



# Andhra Pradesh State Skill Development Corporation



# AWS CLOUD COMPUTING

## CONFIGURATION OF AMAZON ELASTIC FILE SYSTEM (EFS)

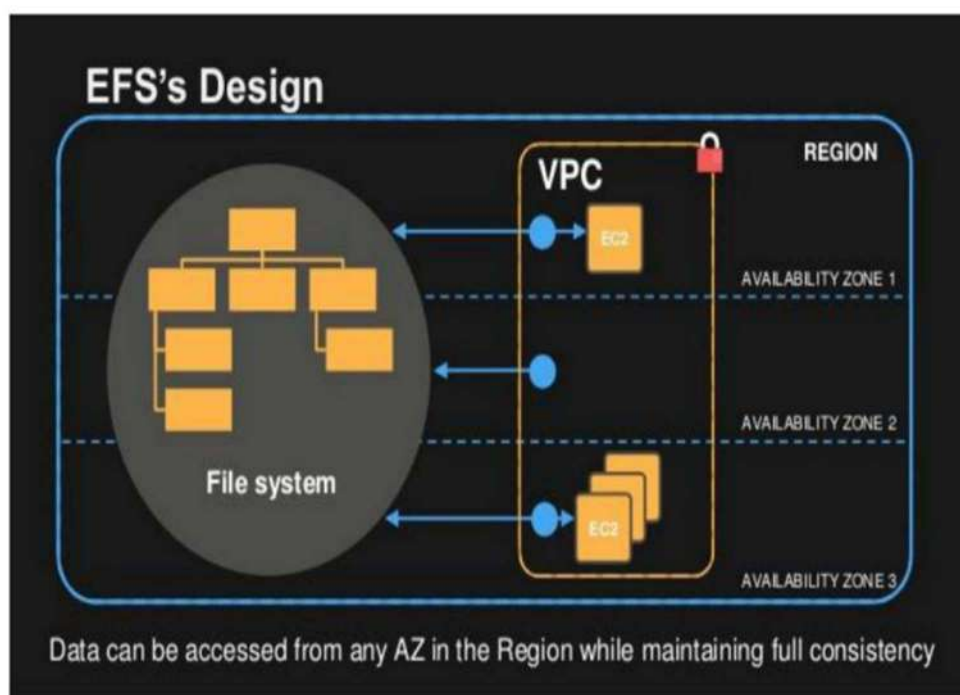


## **Configuration of Amazon Elastic File System (EFS)**

## Configuration of Amazon EFS

Amazon Elastic File System (Amazon EFS) provides a simple, scalable, fully managed elastic NFS file system for use with AWS Cloud services and on-premises resources. It is built to scale on demand to petabytes without disrupting applications, growing and shrinking automatically as you add and remove files, eliminating the need to provision and manage capacity to accommodate growth.

Amazon EFS offers two storage classes. The Standard storage class, and the Infrequent Access storage class (EFS IA). EFS IA provides price/performance that's cost-optimized for files not accessed every day. By simply enabling EFS Lifecycle Management on your file system, files not accessed according to the lifecycle policy you choose will be automatically and transparently moved into EFS IA. The EFS IA storage class costs only \$0.025/GB-month.



**To configure EFS with the following task.**

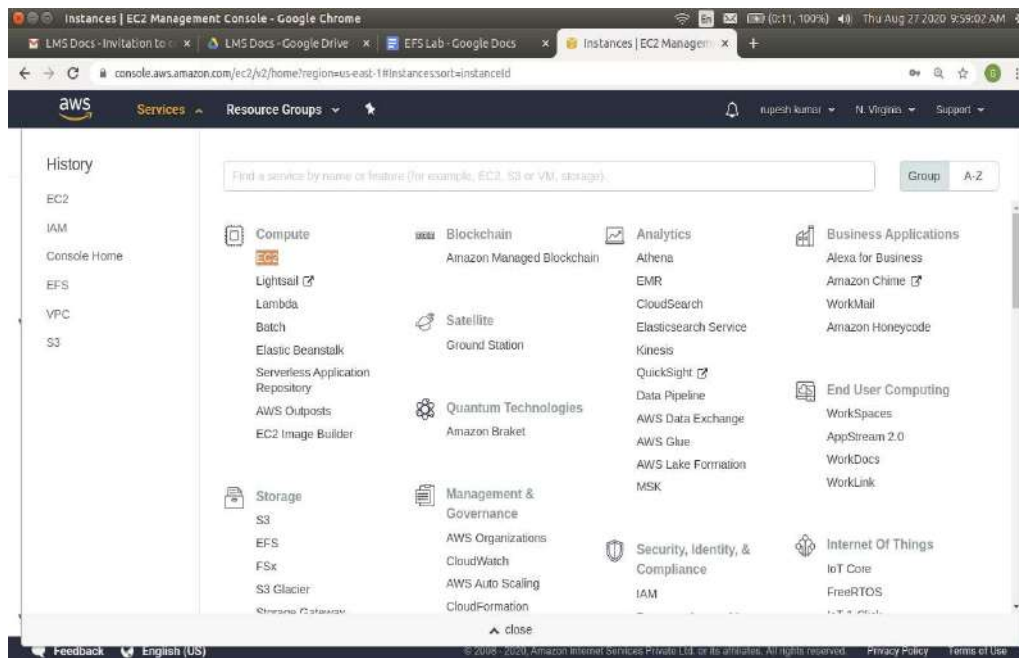
- Create a security group for EFS access
- Create Your Amazon EFS File System
- Launch Your EC2 Instance
- Create Your Amazon EFS File System
- Mount the Amazon EFS File System in your Linux launch instance



## Create a security group for EFS access

Open AWS Console and go for EC2 Service

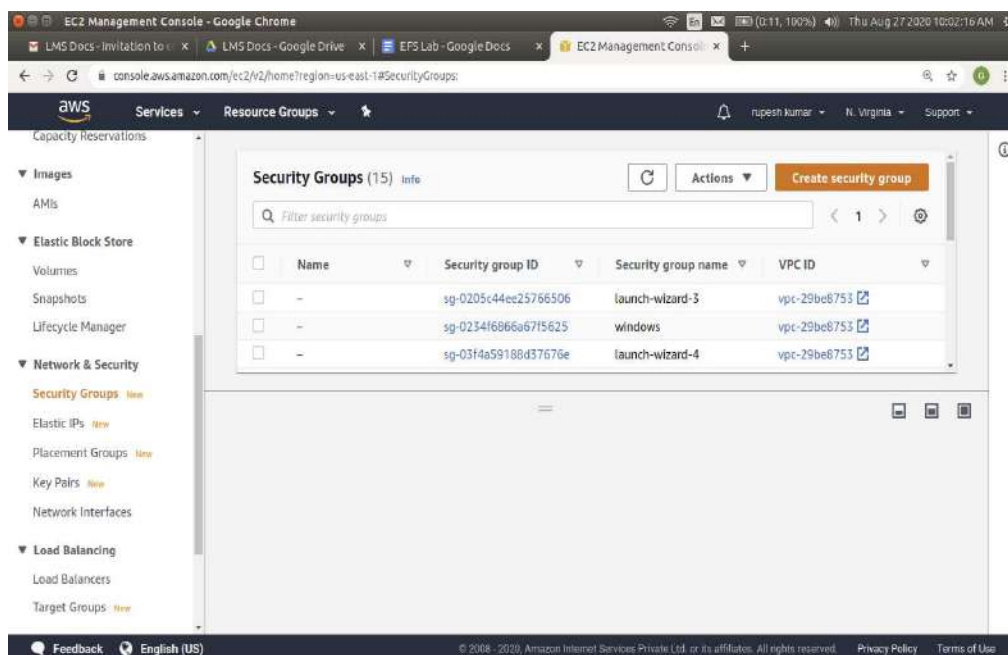
Click on EC2



Under EC2 Dashboard go for Network & Security

Select Security Groups

Click on Create Security Group







Under “Create Security Group” wizard  
Give Following values

Security group name → NFS security  
Description → NFSrule  
VPC → take default  
Select Inbound  
Type → All traffic  
Source → Anywhere  
Click on Create button

Outbound rules

Type	Protocol	Port range	Destination	Description - optional
All traffic	All	All	Custom 0.0.0.0/0	

Add rule

Tags - optional

No tags associated with the resource.

Add new tag

Cancel Create security group

Check the status of NFS security

Security group (sg-01b67df66c1db2114 | NFS security) was created successfully

sg-01b67df66c1db2114 - NFS security

Delete security group Copy to new security group

Security group name	Security group ID	Description	VPC ID
NFS security	sg-01b67df66c1db2114	NFSrule	vpc-29be8753

Owner	Inbound rules count	Outbound rules count
177681988520	2 Permission entries	1 Permission entry

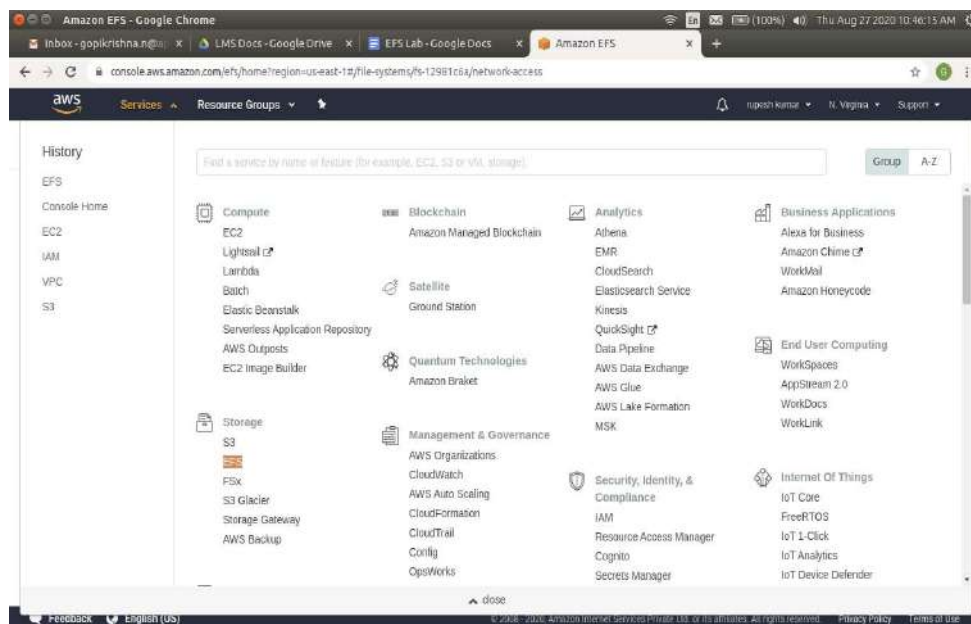
Inbound rules Outbound rules Tags

Edit inbound rules

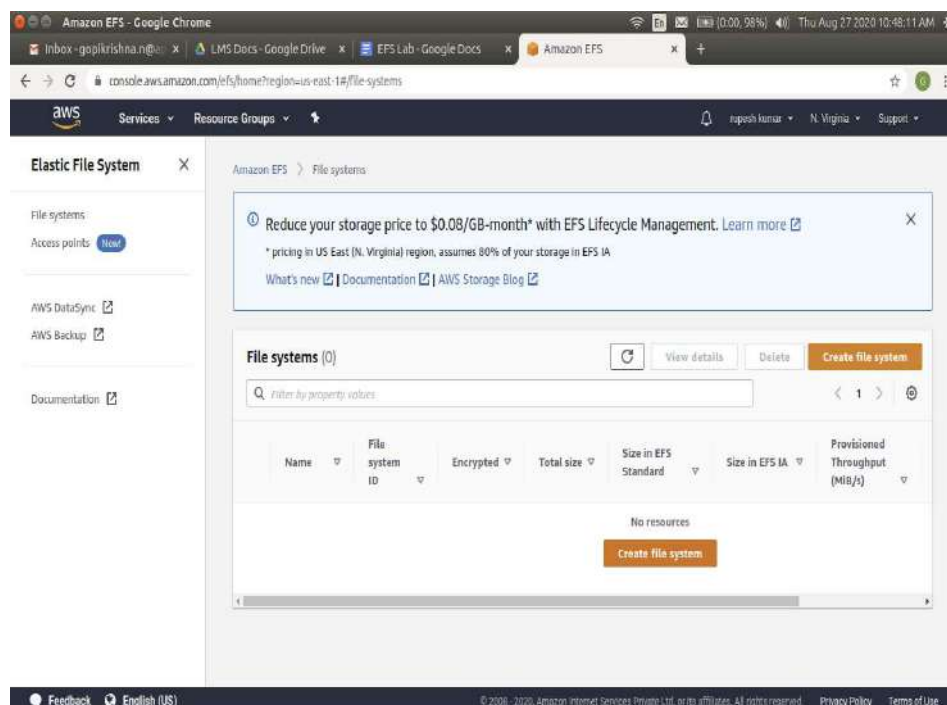


## Create your Amazon EFS File System

Go to services and click on EFS



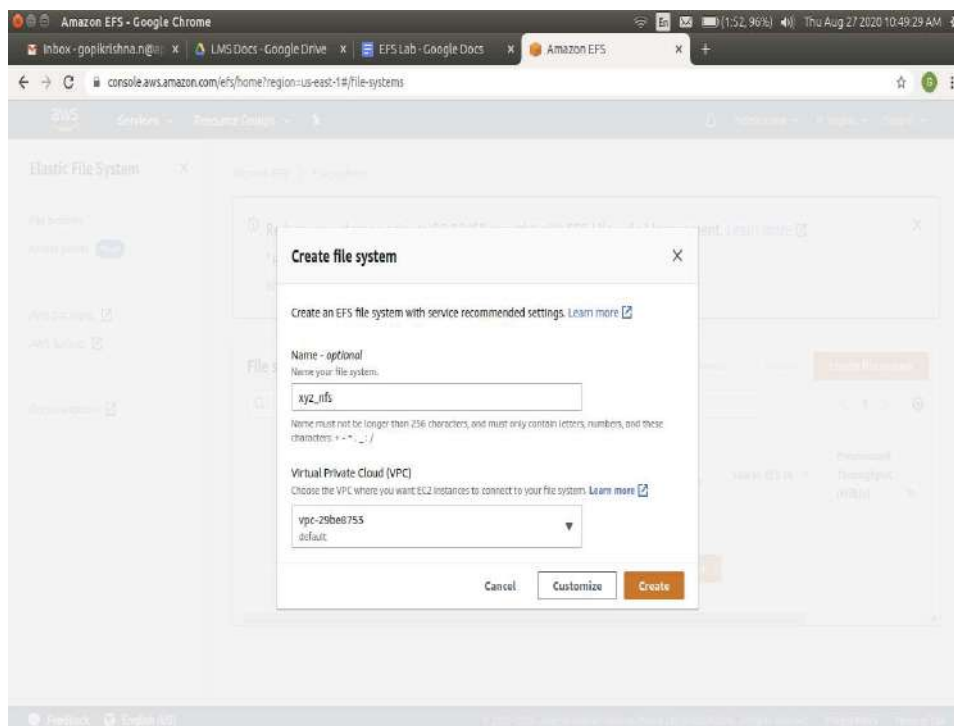
Click on “Create file system” button



Name of the file system → xyz\_nfs (name of the file system is optional)

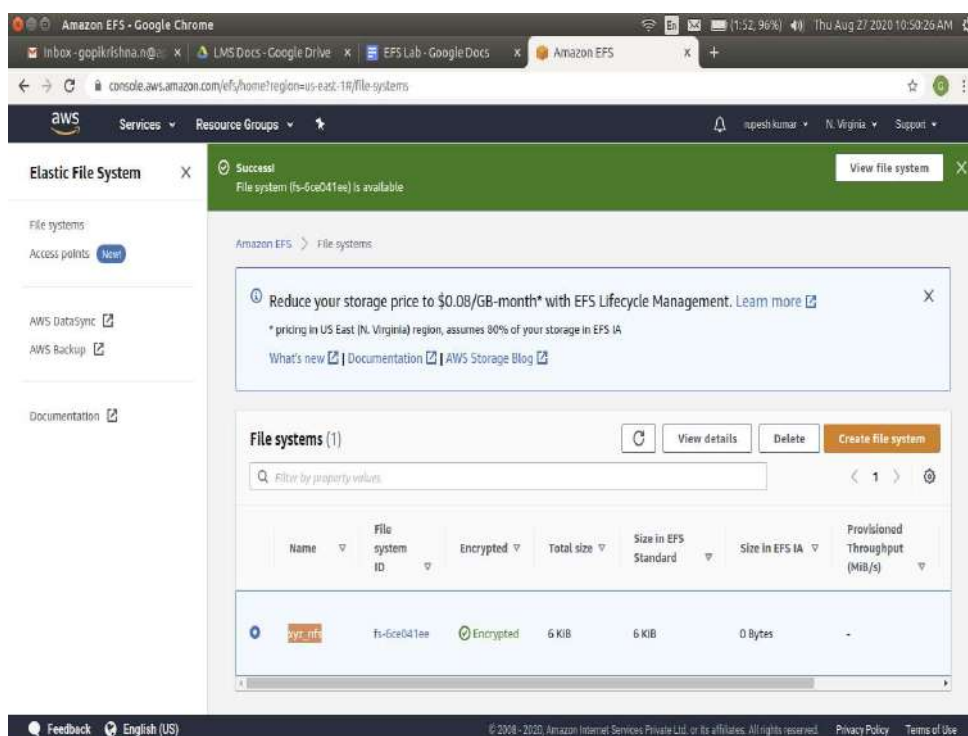


Select Default VPC and Click on create option



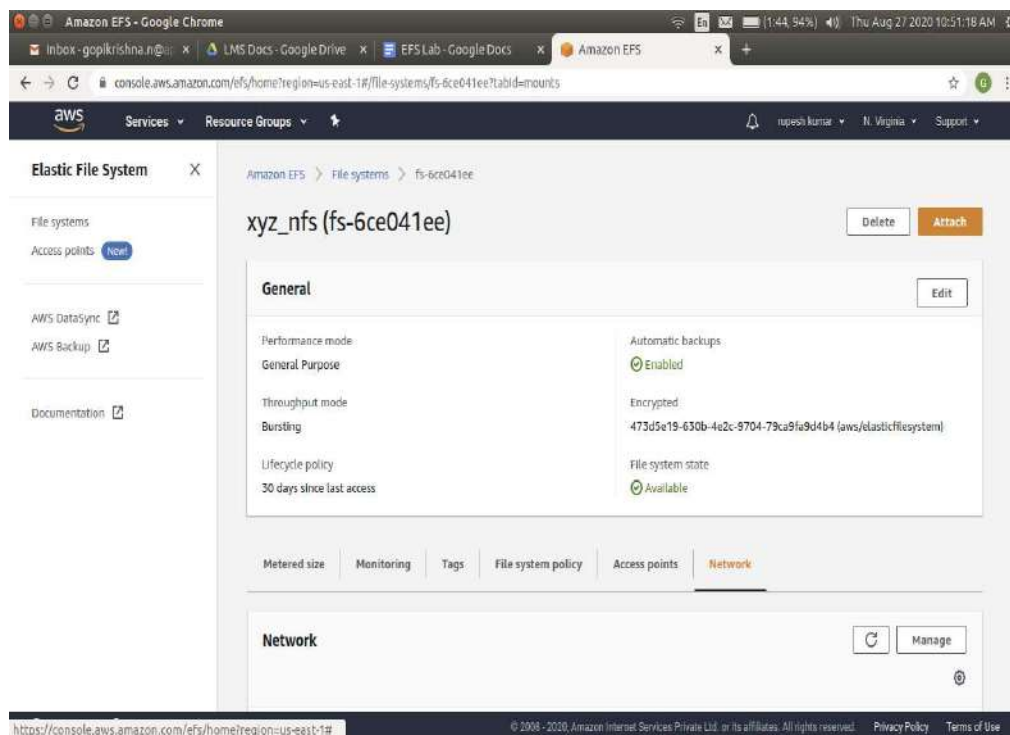
File system xyz\_nfs was created successfully.

Select your file system name and click on your file system name (xyz\_nfs)

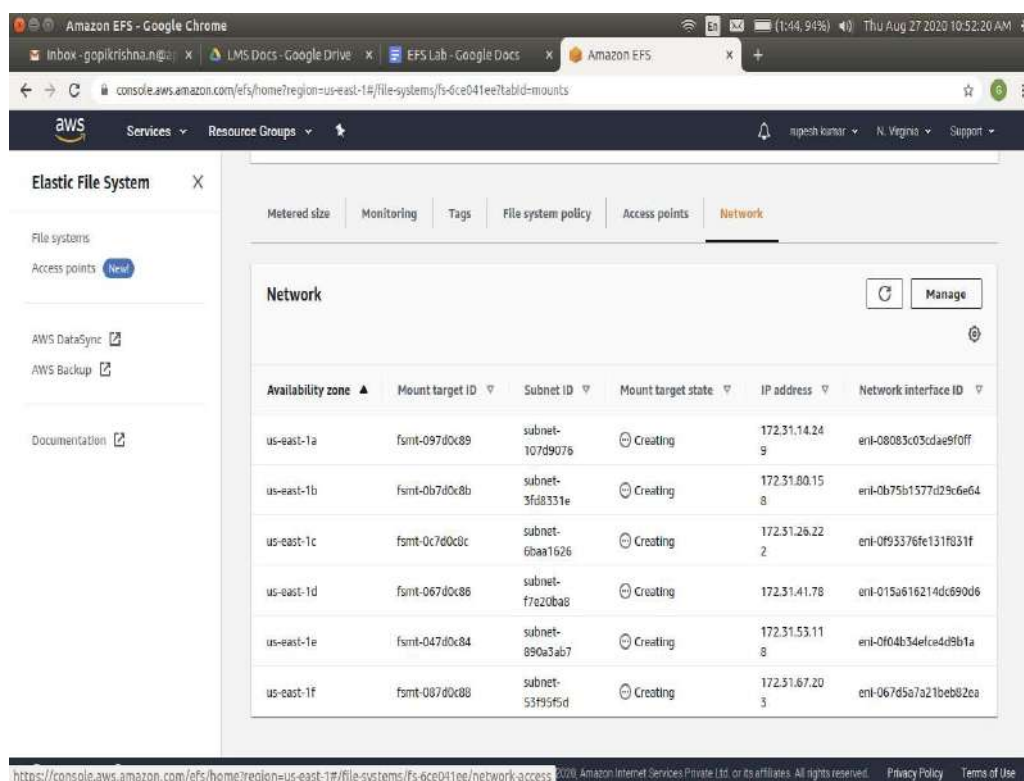




Click on Network option of your file system



In Network, click on Manage







After click on Manage you will get Mount Targets of your file system

The screenshot shows the Amazon EFS console's 'Mount targets' page. A table lists five mount targets across different availability zones. Each target has a security group assigned, which is 'sg-ard0e481' in the default state. The 'Remove' button is visible for each target.

Availability zone	Subnet ID	IP address	Security groups
us-east-1a	subnet-107d9076	172.31.14.249	sg-ard0e481 (default)
us-east-1b	subnet-3fd8331e	172.31.80.158	sg-ard0e481 (default)
us-east-1c	subnet-6baa1626	172.31.26.222	sg-ard0e481 (default)
us-east-1d	subnet-17e20ba8	172.31.41.78	sg-ard0e481 (default)
us-east-1e	subnet-890a3ab7	172.31.53.118	sg-ard0e481 (default)

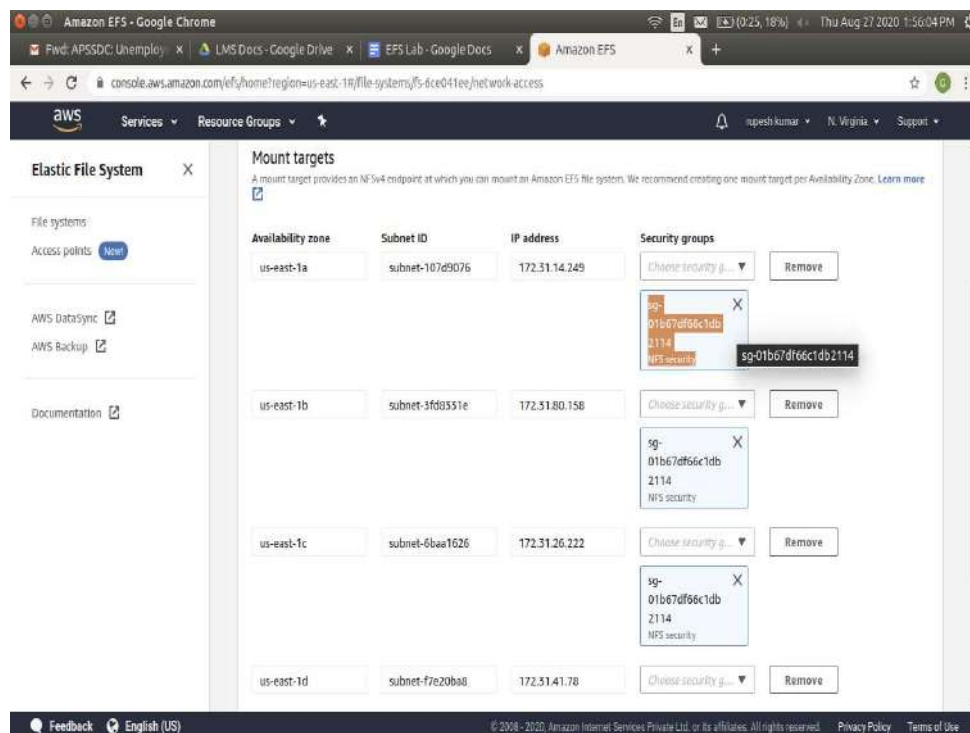
Remove all Security Groups and click on save

The screenshot shows the same 'Mount targets' page, but now the security group dropdowns are empty, indicating they have been removed. The 'Save' button at the bottom right is highlighted in orange, indicating it is the next step to save the changes.

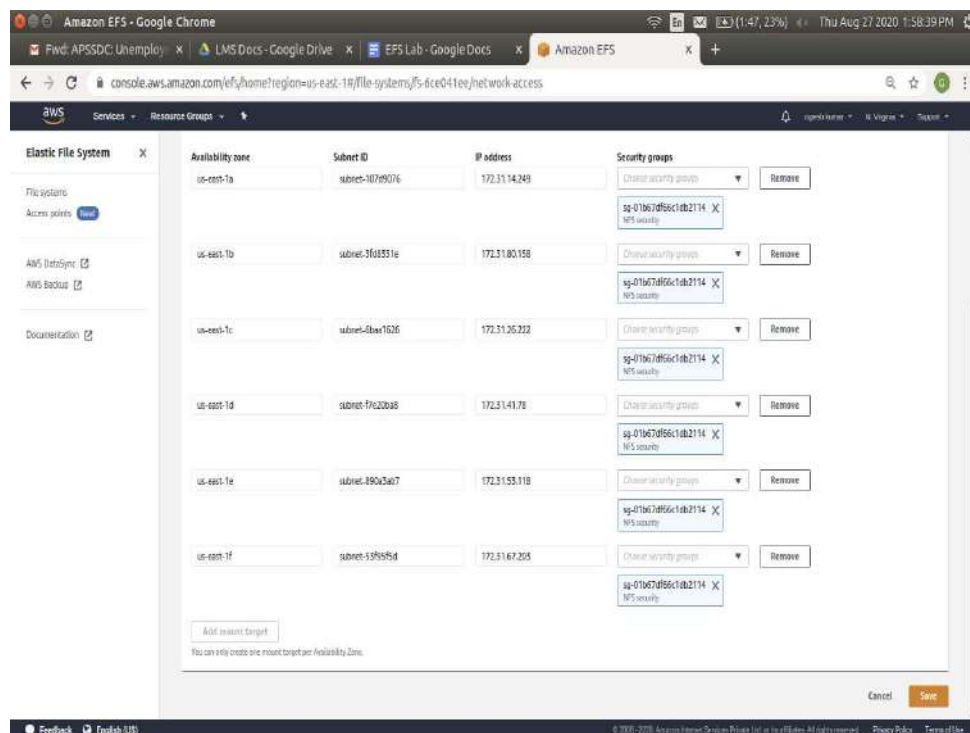
Availability zone	Subnet ID	IP address	Security groups
us-east-1a	subnet-107d9076	172.31.14.249	Choose security g...
us-east-1b	subnet-3fd8331e	172.31.80.158	Choose security g...
us-east-1c	subnet-6baa1626	172.31.26.222	Choose security g...
us-east-1d	subnet-17e20ba8	172.31.41.78	Choose security g...
us-east-1e	subnet-890a3ab7	172.31.53.118	Choose security g...
us-east-1f	subnet-53f95f5d	172.31.67.203	Choose security g...



Now Add NFS Security group in all A-Z

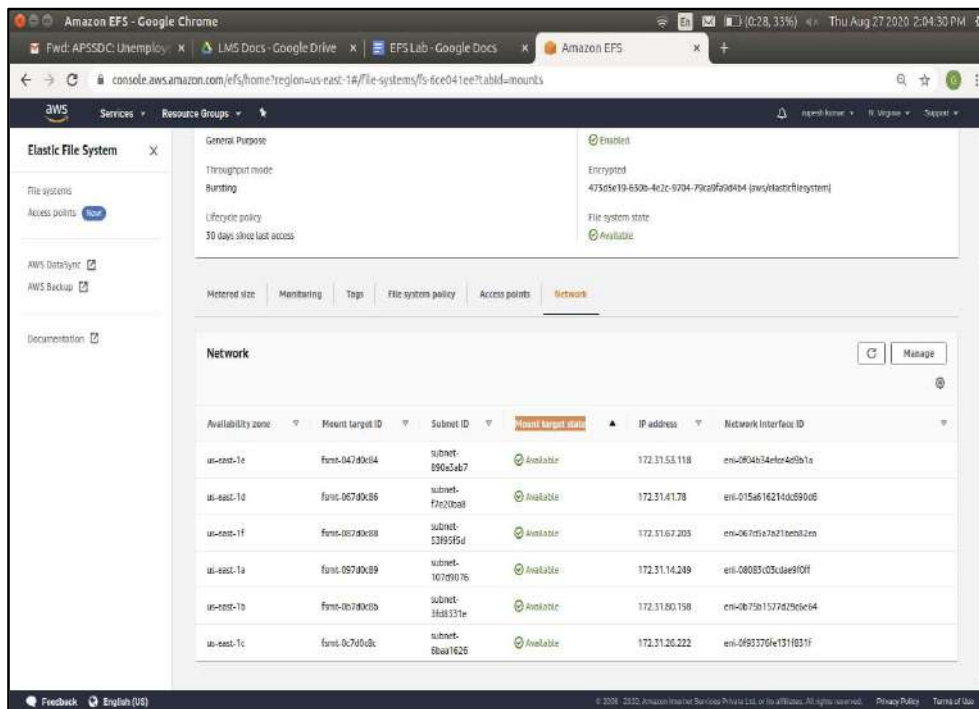


Verify that all Security Groups are added.  
Click on save

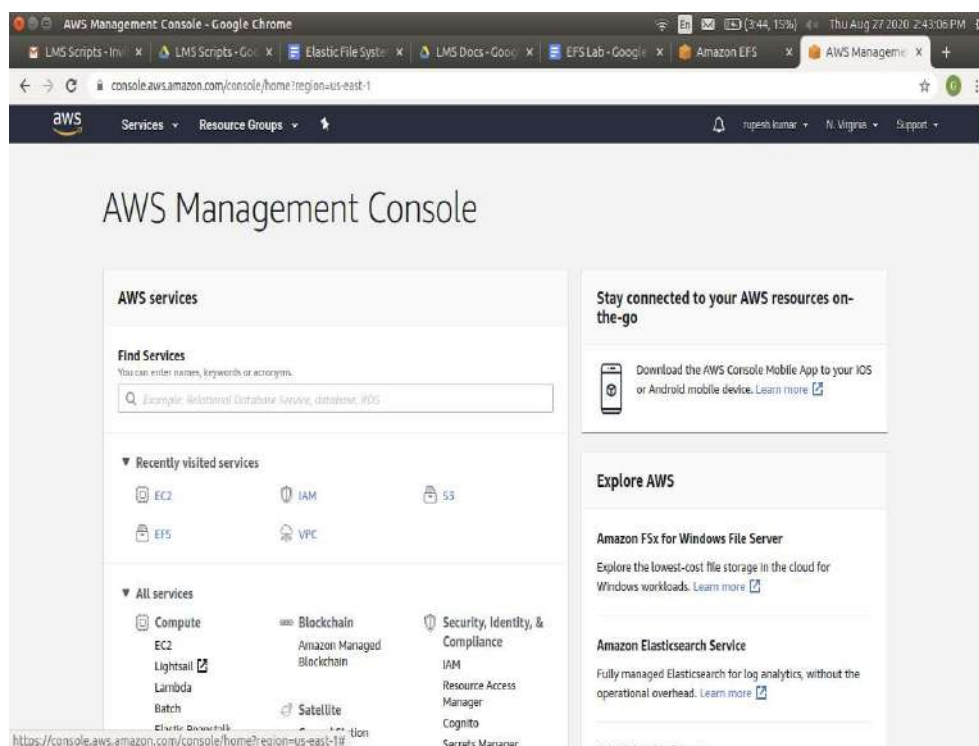




Select Network and check the status of mount targets. The state is available or not.

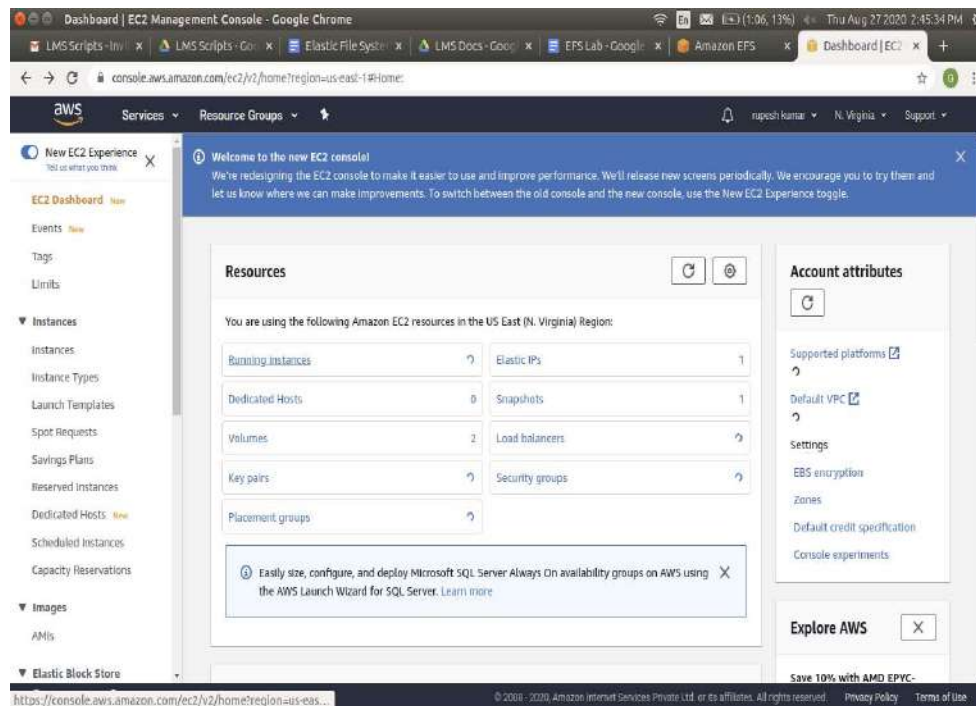


To mount EFS to an instance you need to connect to the instance  
Click on services of AWS management console

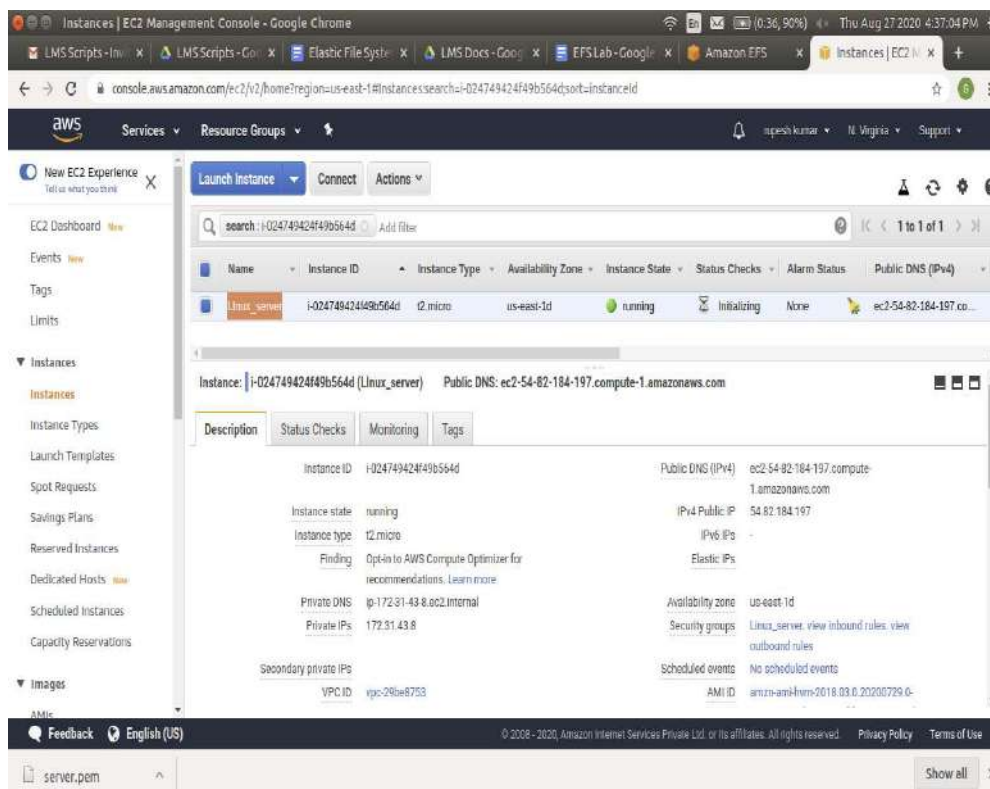




Click on EC2 service and click on Running instances



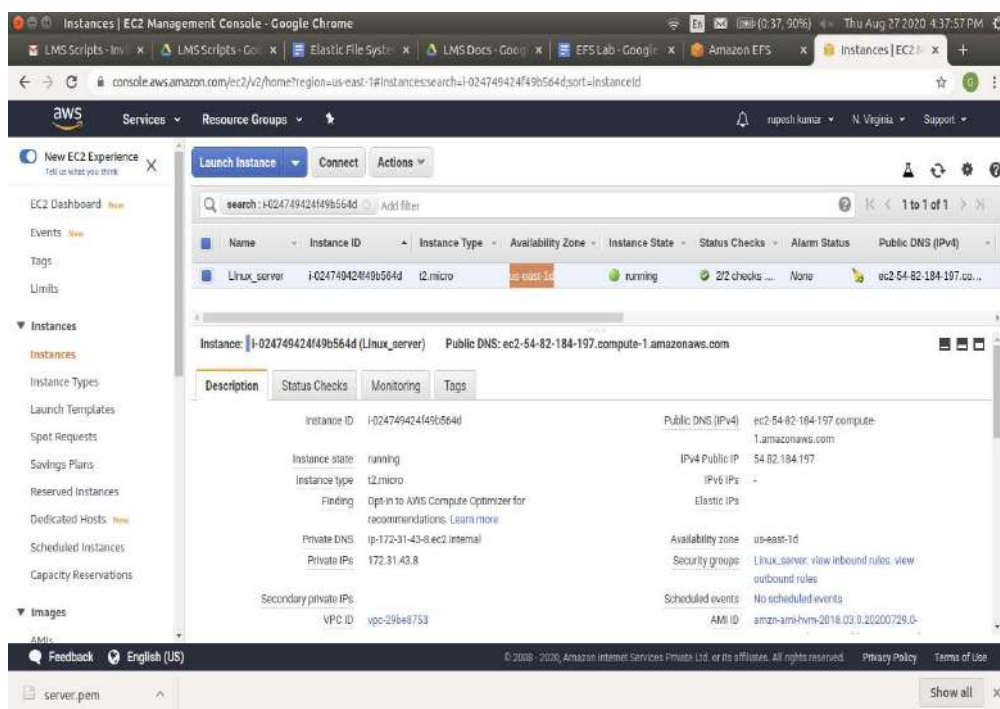
Click on running instances and select the instance you want to mount



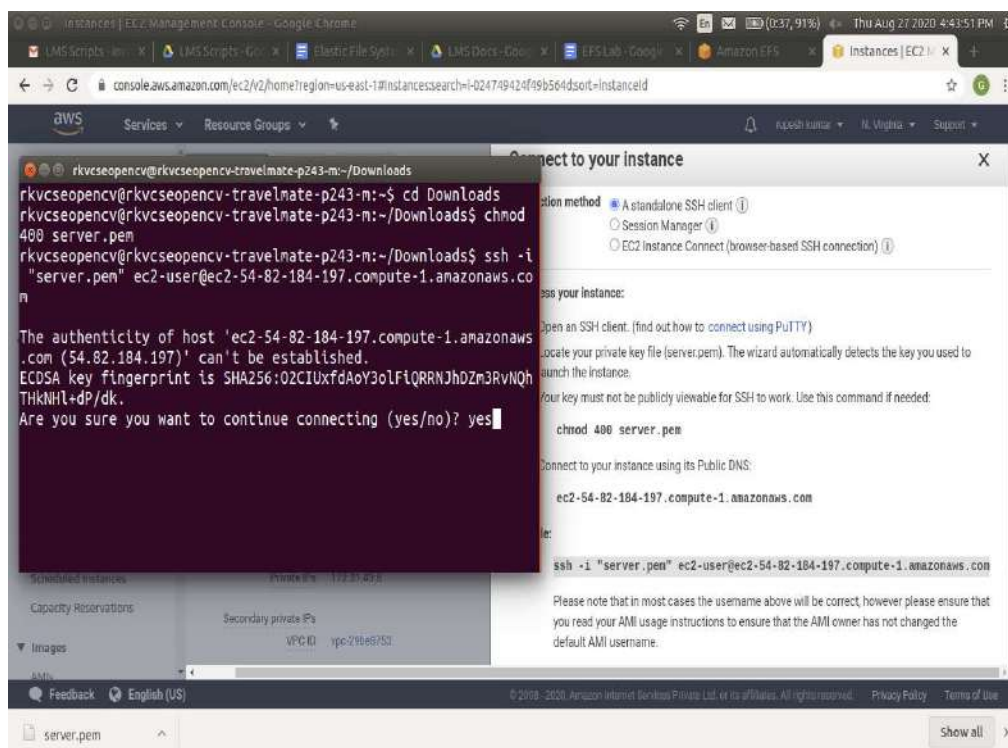




Make sure that, instance and EFS must be in same availability zone. Find out the availability zone of your Linux server

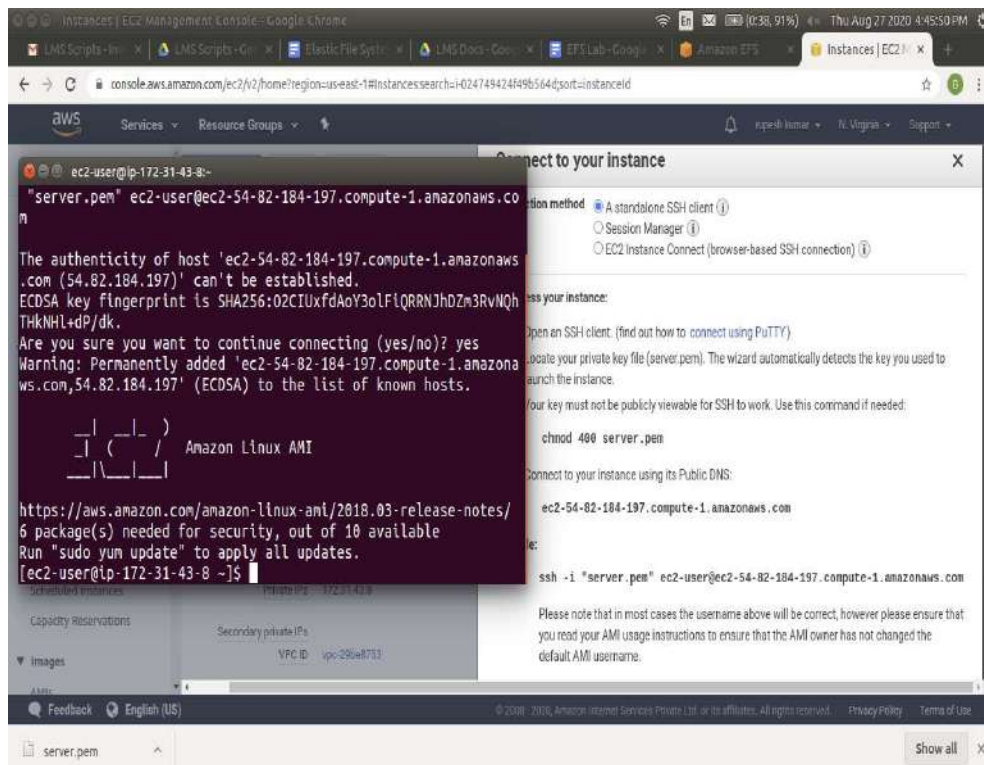


Now login to Linux\_server by using terminal or putty or windows PowerShell. Now I am connecting through terminal

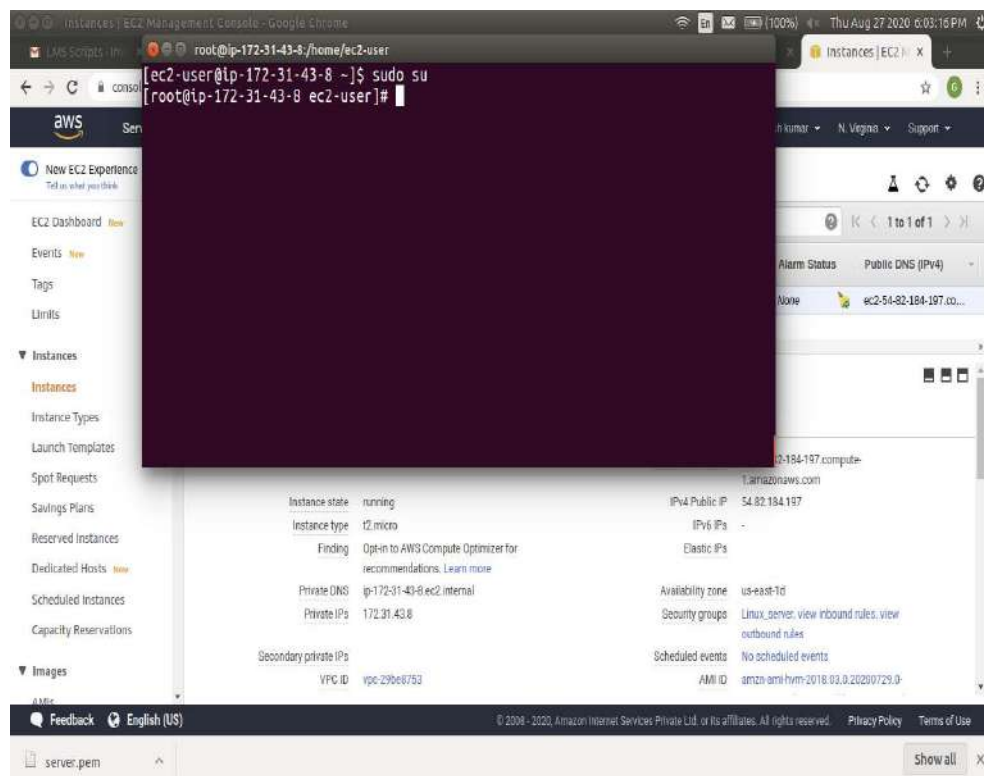




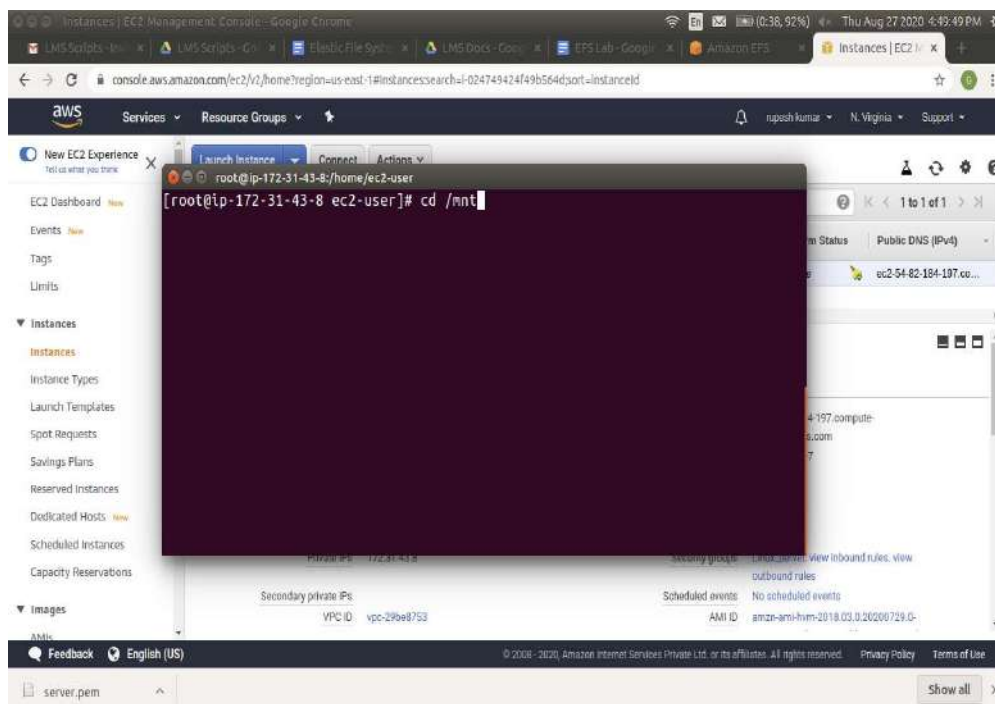
Check the connecting status



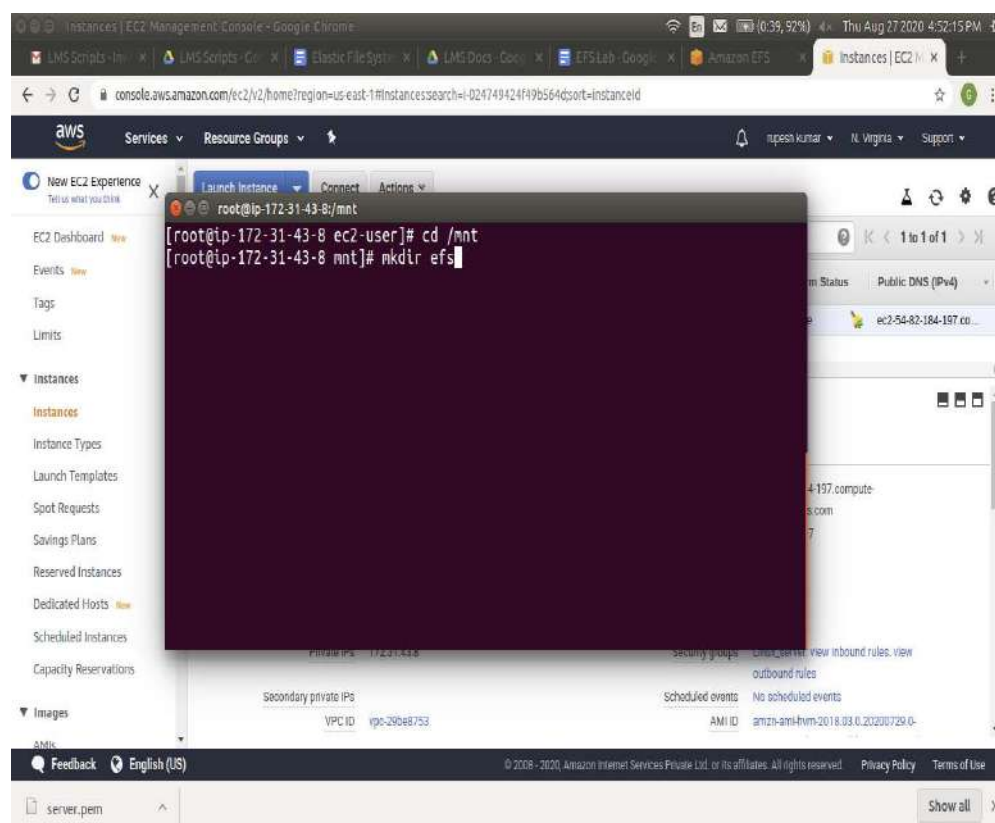
Now change the user from ec2-user to root



Now change the path to mount



Under the mount path create a directory as “EFS”





Now please check that both your instance and EFS both are in the same availability zone. Copy the IP address of the EFS which you want to mount and execute the command .

Availability zone	Mount target ID	Subnet ID	Mount target state	IP address	Network interface ID
us-east-1a	fsmt-0d7d0c89	subnet-107d9076	Available	172.31.14.249	eni-030181c08d0ae999f
us-east-1b	fsmt-0b7d0c8b	subnet-3f0b331e	Available	172.31.80.158	eni-0b75b1577429c4e64
us-east-1c	fsmt-0c7d0c8c	subnet-6b0e1626	Available	172.31.26.222	eni-0f33379fe1318b31f
us-east-1d	fsmt-0d7d0c8d	subnet-77c30b18	Available	172.31.41.77	eni-015e616214d596d6
us-east-1e	fsmt-047d0c84	subnet-890a1ab7	Available	172.31.53.118	eni-0f04b34dc24d91a
us-east-1f	fsmt-0d7d0c8f	subnet-53f95f5a	Available	172.31.67.203	eni-0d7d5e7a210eb02ea

After that click on Attach. Then select Mount via IP

Attach

Mount your Amazon EFS file system on a Linux instance. [Learn more](#)

☐ Mount via DNS ☒ Mount via IP

Availability zone: us-east-1d

Using the NFS client:

```
sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsz=1048576,hard,timeo=600,retrans=2,noresport 172.31.41.78:/ efs
```

See our user guide for more information. [User guide](#)





Now in the putty or terminal or windows power shell console type the command as (follow the command from the above slide)

**\$ sudo mount -t nfs4 -o**

**\$ nfsvers=4.1,rsize=1048576,wsiz=1048576,hard,timeo=600,retrans=2,noresvport 172.31.41.78:/ efs**

```
[root@ip-172-31-43-8 mnt]# sudo mount -t nfs4 -o nfsvers=4.1,rsize=1048576,wsiz=1048576,hard,timeo=600,retrans=2,noresvport 172.31.41.78:/ efs
mount.nfs4: /mnt/efs is busy or already mounted
[root@ip-172-31-43-8 mnt]#
```

Now check whether EFS was mount or not

```
[root@ip-172-31-43-8 mnt]# df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        483M   64K  483M   1% /dev
tmpfs           493M    0  493M   0% /dev/shm
/dev/xvda1       7.9G  1.2G   6.6G  15% /
172.31.41.78:/  8.0E  0  8.0E   0% /mnt/efs
[root@ip-172-31-43-8 mnt]#
```

Lab Setup was completed.