

## ## Create a CPU utilization matrix for an EC2 instance on CloudWatch: -

- Created a EC2 instance: -

EC2 > Instances > i-00562b656a8e4eaa9

**Instance summary for i-00562b656a8e4eaa9 (MJ-EC2-01)** Info [Refresh](#) [Connect](#) Instance state [Instance state](#) Actions [Actions](#)

Updated less than a minute ago

Instance ID i-00562b656a8e4eaa9 (MJ-EC2-01)	Public IPv4 address -	Private IPv4 addresses 172.31.16.249
IPv6 address -	Instance state Pending	Public IPv4 DNS -
Hostname type IP name: ip-172-31-16-249.us-east-2.compute.internal	Private IP DNS name (IPv4 only) ip-172-31-16-249.us-east-2.compute.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. <a href="#">Learn more</a>
Auto-assigned IP address -	VPC ID vpc-08de588c82431b93e	Auto Scaling Group name -
IAM Role MIHIR	Subnet ID subnet-02c188ae9eff5c4e1	

- Search an instance in metrics select CPU utilization of that instance: -

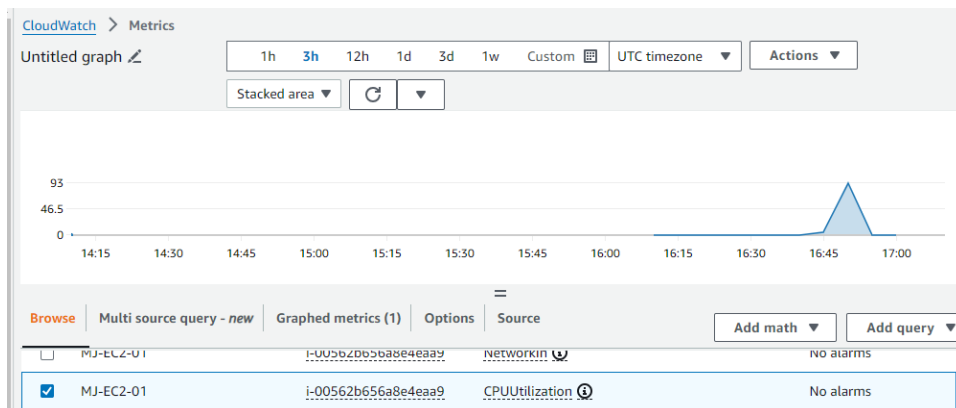
CloudWatch > Metrics

Untitled graph [Link](#) 1h 3h 12h 1d 3d 1w Custom [UTC timezone](#) Actions [Actions](#)

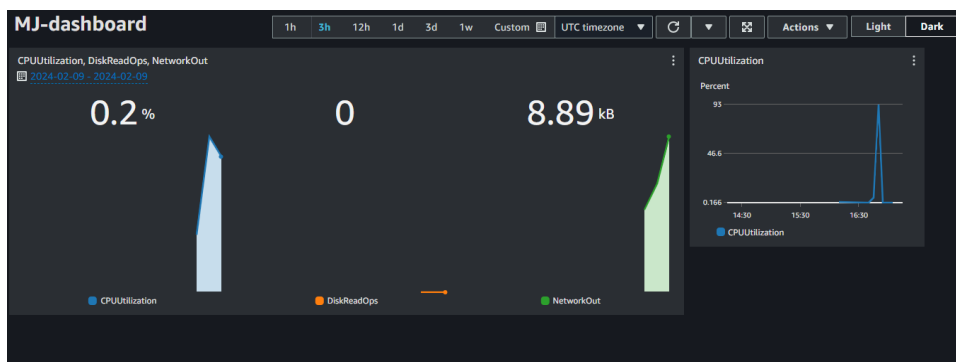
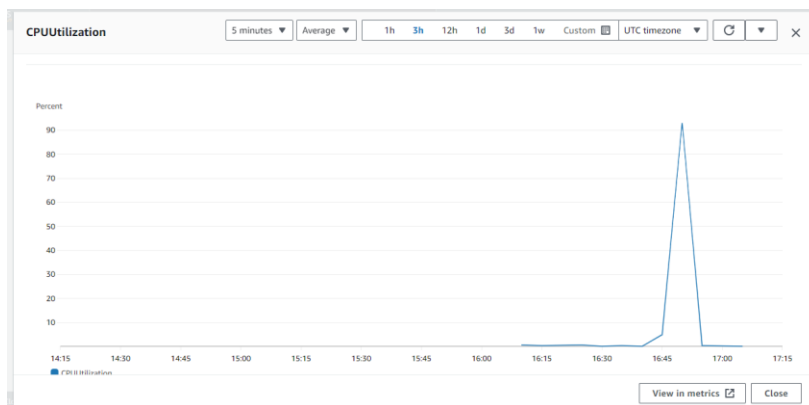
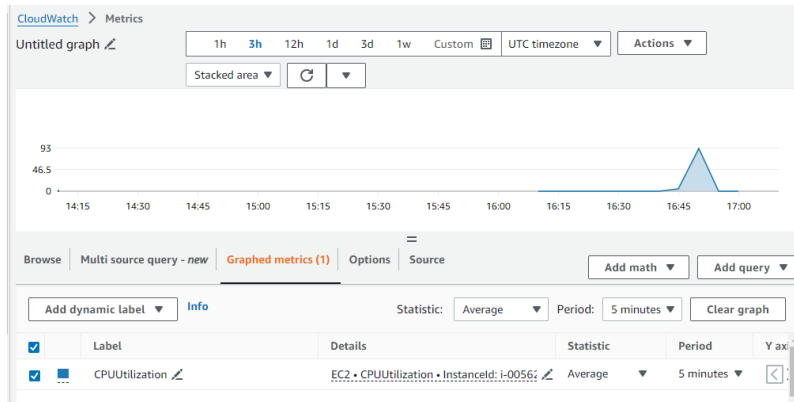
Line [Refresh](#) [Dropdown](#)

**Browse** Multi source query - new Graphed metrics (0/1) Options Source [Add math](#) [Add query](#)

<input type="checkbox"/>	MJ-EC2-01	i-00562b656a8e4eaa9	NetworkOut	No alarms
<input type="checkbox"/>	MJ-EC2-01	i-00562b656a8e4eaa9	NetworkPacketsIn	No alarms
<input type="checkbox"/>	MJ-EC2-01	i-00562b656a8e4eaa9	DiskWriteOps	No alarms
<input type="checkbox"/>	MJ-EC2-01	i-00562b656a8e4eaa9	NetworkIn	No alarms
<input checked="" type="checkbox"/>	MJ-EC2-01	i-00562b656a8e4eaa9	CPUUtilization	No alarms
<input type="checkbox"/>	MJ-EC2-01	i-00562b656a8e4eaa9	DiskReadBytes	No alarms
<input type="checkbox"/>	MJ-EC2-01	i-00562b656a8e4eaa9	DiskWriteBytes	No alarms



- Created a dashboard for this: -



CloudWatch > Dashboards

Custom dashboards Automatic dashboards

CAUTION: We recommend that you share dashboards publicly only if your account does not contain sensitive information, as this will provide anyone with a link to the dashboard with access to all CloudWatch metrics, alarms, Contributor Insights rules and the names and tags of all EC2 instances in the account, even if they are not shown in the Dashboard which you share.

Custom Dashboards (1) Info

Share dashboard Delete Create dashboard

Filter dashboards

Name	Sharing	Favorite	Last update (UTC)
MJ-dashboard	Publicly shared	☆	2024-02-09 17:08

- Created an Alarm with notification (email –id): -

-> using simple notification service :-

The image shows two screenshots from the AWS management console. The top screenshot is from the Amazon SNS console, displaying a new subscription for the topic 'mihir'. The subscription ID is '61a294ab-0081-4cf5-a380-245368b69ab5'. The endpoint is 'jainsuresh713@gmail.com'. The status is 'Confirmed'. The bottom screenshot is from the AWS CloudWatch Alarms console, showing a list of alarms. One alarm, 'alarm-cpu-util', is in the 'OK' state. Its condition is 'CPUUtilization >= 70 for 1 datapoints within 5 minutes'. The last state update was on 2024-02-09 at 17:06:38.

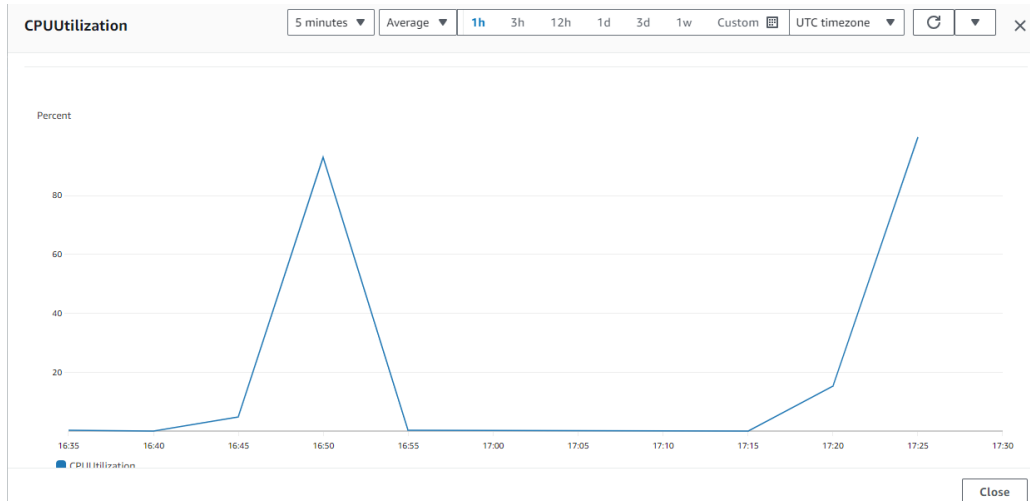
- Tested the alarm: -

Command: - yes > /dev/null & -> (for stressing the CPU for testing)

```
ubuntu@ip-172-31-16-249:~$ yes > /dev/null &
[1] 853
ubuntu@ip-172-31-16-249:~$ top
top - 17:28:33 up 29 min, 1 user, load average: 0.28, 0.07, 0.02
Tasks: 97 total, 2 running, 95 sleeping, 0 stopped, 0 zombie
%Cpu(s): 63.8 us, 36.2 sy, 0.0 ni, 0.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 949.7 total, 430.8 free, 186.9 used, 332.0 buff/cache
MiB Swap: 0.0 total, 0.0 free, 0.0 used. 607.6 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM    TIME+  COMMAND
  853 ubuntu    20   0   6188   1920   1920  R  99.9   0.2   0:18.70  yes
```

- So, the limit is meet with threshold and I set the threshold value of the CPU utilization is 70 percent then alarm stop the instance: -



- Then alarm get notified me on email: -

2 of 23,291

ALARM: "alarm-cpu-util" in US East (Ohio) Inbox x

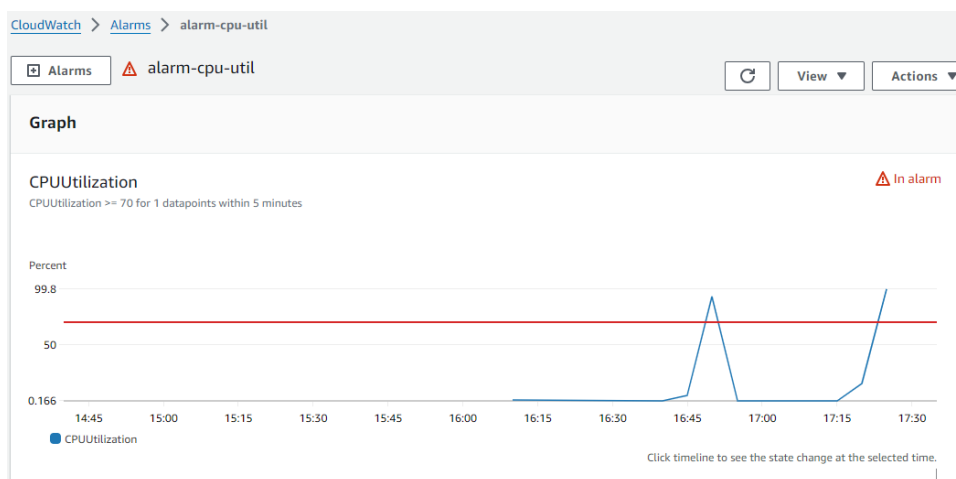
**AWS Notifications** <no-reply@sns.amazonaws.com> 23:04 (4 minutes ago) ☆ ☺ ↶ ⋮

You are receiving this email because your Amazon CloudWatch Alarm "alarm-cpu-util" in the US East (Ohio) region has entered the ALARM state, because "Threshold Crossed: 1 out of the last 1 datapoints [99.7666666666667 (09/02/24 17:29:00)] was greater than or equal to the threshold (70.0) (minimum 1 datapoint for OK -> ALARM transition)." at "Friday 09 February, 2024 17:34:38 UTC".

View this alarm in the AWS Management Console:  
<https://us-east-2.console.aws.amazon.com/cloudwatch/deeplink.js?region=us-east-2#alarmsV2:alarm/alarm-cpu-util>

Alarm Details:

- Name: alarm-cpu-util
- Description:
- State Change: OK -> ALARM
- Reason for State Change: Threshold Crossed: 1 out of the last 1 datapoints [99.7666666666667 (09/02/24 17:29:00)] was greater than or equal to the threshold (70.0) (minimum 1 datapoint for OK -> ALARM transition)
- Timestamp: Friday 09 February, 2024 17:34:38 UTC
- AWS Account: 975050349146
- Alarm Arn: arn:aws:cloudwatch:us-east-2:975050349146:alarm:alarm-cpu-util



- So, the instance will Stop: -

Instances (3) Info

↺

Connect

Instance state ▾

Actions ▾

Launch instances

▼

Q Find Instance by attribute or tag (case-sensitive)

Any state ▾

< 1 > ⚙

<input type="checkbox"/>	Name <div>✎</div> ▾	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm status	Availability
<input type="checkbox"/>	MJ-EC2-01	<a href="#">i-00562b656a8e4eaa9</a>	<div>⏻ Stopped</div> <div>🔍</div> <div>🔍</div>	t2.micro	-	<div>⚠ 1 in al... +</div>	us-east-2b