CODTECH INTERNSHIP – Cloud Computing
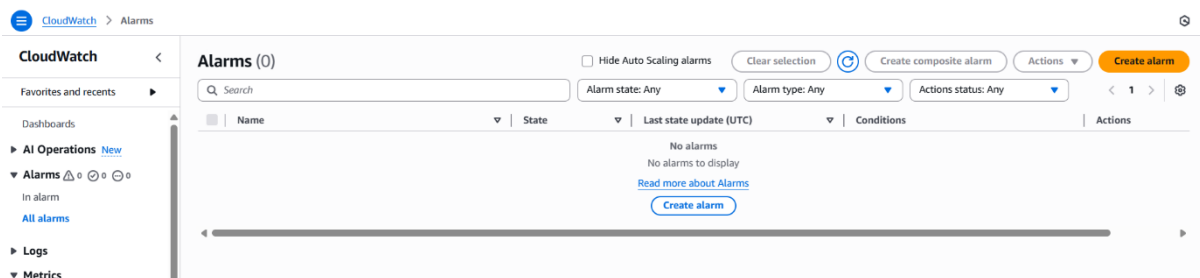
Task-2 : Cloud Monitoring and Alerts

SET UP MONITORING FOR A CLOUD BASED APPLICATION USING AWS CLOUDWATCH, GOOGLE CLOUD MONITORING, OR AZURE MONITOR

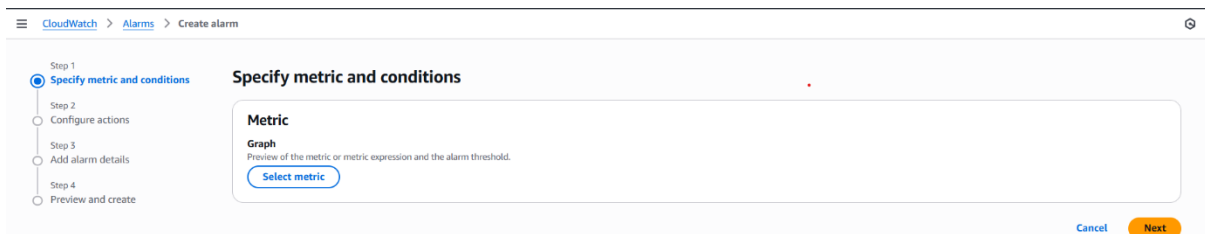DELIVERABLE: CONFIGURED ALERTS AND A DASHBOARD SHOWCASING METRICS

Steps to Complete Task:

Creating an alert using email notification

Go to AWS and search Cloudwatch → Go to Alarm → Click on Create Alarm

Select metric → Go to Browse → Select EC2 → Select Per-Instance Metrics → Select any Instance with CPU Utilization → Select Metric.
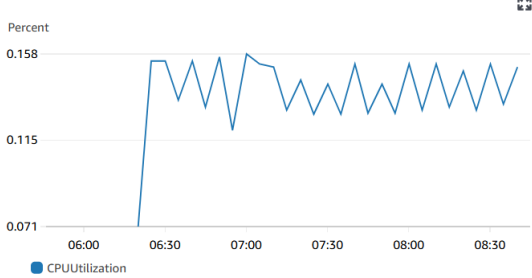
Specify metric and conditions

Metric

Edit

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

Percent

```
0.158
0.115
0.071
     06:00   06:30   07:00   07:30   08:00   08:30
● CPUUtilization
```

Namespace
AWS/EC2

Metric name
CPUUtilization

InstanceId
i-01f0972b82a53f424

Instance name
my-ec2-server

Statistic
🔍 Average ✕

Period
1 minute ▼

Change the values:

- Period → 1 min
- Statistic → average

Conditions

Threshold type

⦿ Static	○ Anomaly detection
Use a value as a threshold	Use a band as a threshold

Whenever CPUUtilization is...
Define the alarm condition.

○ Greater	⦿ Greater/Equal	○ Lower/Equal	○ Lower
> threshold	>= threshold	<= threshold	< threshold

than...
Define the threshold value.

0.4

Must be a number

Here also, Change some Values:

- Alarm condition → Greater/Equal
- Threshold value → 0.4 your chooses

▼ 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.

3   out of   3

Missing data treatment
How to treat missing data when evaluating the alarm.

Treat missing data as good (not breaching threshold) ▼

Set the Configure actions settings.

By completing the settings and the notification setting process.
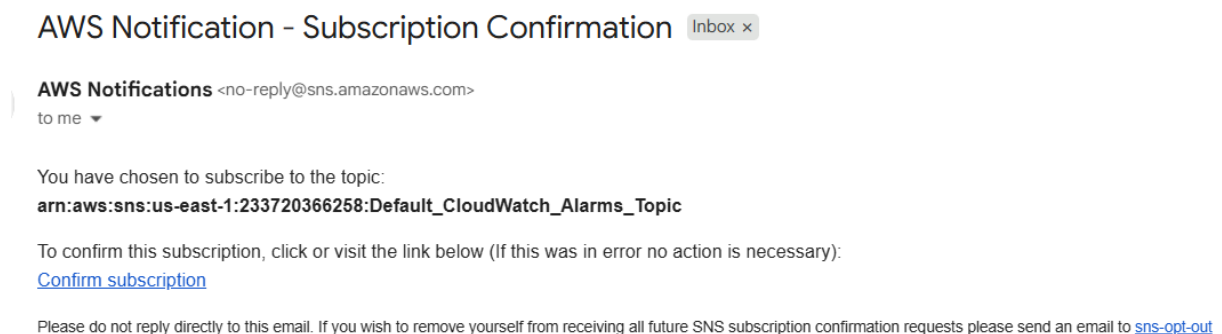
We receives a mail to confirm the subscription.

After Confirming add Alarm Details.

Create Alarm and create Alarm name and all the details → Click Create Alarm

After Previewing all the details of alarm

You may also get the warning alarm mail.

Creating a Dashboard for an Instance that will showcase metrics

Go and Start your Instance
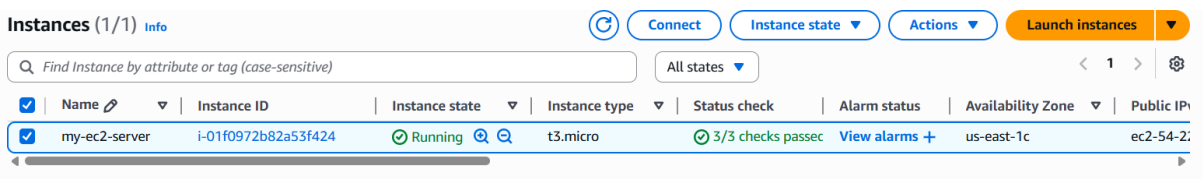
Select the Instance and Go to Connect.
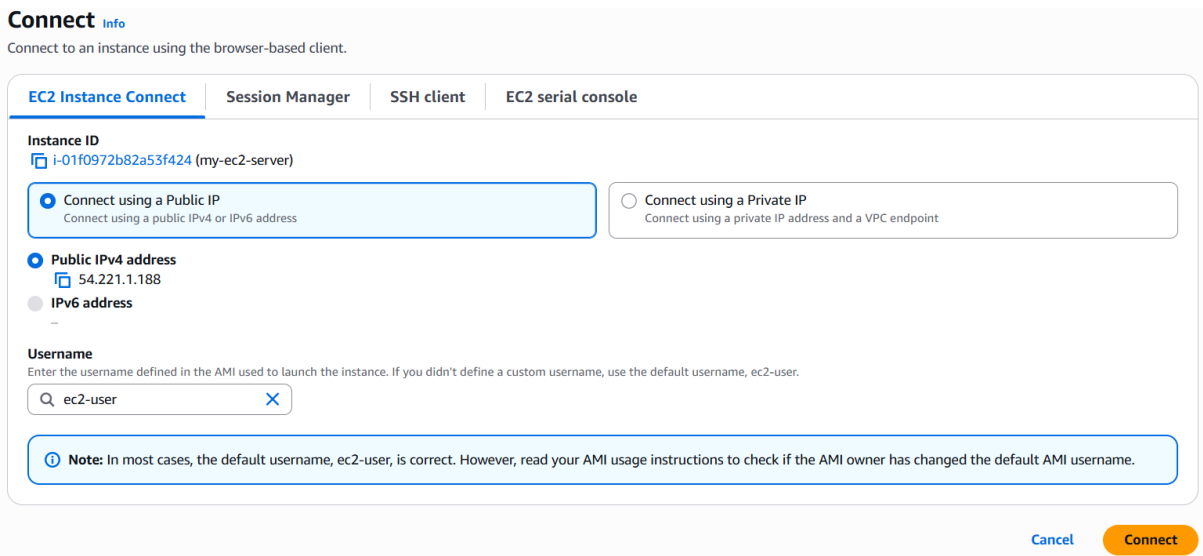
Set the values and options and Click Connect.
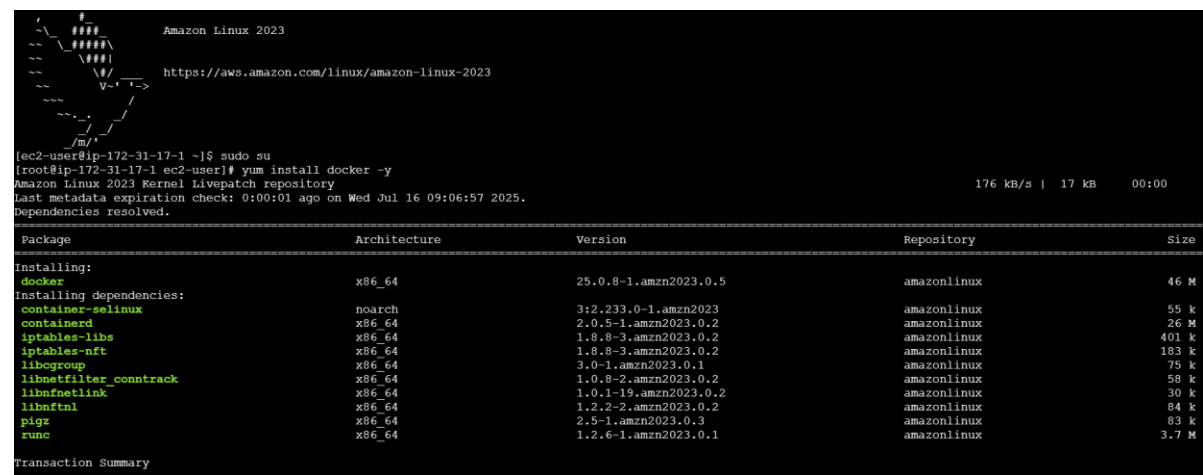
```
[root@ip-172-31-17-1 ec2-user]# yum install java -y
Last metadata expiration check: 0:01:51 ago on Wed Jul 16 09:06:57 2025.
Dependencies resolved.
================================================================================================================================
 Package                             Architecture      Version                          Repository          Size
================================================================================================================================
Installing:
 java-24-amazon-corretto             x86_64            1:24.0.1+9-1.amzn2023.1          amazonlinux         204 k
Installing dependencies:
 alsa-lib                            x86_64            1.2.7.2-1.amzn2023.0.2           amazonlinux         504 k
 cairo                               x86_64            1.18.0-4.amzn2023.0.2            amazonlinux         717 k
 dejavu-sans-fonts                   noarch            2.37-16.amzn2023.0.2             amazonlinux         1.3 M
 dejavu-sans-mono-fonts              noarch            2.37-16.amzn2023.0.2             amazonlinux         467 k
 dejavu-serif-fonts                  noarch            2.37-16.amzn2023.0.2             amazonlinux         1.0 M
 fontconfig                          x86_64            2.13.94-2.amzn2023.0.2           amazonlinux         273 k
 fonts-filesystem                    noarch            1:2.0.5-12.amzn2023.0.2          amazonlinux         9.5 k
 freetype                            x86_64            2.13.2-5.amzn2023.0.1            amazonlinux         423 k
 giflib                              x86_64            5.2.1-9.amzn2023.0.1             amazonlinux          49 k
 google-noto-fonts-common            noarch            20240401-1.amzn2023.0.1          amazonlinux          17 k
 google-noto-sans-vf-fonts           noarch            20240401-1.amzn2023.0.1          amazonlinux         593 k
 graphite2                           x86_64            1.3.14-7.amzn2023.0.2            amazonlinux          97 k
 harfbuzz                            x86_64            7.0.0-2.amzn2023.0.2             amazonlinux         873 k
 java-24-amazon-corretto-headless    x86_64            1:24.0.1+9-1.amzn2023.1          amazonlinux         108 M
 javapackages-filesystem             noarch            6.0.0-7.amzn2023.0.6             amazonlinux          12 k
 langpacks-core-font-en              noarch            3.0-21.amzn2023.0.4              amazonlinux          10 k
 libICE                              x86_64            1.1.1-3.amzn2023.0.1             amazonlinux          76 k
 libSM                               x86_64            1.2.4-3.amzn2023.0.1             amazonlinux          45 k
 libX11                              x86_64            1.8.10-2.amzn2023.0.1            amazonlinux         659 k
 libX11-common                       noarch            1.8.10-2.amzn2023.0.1            amazonlinux         147 k
 libXau                              x86_64            1.0.11-6.amzn2023.0.1            amazonlinux          33 k
 libXext                             x86_64            1.3.6-1.amzn2023.0.1             amazonlinux          42 k
 libXi                               x86_64            1.8.2-1.amzn2023.0.1             amazonlinux          42 k
 libXinerama                         x86_64            1.1.5-6.amzn2023.0.1             amazonlinux          16 k
```

Type the following commands

```
$ sudo su
$ yum install docker -y
$ yum install java -y

# This will install docker and java
```

Search Cloudwatch and go to Dashboard → Click Create Dashboard.

Give name for your dashboard

Add widget   ✕

Data sources types   **Widget Configuration**

🔘 Cloudwatch   Data type
⚪ </> Other content types   [**Metrics** | Logs | Alarms]
⚪ ⚙ Create data sources
                                 Widget type

                                 ⚪ **Line**   ⚪ **Data table**
                                    Compare metrics over time   Compare metrics values
                                                                  over time in a table

                                 🔘 **Number**   **75** %   ⚪ **Gauge**
                                    Instantly see the latest   See the latest value of a
                                    value for a metric   metric within a range

                                 ⚪ **Stacked area**   ⚪ **Bar**
                                    Compare the total over   Compare categories of
                                    time   data

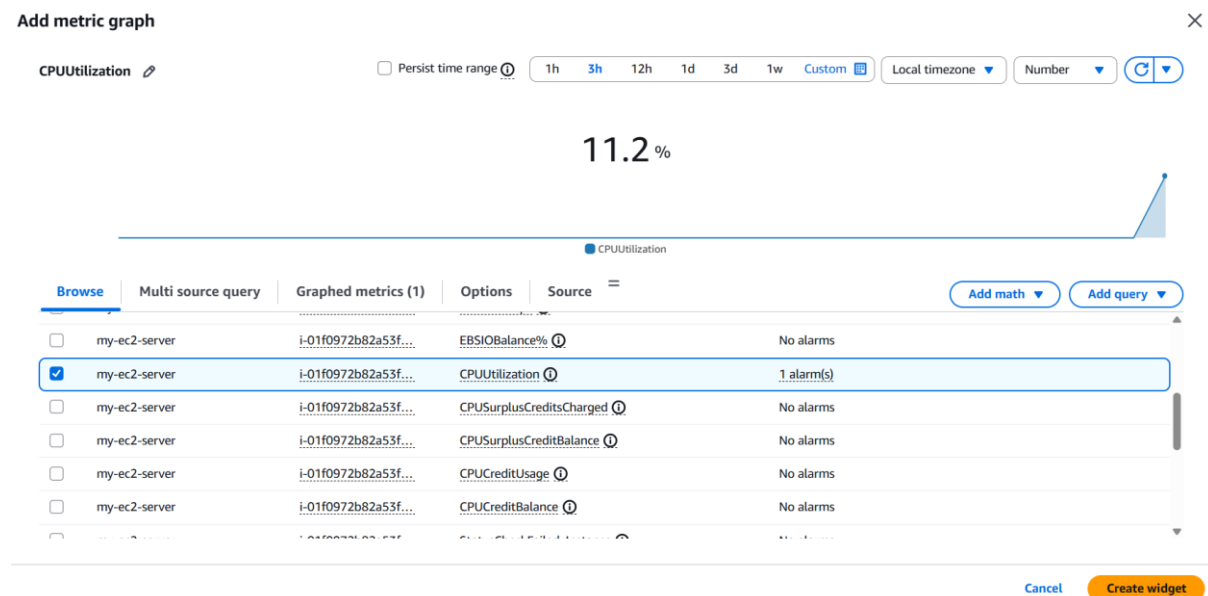   Cancel   **Next**

Add type of Datatype and widget you want to like

- Line Graph
- Number Graph
- Bar Graph

After selecting graph, Go to EC2 → Per-Instance Metrics

Select type of resources you want for Statistics.

You can also add the widget to the Dashboard.