Lesson-End Project

Scaling of EBS Volume for a Linux VM

Project agenda: To implement a procedure to dynamically scale the Elastic Block Store (EBS) volume of a Linux Virtual Machine to optimize storage capacity and performance

Description: Your company is experiencing business growth where solution deployment is happening with limited resources. In this case, the vertical scalability feature of AWS can be used to create a cost-optimised architecture.

Tools required: AWS account

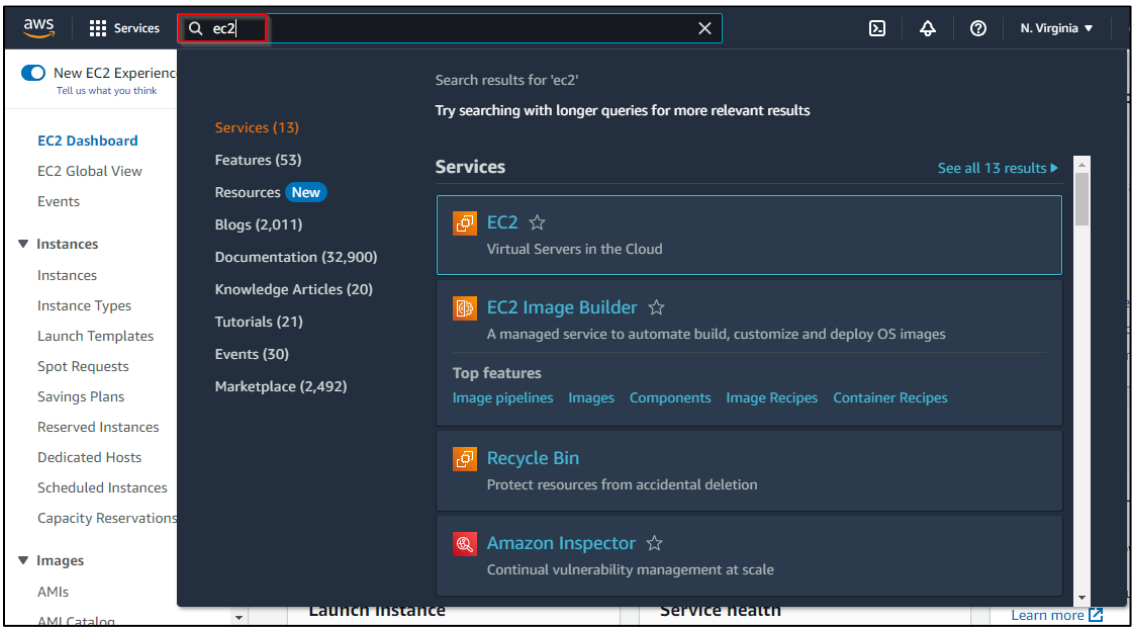
Prerequisites: A running EC2 Instance

Steps to be followed:

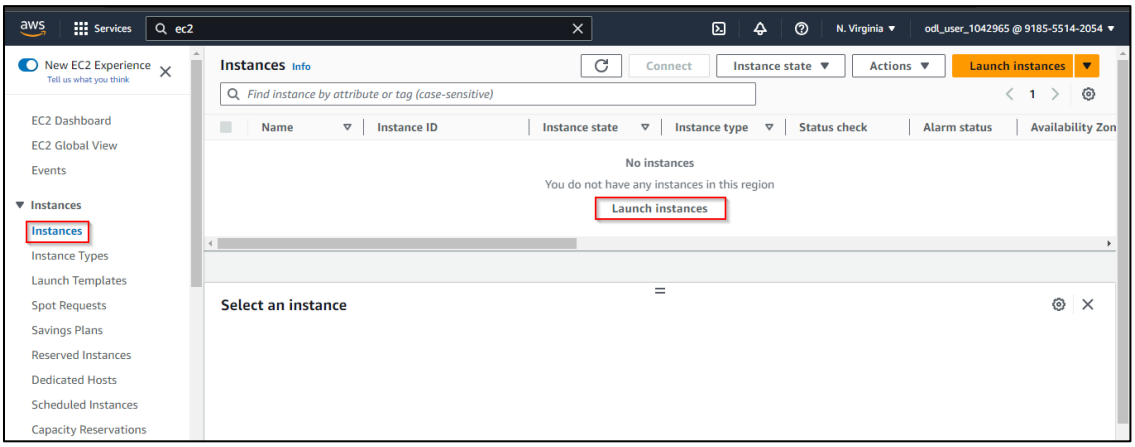
1. Create an EC2 instance
2. Identify the EBS volume
3. Create a snapshot
4. Create a new volume
5. Detach the existing volume from the EC2 Instance
6. Attach a new volume to the EC2 Instance

Step 1: Create an EC2 instance

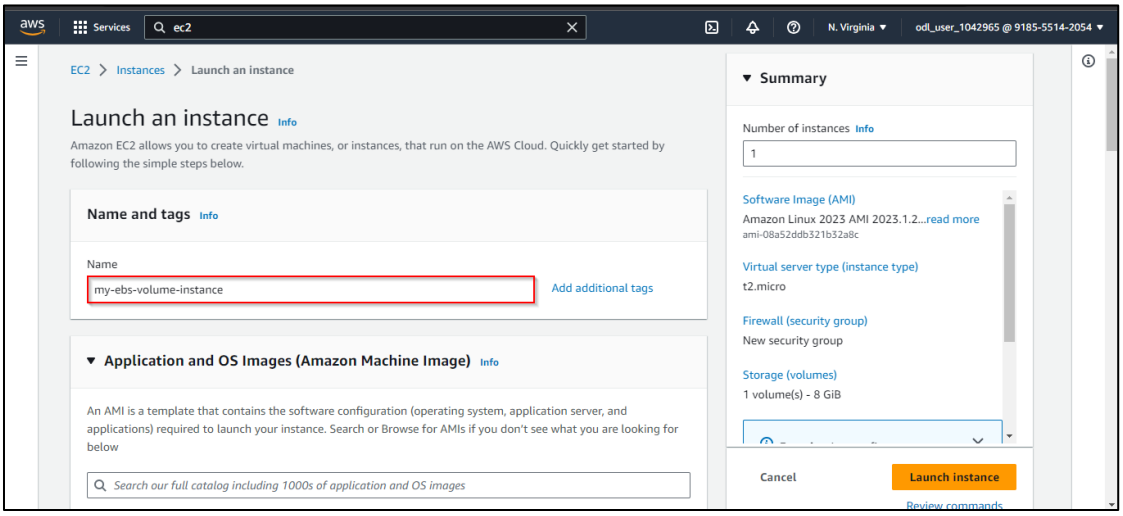
1.1 Navigate to the AWS Management Console and select the **EC2** service



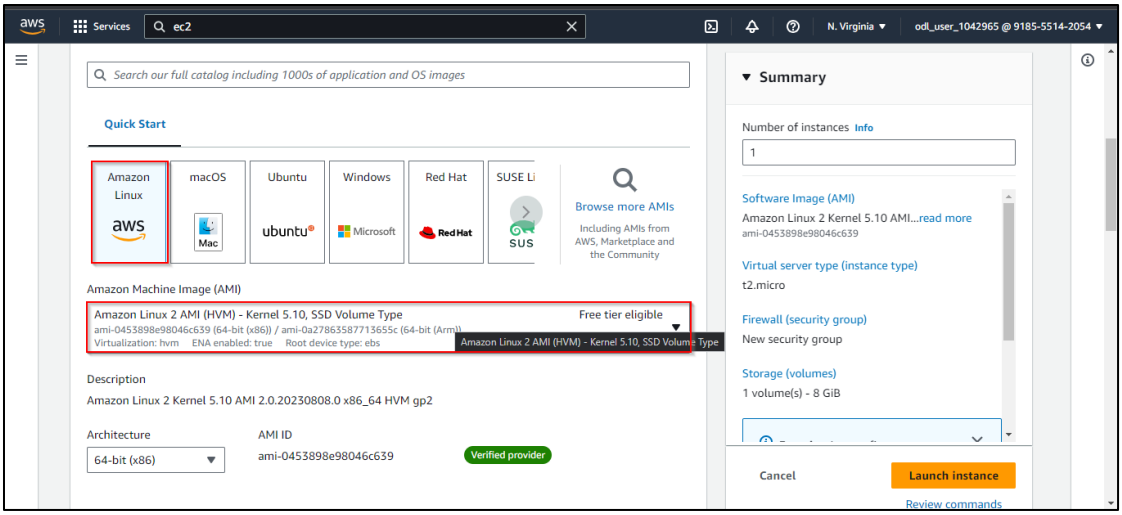
1.2 Click on **Instances** and select **Launch instances**



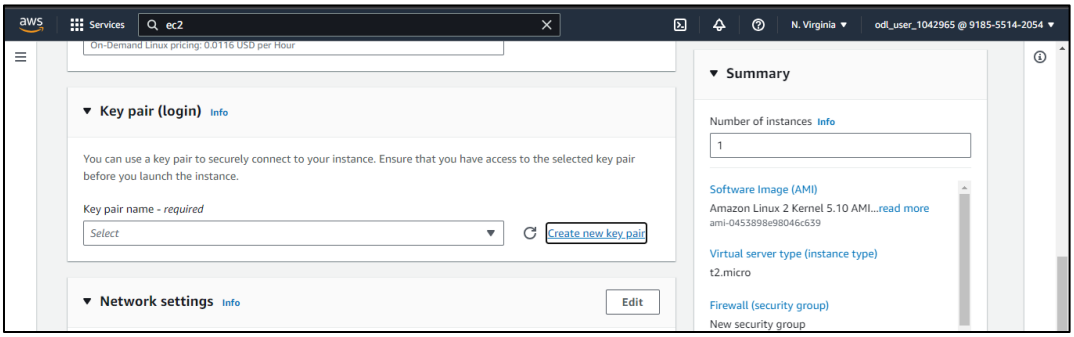
1.3 Enter a name for the **Instance**



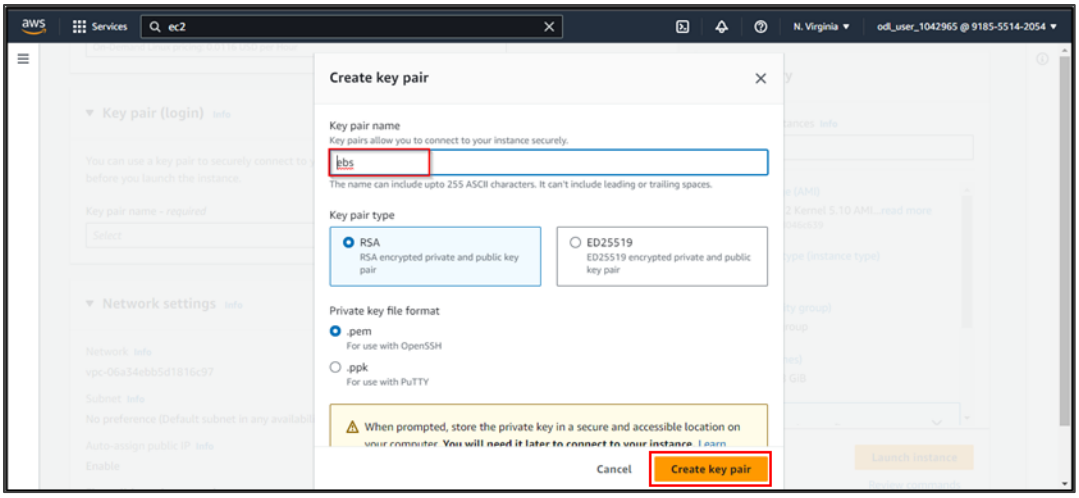
1.4 Select **Amazon Linux VM** and select AMI as **Kernel 5.10, SSD**



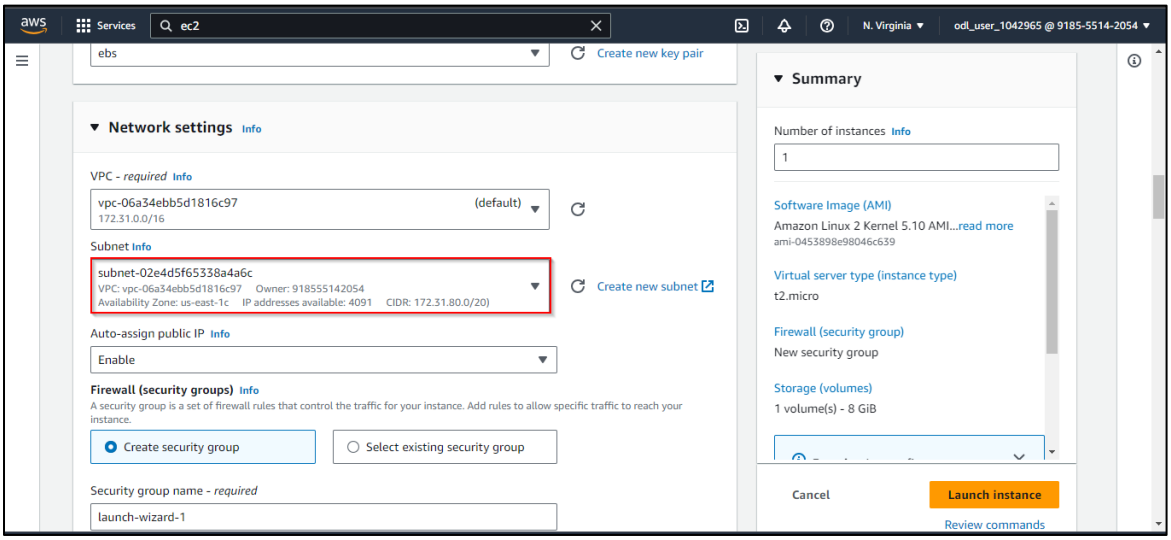
1.5 Click on **Create new key pair**



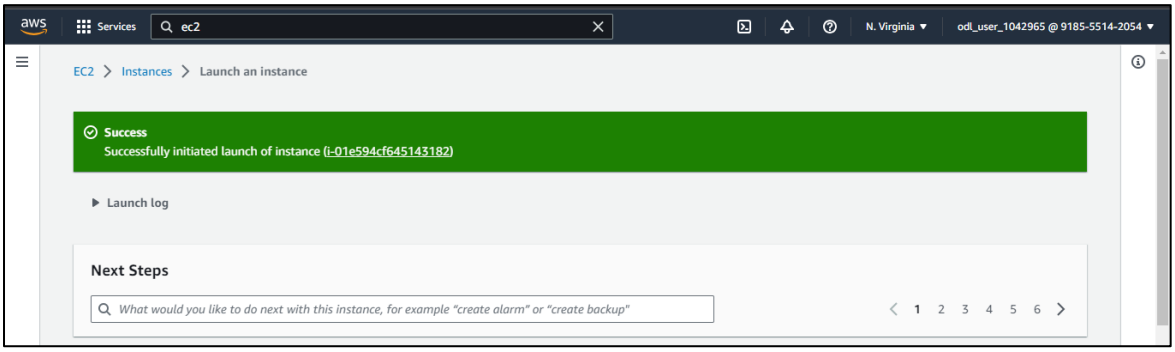
1.6 Enter the **Key pair name** as **ebs** and click the **Create key pair** button



1.7 In the **Network settings**, add the subnet availability zone and click the **Launch instance** button



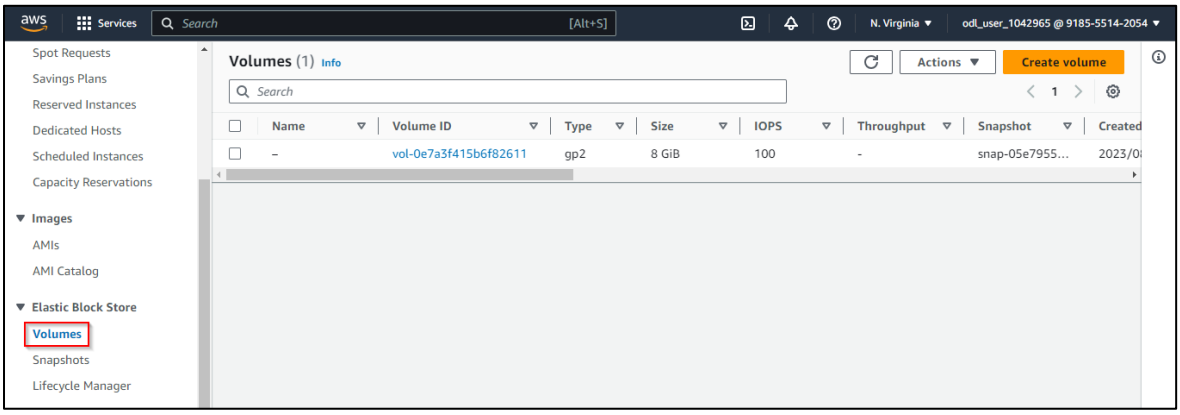
Note: You may also use the Subnet Availability Zone as **us-east-1a**.



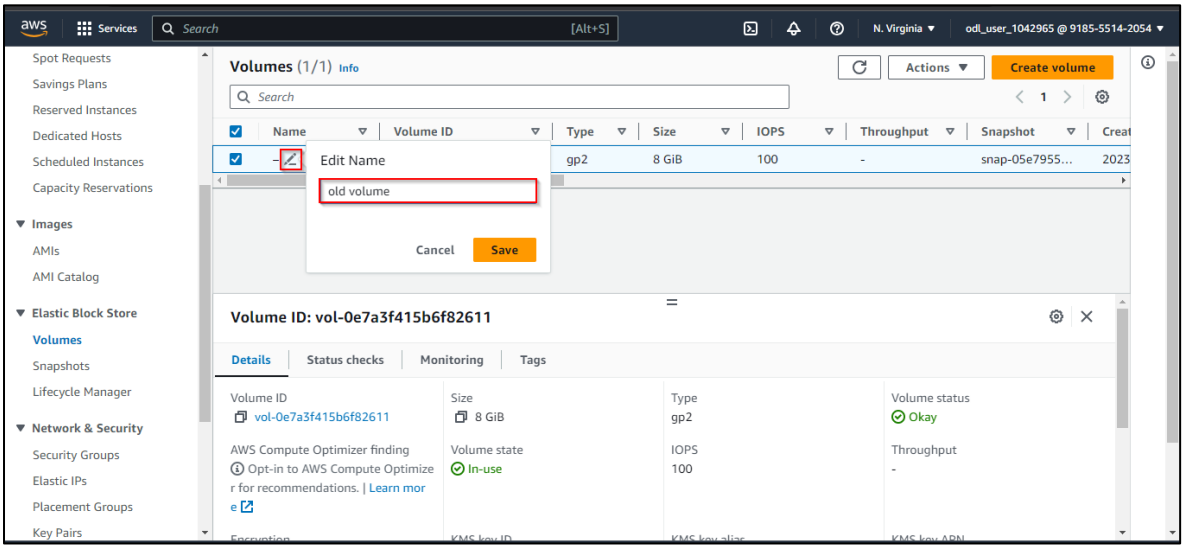
The EC2 Instance has been successfully initiated.

Step 2: Identify the EBS volume

2.1 Navigate to the **Elastic Block Store** and click on **Volumes**

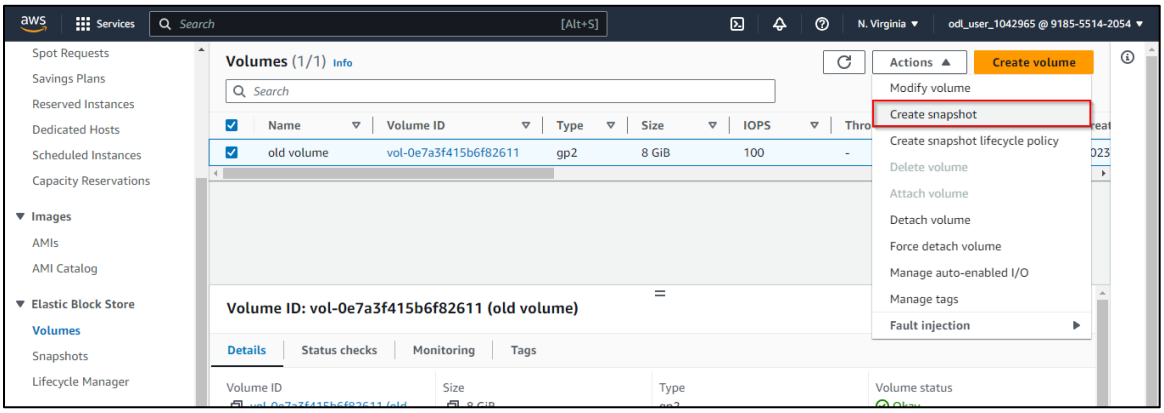


2.2 Click on the **Edit** icon, change the name to **old volume**, and click on **Save**

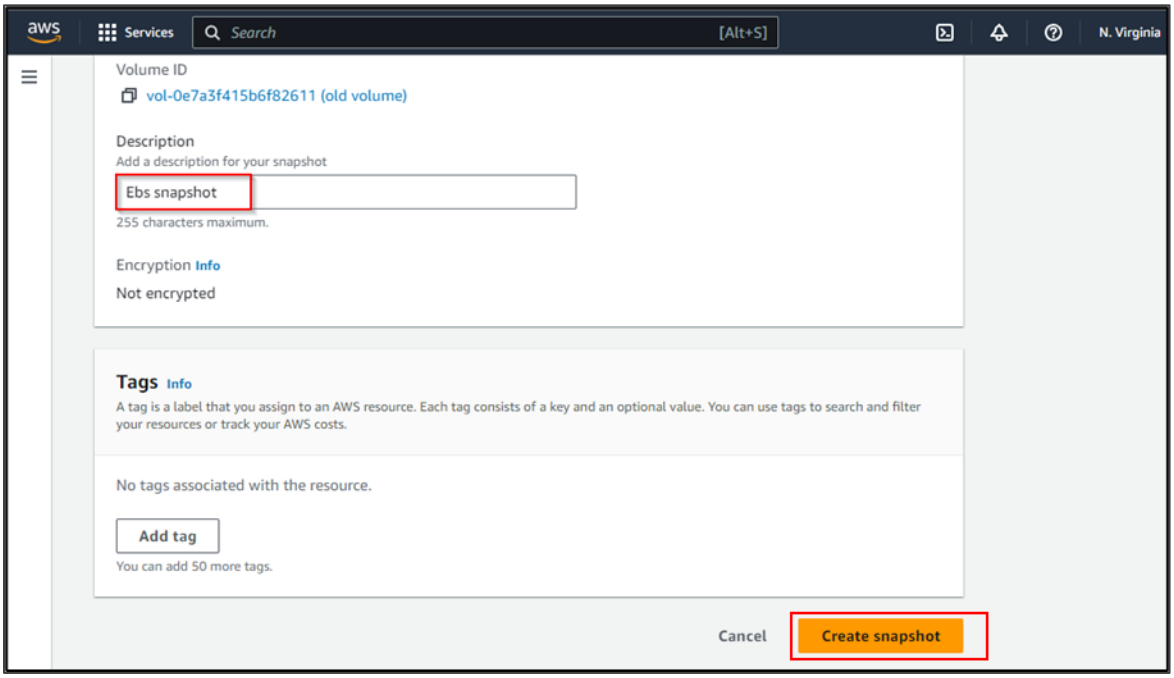


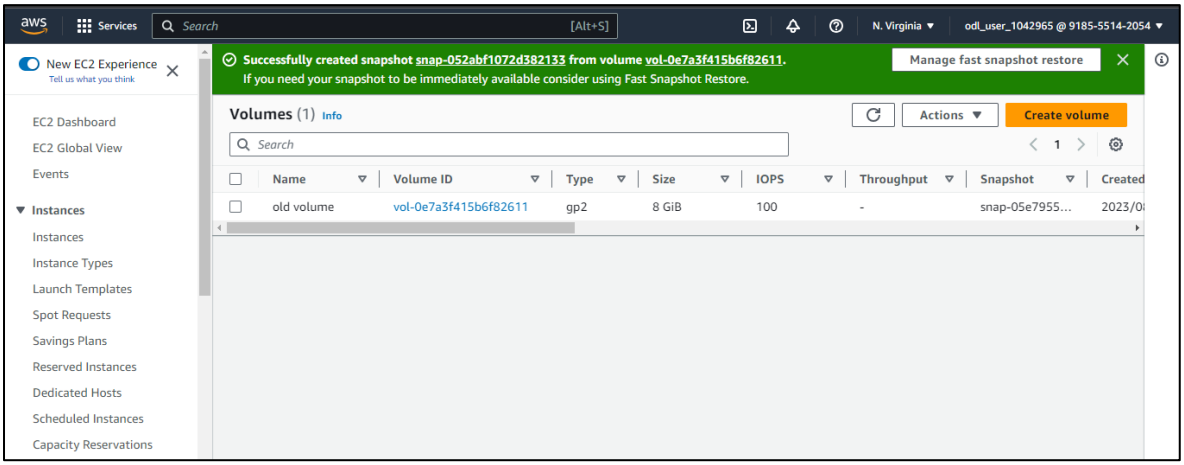
Step 3: Create a snapshot

3.1 Select the **old volume**, click on the **Actions** tab, and select **Create snapshot**



3.2 Enter a description and click on **Create snapshot**

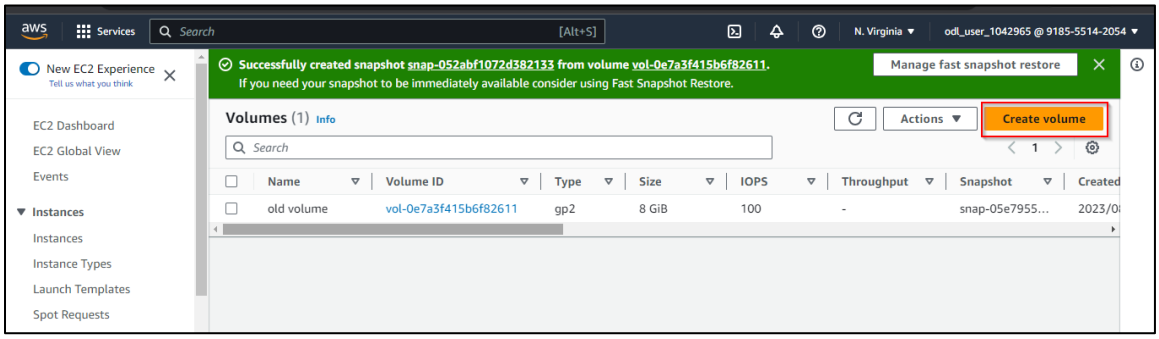




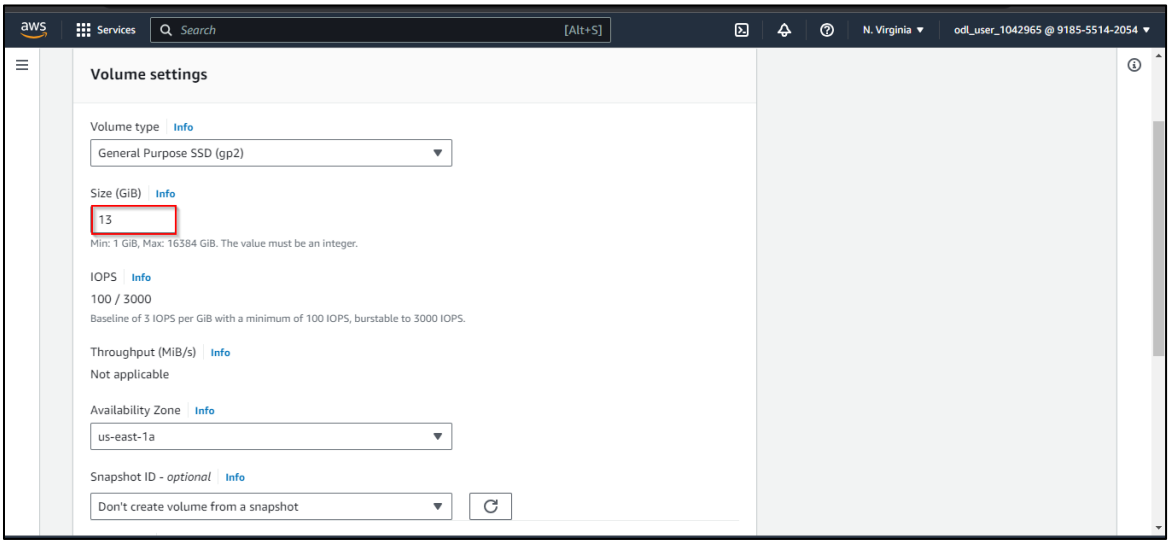
The snapshot has been successfully created.

Step 4: Create a new volume

4.1 Click on **Create volume**

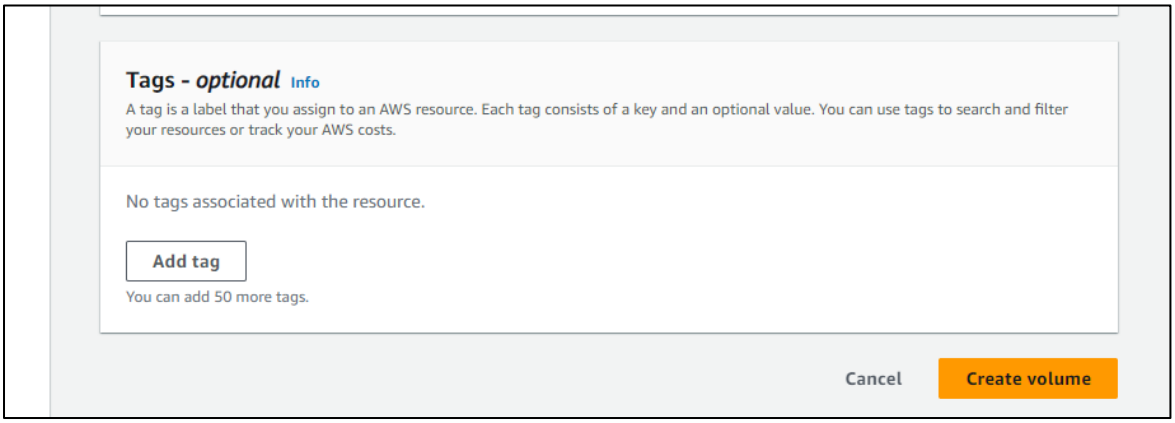


4.1 Enter the **Size (GiB)** as **13**

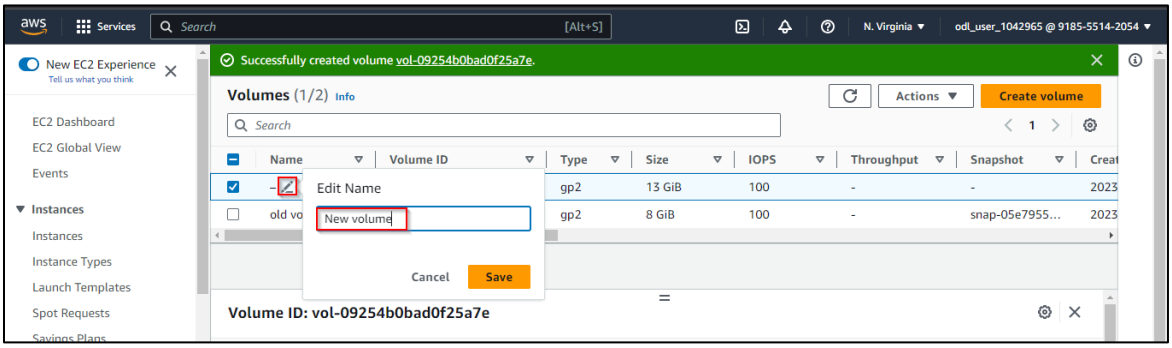


Note: The **Availability Zone** should be provided as the same as the EC2 instance created.

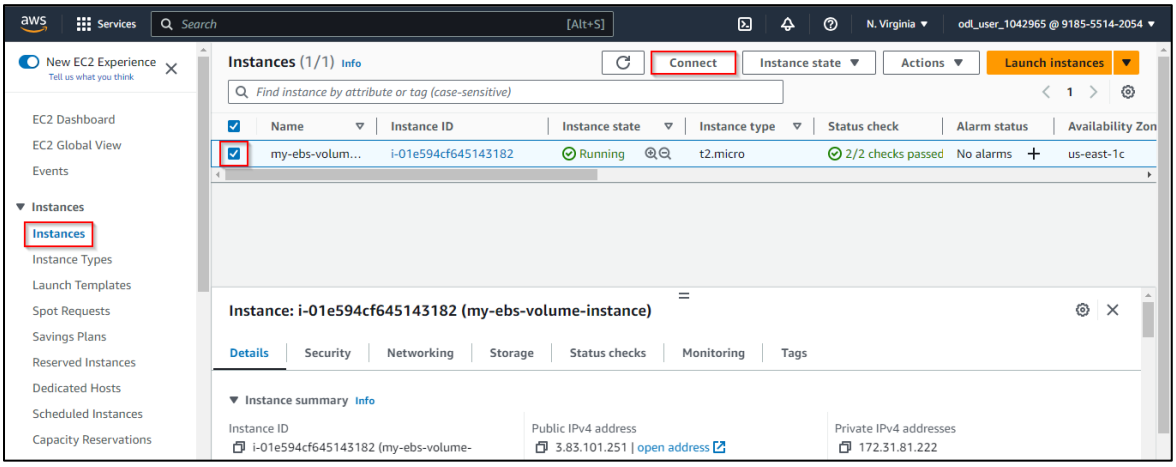
4.2 Click on **Create volume**



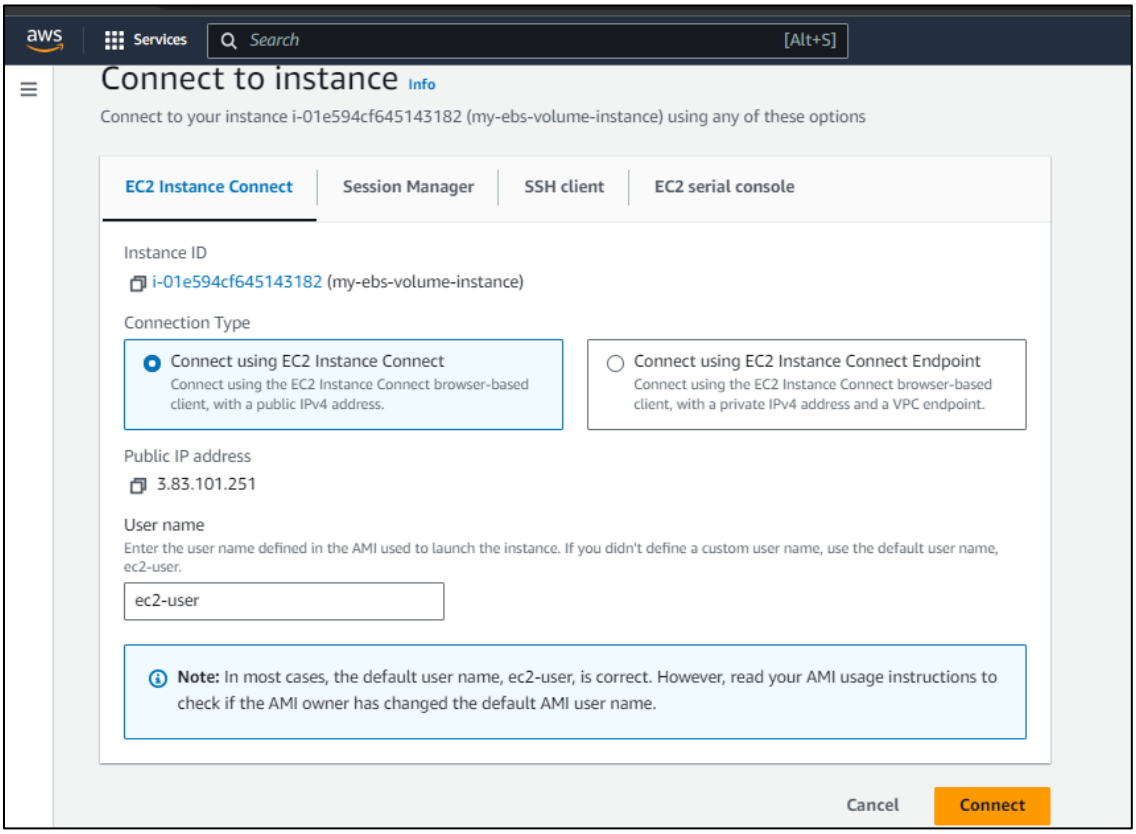
4.3 Click on the edit icon and change the name to **New volume**

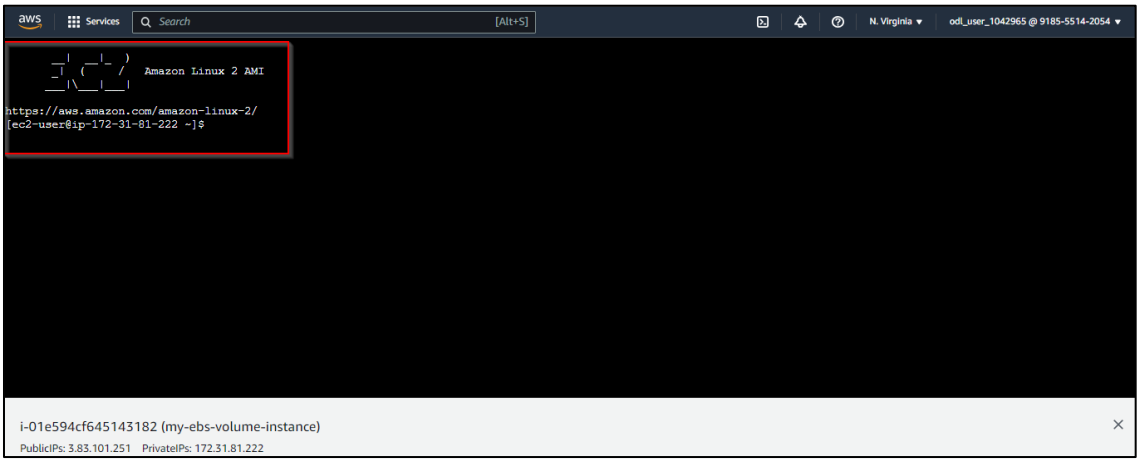


4.4 Connect to the AWS Linux VM by clicking on **Instances**, selecting the instance, and clicking on the **Connect** button



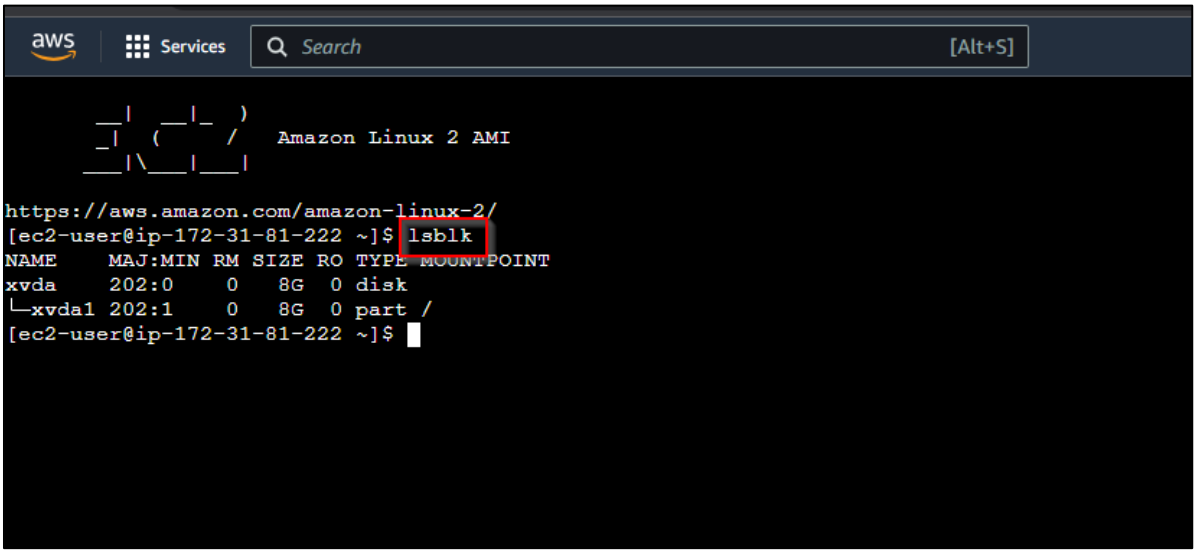
4.5 Click on the **Connect** button





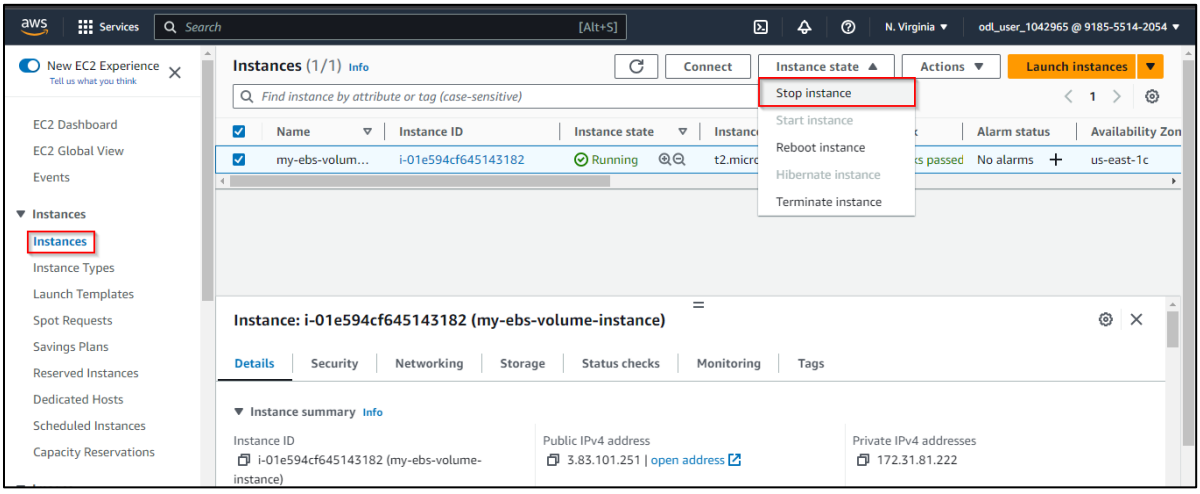
The EC2 instance was successfully connected to the Amazon Linux VM.

4.6 Enter the following command to view the **EBS** volumes created:
lsblk

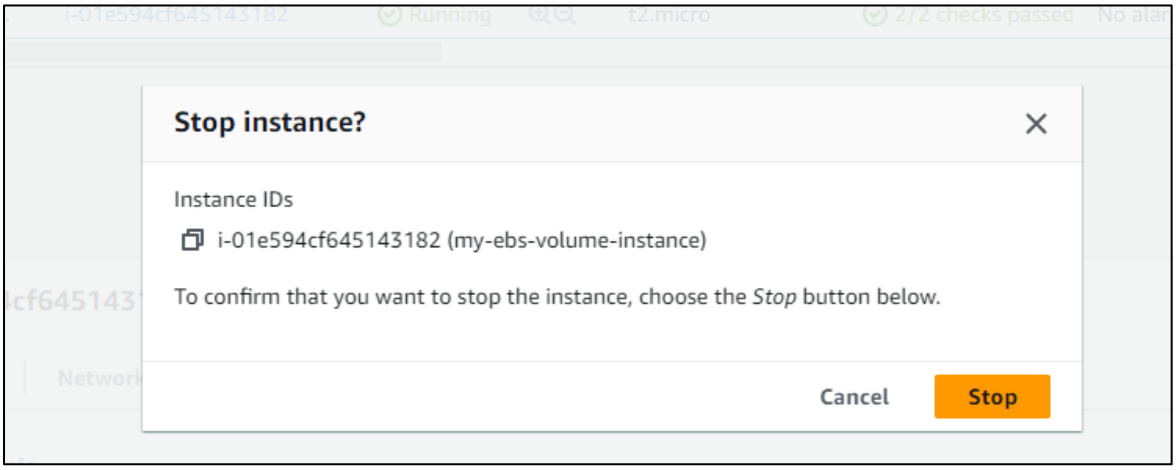


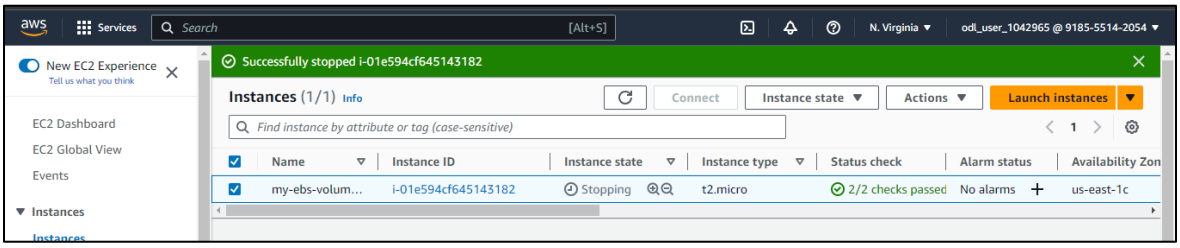
Step 5: Detach the existing volume from the EC2 Instance

5.1 Navigate to the instance **my-ebs-volume** and click on **Stop instance** from the **Instance state** tab



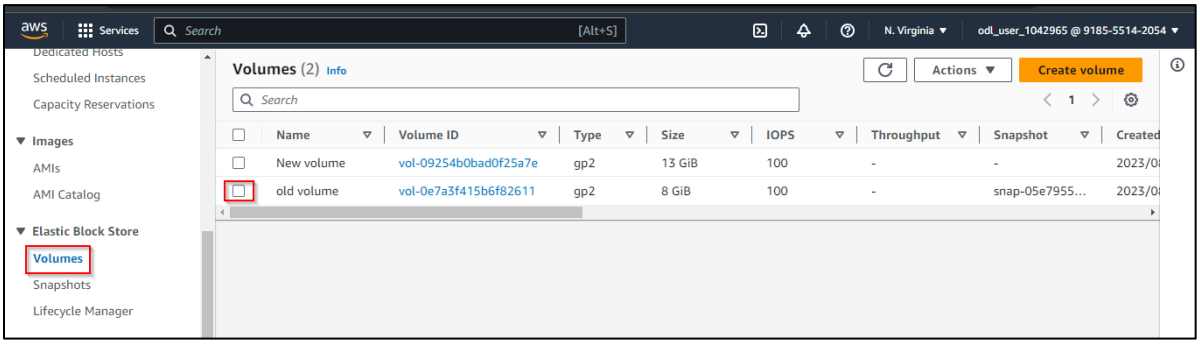
5.2 Click on the **Stop** button



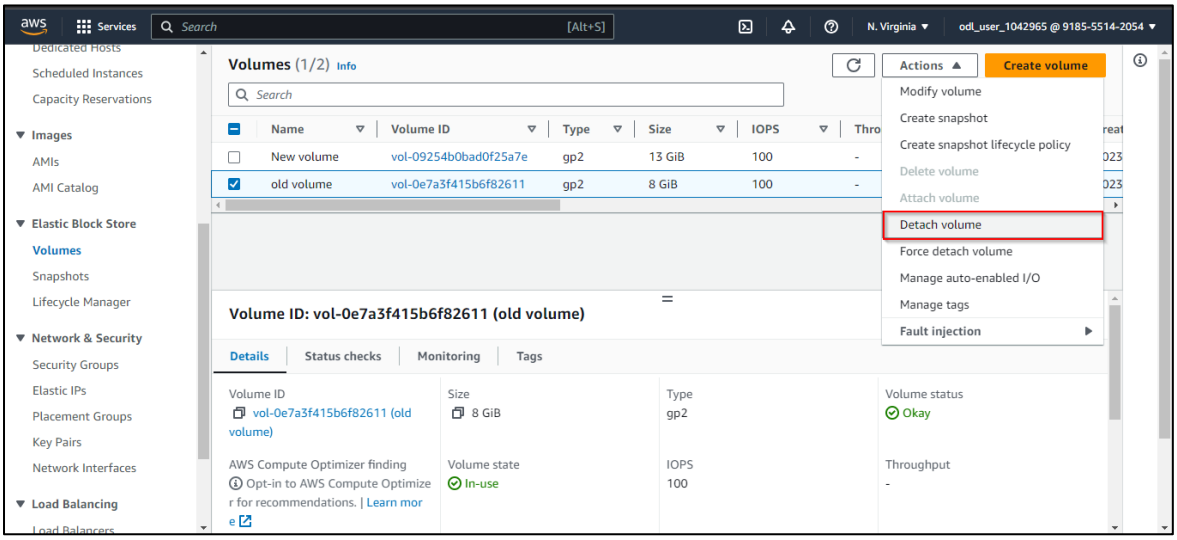


The instance has been successfully stopped.

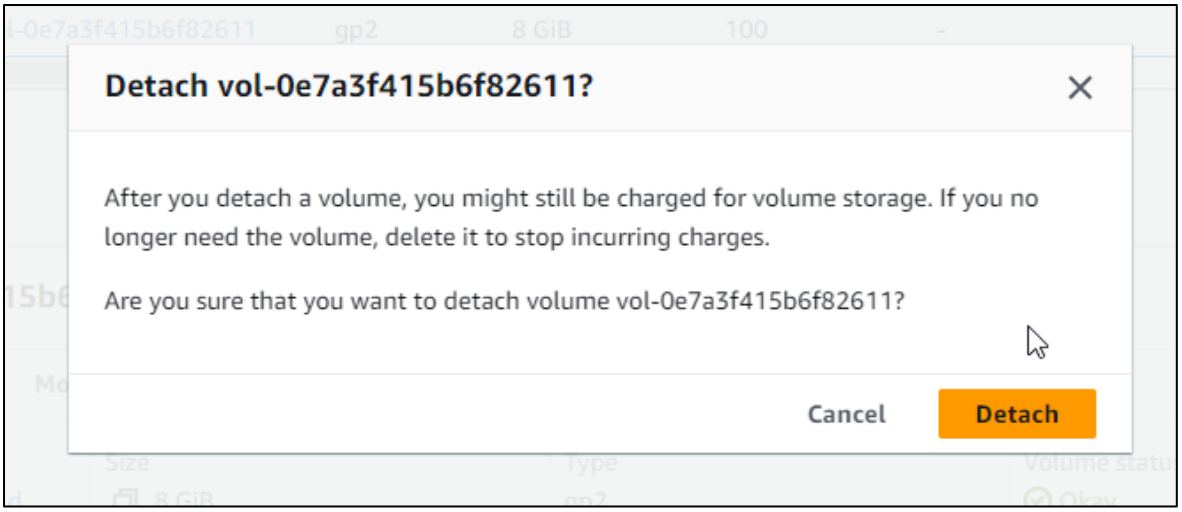
5.3 Navigate to the **Elastic Block Store** and **Volumes**. Now, select the **old volume** checkbox.



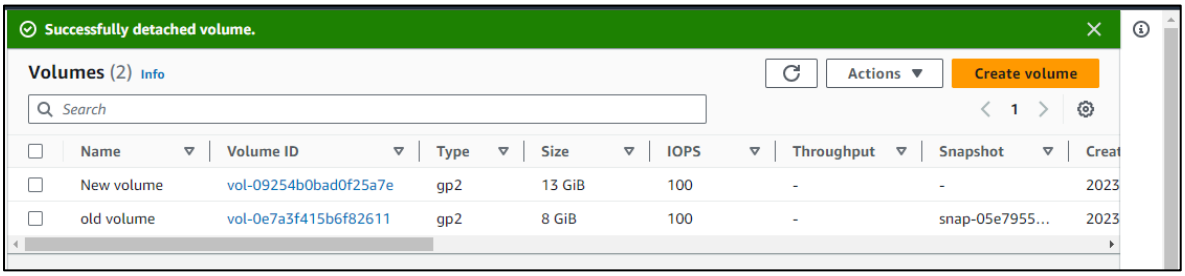
5.4 Under the **Actions** tab, click on **Detach volume**



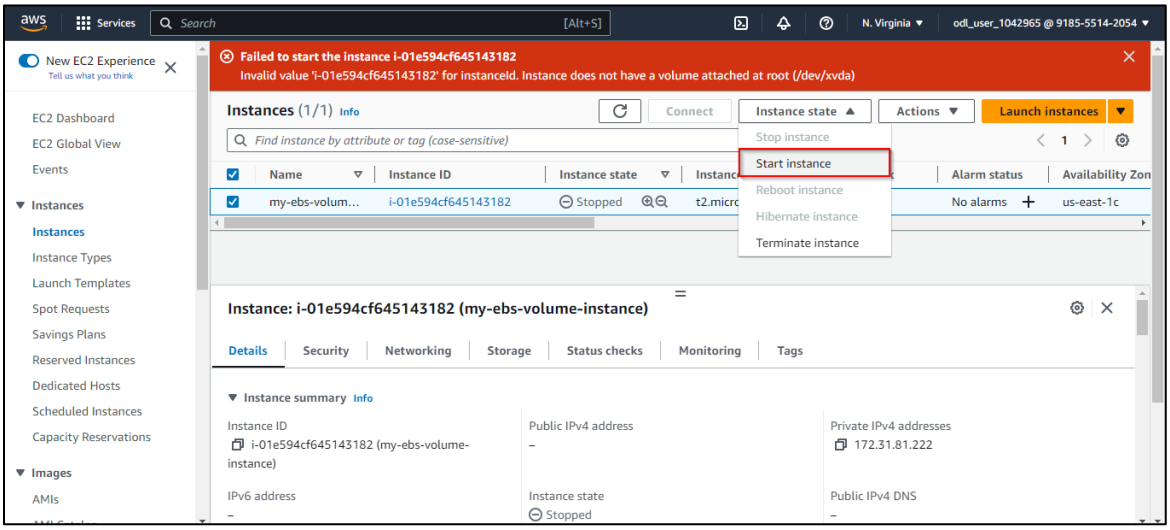
5.5 Click on **Detach**



The **old volume** has been successfully detached.



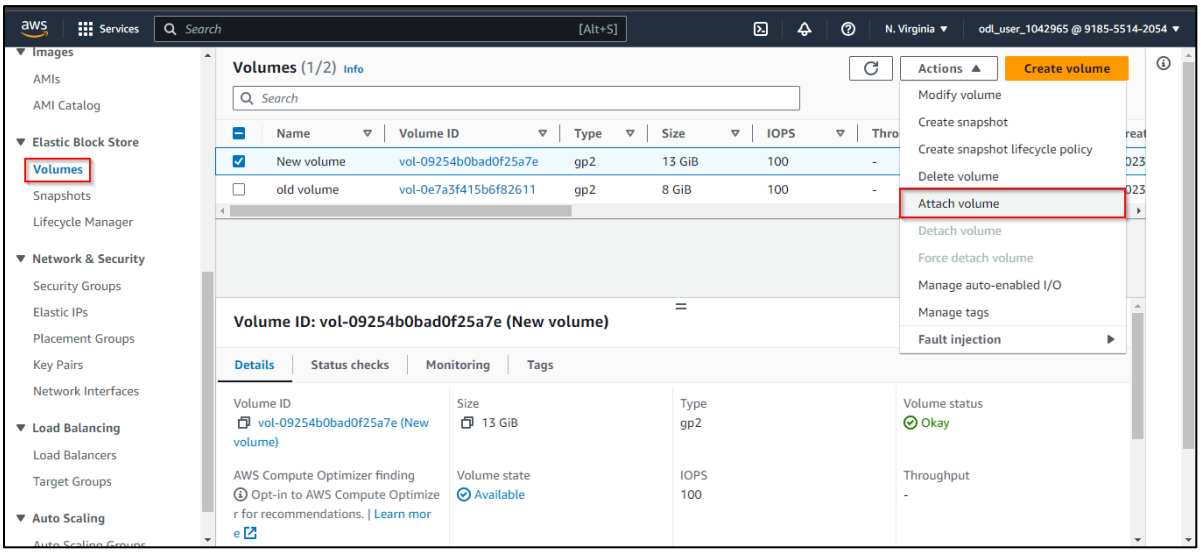
5.6 Start the instance by clicking on the **Instance** tab and then on **Start instance**



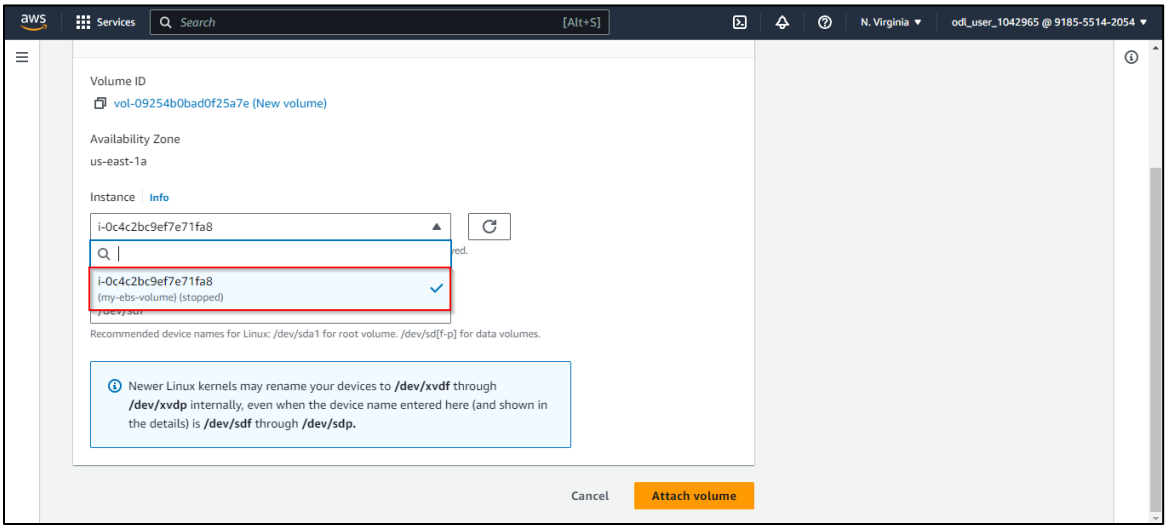
Note: It fails to start the instance as there is no volume attached.

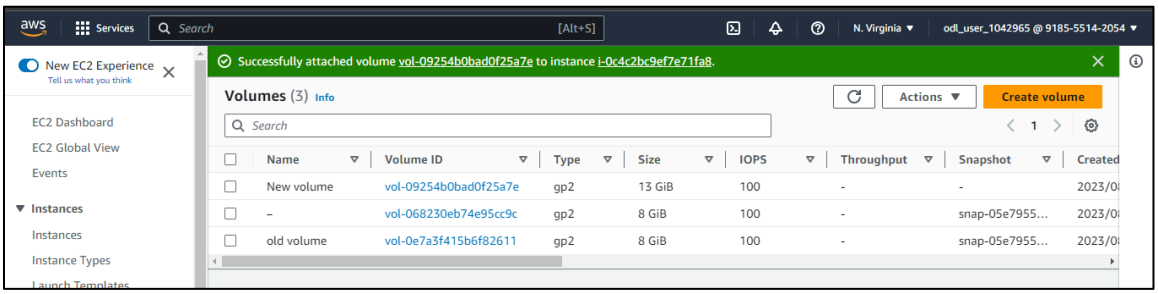
Step 6: Attach a new volume to the EC2 Instance

6.1 Navigate to the **Volumes** section, select the **New volume**, and click on **Attach volume** under the **Actions** tab



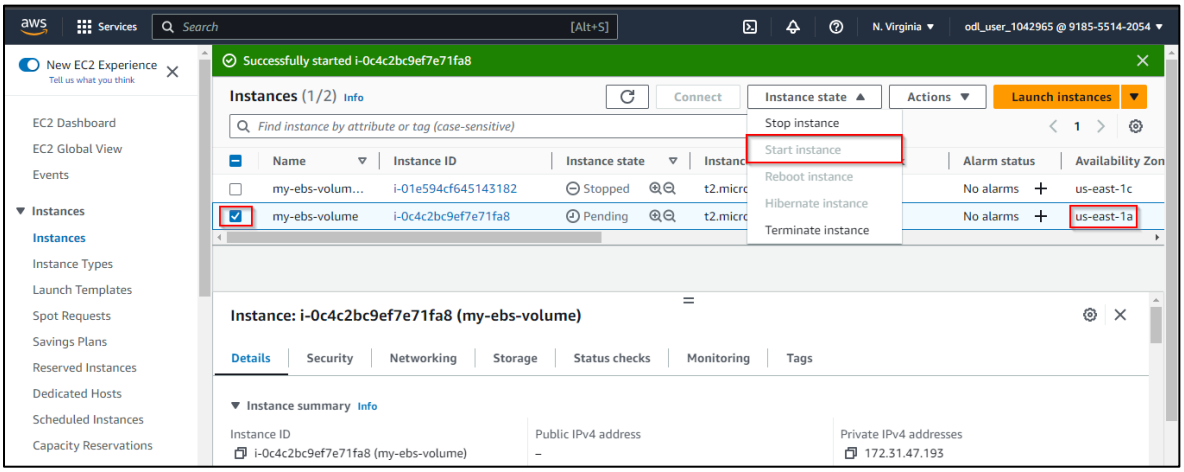
6.2 Select the **my-ebs-volume** instance and click on **Attach volume**



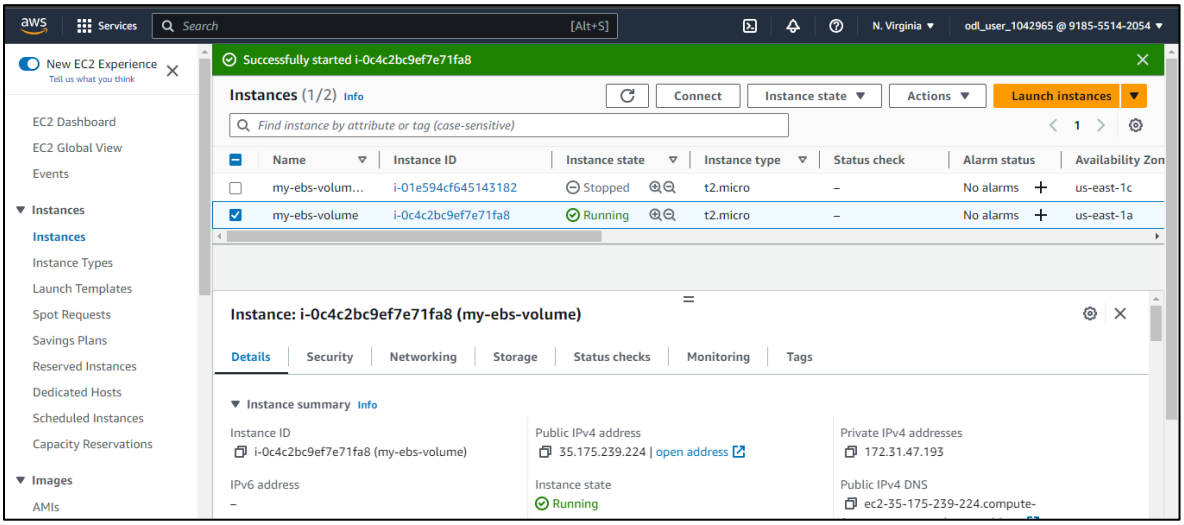


The **New volume** with 13 GiB has been successfully attached.

6.3 Navigate to the Instances page, select **my-ebs-volume**, click on the **Instance state** tab, and select **Start instance**



You must use the **us-east-1a** availability zone.



By following these steps, you have successfully implemented a procedure to dynamically scale the Elastic Block Store (EBS) volume of a Linux Virtual Machine to optimize storage capacity and performance.