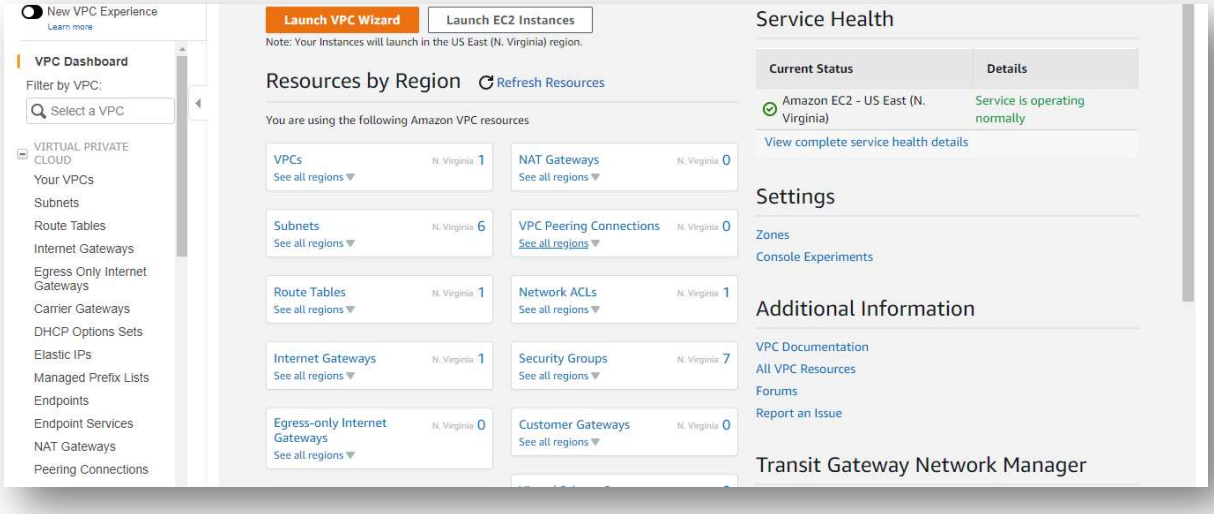
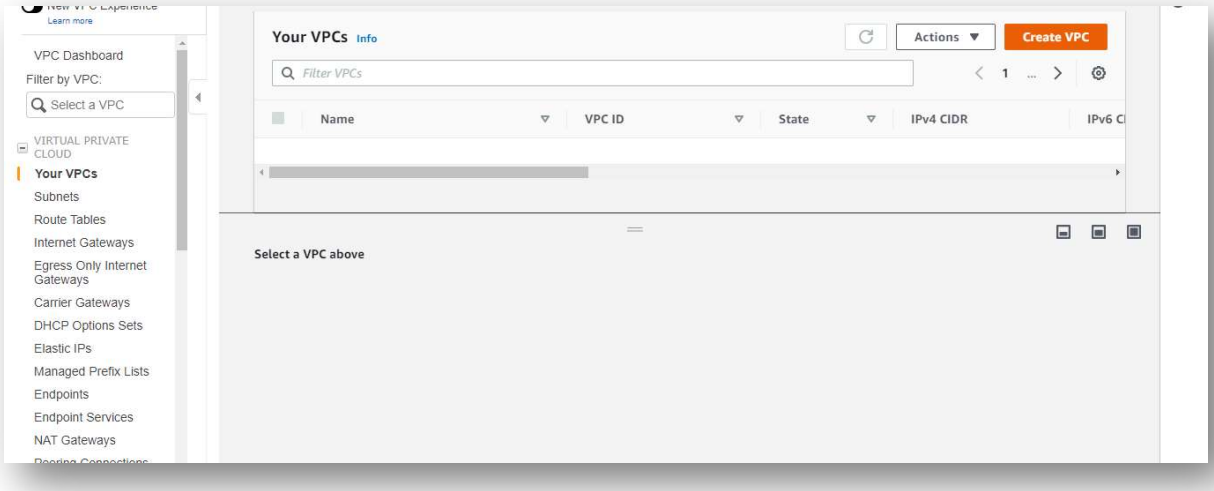
Virtual Private Cloud & Security Groups

Launching instances by using own VPC and Connecting Public instance to Private Instance

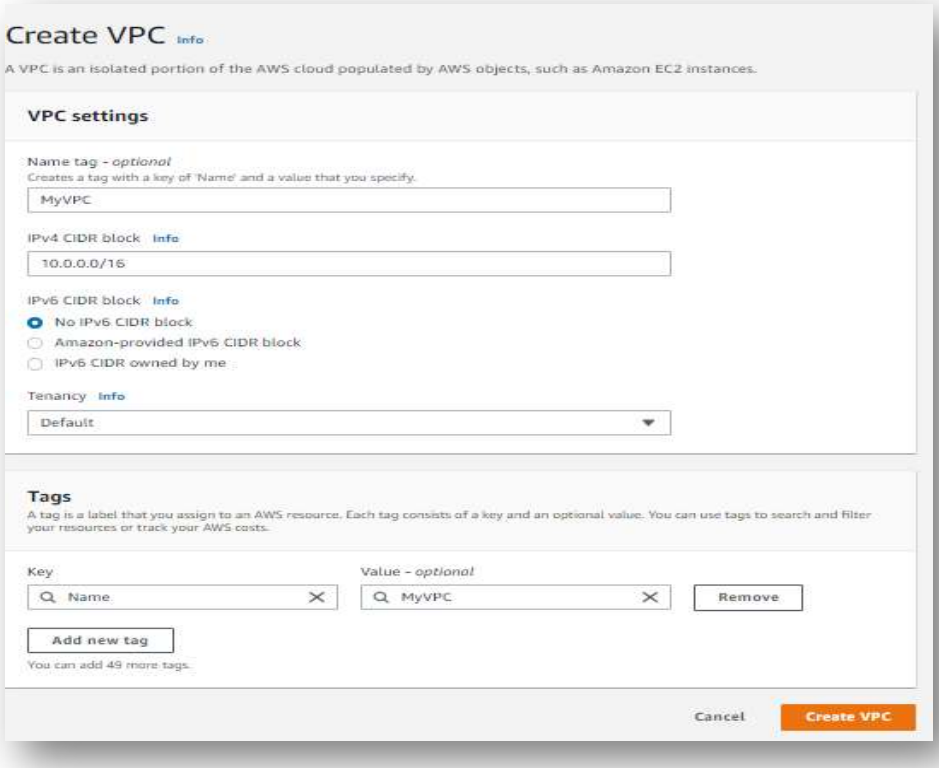
- To Create VPC go to AWS Console -> Services -> VPC and then click on VPCs



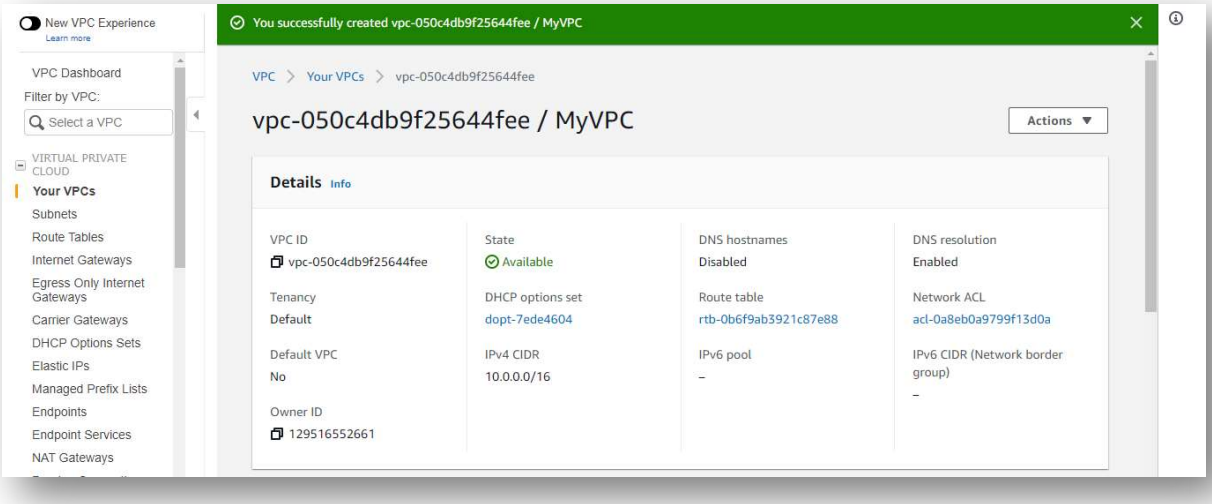
- Click on create VPC button to create VPC



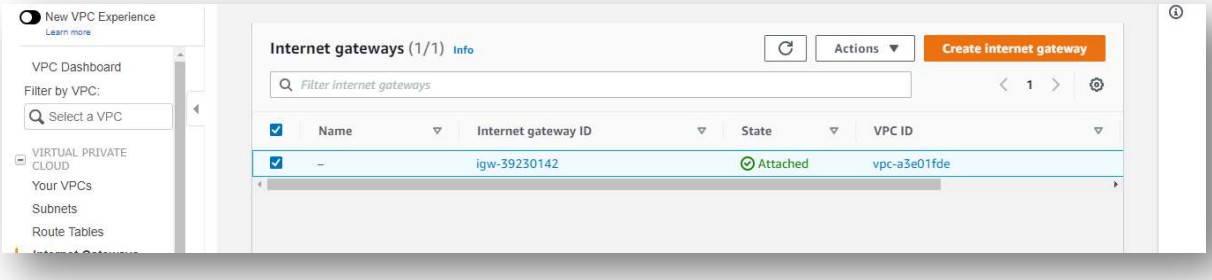
- Give name Tag to VPC and IPv4 CIDR block range to VPC then click on Create VPC button.



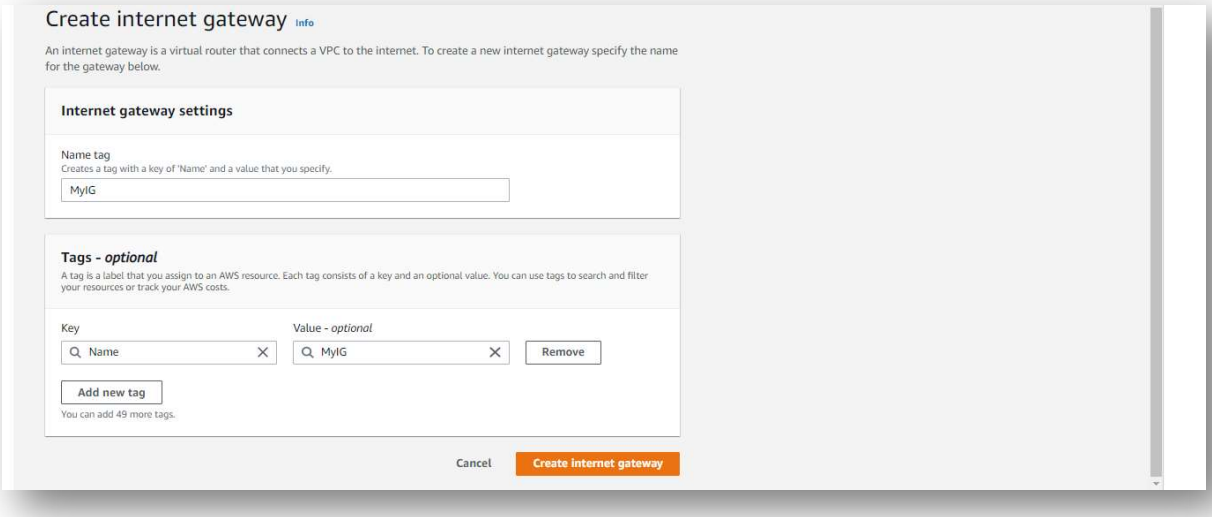
- VPC Created.



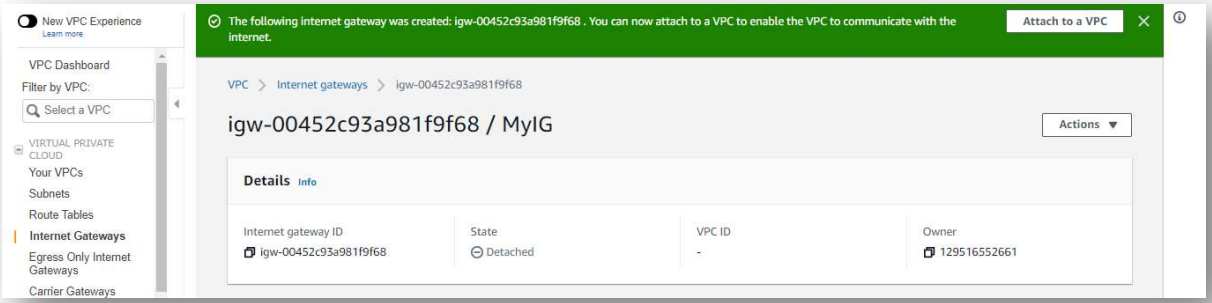
- Now, Create Internet Gateway and attach it to VPC. First Open Internet Gateway Page.



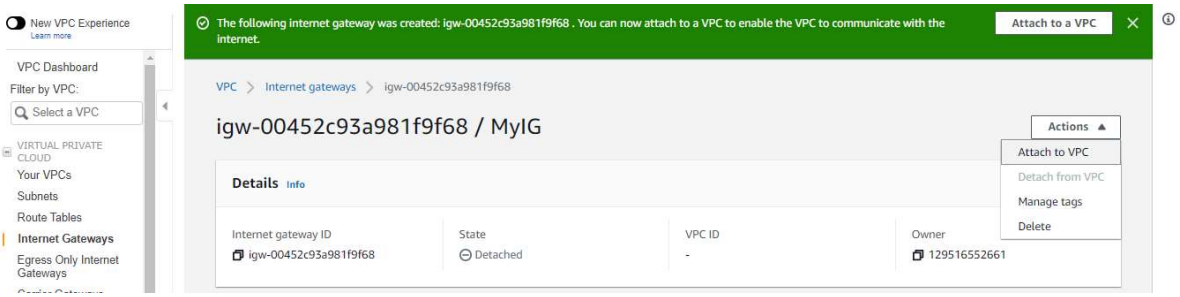
- Give name to Internet Gateway and click on create Internet Gateway



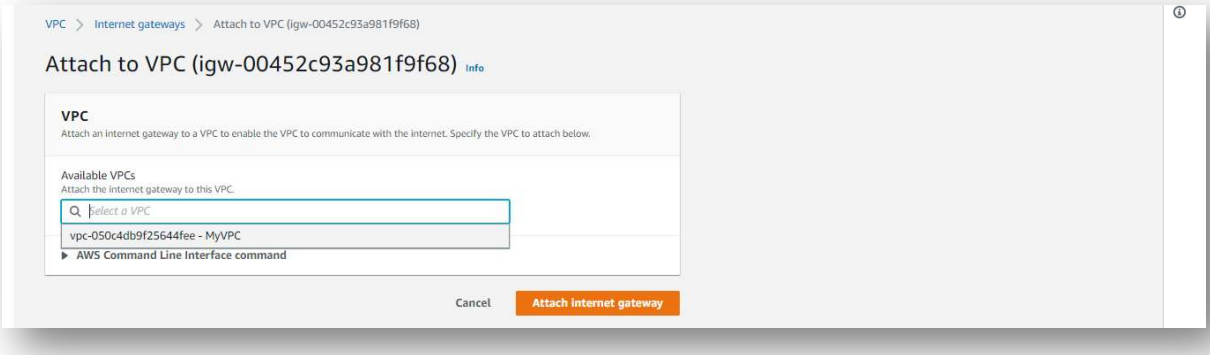
- Internet Gateway created



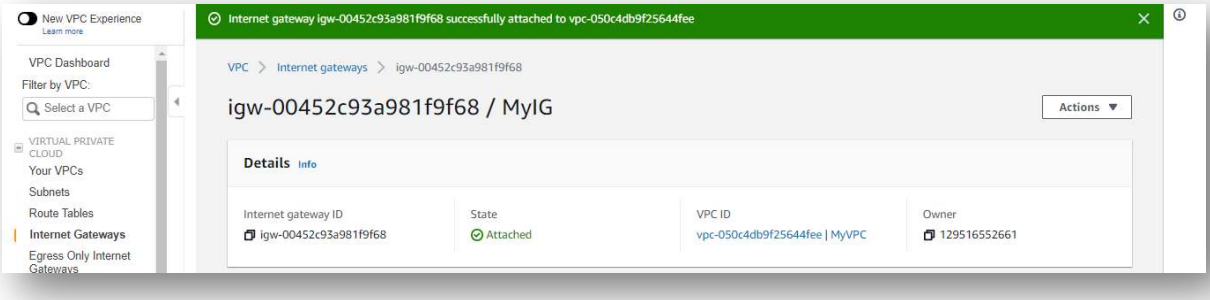
- Attaching IGW to VPC



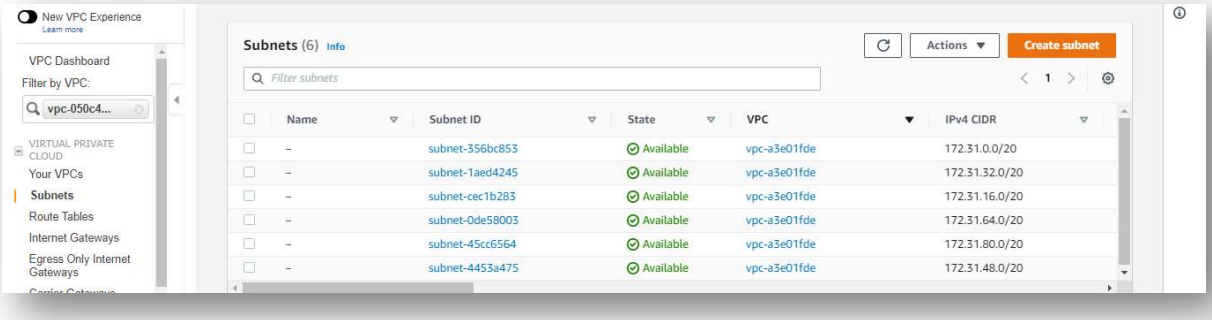
- Select VPC to attach IGW then click attach



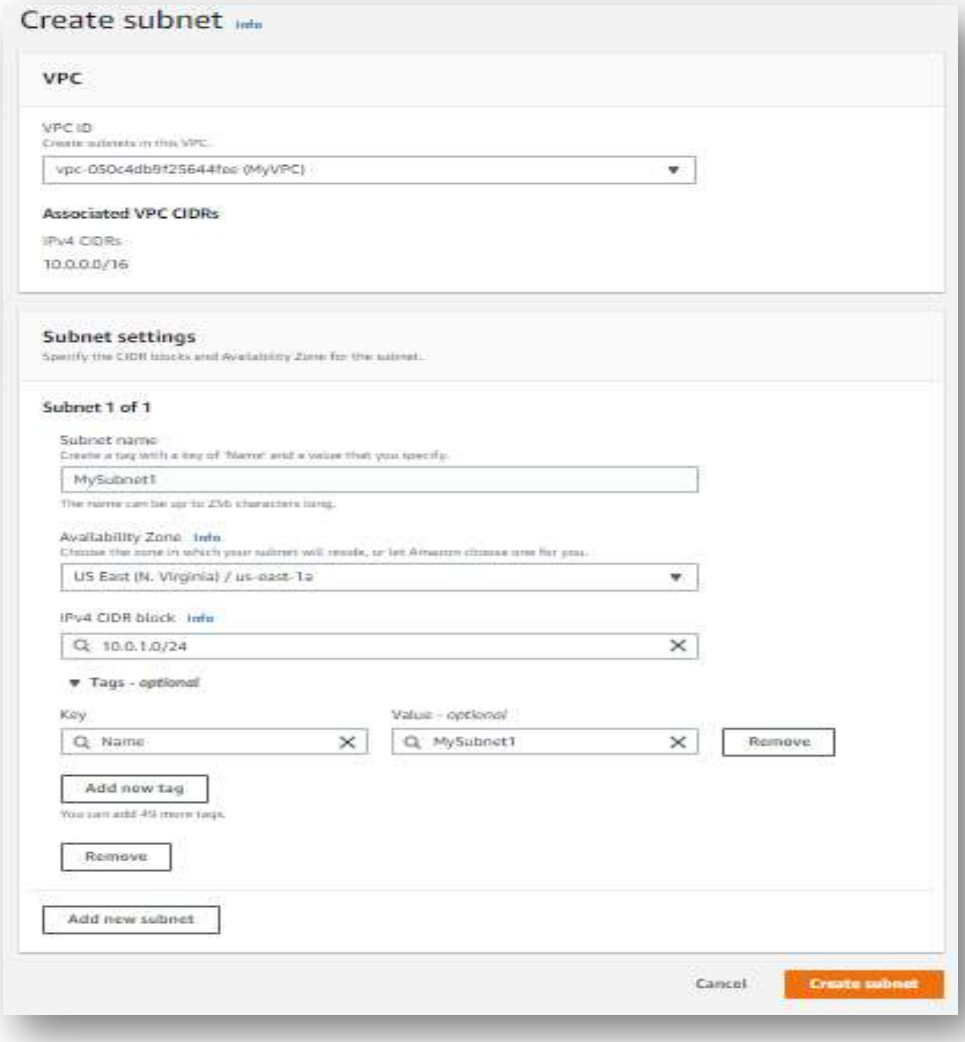
- IGW Attached to VPC



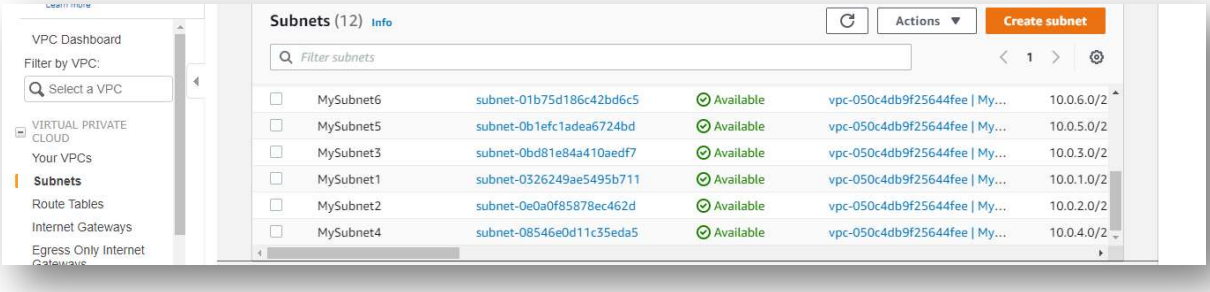
- After attaching IGW to VPC open Subnets to created subnets and to attach subnets to VPC. Click Create Subnet button to create subnets



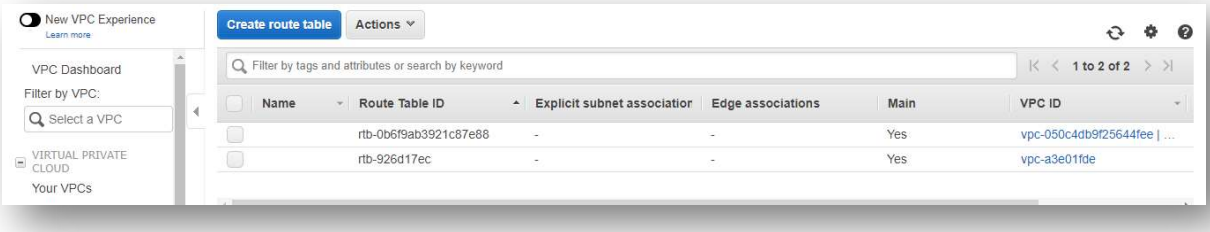
- Select VPC and Give name to Subnet. Select Availability Zone and IPv4 CIDR range then click Create Subnet Button to create subnet.



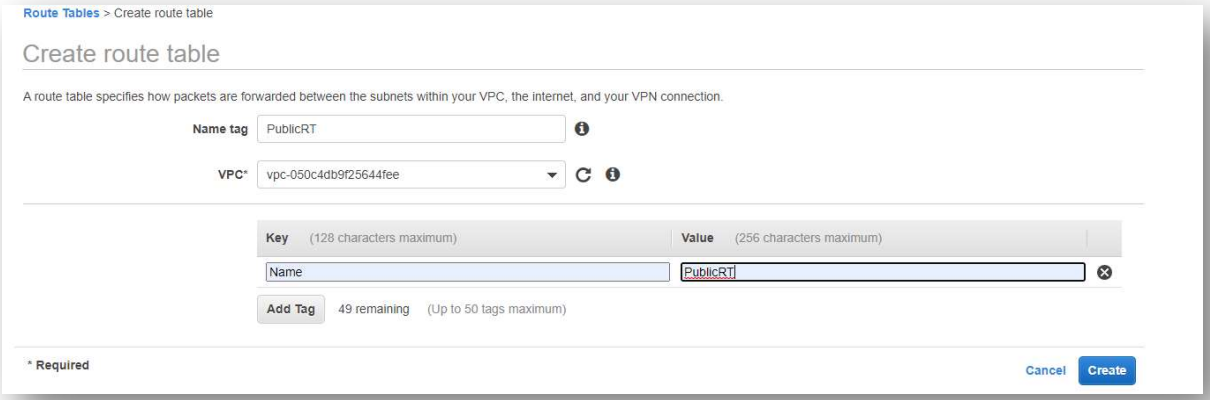
- Six subnets are created. I am created each Availability Zone has one subnet.



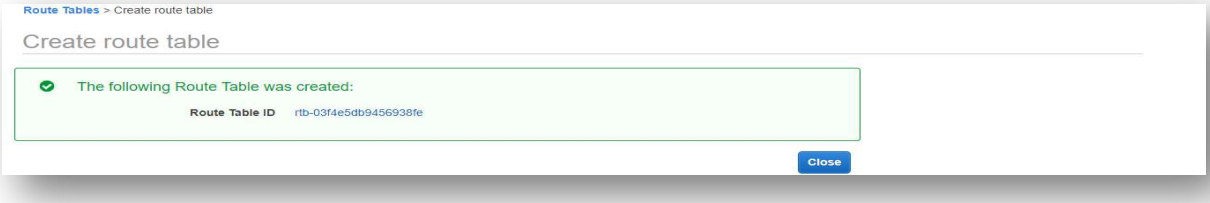
- After subnets, Create route tables. Click Create route table button to create route table.



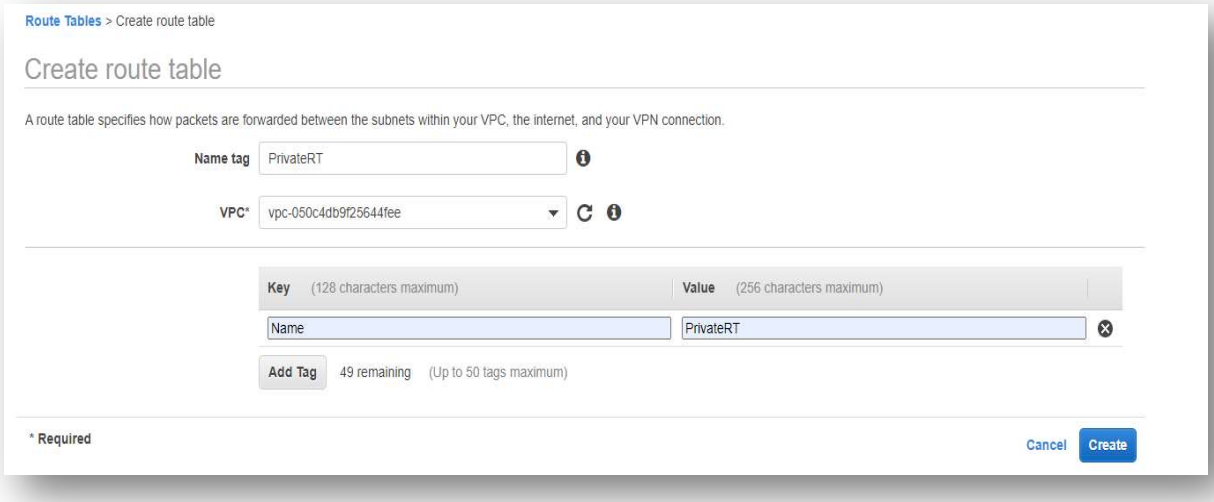
- Give name and select VPC then click on Create button to create route table. I am creating two route tables one is PublicRT and another one is PrivateRT.



- PublicRT route table created.

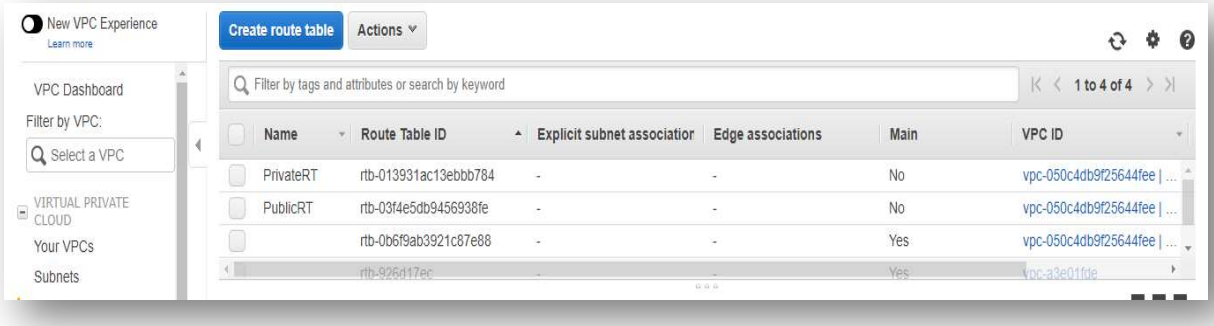


- Now creating another route table called PrivateRT.

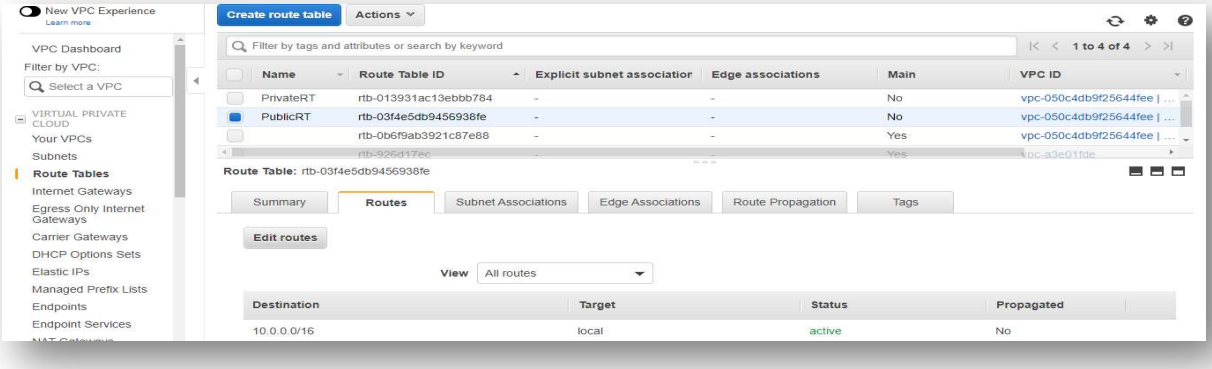


- PrivateRT route table created.

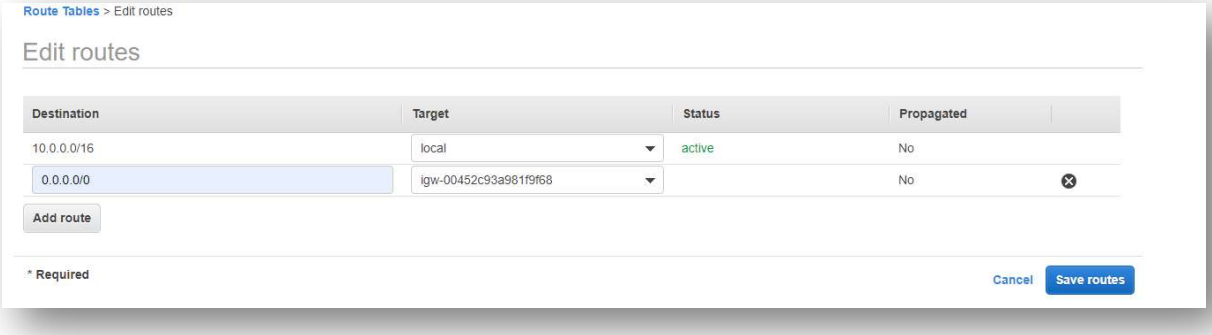
- Two route tables are shown in below image.



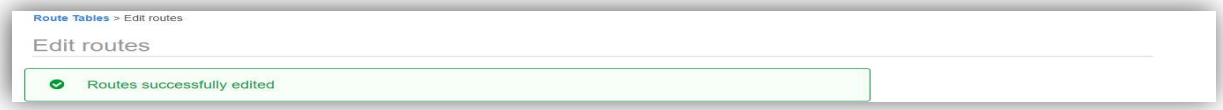
- Click on Edit routes to edit routes.



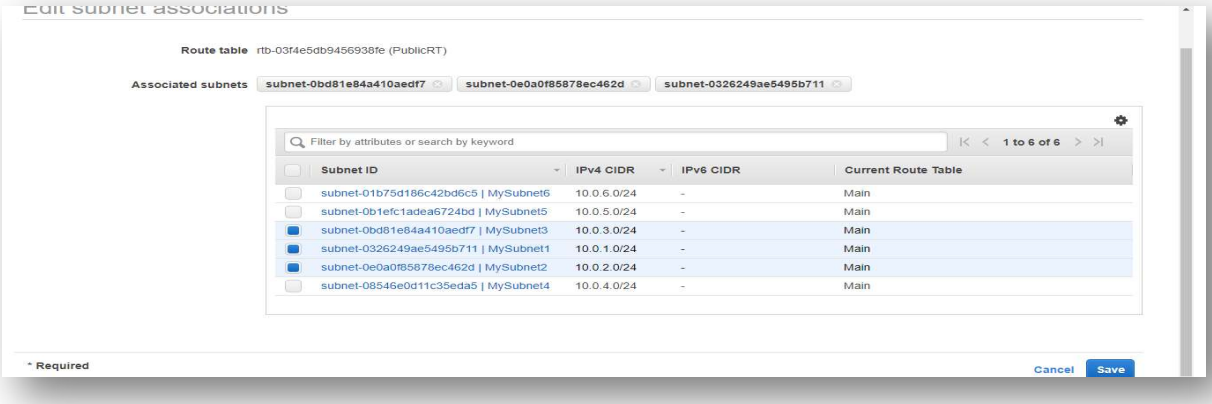
- Add 0.0.0.0/0 destination and select IGW on Target field. Save routes and go back. It is only for PublicRT.



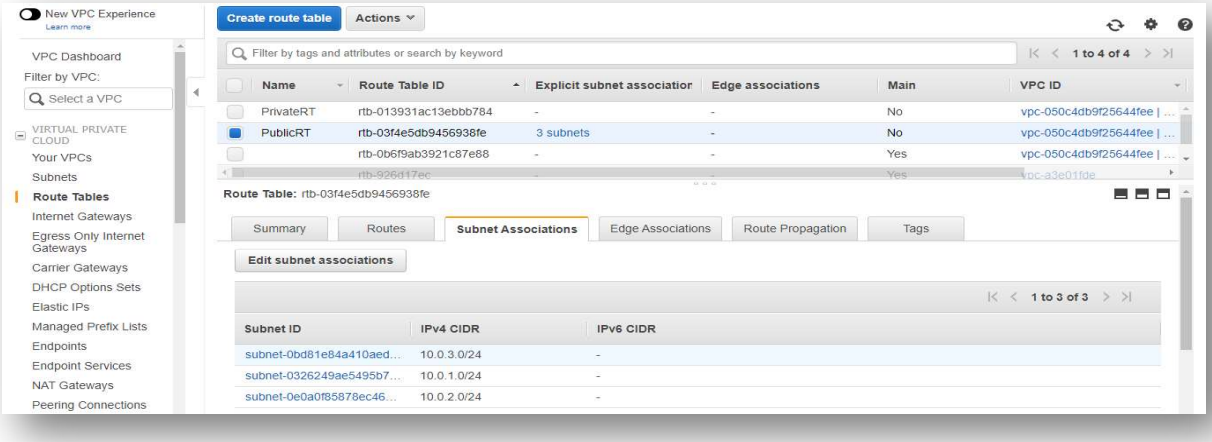
- Routes saved.



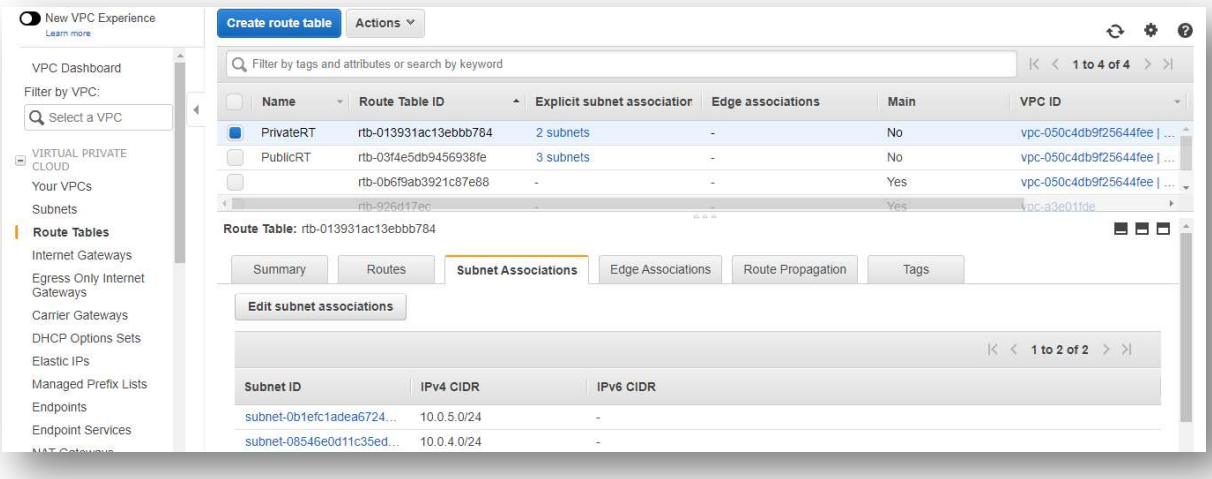
- Add subnets to route table. I am attaching three subnets to PublicRT.



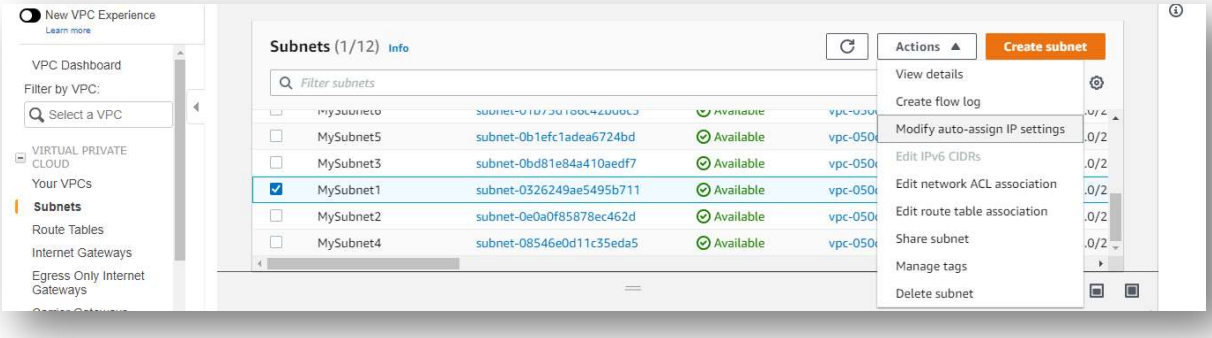
- Now see three subnets are attached to PublicRT.

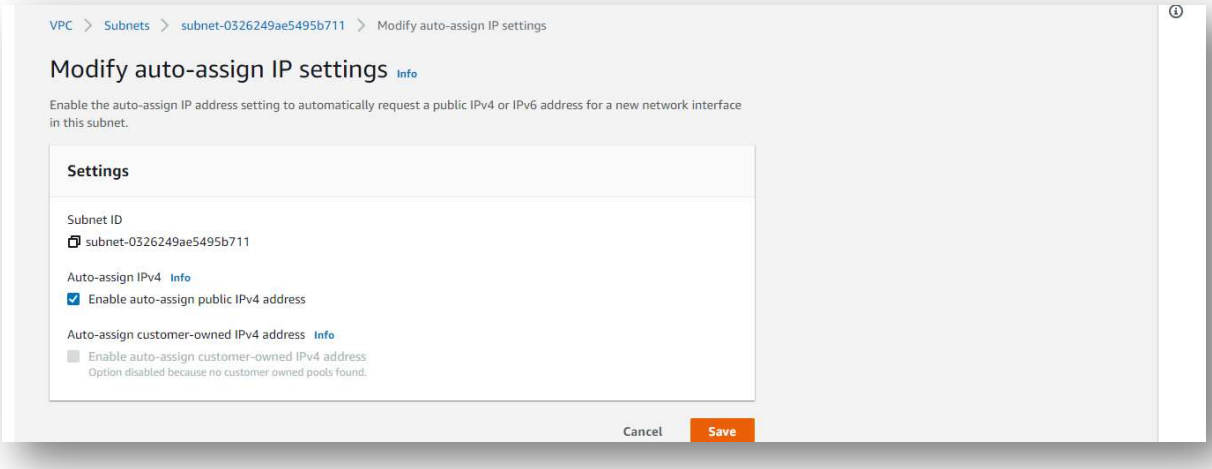


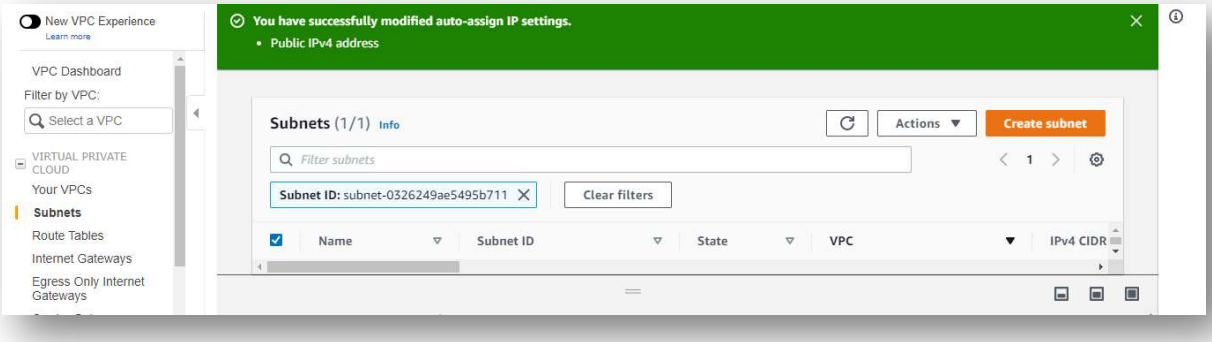
- Two subnets are attached to PrivateRT.



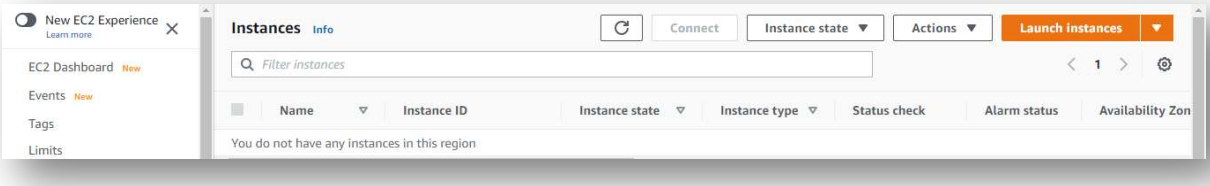
- Three subnets IP settings Modified to auto assign IP



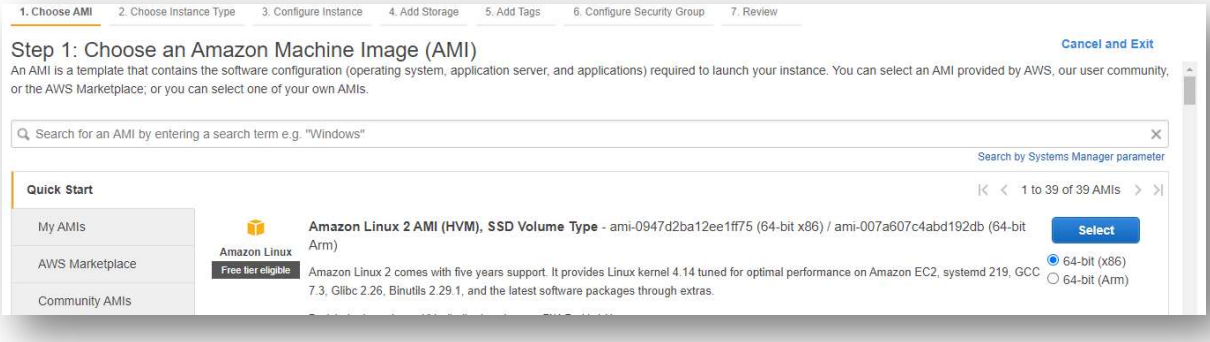




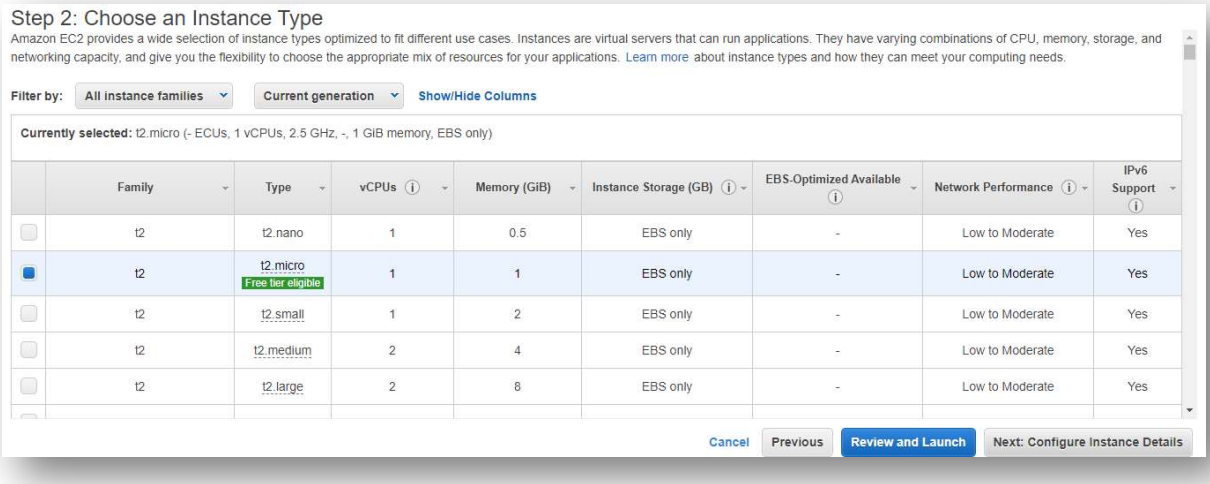
- Creating public instance.
    I. Launch Instance



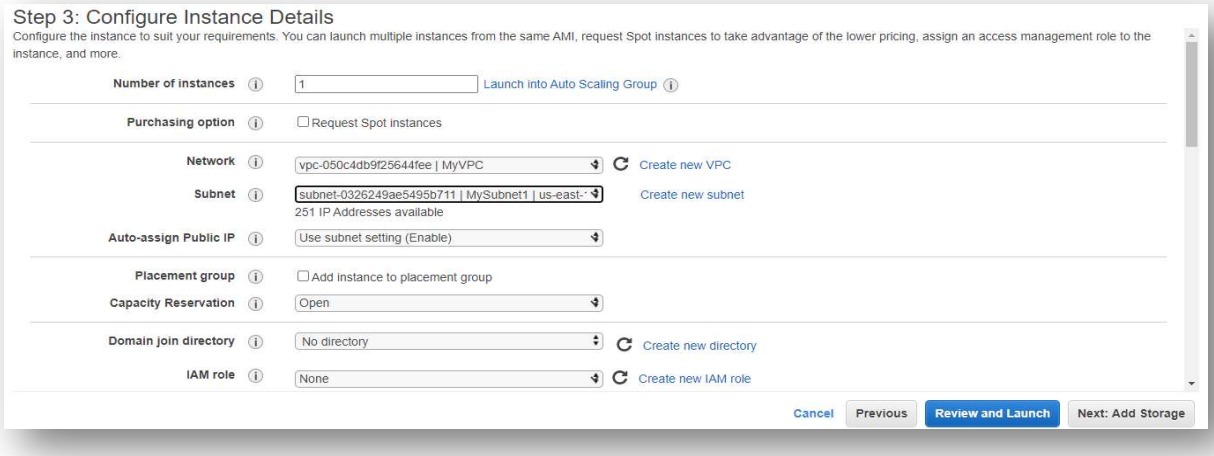
II. Choose Amazon Linux AMI



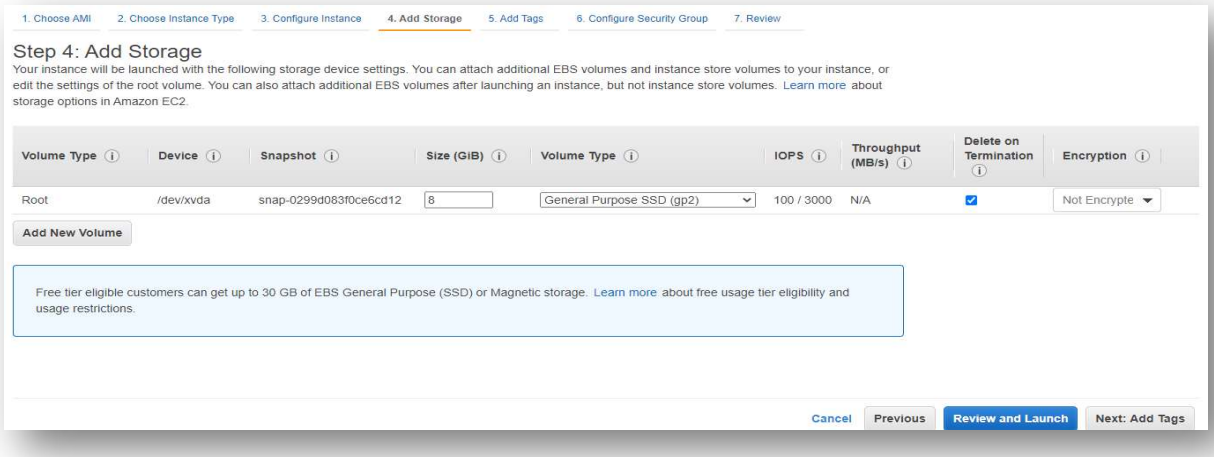
III. Choose Instance Type



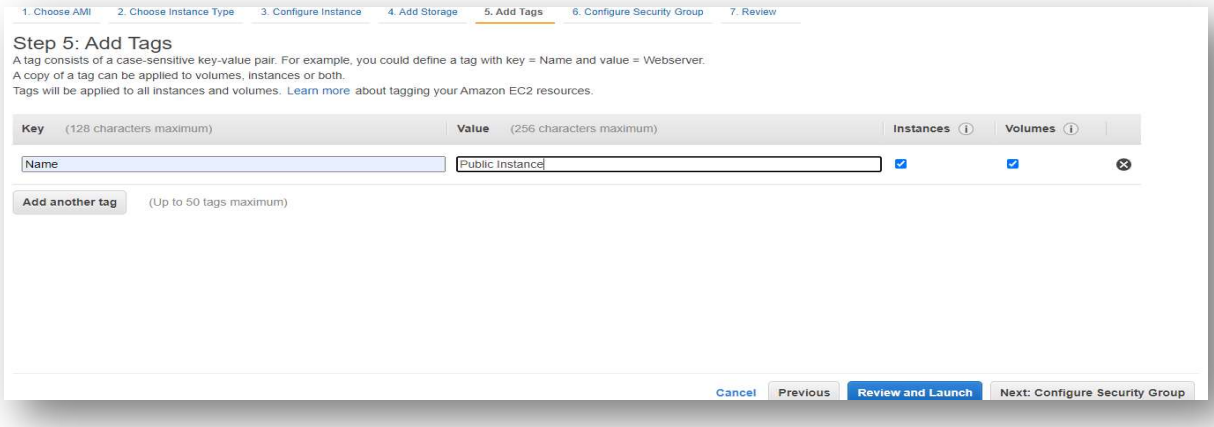
IV. Configure Instance Details. Select VPC i.e., MyVPC and select subnet 1 the Automatically Auto-assign Public IP Enabled.



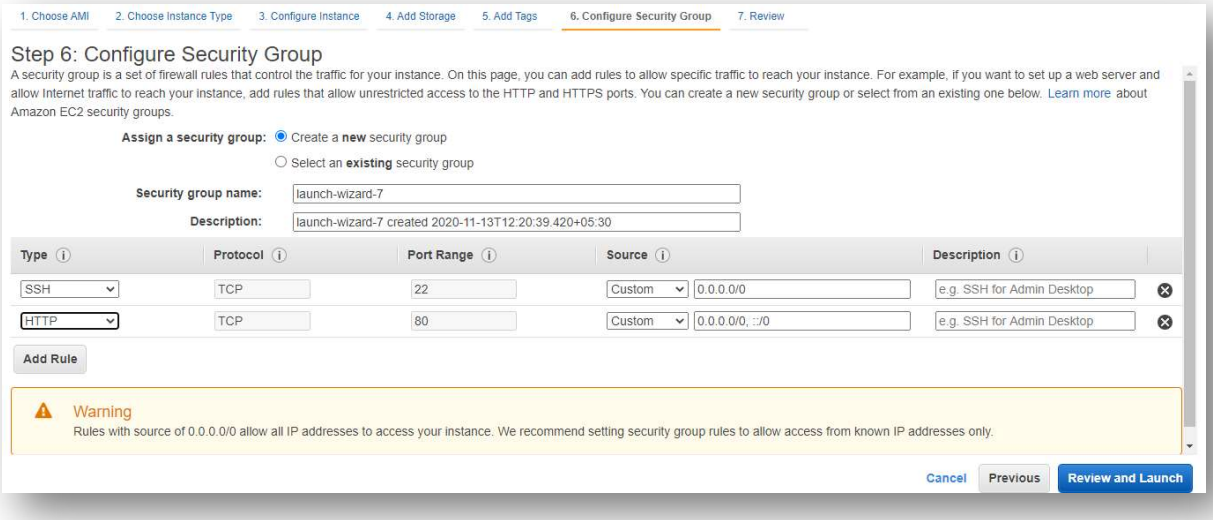
V. Keep everything as default and go to next.



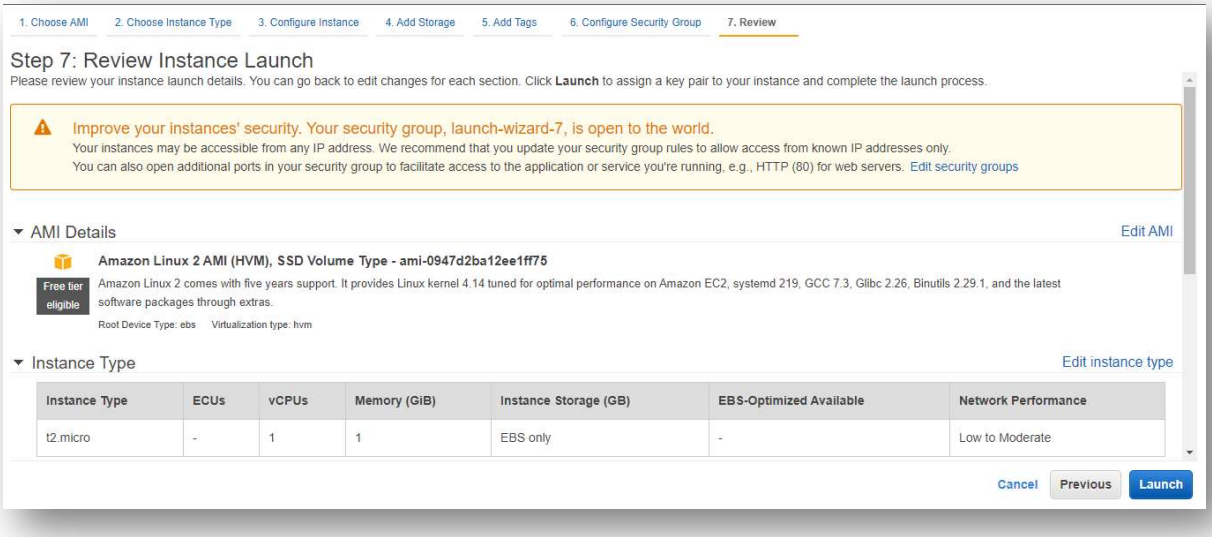
VI. Add name tag Name :: Public Instance



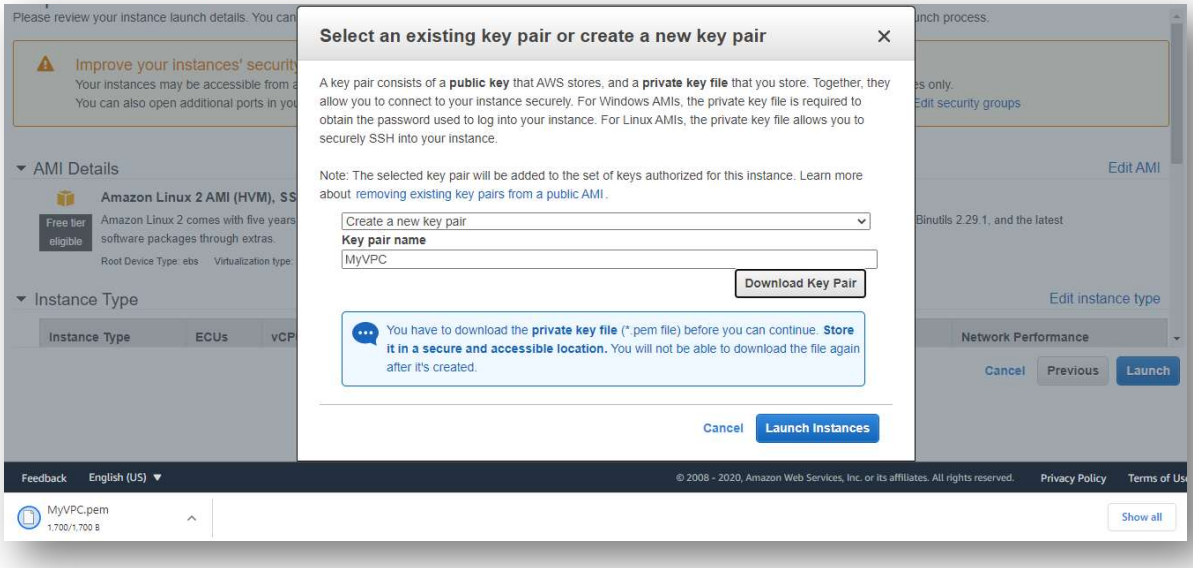
VII. Create new Security Group and add new HTTP protocol.



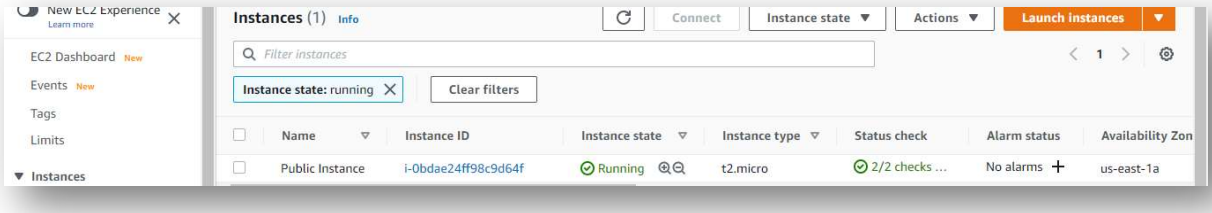
VIII. Review the Instance and Launch the Instance.



IX. Select Key pair either new or existing and download the key pair if it is new. Click Launch instances.

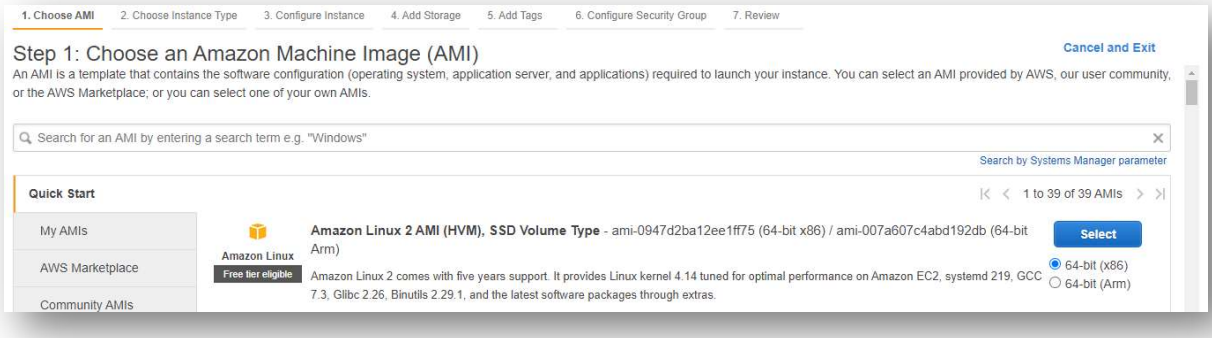


X. Public Instance Launched.

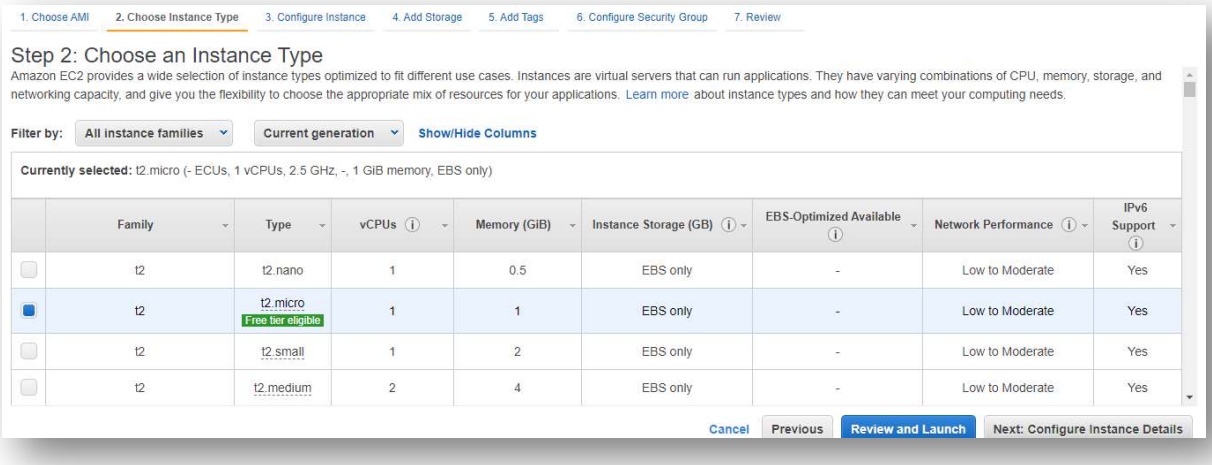


- Now creating new instance i.e., Private Instance

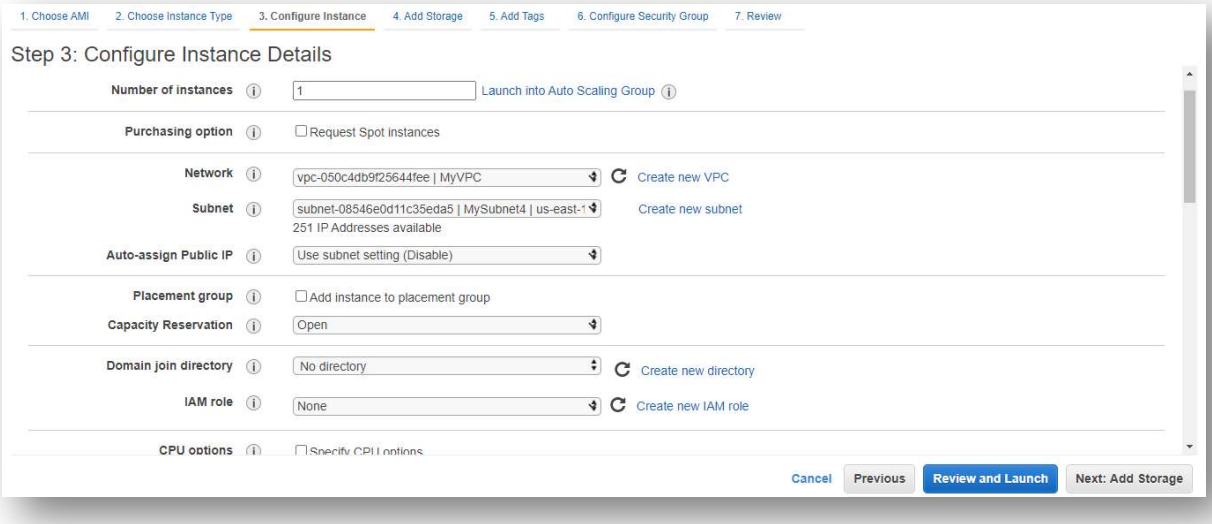
I. Select Amazon Linux AMI.



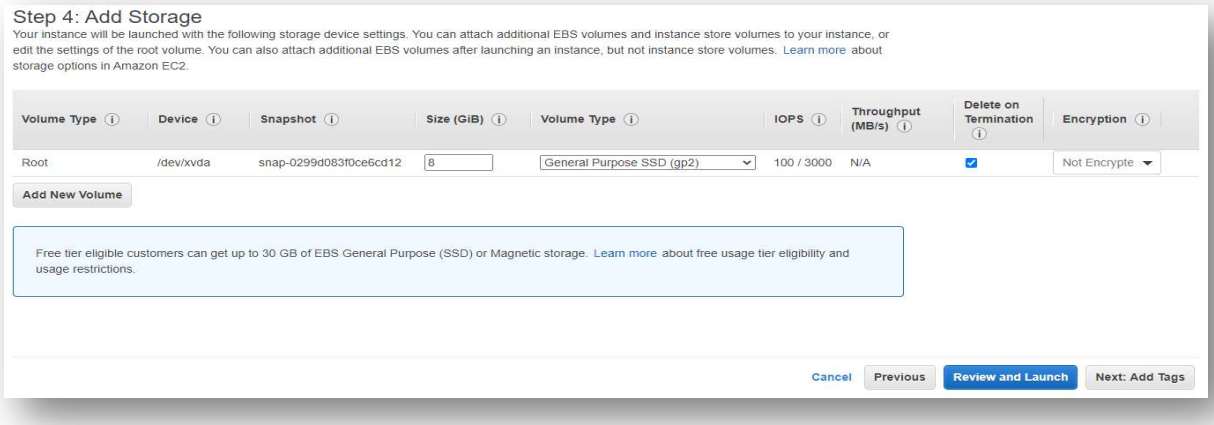
II. Choose Instance Type t2.micro.



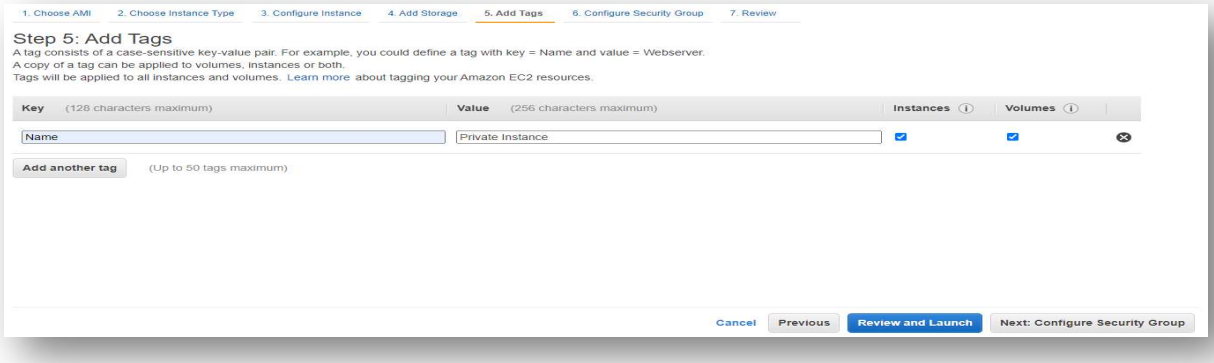
III. Now select MyVPC in Network then select Subnet 4 or 5. After selecting subnet 4 or 5 automatically Auto-assign Public IP goes to Disable state.



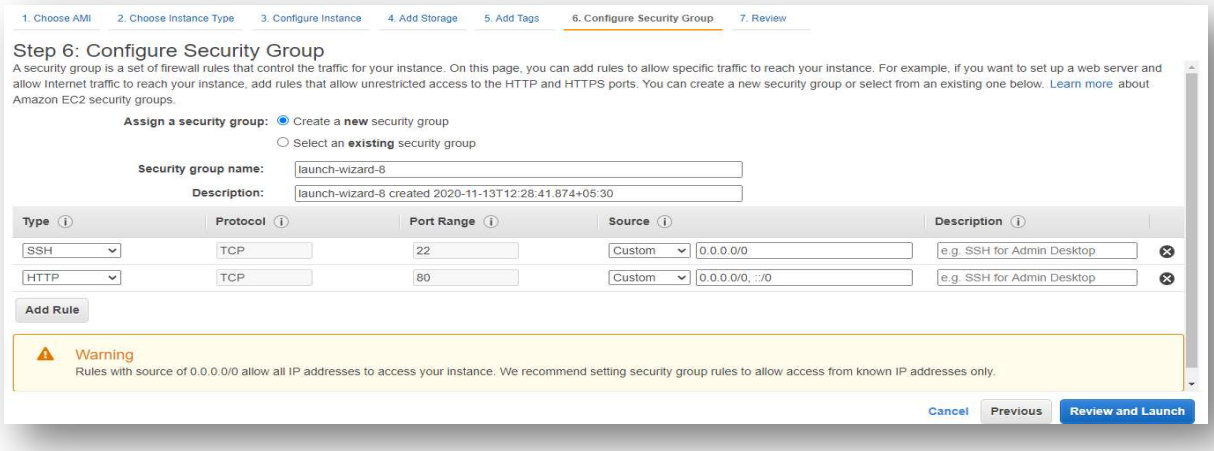
IV. Keep everything default and go to next step



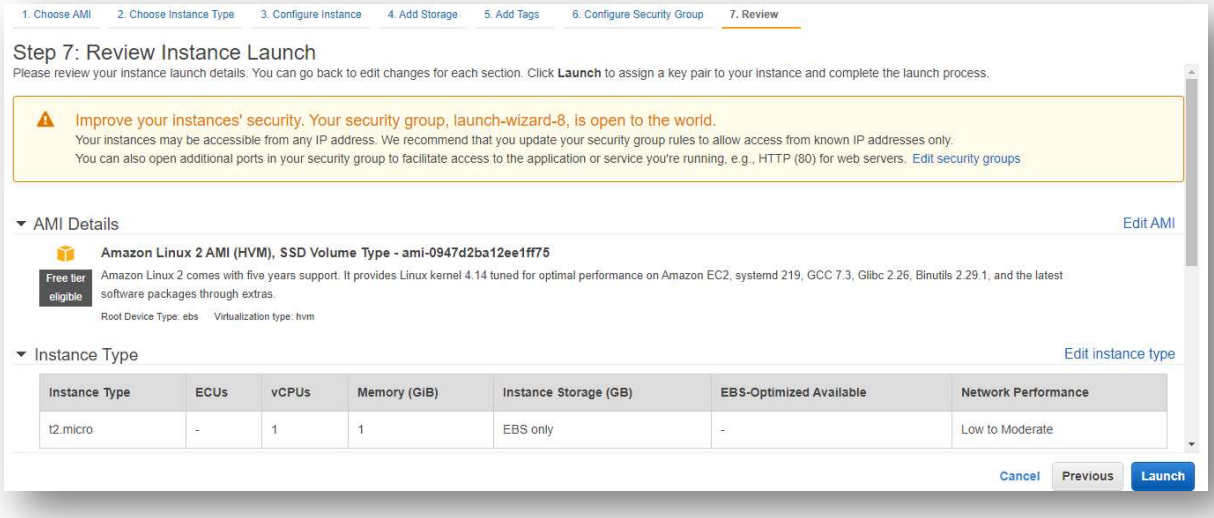
V. Add name tag Name : Private Instance



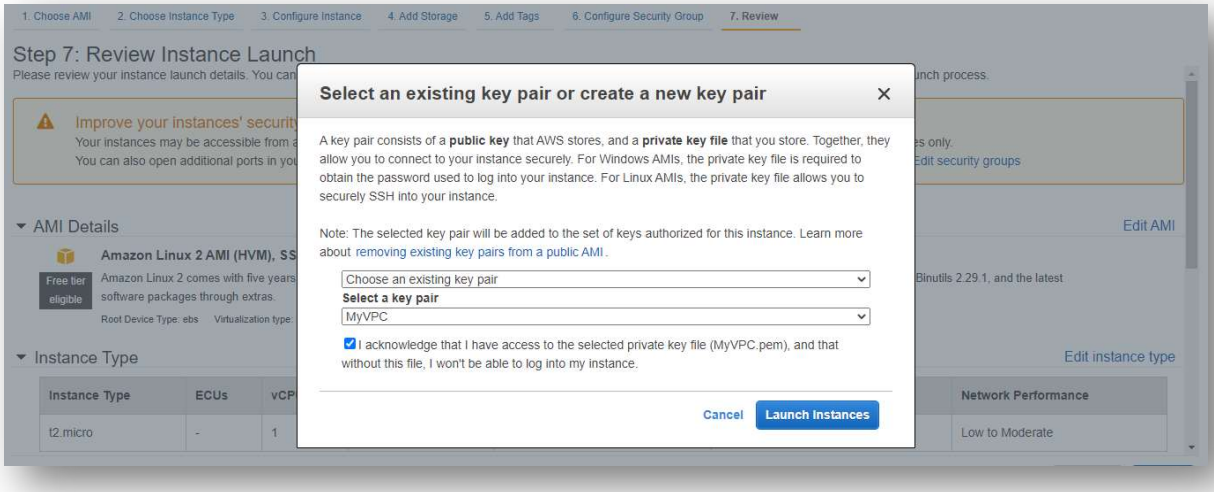
VI. Add http protocol and go to next



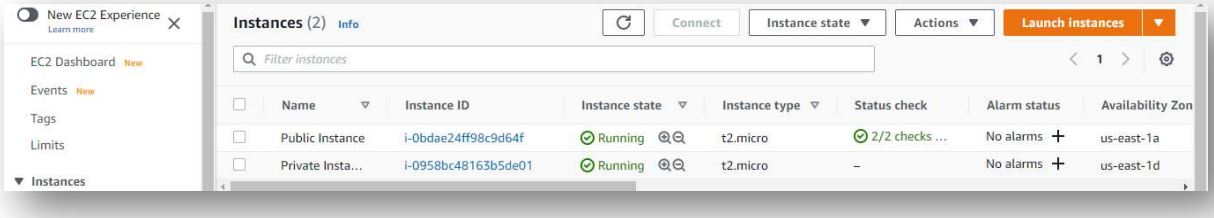
VII. Review the Instance and click on Launch



VIII. Select previous key pair and Launch Instance

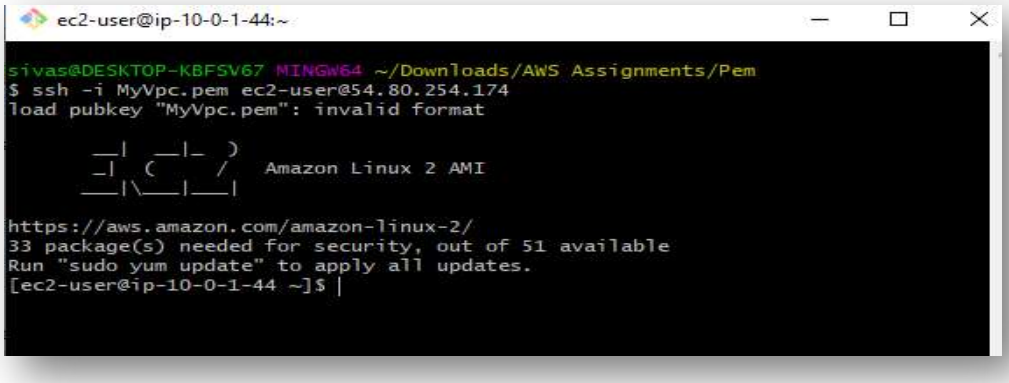


IX. Instance Launched

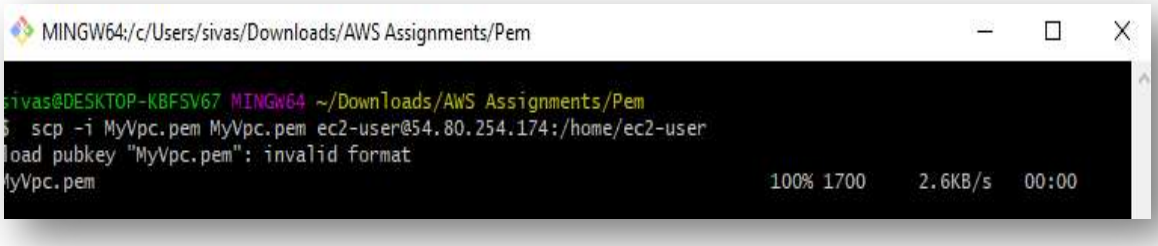


Connecting Private Instance Through Public Instance…

- First Login into Public instance through git

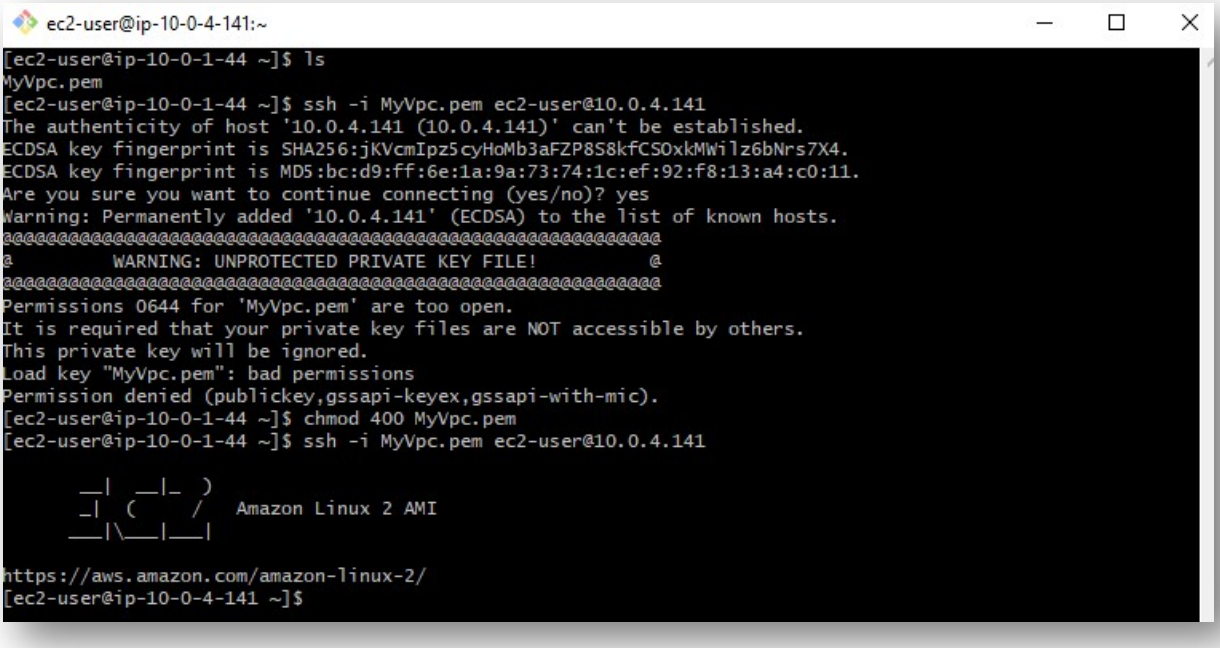


- Use another GitBash window to copy pem file to EC2 instance home directory.



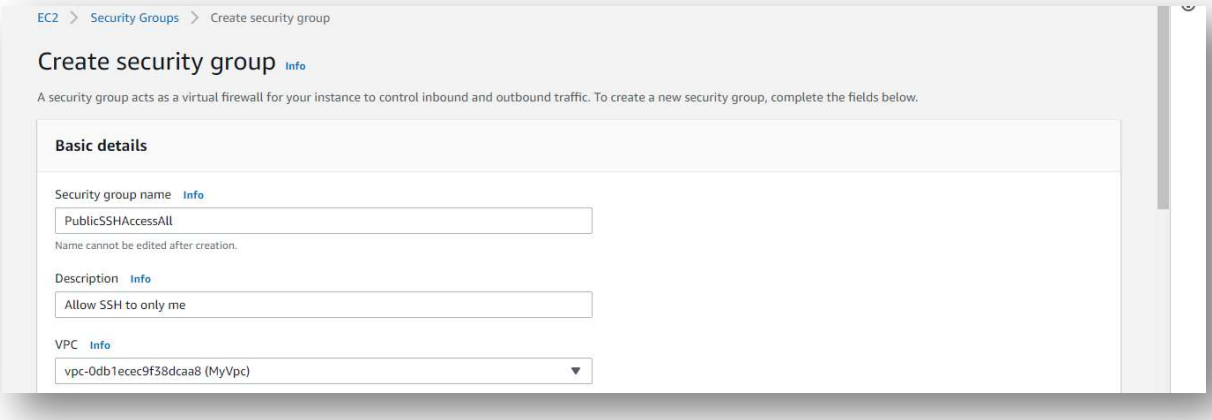
- Key pair Copied into EC2 instance.

- Again, login into Public EC2 instance, change pem file permissions. Now use same command to connect Private instance but use Private IP address of Private Instance instead of Public IP address of Public Instance.

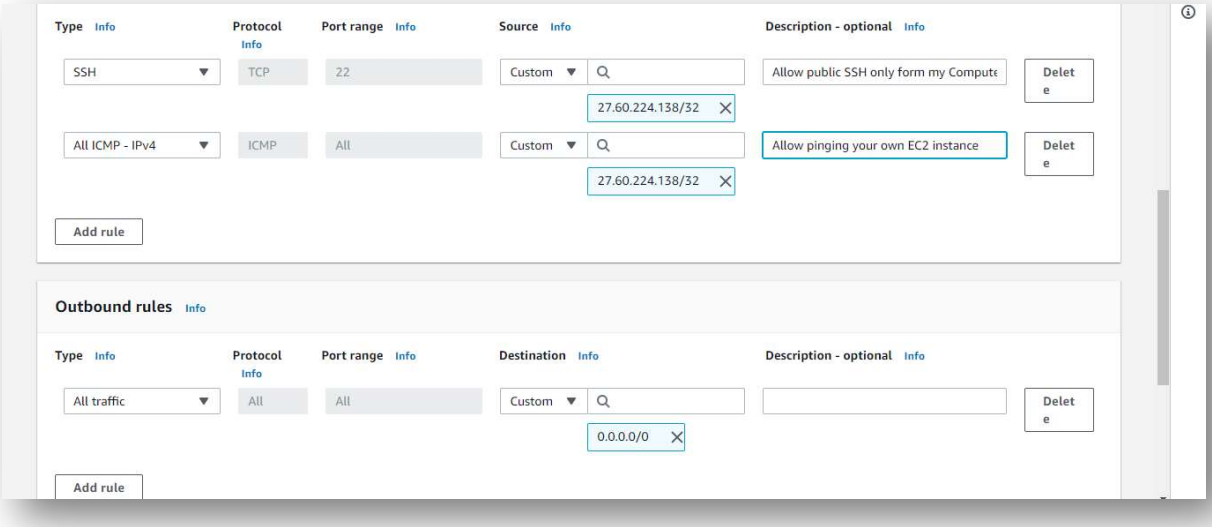


Security Group

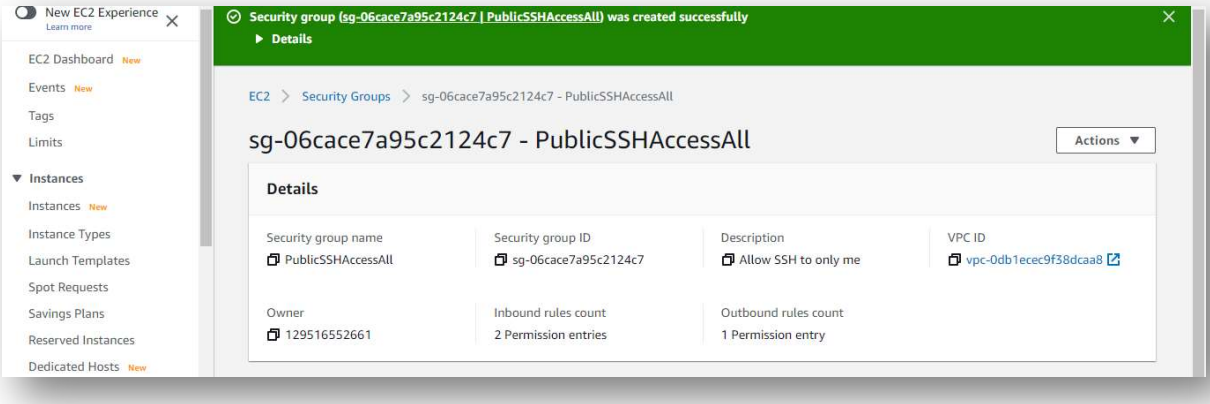
- Creating New security group
- Open **EC2 -> Network & Security -> Security Groups -> Create Security Group**
- Fill all the details



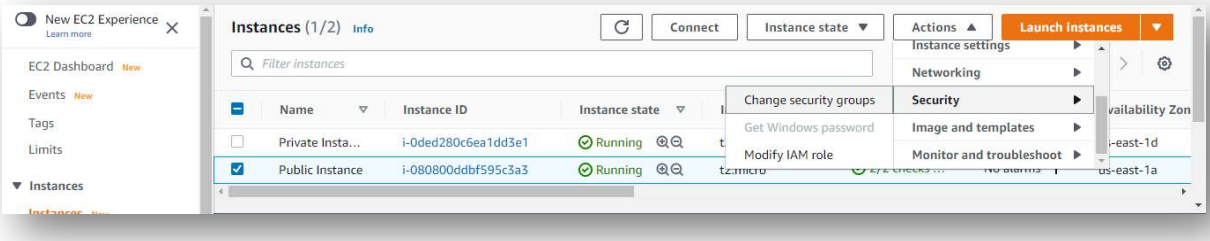
- Add Inbound rule SSH and All ICMP IPv4 (Search “What is My IP” on google to know IP Address). Click on create security



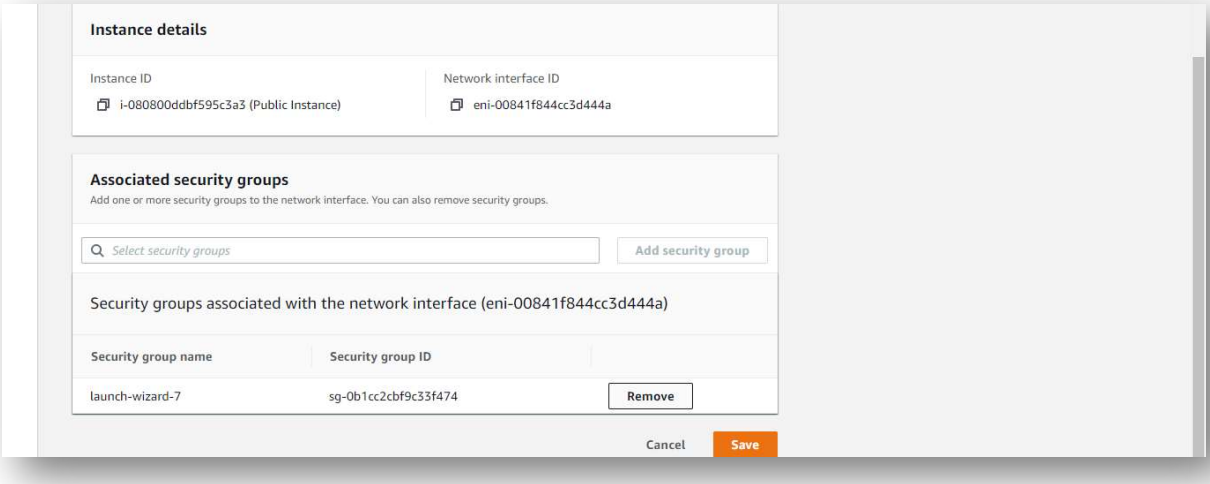
- Security Group was created successfully.



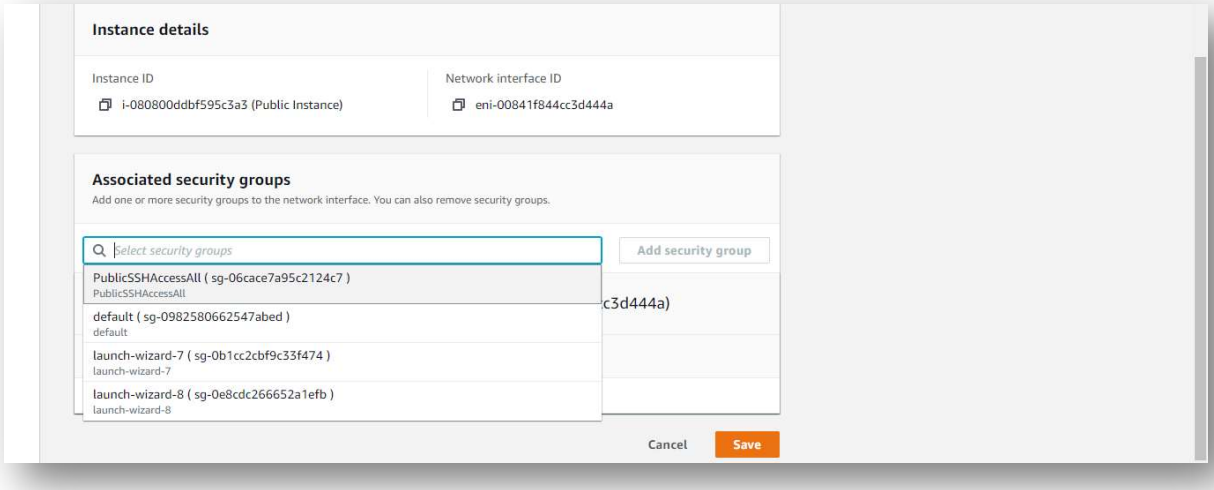
- Attach Security Group to EC2 Instance.
- Select **EC2 Instance -> Actions -> Security -> Change Security Groups**



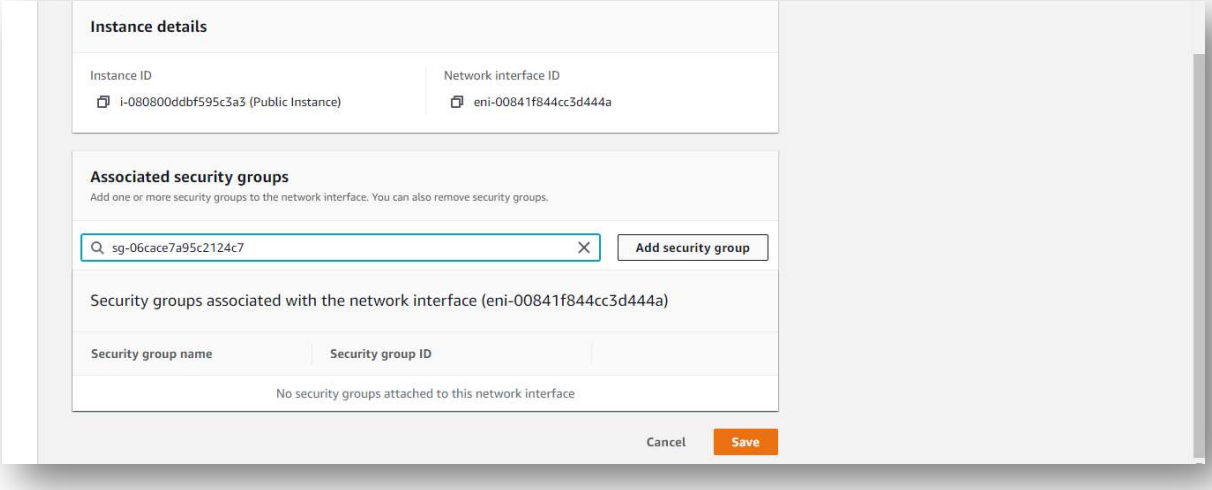
- Remove existing security group.



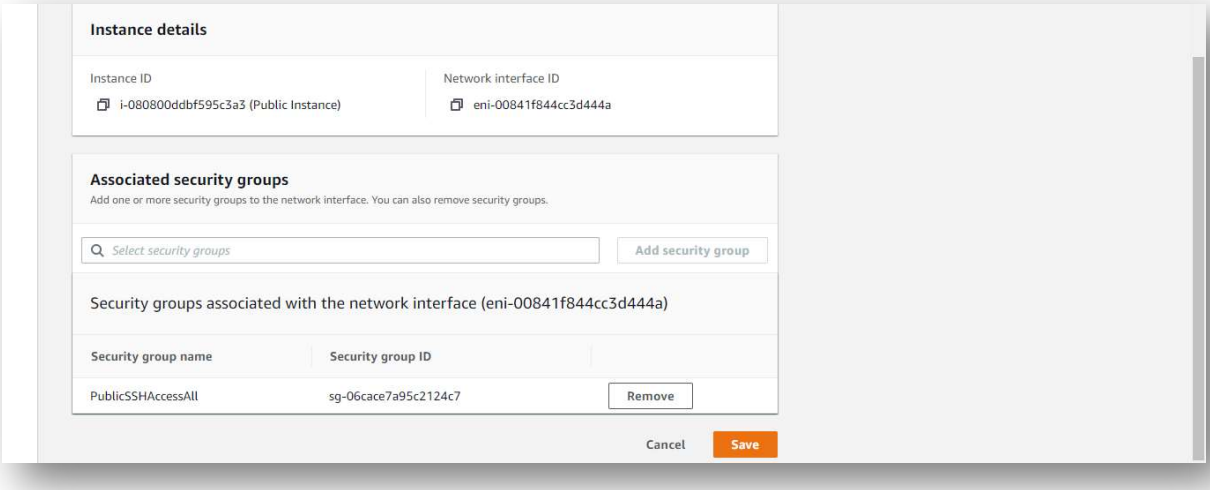
- Search for another security group to add into EC2 Instance and Select what you want to add.



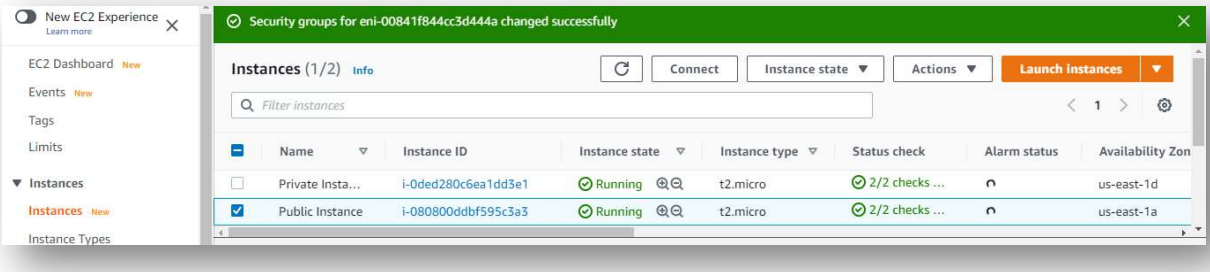
- Click on Add security group to add security group to EC2 Instance.



- Save the changes.



- Security Group successfully changed.



- EC2 Instance Connected through Git Bash and ping the public IP of the EC2 instance.