

TASK 2 – EC2 INSTANCE MONITORING USING AMAZON CLOUDWATCH

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TASK 2 – EC2 INSTANCE MONITORING USING AMAZON CLOUDWATCH

INTERN ID: CT04DR2400

Cloud Platform: Amazon Web Services (AWS)

Duration: 1 MONTH

1. Aim

To launch an Amazon EC2 instance, deploy a web server, monitor its performance using Amazon CloudWatch, and configure an alarm for high CPU utilization with email notifications.

2. Tools & Services Used

- Amazon EC2
- Amazon CloudWatch
- Amazon SNS (Simple Notification Service)
- Amazon Linux 2023
- Apache HTTP Server (httpd)

3. Procedure

Step 1: Launch EC2 Instance

- An EC2 instance was launched using **Amazon Linux 2023 AMI**
- Instance type: **t3.micro**
- Security Group configured to allow:
 - SSH (port 22)
 - HTTP (port 80)
- A public IPv4 address was enabled

Step 2: Install and Run Web Server

- Connected to EC2 using **EC2 Instance Connect**
- Installed Apache web server
- Started and enabled the httpd service
- Created a simple HTML page
- Verified web server using public IP in browser
(“It works!” page displayed successfully)

Step 3: Enable CloudWatch Monitoring

- Detailed monitoring was enabled for the EC2 instance
- Metrics such as:
 - CPU Utilization
 - Network In/Out
 - Network Packetswere observed in CloudWatch

Step 4: Create CloudWatch Alarm

- Metric selected: **CPUUtilization**
- Threshold condition: **CPUUtilization > 70%**
- Evaluation period: **5 minutes**
- Datapoints to alarm: **1 out of 1**

Step 5: Configure SNS Notification

- Created a new SNS topic: **ec2-cpu-alarm**
- Added email subscription
- Email confirmation completed successfully
- Alarm configured to send notification when threshold is breached

4. Result

- EC2 instance was successfully launched and web server deployed
- CloudWatch metrics were monitored successfully
- CPU Utilization alarm was created and is currently in **OK** state
- Email notification system was configured successfully

5. Conclusion

This task demonstrates how Amazon CloudWatch can be used to monitor EC2 instances and proactively detect performance issues. Setting alarms and notifications helps in effective resource management and ensures high availability of cloud applications.

6. Screenshots Included

EC2 Instance Running

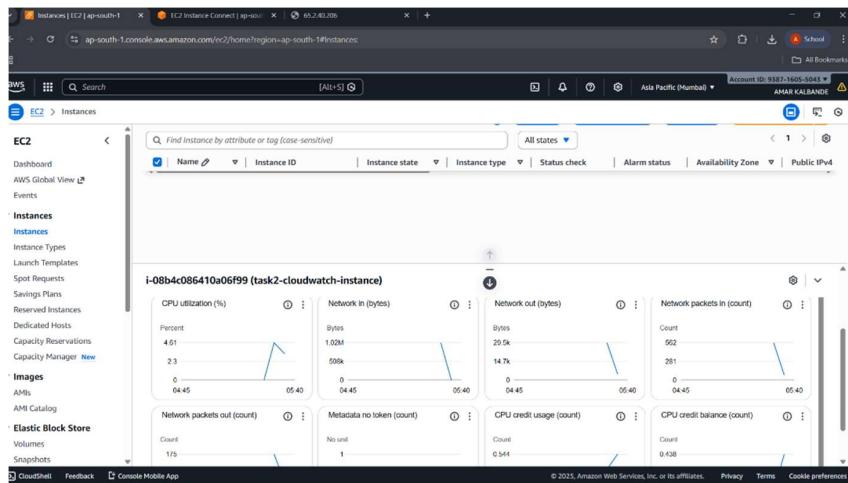
The screenshot shows the AWS EC2 Instances Launch Instances page. A green success banner at the top states "Successfully initiated launch of instance i-08b4c086410a06f99". Below this is a "Launch log" section with a link to "View log". The main area is titled "Next Steps" with a search bar. It contains several cards: "Create billing usage alerts" (with a "Create billing alerts" button), "Connect to your instance" (with a "Connect to instance" button), "Connect an RDS database" (with a "Connect an RDS database" button), "Create EBS snapshot policy" (with a "Create EBS snapshot policy" button), "Manage detailed monitoring" (with a "Create CloudWatch Metrics" button), "Create Load Balancer" (with a "Create Load Balancer" button), "Create AWS budget" (with a "Create AWS budget" button), and "Manage CloudWatch alarms" (with a "Create CloudWatch alarm" button). At the bottom are links for "CloudShell", "Feedback", and "Console Mobile App".

Web Server Output in Browser

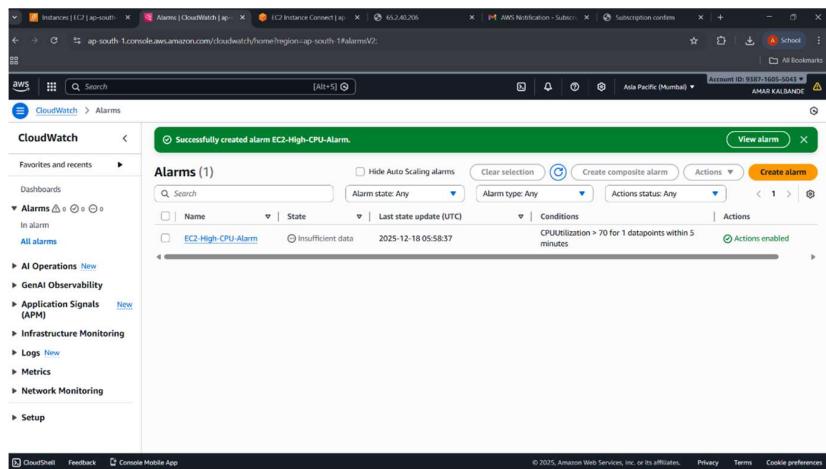
The screenshot shows a web browser window with the URL "65.2.40.206". The page content includes the text "It works!" and some small, illegible text below it.

CloudWatch Metrics Graph

The screenshot shows the AWS CloudWatch Metrics Graph for the EC2 instance i-08b4c086410a06f99. The left sidebar shows navigation options like EC2, Dashboard, AWS Global View, Events, Instances, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Capacity Reservations, Capacity Manager, Images, AMIs, and Elastic Block Store. The main area displays a metrics dashboard for the instance. It includes tabs for "Details", "Status and alarms", "Monitoring" (which is selected), "Security", "Networking", "Storage", and "Tags". Under "Monitoring", there are four charts: "CPU utilization (%)" (Percent: 4.61), "Network in (bytes)" (Bytes: 1.0M), "Network out (bytes)" (Bytes: 29.5k), and "Network packets in (count)" (Count: 582). Below the charts are buttons for "Configure CloudWatch agent" and "Manage detailed monitoring". The top of the page shows a success message: "Successfully enabled detailed monitoring for instance i-08b4c086410a06f99." The bottom of the page includes links for "CloudShell", "Feedback", and "Console Mobile App".



CloudWatch Alarm Configuration



Alarm Status (OK)

