

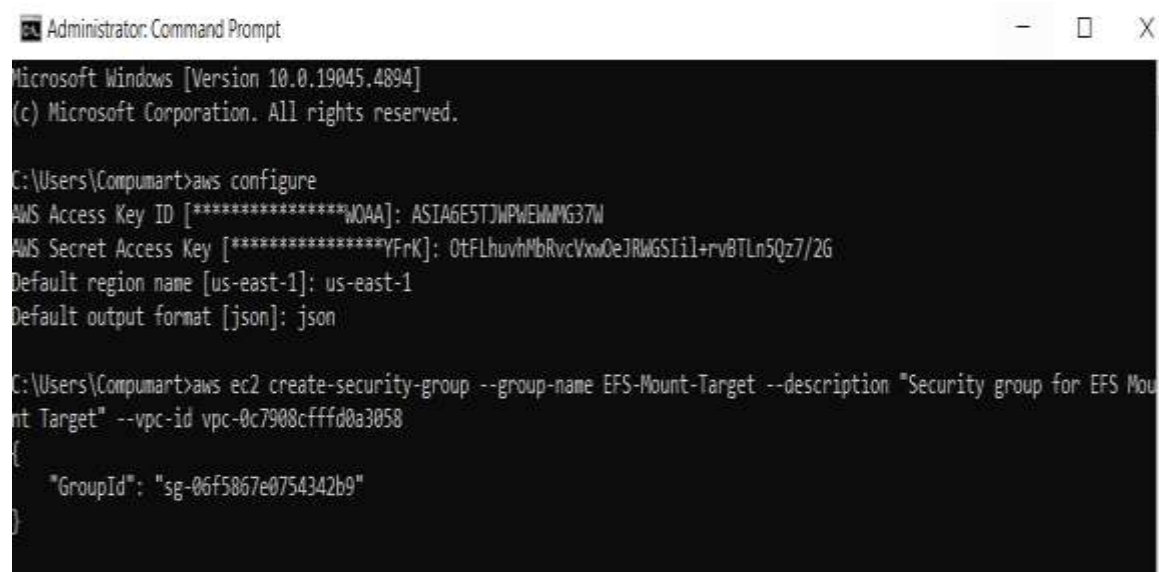
## Project 7: Introducing Amazon Elastic File System (Amazon EFS)

### Access and Configure AWS CLI

1. Open the Lab Environment o Start your lab session as directed.
2. Run the Lab o Initiate the lab session by clicking the "Run Lab" button.
3. Access AWS CLI
  - Navigate to the AWS Details panel.
  - Locate the AWS CLI section and click "Show" to reveal the CLI credentials.

#### Task 1: Create a Security Group for EFS Access

##### Task 1.1: Creating a Security Group using AWS CLI



```
Administrator: Command Prompt

Microsoft Windows [Version 10.0.19045.4894]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Compumart>aws configure
AWS Access Key ID [*****WQAA]: ASIA6E5TJMPWEIMMG37W
AWS Secret Access Key [*****YFrK]: 0tFLhuvhMbRvcVxw0eJRWGSIil+rv8TLn5Qz7/2G
Default region name [us-east-1]: us-east-1
Default output format [json]: json

C:\Users\Compumart>aws ec2 create-security-group --group-name EFS-Mount-Target --description "Security group for EFS Mount Target" --vpc-id vpc-0c7908cfff0a3058
{
  "GroupId": "sg-06f5867e0754342b9"
}
```

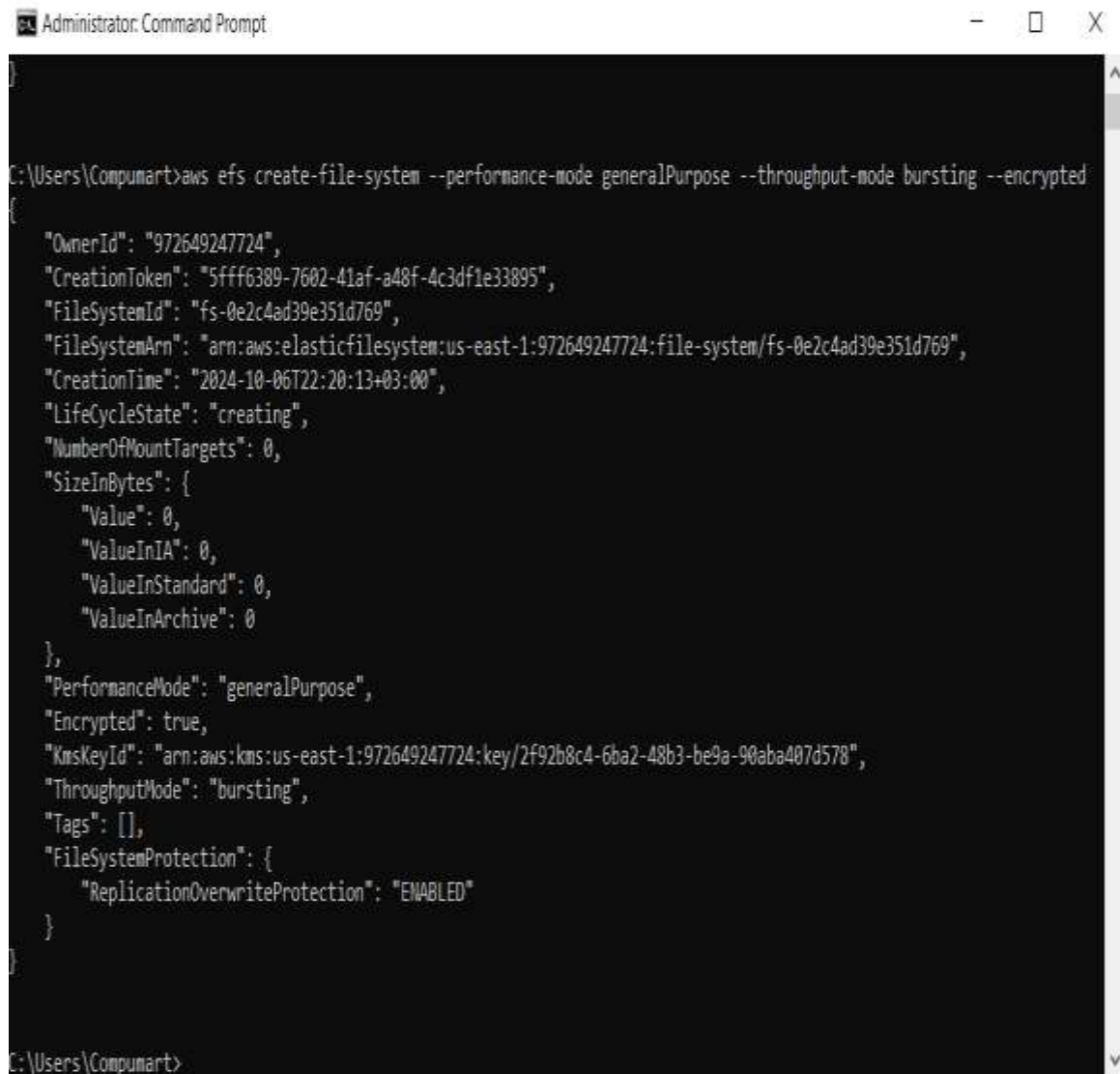
##### Task 1.2: Adding Inbound Rules to Allow Access via NFS

Administrator: Command Prompt

```
C:\Users\Compumart>aws ec2 authorize-security-group-ingress --group-id sg-06f5867e0754342b9 --protocol tcp --port 2049 --cidr 0.0.0.0/0
{
  "Return": true,
  "SecurityGroupRules": [
    {
      "SecurityGroupRuleId": "sgr-07aa1417c10b02c5a",
      "GroupId": "sg-06f5867e0754342b9",
      "GroupOwnerId": "972649247724",
      "IsEgress": false,
      "IpProtocol": "tcp",
      "FromPort": 2049,
      "ToPort": 2049,
      "CidrIpv4": "0.0.0.0/0"
    }
  ]
}

C:\Users\Compumart>
```

## Task 2: Creating an Amazon EFS File System



```
Administrator: Command Prompt

C:\Users\Compumart>aws efs create-file-system --performance-mode generalPurpose --throughput-mode bursting --encrypted

{
  "OwnerId": "972649247724",
  "CreationToken": "5fff6389-7602-41af-a48f-4c3df1e33895",
  "FileSystemId": "fs-0e2c4ad39e351d769",
  "FileSystemArn": "arn:aws:elasticfilesystem:us-east-1:972649247724:file-system/fs-0e2c4ad39e351d769",
  "CreationTime": "2024-10-06T22:20:13+03:00",
  "LifeCycleState": "creating",
  "NumberOfMountTargets": 0,
  "SizeInBytes": {
    "Value": 0,
    "ValueInIA": 0,
    "ValueInStandard": 0,
    "ValueInArchive": 0
  },
  "PerformanceMode": "generalPurpose",
  "Encrypted": true,
  "KmsKeyId": "arn:aws:kms:us-east-1:972649247724:key/2f92b8c4-6ba2-48b3-be9a-90aba407d578",
  "ThroughputMode": "bursting",
  "Tags": [],
  "FileSystemProtection": {
    "ReplicationOverwriteProtection": "ENABLED"
  }
}
```

### 2.2 Adding Mount Targets for the EFS File System

```
Administrator: Command Prompt
C:\Users\Compumart>aws efs create-mount-target --file-system-id fs-0e2c4ad39e351d769 --subnet-id subnet-049ad398543aaa80b --security-groups sg-0873e77efc5949439
{
  "OwnerId": "972649247724",
  "MountTargetId": "fsmt-0feedbf378b5c0418",
  "FileSystemId": "fs-0e2c4ad39e351d769",
  "SubnetId": "subnet-049ad398543aaa80b",
  "LifeCycleState": "creating",
  "IpAddress": "10.0.3.186",
  "NetworkInterfaceId": "eni-0cb4aaaac4451e1c4",
  "AvailabilityZoneId": "us-east-1a",
  "AvailabilityZoneName": "us-east-1a",
  "VpcId": "vpc-0c7908cffffd0a3058"
}
```

### Task 3: Connect to the EC2 Instance.

Connect to the EC2 Instance using Session Manager.

```
Administrator: Command Prompt
C:\Users\Compumart>aws ssm start-session --target i-0b99660f6117e3c18

An error occurred (AccessDeniedException) when calling the TerminateSession operation: User: arn:aws:sts::972649247724:assumed-role/voclabs/user3371450-minaakram2002@gmail.com is not authorized to perform: ssm:TerminateSession on resource: arn:aws:ssm:us-east-1:972649247724:session/user3371450-minaakram2002@gmail.com-x1rok4r7izvf05ou9h4h3lx6ji because no identity-based policy allows the ssm:TerminateSession action

C:\Users\Compumart>
```

## Task 4: Mounting the EFS File System

Install the required tools.

```
Session ID: user13371450@mznazkrm2002@gmail.com- Instance ID: i-0u9f91675f986b0e8c
r575kqcvq2k0rzqht8q1g5gq Terminate

Installing:
amazon-efs-utils                x86_64                2.0.4-1.amzn2023                amazonlinux                1.4 M
Installing dependencies:
stunnel                         x86_64                5.58-1.amzn2023.0.2            amazonlinux                156 k

Transaction Summary
-----
Install 2 Packages

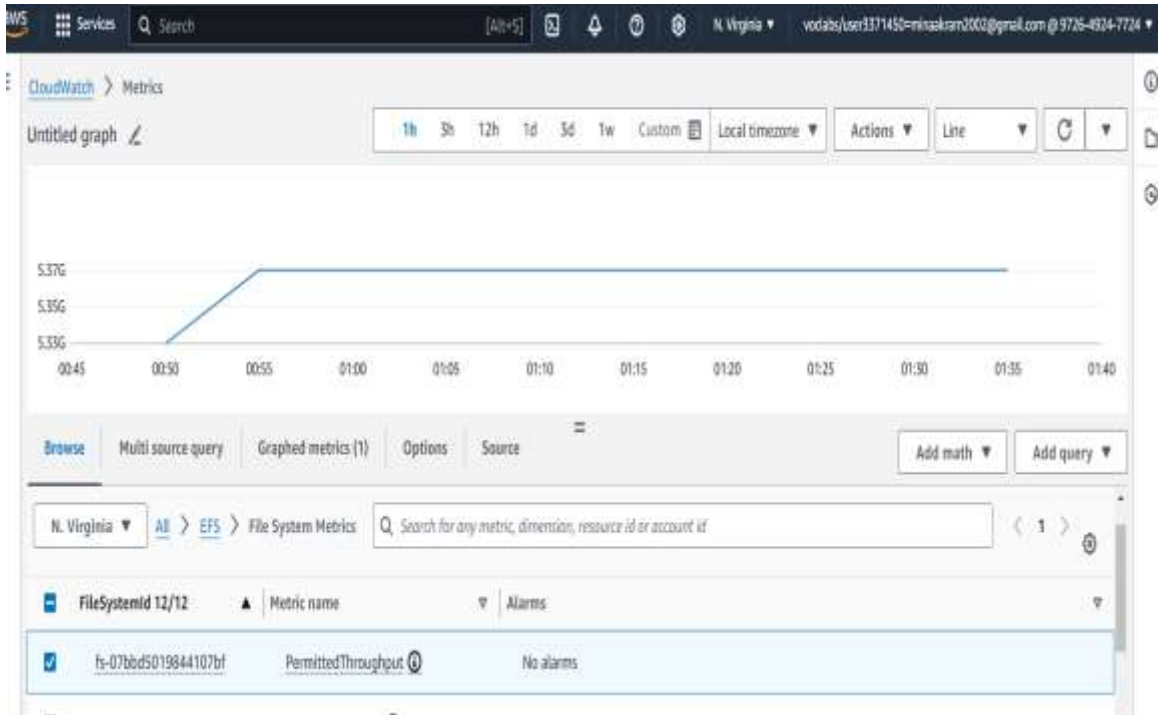
Total download size: 1.5 M
Installed size: 5.5 M
Downloading Packages:
(1/2): amazon-efs-utils-2.0.4-1.amzn2023.x86_64.rpm                20 MB/s | 1.4 MB  00:00
(2/2): stunnel-5.58-1.amzn2023.0.2.x86_64.rpm                    2.0 MB/s | 156 kB  00:00
-----
Total                                                                    13 MB/s | 1.5 MB  00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      : stunnel-5.58-1.amzn2023.0.2.x86_64                1/1
  Installing     : stunnel-5.58-1.amzn2023.0.2.x86_64                1/2
  Running scriptlet: stunnel-5.58-1.amzn2023.0.2.x86_64                1/2
  Installing     : amazon-efs-utils-2.0.4-1.amzn2023.x86_64          2/2
  Running scriptlet: amazon-efs-utils-2.0.4-1.amzn2023.x86_64          2/2
  Verifying      : amazon-efs-utils-2.0.4-1.amzn2023.x86_64          1/2
  Verifying      : stunnel-5.58-1.amzn2023.0.2.x86_64                2/2

Installed:
  amazon-efs-utils-2.0.4-1.amzn2023.x86_64                stunnel-5.58-1.amzn2023.0.2.x86_64

Complete!
```

## Task 5: Examining the Performance of the EFS File System

```
[ec2-user@ip-10-0-1-183 ~]$ sudo fio --name=fio-efs --filesize=10G --filename=./efs/fio-efs-test.img --bs=1M --nrfiles=1 --direct=1 --sync=0 --rw=write --io-depth=200 --ioengine=libaio
fio-efs: (g=0): rw=write, bs=(B) 1024KiB-1024KiB, (W) 1024KiB-1024KiB, (T) 1024KiB-1024KiB, ioengine=libaio, iodepth=200
fio-3.32
Starting 1 process
fio-efs: Laying out IO file (1 file / 10240MiB)
Jobs: 1 (f=1): (W(1)) [48.2%] [w=122MiB/s] [w=122 IOPS] [eta 0m:44s]
```



[▶ Start Lab](#)   [■ End Lab](#)   [i AWS Details](#)   [i Details](#)   [✕](#)

Submit

Submission Report

Grades

Total score

15/15

[Task 1] Security Group created

5/5

[Task 2] EFS file system created

5/5

[Task 5] Flexible IO was run

5/5