

# **Module 3: CloudWatch Alarms** **Assignment**

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**Course Offered: Advanced Cloud Computing And Devops**

# Cloud Watch Alarm Creation

## Problem Statement:

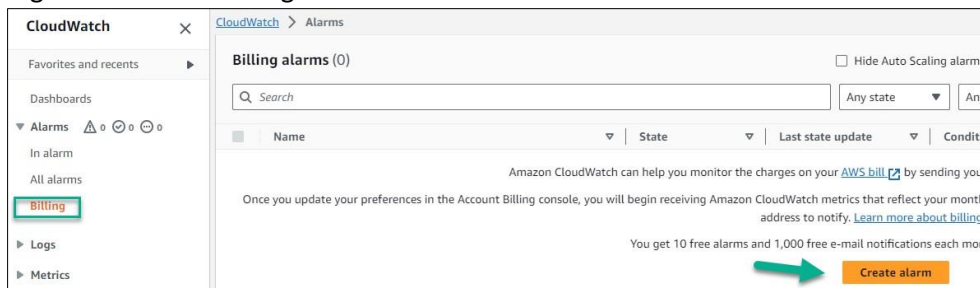
You work for XYZ Corporation. To maintain the security of the AWS account and the resources you have been asked to implement a solution that can help easily recognize and monitor the different users. Also, you will be monitoring the machines created by these users for any errors or misconfigurations.

## Tasks to Be Performed:

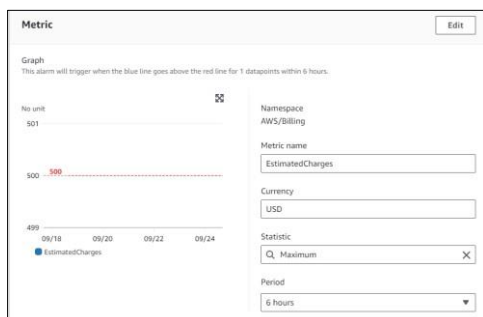
1. Create a CloudWatch billing alarm that goes off when the estimated charges go above \$500.
2. Create a CloudWatch alarm which goes off to an Alarm state when the CPU utilization of an EC2 instance goes above 65%. Also, add an SNS topic so that it notifies the person when the threshold is crossed.

## Answer

Login to the AWS Management console then search for Cloudwatch



CloudWatch → Alarms → Billing → Create Alarm



**Conditions**

Threshold type

☒ Static  
Use a value as a threshold

☐ Anomaly detection  
Use a band as a threshold

Whenever EstimatedCharges is...

Define the alarm condition.

☒ Greater  
> threshold

☐ Greater/Equal  
>= threshold

☐ Lower/Equal  
<= threshold

☐ Lower  
< threshold

than...

Define the threshold value.

500 USD

Must be a number

► Additional configuration

Cancel Next

Select the conditions based on your requirement

**Type:** Static

**Estimated Charges:** Greater than

\$500

Click **Next**

**Configure actions**

**Notification**

Add notification

**Auto Scaling action**

Add Auto Scaling action

**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

Cancel Previous Next

Click **Next**

### 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)

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

Preview and confirm the alarm

### “Create Alarm”

Successfully created alarm **BillingAlarmUSD500**.

CloudWatch > Alarms

Billing alarms (1)

☐ Hide Auto Scaling alarms
 

Clear selection

Create composite alarm

Any state

Any type

Any actions ...

<input type="checkbox"/>	Name	State	Last state update	Conditions	Actions
<input type="checkbox"/>	BillingAlarmUSD500	Insufficient data	2023-09-25 11:44:32	EstimatedCharges > 500 for 1 datapoints within 6 hours	No actions

The alarm was Created successfully as per the requirement. Which will trigger the alarm when the usage of the AWS account reaches \$500.

## Creating an Alarm for CPU Utilization notification

CloudWatch → In Alarm → Create Alarm

CloudWatch

Alarms (0)

☐ Hide Auto Scaling alarms

In alarm

Any type

<input type="checkbox"/>	Name	State	Last state update	Conditions
No alarms				
No alarms to display				
<a href="#">Read more about Alarms</a>				
<div>Create alarm</div>				

### Specify metric and conditions

**Metric**

Graph  
 Preview of the metric or metric expression and the alarm threshold.

Select metric

Cancel

Next

Select metric → EC2 → Per-Instance Metrics → CPU Utilization

Graph  
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 5 minutes.

No unit

66

65

64

09:30 10:30 11:30

CPUUtilization

Namespace  
AWS/EC2

Metric name  
CPUUtilization

InstanceId  
i-02ed5bc078179db9c

Instance name  
No name specified

Statistic  
Average

Period  
5 minutes

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

Select the threshold Greater/Equal => 65%

Click **Next**

### Configure actions

**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.

Remove

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

Create a new topic...  
The topic name must be unique.

Default\_CloudWatch\_Alarms\_Topic

SNS topic names can contain only alphanumeric characters, hyphens (-) and underscores (\_).

Email endpoints that will receive the notification...  
Add a comma-separated list of email addresses. Each address will be added as a subscription to the topic above.

aravikumar48@gmail.com

user1@example.com, user2@example.com

Create topic

Add notification

I do not have an SNS topic already created so I am creating a new SNS topic, if you have already a topic just select the existing SNS topic

Click **"Create Topic"**

Click **Next**

### Add name and description

**Name and description**

Alarm name

CPUUtilization65

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)

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

Provide the Alarm Name, Click **Next**

Preview and Create the Alarm



In order to get the email notifications you have to confirm the subscription from your email address

Actions

✔ Actions enabled

Warning

No actions

This action sends a message to an SNS topic with an endpoint that is pending confirmation. It will not work as expected until the endpoint is confirmed. Look for a subscription confirmation email or review the topic in SNS.