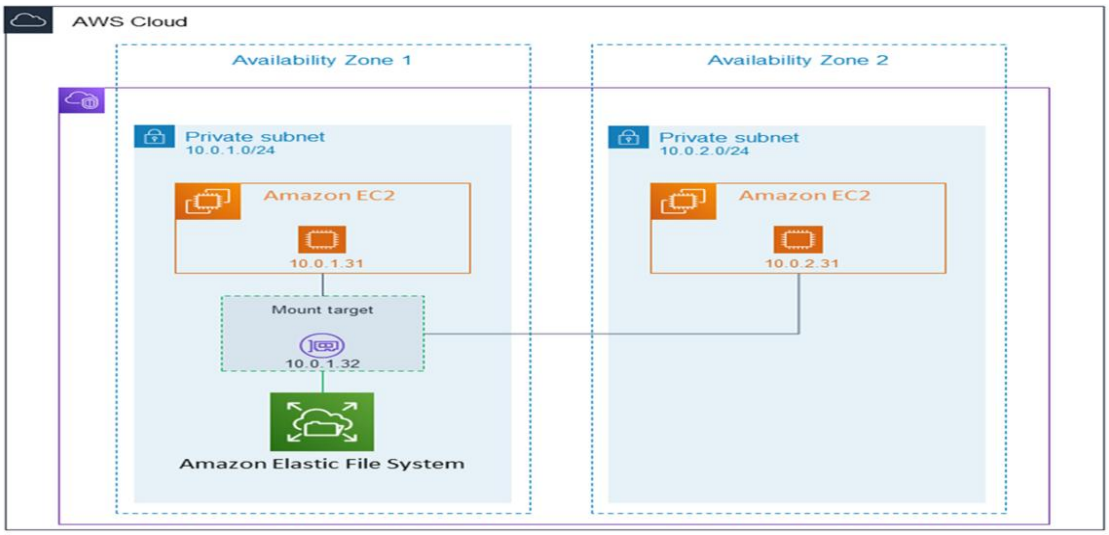
Elastic File Storage

Amazon Elastic File System (EFS) is a scalable and fully managed file storage service provided by Amazon Web Services (AWS). It allows you to create and configure file systems that can be accessed concurrently from multiple EC2 instances, providing a highly available and scalable storage solution for your applications and workloads.



Amazon EFS supports **for only Amazon Linux instance**:

Step 1: Launching EC2 Instances

1. Sign in to AWS Management Console.

2. Go to the EC2 dashboard.

3. Click on "Launch Instance".

4. Configure instance details:

   - Instance Name: **EFS-1**

5. Choose an Amazon Machine Image (AMI) **for Linux**.

6. Select instance type: t2.micro.

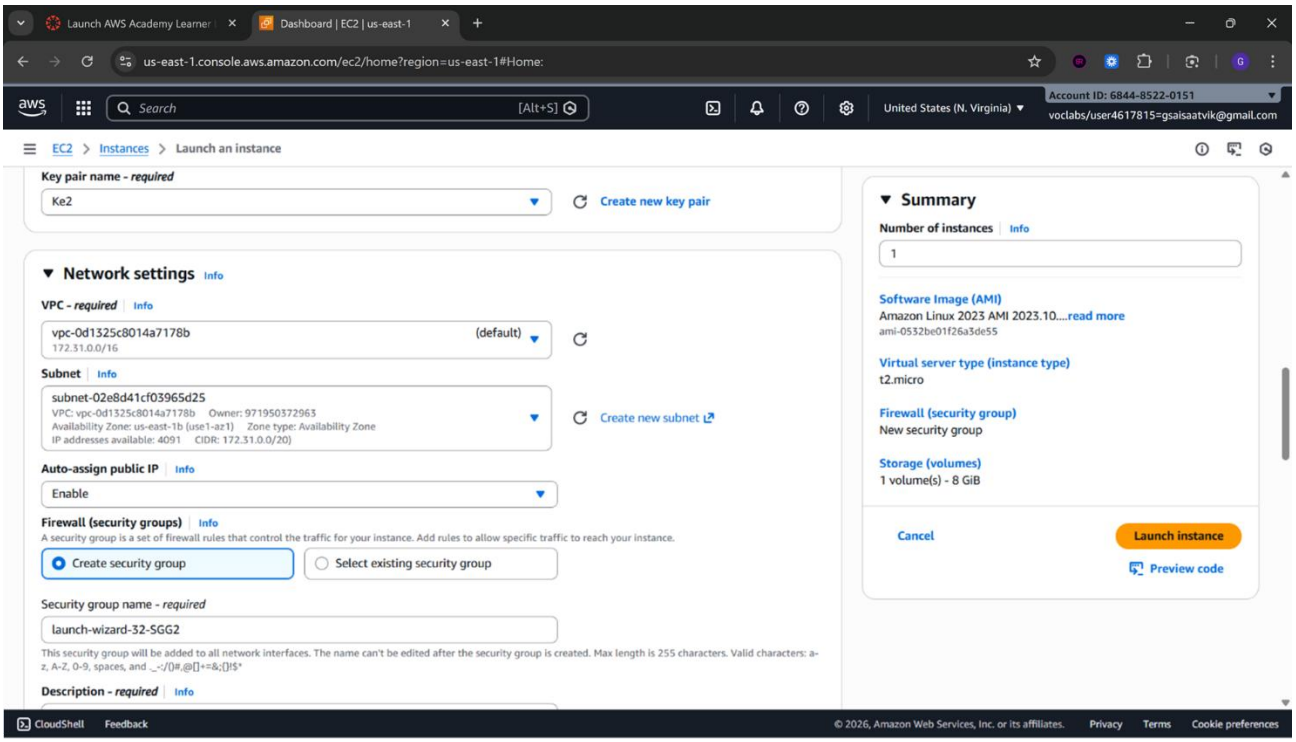
   - Key Pair: EFS

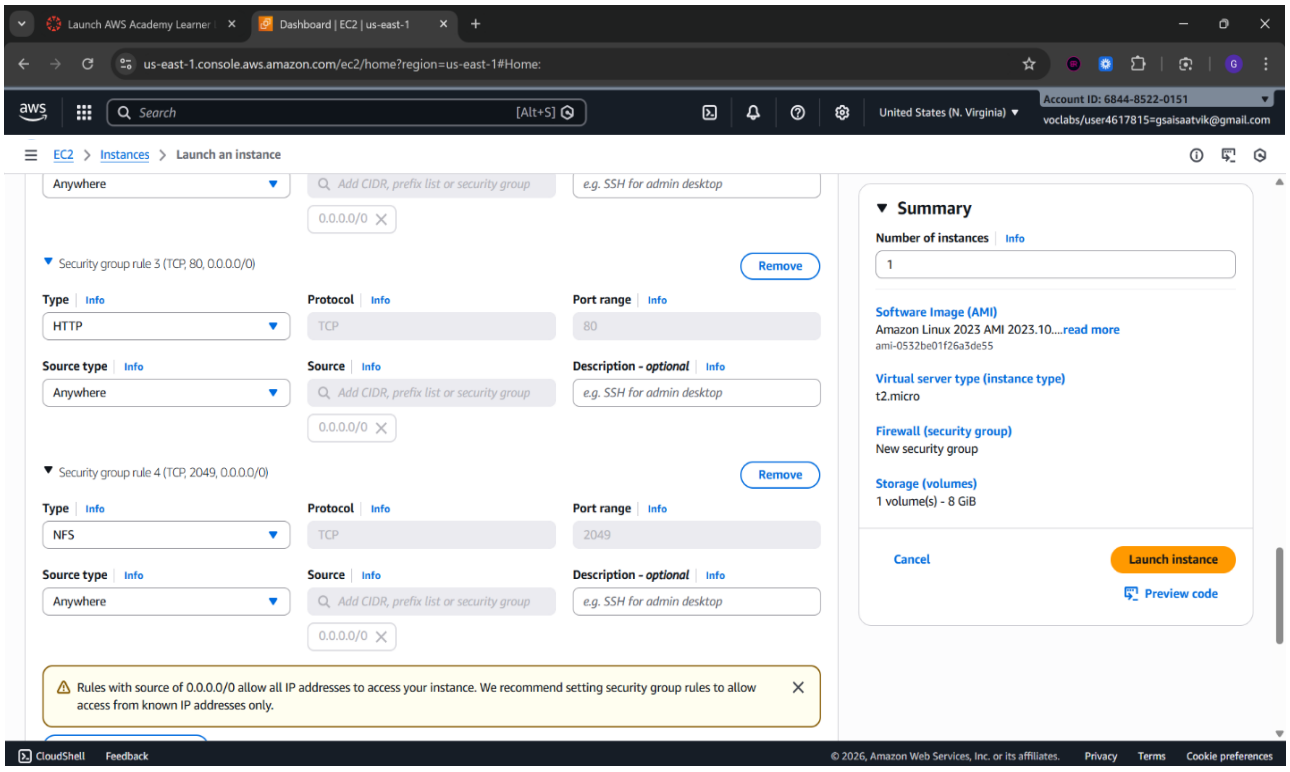
   - Network: Choose Subnet-1a

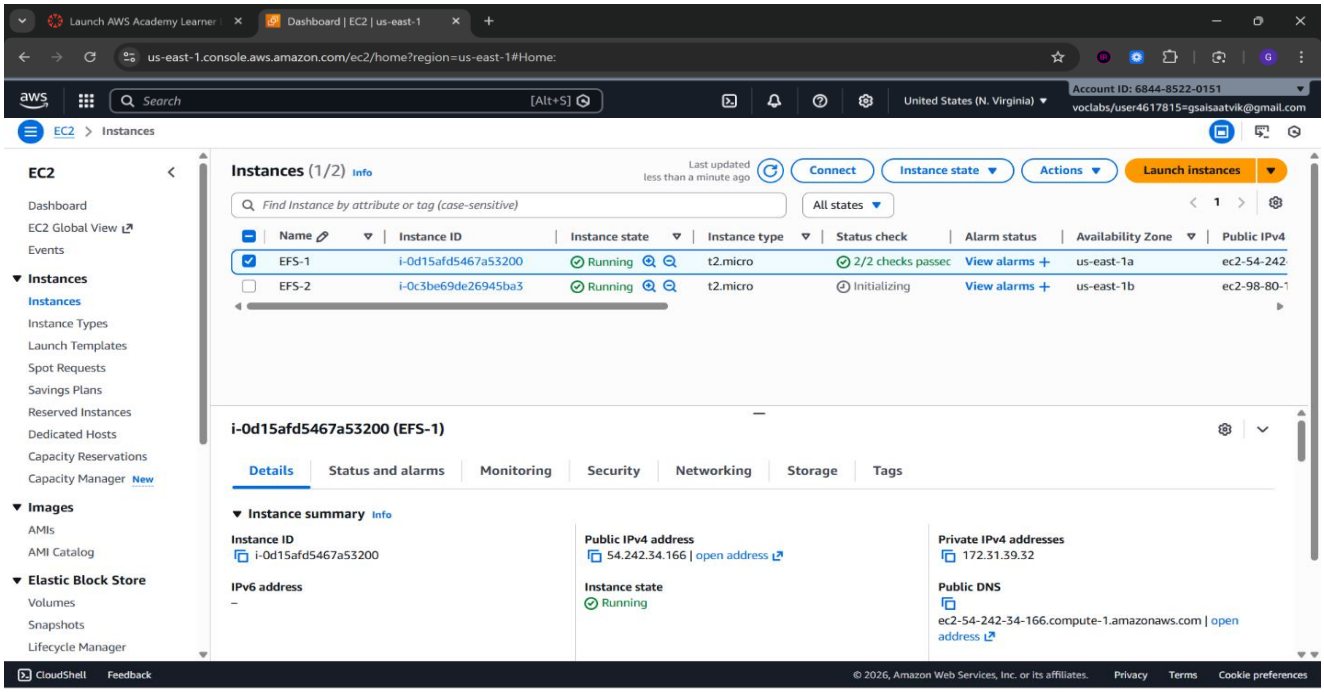
   - Security Group: **Create a new security group (SG) and add NFS and allow from anywhere.**

7. Launch the instance.

8. Repeat the above steps to launch another instance named **EFS-2 in Subnet-1b**with the same configuration.







Step 2: Creating an EFS File System

1. Go to the EFS service in the AWS Management Console.

2. Click on "Create file system".

3. Specify details:

   - Name: Optional

   - VPC: Default

   - Enable region button.

     Click on "Next".

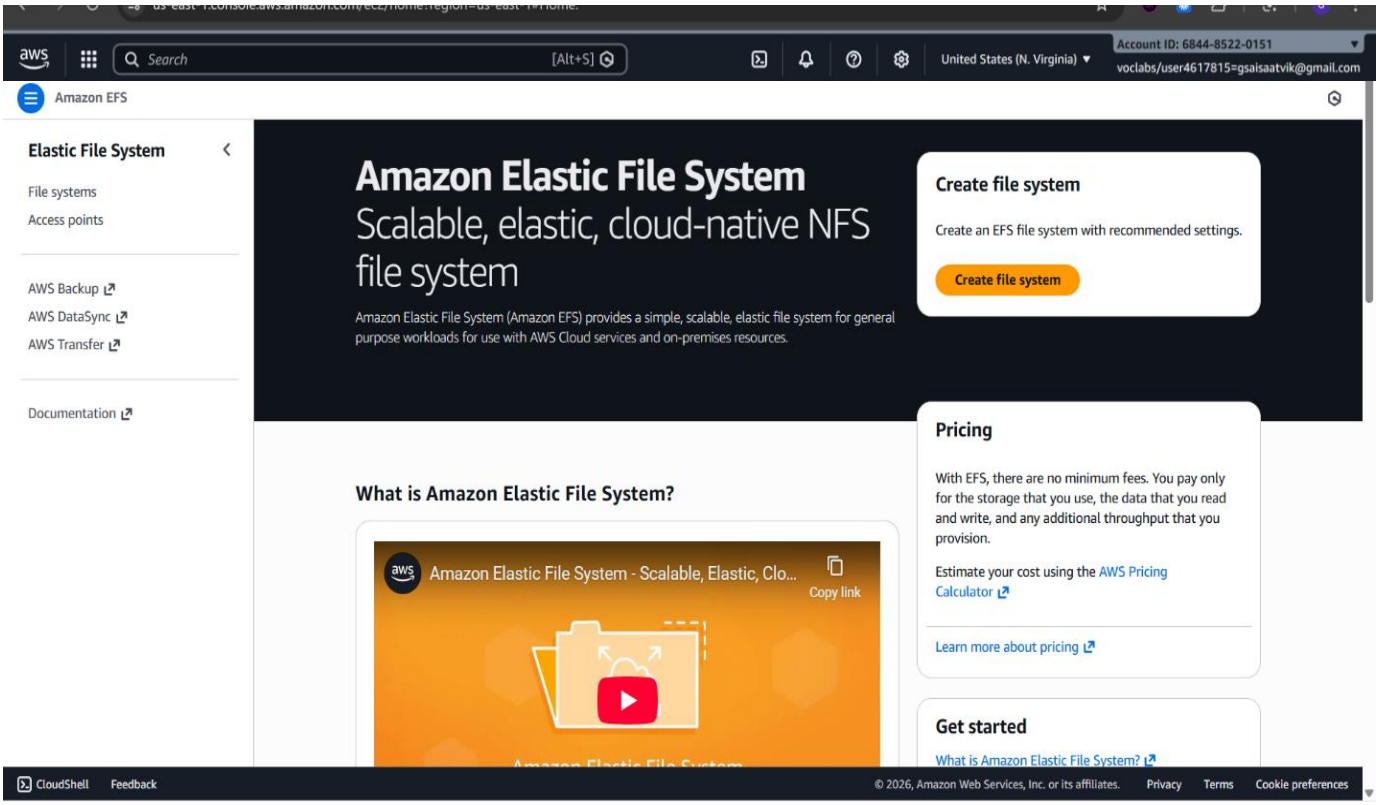
4. In the Network settings:

   - Delete all security groups.

   - **Select the newly created security group (**NFS).---which is created while creating instance

     Click on "Next" and review the configuration.

     Click on "Create file system".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Amazon EFS
Elastic File System
File systems
Access points
AWS Backup
AWS DataSync
AWS Transfer
Documentation
Amazon Elastic File System
Scalable, elastic, cloud-native NFS file system
Amazon Elastic File System (Amazon EFS) provides a simple, scalable, elastic file system for general purpose workloads for use with AWS Cloud services and on-premises resources.
Create file system
Create an EFS file system with recommended settings.
Create file system
Pricing
With EFS, there are no minimum fees. You pay only for the storage that you use, the data that you read and write, and any additional throughput that you provision.
Estimate your cost using the AWS Pricing Calculator
Learn more about pricing
Get started
What is Amazon Elastic File System?
What is Amazon Elastic File System?
Amazon Elastic File System - Scalable, Elastic, Clo...
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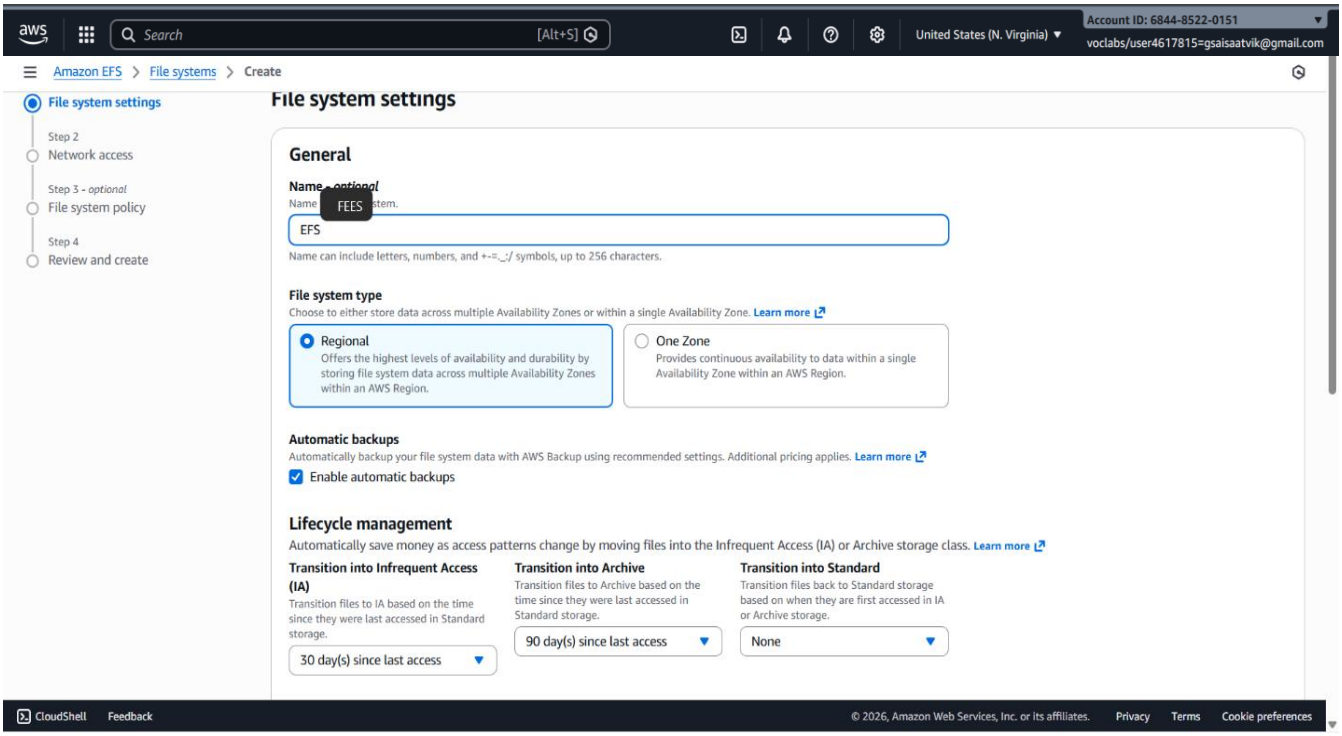
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Amazon EFS > File systems > Create
File system settings
Step 2
Network access
Step 3 - optional
File system policy
Step 4
Review and create
File system settings
General
Name - optional
FEES
EFS
Name can include letters, numbers, and +-=._:/ symbols, up to 256 characters.
File system type
Choose to either store data across multiple Availability Zones or within a single Availability Zone. Learn more
Regional
Offers the highest levels of availability and durability by storing file system data across multiple Availability Zones within an AWS Region.
One Zone
Provides continuous availability to data within a single Availability Zone within an AWS Region.
Automatic backups
Automatically backup your file system data with AWS Backup using recommended settings. Additional pricing applies. Learn more
Enable automatic backups
Lifecycle management
Automatically save money as access patterns change by moving files into the Infrequent Access (IA) or Archive storage class. Learn more
Transition into Infrequent Access (IA)
Transition files to IA based on the time since they were last accessed in Standard storage.
30 day(s) since last access
Transition into Archive
Transition files to Archive based on the time since they were last accessed in Standard storage.
90 day(s) since last access
Transition into Standard
Transition files back to Standard storage based on when they are first accessed in IA or Archive storage.
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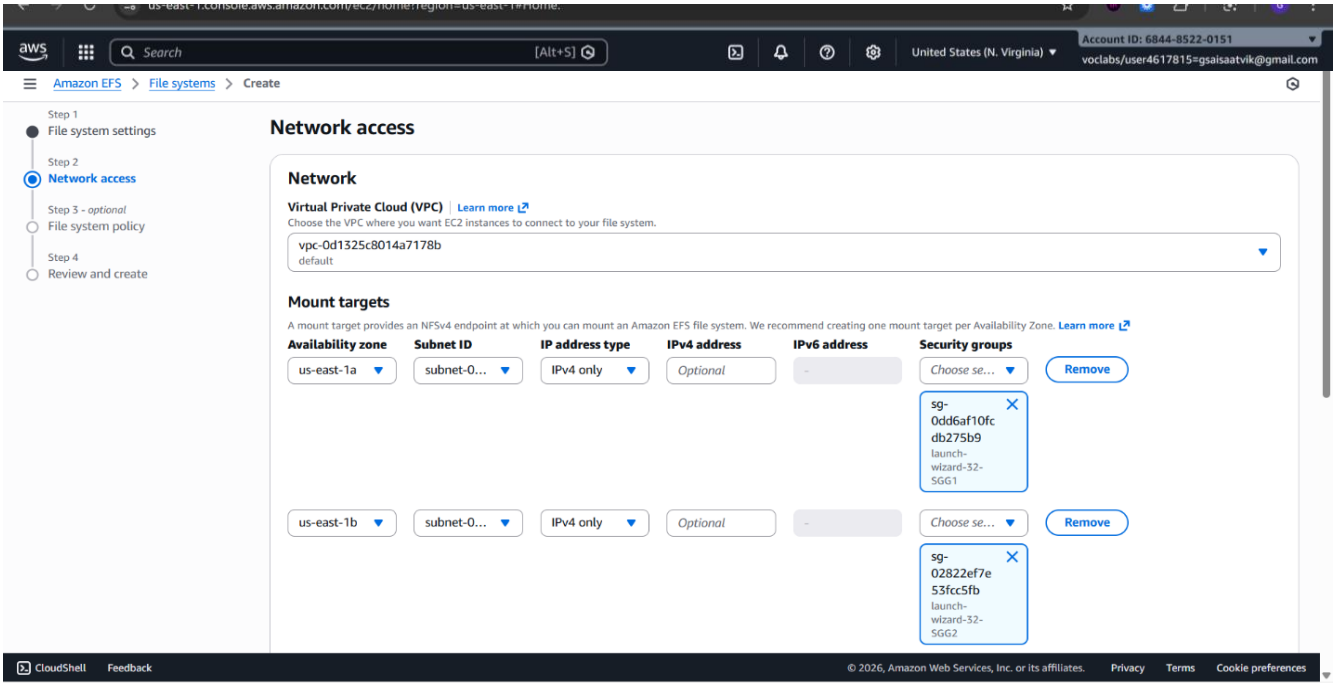
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Amazon EFS > File systems > Create
Step 1
File system settings
Step 2
Network access
Step 3 - optional
File system policy
Step 4
Review and create
Network access
Network
Virtual Private Cloud (VPC) | Learn more
Choose the VPC where you want EC2 instances to connect to your file system.
vpc-0d1325c8014a7178b
default
Mount targets
A mount target provides an NFSv4 endpoint at which you can mount an Amazon EFS file system. We recommend creating one mount target per Availability Zone. Learn more
Availability zone
Subnet ID
IP address type
IPv4 address
IPv6 address
Security groups
us-east-1a
subnet-0...
IPv4 only
Optional
Choose se...
Remove
sg-0dd6af10fcdb275b9
launch-wizard-32-SGG1
us-east-1b
subnet-0...
IPv4 only
Optional
Choose se...
Remove
sg-02822ef7e53fcc5fb
launch-wizard-32-SGG2
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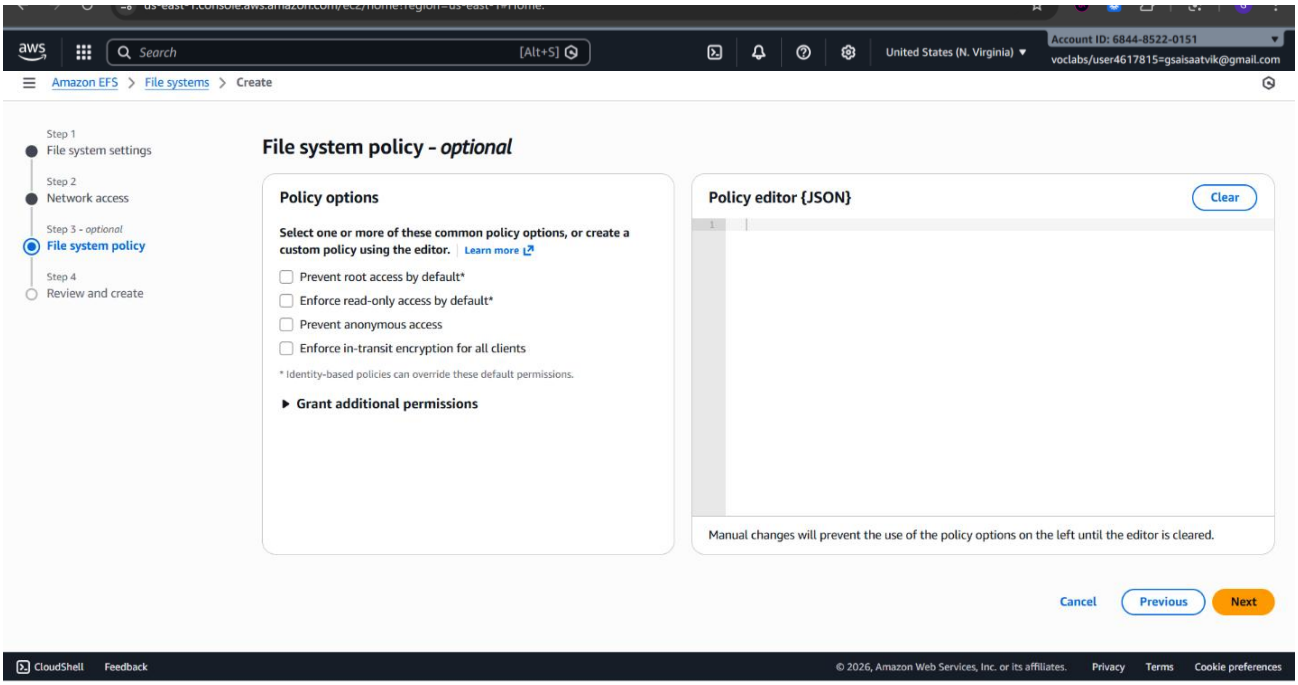
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Amazon EFS > File systems > Create
Step 1
File system settings
Step 2
Network access
Step 3 - optional
File system policy
Step 4
Review and create
File system policy - optional
Policy options
Select one or more of these common policy options, or create a custom policy using the editor. Learn more
Prevent root access by default*
Enforce read-only access by default*
Prevent anonymous access
Enforce in-transit encryption for all clients
* Identity-based policies can override these default permissions.
Grant additional permissions
Policy editor {JSON}
Clear
Manual changes will prevent the use of the policy options on the left until the editor is cleared.
Cancel
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Next
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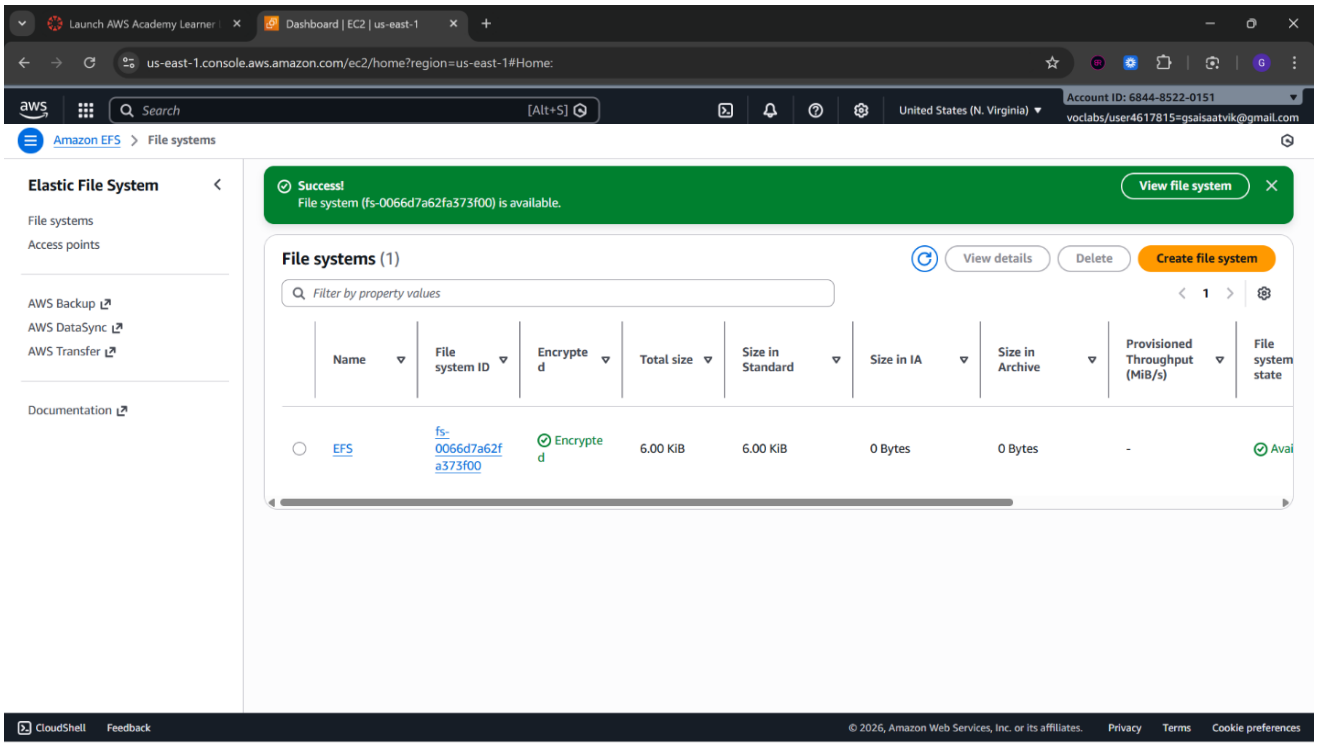


Step 3: Accessing the two EC2 instances named EFS-1& EFS -2 in **two different PowerShell** sessions and performing the specified tasks:

Accessing EFS-1 Instances in Two Different PowerShell Sessions:

1. Open Two PowerShell Sessions:

- Open two separate PowerShell windows or tabs on your local machine.

For each Instance:

2. SSH into the Instance:

- Use the SSH command to connect to the EFS-1 instance

ssh -i [path-to-your-keypair.pem] ec2-user@[instance-public-ip]

3. Switch to Root User:

- Gain root access by executing the following command:

sudosu

4. Create a Directory:

- Make a directory named "efs" using the following command:

mkdirefs

5. Install Amazon EFS Utilities:

- Use yum package manager to install the Amazon EFS utilities:

yum install -y amazon-efs-utils

6. List Files:

- Execute the following command to list files in the current directory:

ls

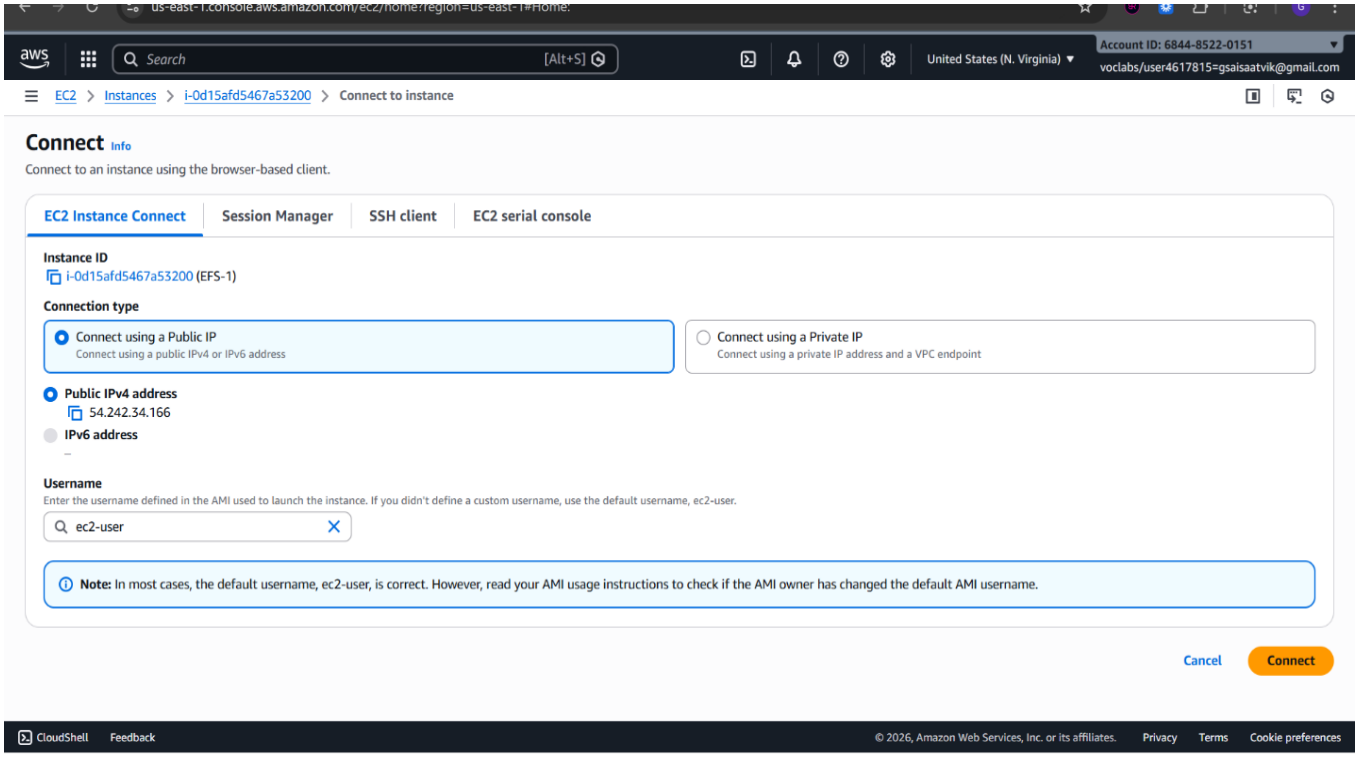
7. Verify Installation (Optional):

- Optionally, you can verify the installation of the Amazon EFS utilities by checking the version:

efs-utils --version

Repeat Steps 2-7 for ---------- EFS-2 Instance.

By following these steps, you'll have accessed each EFS-1 instance in separate PowerShell sessions, switched to the root user, created a directory named "efs," installed the Amazon EFS utilities, and listed files in the directory. This setup allows you to configure and manage each instance individually as needed.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EC2 > Instances > i-0d15afd5467a53200 > Connect to instance
Connect Info
Connect to an instance using the browser-based client.
EC2 Instance Connect
Session Manager
SSH client
EC2 serial console
Instance ID
i-0d15afd5467a53200 (EFS-1)
Connection type
Connect using a Public IP
Connect using a public IPv4 or IPv6 address
Connect using a Private IP
Connect using a private IP address and a VPC endpoint
Public IPv4 address
54.242.34.166
IPv6 address
Username
Enter the username defined in the AMI used to launch the instance. If you didn't define a custom username, use the default username, ec2-user.
ec2-user
Note: In most cases, the default username, ec2-user, is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.
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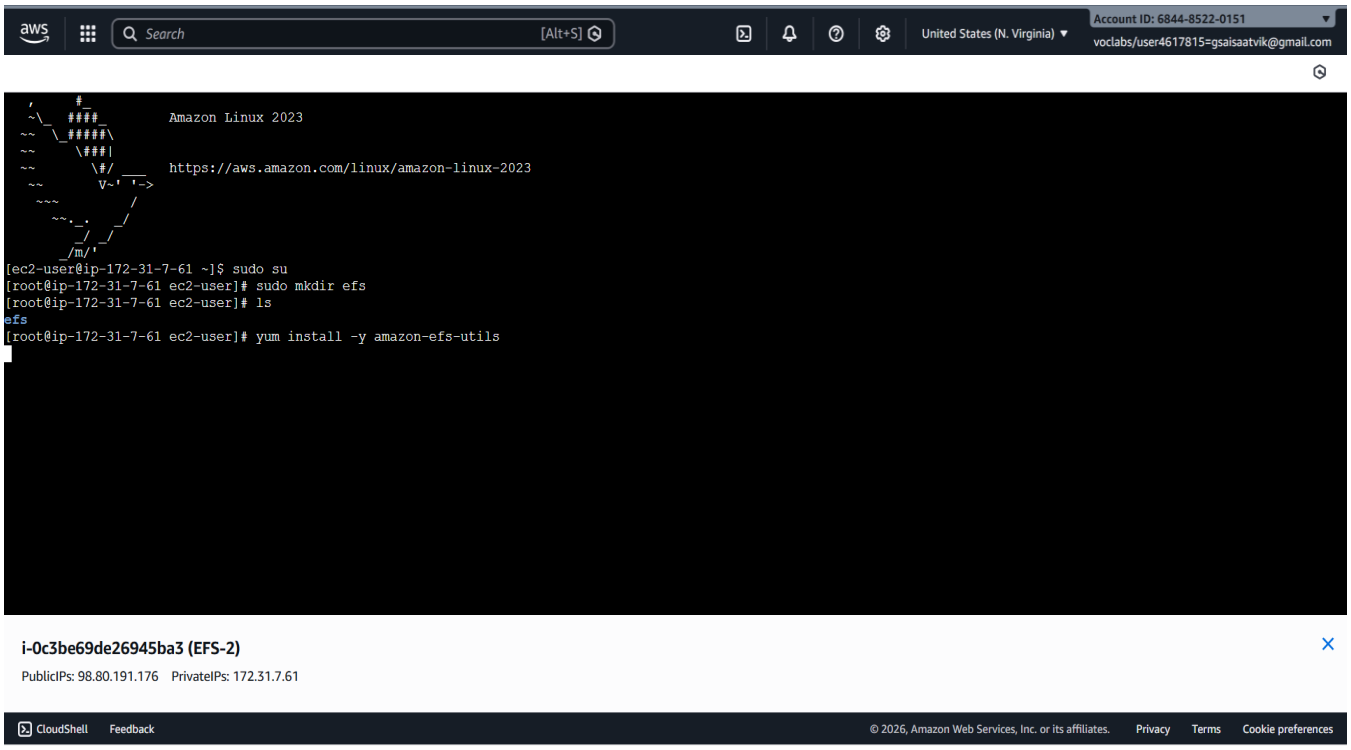
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Amazon Linux 2023
https://aws.amazon.com/linux/amazon-linux-2023
[ec2-user@ip-172-31-7-61 ~]$ sudo su
[root@ip-172-31-7-61 ec2-user]# sudo mkdir efs
[root@ip-172-31-7-61 ec2-user]# ls
efs
[root@ip-172-31-7-61 ec2-user]# yum install -y amazon-efs-utils
i-0c3be69de26945ba3 (EFS-2)
PublicIPs: 98.80.191.176 PrivateIPs: 172.31.7.61
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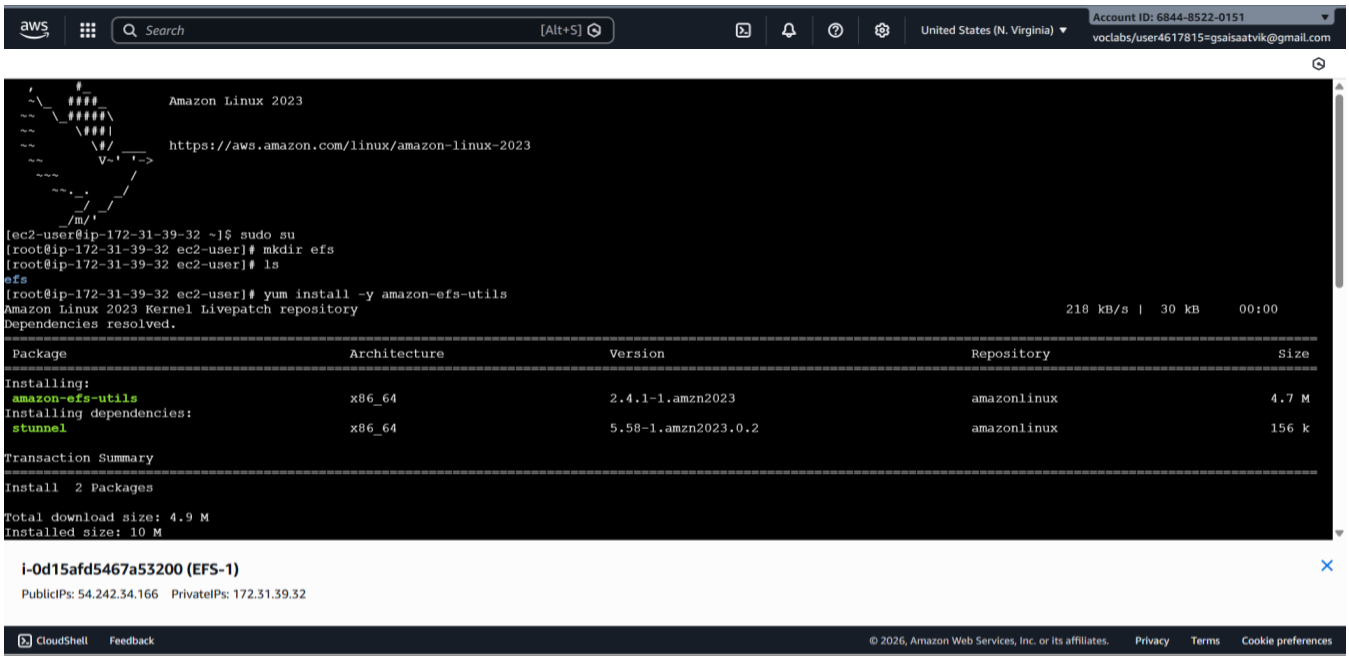


Step 4: Attaching EFS to EC2 Instances

1. Go to the EFS service in the AWS Management Console.

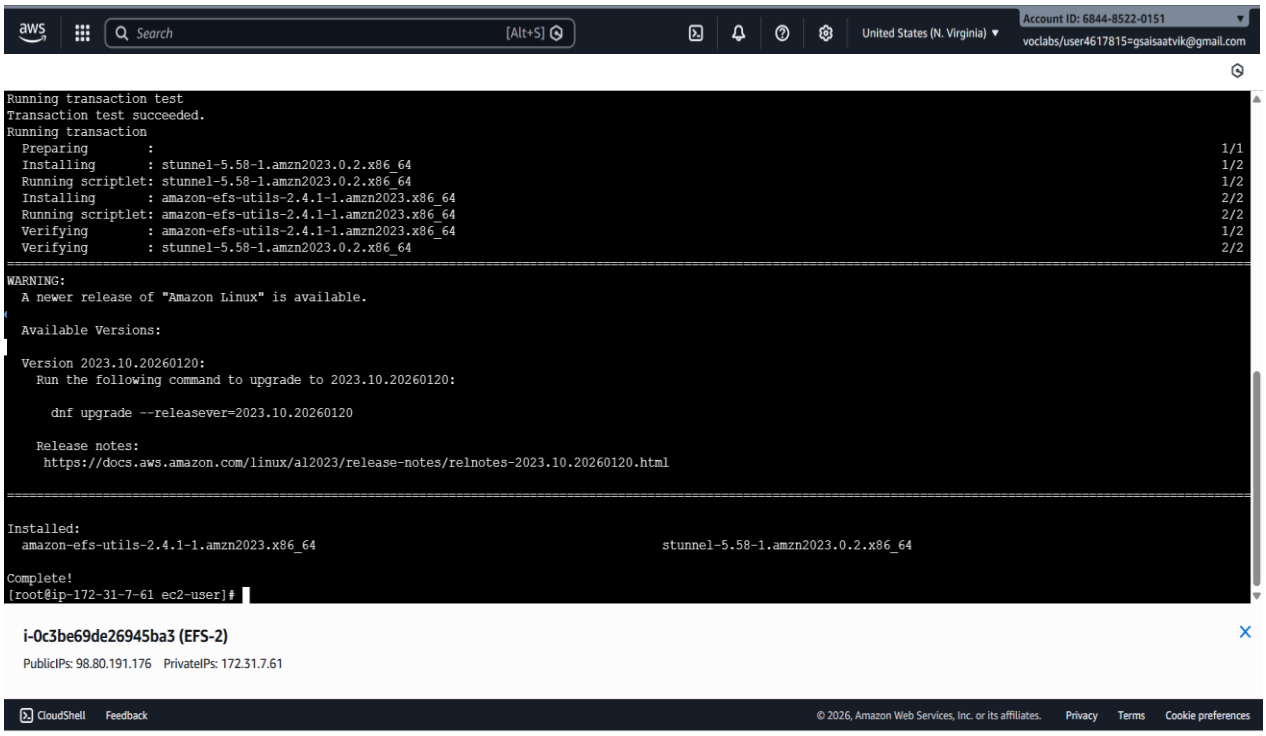
2. Click on the target EFS file system.

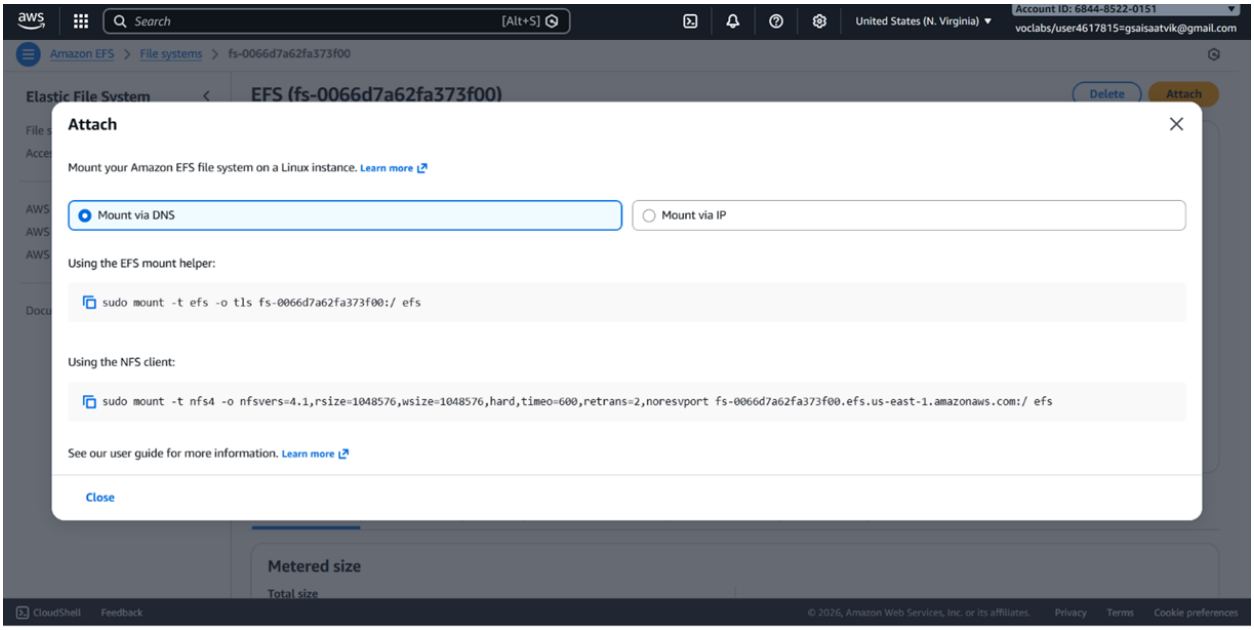
3. Click on the "Attach" button.

4. Choose "**Mount via DNS**" option.

5. Copy the displayed command.,on both ec2 instances(powershell)

6. Paste and execute the copied command in the terminal to mount the EFS file system onto the instance.



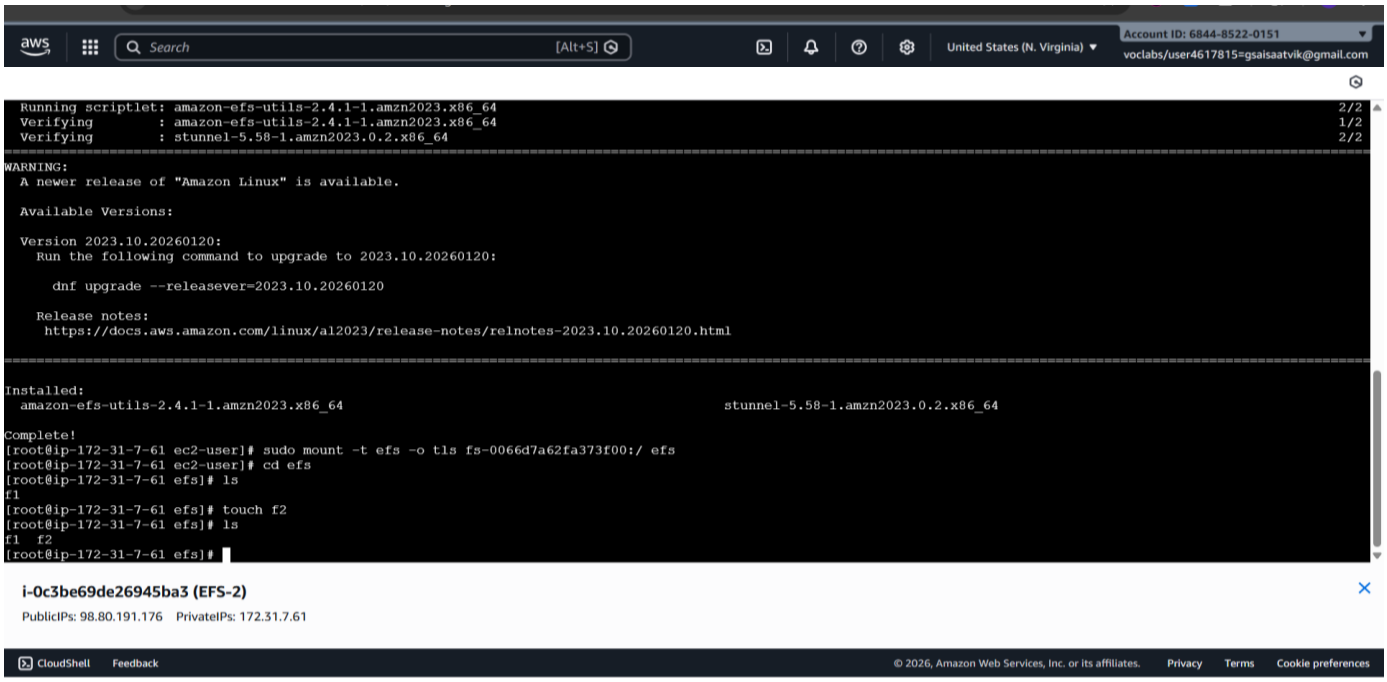


Step 5: Verify and Test EFS

1. Change the directory to EFS on both instances.

2. **Create a file on one instance.**

3. Verify that the file automatically synchronizes and appears on the other instance.



By above steps, we can successfully create EC2 instances, configured them, created an EFS file system, and attached it to the instances in the same availability zone in the Mumbai region. Now, the instances can seamlessly access and share files stored in the EFS file system.