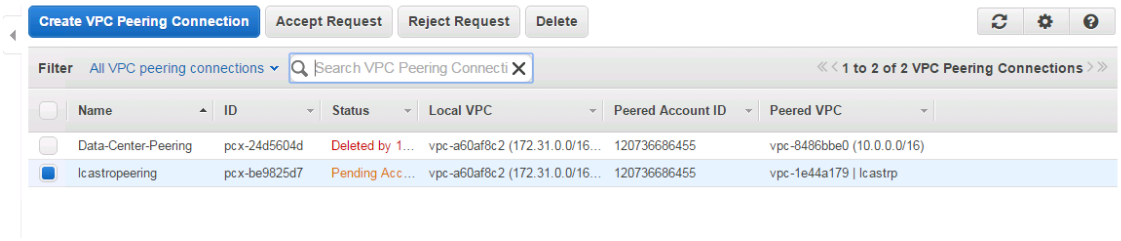
- **Virginia:**
  - 172.31.56.69
- **Oregon**
  - 172.31.3.242
- **N California**
  - 172.31.20.57
- **Ohio**
  - 172.31.9.42

Access **VPC>Peering Connections>Create VPC Peering Connections**

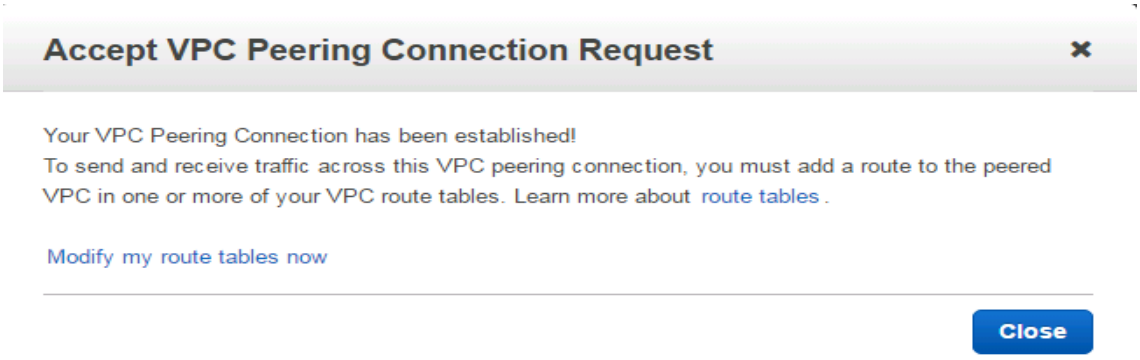
- **Name tag**
  - Username + peering, ex: lcastropeering
- **Local VPC to Peer**
  - VPC Default
- **VPC ID**
  - VPC created - 10.X.0.0/16



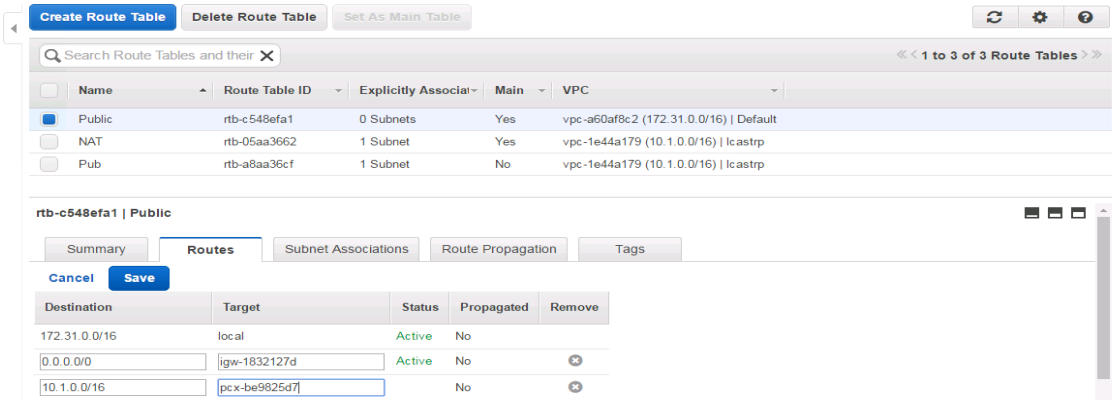
- Accept Request



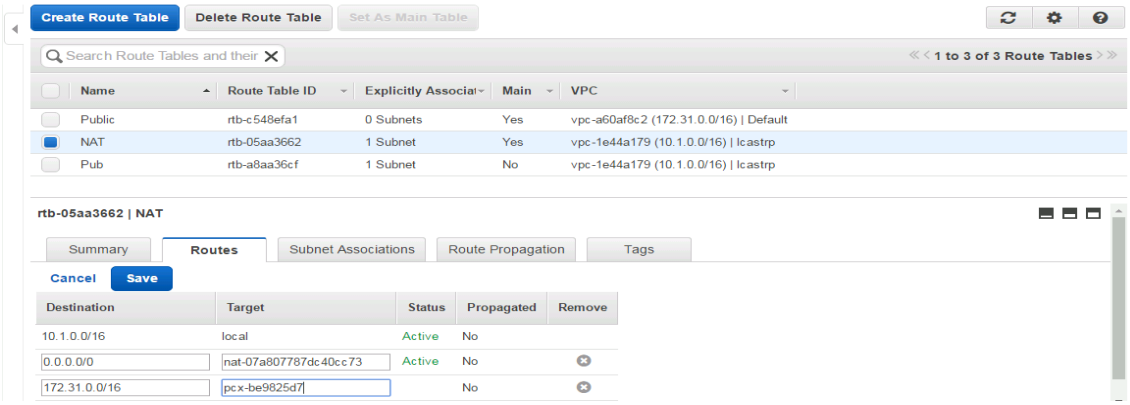
- Modify my route tables now



- Select the Default VPC and add a new path
    - Edit
        - Destination
            - 10.X.0.0/16
        - Target
            - Pcx-be982 (Validar el Peering Asociado)
        - Save

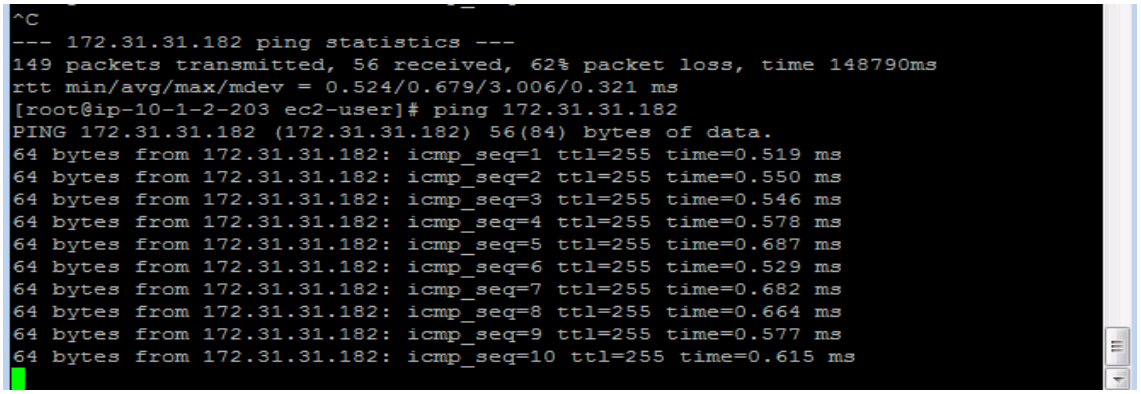


- Select the VPCs created in the 10.X.0.0 / 16 network and add a new route
    - Edit
        - Destination
            - 172.31.0.0/16
        - Target
            - Pcx-be982 (Validar el Peering Asociado)
        - Save



From the private machine ping the IP Address according to your Region

- **Virginia:**
    - 172.31.56.69
- **Oregon**
    - 172.31.3.242
- **N California**
    - 172.31.20.57
- **Ohio**
    - 172.31.9.42


^C
--- 172.31.31.182 ping statistics ---
149 packets transmitted, 56 received, 62% packet loss, time 148790ms
rtt min/avg/max/mdev = 0.524/0.679/3.006/0.321 ms
[root@ip-10-1-2-203 ec2-user]# ping 172.31.31.182
PING 172.31.31.182 (172.31.31.182) 56(84) bytes of data.
64 bytes from 172.31.31.182: icmp_seq=1 ttl=255 time=0.519 ms
64 bytes from 172.31.31.182: icmp_seq=2 ttl=255 time=0.550 ms
64 bytes from 172.31.31.182: icmp_seq=3 ttl=255 time=0.546 ms
64 bytes from 172.31.31.182: icmp_seq=4 ttl=255 time=0.578 ms
64 bytes from 172.31.31.182: icmp_seq=5 ttl=255 time=0.687 ms
64 bytes from 172.31.31.182: icmp_seq=6 ttl=255 time=0.529 ms
64 bytes from 172.31.31.182: icmp_seq=7 ttl=255 time=0.682 ms
64 bytes from 172.31.31.182: icmp_seq=8 ttl=255 time=0.664 ms
64 bytes from 172.31.31.182: icmp_seq=9 ttl=255 time=0.577 ms
64 bytes from 172.31.31.182: icmp_seq=10 ttl=255 time=0.615 ms