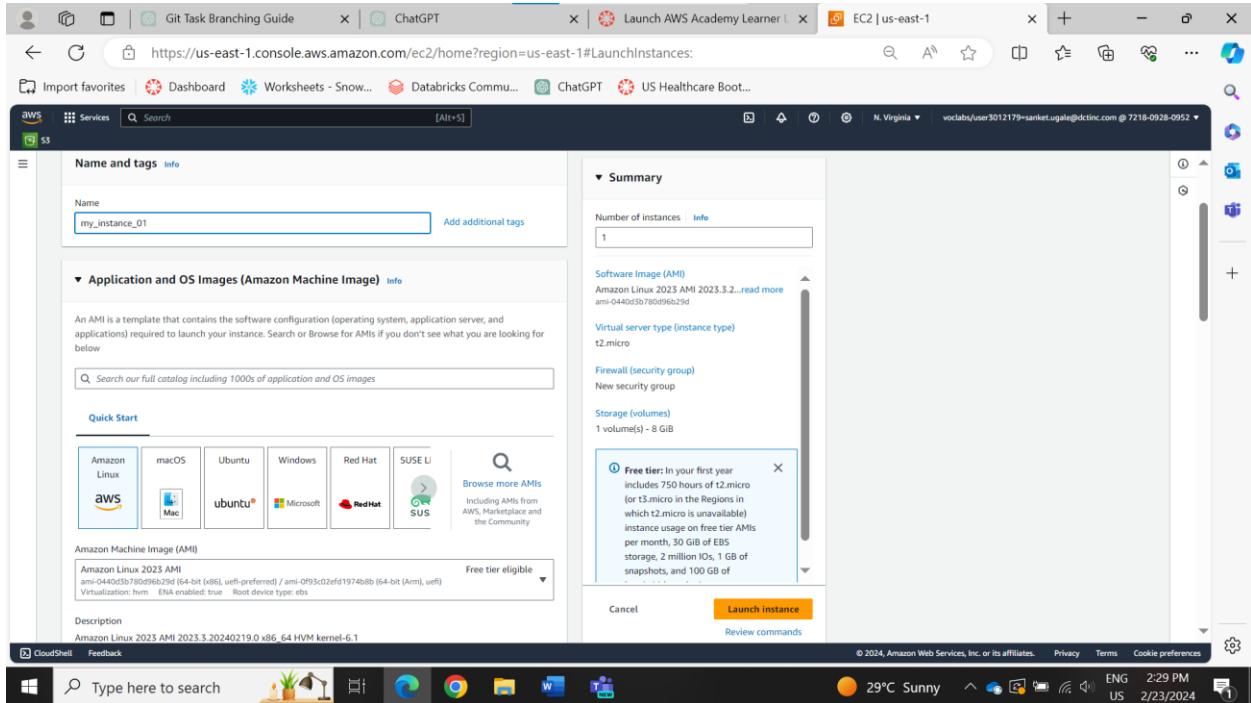
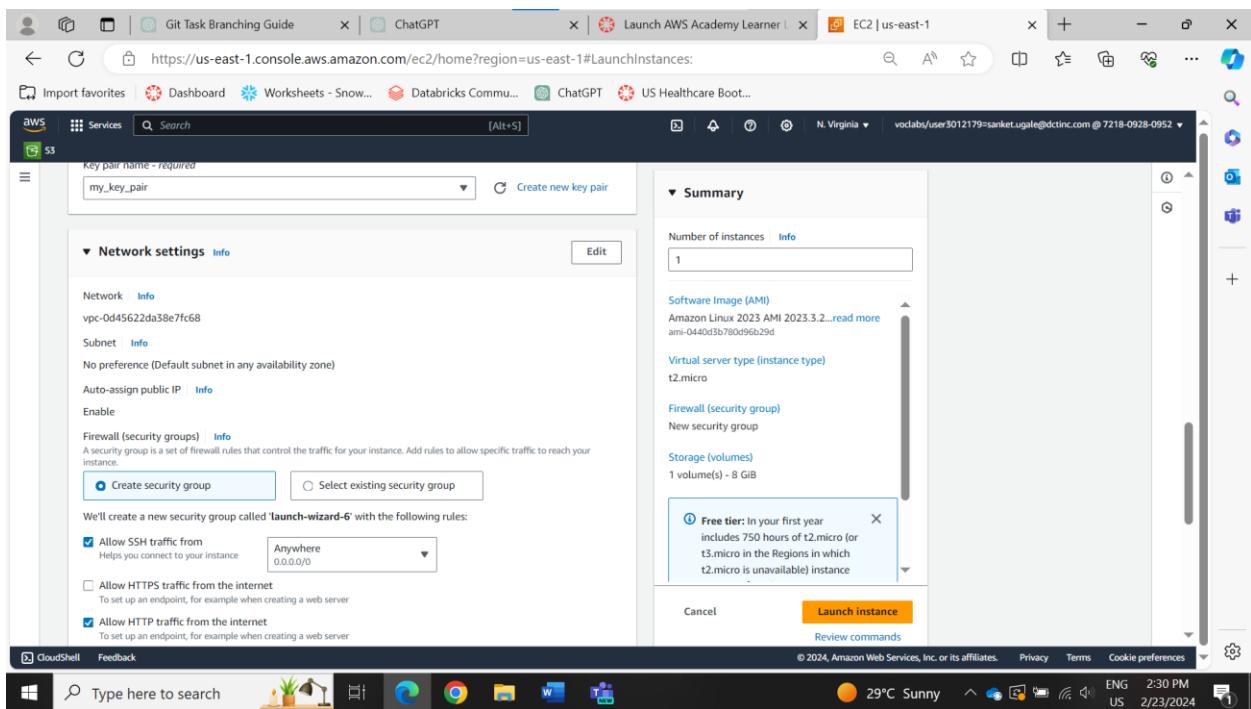


AWS LOAD Balancer Task

STEP : Click on Create EC2 Instance and name it and select your AMI and Instance type and select Your key_pair.



STEP : In Network Setting tick the “Allow HTTP Traffic from internet”



STEP : Go to Advance Details. And Paste the below Script in the User data.

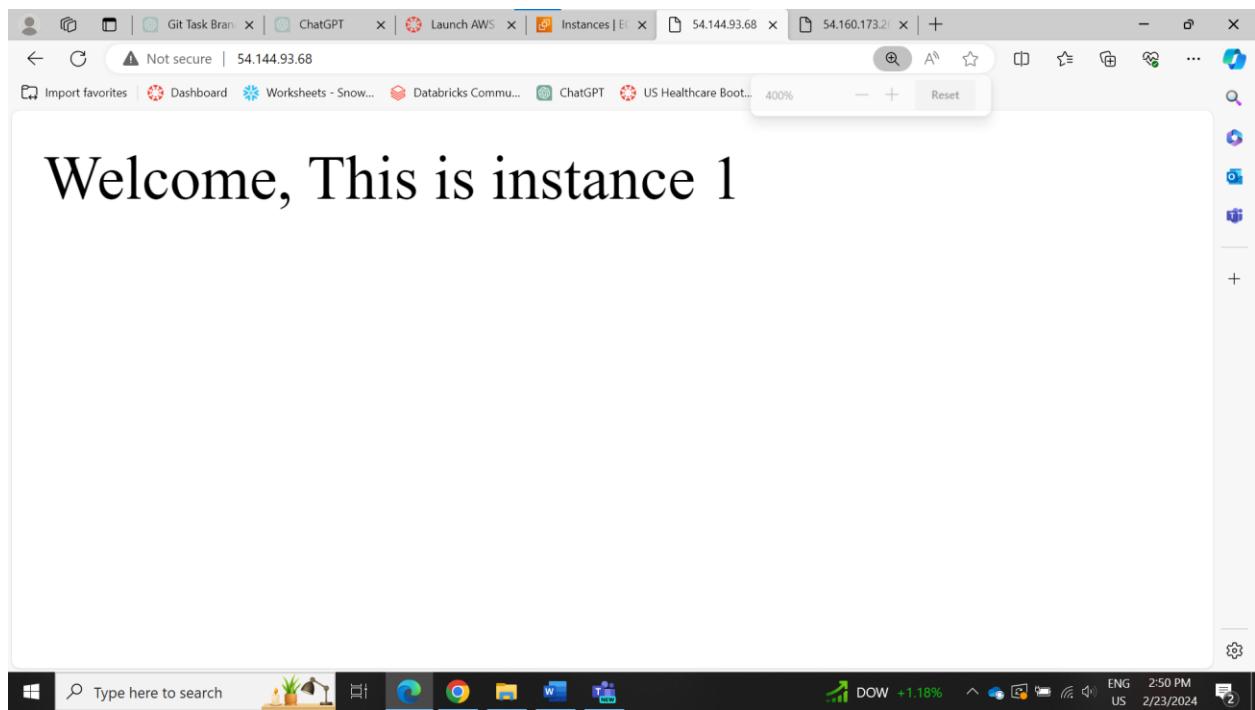
```
#!/bin/bash  
apt-get update  
apt-get install nginx -y  
echo "Welcome, This is instance 1 - $(hostname)" >/var/www/html/index.html
```

and Click on Create instance.

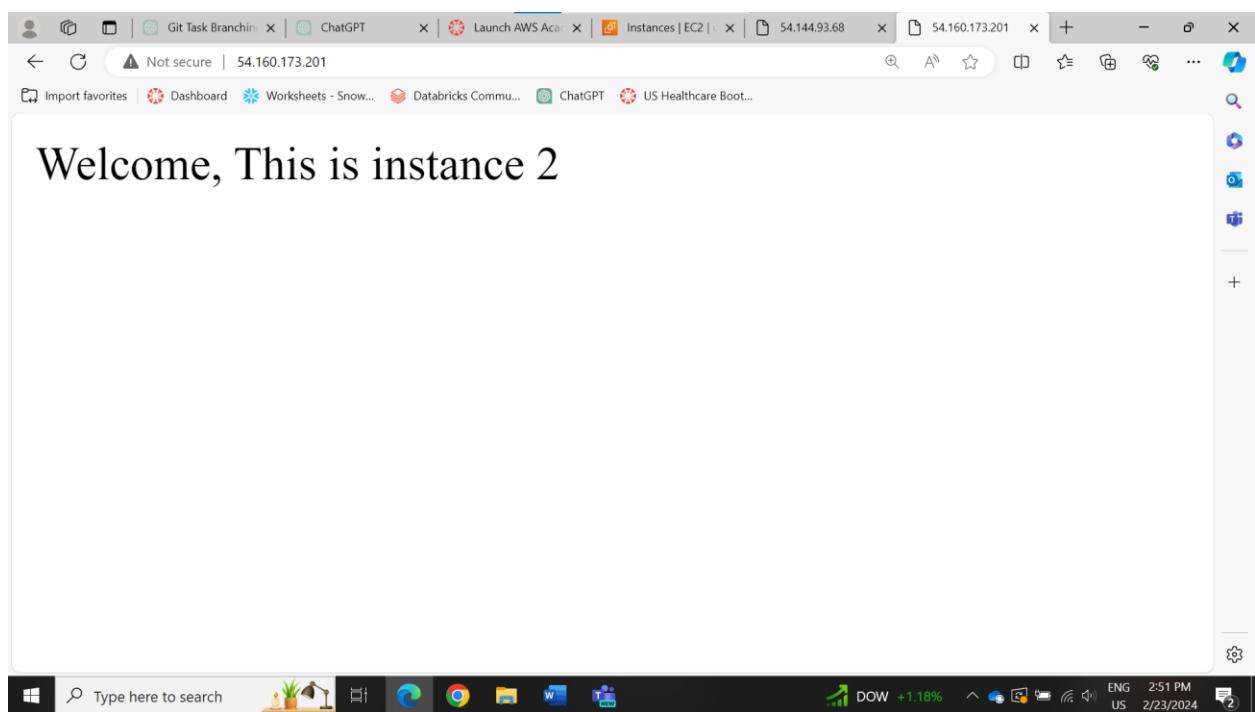
The screenshot shows the AWS Management Console interface for the EC2 service. The left sidebar navigation bar includes links for EC2 Dashboard, EC2 Global View, Events, Console-to-Code (Preview), Instances (Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, New AMIs), and Images (AMIs). The main content area displays the 'Instances (2) Info' table with the following data:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
my_instance_01	i-0c3b6c66a9cc9a22e	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a
my_instance_02	i-0a6c713f6bf98edf6	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a

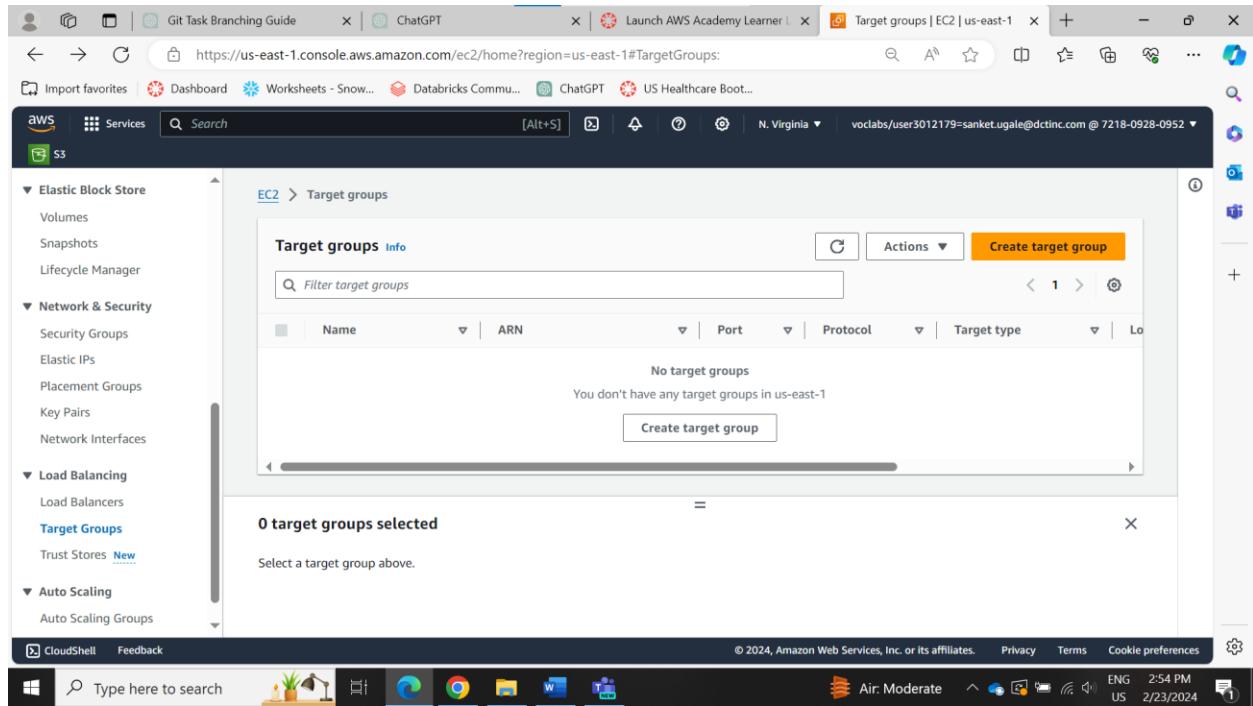
A modal window titled 'Select an instance' is open at the bottom of the screen. The browser's address bar shows the URL: https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:v=3;\$case=tags:true%5C;client:fals... . The status bar at the bottom right indicates the date and time as 2/23/2024 and 2:51 PM, along with the weather information: 30°C Sunny.



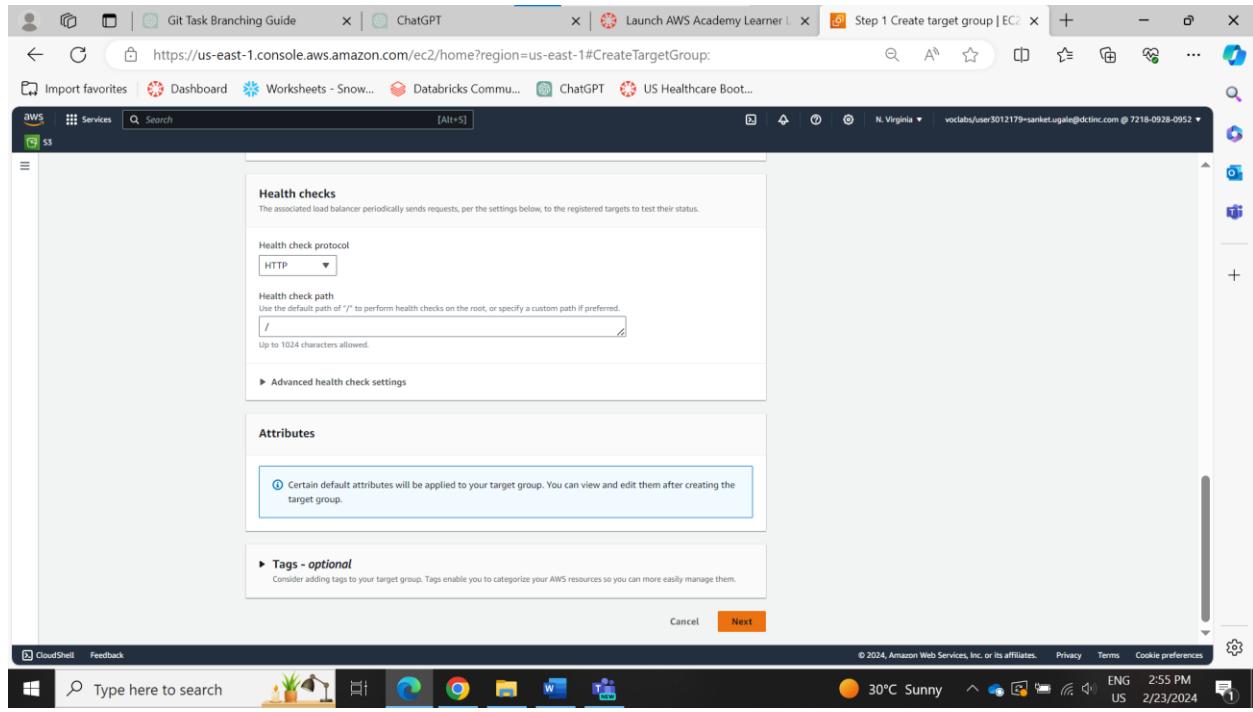
STEP : Repeat the same procedure to Create a another instance in another subnet.



STEP : Go to target group in load balancing and click on Create Target Group



STEP : tick the instance and name the target group and select port 80 (HTTP)



STEP : Select the instances you want to add and create target group

Screenshot of the AWS Management Console showing the creation of a target group for an Application Load Balancer.

The browser tabs are:

- Git Task Branching Guide
- ChatGPT
- Launch AWS Academy Learner L
- Step 2 Create target group | EC2

The AWS Services navigation bar shows:

- EC2
- Services
- Search [Alt+S]

The main content area is titled "Register targets" and shows the "Available instances (2/2)" section. It lists two instances:

Instance ID	Name	State	Security groups	Zone	Private IPv4 address	Subnet ID	Launch time
i-0d6c713fb0f98ed6	my_instance_02	Running	launch-wizard-8	us-east-1a	172.31.17.125	subnet-03d95585ea0d7f02	February 23, 2024, 14:40 (UTC-05:00)
i-0c3b6c6a9cc9a22e	my_instance_01	Running	launch-wizard-7	us-east-1a	172.31.17.46	subnet-03d95585ea0d7f02	February 23, 2024, 14:36 (UTC-05:00)

Below the table, there is a "Ports for the selected instances" section with a dropdown menu showing "80" and "1-45555 (separate multiple ports with comma)". A "Include as pending" button is also present.

The "Review targets" section shows a table with the heading "Targets (0)". It includes a "Filter targets" search bar and a "Show only pending" checkbox. The table has columns for Instance ID, Name, Port, State, Security groups, Zone, Private IPv4 address, Subnet ID, and Launch time. A note at the bottom says "No instances added yet. Specify instances above, or leave the group empty if you prefer to add targets later." A "Create target group" button is located at the bottom right of this section.

At the bottom of the page, there is a "CloudShell" and "Feedback" section, along with system status indicators like temperature (30°C), weather (Sunny), battery level, and network connectivity.

The second screenshot shows the "Target groups" page with one target group listed:

Name	ARN	Port	Protocol	Target type
my-TG	arn:aws:elasticloadbalancing:us-east-1:123456789012:targetgroup/my-TG/1234567890123456	80	HTTP	Instance

The message "0 target groups selected" is displayed below the table, along with the instruction "Select a target group above."

The browser tabs are:

- Git Task Branching Guide
- ChatGPT
- Launch AWS Academy Learner L
- Target groups | EC2 | us-east-1

The AWS Services navigation bar shows:

- EC2
- Services
- Search [Alt+S]

The bottom status bar shows: © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences ENG US 2:56 PM 2/23/2024

STEP : Go to load balancer and Create Application Load balancer.

EC2 > Load balancers

Load balancers

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter load balancers

Name	DNS name	State	VPC ID	Available
No load balancers				
You don't have any load balancers in us-east-1				

0 load balancers selected

Select a load balancer above.

Load balancer types

Application Load Balancer Info

Choose an Application Load Balancer when you need a flexible feature set for your applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers.

Create

Network Load Balancer Info

Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your applications. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies.

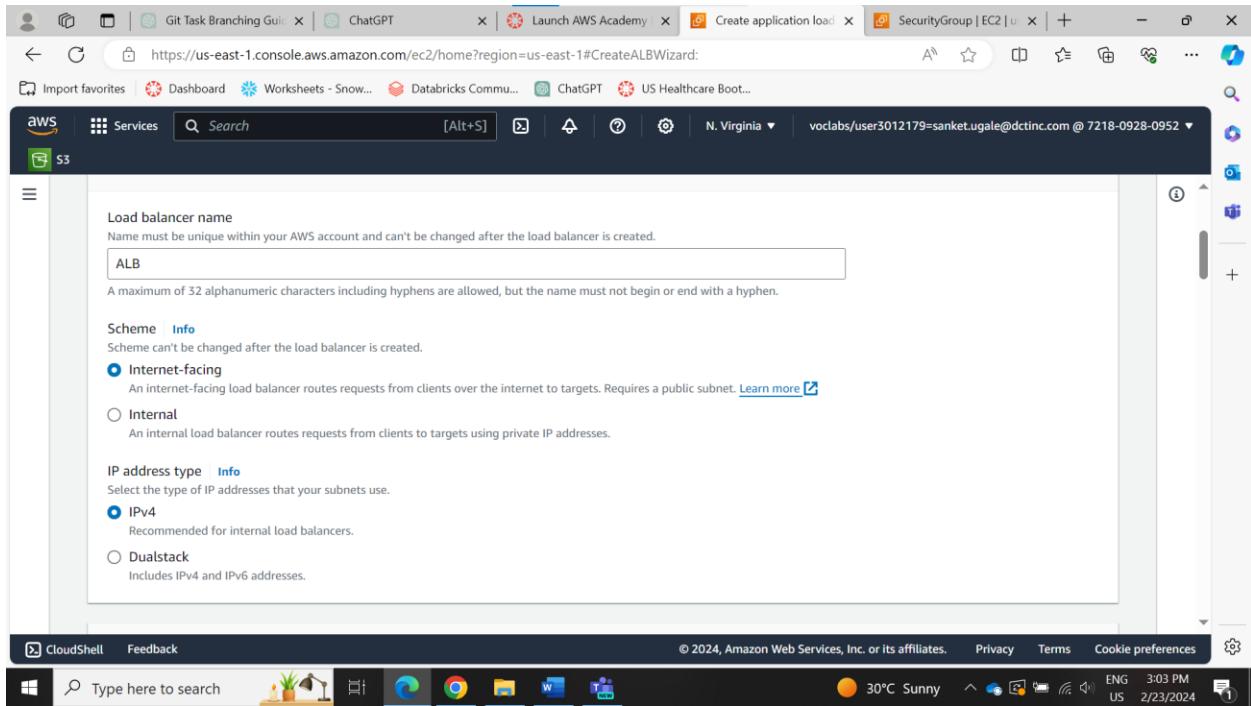
Create

Gateway Load Balancer Info

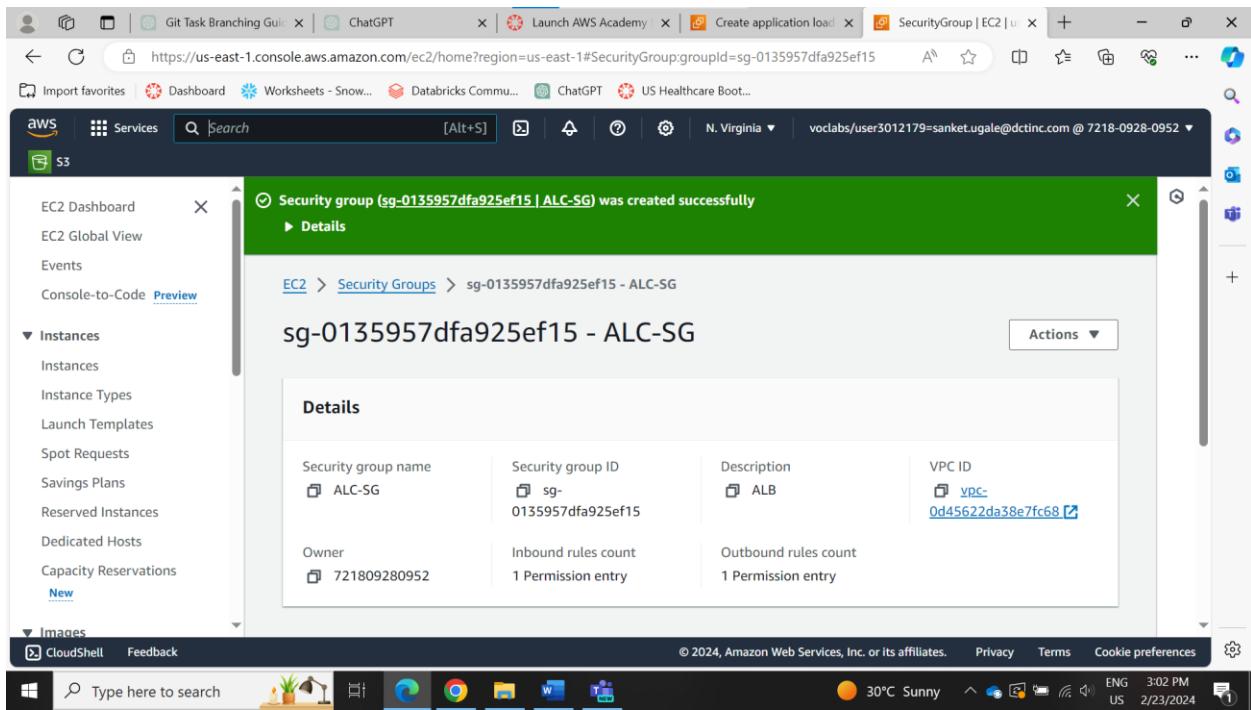
Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support GENEVE. These appliances enable you to improve security, compliance, and policy controls.

Create

STEP : Name your load Balancer and select your AZ's .



STEP : create New Security group.



STEP : In listener and Routing Select your Target group click on load balancer.

The screenshot shows the AWS Lambda console with the URL <https://us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#CreateALBWizard>. The page is titled "Create application load balancer". It displays a "Listeners and routing" configuration section. Under "Listener HTTP:80", there is one rule: "Protocol: HTTP, Port: 80, Default action: my-TG (Forward to target group: my-TG, Target type: Instance, IPv4 1-65535)". Below this, there is a "Listener tags - optional" section. The bottom of the page includes standard AWS navigation links like CloudShell, Feedback, and a footer with copyright information.

STEP : Copy your Load Balancer DNS Name and Paste it in the new tab.

The screenshot shows a Microsoft Edge browser window with the URL alb-1507425329.us-east-1.elb.amazonaws.com in the address bar. The page title is "Not secure | alb-1507425329.us-east-1.elb.amazonaws.com". The main content of the page is "Welcome, This is instance 2". The browser interface includes a search bar, pinned sites, and a taskbar at the bottom.

Creating Auto Scaling Group

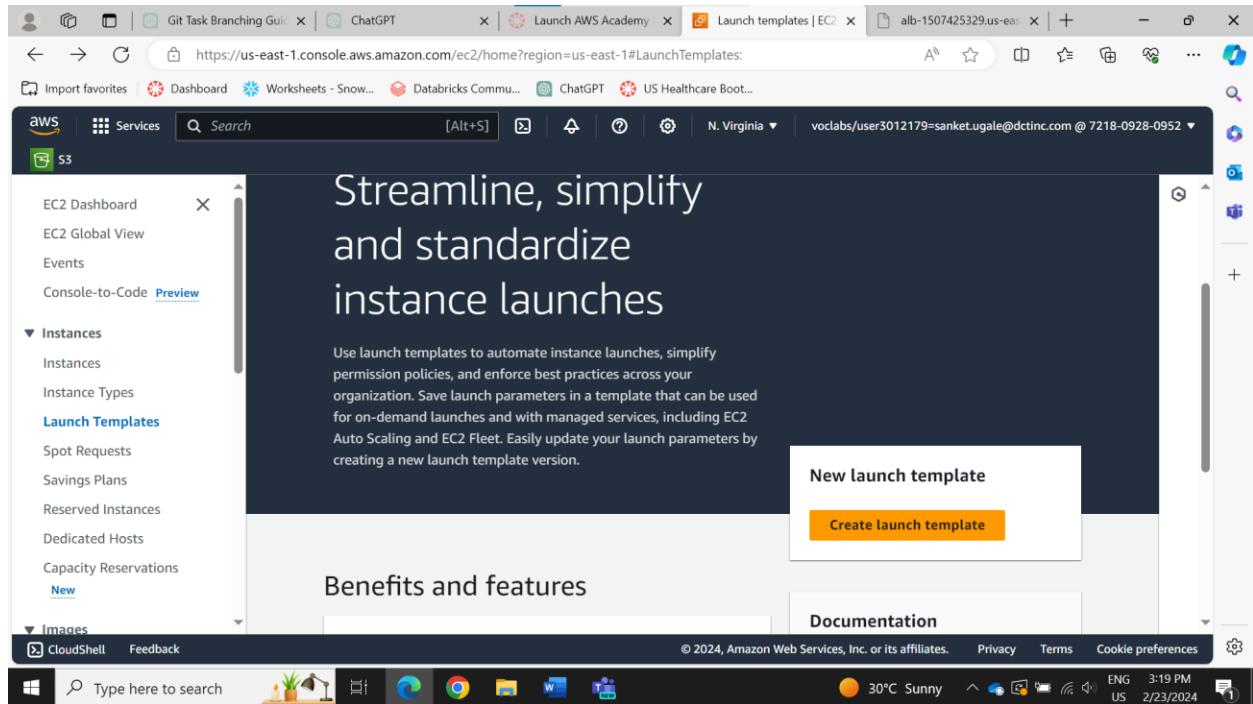
STEP : go to EC2 Select Any Instance and click action > image and templates > Create image

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like EC2 Dashboard, EC2 Global View, Events, Console-to-Code, Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, and Images. The main area displays a table of instances with columns for Name, Instance ID, Instance state, Instance type, and Status check. Two instances are listed: 'my_instance_01' (running, t2.micro) and 'my_instance_02' (running, t2.micro). An 'Actions' dropdown menu is open over instance 01, showing options like Connect, View details, Manage instance state, Instance settings, Networking, Security, Image and templates, Monitor and troubleshoot, and ability Zone. Below the table, a detailed view for 'Instance: i-0c3b6c66a9cc9a22e (my_instance_01)' is shown with tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags.

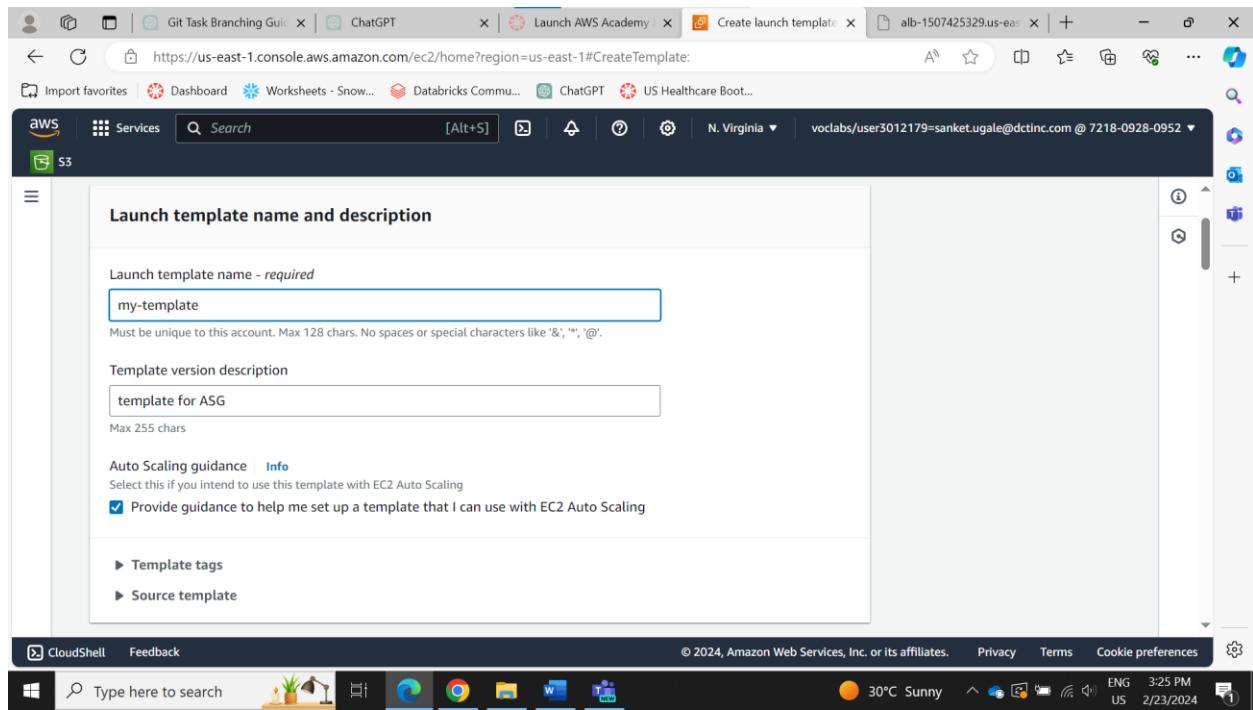
STEP : Name your image then create image.

The screenshot shows the 'Create Image' page. It starts with a note: 'An image (also referred to as an AMI) defines the programs and settings that are applied when you launch an EC2 instance. You can create an image from the configuration of an existing instance.' The 'Instance ID' field is populated with 'i-0c3b6c66a9cc9a22e (my_instance_01)'. The 'Image name' field is set to 'My-ELB-task'. There are fields for 'Image description - optional' and 'Image description' with placeholder text 'Maximum 255 characters'. Under 'No reboot', there's a checked checkbox 'Enable'. The 'Instance volumes' section shows one volume: an EBS volume of size 8 GiB, Volume type 'EBS General Purpose S...', IOPS 100, Throughput 100, Delete on termination checked, and Encrypted checked. A note below says 'During the image creation process, Amazon EC2 creates a snapshot of each of the above volumes.' In the 'Tags - optional' section, there are two radio button options: 'Tag image and snapshots together' (selected) and 'Tag the image and the snapshots with the same tag.' and 'Tag image and snapshots separately' (disabled). A note says 'No tags associated with the resource.' At the bottom, there's a 'Cancel' button and a highlighted 'Create image' button.

STEP : Go to Launch Template Create Launch Template



STEP : Name your template



STEP : Select your created IMAGE and instance type.

The screenshot shows the AWS CloudFormation console with the URL <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTemplate>. The page is titled "Application and OS Images (Amazon Machine Image) - required". It explains that an AMI is a template containing software configuration and applications. A search bar is available to find AMIs. Below it, there are tabs for "Recents", "My AMIs" (which is selected), and "Quick Start". Under "My AMIs", two options are shown: "Owned by me" (selected) and "Shared with me". A "Browse more AMIs" button is available, including AMIs from AWS Marketplace and the Community. A specific AMI named "My-ELB-task" is listed under "Amazon Machine Image (AMI)". The bottom of the screen shows the Windows taskbar with the Start button, a search bar, and various pinned icons.

STEP : Select your key pair and security group attached to instance and launch instance.

The screenshot shows the AWS CloudFormation console with the URL <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateTemplate>. The page is titled "Network settings". It includes fields for "Subnet" (set to "Don't include in launch template") and "Create new subnet". There is also a "Create new subnet" button. The "Firewall (security groups)" section allows selecting an existing security group or creating a new one. The "Select existing security group" tab is selected, showing a dropdown menu with "launch-wizard-7" selected. The "Security groups" section shows the selected group "launch-wizard-7" with the identifier "sg-0b228ff4c0e73bb44" and VPC ID "vpc-0d45622da38e7fc68". A "Compare security group rules" button is available. The bottom of the screen shows the Windows taskbar with the Start button, a search bar, and various pinned icons.

The screenshot shows the AWS EC2 Launch Templates page. The left sidebar is expanded to show the 'Launch Templates' section. A table lists one launch template:

Launch Template ID	Launch Template Name	Default Version	Latest Version	Created
lt-02774afb26da31b12	my-template	1	1	2024-

A modal window titled 'Select a launch template' is open at the bottom, showing the same single entry.

STEP : now go to Auto Scaling Group.

The screenshot shows the AWS Auto Scaling Groups page. The left sidebar is expanded to show the 'Auto Scaling' section. The main area features a large heading 'Amazon EC2 Auto Scaling' and a sub-section 'helps maintain the availability of your applications'. A prominent orange button labeled 'Create Auto Scaling group' is visible on the right.

The screenshot shows the AWS Auto Scaling Group creation wizard at Step 6: Network. The left sidebar lists optional steps: Step 6 - optional (Add tags), Step 7 - optional (Review). The main panel is titled "Network Info". It states: "For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly." A dropdown menu for "VPC" is open, showing "vpc-0d45622da38e7fc68" selected. Below it, a list of "Availability Zones and subnets" is shown, with four subnets from the "us-east-1a" zone selected: "us-east-1a | subnet-03a95585ea0d7f02", "us-east-1b | subnet-0d6d56c3eet1ff5fc", "us-east-1c | subnet-05f2f87971cd38919", and "us-east-1d | subnet-0ef569a5377b60a88". The status for each is "Default". A "Create a subnet" button is also present. The bottom of the screen shows the Windows taskbar with the Start button, a search bar, and various pinned icons.

The screenshot shows the AWS Auto Scaling Group creation wizard at Step 3: Configure advanced options. The left sidebar lists optional steps: Step 3 - optional (Configure advanced options), Step 4 - optional (Configure group size and scaling), Step 5 - optional (Add notifications), Step 6 - optional (Add tags), Step 7 - optional (Review). The main panel is titled "Load balancing Info". It asks: "Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define." Three radio button options are shown: "No load balancer" (Traffic to your Auto Scaling group will not be fronted by a load balancer), "Attach to an existing load balancer" (selected), and "Attach to a new load balancer" (Quickly create a basic load balancer to attach to your Auto Scaling group). Below this, under "Attach to an existing load balancer", it says: "Select the load balancers that you want to attach to your Auto Scaling group." Two radio button options are shown: "Choose from your load balancer target groups" (selected) and "Choose from Classic Load Balancers". A "Select target groups" dropdown menu is open, showing "my-TG | HTTP Application Load Balancer: ALB". The bottom of the screen shows the Windows taskbar with the Start button, a search bar, and various pinned icons.

The screenshot shows the AWS CloudWatch Metrics console with the URL <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup>. The page is titled "Create Auto Scaling group". The "Health checks" section is active. It includes:

- EC2 health checks**: Status is "Always enabled".
- Turn on Elastic Load Balancing health checks**: Status is "Recommended". A tooltip says: "Elastic Load Balancing monitors whether instances are available to handle requests. When it reports an unhealthy instance, EC2 Auto Scaling can replace it on its next periodic check." A note below says: "EC2 Auto Scaling will start to detect and act on health checks performed by Elastic Load Balancing. To avoid unexpected terminations, first verify the settings of these health checks in the [Load Balancer console](#)".
- Turn on VPC Lattice health checks**: Status is "Not configured". A tooltip says: "VPC Lattice can monitor whether instances are available to handle requests. If it considers a target as failed a health check, EC2 Auto Scaling replaces it after its next periodic check."
- Health check grace period**: Set to 300 seconds.

At the bottom, there are "CloudShell" and "Feedback" buttons, and a status bar showing "© 2024, Amazon Web Services, Inc. or its affiliates." and "CloudWatch Metrics".

The screenshot shows the AWS CloudWatch Metrics console with the URL <https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup>. The page is titled "Create Auto Scaling group". The "Units (number of instances)" section is active. It includes:

- Desired capacity**: Set to 1.
- Scaling limits**: Min desired capacity is 2, Max desired capacity is 5. A tooltip says: "Set limits on how much your desired capacity can be increased or decreased." Below it: "Equal or less than desired capacity" and "Equal or greater than desired capacity".
- Automatic scaling - optional**: Options for scaling policies:
 - No scaling policies**: "Your Auto Scaling group will remain at its initial size and will not dynamically resize to meet demand." (selected)
 - Target tracking scaling policy**: "Choose a CloudWatch metric and target value and let the scaling policy adjust the desired capacity in proportion to the metric's value." (not selected)

On the left sidebar, "Step 5 - optional" and "Add notifications" are listed. At the bottom, there are "Step 7" and "Review" buttons, and a status bar showing "© 2024, Amazon Web Services, Inc. or its affiliates." and "CloudWatch Metrics".

<https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateAutoScalingGroup>

Automatic scaling - optional

Choose whether to use a target tracking policy [Info](#)

You can set up other metric-based scaling policies and scheduled scaling after creating your Auto Scaling group.

No scaling policies
Your Auto Scaling group will remain at its initial size and will not dynamically resize to meet demand.

Target tracking scaling policy
Choose a CloudWatch metric and target value and let the scaling policy adjust the desired capacity in proportion to the metric's value.

Scaling policy name: Target Tracking Policy

Metric type: [Info](#)
Monitored metric that determines if resource utilization is too low or high. If using EC2 metrics, consider enabling detailed monitoring for better scaling performance.

Average CPU utilization

Target value: 80

Instance warmup: 300 seconds

Disable scale in to create only a scale-out policy

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<https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AutoScalingGroups>

Auto Scaling groups (1) [Info](#)

Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability zones
my-ASG	my-template Version Default	0	Updating capacity...	1	1	5	us-east-1a, ...

0 Auto Scaling groups selected

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The screenshot shows the AWS EC2 Instances page. A modal window titled "Instances (3) Info" is open, displaying a message: "Currently creating AMI ami-094127e31c09a0356 from instance i-0c3b6c66a9cc9a22e. Check that the AMI status is 'Available' before deleting the instance or carrying out other actions related to this AMI." Below this, a table lists three instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4
my_instance_01	i-0c3b6c66a9cc9a22e	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-54-144
my_instance_02	i-0a6c713f6bf98edf6	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a	ec2-54-166
	i-04bb73d1c9d530f13	Running	t2.micro	Initializing	View alarms	us-east-1d	ec2-3-93-1

A secondary modal window titled "Select an instance" is also visible.

AWS Hosting Static website Task

STEP : Create a S3 bucket (Please refer the AWS S3 task in the Basic Task)

The screenshot shows the AWS S3 console interface. On the left, there's a sidebar with options like Buckets, Access Grants, Access Points, Object Lambda Access Points, Multi-Region Access Points, Batch Operations, IAM Access Analyzer for S3, Block Public Access settings, Storage Lens, Dashboards, Storage Lens groups, AWS Organizations settings, and a Feature spotlight. The main area displays bucket statistics: Total storage (101.0 B), Object count (2), and Average object size (50.5 B). A message indicates you can enable advanced metrics in the "default-account-dashboard" configuration. Below this, tabs for General purpose buckets and Directory buckets are shown, with General purpose buckets selected. It lists three buckets: my-bucket0241, my-bucket0249, and my-static-website-task. Each entry includes the Name, AWS Region, Access level (e.g., Objects can be public or Bucket and objects not public), and Creation date. At the bottom of the list is a "Create bucket" button. The status bar at the bottom right shows the date (2/22/2024), time (6:56 PM), and location (US ENG).

STEP : Upload your static website code file in the bucket

The screenshot shows the AWS S3 bucket properties page for "my-static-website-task". The top navigation bar has tabs for Objects, Properties, Permissions, Metrics, Management, and Access Points, with Objects selected. The main content area is titled "Objects (2) Info". It shows two files: "error.html.html" and "index.html". Both are of type html, created on February 22, 2024, at 18:56:49 (UTC+05:30), and have a size of 198.0 B and 205.0 B respectively, both stored in the Standard storage class. Action buttons for Copy S3 URI, Copy URL, Download, Open, Delete, Actions, Create folder, and Upload are available. A note at the bottom explains that objects are fundamental entities stored in Amazon S3 and provides a link to the Amazon S3 inventory. The status bar at the bottom right shows the date (2/22/2024), time (6:57 PM), and location (US ENG).

STEP : Go to properties of your bucket

Amazon S3 > Buckets > my-static-website-task

my-static-website-task Info Publicly accessible

Objects Properties Metrics Management Access Points

Bucket overview

AWS Region US East (N. Virginia) us-east-1	Amazon Resource Name (ARN) arn:aws:s3:::my-static-website-task	Creation date February 22, 2024, 18:15:14 (UTC+05:30)
---	---	--

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Bucket Versioning
Disabled

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STEP : Edit the Static website hosting in the below.

Object Lock
Disabled

Requester pays

When enabled, the requester pays for requests and data transfer costs, and anonymous access to this bucket is disabled. [Learn more](#)

Requester pays
Disabled

Static website hosting

Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting
Disabled

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STEP : tick the Enable and select your index and error document save the changes.

Enable

Hosting type

Host a static website
Use the bucket endpoint as the web address. [Learn more](#)

Redirect requests for an object
Redirect requests to another bucket or domain. [Learn more](#)

For your customers to access content at the website endpoint, you must make all your content publicly readable. To do so, you can edit the S3 Block Public Access settings for the bucket. For more information, see [Using Amazon S3 Block Public Access](#)

Index document
Specify the home or default page of the website.
index.html

Error document - optional
This is returned when an error occurs.
error.html

Redirection rules - optional
Redirection rules, written in JSON, automatically redirect webpage requests for specific content. [Learn more](#)

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STEP : Copy the static website URL and paste it in the new tab

Requester pays

When enabled, the requester pays for requests and data transfer costs, and anonymous access to this bucket is disabled. [Learn more](#)

Requester pays
Disabled

Static website hosting

Use this bucket to host a website or redirect requests. [Learn more](#)

Static website hosting
Enabled
Hosting type
Bucket hosting
Bucket website endpoint
When you configure your bucket as a static website, the website is available at the AWS Region-specific website endpoint of the bucket. [Learn more](#)

<http://my-static-website-task.s3-website-us-east-1.amazonaws.com>

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Congratulation your static website is hosted.

