

Amazon-CloudWatch : CloudWatch Alarms Task2

Problem Statement:

You work for XYZ Corporation. To maintain the security of the AWS account and the resources you have been asked to implement a solution that can help easily recognize and monitor the different users. Also, you will be monitoring the machines created by these users for any errors or misconfigurations.

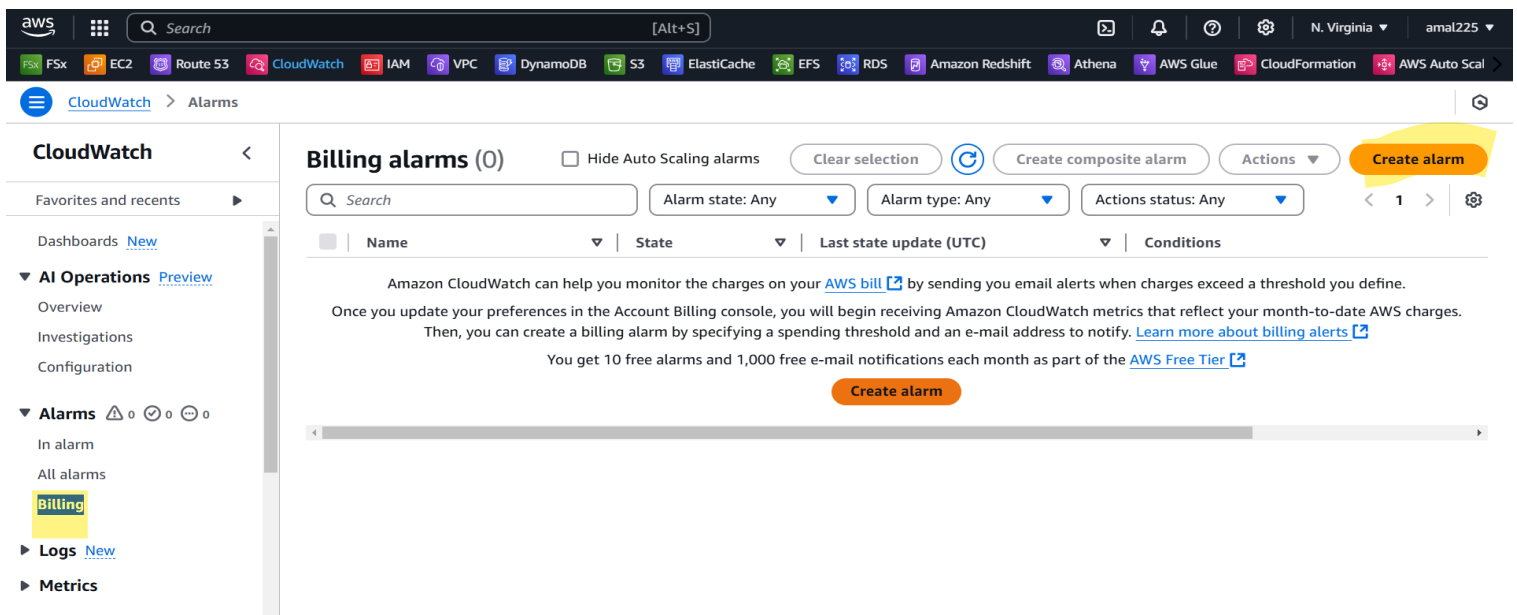
Tasks To Be Performed:

1. Create a CloudWatch billing alarm which goes off when the estimated charges go above \$500.

Create a CloudWatch alarm which goes off to an Alarm state when the CPU utilization of an EC2 instance goes above 65%. Also add an SNS topic so that it notifies the person when the threshold is crossed.

Solution:

1. Create a CloudWatch billing alarm which goes off when the estimated charges go above \$500.
 - Billing alarm create only in N.Virginia region , go to cloudwatch console, go Alarm , in their Billing , which goes off when the estimated charges go above \$500.



The screenshot shows the AWS CloudWatch Alarms console. The left sidebar contains the navigation menu with 'Alarms' selected. The main content area displays 'Billing alarms (0)' and includes a 'Create alarm' button. Below this, there is a table with columns for Name, State, Last state update (UTC), and Conditions. A message explains that Amazon CloudWatch can help monitor charges on the AWS bill by sending email alerts when charges exceed a threshold. It also mentions that you get 10 free alarms and 1,000 free e-mail notifications each month as part of the AWS Free Tier.

CloudWatch > Alarms

Billing alarms (0) ☐ Hide Auto Scaling alarms

Alarm state: Any Alarm type: Any Actions status: Any

Name	State	Last state update (UTC)	Conditions
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Amazon CloudWatch can help you monitor the charges on your [AWS bill](#) by sending you email alerts when charges exceed a threshold you define. Once you update your preferences in the Account Billing console, you will begin receiving Amazon CloudWatch metrics that reflect your month-to-date AWS charges. Then, you can create a billing alarm by specifying a spending threshold and an e-mail address to notify. [Learn more about billing alerts](#)

You get 10 free alarms and 1,000 free e-mail notifications each month as part of the [AWS Free Tier](#)

FSxEC2Route 53CloudWatchIAMVPCDynamoDBS3ElastiCacheEFSRDSEFSAmazon RedshiftAthenaAWS GlueCloudFormationAWS Auto Scal

CloudWatch > Alarms > Create alarm

Step 2

Configure actions

Step 3

Add name and description

Step 4

Preview and create

Metric

Edit

Graph

This alarm will trigger when the blue line goes below the red line for 1 datapoints within 6 hours.

No unit

1

0.5

0

11/3012/0212/0412/06

EstimatedCharges

Namespace

AWS/Billing

Metric name

EstimatedCharges

Currency

500\$

Statistic

Maximum

Period

6 hours

awsSearch [Alt+S]

FSxEC2Route 53CloudWatchIAMVPCDynamoDBS3ElastiCacheEFSRDSEFSAmazon RedshiftAthenaAWS GlueCloudFormationAWS Auto Scal

CloudWatch > Alarms > Create alarm

Step 1

Specify metric and conditions

Step 2

Configure actions

Step 3

Add name and description

Step 4

Preview and create

Configure actions

Remove

Notification

Alarm state trigger

Define the alarm state that will trigger this action.

In alarm

The metric or expression is outside of the defined threshold.

OK

The metric or expression is within the defined threshold.

Insufficient data

The alarm has just started or not enough data is available.

Send a notification to the following SNS topic

Define the SNS (Simple Notification Service) topic that will receive the notification.

Select an existing SNS topic

Create new topic

Use topic ARN to notify other accounts

Send a notification to...

Select an SNS topic

Only topics belonging to this account are listed here. All persons and applications subscribed to the selected topic will receive notifications.

CloudWatch > Alarms > Create alarm

EC2 action

This action is only available for EC2 Per-Instance Metrics.

Add EC2 action

Systems Manager action Info

This action will create an Incident or Opsitem in Systems Manager when the alarm is In alarm state.

Add Systems Manager action

Investigation action Info

This action will create an Investigation when the alarm is In alarm state.

Add Investigation action

Cancel

Previous

Next

CloudWatch > Alarms > Create alarm

Add name and description

Name and description

Alarm name:

Alarm description - optional [View formatting guidelines](#)

Edit **Preview**

This is an H1
 double asterisks will produce strong character
 This is [an example](https://example.com/) inline link.

Up to 1024 characters (0/1024)

CloudWatch > Alarms > Create alarm

Step 2: Configure actions

Actions

Notification
 When In alarm, send a notification to "CREATE-ALARM"

Step 3: Add name and description

Name and description

Name
 Billig

Description
 -

Cancel Previous **Create alarm**

CloudWatch > Alarms

CloudWatch

Successfully created alarm Billig. [View alarm](#)

Billing alarms (1) ☐ Hide Auto Scaling alarms [Clear selection](#) [Create composite alarm](#) [Actions](#) [Create alarm](#)

Alarm state: Any Alarm type: Any Actions status: Any

<input type="checkbox"/>	Name	State	Last state update (UTC)	Conditions
<input type="checkbox"/>	Billig	Insufficient data	2024-12-07 06:08:49	EstimatedCharges <= 47 for 1 datapoints within 6 hours

- Create a CloudWatch alarm which goes off to an Alarm state when the CPU utilization of an EC2 instance goes above 65%. Also add an SNS topic so that it notifies the person when the threshold is crossed.
 - Create EC2 instance and to modify role IAM.

aws Search [Alt+S] N. Virginia amal225

FSx EC2 Route 53 CloudWatch IAM VPC DynamoDB S3 ElastiCache EFS RDS Amazon Redshift Athena AWS Glue CloudFormation AWS Auto Scal

Dashboard EC2 Global View Events

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Successfully attached cloudwatchfullaccess to instance i-02cd5c351b0578ae4

Instances (1/1) Info Last updated less than a minute ago Connect Instance state Actions Launch Instances

Find Instance by attribute or tag (case-sensitive) All states

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
Test	i-02cd5c351b0578ae4	Running	t2.micro	Initializing	View alarms +	us-east-1d

aws Search [Alt+S] N. Virginia amal225

FSx EC2 Route 53 CloudWatch IAM VPC DynamoDB S3 ElastiCache EFS RDS Amazon Redshift Athena AWS Glue CloudFormation AWS Auto Scal

CloudWatch Alarms

CloudWatch

Favorites and recents

Dashboards New

AI Operations Preview

Overview

Investigations

Configuration

Alarms

In alarm

All alarms

Billing

Logs New

Metrics

Alarms (0) Hide Auto Scaling alarms Clear selection Create composite alarm Actions Create alarm

Search Alarm state: In alarm Alarm type: Any Actions status: Any

Name	State	Last state update (UTC)	Conditions
No alarms			
No alarms to display			
Read more about Alarms			
Create alarm			

aws Search [Alt+S] N. Virginia amal225

FSx EC2 Route 53 CloudWatch IAM VPC DynamoDB S3 ElastiCache EFS RDS Amazon Redshift Athena AWS Glue CloudFormation AWS Auto Scal

CloudWatch Alarms Create alarm

Step 4 Preview and create

Graph

This alarm will trigger when the blue line goes above the red line for 3 datapoints within 3 minutes.

Percent

65

33.7

2.41

04:30 05:30 06:30

CPUUtilization

Namespace AWS/EC2

Metric name CPUUtilization

InstanceId i-02cd5c351b0578ae4

Instance name Test

Statistic Average

Period 1 minute

Conditions

Threshold type

☒ Static
Use a value as a threshold

☐ Anomaly detection
Use a band as a threshold

Whenever CPUUtilization is...

Define the alarm condition.

☐ Greater
> threshold

☐ Greater/Equal
≥ threshold

☒ Lower/Equal
≤ threshold

☐ Lower
< threshold

than...

Define the threshold value.

65

Must be a number

▶ Additional configuration

Cancel

Next

- Step 1
Specify metric and conditions
- Step 2
Configure actions
- Step 3
Add name and description
- Step 4
Preview and create

Configure actions

Notification

Add notification

Lambda action

Add Lambda action

Auto Scaling action

Add Auto Scaling action

ption

Notification

Alarm state trigger

Define the alarm state that will trigger this action.

☒ In alarm
The metric or expression is outside of the defined threshold.

☐ OK
The metric or expression is within the defined threshold.

☐ Insufficient data
The alarm has just started or not enough data is available.

Send a notification to the following SNS topic

Define the SNS (Simple Notification Service) topic that will receive the notification.

☒ Select an existing SNS topic

☐ Create new topic

☐ Use topic ARN to notify other accounts

Send a notification to...

Q CREATE-ALRAM

X

Only topics belonging to this account are listed here. All persons and applications subscribed to the selected topic will receive notifications.

Email (endpoints)

rajamal2205@gmail.com - View in SNS Console

Add notification

Name and description

Alarm name 🔗

AWS/EC2 CPUUtilization InstanceId=i-02cd5c351b0578ae4

Alarm description 🔗 - optional [View formatting guidelines](#)

Edit Preview

This alarm helps to monitor the CPU utilization of an EC2 instance. Depending on the application, consistently high utilization levels might be normal. But if performance is degraded, and the application is not constrained by disk I/O, memory, or network resources, then a maxed-out CPU might indicate a resource bottleneck or application performance

Up to 1024 characters (723/1024)

📘 Markdown formatting is only applied when viewing your alarm in the console. The description will remain in plain text in the alarm notifications.

Cancel

Previous

Next

Conditions

Threshold type
Static

Whenever **CPUUtilization** is
Lower/Equal (<=)

than...
65

▼ Additional configuration

Datapoints to alarm
3 out of 3

Missing data treatment
Treat missing data as missing

Step 2: Configure actions

Edit

Actions

Notification
When Insufficient data, send a notification to "CREATE-ALARM"

Step 3: Add name and description

Edit

Name and description

Name
AWS/EC2 CPUUtilization InstanceId=i-02cd5c351b0578ae4

Description

This alarm helps to monitor the CPU utilization of an EC2 instance. Depending on the application, consistently high utilization levels might be normal. But if performance is degraded, and the application is not constrained by disk I/O, memory, or network resources, then a maxed-out CPU might indicate a resource bottleneck or application performance problems. High CPU utilization might indicate that an upgrade to a more CPU intensive instance is required. If detailed monitoring is enabled, you can change the period to 60 seconds instead of 300 seconds. For more information, see [Enable or turn off detailed monitoring for your instances](#).

Configuration

▼ Alarms 0 0 0

In alarm

All alarms

Billing



✔ Successfully created alarm AWS/EC2 CPUUtilization InstanceId=i-02cd5c351b0578ae4.

View alarm



Alarms (1)

☐ Hide Auto Scaling alarms

Clear selection



Create composite alarm

Actions ▼

Create alarm

🔍 Search

Alarm state: Any ▼

Alarm type: Any ▼

Actions status: Any ▼

< 1 >



<input type="checkbox"/>	Name ▼	State ▼	Last state update (UTC) ▼	Conditions
<input type="checkbox"/>	AWS/EC2 CPUUtilization InstanceId=i-02cd5c351b0578ae4	Insufficient data	2024-12-07 06:38:03	CPUUtilization <= 65 for 3 datapoints within 3 minutes



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