1. Monitor Your Estimated Charges Using CloudWatch
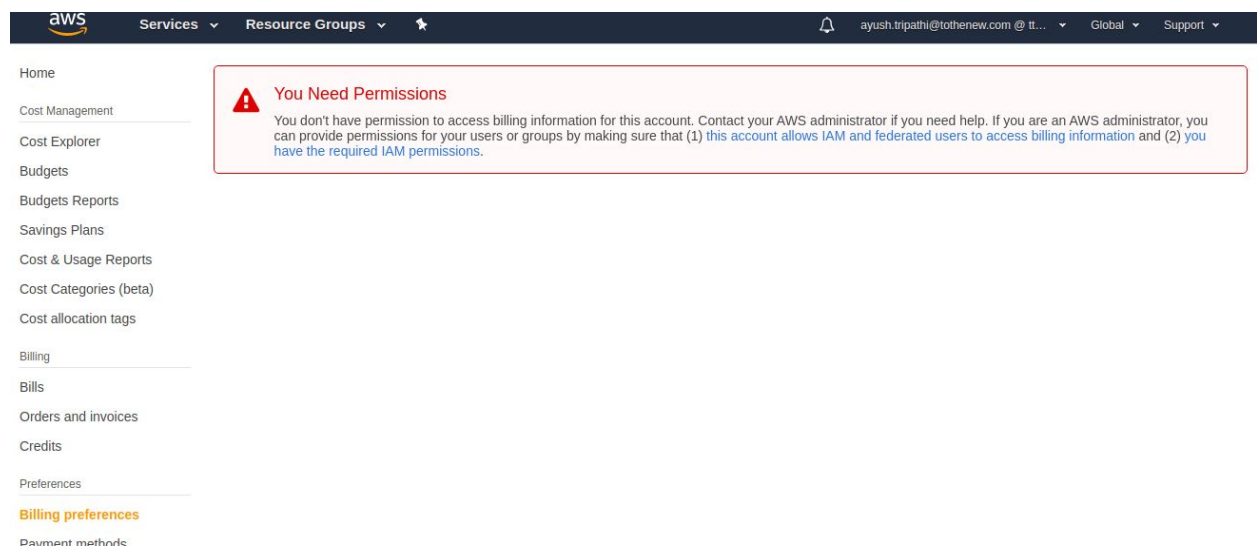
    Step 1: Enable Billing Alerts

    Step 2: Create a Billing Alarm

    Step 3: Check the Alarm Status

    Step 4: Create & Subscribe to SNS Topic

    Step 5: Send a notification all the stakeholder, if AWS resource pricing reaches the threshold value.

2. Create a custom Memory metric in CloudWatch and set up alarm at 80 % which will autoscale the instance in the autoscaling group.

Summary

Role ARN	arn:aws:iam::187632318301:role/EC2AccessToCloudwatch
Role description	Allows EC2 instances to call AWS services on your behalf. | Edit
Instance Profile ARNs	arn:aws:iam::187632318301:instance-profile/EC2AccessToCloudwatch
Path	/
Creation time	2020-03-01 19:07 UTC+0530
Last activity	Not accessed in the tracking period
Maximum CLI/API session duration	1 hour Edit

Permissions | Trust relationships | Tags (2) | Access Advisor | Revoke sessions

▼ Permissions policies (1 policy applied)

Attach policies

⊕ Add inline policy

Policy name ▼	Policy type ▼	
▶ 📦 CloudWatchFullAccess	AWS managed policy	✖

Attach/Replace IAM Role

Select an IAM role to attach to your instance. If you don't have any IAM roles, choose Create new IAM role to create a role in the IAM console.
If an IAM role is already attached to your instance, the IAM role you choose will replace the existing role.

Instance ID i-0ba25c512bf099848 (nginx-ALB-2) ⓘ

IAM role* EC2AccessToCloudwatch ▼ ⟳ Create new IAM role ⓘ

* Required

```
#START OF SCRIPT

MEMFREE=$(egrep -o "MemFree:\s*([0-9]*)" /proc/meminfo | egrep -o "[0-9]*")

BUFFERS=$(egrep -o "Buffers:\s*([0-9]*)" /proc/meminfo | egrep -o "[0-9]*")

CACHED=$(egrep -o "\bCached:\s*([0-9]*)" /proc/meminfo | egrep -o "[0-9]*")

echo $MEMFREE

echo $BUFFERS

echo $CACHED

FREEMEM=`expr $MEMFREE + $BUFFERS + $CACHED`

echo $FREEMEM

/usr/bin/aws cloudwatch put-metric-data --namespace "ayush-mem-NS" --metric-name "FREE-RAM-ayush" -
-value $FREEMEM --region us-east-1

#END OF SCRIPT
~
~
```

```
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
* * * * * ./script.sh
```

All metrics	Graphed metrics (1)	Graph options	Source

Q Search for any metric, dimension or resource id

23,164 Metrics

▼ — Custom Namespaces

ayush-mem-NS

1 Metric

▼ — AWS Namespaces

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.

No unit

850k

840k

830k

820k

11:30   12:30   13:30

● FREE-RAM-ayush

Namespace
ayush-mem-NS

Metric name
FREE-RAM-ayush

Statistic
Q Average   ✕

Period
5 minutes   ▼

Conditions

Threshold type

○ **Static**
Use a value as a threshold

○ **Anomaly detection**
Use a band as a threshold

Whenever FREE-RAM-ayush is...
Define the alarm condition.

● **Greater**
> threshold

○ **Greater/Equal**
>= threshold

○ **Lower/Equal**
<= threshold

○ **Lower**
< threshold

than...
Define the threshold value.

```
819200
```

Must be a number

▶ **Additional configuration**

Cancel   **Next**

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.

Select an 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

Send a notification to...

🔍 ayush-asg-wp   ✕

Only email lists for this account are available.

Email (endpoints)

ayush.tripathi@tothenew.com - View in SNS Console ↗

Auto Scaling 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.

Resource type
Select a resource type.

- ● EC2 Auto Scaling group
- ○ ECS Service

Select a group

| aws-SG | ▼ |

Only Auto Scaling groups with a simple scaling or step scaling policy in this account are available.

Take the following action...

| Increase Group Size (No change) | ▼ |

Only actions for the selected Auto Scaling group are available.

Alarms (55)

☐ Hide Auto Scaling alarms   **Clear selection**   ⟳   **Actions ▼**   **Create**

| 🔍 mem | ✕ | Any state ▼ | ‹ 1 |

☐	Name	▽	State	▽	Conditions
☐	mem-ec2-alarm		⚠ In alarm		FREE-RAM-ayush > 819200 for 1 datapoints within 5 minutes

Create Scaling policy

Name: >80%

Execute policy when: mem-ec2-alarm ▾ C Create new alarm

breaches the alarm threshold: FREE-RAM-ayush > 819200 for 300 seconds
for the metric dimensions

Take the action: Add ▾ 1 capacity units ▾

And then wait: 300 seconds before allowing another scaling activity

Create a target tracking scaling policy ⓘ
Create a scaling policy with steps ⓘ

Refrence:

https://cloudkul.com/blog/create-custom-metrics-aws-cloudwatch/

3. Create SNS topic, subscribe to a topic, publish message, unsubscribe the message and delete the topic.

ayush-sns

| Edit | Delete | Publish message |

Details

Name	Display name
ayush-sns	SNS-ayush
ARN	Topic owner
arn:aws:sns:us-east-1:187632318301:ayush-sns	187632318301

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

Create subscription

Details

Topic ARN

🔍 arn:aws:sns:us-east-1:187632318301:ayush ✕

Protocol
The type of endpoint to subscribe

Email ▼

Endpoint
An email address that can receive notifications from Amazon SNS.

ayush.tripathi@tothenew.com

ⓘ After your subscription is created, you must confirm it. **Info**

AWS Notification - Subscription Confirmation

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

to me ▾

You have chosen to subscribe to the topic:
arn:aws:sns:us-east-1:187632318301:ayush-asg-wp

To confirm this subscription, click or visit the link below (If this was in error no action is n
Confirm subscription

Please do not reply directly to this email. If you wish to remove yourself from receiving all future SNS subs

amazon
web services™

Simple Notification Service

Subscription confirmed!

You have subscribed ayush.tripathi@tothenew.com to the topic:
ayush-asg-wp.

Your subscription's id is:
arn:aws:sns:us-east-1:187632318301:ayush-asg-wp:84e57310-00d6-449a-
888e-4ef61a982ac6

If it was not your intention to subscribe, click here to unsubscribe.

Publish message to topic

Message details

Topic ARN

arn:aws:sns:us-east-1:187632318301:ayush-sns

Subject - *optional*

test message

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

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 this is the test message for SNS
```

⊘ **Message published to topic ayush-sns successfully.**
Message "ID": 0ba46804-ff30-5300-a36d-3ed1356e0d22

Amazon SNS > Topics > ayush-sns

ayush-sns

4. Send a sample mail using SES.

Verify a New Email Address   ✕

⚠️ User: arn:aws:iam::187632318301:user/ayush.tripathi@tothenew.com is not authorized to perform: ses:VerifyEmailIdentity (Request ID: f05c9fe1-8403-45e7-9d43-4185b6ce9776)

To verify a new email address, enter it below and click the **Verify This Email Address** button. A verification email will be sent to the email address you entered.

Email Address: ayush.me001@gmail.com

Cancel   **Verify This Email Address**