

**Title :** Case study on Amazon EC2 and learn about Amazon EC2 web services.

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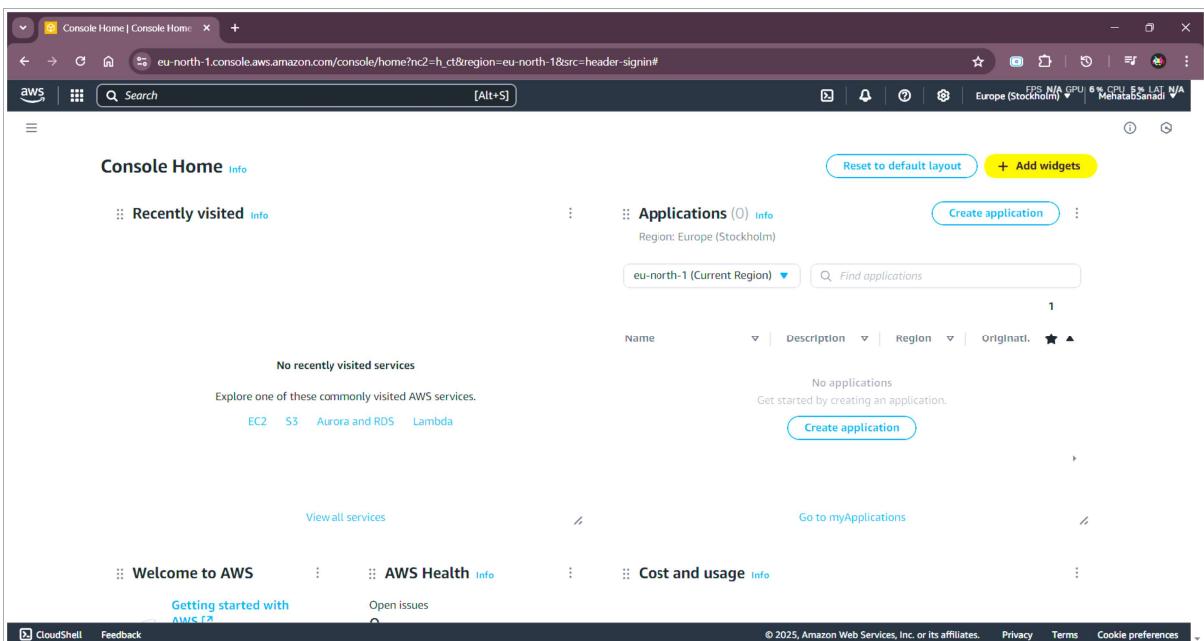
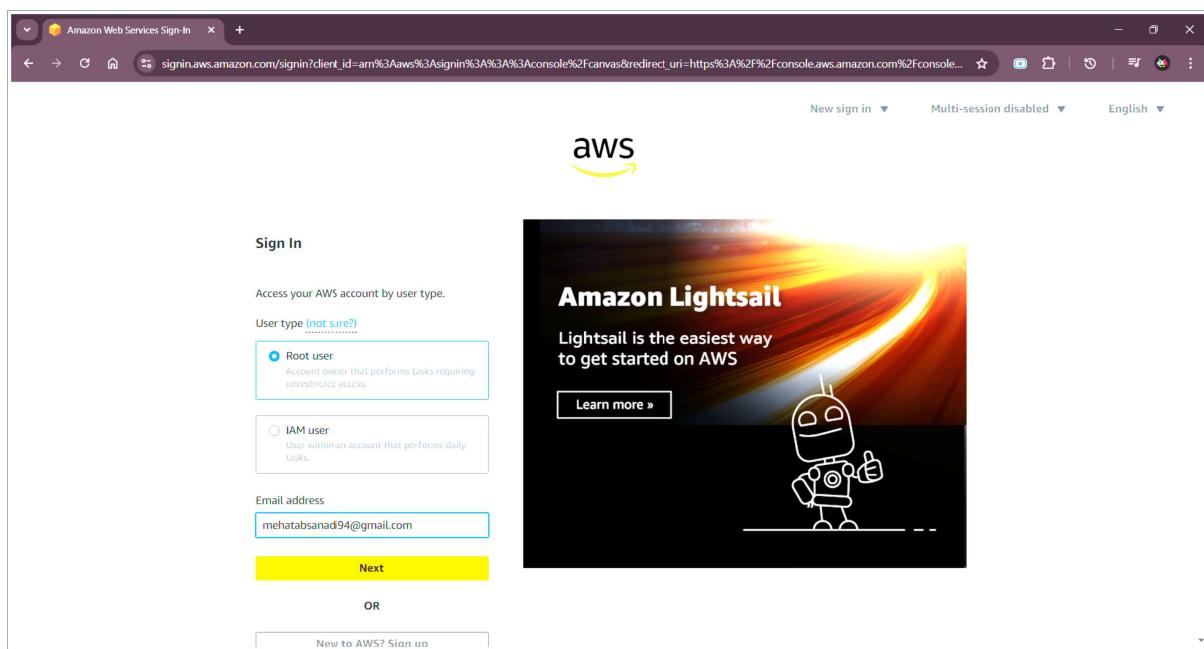
**Class :-** TE Computer

**Subject :-** Cloud Computing

**Date :-**

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**Step 1 :** Sign-in to AWS account and open IAM console by using the following link - <https://console.aws.amazon.com/iam/> .



## Step 2 : Navigate to EC2 instance page

The screenshot shows the AWS EC2 home page. On the left, there's a navigation sidebar with sections like Instances, Images, and Elastic Block Store. The main content area features a large heading "Amazon Elastic Compute Cloud (EC2)" with the subtext "Create, manage, and monitor virtual servers in the cloud." Below this, there's a brief description of EC2's capabilities and a "Launch a virtual server" call-to-action button.

## Step 3 : Follow following steps to create EC2 instance in VM using required AMI

### Step 3a : Name an instance

This screenshot shows the first step of the "Launch an instance" wizard. It asks for the instance name, which is "My\_Server". A tooltip provides instructions on naming instances. The "Summary" section on the right shows one instance is selected, and the "Software Image (AMI)" field is set to "Amazon Linux 2023 AMI 2023.6.2...". Other settings shown include "Virtual server type (instance type)" as "t3.micro", "Firewall (security group)" as "New security group", and "Storage (volumes)" as "1 volume(s) - 8 GiB".

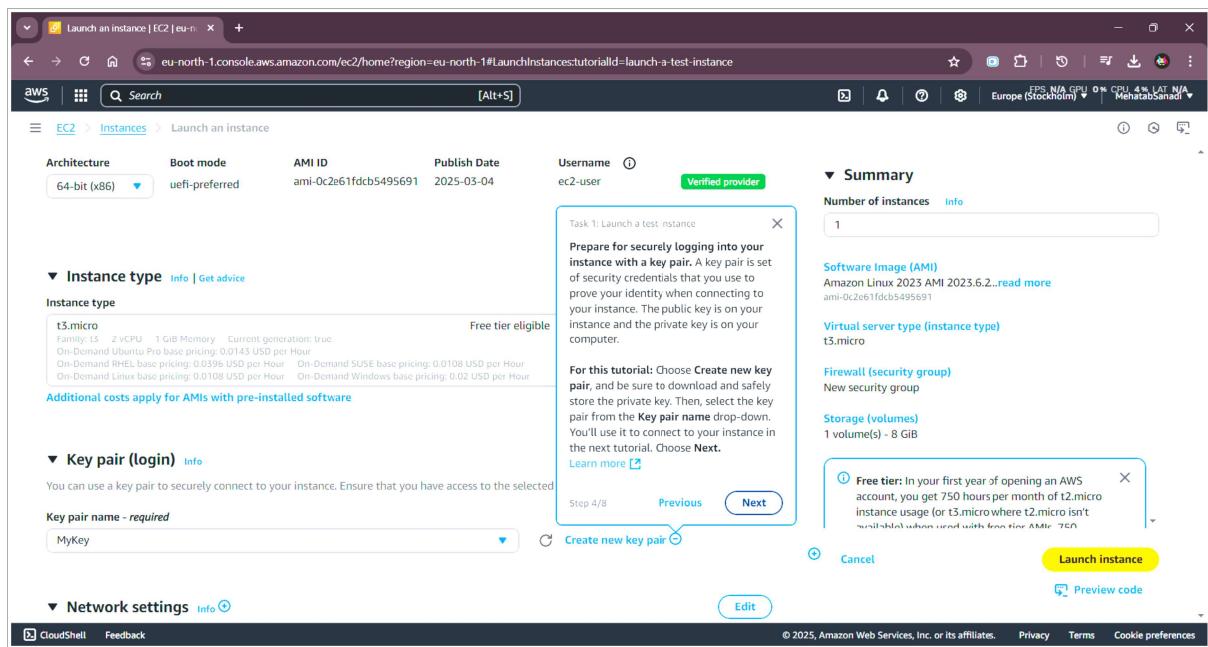
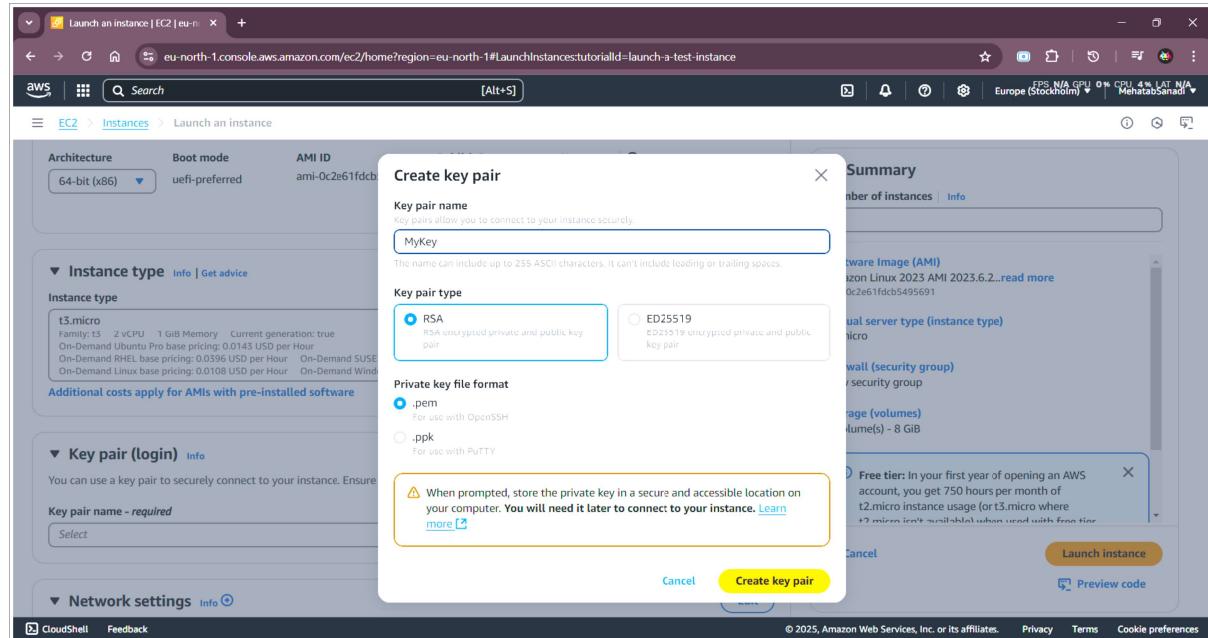
## Step 3b : Choose your OS and Software i.e. AMI

The screenshot shows the 'Launch an instance' wizard on the AWS EC2 console. The current step is 'Application and OS Images (Amazon Machine Image)'. A callout box highlights the 'Choose your OS and software - the Amazon Machine Image (AMI)' section, which describes an AMI as a template containing software configuration. It lists several AMI options: Amazon Linux, macOS, Ubuntu, and Windows. Below this, a note says 'For this tutorial: Choose an OS from the Quick Start list, and then choose an AMI that is marked Free tier eligible. Then choose Next.' A 'Next' button is visible. To the right, a 'Summary' section shows 'Number of instances' set to 1, and a note about the 'Software Image (AMI)' being 'Amazon Linux 2023 AMI 2023.6...'. Other settings like 'Virtual server type (instance type)', 'Firewall (security group)', and 'Storage (volumes)' are listed. A note about the 'Free tier' is present, along with 'Cancel' and 'Launch instance' buttons.

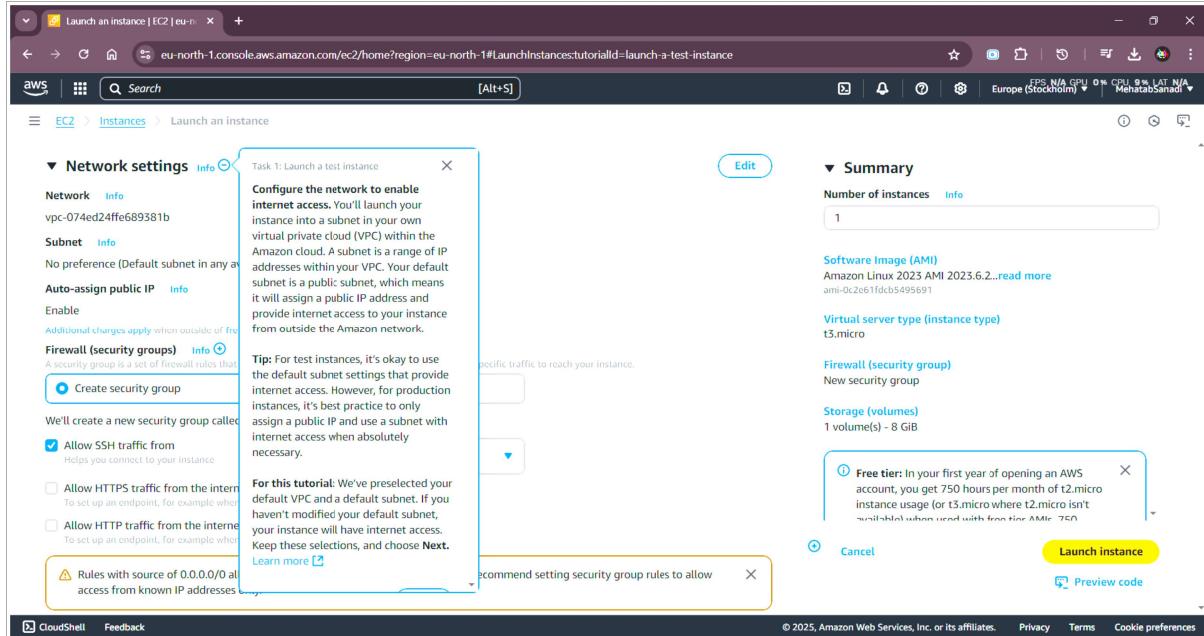
## Step 3c : Choose your hardware i.e. instance type

The screenshot shows the 'Launch an instance' wizard on the AWS EC2 console, currently at 'Instance type'. A callout box highlights the 'Choose your hardware - the instance type' section, which explains that the instance type determines the CPU, memory, storage, and networking capacity. It lists the 't3.micro' instance type, noting it's free tier eligible and suitable for testing. A 'Next' button is visible. To the right, a 'Summary' section shows 'Number of instances' set to 1, and a note about the 'Software Image (AMI)' being 'Amazon Linux 2023 AMI 2023.6...'. Other settings like 'Virtual server type (instance type)', 'Firewall (security group)', and 'Storage (volumes)' are listed. A note about the 'Free tier' is present, along with 'Cancel' and 'Launch instance' buttons.

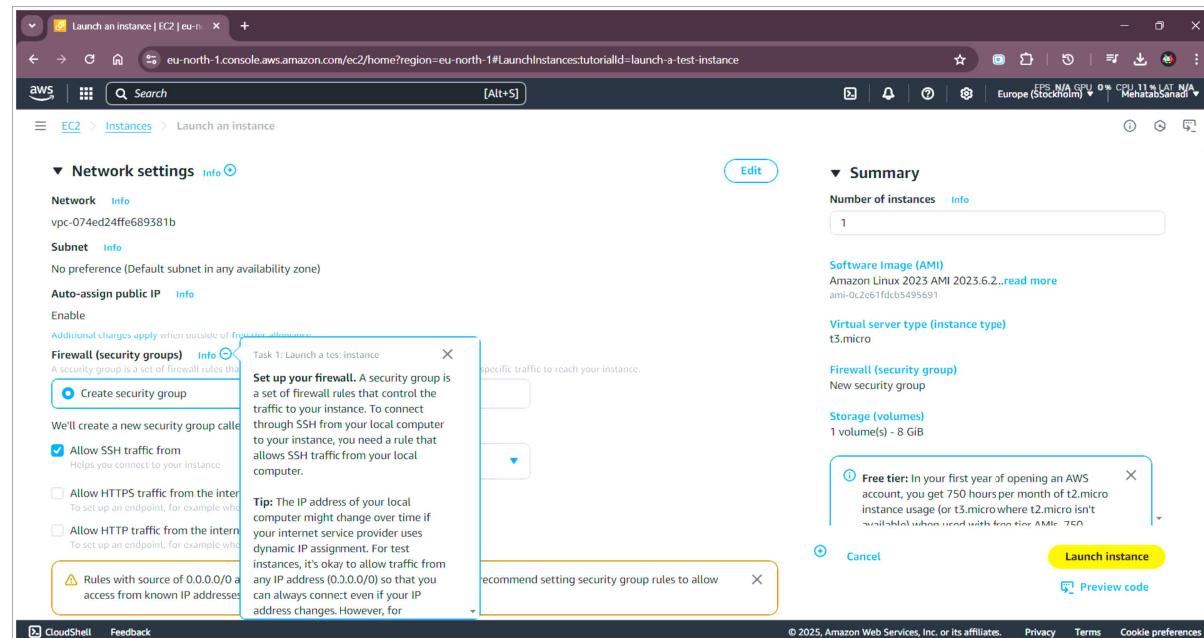
## Step 3d : Create Key pair for authorization



## Step 3e : Configure network for enabling network access



## Step 3f : Setup your Firewall



## Step 3g : Configure your storage

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Configure storage. An Amazon EBS volume is a storage device that functions like a physical hard drive. The root volume is a special EBS volume that stores the AMI which includes the operating system and software needed to boot your instance.

General Purpose (SSD) or Magnetic storage

For this tutorial: Since our test instance won't store any sensitive data, we don't need additional encrypted volumes. Leave the settings as they are to remain free tier eligible. Choose Next.

Step 7/8 Previous Next

Summary

Number of instances: 1

Software Image (AMI): Amazon Linux 2023 AMI 2023.6.2... read more

Virtual server type (instance type): t3.micro

Firewall (security group): New security group

Storage (volumes): 1 volume(s) - 8 GiB

Free tier: In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available when used with free tier AMI). 750

Cancel Launch instance Preview code

## Step 3h : Review your configuration and Launch the instance

Allow HTTP traffic from the internet

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Configure storage

Root volume, 3000 IOPS, Not encrypted

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

Add new volume

Click refresh to view backup information

Advanced details

Summary

Number of instances: 1

Software Image (AMI): Amazon Linux 2023 AMI 2023.6.2... read more

Virtual server type (instance type): t3.micro

Firewall (security group): New security group

Storage (volumes): 1 volume(s) - 8 GiB

Free tier: In your first year of opening an AWS account, you get 750 hours per month of t2.micro instance usage (or t3.micro where t2.micro isn't available when used with free tier AMI). 750

Cancel Launch instance Preview code

## Step 4 : Connect to the instance and Start Working

The screenshot shows the AWS EC2 console after launching an instance. A green success message at the top states: "Successfully initiated launch of instance (i-08fbceab766d6f0d8)". Below it, a "Launch log" section shows a single task: "Task 1: Post-launch setup". The log indicates that once the instance is up and running, it can be connected to. It also provides links to "Create billing alerts" and "Learn more" about the instance.

**Next Steps:**

- Create billing and free tier usage alerts**: To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds. Link: [Create billing alerts](#).
- Connect to instance**: Once your instance is up and running, you can connect to it. Step 2/2. Link: [Connect to instance](#).
- Connect an RDS database**: Configure the connection between an EC2 instance and a database to allow traffic flow between them. Link: [Connect an RDS database](#).
- Create EBS snapshot policy**: Create a policy that automates the creation, retention, and deletion of EBS snapshots. Link: [Create EBS snapshot policy](#).

**Manage detailed monitoring**, **Create Load Balancer**, **Create AWS budget**, **Manage CloudWatch alarms**

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The screenshot shows the "Connect to instance" page for the launched instance (i-08fbceab766d6f0d8). It displays connection options:

- EC2 Instance Connect** (selected): Connect using EC2 Instance Connect browser-based client, with a public IPv4 or IPv6 address.
- Session Manager**: Connect using the EC2 Instance Connect browser-based client, with a private IPv4 address and a VPC endpoint.
- SSH client**: Connect using EC2 serial console.
- EC2 serial console**: Connect using EC2 serial console.

**Connection Type:**

- Public IPv4 address** (selected): 16.170.228.35
- IPv6 address**

**Username:** 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.

**Cancel** | **Connect**

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The screenshot shows the AWS EC2 Instances page. On the left, there's a navigation sidebar with options like Dashboard, EC2 Global View, Events, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Images (AMIs, AMI Catalog), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area has a header with 'Instances (1/1)' and a search bar. Below it is a table with columns: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, Availability Zone, and Public IPv4. A single row is selected for 'My\_Server' (i-08fbceab766d6f0d8), which is 'Running' on a 't3.micro' instance type. At the bottom of the table is a 'Launch instances' button. The instance details panel below shows tabs for Details, Status and alarms, Monitoring, Security, Networking, Storage, and Tags. Under 'Details', there's an 'Instance summary' section with fields for Instance ID (i-08fbceab766d6f0d8), Public IPv4 address (16.170.228.35), Private IPv4 address (172.31.36.244), Public IPv6 DNS (ec2-16-170-228-35.eu-north-1.compute.amazonaws.com), and Instance state (Running).

The screenshot shows an EC2 Instance Connect terminal session. The terminal window displays a welcome message for Amazon Linux 2023, followed by a URL: <https://aws.amazon.com/linux/amazon-linux-2023>. The command prompt shows the user is connected via SSH from IP 172.31.36.244. Below the terminal window, the instance details are shown again, including the instance ID (i-08fbceab766d6f0d8), name (My\_Server), and public/private IP addresses.

**Conclusion :** Successfully Created an EC2 instance.