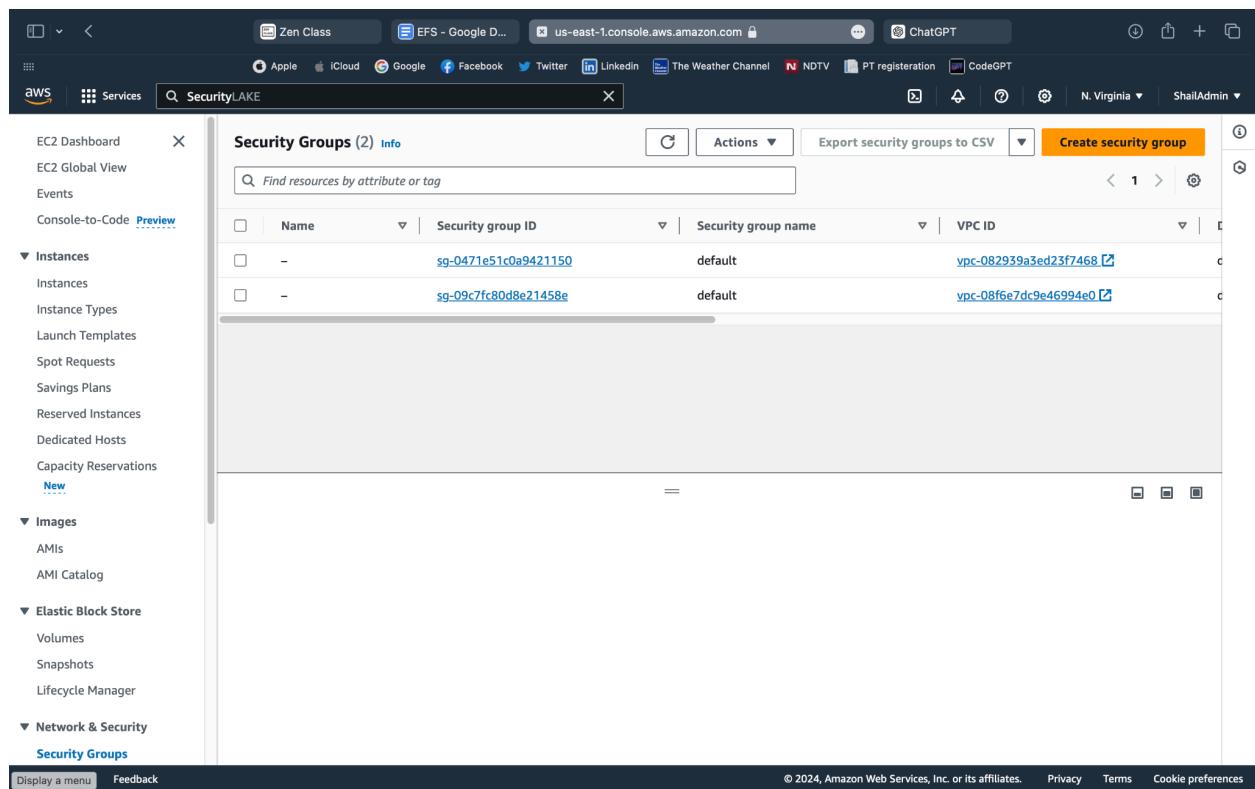


Steps to Mount EFS to EC2

- 1) Create EC2 instance linux based with port 22 open as EFS doesn't support windows based systems.
- 2) Create a Security group for EFS to monitor traffic flow.
- 3) Create a File System and mount on an EC2 instance.
- 4) Let us create 2 security groups one for instance and other for file system.

Create a Security Group



The screenshot shows the AWS EC2 Security Groups page. The left sidebar navigation includes EC2 Dashboard, EC2 Global View, Events, Console-to-Code, Instances (with sub-options like Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations), Images (AMIs, AMI Catalog), Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), and Network & Security (Security Groups). The main content area displays a table titled "Security Groups (2) Info" with columns: Name, Security group ID, Security group name, and VPC ID. Two entries are listed:

Name	Security group ID	Security group name	VPC ID
-	sg-0471e51c0a942150	default	vpc-082939a3ed23f7468
-	sg-09c7fc80d8e21458e	default	vpc-08f6e7dc9e46994e0

Click on Create Security Group

Create a security group for ec2 instance.

The screenshot shows the 'Create security group' page in the AWS Management Console. In the 'Basic details' section, the security group name is 'EC2-Sg' and the description is 'EC2-SSH'. Under 'VPC Info', the VPC is set to 'vpc-082939a3ed23f7468'. In the 'Inbound rules' section, there is one rule: Type: SSH, Protocol: TCP, Port range: 22, Source: Anywhere (0.0.0.0/0). An 'Add rule' button is visible.

Fill in the details and allow ssh port. Create a security group

The screenshot shows the 'Create security group' page with more rules added. In the 'Inbound rules' section, there is one rule: Type: SSH, Protocol: TCP, Port range: 22, Source: Anywhere (0.0.0.0/0). In the 'Outbound rules' section, there is one rule: Type: All traffic, Protocol: All, Port range: All, Destination: Custom (0.0.0.0/0). In the 'Tags - optional' section, there is a note about tags and a 'CreateSecurityGroup' button. At the bottom, there are 'Cancel' and 'Create security group' buttons.

Now create one more security group for EFS with port-22 open.

The screenshot shows the AWS EC2 Security Groups creation interface. In the 'Basic details' section, a security group named 'EFS-Sg' is being created with a description 'TCP Traffic'. It is associated with VPC 'vpc-082939a3ed23f7468'. In the 'Inbound rules' section, a rule is defined for SSH (Protocol TCP, Port range 22) from Anywhere (0.0.0.0/0) to 0.0.0.0/0. An 'Add rule' button is visible below the table.

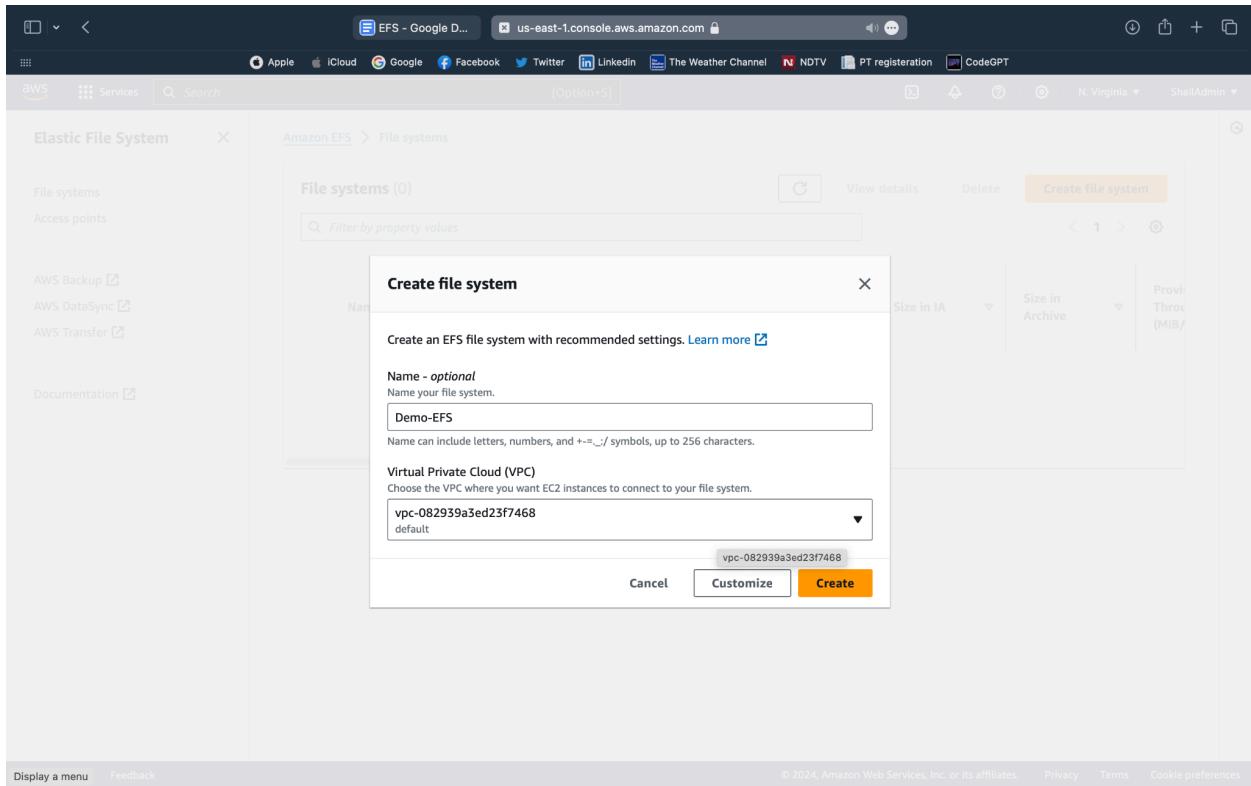
Create a Security Group.

Now let's create a file system. Go to EFS service and create a file system

The screenshot shows the AWS EFS File Systems creation interface. On the left, a sidebar lists 'File systems' and 'Access points'. The main area displays a table titled 'File systems (0)' with columns for Name, File system ID, Encrypted, Total size, Size in Standard, Size in IA, Size in Archive, and Provisioned Thru (MiB). A large orange 'Create file system' button is centered at the bottom of the table.

Click on create file system.

Give a name and click on customize to choose our VPC as we need add Security group to the file system.



Click on Customize.

The screenshot shows the 'File system settings' page for creating a new Amazon EFS file system. The left sidebar lists steps: Step 1 (File system settings), Step 2 (Network access), Step 3 (optional: File system policy), and Step 4 (Review and create). The main area is titled 'File system settings' under 'General'. It includes fields for 'Name - optional' (Demo-EFS) and 'File system type' (Regional, selected). Other sections include 'Automatic backups' (checked) and 'Lifecycle management' (Transition into Infrequent Access (IA) set to 30 days since last access). The bottom right has links for 'Display a menu', 'Feedback', and copyright information.

I will not change default settings. Click on Next.

The screenshot shows the continuation of the 'File system settings' page. The 'Encryption' section is shown with the 'Enable encryption of data at rest' checkbox checked. The 'Performance settings' section follows, with 'Throughput mode' options: Enhanced (selected), Bursting, Elastic (Recommended) (selected), and Provisioned. The 'Tags optional' section is at the bottom. Navigation buttons 'Cancel' and 'Next' are at the very bottom right.

In the next step Network access we will change Security Groups.

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 [\[link\]](#)
Choose the VPC where you want EC2 instances to connect to your file system.
vpc-082939a3ed23f7468
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 \[link\]](#)

Availability zone	Subnet ID	IP address	Security groups
us-east-1a	subnet-033008...	Automatic	Choose security ... Remove sg-0471e51c0a9421 150 default
us-east-1b	subnet-01a8b4c...	Automatic	Choose security ... Remove sg-0471e51c0a9421 150 default
us-east-1c	subnet-0227a6...	Automatic	Choose security ... Remove

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We will remove all our Security Group and set our security groups.

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 [\[link\]](#)
Choose the VPC where you want EC2 instances to connect to your file system.
vpc-082939a3ed23f7468
default

Mount targets

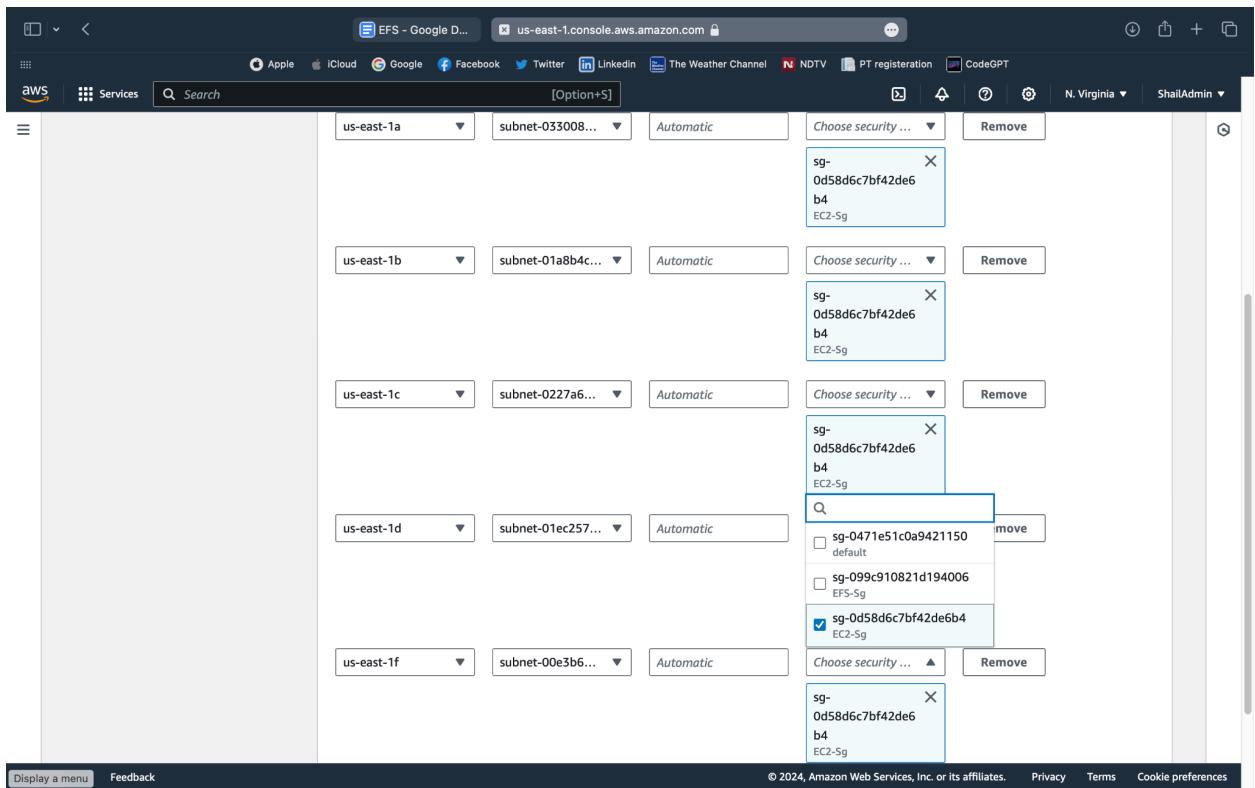
A mount target provides an NFSv4 endpoint at which you can mount an Amazon EFS file system. We recommend creating one mount target per Availability Zone. [Learn more \[link\]](#)

Availability zone	Subnet ID	IP address	Security groups
us-east-1a	subnet-033008...	Automatic	Choose security ... Remove
us-east-1b	subnet-01a8b4c...	Automatic	Choose security ... Remove
us-east-1c	subnet-0227a6...	Automatic	Choose security ... Remove
us-east-1d	subnet-01ec257...	Automatic	Choose security ... Remove
us-east-1f	subnet-00e3b6...	Automatic	Choose security ... Remove

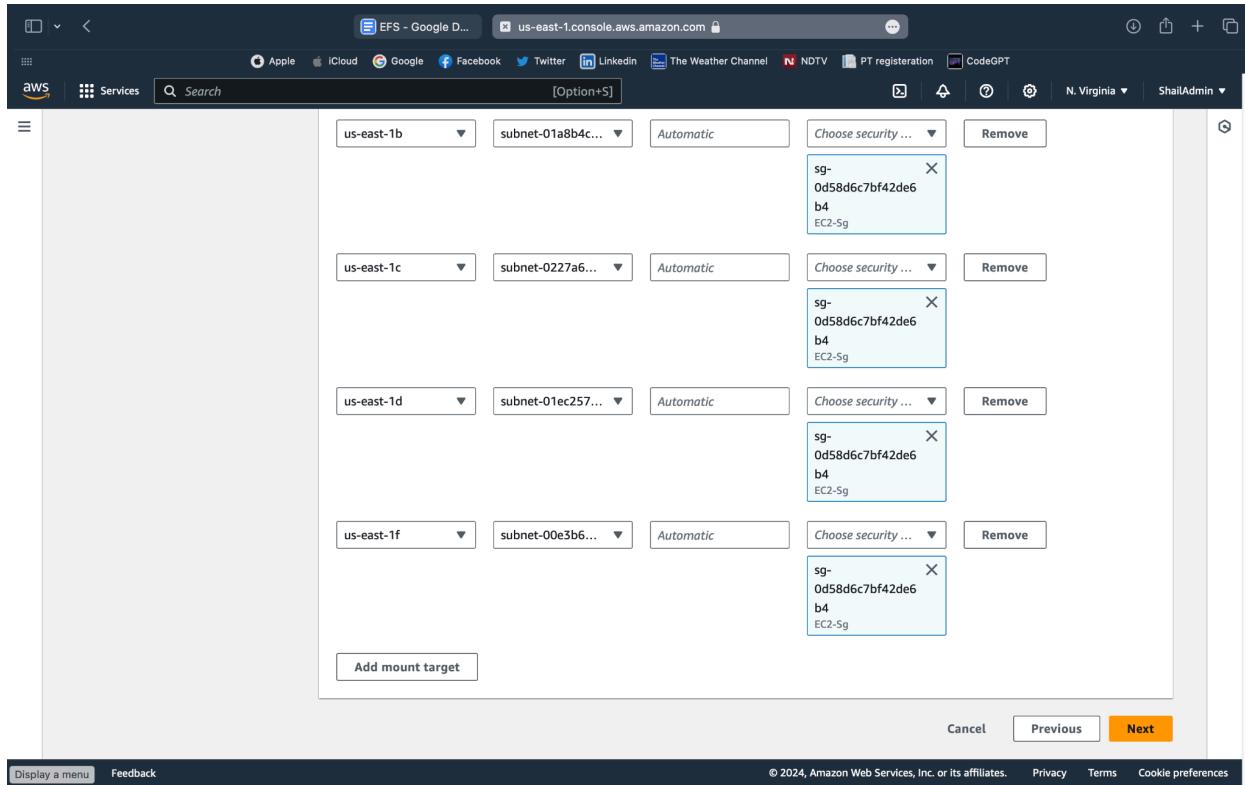
Add mount target

Cancel Previous Next

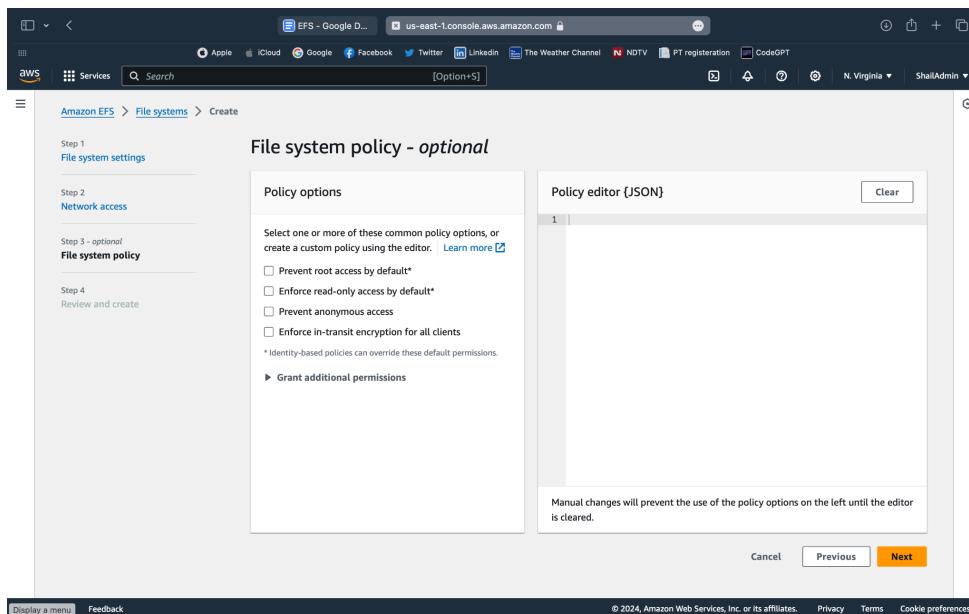
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Now we are creating a subnet as EC2 instance should be connected to EFS no matter where the availability zone is. Click on Next.



You can select on File System. As of now let it be as it is.



Click on Next. Review and Create.

File System is getting created.

Go to file system > Network. We will see the it is still getting created.

The screenshot shows the AWS EFS console with the URL `us-east-1.console.aws.amazon.com`. The left sidebar is titled "Elastic File System" and includes links for "File systems", "Access points", "AWS Backup", "AWS DataSync", "AWS Transfer", and "Documentation". The main content area displays various settings for a file system, including "Performance mode" (General Purpose), "Throughput mode" (Elastic), "Lifecycle management" (Transition into Infrequent Access (IA): 30 day(s) since last access, Transition into Archive: 90 day(s) since last access, Transition into Standard: None), "Availability zone" (Regional), "Automatic backups" (Enabled), "Encrypted" (with ID `cb8dbfee-4923-45a7-88dc-bf34219be371`), "File system state" (Available), "DNS name" (`fs-02eae4a80fa974ff4.efs.us-east-1.amazonaws.com`), and "Replication overwrite protection" (Enabled). Below this, a navigation bar has tabs for "Metered size", "Monitoring", "Tags", "File system policy", "Access points", "Network" (which is selected), and "Replication". The "Network" section title is "Network" and includes "Create" and "Manage" buttons. A table lists network interface details:

Availability zone (AZ-ID)	Mount target ID	Subnet ID	Mount target state	IP address	Network interface ID	Security groups
us-east-1a (use1-az1)	fsmt-04fcfd5de7b050 a8e2	subnet-0330084cd3e4f 88d4	Creating	172.31.14.63	eni-0107c813beeee a3eb	-
us-east-1b	fsmt-	subnet-			eni-	

Now lets create an Amazon linux EC2 instance

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name Add additional tags

Application and OS Images (Amazon Machine Image) [Info](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Recents Quick Start

Amazon Linux macOS Ubuntu Windows Red Hat SUSE Linux

Mac

Ubuntu® Microsoft Red Hat SUSE

Browse more AMIs Including AMIs from AWS, Marketplace and the Community

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, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million IOs, 1 GiB

Cancel Launch instance Review commands

The screenshot shows the AWS Lambda console interface. At the top, there's a navigation bar with links for Apple, iCloud, Google, Facebook, Twitter, LinkedIn, The Weather Channel, NDTV, PT registration, and CodeGPT. Below the navigation bar, the AWS logo is visible, followed by a "Services" dropdown menu and a search bar with the placeholder "Search". A button labeled "[Option+S]" is also present.

The main content area has a header with "Recents" and "Quick Start" tabs. Under "Recents", there are icons for Amazon Linux, macOS, Ubuntu, Windows, Red Hat, and SUSE Linux. To the right of these icons is a search bar with the placeholder "Browse more AMIs" and a link to "Including AMIs from AWS, Marketplace and the Community".

Below the recent items, there's a section for "Amazon Machine Image (AMI)". It shows details for the "Amazon Linux 2023 AMI":
AMI ID: ami-066784287e358dad1 (64-bit (x86), uefi-preferred) / ami-023508951a94f0c71 (64-bit (Arm), uefi)
Virtualization: hvm ENA enabled: true Root device type: ebs
Status: Free tier eligible

The "Description" section states: "Amazon Linux 2023 is a modern, general purpose Linux-based OS that comes with 5 years of long term support. It is optimized for AWS and designed to provide a secure, stable and high-performance execution environment to develop and run your cloud applications."

Below the description, there are filters for "Architecture" (64-bit (x86)), "Boot mode" (uefi-preferred), and "AMI ID" (ami-066784287e358dad1). A green button labeled "Verified provider" is also present.

On the right side of the screen, there's a sidebar titled "Instance type" with a dropdown menu. The sidebar contains the following text:
"Select an instance type that meets your computing, memory, networking, or storage needs."
"Prices shown are for instances running common operating systems with no pre-installed software. Prices for instances running other operating systems are available on the [Amazon EC2 On-Demand Pricing](#) page. You can calculate your estimated costs using the [AWS Pricing Calculator](#)".

At the bottom of the sidebar, there's a "Learn more" link and a "Amazon EC2 instance types" link.

Select a subnet.

The screenshot shows the AWS EC2 instance creation process. The current step is 'Select a subnet'. The interface includes a sidebar for 'Instance type' with a note about additional costs for pre-installed software. The main form contains sections for 'Key pair (login)', 'Network settings', and 'Auto-assign public IP'. Under 'Network settings', a VPC and subnet are selected. A note at the bottom indicates that additional charges apply outside of the free tier allowance.

On-Demand Linux base pricing: 0.0116 USD per Hour

Additional costs apply for AMIs with pre-installed software

Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required

gk-macbook [Create new key pair](#)

Network settings [Info](#)

VPC - required [Info](#)

vpc-082939a3ed23f7468 (default) [Edit](#)

Subnet [Info](#)

subnet-00e3b6bab2abb0da0 [Edit](#)

Auto-assign public IP [Info](#)

Enable [Edit](#)

Additional charges apply when outside of [free tier allowance](#)

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.

Instance type [Edit](#)

Select an instance type that meets your computing, memory, networking, or storage needs.

Pricing

Prices shown are for instances running common operating systems with no pre-installed software. Prices for instances running other operating systems are available on the [Amazon EC2 On-Demand Pricing](#) page. You can calculate your estimated costs using the [AWS Pricing Calculator](#).

Learn more [Edit](#)

Amazon EC2 instance types

Display a menu [Feedback](#)

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Select Existing Security Group.

EFS - Google D... us-east-1.console.aws.amazon.com

Services Search [Option+S]

VPC - required Info

VPC: vpc-082939a3ed23f7468 (default) Subnet: subnet-00e3b6bab2abb0da0

Subnet: subnet-00e3b6bab2abb0da0 VPC: vpc-082939a3ed23f7468 Owner: 637423339839 Availability Zone: us-east-1f Zone type: Availability Zone IP addresses available: 4090 CIDR: 172.31.64.0/20

Create new subnet

Auto-assign public IP Info

Enable Additional charges apply when outside of free tier allowance

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

Common security groups Info

Select security groups EC2-Sg sg-0d58d6c7bf42de6b4

EC2-Sg sg-0d58d6c7bf42de6b4 VPC: vpc-082939a3ed23f7468

Compare security group rules

Advanced network configuration

Storage (volumes) Info Simple

Instance type

Select an instance type that meets your computing, memory, networking, or storage needs.

Pricing

Prices shown are for instances running common operating systems with no pre-installed software. Prices for instances running other operating systems are available on the [Amazon EC2 On-Demand Pricing](#) page. You can calculate your estimated costs using the [AWS Pricing Calculator](#).

Learn more

Amazon EC2 instance types

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In Storage Volume .

Add EFS

EFS - Google D... us-east-1.console.aws.amazon.com

Services Search [Option+S]

Storage (volumes) Info Simple

EBS Volumes Hide details

Volume 1 (AMI Root) (8 GiB, EBS, General purpose SSD (gp3))

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage

Add new volume

No Data Lifecycle Manager policies targeting this instance Show details

Creating backups can help you prevent data loss. [Learn more](#)

File systems Hide details

EFS FSx

Shared file system 1 Remove

File system Info

fs-02ea4a80fa9374ff4 Name: Demo-EFS Availability: Regional Mount point Info /mnt/efs/fs1

Instance type

Select an instance type that meets your computing, memory, networking, or storage needs.

Pricing

Prices shown are for instances running common operating systems with no pre-installed software. Prices for instances running other operating systems are available on the [Amazon EC2 On-Demand Pricing](#) page. You can calculate your estimated costs using the [AWS Pricing Calculator](#).

Learn more

Amazon EC2 instance types

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The screenshot shows the AWS Lambda console interface. On the left, under 'File systems', there are two shared file systems listed: 'Shared file system 1' and 'Shared file system 2'. Each entry includes a 'File system' dropdown, an 'Info' link, and a 'Mount point' field set to '/mnt/efs/fs1' and '/mnt/efs/fs2' respectively. Below these are buttons for 'Add shared file system' and 'Create new shared file system'. On the right, the 'Instance type' configuration panel is open, showing a dropdown menu with 't2.micro' selected. The panel also contains sections for 'Pricing' (describing prices for common operating systems) and 'Amazon EC2 instance types' (with a 'Learn more' link). At the bottom of the page, there are links for 'Display a menu', 'Feedback', '© 2024, Amazon Web Services, Inc. or its affiliates.', 'Privacy', 'Terms', and 'Cookie preferences'.

Click and launch Instance.

The screenshot shows the 'Launch an instance' wizard on the AWS EC2 console. The user has selected the 't2.micro' instance type. The 'Number of instances' dropdown is set to 1. The 'Software Image (AMI)' is set to 'Amazon Linux 2023 AMI 2023.5.2...'. The 'Virtual server type (instance type)' is 't2.micro'. The 'Firewall (security group)' is 'EC2-Sg'. Under 'Storage (volumes)', there is 1 volume(s) - 8 GiB. A tooltip for the 'Free tier' is displayed, stating: '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, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million IOPS, 1 GB of snapshots, and 100 GB of bandwidth to the internet.' At the bottom, there are 'Cancel', 'Launch instance', and 'Review commands' buttons.

The screenshot shows the 'Launch an instance' wizard in progress. The status bar indicates 'Adding EFS security group to mount targets' and shows a progress bar at 42%. The message 'Please wait while we launch your instance. Do not close your browser while this is loading.' is displayed. A 'Launch an instance' button is visible. The right sidebar contains information about the instance type, pricing, and links to learn more and view instance types.

We will check for EC2 status

The screenshot shows the AWS EC2 Instances page. The left sidebar includes links for EC2 Dashboard, EC2 Global View, Events, Console-to-Code, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations (New), Images (AMIs, AMI Catalog), Elastic Block Store (Volumes, Snapshots, Lifecycle Manager), and Network & Security (Security Groups). The main content area displays a table titled "Instances (2) Info" with columns: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. It lists two instances: EC2 (i-04738515e3dd9456b, Running, t2.micro, 2/2 checks passed, us-east-1f) and EFS-1 (i-0b017d5c87dc62964, Terminated, t2.micro, -, us-east-1b). A "Select an instance" dialog is open at the bottom.

This screenshot shows the same AWS EC2 Instances page as the previous one, but with more detailed network information visible in the table headers. The table columns include Public IPv4 DNS, Public IPv4 IP, Elastic IP, IPv6 IPs, Monitoring, Security group name, and Key name. The instances listed are ec2-3-236-111-240.co... (3.236.111.240, -) and another row with - values. The rest of the interface is identical to the first screenshot.

Go to EC2 instance and click on connect.

The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with categories like EC2 Dashboard, EC2 Global View, Events, Console-to-Code, Instances, Images, Elastic Block Store, Network & Security, and more. The main content area displays an 'Instance summary' for an EC2 instance with ID i-04738515e3dd9456b. Key details shown include:

- Public IPv4 address: 3.236.111.240
- Instance state: Running
- Private IP DNS name (IPv4 only): ip-172-31-67-235.ec2.internal
- Instance type: t2.micro
- VPC ID: vpc-082939a3ed23f7468
- Subnet ID: subnet-00e3b6bab2abb0da0
- Instance ARN: arn:aws:ec2:us-east-1:657423339839:instance/i-04738515e3dd9456b

At the bottom, there are tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags. The Details tab is selected. A note at the bottom states "AWS Compute Optimizer finding No recommendations available for this instance."

Click on connect

The screenshot shows the EC2 Instance Connect page. It features a warning box about Port 22 (SSH) being open to all IPv4 addresses. Below the warning, there are connection options:

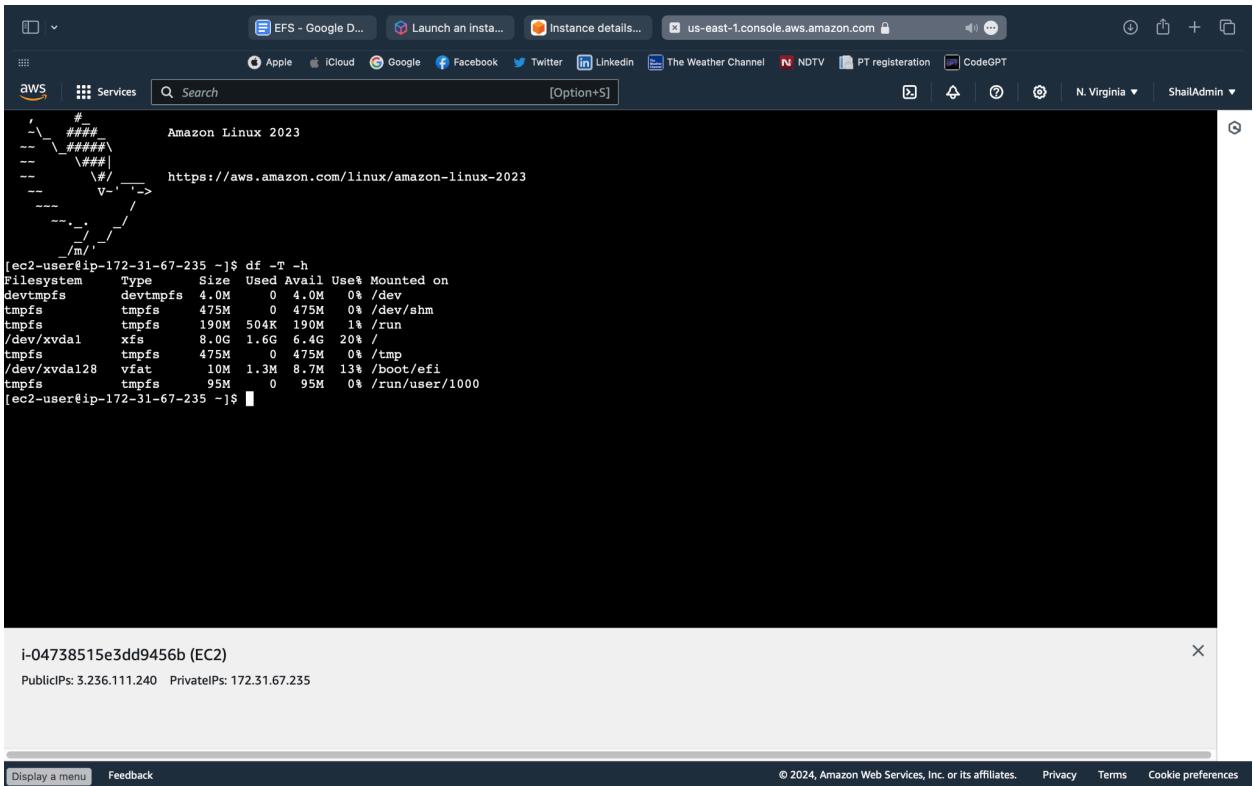
- EC2 Instance Connect:** Selected. Sub-options include "Connect using EC2 Instance Connect" (selected) and "Connect using EC2 Instance Connect Endpoint".
- Session Manager:** Unselected.
- SSH client:** Unselected.
- EC2 serial console:** Unselected.

Below the options, there are fields for:

- Instance ID: i-04738515e3dd9456b (EC2)
- Connection Type: "Connect using EC2 Instance Connect" (radio button selected)
- Public IP address: 3.236.111.240
- Username: ec2-user (text input field)
- 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."

At the bottom right, there are "Cancel" and "Connect" buttons. The "Connect" button is highlighted in orange.

Go to your EC2 instance and type df -T -h



```
[ec2-user@ip-172-31-67-235 ~]$ df -T -h
Filesystem      Type  Size  Used Avail Use% Mounted on
devtmpfs        tmpfs  4.0M   0  4.0M  0% /dev
tmpfs          tmpfs  475M   0  475M  0% /dev/shm
tmpfs          tmpfs  190M 504K 190M  1% /run
tmpfs          xfs   8.0G 1.6G  6.4G 20% /
tmpfs          tmpfs  475M   0  475M  0% /tmp
/dev/xvda128    vfat   10M  1.3M  8.7M 13% /boot/efi
tmpfs          tmpfs  95M   0   95M  0% /run/user/1000
[ec2-user@ip-172-31-67-235 ~]$
```

i-04738515e3dd9456b (EC2)
PublicIPs: 3.236.111.240 PrivateIPs: 172.31.67.235

This command will help EC2 mounted on EFS. if you create another EC2 make some changes and mount on EFS you can see the changes visible in another EC2 instance