

Assignment 6 :: Setting Up cloud Watch with SNS to control EC2 actions

Step 1: Create an instance and ensure its in running state

Instances (1/1) Info

Search

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elas
Assignment-6	i-09f96705b47c29207	Running	t2.micro	2/2 checks passed	No alarms	us-east-1c	ec2-3-213-86-69.comp...	3.213.86.69	3.21

Instance: i-09f96705b47c29207 (Assignment-6)

Details Security Networking Storage Status checks Monitoring Tags

▼ Instance summary Info

Instance ID i-09f96705b47c29207 (Assignment-6)	Public IPv4 address 3.213.86.69 open address	Private IPv4 addresses 172.31.0.193
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-3-213-86-69.compute-1.amazonaws.com open address
Hostname type IP name: ip-172-31-0-193.ec2.internal	Private IP DNS name (IPv4 only) ip-172-31-0-193.ec2.internal	Elastic IP addresses 3.213.86.69 [Public IP]
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more
Auto-assigned IP address -	VPC ID vpc-6fc80712	Auto Scaling Group name -
IAM Role -	Subnet ID subnet-091942112c13c5ea6 (default)	

▼ Instance details Info

3.213.86.69

Not secure | 3.213.86.69

GL Ericsson Public How To Set Up a Pri... Docker Hub

Hello World form ip-172-31-0-193.ec2.internal

Step 2 :: Create a SNS Topic as below

Amazon SNS > Topics > Create topic

Create topic

Details

Type [Info](#)
Topic type cannot be modified after topic is created

☐ FIFO (first-in, first-out)

- Strictly-preserved message ordering
- Exactly-once message delivery
- High throughput, up to 300 publishes/second
- Subscription protocols: SQS

☒ Standard

- Best-effort message ordering
- At-least once message delivery
- Highest throughput in publishes/second
- Subscription protocols: SQS, Lambda, HTTP, SMS, email, mobile application endpoints

Name

Assignment-6

Maximum 256 characters. Can include alphanumeric characters, hyphens (-) and underscores (_).

Display name - optional
To use this topic with SMS subscriptions, enter a display name. Only the first 10 characters are displayed in an SMS message. [Info](#)

Assignment-6

Maximum 100 characters.

Skip the rest and click “Create Topic”

Topic Assignment-6 created successfully.
You can create subscriptions and send messages to them from this topic.

Amazon SNS > Topics > Assignment-6

Assignment-6

Edit Delete Publish message

Details

Name	Assignment-6	Display name	Assignment-6
ARN	arn:aws:sns:us-east-1:271697867512:Assignment-6	Topic owner	271697867512
Type	Standard		

Subscriptions | Access policy | Delivery retry policy (HTTP/S) | Delivery status logging | Encryption | Tags

Subscriptions (0)

Edit Delete Request confirmation Confirm subscription Create subscription

Search

ID	Endpoint	Status	Protocol
No subscriptions found			

Step 3 :: Create a subscription for this topic as below

[Amazon SNS](#) > [Subscriptions](#) > Create subscription

Create subscription

Details

Topic ARN

Protocol

The type of endpoint to subscribe

Email

Endpoint

An email address that can receive notifications from Amazon SNS.

After your subscription is created, you must confirm it.

Info

Subscription filter policy - optional

This policy filters the messages that a subscriber receives. Info

Redrive policy (dead-letter queue) - optional

Send undeliverable messages to a dead-letter queue. Info

Cancel

Create subscription

[Amazon SNS](#) > [Topics](#) > [Assignment-6](#) > Subscription: 3276390e-1f62-43a6-9b8e-bd7706708020

Subscription: 3276390e-1f62-43a6-9b8e-bd7706708020

EditDelete

Details

ARN

arn:aws:sns:us-east-1:271697867512:Assignment-6:3276390e-1f62-43a6-9b8e-bd7706708020

Endpoint

hari.gopalakrishnan@globallogic.com

Topic

Assignment-6

Status

Pending confirmation

Protocol

EMAIL

AWS Notification - Subscription Confirmation



Assignment-6 <no-reply@sns.amazonaws.com>
To hari.gopalakrishnan@globallogic.com

You have chosen to subscribe to the topic:

arn:aws:sns:us-east-1:271697867512:Assignment-6

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](#)



Simple Notification Service

Subscription confirmed!

You have successfully subscribed.

Your subscription's id is:

arn:aws:sns:us-east-1:271697867512:Assignment-6:3276390e-1f62-43a6-9b8e-bd7706708020

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

Subscription: 3276390e-1f62-43a6-9b8e-bd7706708020

Edit

Delete

Details

ARN
arn:aws:sns:us-east-1:271697867512:Assignment-6:3276390e-1f62-43a6-9b8e-bd7706708020

Endpoint
hari.gopalakrishnan@globallogic.com

Topic
[Assignment-6](#)

Status
 Confirmed

Protocol
EMAIL

Step 4 :: Send a sample message to verify the subscription → Select “Publish message” and follow below screens

Amazon SNS > Topics > Assignment-6

Assignment-6

Edit Delete Publish message

Details

Name Assignment-6	Display name Assignment-6
ARN arn:aws:sns:us-east-1:271697867512:Assignment-6	Topic owner 271697867512
Type Standard	

Message details

Topic ARN
arn:aws:sns:us-east-1:271697867512:Assignment-6

Subject - *optional*

Test Mail

Maximum 100 printable ASCII characters

Time to Live (TTL) - *optional*
This setting applies only to mobile application endpoints. The number of seconds that the push notification service has to deliver the message to the endpoint. [Info](#)

Message body

Message structure



☒ Identical payload for all delivery protocols.
The same payload is sent to endpoints subscribed to the topic, regardless of their delivery protocol.

☐ Custom payload for each delivery protocol.
Different payloads are sent to endpoints subscribed to the topic, based on their delivery protocol.

Message body to send to the endpoint

1 Test Message

Test Mail

 Assignment-6 <no-reply@sns.amazonaws.com>
To:  hari.gopalakrishnan@globallogic.com

Test Message

--

If you wish to stop receiving notifications from this topic, please click or visit the link below to unsubscribe:
<https://sns.us-east-1.amazonaws.com/unsubscribe.html?SubscriptionArn=arn:aws:sns:us-east-1:271697867512:Assignment-6:3276390e-1f62-43a6-9b8e-bd7706708020&Endpoint=hari.gopalakrishnan@globallogic.com>

Please do not reply directly to this email. If you have any questions or comments regarding this email, please contact us at <https://aws.amazon.com/support>

Step 5 :: Create a Cloud Watch as below

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

Specify metric and conditions

Metric

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

Select metric

Cancel Next

Select metric

0 07:00 07:15 07:30 07:45 08:00 08:15 08:30 08:45 09:00 09:15 09:30 09:45

Browse Query Graphed metrics Options Source Add math Add query

Metrics (1,268)

Search for any metric, dimension or resource id

ApplicationELB 171	Auto Scaling 21	Billing 14	EBS 261
EC2 494	Firehose 2	Logs 5	NATGateway 36
Polly 3	Recognition 6	SNS 6	Transcribe 6

Cancel Select a single metric to continue

Select metric

0 07:00 07:15 07:30 07:45 08:00 08:15 08:30 08:45 09:00 09:15 09:30 09:45

Browse Query Graphed metrics Options Source Add math Add query

Metrics (494)

All > EC2 Search for any metric, dimension or resource id

By Auto Scaling Group 17	Per-Instance Metrics 477
--------------------------	---------------------------------

Cancel Select a single metric to continue

Select metric

07:0007:1507:3007:4508:0008:1508:3008:4509:0009:1509:3009:45

CPUUtilization

Browse

Query

Graphed metrics (1)

Options

Source

Add math

Add query

Metrics (477)

Graph with SQL

Graph search

All

EC2

Per-Instance Metrics

Search for any metric, dimension or resource id

Instance name (477)	Instanceld	Metric name
Assignment-6	i-09f96705b47c29207	StatusCheckFailed
Assignment-6	i-09f96705b47c29207	NetworkPacketsIn
Assignment-6	i-09f96705b47c29207	NetworkPacketsOut
Assignment-6	i-09f96705b47c29207	CPUUtilization
Assignment-6	i-09f96705b47c29207	NetworkIn
Assignment-6	i-09f96705b47c29207	NetworkOut

Cancel

Select metric

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

Specify metric and conditions

Metric

Edit

Graph

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

Percent

15

10

5

07:3008:3009:30

CPUUtilization

Namespace

AWS/EC2

Metric name

CPUUtilization

Instanceld

i-09f96705b47c29207

Instance name

Assignment-6

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.

15

Must be a number

▼ Additional configuration

Datapoints to alarm

Define the number of datapoints within the evaluation period that must be breaching to cause the alarm to go to ALARM state.

1

out of

1

Missing data treatment

How to treat missing data when evaluating the alarm.

Treat missing data as missing ▼

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

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

Send a notification to...



Assignment-6



Only email lists for this account are available.

Email (endpoints)

hari.gopalakrishnan@globallogic.com - [View in SNS Console](#)

Add notification

Auto Scaling action

Add Auto Scaling action

EC2 action

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.

Take the following action...

Define what will happen to the EC2 instance with the Instance ID i-09f96705b47c29207 when this alarm is triggered.

☐ Recover this instance

You can only recover certain EC2 instance types. [See documentation](#)

☒ Stop this instance

You can only stop an instance if it is backed by an EBS volume. AWS will use the existing Service Linked Role (AWSServiceRoleForCloudWatchEvents) to perform this action. [Show IAM policy document](#)

☐ Terminate this instance

You will not be able to terminate this instance if termination protection is enabled. AWS will use the existing Service Linked Role (AWSServiceRoleForCloudWatchEvents) to perform this action. [Show IAM policy document](#)

☐ Reboot this instance

An instance reboot is equivalent to an operating system reboot. AWS will use the existing Service Linked Role (AWSServiceRoleForCloudWatchEvents) to perform this action. [Show IAM policy document](#)

Add EC2 action

Systems Manager action [Info](#)

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

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

Alarm description - *optional*

Up to 1024 characters (48/1024)

Cancel Previous **Next**

Now preview the CloudWatch Alarm and click submit

Result ::

CloudWatch > Alarms

Alarms (1) ☐ Hide Auto Scaling alarms

<input type="checkbox"/>	Name	State	Last state update	Conditions	Actions
<input type="checkbox"/>	CPU_utilization	⚠ In alarm	2022-06-23 15:38:36	CPUUtilization < 15 for 1 datapoints within 1 minute	✅ Actions enabled

Instances (1)

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elas
<input type="checkbox"/>	Assignment-6	i-09f96705b47c29207	⏸ Stopped	t2.micro	-	⚠ 1/1 in al +	us-east-1c	ec2-3-213-86-69.comp...	3.213.86.69	3.2

ALARM: "CPU_utilization" in US East (N. Virginia)

Assignment-6 <no-reply@sns.amazonaws.com>
To: hani.gopalakrishnan@globallogic.com

datapoint for OK -> ALARM transition." at "Thursday 23 June, 2022 10:08:36 UTC".

View this alarm in the AWS Management Console:
https://us-east-1.console.aws.amazon.com/cloudwatch/deeplink.js?region=us-east-1&alarms%2Falarm%2FCPU_utilization

Alarm Details:

- Name: CPU_utilization
- Description: Triggers alarm when cpu utilization is below 15%
- State Change: INSUFFICIENT_DATA -> ALARM
- Reason for State Change: Threshold Crossed: 1 out of the last 1 datapoints [0.268549754736593 (23/06/22 10:03:00)] was less than the threshold (15.0) (minimum 1 datapoint for OK -> ALARM transition).
- Timestamp: Thursday 23 June, 2022 10:08:36 UTC
- AWS Account: 271697867512
- Alarm Arn: arn:aws:cloudwatch:us-east-1:271697867512:alarm:CPU_utilization

Threshold:

- The alarm is in the ALARM state when the metric is LessThanThreshold 15.0 for at least 1 of the last 1 period(s) of 60 seconds.

Monitored Metric:

- MetricNamespace: AWS/EC2
- MetricName: CPUUtilization
- Dimensions: [InstanceId = i-09f96705b47c29207]
- Period: 60 seconds
- Statistic: Average
- Unit: not specified
- TreatMissingData: missing

State Change Actions:

- OK: [arn:aws:aws-us-east-1:271697867512:action/actions/AWS_EC2_InstanceID_Stop/1.0] [arn:aws:sns:us-east-1:271697867512:Assignment-6]
- INSUFFICIENT_DATA:

...
If you wish to stop receiving notifications from this topic, please click or visit the link below to unsubscribe:
<https://us-east-1.amazonaws.com/unsubscribe.html?subscriptionId=arn:aws:sns:us-east-1:271697867512:Assignment-6:3276390e-1892-43a6-9b8e-bd7706298008&tokenpoint=chari.gopalakrishnan@globallogic.com>

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