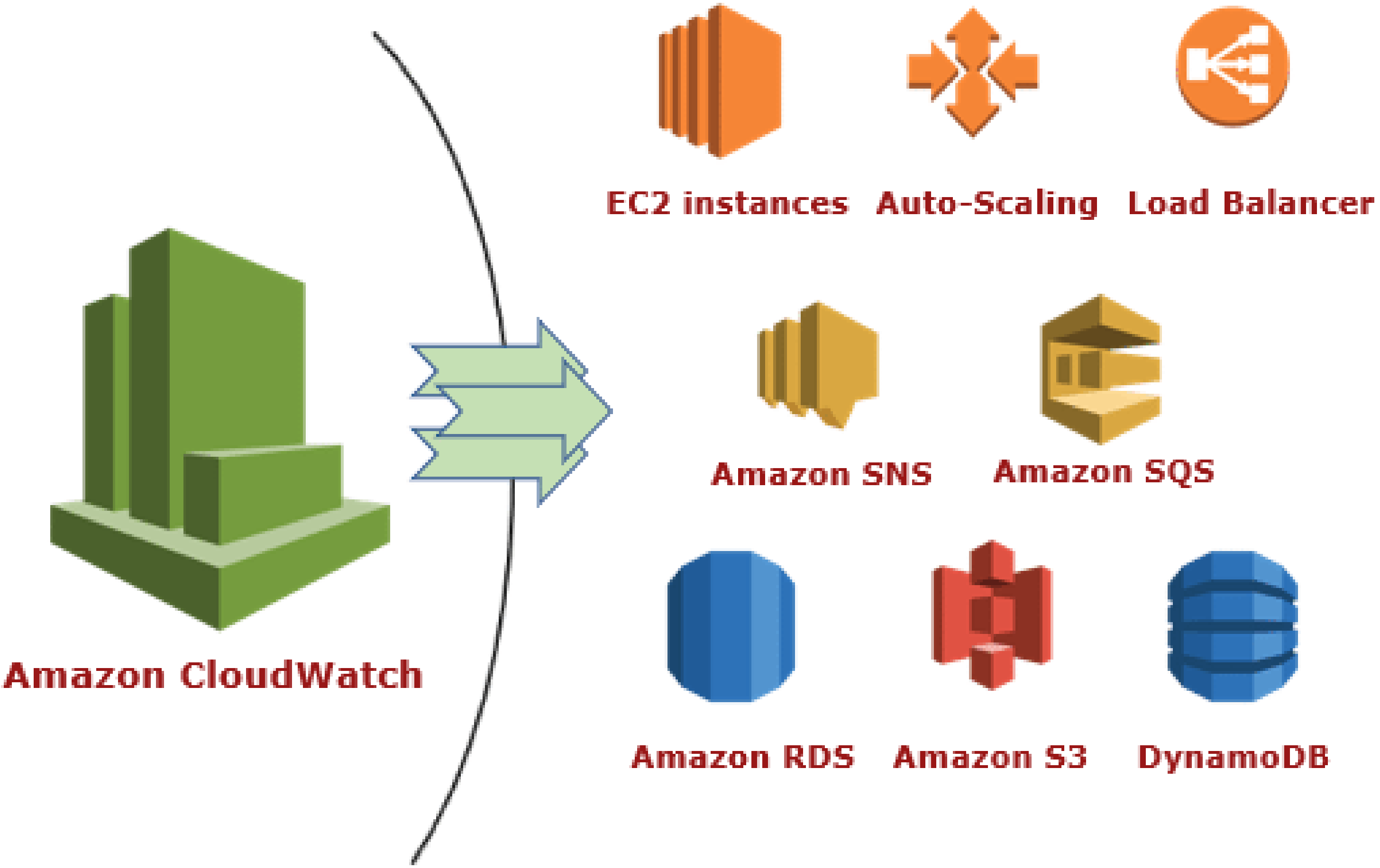
Amazon Cloudwatch

Cloudwatch

- Amazon CloudWatch is the component of Amazon Web Services that provides real-time monitoring of AWS resources and customer applications running on Amazon infrastructure.

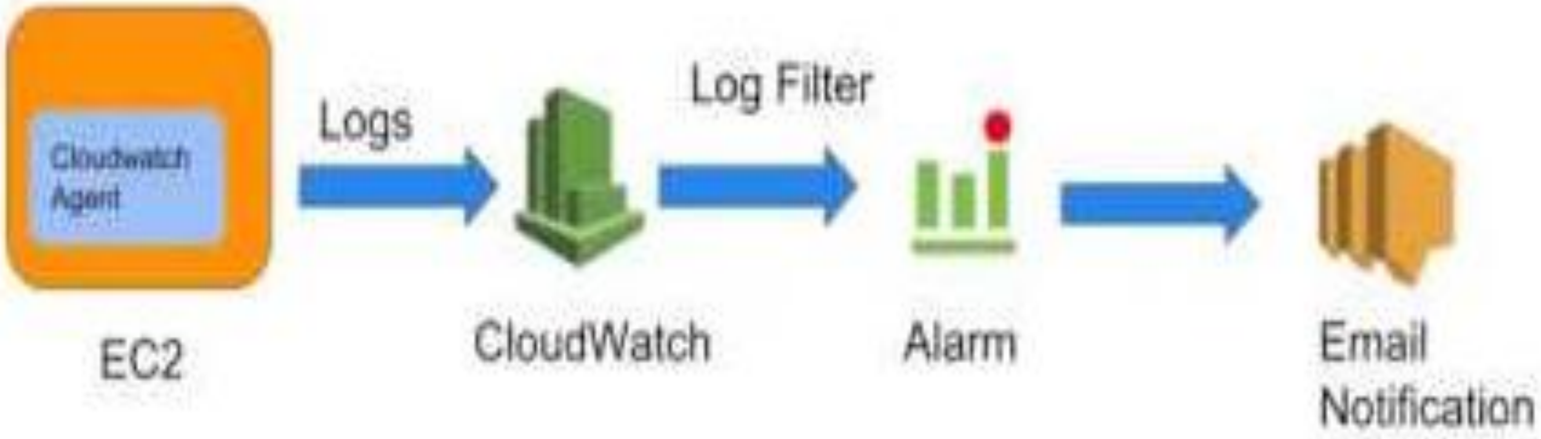
- Amazon CloudWatch allows developers, system architects, and administrators to monitor their AWS applications in the cloud, in near-real-time. CloudWatch is automatically configured to provide metrics on request counts, latency, and CPU usage. Users also can send their own logs and custom metrics to CloudWatch for monitoring.

- The data and reports CloudWatch provides lets users keep track of application performance, resource use, operational issues, and constraints. This helps organizations resolve technical issues and streamline operations.



Resources Monitored By CloudWatch

Stream EC2 logs to CloudWatch and Create Alarm based on Log message



Monitoring AWS Resources With CloudWatch

Amazon CloudWatch is configured out-of-the-box to integrate with EC2, offering two levels of monitoring capabilities:

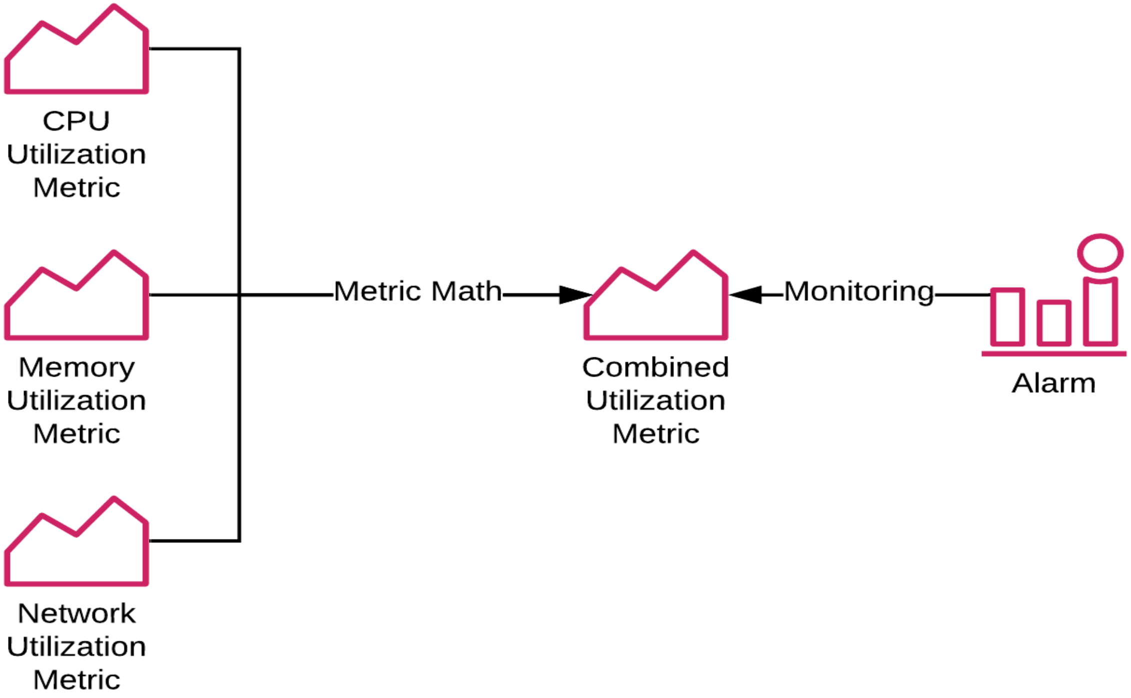
- **Basic monitoring**, which requires no additional fee, includes seven pre-selected metrics and three status-check metrics, produced at five-minute and one-minute intervals, respectively.
- **Detailed monitoring**, which comes at an additional charge, increases the frequency of all metrics to one-minute intervals.

Additional AWS services that CloudWatch can monitor automatically include the following:

- **EBS**: Monitors read/write latency and similar measurements.
- **RDS database instances**: Monitors metrics such as storage space and freeable memory.
- **SQS Queues**: Monitors messages sent, messages received, and other key metrics.
- **SNS Topics**: Monitors common metrics like number of published and delivered messages.

Does CloudWatch Charge for All Monitoring

Amazon CloudWatch offers Basic Monitoring at no cost for EC2 instances. Data included in Basic monitoring includes CPU load, disk I/O, and network I/O metrics which is collected in five minute intervals with two week storage.


CPU Utilization Metric
Memory Utilization Metric
Network Utilization Metric
Metric Math
Combined Utilization Metric
Monitoring
Alarm

Cloudwatch Lab

1) Configure Cloudwatch alert to get notification for each and every activity of EC2 console.

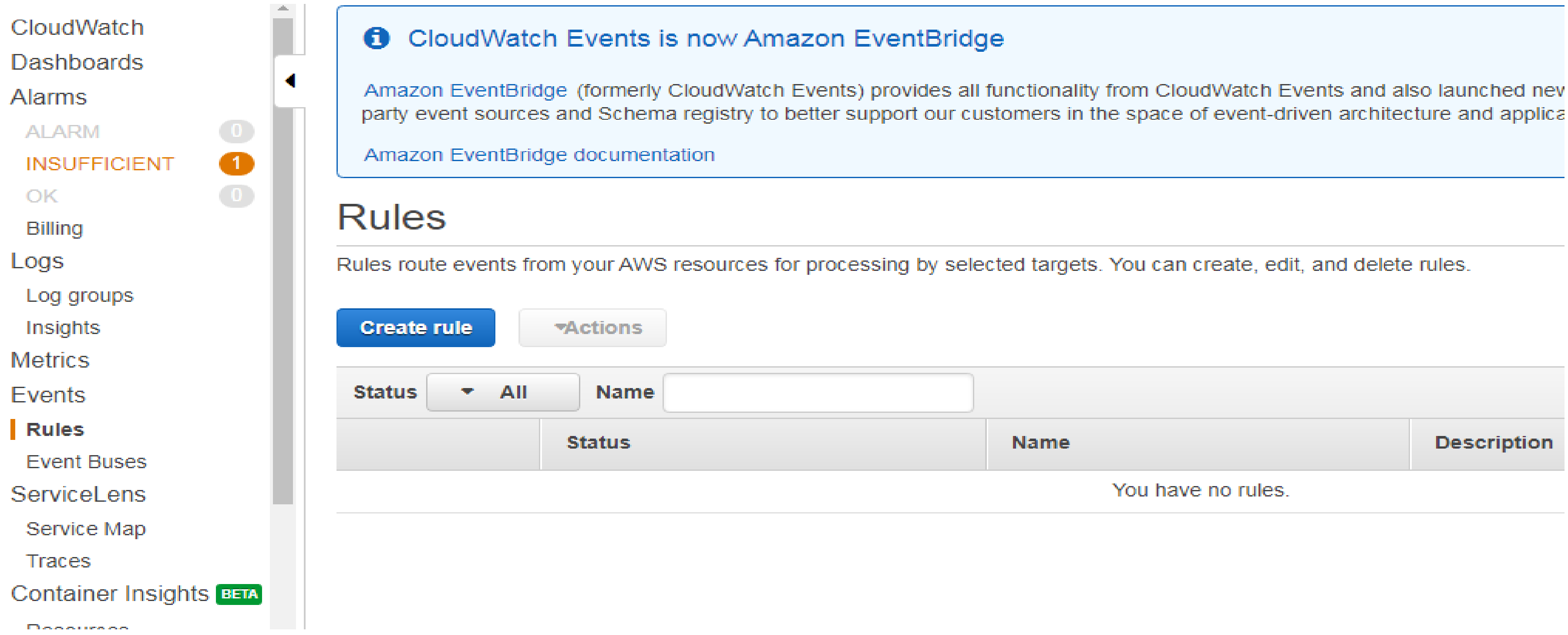
2) Configure Cloudwatch alarm to stop the instance in case cpu utilization cross 80% of the usage

3) Create a metric graph to monitor CPU utilisation of webserver instance.

4) Create a metric graph to monitor Network in out utilisation of ftp instance.

1) Configure Cloudwatch alert to get notification for each and every activity of EC2 console.

Ans: Open Services--Cloudwatch –Rule –create rule—Event pattern---Service name: EC2 –Event Type: All events– Add target—SNS topic –Select SNS created topic name –configure detail –give rule name --create



CloudWatch Events is now Amazon EventBridge

Amazon EventBridge (formerly CloudWatch Events) provides all functionality from CloudWatch Events and also launched new party event sources and Schema registry to better support our customers in the space of event-driven architecture and applica

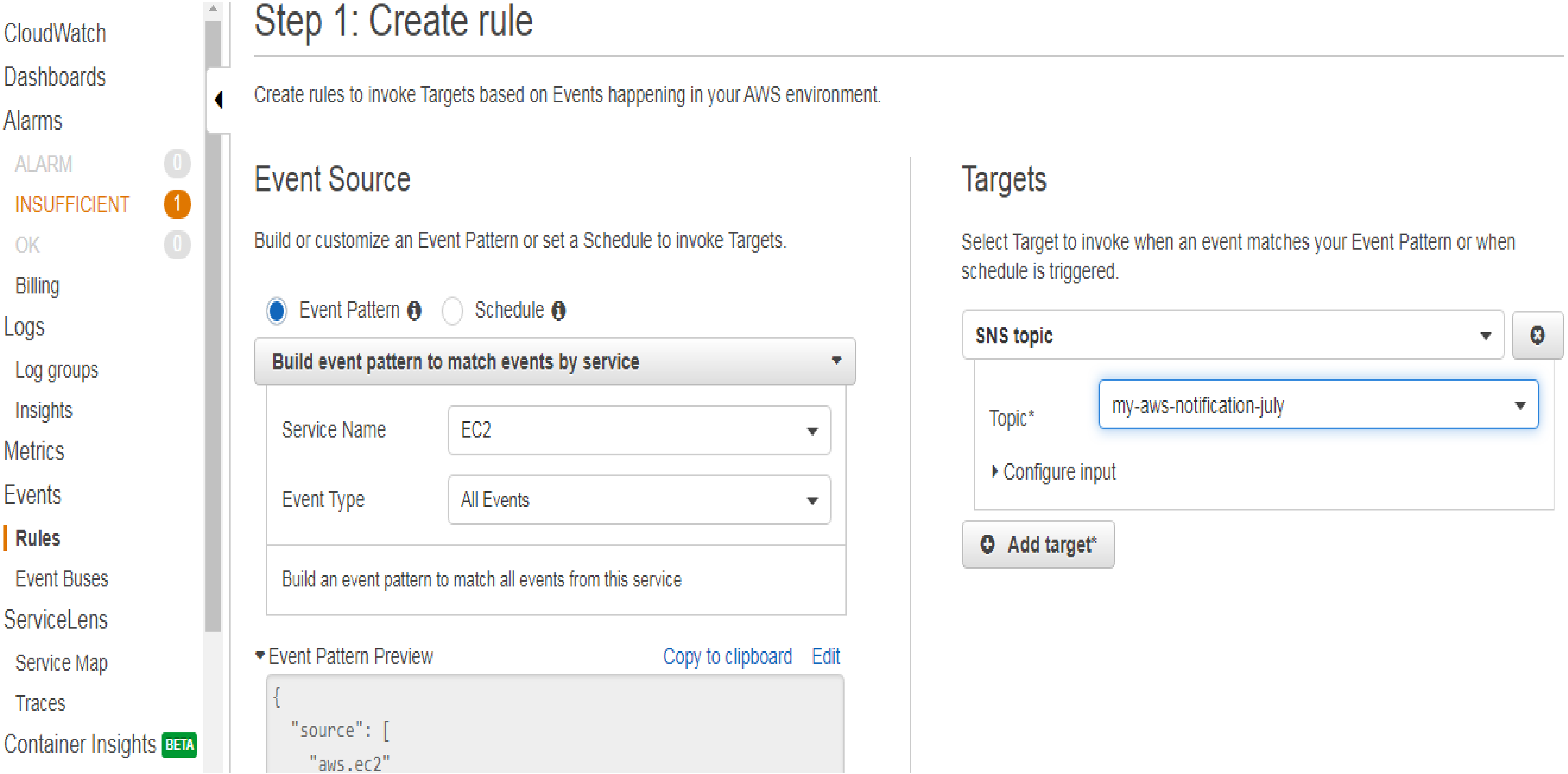
Amazon EventBridge documentation

Rules

Rules route events from your AWS resources for processing by selected targets. You can create, edit, and delete rules.

	Status	Name	Description

You have no rules.



Step 1: Create rule

Create rules to invoke Targets based on Events happening in your AWS environment.

Event Source

Build or customize an Event Pattern or set a Schedule to invoke Targets.

● Event Pattern ○ Schedule

Build event pattern to match events by service

Service Name: EC2

Event Type: All Events

Build an event pattern to match all events from this service

Event Pattern Preview

```
{
  "source": [
    "aws.ec2"
```

Targets

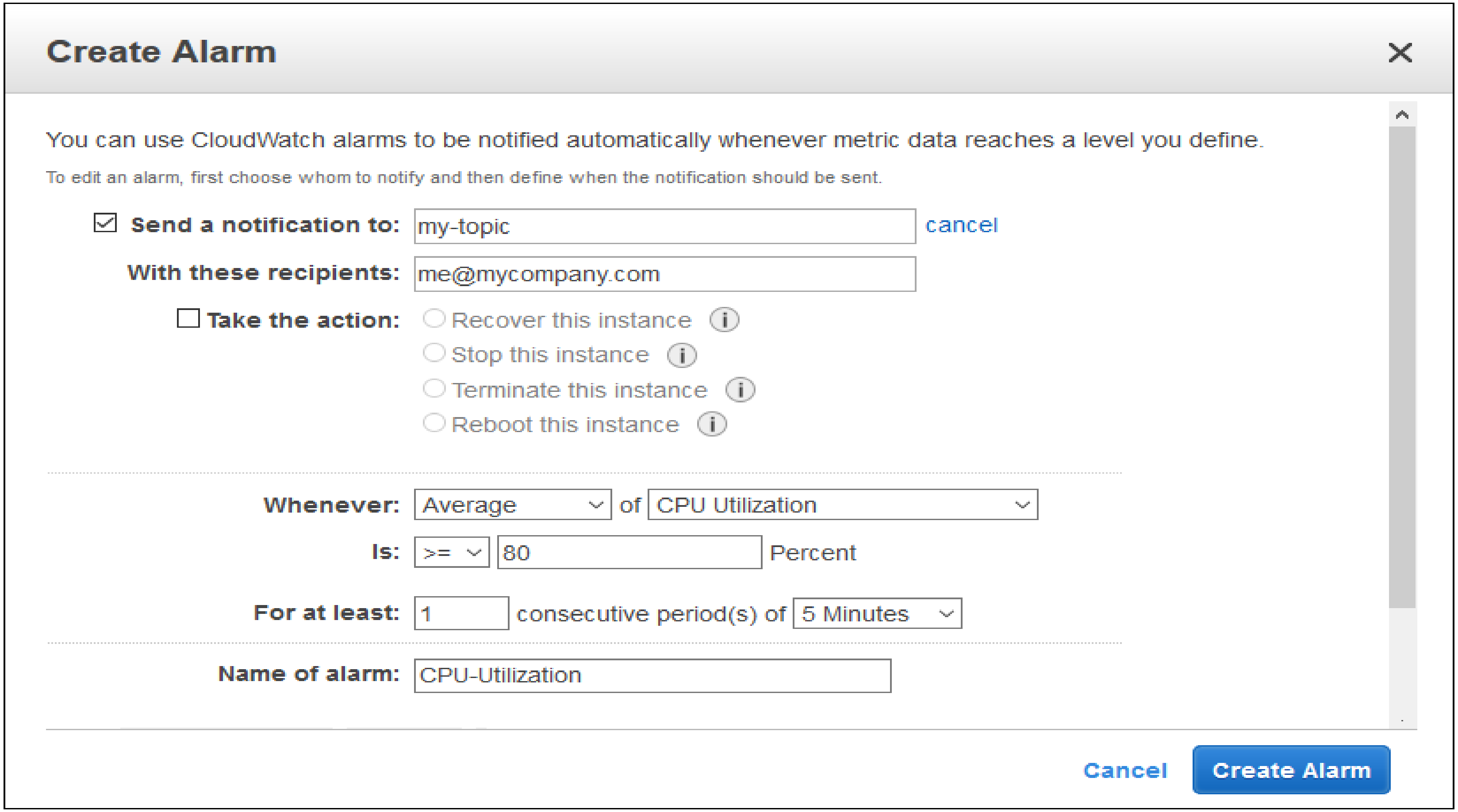
Select Target to invoke when an event matches your Event Pattern or when schedule is triggered.

SNS topic

Topic*: my-aws-notification-july

2) To stop the instance in case cpu utilization cross 80% of the usage.

Ans: Launch one Instance----click on alarm – and fill the detail—SNS topic –action—stop the instance –set cpu value –80%



Create Alarm

You can use CloudWatch alarms to be notified automatically whenever metric data reaches a level you define.

To edit an alarm, first choose whom to notify and then define when the notification should be sent.

☑ **Send a notification to:** my-topic cancel

With these recipients: me@mycompany.com

□ **Take the action:**
- ○ Recover this instance
- ○ Stop this instance
- ○ Terminate this instance
- ○ Reboot this instance

Whenever: Average of CPU Utilization

Is: >= 80 Percent

For at least: 1 consecutive period(s) of 5 Minutes

Name of alarm: CPU-Utilization

How to increase CPU load manually ?

- **Open Linux Instance**

```
# sudo su
# top
%cpu = 0
# yes >/dev/null  &
# top
%cpu = 99
```

How to decrease cpu load manually ?

Ans:

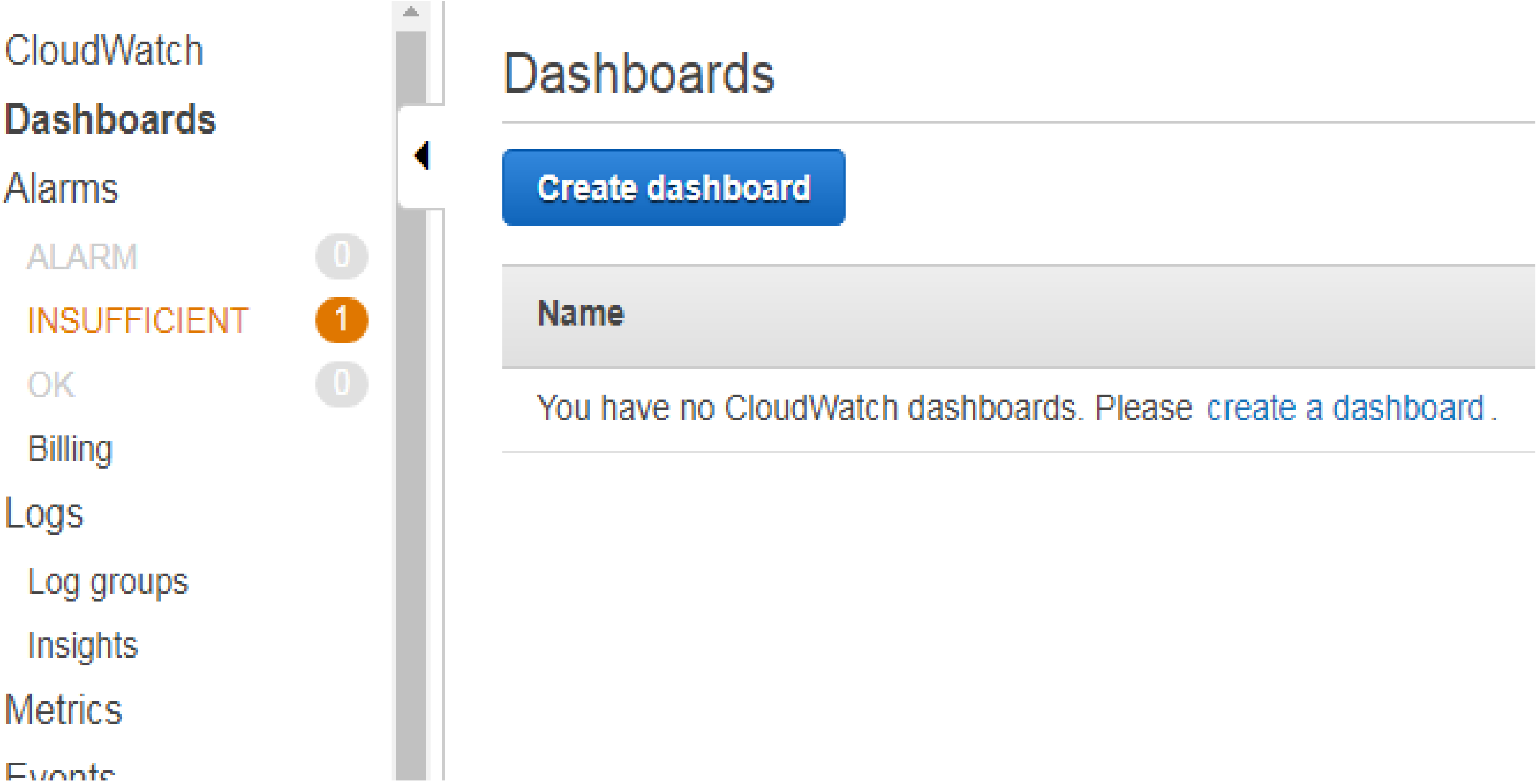
```
# top
%cpu = 99
```

check th pip consuming more cpu usage (eg : 3147)

```
# kill  -9  3147
```

3) Create a metric graph to monitor CPU utilisation of webserver instance.

Ans: Launch One Instance – Open Cloudwatch –Dashboard—Create dashboard --

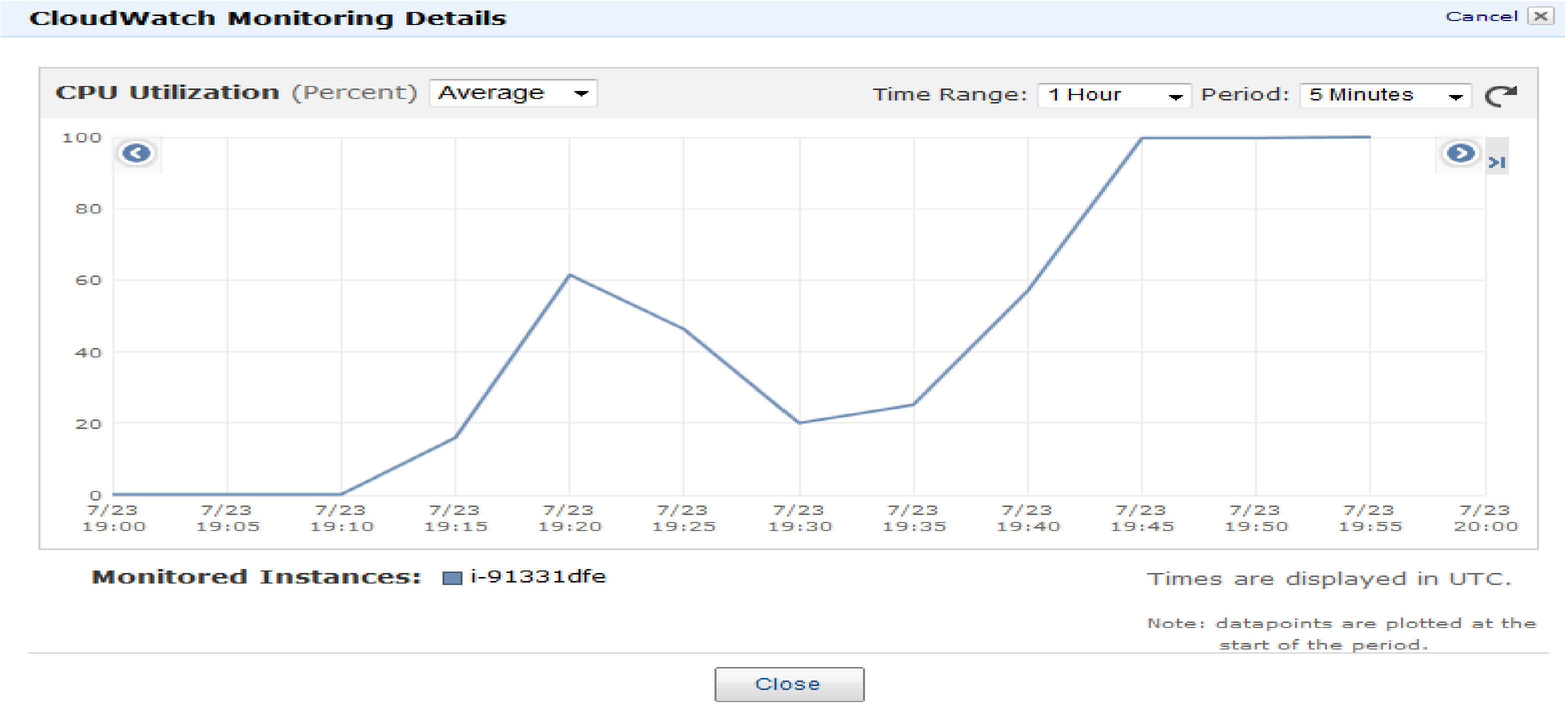


You have no CloudWatch dashboards. Please create a dashboard .

Cloudwatch Lab

3) Create a metric graph to monitor CPU utilisation of webserver instance.

Ans: Now give dashboard name—create dashboard—select line metric –configure—select EC2—Per Instance metric – select the required instance with cpu utilisation metric –create widget



CloudWatch Monitoring Details

CPU Utilization (Percent) Average

Time Range: 1 Hour

Period: 5 Minutes

Monitored Instances: ▨ i-91331dfe

Times are displayed in UTC.

Note: datapoints are plotted at the start of the period.