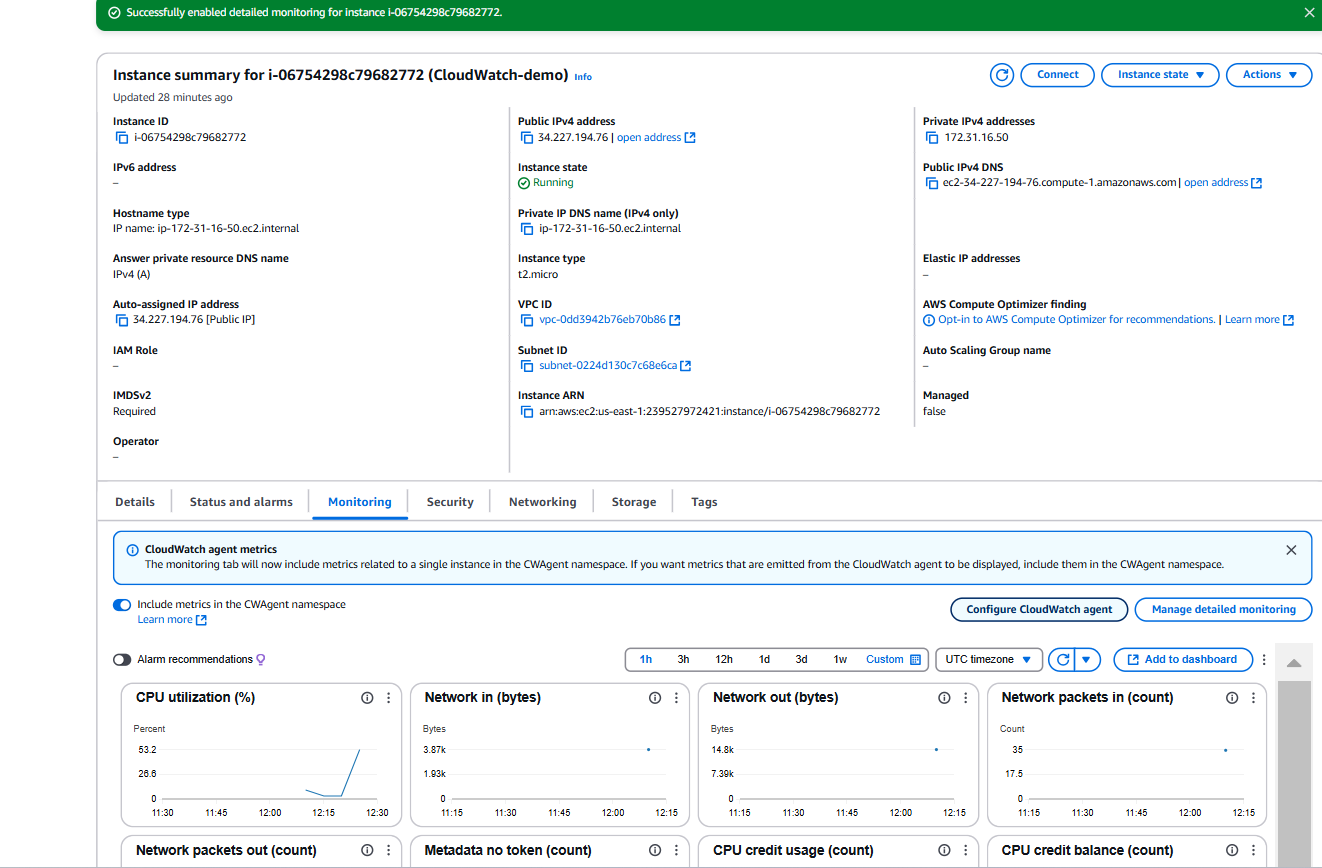
**EC2 CPU Monitoring and Auto-Alert System using AWS CloudWatch**

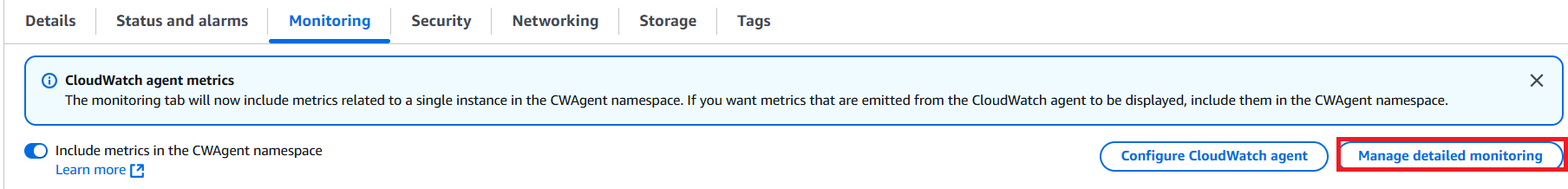
**Step 1: Create an EC2 Instance**

* Launch a new EC2 instance from the AWS Console.



**Step 2: Enable Detailed Monitoring**

* Go to the **Monitoring** tab of your EC2 instance.
* Click on **Manage detailed monitoring** and enable it.



**Step 3: Simulate a CPU Spike**

* SSH into your EC2 instance.
* Run the following command to create a Python script:

nano cpu\_spike.py

Paste the below script into the file:

import time

def simulate\_cpu\_spike(duration=30, cpu\_percent=80):

print(f"Simulating CPU spike at {cpu\_percent}%...")

start\_time = time.time()

# Calculate the number of iterations needed to achieve the desired CPU utilization

target\_percent = cpu\_percent / 100

total\_iterations = int(target\_percent \* 5\_000\_000) # Adjust the number as needed

# Perform simple arithmetic operations to spike CPU utilization

for \_ in range(total\_iterations):

result = 0

for i in range(1, 1001):

result += i

# Wait for the rest of the time interval

elapsed\_time = time.time() - start\_time

remaining\_time = max(0, duration - elapsed\_time)

time.sleep(remaining\_time)

print("CPU spike simulation completed.")

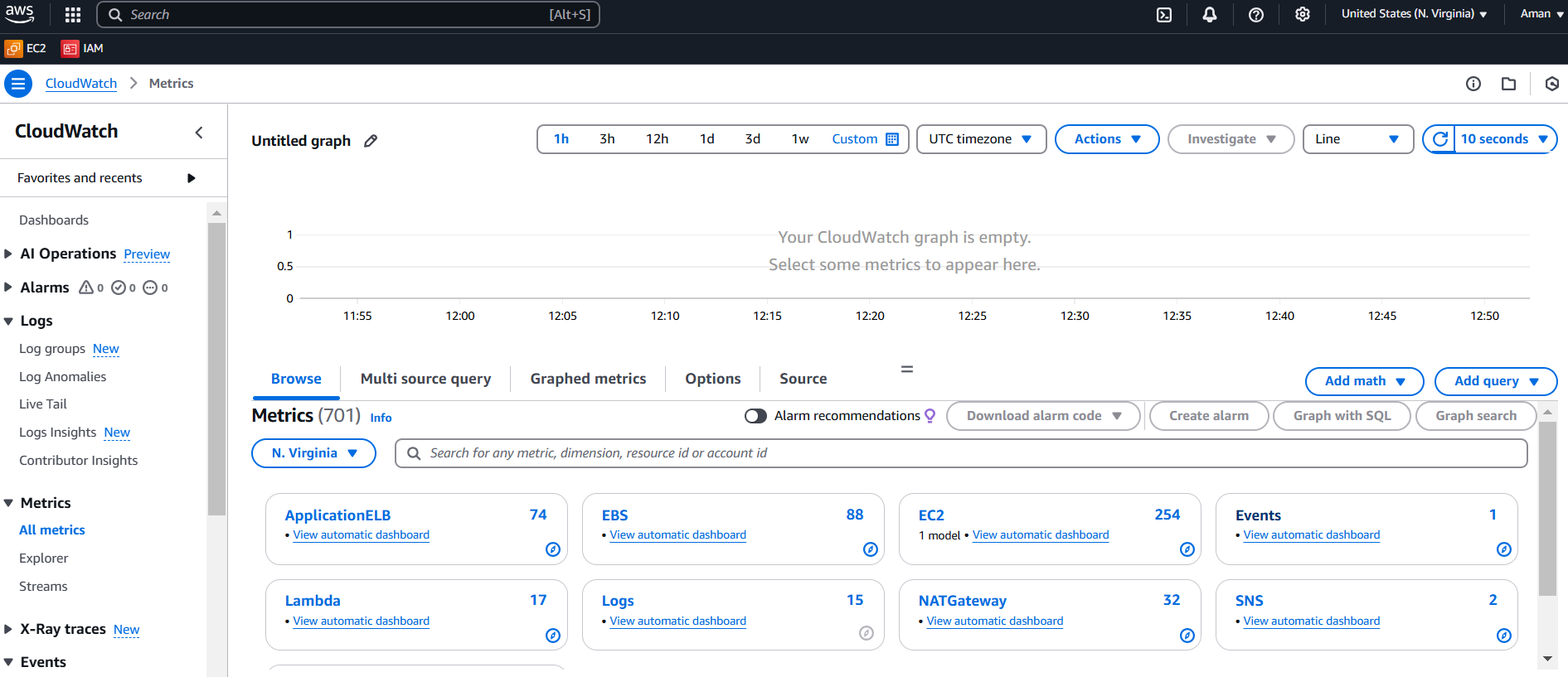
if \_\_name\_\_ == '\_\_main\_\_':

# Simulate a CPU spike for 30 seconds with 80% CPU utilization

simulate\_cpu\_spike(duration=30, cpu\_percent=80)

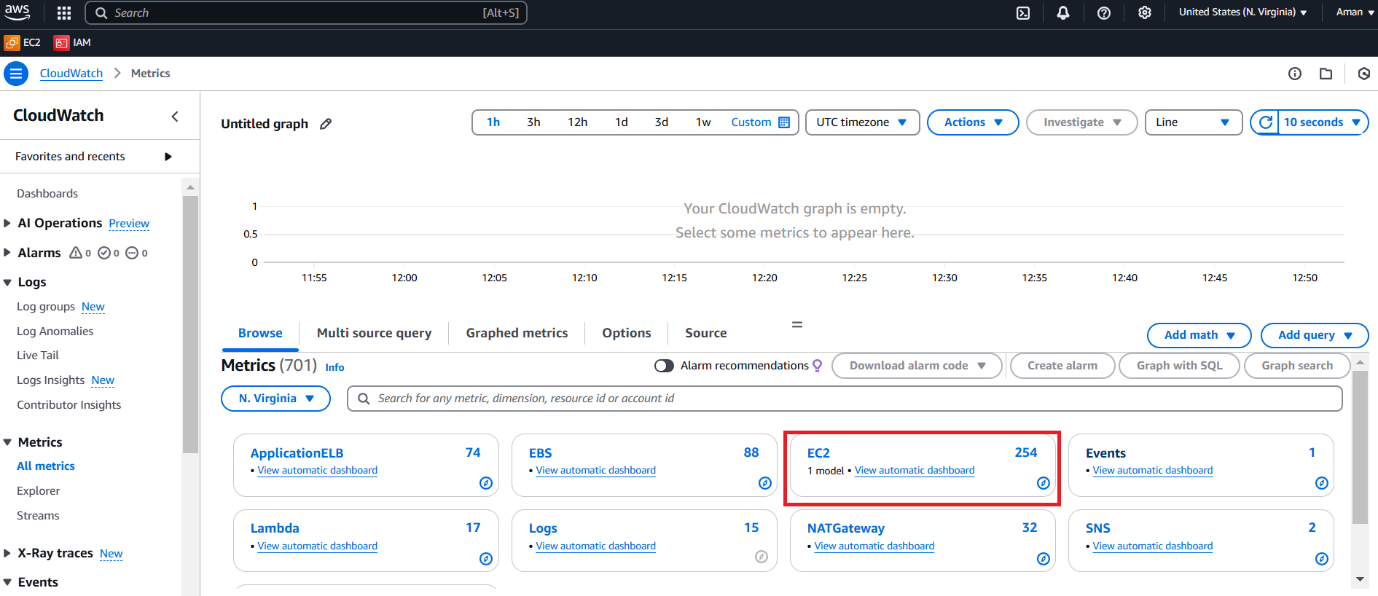
**Step 4: Go to CloudWatch Metrics**

* Open **CloudWatch** in the AWS Console.
* Click on **Metrics** in the left-hand menu



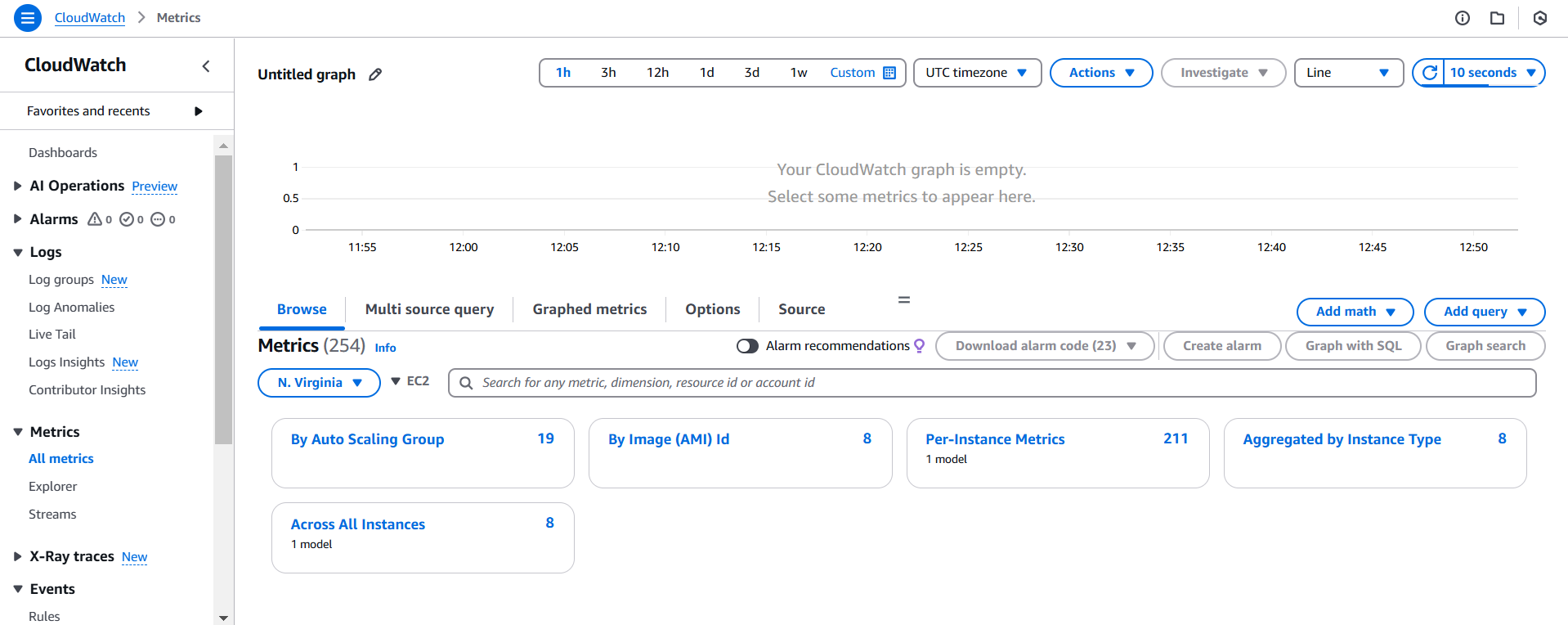
**Step 5: Select EC2 Metrics**

* Select **EC2** under available metric namespaces.



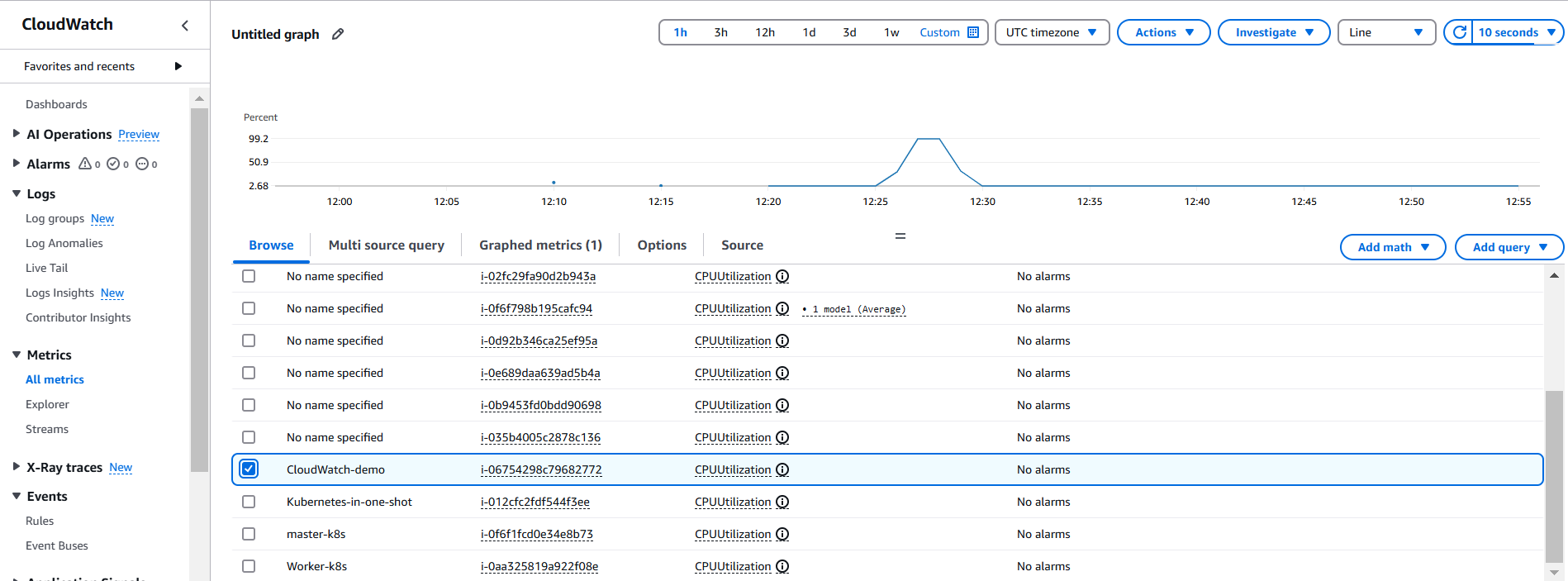
**Step 6: Choose Per-Instance Metrics**

* Click on **Per-Instance Metrics**.
* Select your EC2 instance ID.



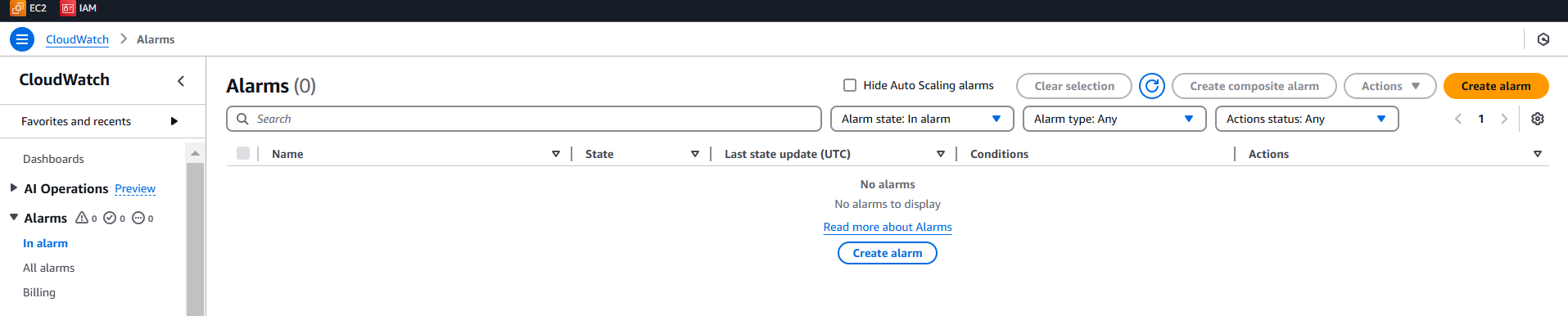
**Step 7: Create an Alarm**

* In the left-hand menu, select **Alarms**.
* Click on **Create alarm**.



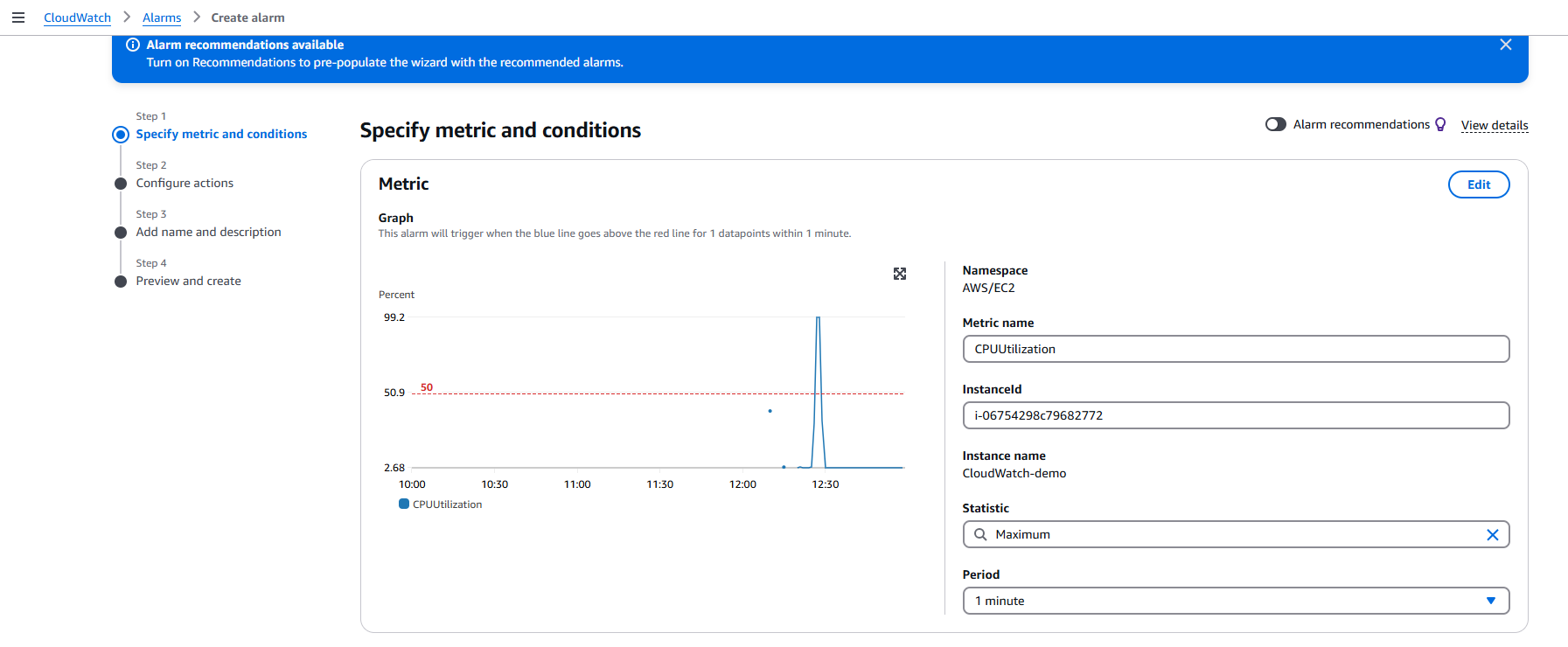
**Step 8: Configure Alarm Conditions**

* Select the metric (e.g., CPUUtilization).
* Set the condition (e.g., whenever CPU utilization is **greater than 50%**).



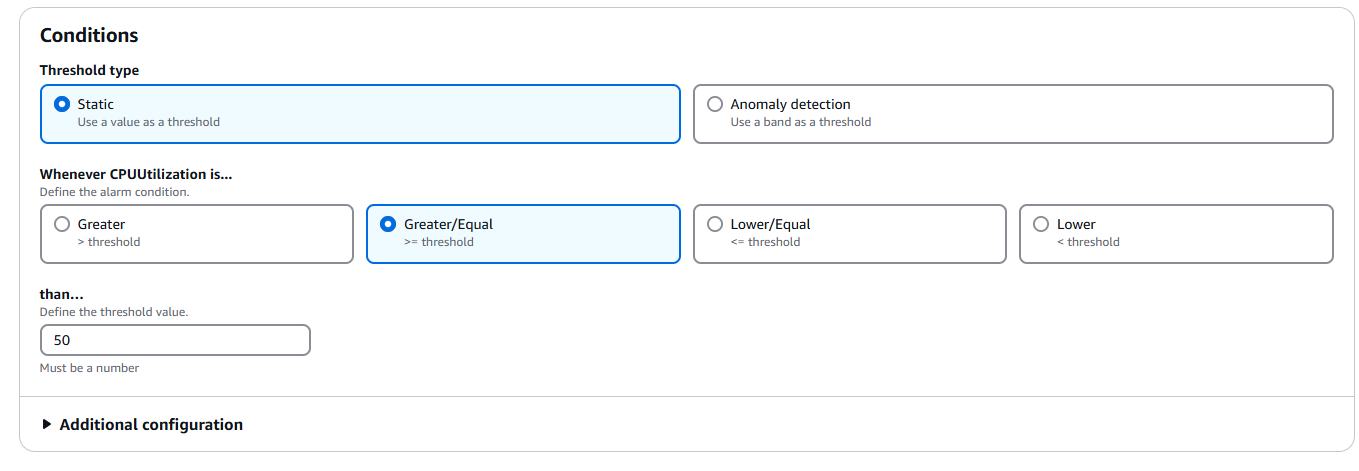
**Step 9: Notification Setup**

* Provide your **email address** for alarm notifications.
* (You will receive a confirmation email to subscribe to the SNS topic.)



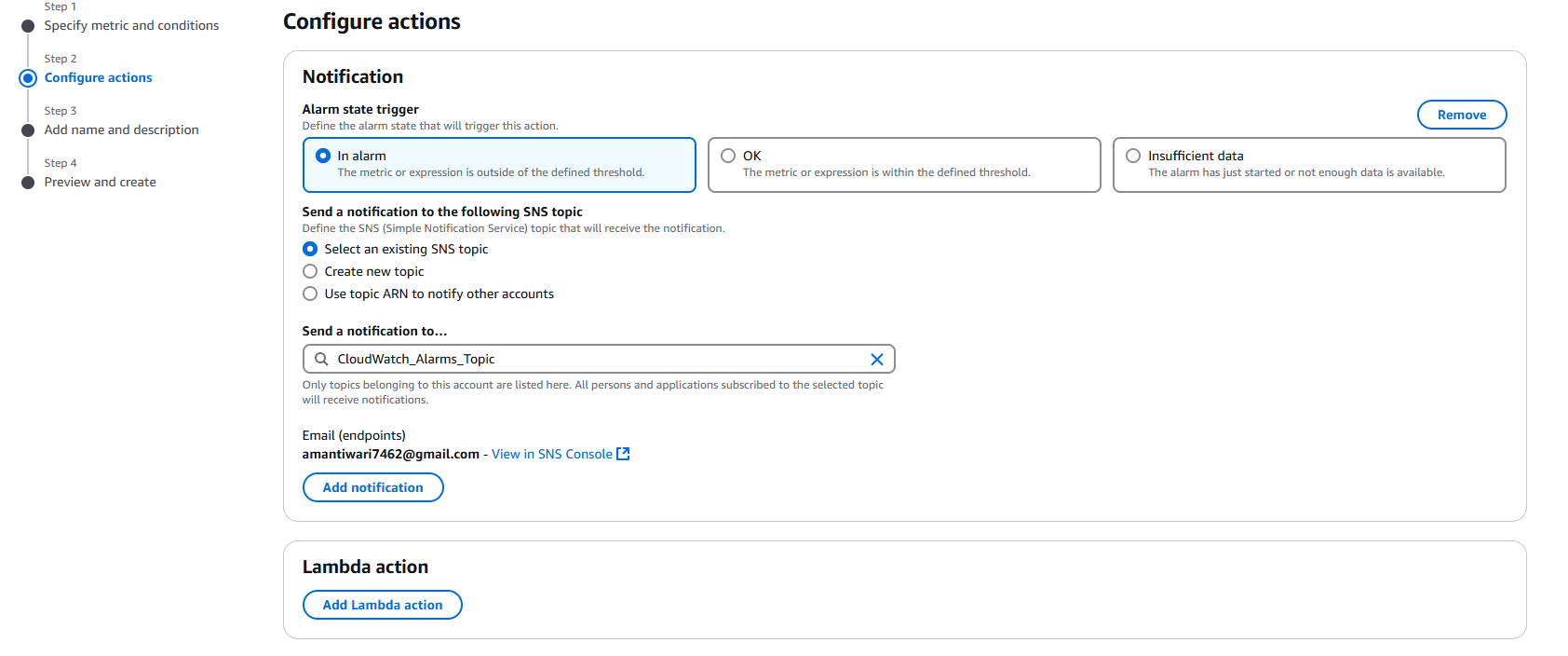
**Step 10: Name and Describe the Alarm**

* Enter a descriptive name and optional description for the alarm.

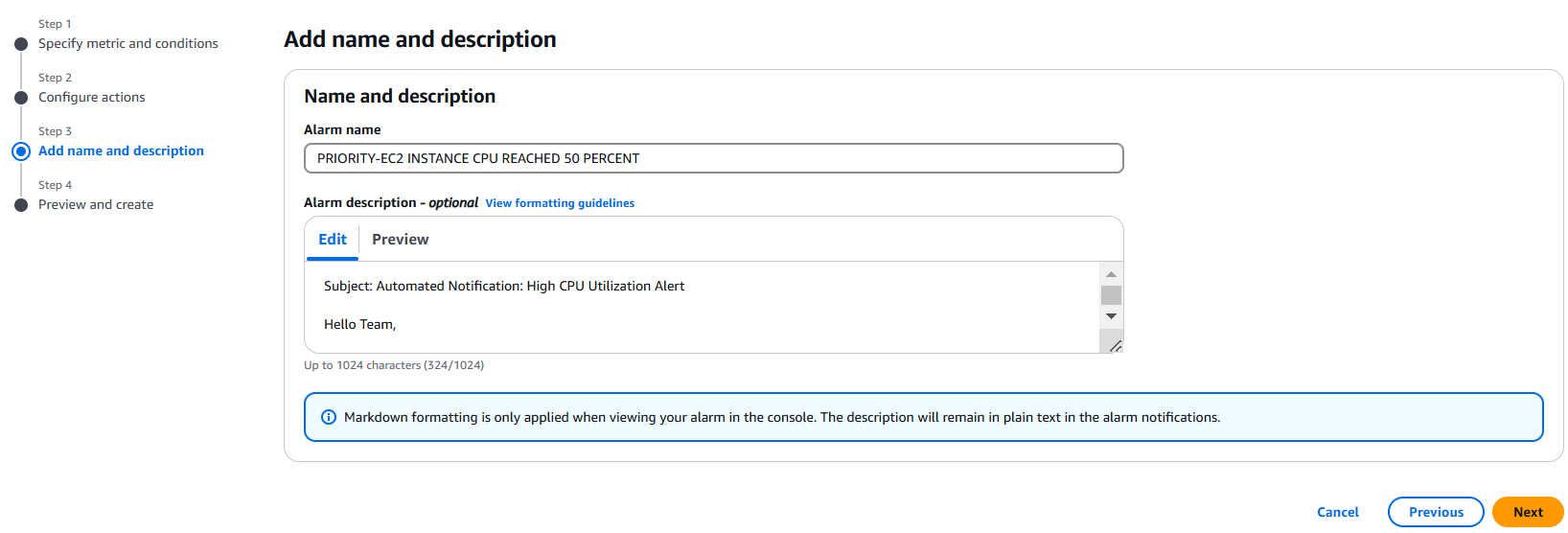


**Step 11: Email Confirmation**

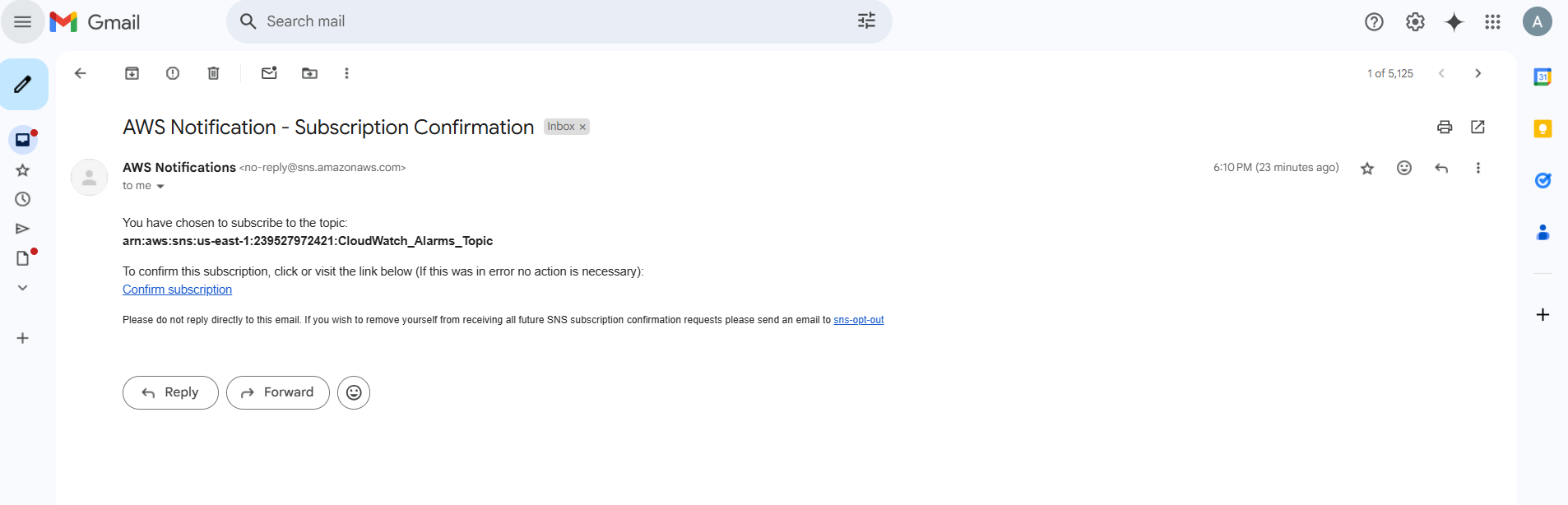
* Check your email and confirm the subscription.



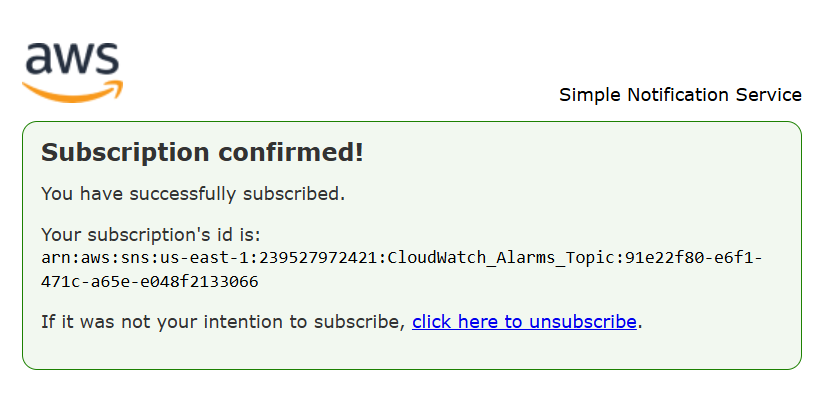
**Step 11->**Provide the name and description of the alert



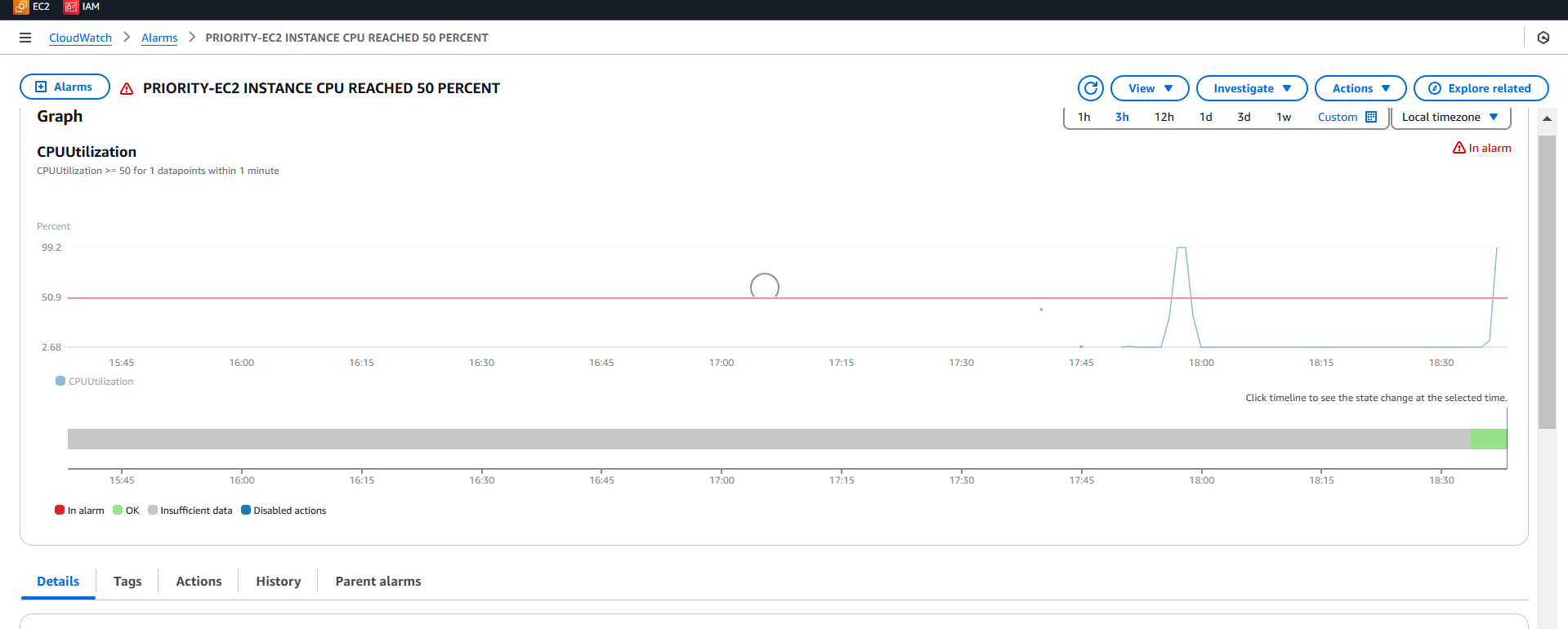
Step 12->You will get the email option to confirm



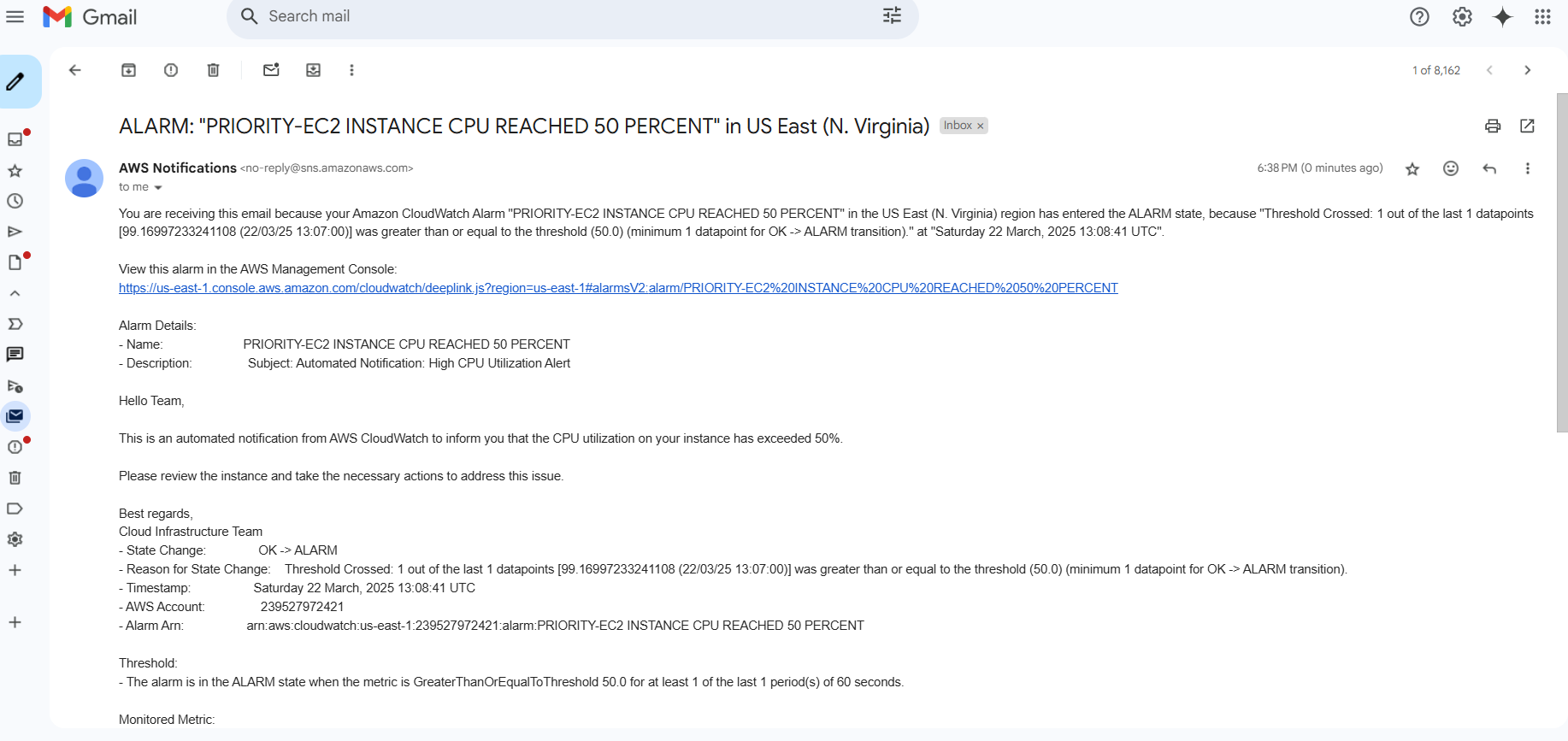
Step 13-> you get similar picture



Step 14->



Step 15-> Email Which you will get after



Step 16-> Once spike is generated you will get the output similar to this 