

Basic Labs

EC2 Basics Lab

Objective: To understand the process of setting up and managing an Amazon EC2 instance.

Approach: Students will start by launching a new EC2 instance, selecting an appropriate instance type and configuring the instance details. They will then create and configure a new Security Group and allocate an Elastic IP address to the instance. The lab will also include connecting to the instance via SSH.

Goal: By the end of this lab, students should be able to launch and manage an EC2 instance, understand instance types, security groups, and IP addressing in AWS.

1. AWS Console

Landing page of the AWS console. Now, the **View all services** is selected.

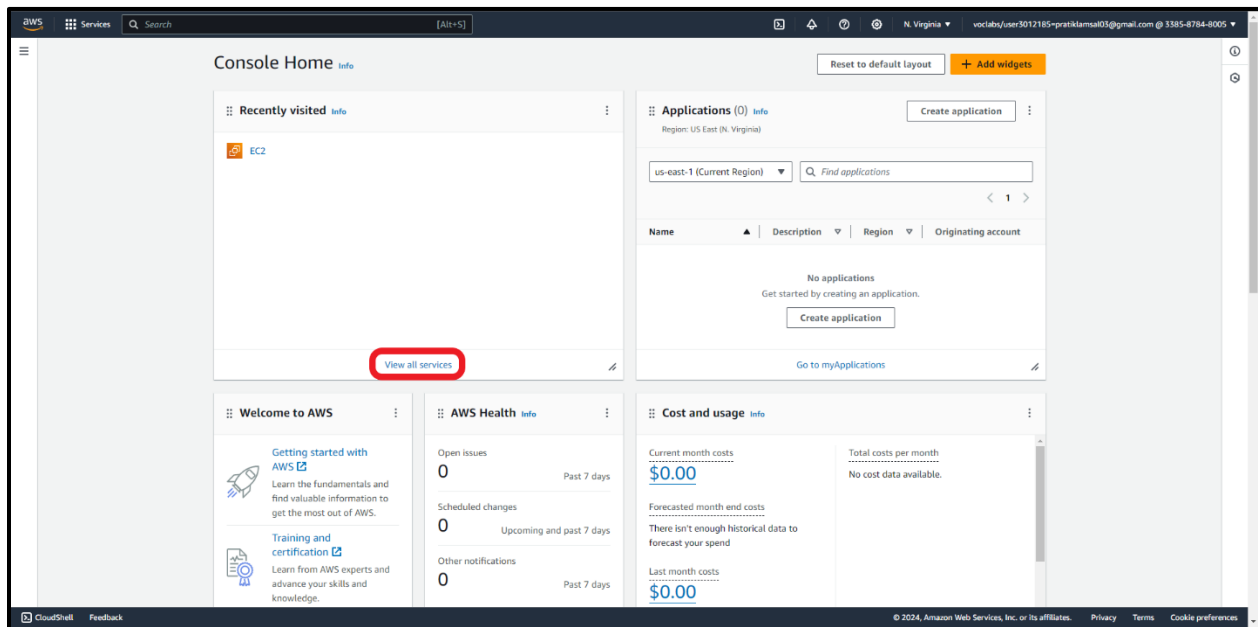


Figure 1 AWS Console

2. List of all Services

Here, **EC2** within **Compute** category is selected.

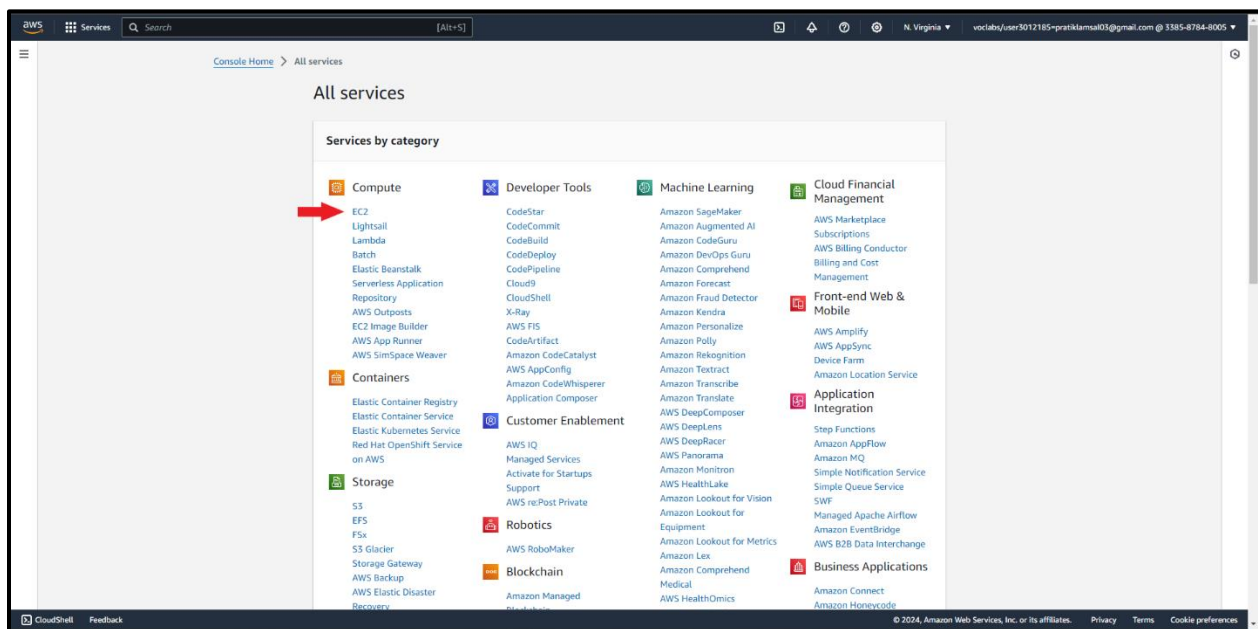


Figure 2 List of all services

3. EC2 Dashboard

EC2 Dashboard is open. **Instances** option on the left is selected.

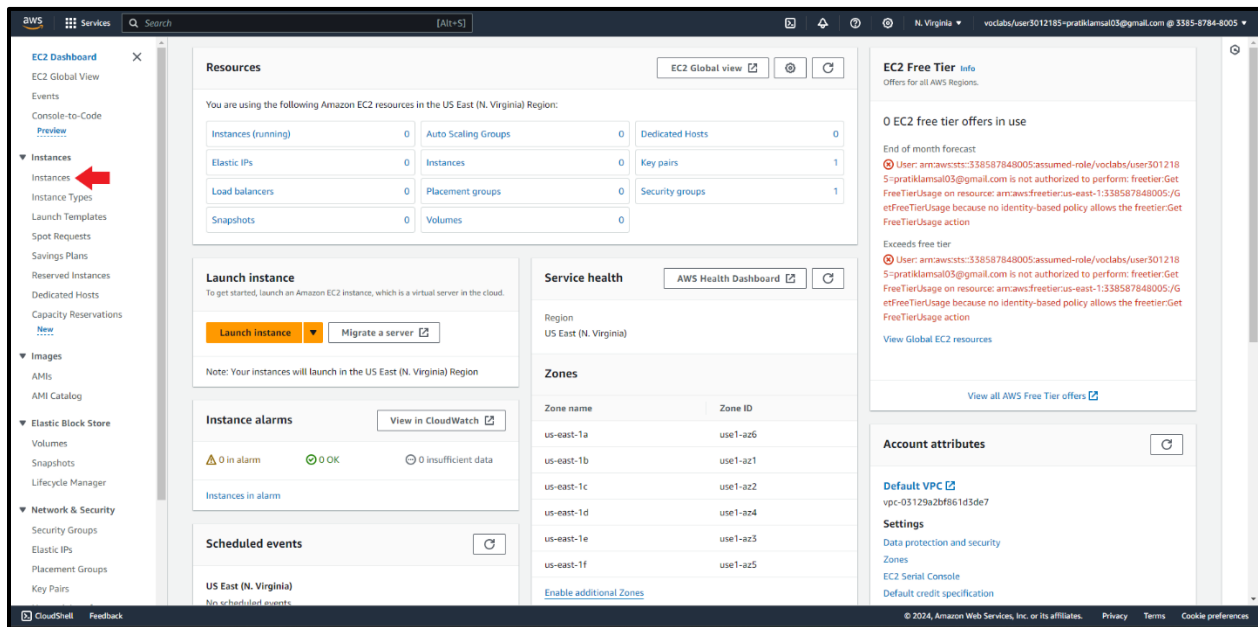


Figure 3 EC2 Dashboard

4. Instances Section

Instances Section is open. Here, the Launch Instance button is selected.

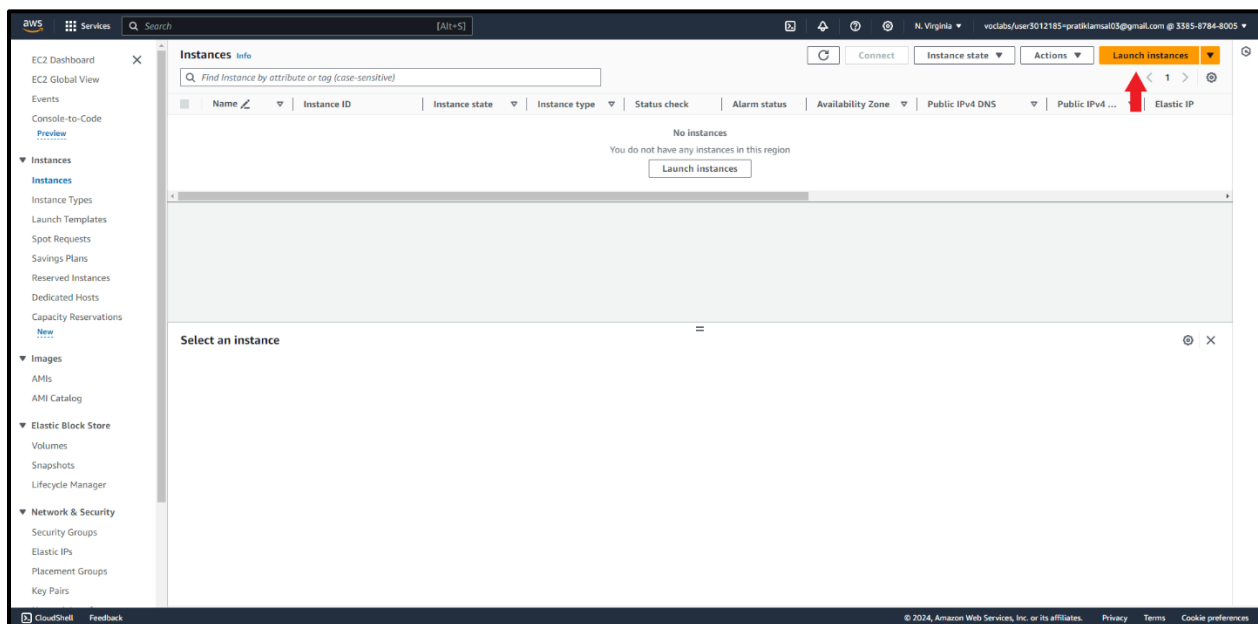


Figure 4 Instances Section

5. Launching an Instance

Here, Instance name and tags are given along with selecting among provided options.

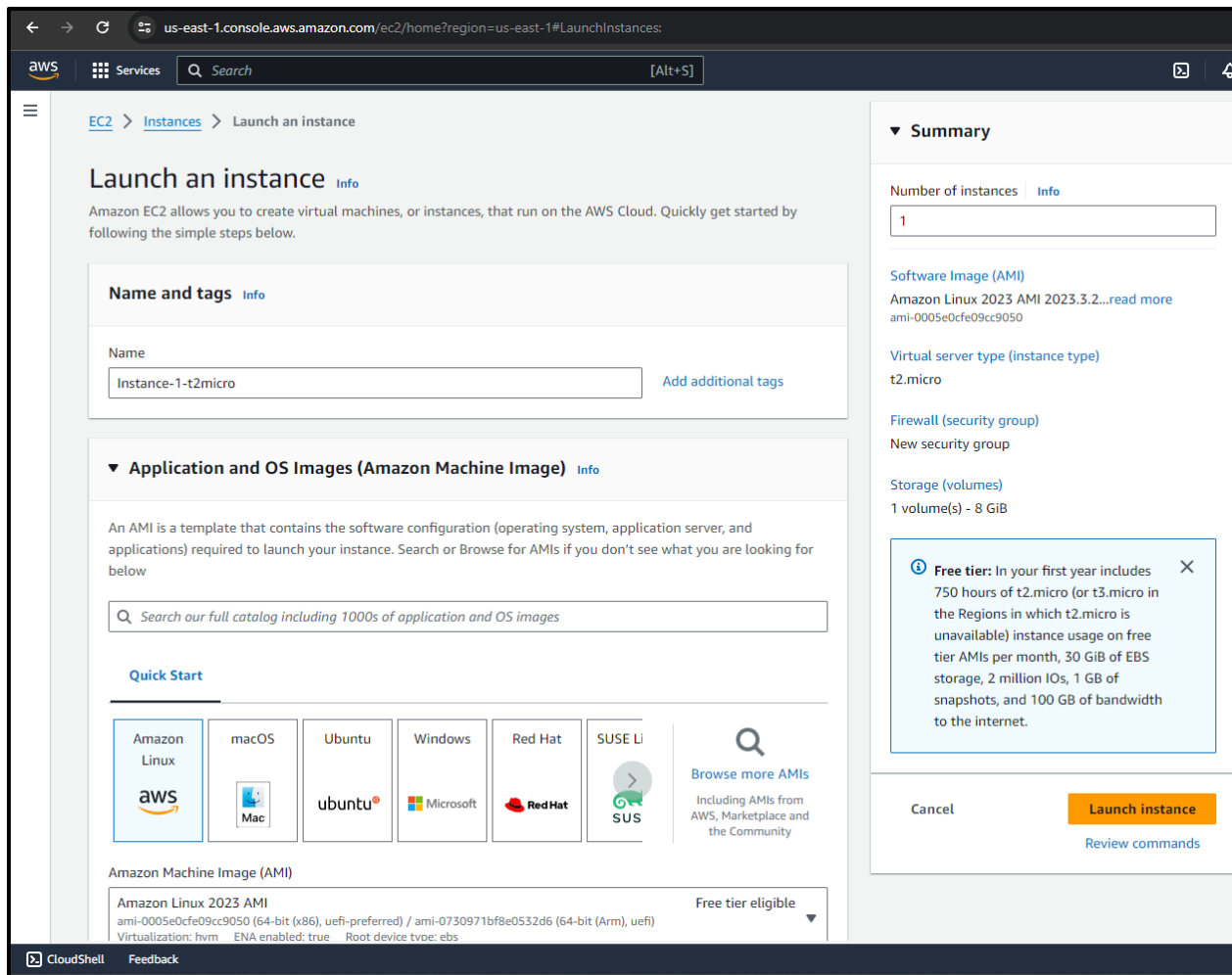


Figure 5 Launching an Instance

6. Instance Type and Key Pair

Here, Instance Type is selected along with a Key Pair. Key Pair can be created using the **Create new key pair** option highlighted.

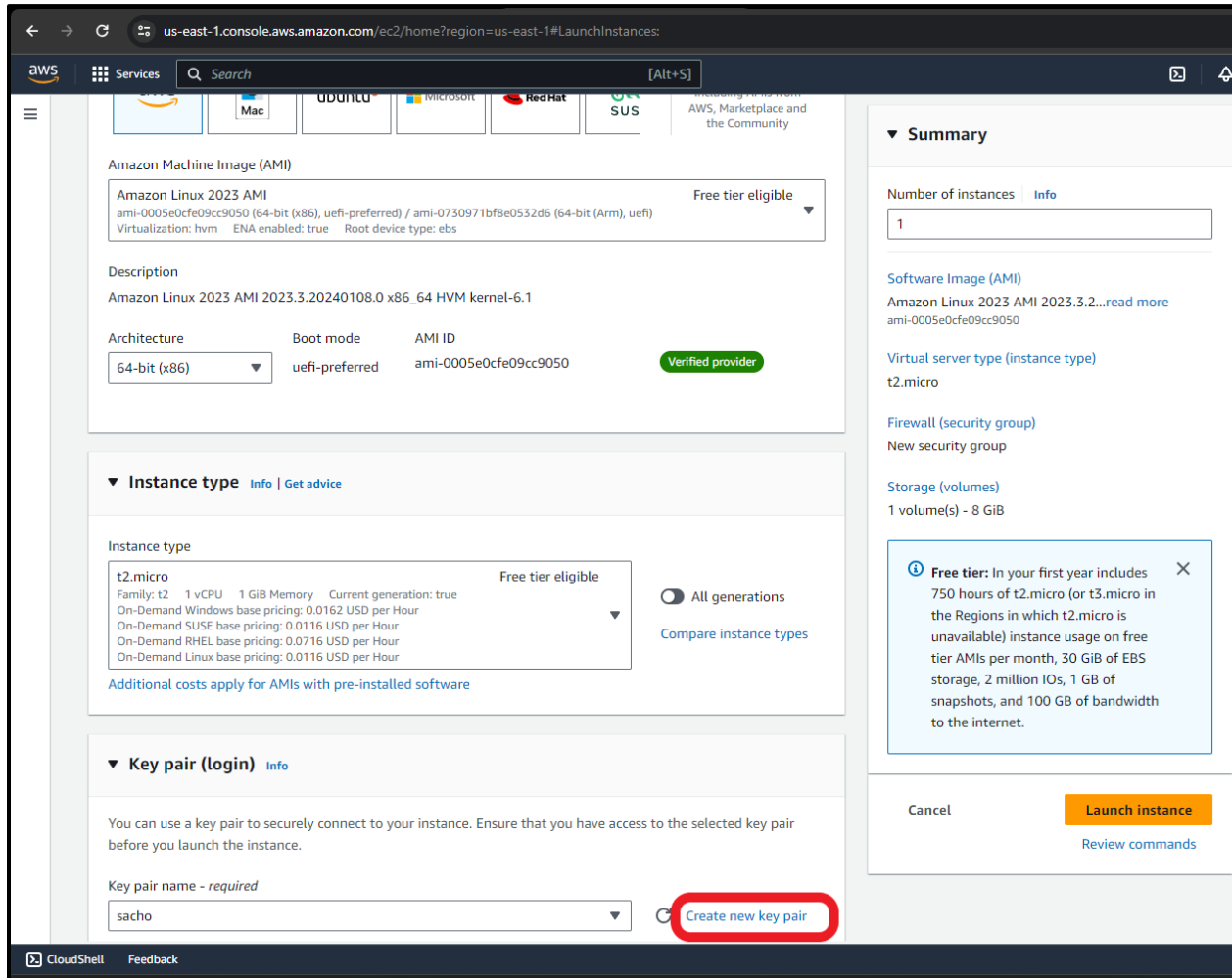


Figure 6 Selecting Instance Type and Key Pair

7. Security Group and Elastic Ip Address

Here, a new Security Group is created. Also, **Auto-assign public IP** is disabled to allocate an Elastic IP to the Instance.

The screenshot displays the AWS Management Console interface for creating a new EC2 instance. The 'Auto-assign public IP' dropdown is highlighted with a red box and set to 'Disable'. The 'Security group' section shows a new security group named 'launch-wizard-1' with an inbound rule for SSH access from anywhere. The 'Summary' panel on the right shows the instance configuration: 1 instance, Amazon Linux 2023.3.2 AMI, t2.micro instance type, and 1 volume of 8 GiB.

VPC - required | Info
vpc-03129a2bf861d3de7 (default) 172.31.0.0/16

Subnet | Info
No preference Create new subnet

Auto-assign public IP | Info
Disable

Firewall (security groups) | Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
☒ Create security group ☐ Select existing security group

Security group name - required
launch-wizard-1
This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and .-:/[]+=&:~!\$*

Description - required | Info
launch-wizard-1 created 2024-01-19T10:22:51.053Z

Inbound Security Group Rules
▼ Security group rule 1 (TCP, 22, 0.0.0.0/0) Remove

Type | Info
ssh

Protocol | Info
TCP

Port range | Info
22

Source type | Info
Anywhere

Source | Info
Add CIDR, prefix list or security
0.0.0.0/0 X

Description - optional | Info
e.g. SSH for admin desktop

Summary
Number of instances | Info
1

Software Image (AMI)
Amazon Linux 2023.3.2...read more
ami-0005e0cfe09cc9050

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million IOs, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel Launch instance Review commands

CloudShell Feedback

Figure 7 Creating New Security Group and Public IP configuration.

8. Successful Instance Launch

Instance is successfully launched. The Instance ID is highlighted.

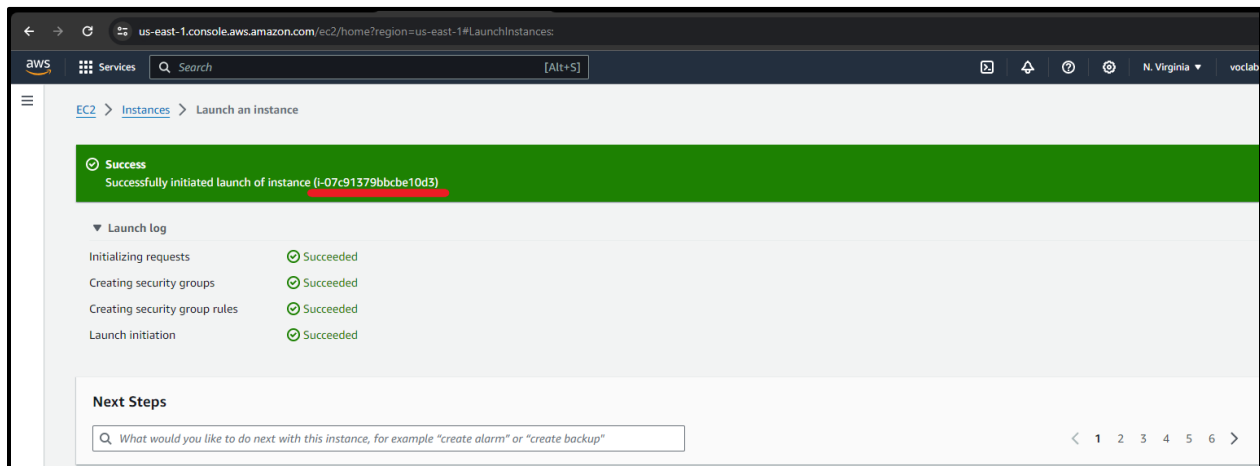


Figure 8 Successful Instance Launch

9. Lack of Public IP

Since we disabled Auto-assign public IP, Public IPv4 address is empty. To assign an Elastic IP, **Elastic IPs** is selected from the **Network & Security** options.

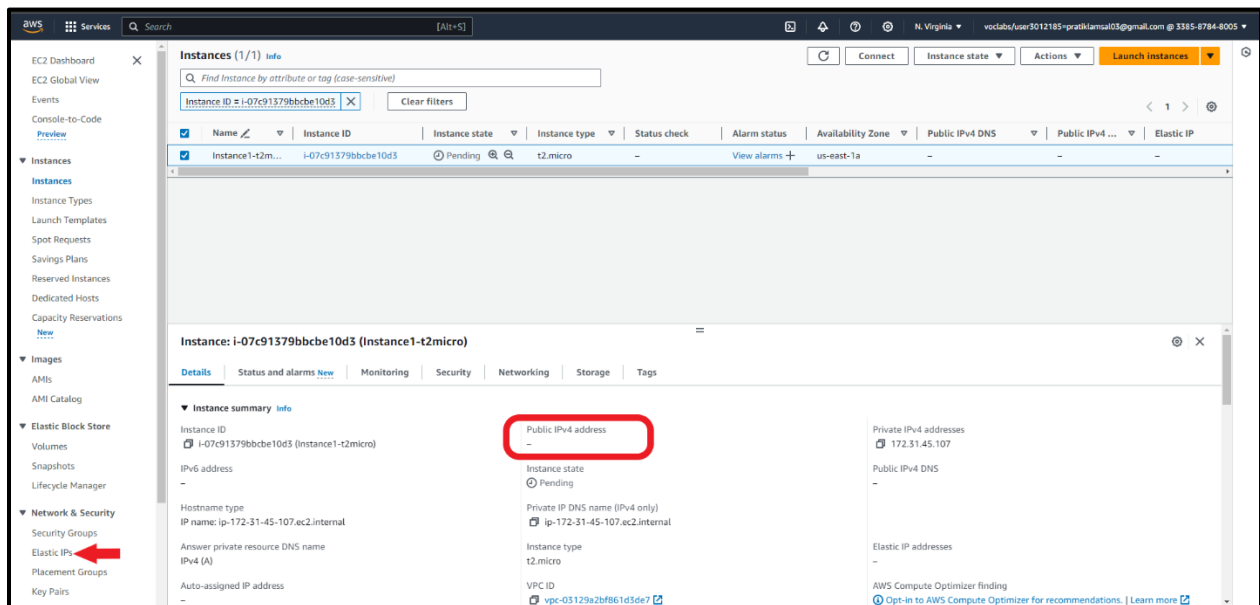


Figure 9 Lack of Public IP

10. Allocating Elastic IP

Allocate Elastic IP address button is pressed.

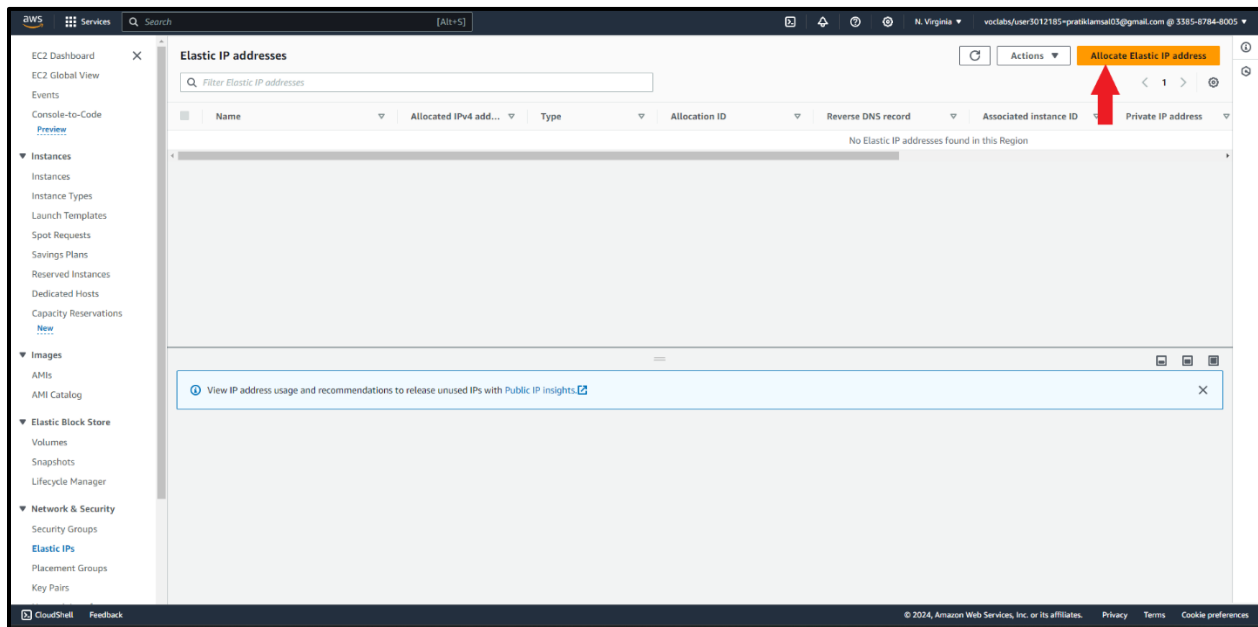


Figure 10 Allocating Elastic IP

11. Elastic IP Settings

The settings are kept at default. Then, the **Allocate** button is pressed.

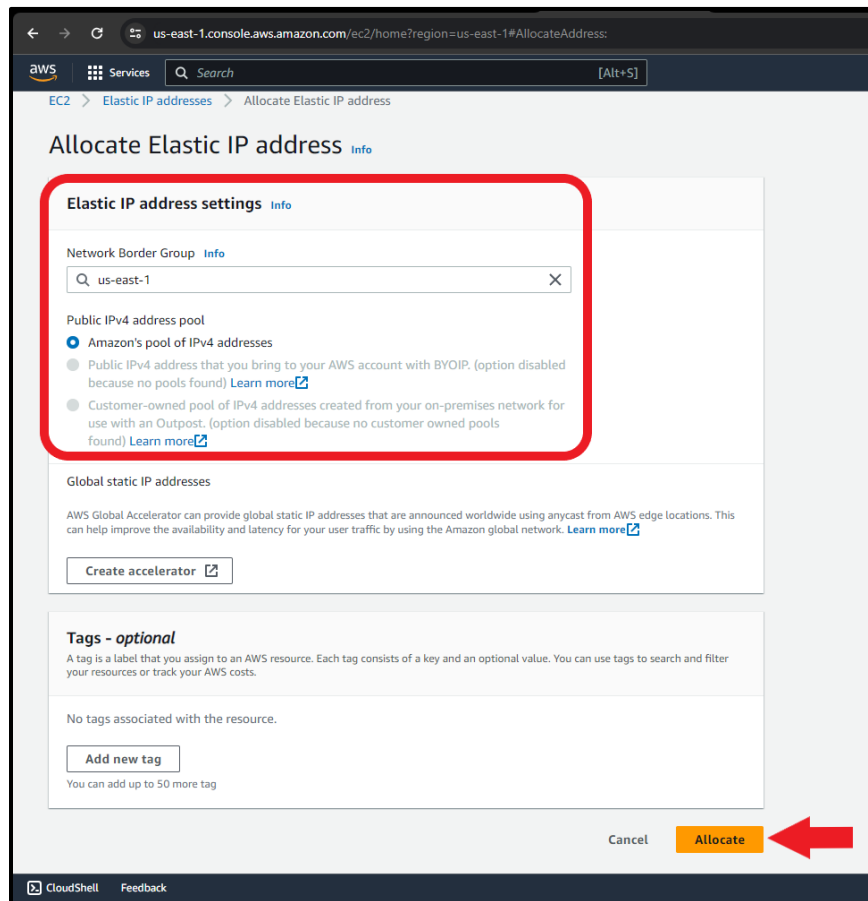


Figure 11 Elastic IP settings

12. Available Elastic IP

We can see the available Elastic IP address.

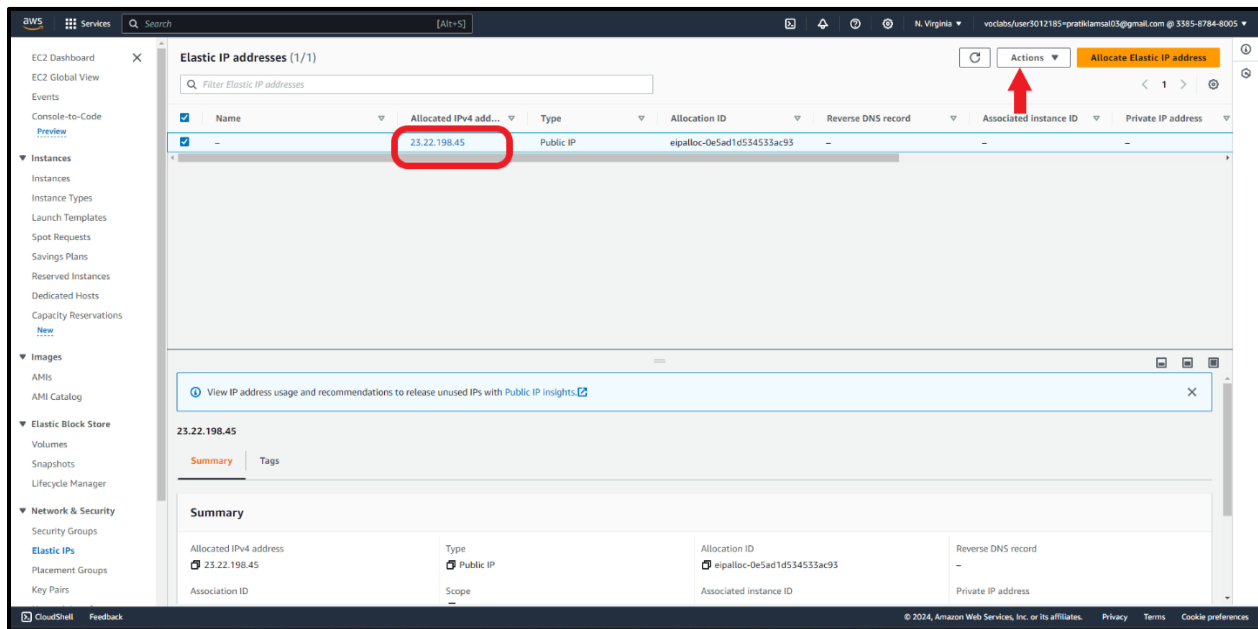


Figure 12 Elastic IP Address

Now, Actions is selected to be allocated to the instance.

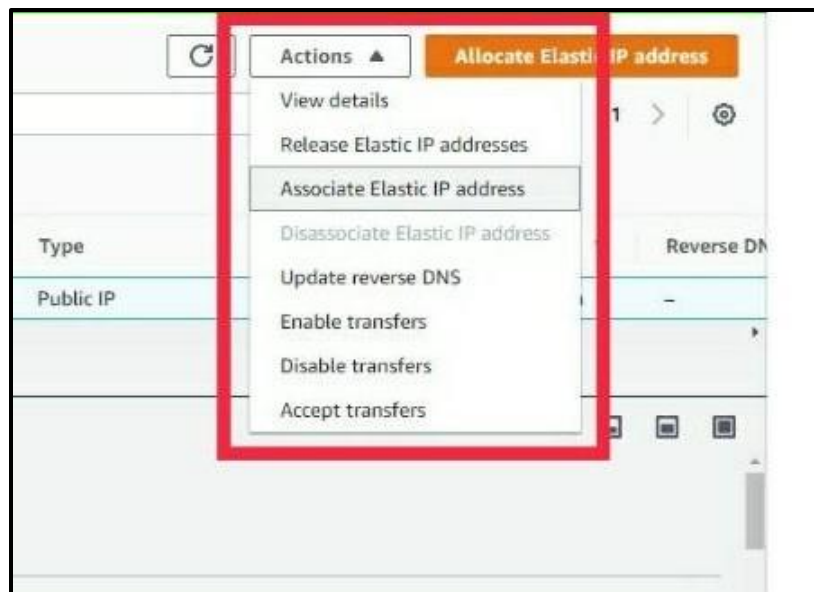


Figure 13 Associating Elastic IP Address

13. Associating Elastic IP Address

The instance to which the Elastic IP Address should be associated with is selected.

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AssociateAddress:PublicIp=23.22.198.45

aws Services Search [Alt+S]

EC2 > Elastic IP addresses > Associate Elastic IP address

Associate Elastic IP address [Info](#)

Choose the instance or network interface to associate to this Elastic IP address (23.22.198.45)

Elastic IP address: 23.22.198.45

Resource type
Choose the type of resource with which to associate the Elastic IP address.

☒ Instance
☐ Network interface

Warning: If you associate an Elastic IP address with an instance that already has an Elastic IP address associated, the previously associated Elastic IP address will be disassociated, but the address will still be allocated to your account. [Learn more](#)

If no private IP address is specified, the Elastic IP address will be associated with the primary private IP address.

Instance
i-0974b41f6bfc217bd

Private IP address
The private IP address with which to associate the Elastic IP address.
Choose a private IP address

Reassociation
Specify whether the Elastic IP address can be reassociated with a different resource if it already associated with a resource.
☐ Allow this Elastic IP address to be reassociated

Cancel Associate

CloudShell Feedback

Figure 14 Associating Elastic IP with the Instance

14. Instance with Elastic IP Address

We can see the Elastic IP address is associated with the Instance as highlighted.

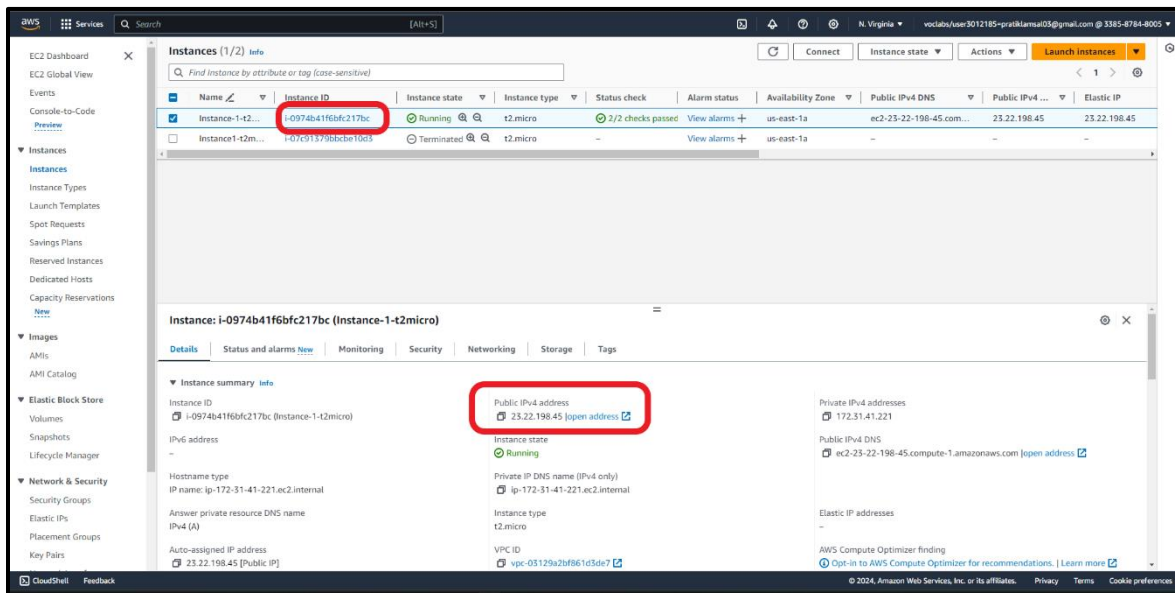


Figure 15 Instance associated with Elastic IP Address

15. Access to Key Pair file

Here, read permission is provided to the Key Pair file which downloaded when creating Key Pair in Step-6.

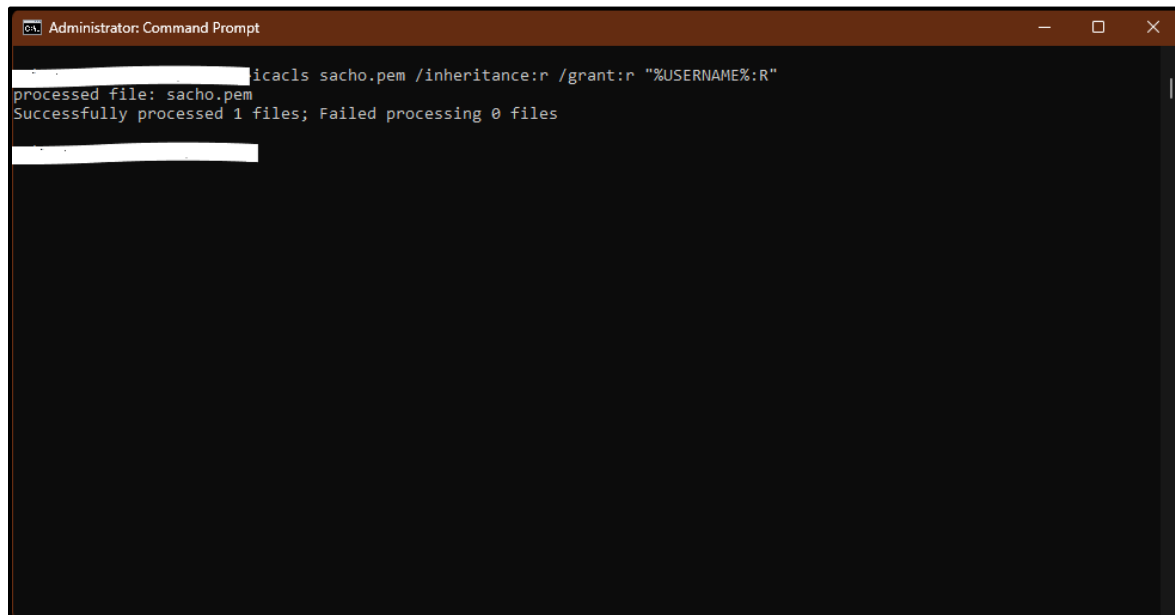


Figure 16 Key Pair File Permission

