

## **Placement Empowerment Program**

### ***Cloud Computing and DevOps Centre***

Set Up a Cloud-Based Monitoring Service Enable basic cloud monitoring (e.g., CloudWatch on AWS) View metrics like CPU usage and disk I/O for your cloud VM.

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# Introduction and Overview

Cloud-based monitoring is a critical component of modern infrastructure management, enabling real-time insights into the performance and health of cloud resources. In this PoC, we will set up AWS CloudWatch to monitor key metrics for an EC2 instance, such as CPU utilization, disk I/O, and network traffic. This task demonstrates how to track system performance, identify bottlenecks, and set up alerts for proactive issue resolution.

## Objective

The goal of this project is to:

1. Understanding the basics of AWS CloudWatch and its monitoring capabilities.
2. Configuring CloudWatch to monitor essential EC2 metrics.
3. Gaining hands-on experience in proactive cloud resource management

## Importance of Cloud-Based Monitoring

**Hands-On Learning:** Provides practical exposure to cloud-based monitoring tools like AWS CloudWatch, helping you gain essential skills for real-world cloud infrastructure management.

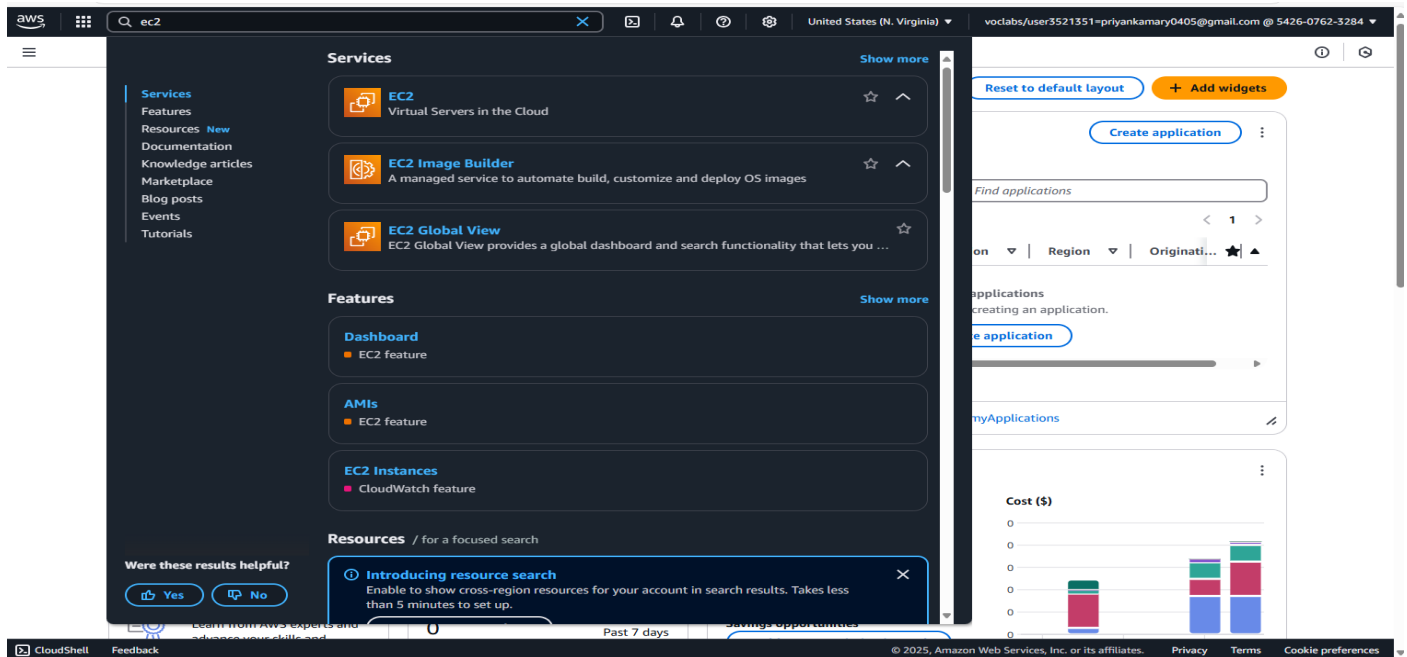
**Proactive Resource Management:** Enables you to monitor system performance in real-time, identify performance issues, and take corrective actions before they impact end users.

**Foundation for Automation:** Lays the groundwork for automating monitoring processes, such as setting up alerts and scaling actions, which are critical for efficient cloud operations and DevOps practices.

# Step-by-Step Overview

## Step1:

Open the AWS Management Console. Navigate to the EC2 Dashboard.

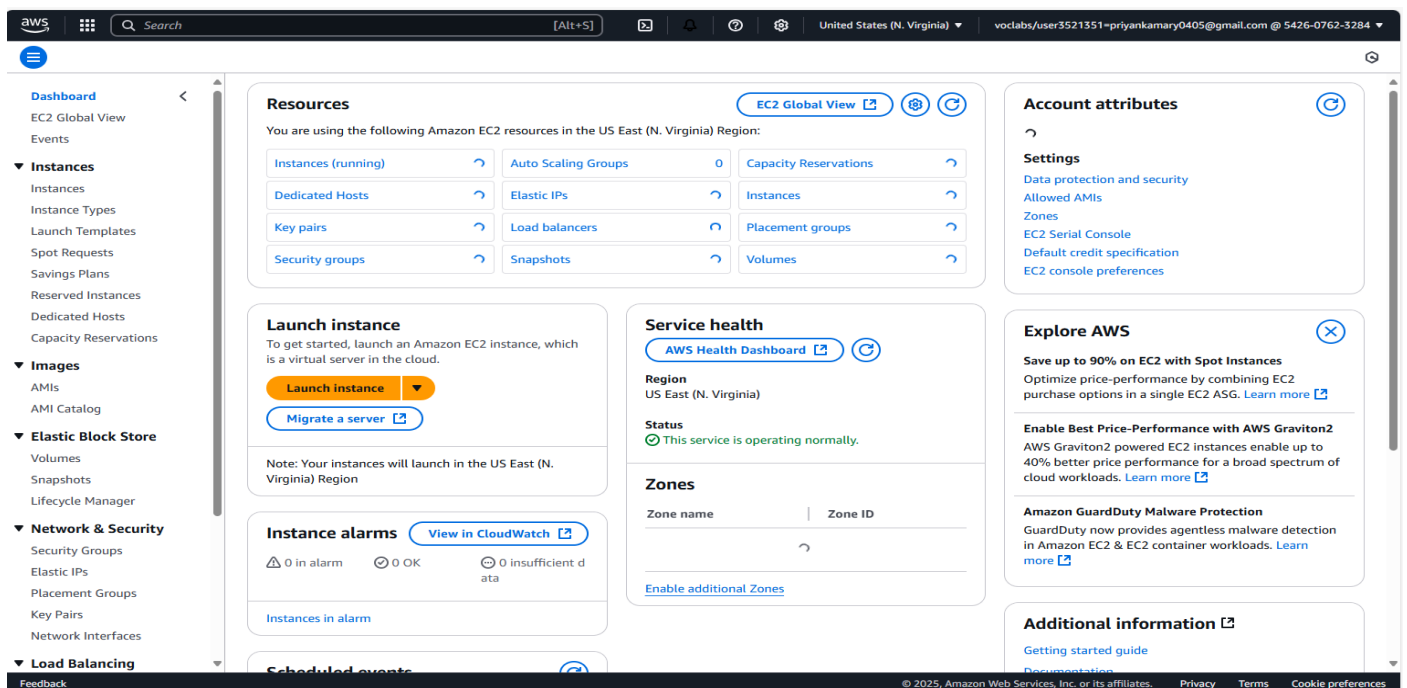


## Step 2 :

Click Launch Instance, Configure the instance as needed:

Select an Amazon Machine Image (e.g., Amazon Linux or Ubuntu).

Choose an instance type (e.g., t2.Micro for free-tier eligibility)



aws

Search

[Alt+S]

United States (N. Virginia)

voclabs/user3521351~priyankamary0405@gmail.com @ 5426-0762-3284

EC2 > Instances > Launch an instance

Launch an 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

Name

mybobl

Add additional tags

Application and OS Images (Amazon Machine Image)

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

Debian

Browse more AMIs

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

ami-0c614dee691cbbf37 (64-bit (x86), uefi-preferred) / ami-0b29c89c15cfb8a6d (64-bit (Arm), uefi)

Free tier eligible

Description

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.

Summary

Number of instances

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.6.2...read more

ami-0c614dee691cbbf37

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

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 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

Launch instance

Preview code

CloudShell

Feedback

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Step 3:

Configure the security group to allow necessary ports (e.g., SSH, HTTP, etc.).

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EC2 > Instances > Launch an instance

Select

Create new key pair

Network settings

Network

vpc-0a8eb65baee4e424e

Subnet

No preference (Default subnet in any availability zone)

Auto-assign public IP

Enable

Additional charges apply when outside of free tier allowance

Firewall (security groups)

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

We'll create a new security group called 'launch-wizard-1' with the following rules:

Allow SSH traffic from

Anywhere

Allow HTTPS traffic from the internet

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

Advanced

Summary

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Amazon Linux 2023 AMI 2023.6.2...read more

ami-0c614dee691cbbf37

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Launch instance

Preview code

CloudShell

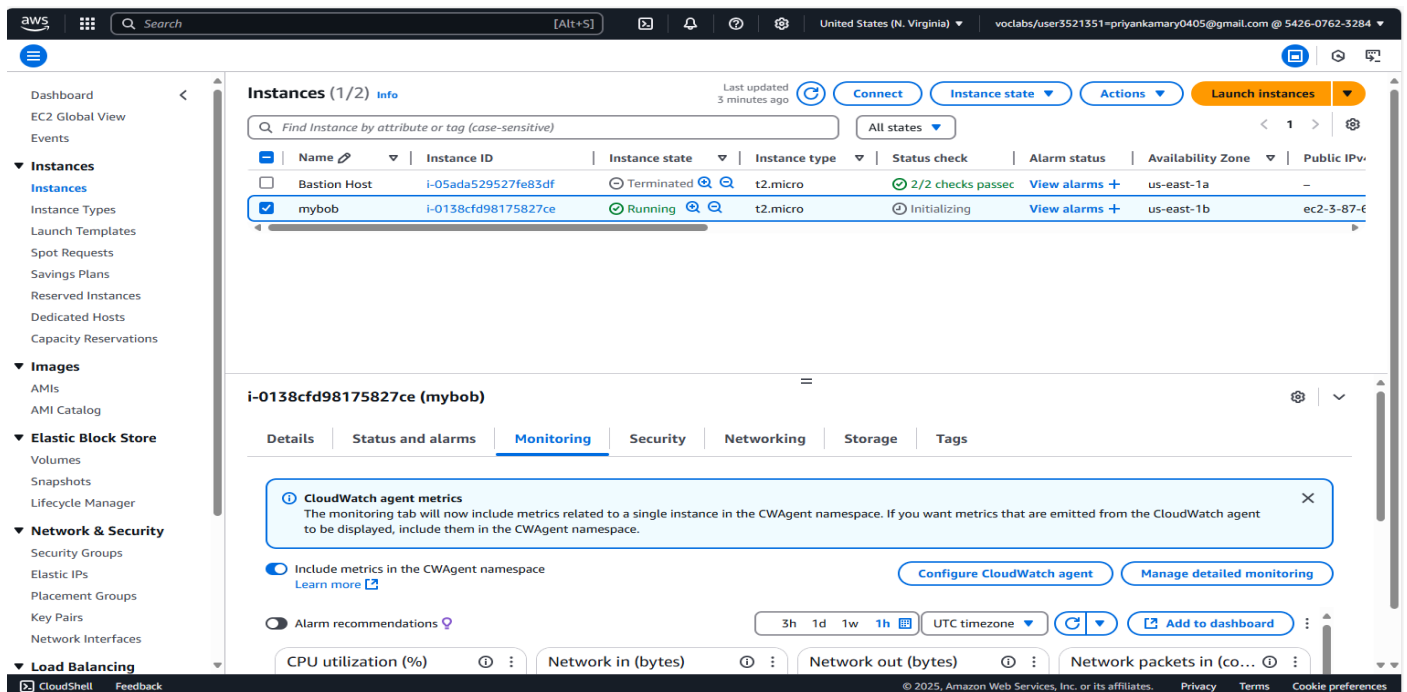
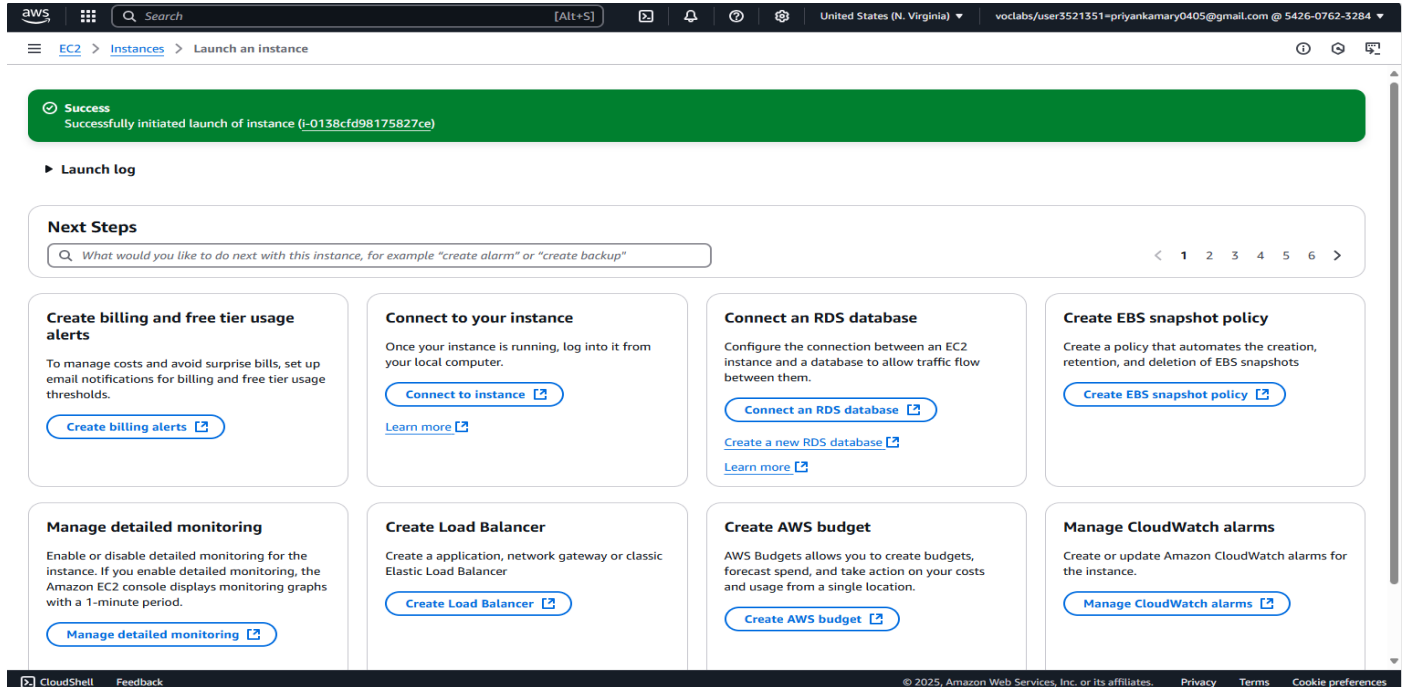
Feedback

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## Step 4:

Launch the instance, While launching the EC2 instance:

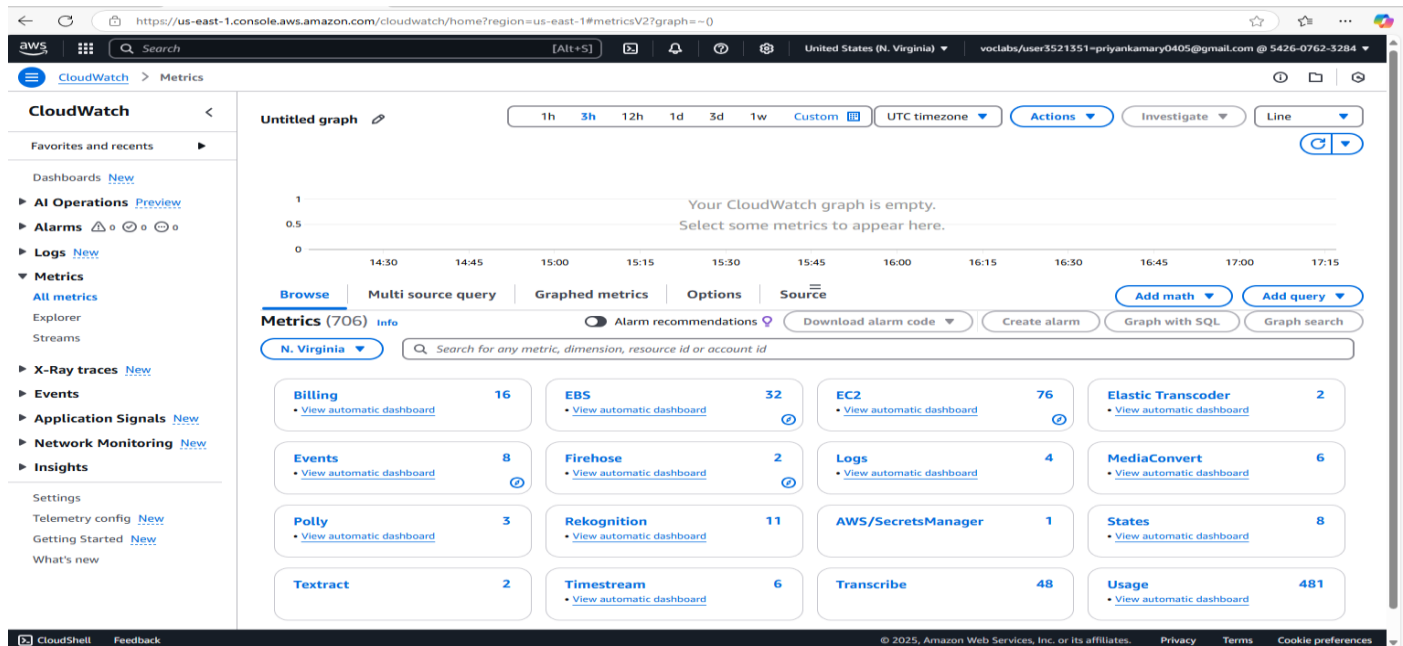
Under the "Advanced Details" section, ensure that the CloudWatch monitoring option is enabled.



## Step 5:

Open the CloudWatch Dashboard, On the CloudWatch Dashboard, navigate to Metrics on the left-hand menu.

Click All Metrics and choose the EC2 namespace.



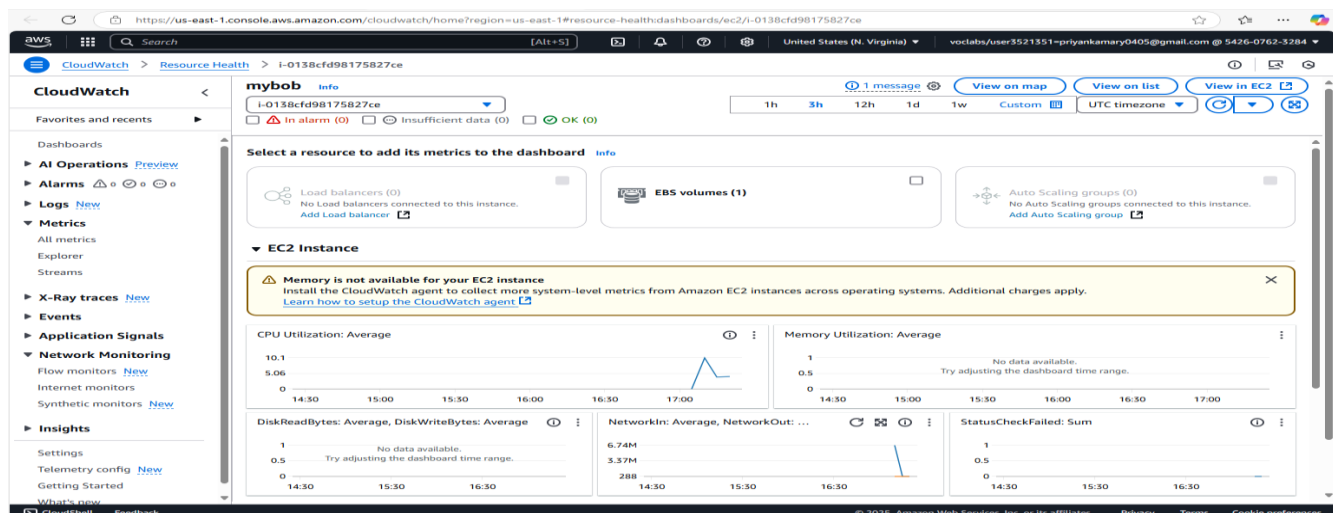
## Step 6:

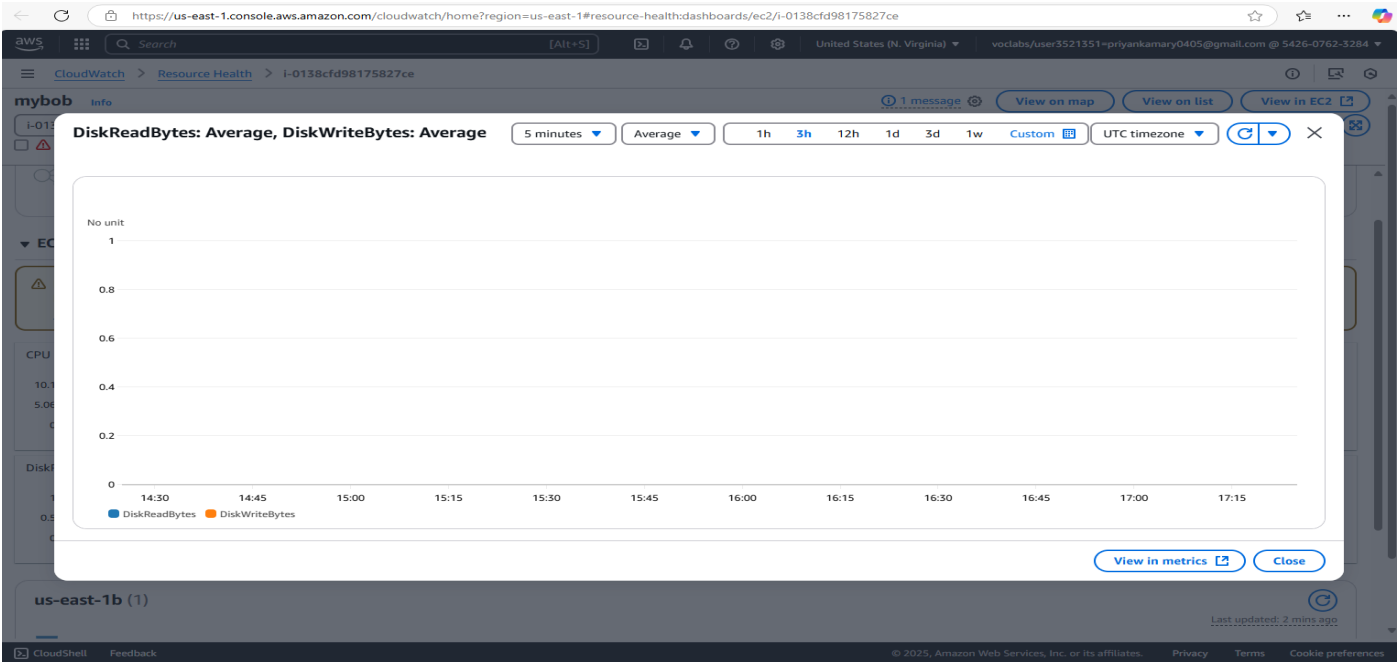
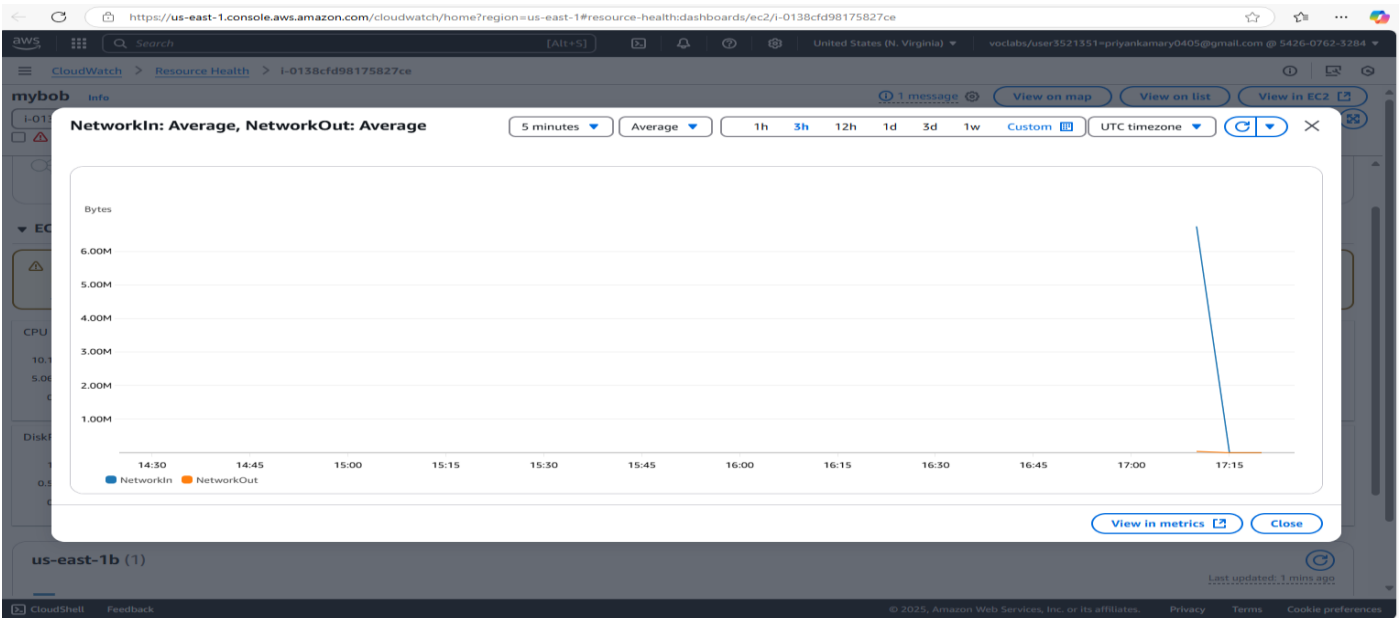
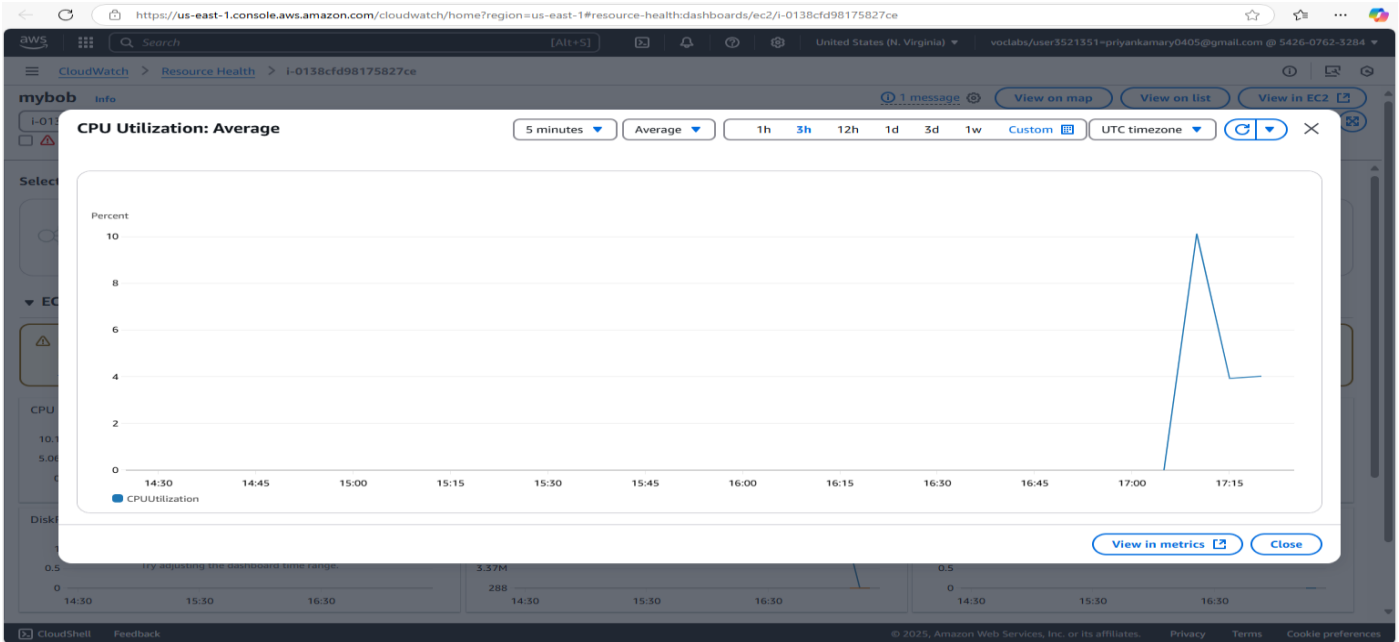
Select metrics like:

CPUUtilization (CPU usage in percentage).

DiskReadBytes and DiskWriteBytes (disk I/O activity).

Network In and Network Out (network data transfer).





## **Expected Outcome**

By completing this POC, you will:

1. Successful setup of AWS CloudWatch to monitor key metrics like CPU usage, disk I/O, and network traffic for an EC2 instance.
2. Creation of a custom CloudWatch dashboard for real-time performance tracking.
3. Improved understanding of cloud monitoring and proactive resource management.