

Module-8: CloudWatch Assignment - 5

You have been asked to:

1. Create a CloudWatch Billing Alarm which goes off when the Estimated Charges goes 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%
 - a. Also add an SNS topic so it notifies the person when the threshold is crossed
-



https://

aws



Services



CloudWatch



Favorites and recents



Dashboards

▼ Alarms

⚠ 0 ✅ 0 🔍 0

In alarm

All alarms

Billing



► Logs

► Metrics

► X-Ray traces

► Events

► Application monitoring

► Insights

Settings

Getting Started

Billing alarms (0) Hide Auto Scaling alarms[Clear selection](#)[Create composite alarm](#)[Actions ▾](#)[Create alarm](#)[Search](#)[Any state](#)[Any type](#)[Any actions ...](#)< 1 >

Name	State	Last state update	Conditions	Actions
------	-------	-------------------	------------	---------

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](#)

[Create alarm](#)



Step 1
Specify metric and conditions

Step 2
Configure actions

Step 3
Add name and description

Step 4
Preview and create

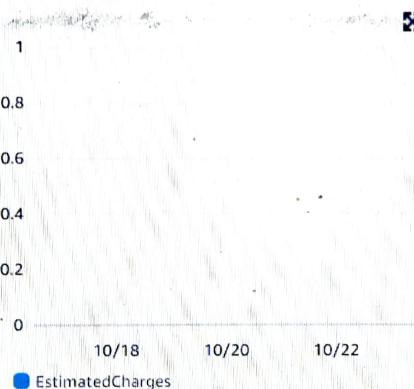
Specify metric and conditions

Metric

Edit

Graph

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



Namespace

AWS/Billing

Metric name

EstimatedCharges

Currency

USD

Statistic

Maximum

X

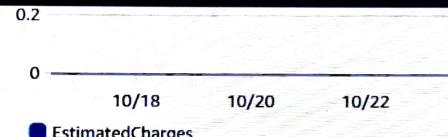
Period

6 hours

Conditions

Threshold type





USD

Statistic

 Maximum [X](#)

Period

6 hours [▼](#)

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](#)



Services



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

Notification

Alarm state trigger

Define the alarm state that will trigger this action.

Remove

 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 email list

Only email lists for this account are available.

Add notification

Auto Scaling action

Add Auto Scaling action

https://us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#alarmsV2:create/\$B\$2metrics\$22\$3A\$5B\$5B\$22A

aws Services

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

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



Step 1

Specify metric and conditions

Step 2

Configure actions

Step 3

Add name and description

Step 4

Preview and create

Add name and description

Name and description

Alarm name

VaibhavBillingAlarm

Alarm description - optional

Alarm description

Up to 1024 characters (0/1024)

Cancel

Previous

Next





Services



Step 1

Specify metric and conditions

Step 2

Configure actions

Step 3

Add name and description

Step 4

Preview and create

Preview and create

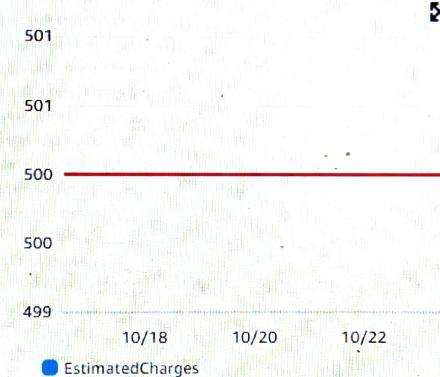
Step 1: Specify metric and conditions

[Edit](#)

Metric

Graph

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



Namespace
AWS/Billing

Metric name
EstimatedCharges

Currency
USD

Statistic
Maximum

Period
6 hours

Conditions

Threshold type
Static



Services



Whenever **EstimatedCharges** is
Greater (>)

than...

500

▶ Additional configuration

Step 2: Configure actions

Edit

Actions

No actions

You don't have any actions for this alarm.

Step 3: Add name and description

Edit

Name and description

Name

VaibhavBillingAlarm

Description

Cancel

Previous

Create alarm

[All]



N. Virginia

VAIBHAV VERMA

Successfully created alarm VaibhavBillingAlarm.

View alarm



CloudWatch > Alarms

Billing alarms (1/1)

 Hide Auto Scaling alarms

Clear selection



Create composite alarm

Actions ▾

Create alarm



Search

Any state

Any type

Any actions ...



1



<input checked="" type="checkbox"/>	Name	State	Last state update	Conditions	Actions
<input checked="" type="checkbox"/>	VaibhavBillingAlarm	Insufficient data	2022-10-24 13:15:18	EstimatedCharges > 500 for 1 datapoints within 6 hours	No actions

[Alt+S] N. Virginia VAIBHAV VERMA

Successfully created alarm VaibhavBillingAlarm.

View alarm X

CloudWatch > Alarms

Billing alarms (1/1)

Hide Auto Scaling alarms Clear selection Create composite alarm Actions **Create alarm**

Search Any state Any type Any actions ...

<input checked="" type="checkbox"/> Name	State	Last state update	Conditions	Actions
<input checked="" type="checkbox"/> VaibhavBillingAlarm	Insufficient data	2022-10-24 13:15:18	EstimatedCharges > 500 for 1 datapoints within 6 hours	No actions

cloudwatch/home?region=us-east-1#alarmsV2:create © 2022, Amazon Internet Services Private Ltd. or its affiliates. Privacy Terms Cookie preferences

Step 1

Specify metric and conditions

Step 2

Configure actions

Step 3

Add name and description

Step 4

Preview and create

Specify metric and conditions

Metric

Graph

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

Select metric

Cancel

Next

[CloudWatch Metrics](#) > [CloudWatch Metrics](#)Spec
cond

Select metric

1

Your CloudWatch graph is empty.

Select some metrics to appear here.

05:00 05:15 05:30 05:45 06:00 06:15 06:30 06:45 07:00 07:15 07:30 07:45

[Browse](#) | [Query](#) | [Graphed metrics](#) | [Options](#) | [Source](#)

[Add math ▾](#) | [Add query ▾](#)

Metrics (83)

[Graph with SQL](#) | [Graph search](#)

Search for any metric, dimension or resource id

EC2  

[EC2 > Per-Instance Metrics](#) 

17

[Usage > By AWS Resource](#)

66

[EC2 > Per-Instance Metrics](#)

[Cancel](#)

Select a single metric to continue

Spec
cond**Select metric** CPUUtilization[Browse](#) | [Query](#) | **Graphed metrics (1)** | [Options](#) | [Source](#)[Add math ▾](#) | [Add query ▾](#)**Metrics (17)**[Graph with SQL](#) | [Graph search](#)

All > EC2 > Per-Instance Metrics

 Search for any metric, dimension or resource id[EC2](#) [i-0ed995d3580fcce77](#) Instance name (17)

▲ InstanceId

▲ Metric name

 VaibhavServer

i-0ed995d3580fcce77 ▾

NetworkPacketsOut ▾

 VaibhavServer

i-0ed995d3580fcce77 ▾

CPUUtilization ▾

 VaibhavServer

i-0ed995d3580fcce77 ▾

NetworkIn ▾

 VaibhavServer

i-0ed995d3580fcce77 ▾

NetworkOut ▾

 VaibhavServer

i-0ed995d3580fcce77 ▾

DiskReadBytes ▾

[Cancel](#)[Select metric](#)

Step 1
Specify metric and
conditions

Step 2
Configure actions

Step 3
Add name and
description

Step 4
Preview and create

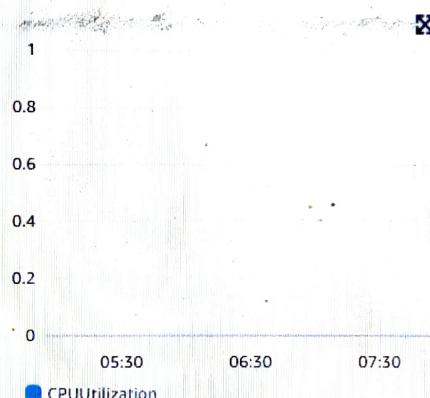
Specify metric and conditions

Metric

[Edit](#)

Graph

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



Namespace

AWS/EC2

Metric name

CPUUtilization

InstanceId

i-0ed995d3580fcce77

Instance name

VaibhavServer

Statistic

Average

[X](#)

Period

5 minutes

Conditions



05:30 06:30 07:30

CPUUtilization

VaibhavServer

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





Services

EC2



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

Notification

Alarm state trigger

Define the alarm state that will trigger this action.

[Remove](#)

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

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.

vaibhavgla10@gmail.com

user1@example.com, user2@example.com

[Create topic](#)

[Add notification](#)



Services

EC2



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

Notification

Alarm state trigger

Define the alarm state that will trigger this action.

[Remove](#)

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...

Default_CloudWatch_Alarms_Topic 

Only email lists for this account are available.

Email (endpoints)

vaibhavgl10@gmail.com - [View in SNS Console](#) 

[Add notification](#) 

Auto Scaling action

Send a notification to...

Default_CloudWatch_Alarms_Topic X

Only email lists for this account are available.

Email (endpoints)

vaibhavgla10@gmail.com - View in SNS Console Info

Add notification

Auto Scaling action

Add Auto Scaling action

EC2 action

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



Services

EC2



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

Add name and description

Name and description

Alarm name

CPU_Utilization_Alarm

Alarm description - optional

Alarm description

Up to 1024 characters (0/1024)

Cancel

Previous

Next





Step 1

Specify metric and conditions

Step 2

Configure actions

Step 3

Add name and description

Step 4

Preview and create

Preview and create

Step 1: Specify metric and conditions

[Edit](#)

Metric

Graph

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

Percent

65

Namespace
AWS/EC2

32.6

Metric name
CPUUtilization

0.1

InstanceId
i-0ed995d3580fcce77

CPUUtilization

Instance name
VaibhavServer

05:30 06:30 07:30

Statistic
AveragePeriod
5 minutes

Conditions

Static

Whenever **CPUUtilization** is
Greater (>)

than...
65

► Additional configuration

Step 2: Configure actions

Edit

Actions

Notification

When In alarm, send a notification to "Default_CloudWatch_Alarms_Topic"

Step 3: Add name and description

Edit

Name and description

Name

CPU_Utilization_Alarm

Description

Cancel

Previous

Create alarm

Successfully created alarm [CPU Utilization Alarm](#).

[View alarm](#)[CloudWatch](#) > Alarms

Billing alarms (1)

 Hide Auto Scaling alarms[Clear selection](#)[Create composite alarm](#)[Actions ▾](#)[Create alarm](#)

<input type="checkbox"/>	Name	State	Last state update	Conditions	Actions
<input type="checkbox"/>	VaibhavBillingAlarm	Insufficient data	2022-10-24 13:15:18	EstimatedCharges > 500 for 1 datapoints within 6 hours	No actions

Some subscriptions are pending confirmation

Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed

[View SNS Subscriptions](#)

CloudWatch > Alarms

Alarms (1/2)

Hide Auto Scaling alarms

[Clear selection](#)



[Create composite alarm](#)

[Actions ▾](#)

[Create alarm](#)

Name	State	Last state update	Conditions	Actions
CPU_Utilization_Alarm	OK	2022-10-24 13:36:54	CPUUtilization > 65 for 1 datapoints within 5 minutes	Actions enabled Warning
VaibhavBillingAlarm	Insufficient data	2022-10-24 13:15:18	EstimatedCharges > 500 for 1 datapoints within 6 hours	No actions



Compose

AWS Notification - Subscription Confirmation ➔ Inbox

AWS Notifications <no-reply@sns.amazonaws.com>

to me ▾

Inbox 13,872

Starred

Snoozed

Sent

Drafts

More

Labels +

Intellipaat(Cloud Compu...)

Intellipaat(Early Salary I...)

Intellipaat Assignments(C...)

LogicLadder Technologi...)

RailTel

You have chosen to subscribe to the topic:

arn:aws:sns:us-east-1:111952067877:Default_CloudWatch_Alarms_Topic

To confirm this subscription, click or visit the link below (if this was in error no action is necessary):

[Confirm subscription](#)Please do not reply directly to this email. If you wish to remove yourself from receiving all future SNS subscription confirmation requests please send an email to [sns-opt-out](#)[Reply](#)[Forward](#)



Simple Notification Service

Subscription confirmed!

You have successfully subscribed.

Your subscription's id is:

arn:aws:sns:us-east-

1:111952067877:Default_CloudWatch_Alarms_Topic:073c95cc-cb09-47f4-9aff-4a9c008e3d27

If it was not your intention to subscribe, [click here to unsubscribe](#).



N. Virginia ▾

VAIBHAV VERMA ▾

n_Alarm

CPU_Utilization_Alarm



Actions ▾

Graph

[View in metrics](#)

OK

CPUUtilization

CPUUtilization > 65 for 1 datapoints within 5 minutes

Percent

65

32.5

0.067

05:15 05:30 05:45 06:00 06:15 06:30 06:45 07:00 07:15 07:30 07:45 08:00

CPUUtilization

Click timeline to see the state change at the selected time.

5:15 5:30 5:45 6:00 6:15 6:30 6:45 7:00 7:15 7:30 7:45 8:00

In alarm OK Insufficient data Disabled actions

[Details](#)[Actions](#)[History](#)[Parent alarms](#)



Services

Search for services, features, blogs, docs, and more

[Alt+S]

AWS CloudShell

us-east-1

Preparing your terminal...

[cloudshell-user@ip-10-1-54-209 ~]\$ Try these commands to get started:
aws help or aws <command> help or aws <command> --cli-auto-prompt

[cloudshell-user@ip-10-1-54-209 ~]\$ aws cloudwatch set-alarm-state --alarm-name "CPU_Utilization_Alarm" --state-value ALARM --state-reason "testing purposes"
[cloudshell-user@ip-10-1-54-209 ~]\$



N. Virginia ▾

VAIBHAV VERMA ▾

Alarm

⚠ CPU_Utilization_Alarm



Actions ▾

Graph

View in metrics

CPUUtilization

CPUUtilization > 65 for 1 datapoints within 5 minutes

⚠ In alarm

Percent

65

32.5

0.067

05:30 05:45 06:00 06:15 06:30 06:45 07:00 07:15 07:30 07:45 08:00 08:15

CPUUtilization

Click timeline to see the state change at the selected time.

5:30 5:45 6:00 6:15 6:30 6:45 7:00 7:15 7:30 7:45 8:00 8:15

In alarm OK Insufficient data Disabled actions

[Details](#)[Actions](#)[History](#)[Parent alarms](#)

A set of small, light-gray navigation icons typically found in LaTeX Beamer presentations, including symbols for back, forward, search, and table of contents.

1 of 15,930 < > ■

1

AWS Notifications <no-reply@sns.amazonaws.com>
to me ▾

1:51 PM (7 minutes ago)

You are receiving this email because your Amazon CloudWatch Alarm "CPU_Utilization_Alarm" in the US East (N. Virginia) region has entered the ALARM state, because "testing purposes" at "Monday 24 October, 2022 08:21:43 UTC".

[View this alarm in the AWS Management Console](#)

https://us-east-1.console.aws.amazon.com/cloudwatch/deeplink?is?region=us-east-1#alarmsV2:alarm/CPU_Utillization_Alarm

Alarm Details

- Name: CPU_Utilization_Alarm
- Description:
- State Change: OK -> ALARM
- Reason for State Change: testing purposes
- Timestamp: Monday 24 October, 2022 08:21:43 UTC
- AWS Account: 111952067877
- Alarm Arn: arn:aws:cloudwatch:us-east-1:111952067877:alarm:CPU_Utilization_Alarm

Threshold

- The alarm is in the ALARM state when the metric is GreaterThanThreshold 65.0 for at least 1 of the last 1 period(s) of 300 seconds.

Monitored Metrics

- | | |
|---------------------|------------------------------------|
| - MetricNamespace: | AWS/EC2 |
| - MetricName: | CPUUtilization |
| - Dimensions: | [InstanceId = i-0ed995d3580fcce77] |
| - Period: | 300 seconds |
| - Statistic: | Average |
| - Unit: | not specified |
| - TreatMissingData: | missing |

State Change Actions

- OK
 - ALARM [arn:aws:sns:us-east-1:111952067877:Default_CloudWatch_Alarms_Topic]