Placement Empowerment Program

Cloud Computing and DevOps Centre

Set Up a Cloud-Based Monitoring ServiceEnable 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 services, like AWS CloudWatch, provide real-time insights into the performance and health of virtual machines (VMs) hosted in the cloud. By enabling basic monitoring, users can track key metrics such as CPU utilization, disk I/O, and network traffic, allowing for better resource management and quick identification of potential issues. CloudWatch offers a centralized platform to visualize and analyze performance data, which helps ensure optimal operation, improve troubleshooting, and support proactive scaling decisions in cloud environments.

Objective

The goal of this project is to:

• **Enable CloudWatch Monitoring**: Set up Amazon CloudWatch to monitor key metrics such as CPU usage, memory, disk I/O, and network traffic for your virtual machine (VM) in AWS.

• **View and Analyze Metrics**: Access the CloudWatch dashboard to visualize the collected data and track the performance of your cloud VM, helping in proactive resource management and performance optimization.

Importance

• **Proactive Issue Detection** – Helps identify performance bottlenecks, high CPU usage, or disk failures before they impact the system.

• **Improved Resource Optimization** – Enables efficient scaling and cost management by analyzing usage trends and adjusting resources accordingly.

• **Enhanced Security & Compliance** – Monitors unusual activity, logs system events, and helps maintain compliance with security standards.

Step-by-Step Overview

Step 1: Log in to AWS and Open CloudWatch

1. Go to [AWS Console](#).
2. Search for **CloudWatch** in the AWS search bar and open it.
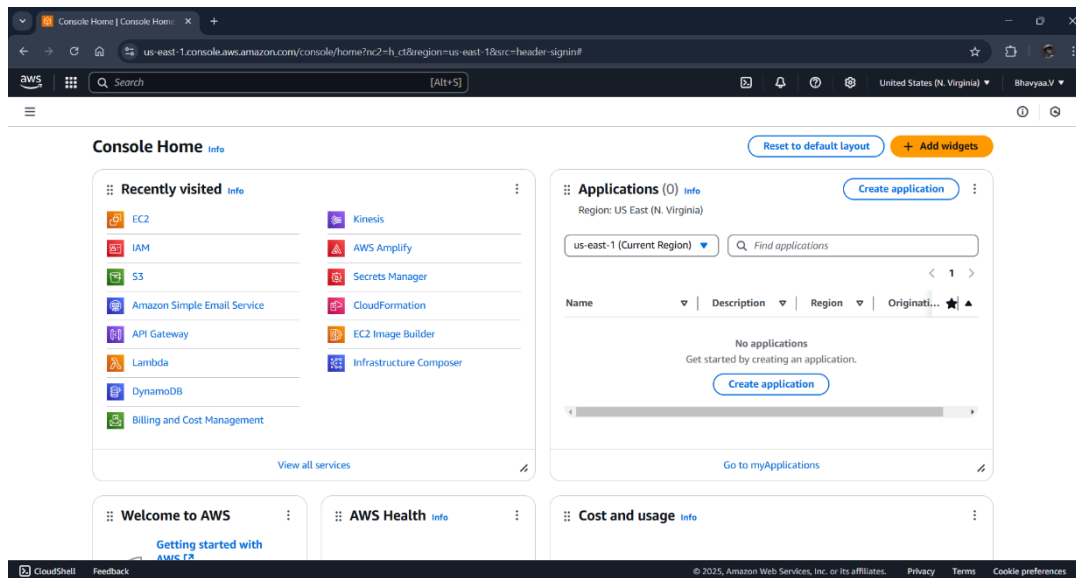
Step 2: Enable CloudWatch Monitoring for an EC2 Instance

Basic Monitoring (Default)

- AWS EC2 instances automatically provide **free, 5-minute interval metrics** for CPU usage, network traffic, and disk activity.

Detailed Monitoring (Paid)

- To get **1-minute interval metrics**, enable **Detailed Monitoring**:
    1. Go to **EC2 Dashboard** → Click **Instances**.
    2. Select your instance and click **Modify Monitoring**.
    3. Enable **Detailed Monitoring** and click **Save**.
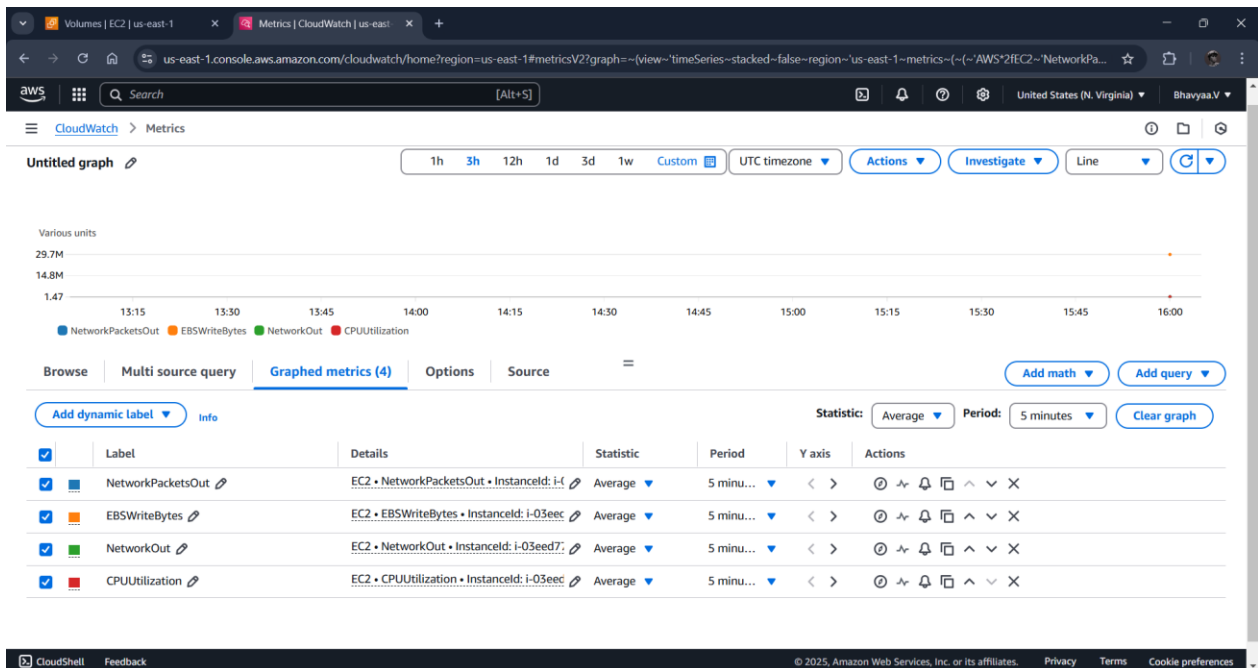
Step 3:

In the CloudWatch dashboard, look at the left-hand menu.

Click on **Metrics**.
Under **Browse**, click on **EC2**.

Then click on the **Per-Instance Metrics**.

Expected Outcome

By completing this POC, you will:

- **CloudWatch Metrics are enabled**, allowing real-time monitoring of CPU usage, disk I/O, and network performance for your EC2 instance.

- **Per-Instance Metrics are accessible**, providing detailed insights into the resource utilization of individual instances.

- **Improved performance monitoring and troubleshooting**, helping you detect and resolve potential issues before they impact your application.

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