

Placement Empowerment Program

Cloud Computing and DevOps Centre

Set up a cloud based monitoring service that enables

Basic cloud monitoring

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Introduction

Introduction to Cloud Monitoring

Cloud monitoring involves tracking various metrics such as system health, performance, uptime, and usage across your cloud resources. These can include virtual machines, containers, networks, databases, and even applications. Cloud monitoring is essential for ensuring the performance, availability, and security of your cloud infrastructure.

Overview

Overview of the Task: Monitoring CPU Utilization in CloudWatch

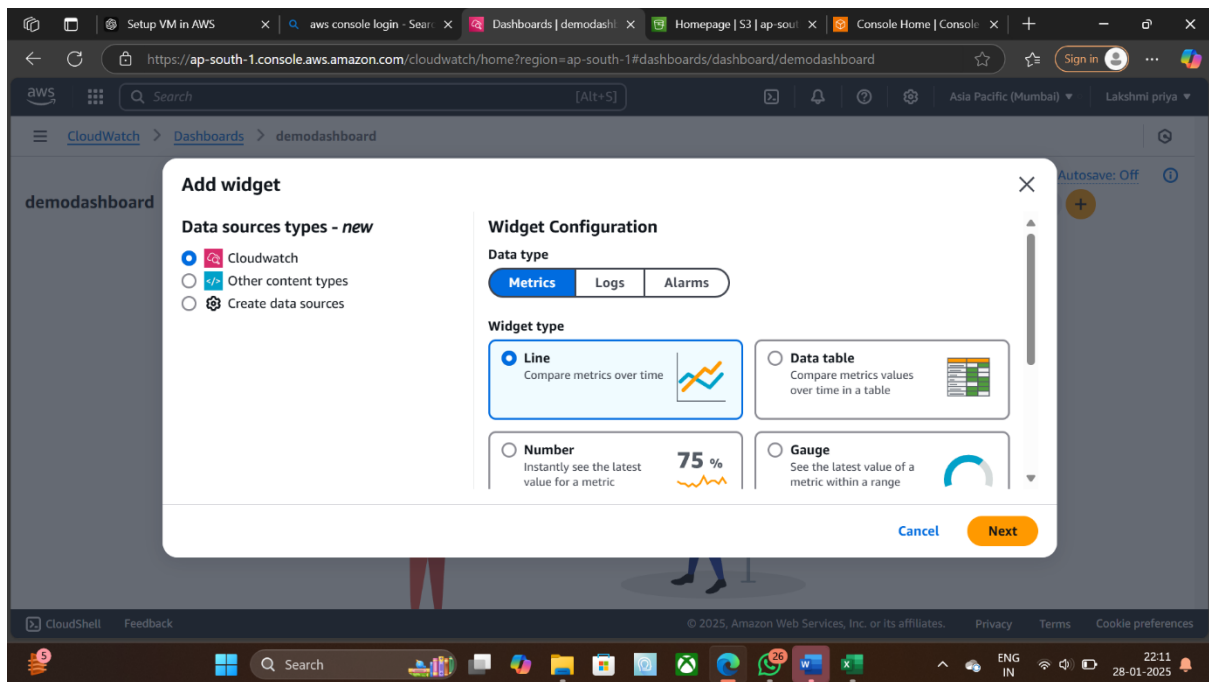
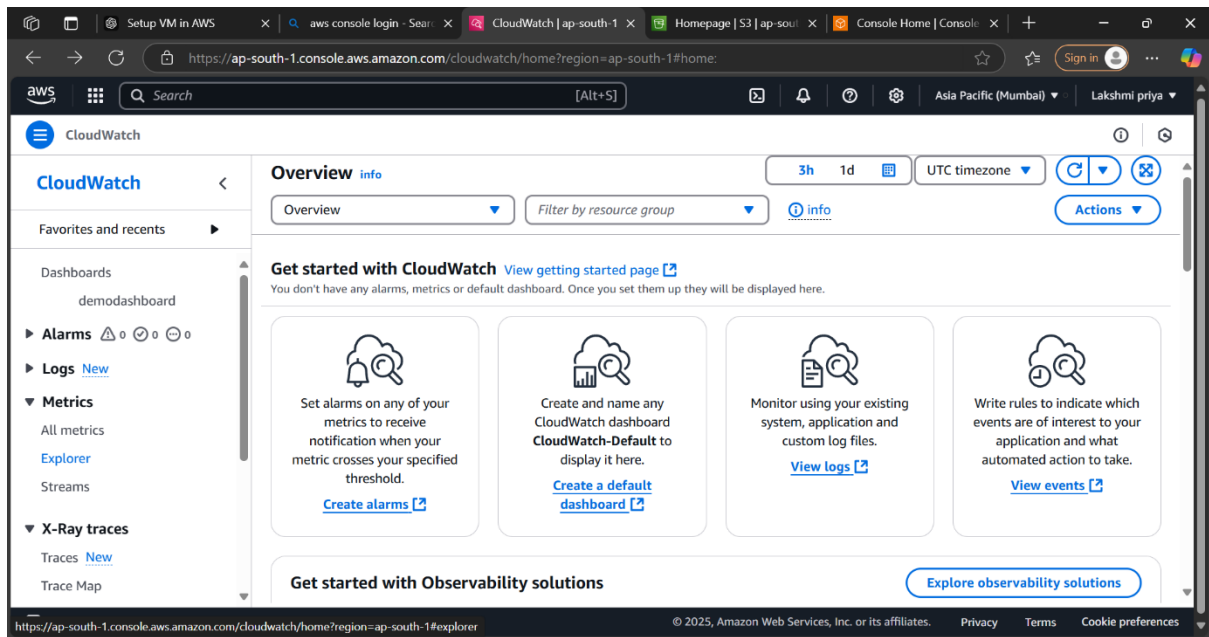
The task is focused on setting up CPU utilization monitoring for cloud-based infrastructure using Amazon CloudWatch. This involves configuring CloudWatch to track the performance of EC2 instances (or other services) and setting alarms to be notified when CPU usage exceeds specific thresholds.

By monitoring CPU utilization, you can ensure that your instances are running optimally and prevent over-utilization, which could lead to slow performance, downtime, or increased costs due to resource limitations

Objectives

Objectives of the Task: Monitoring CPU Utilization in CloudWatch

1. Track EC2 Performance:
 - To continuously monitor the CPU utilization of EC2 instances to ensure they are performing within expected thresholds.
2. Optimize Resource Allocation:
 - To identify underutilized or overutilized resources, helping you optimize the allocation of EC2 instances or other cloud resources and avoid unnecessary costs



Step 3 Set Up Alarms for Notification

1. Navigate to Alarms:

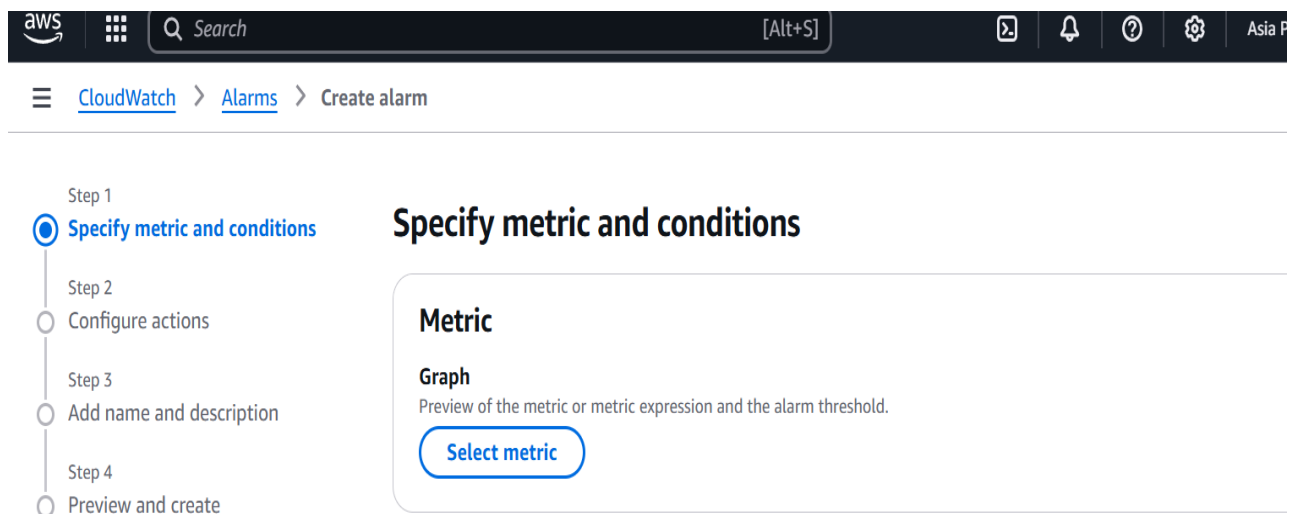
- In the CloudWatch dashboard, click on **Alarms** in the left-hand menu and then click the **Create Alarm** button.

2. Select Metric to Monitor:

- Choose a metric from the list (e.g., CPUUtilization for EC2 instances).
- You can also create custom metrics based on your needs.

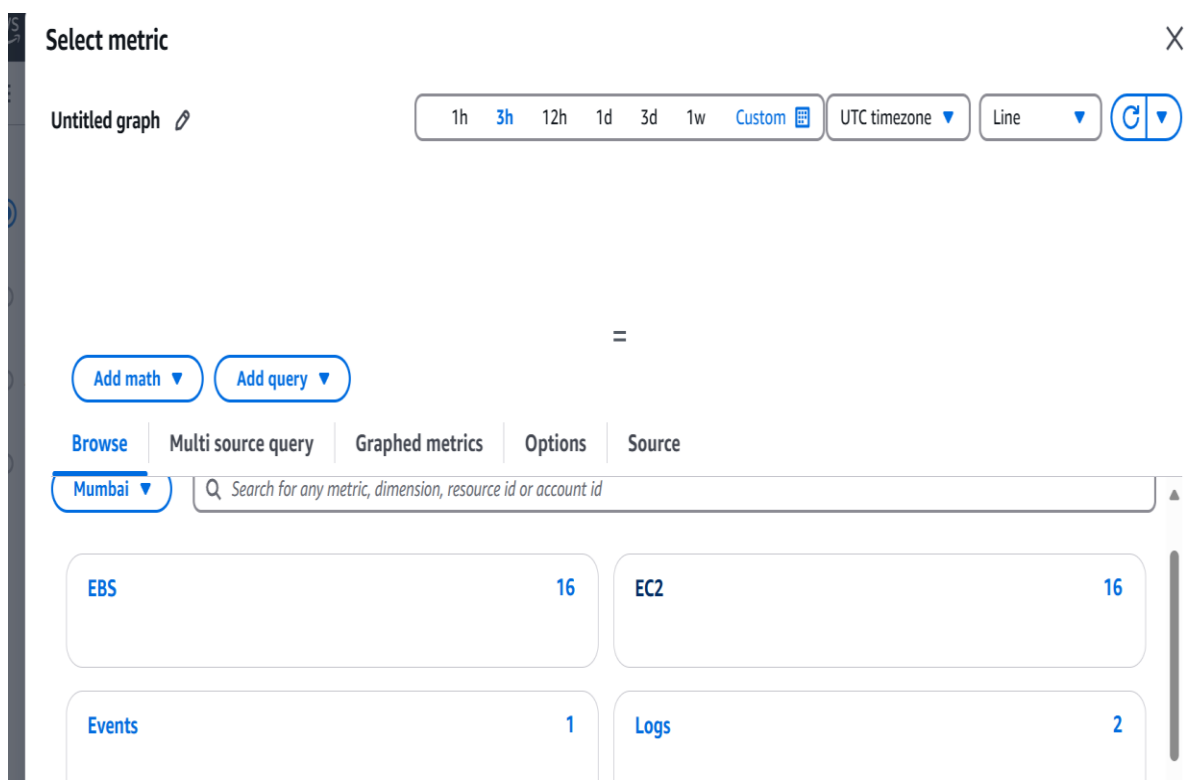
3. Set Alarm Conditions:

- Specify the threshold conditions. For example, trigger an alarm when CPU utilization exceeds 80% for 5 minutes.



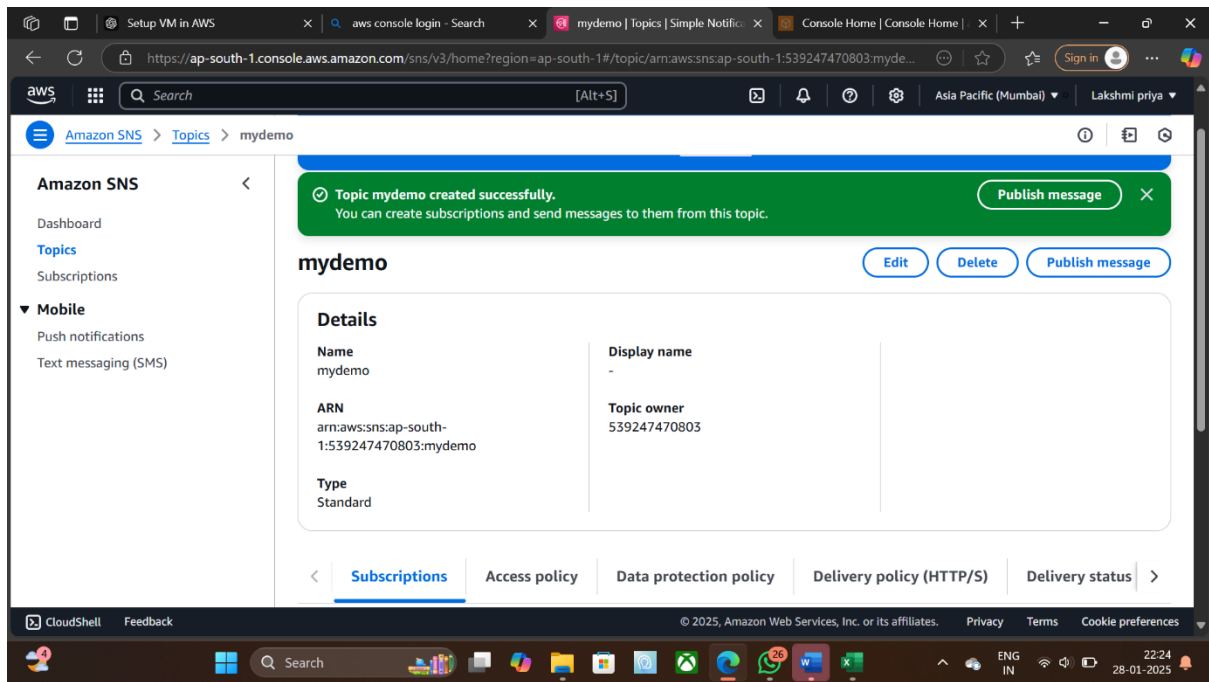
Step 4 Define Notification Actions:

- a Set up notifications by selecting an existing SNS (Simple Notification Service) topic or create new one. SNS can send notifications via email, SMS, or trigger other actions.
- You can also trigger automated actions using Lambda functions or EC2 Auto Scaling.



Step 5:

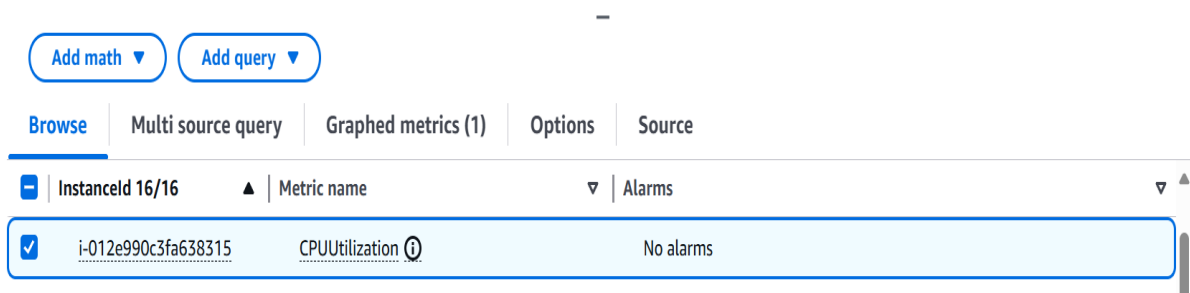
After configuring the conditions and notifications, click **Create Alarm**

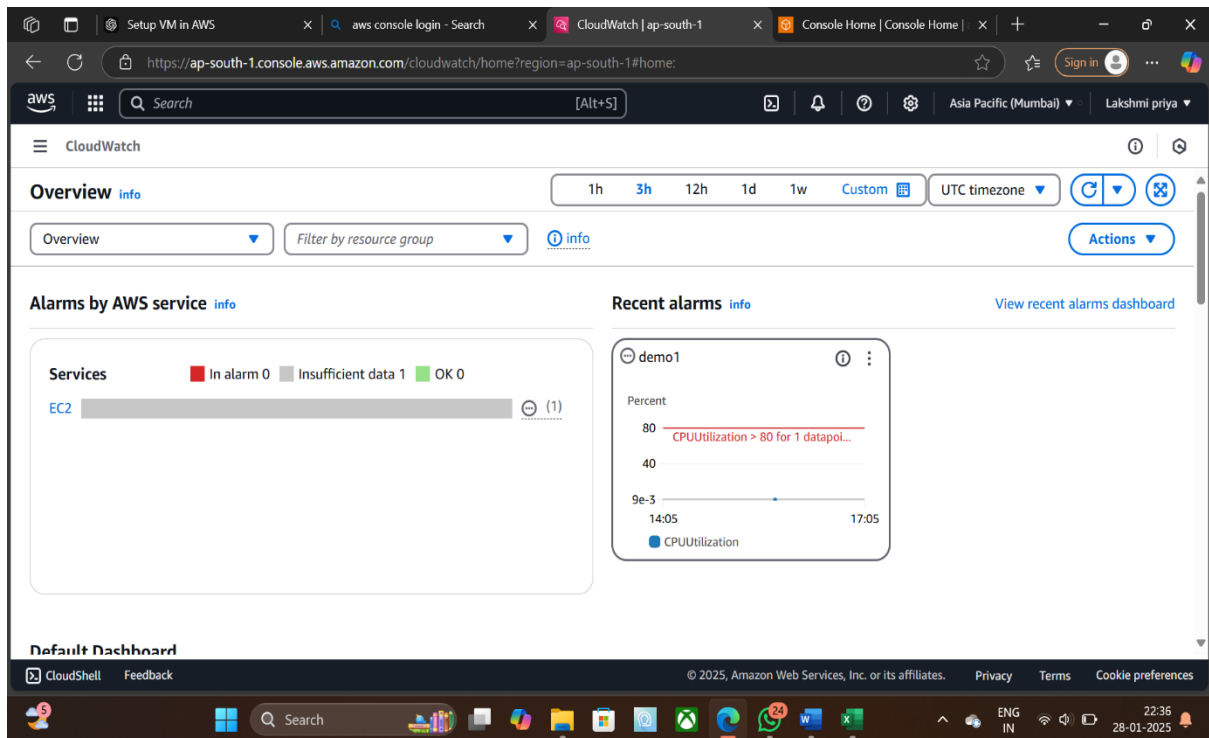


Step 6

Go to Metrics: Click **Metrics** on the left sidebar, then select **EC2** and **Per-Instance Metrics**.

Select CPU Utilization: Find **CPUUtilization** and select the instance(s) to view the graph





Step 7

View Output (CPU Utilization Graph): The output from this process is the **CPU utilization graph**, which displays real-time and historical CPU usage data.

Output:

The output of this task will be:

- **CPU Utilization Metric:** A graph showing the percentage of CPU usage over time for the selected EC2 instance(s).

- Alarm Notifications (Optional): If alarms were set, you will receive notifications when CPU utilization exceeds the defined threshold. For example, if CPU usage goes beyond 80%, an alert will be triggered.

This data helps you:

- Monitor performance: Ensure your EC2 instances are not under or over-utilized.
- Prevent issues: If high CPU utilization occurs, you can take corrective actions (e.g., scaling instances, optimizing applications).

THANK YOU !!!