MONITER AN EC2 INSTANCE

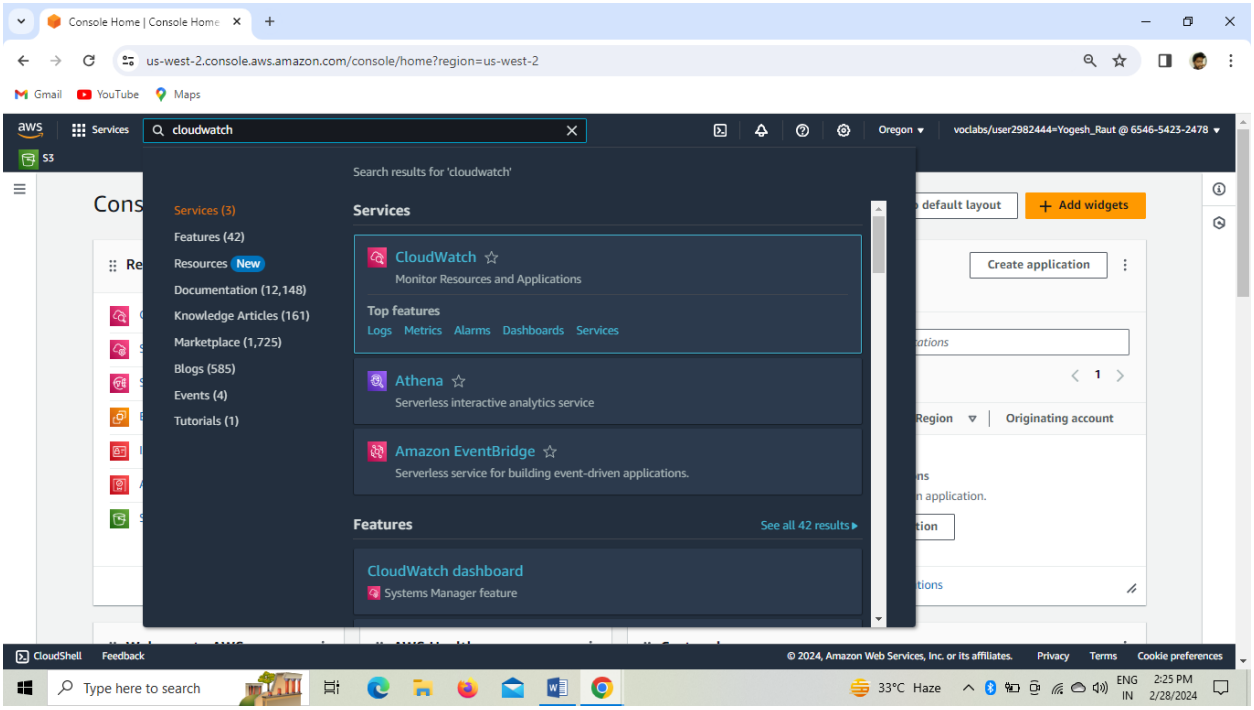
This project is all about helping an organization to monitor the instance. Every time we launch an EC2 instance, it becomes important to check on it often so that operations run smoothly. Luckily the AWS has a dedicated service to monitor not just instances, but all AWS activities. So as easy as it is, we still need to set it up for our use. Let's see how it is done.

PROBLEM STATEMENT:

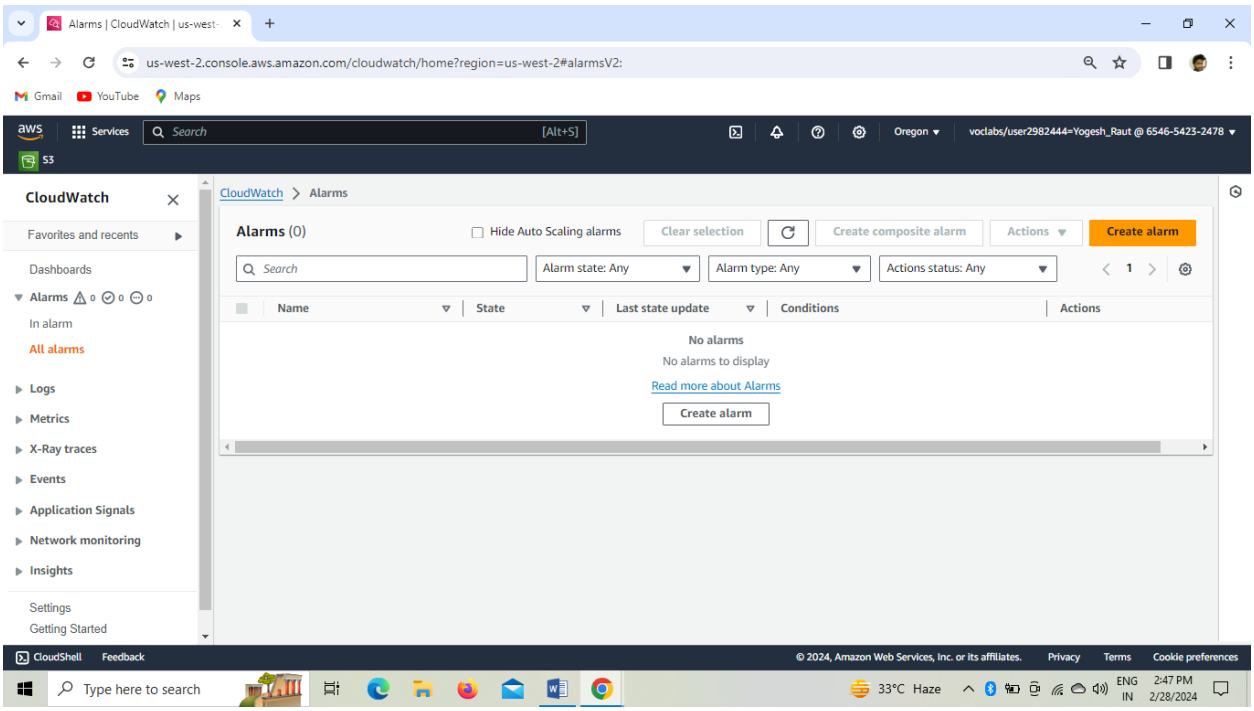
Set up an alarm for the CPU Utilization of the given EC2 Instance, so that we can get notified of an alert via email if the desired threshold is breached.

STEPS TO FOLLOW:

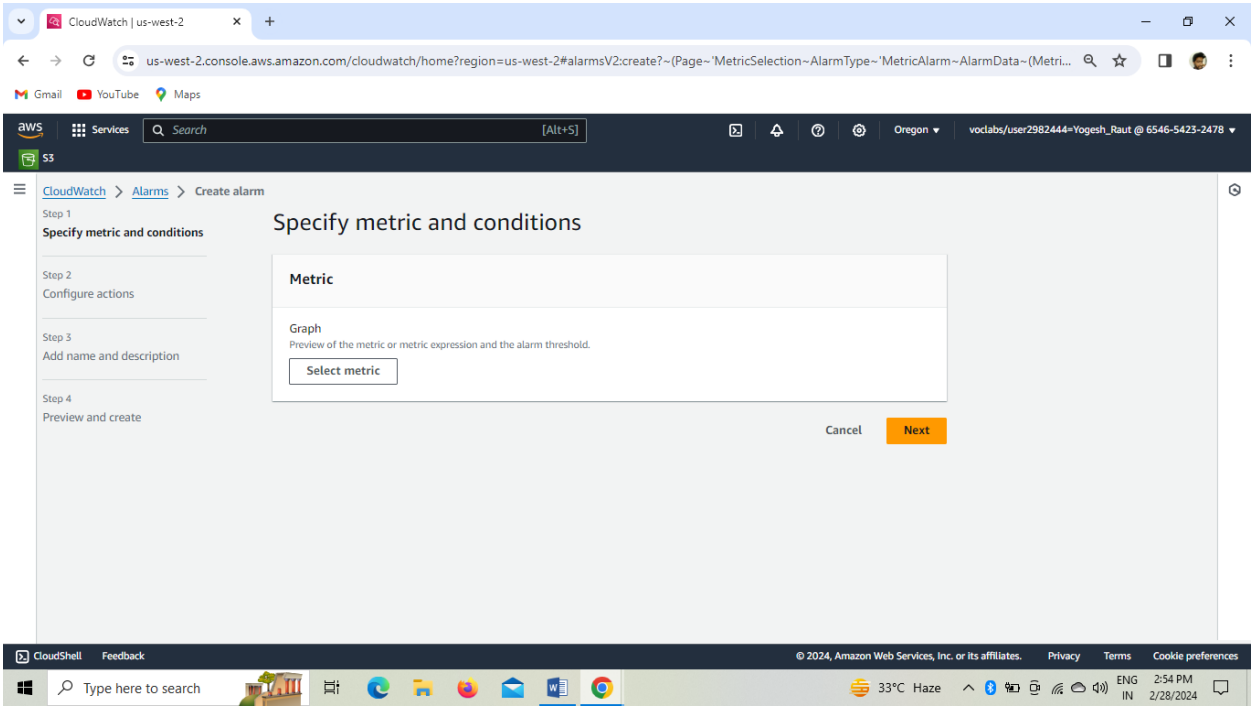
1. Login and access the AWS Management Console, and search for **Cloudwatch** as shown. (**Cloudwatch** is an AWS Service that monitors all the resources and apps as mentioned in the image.)



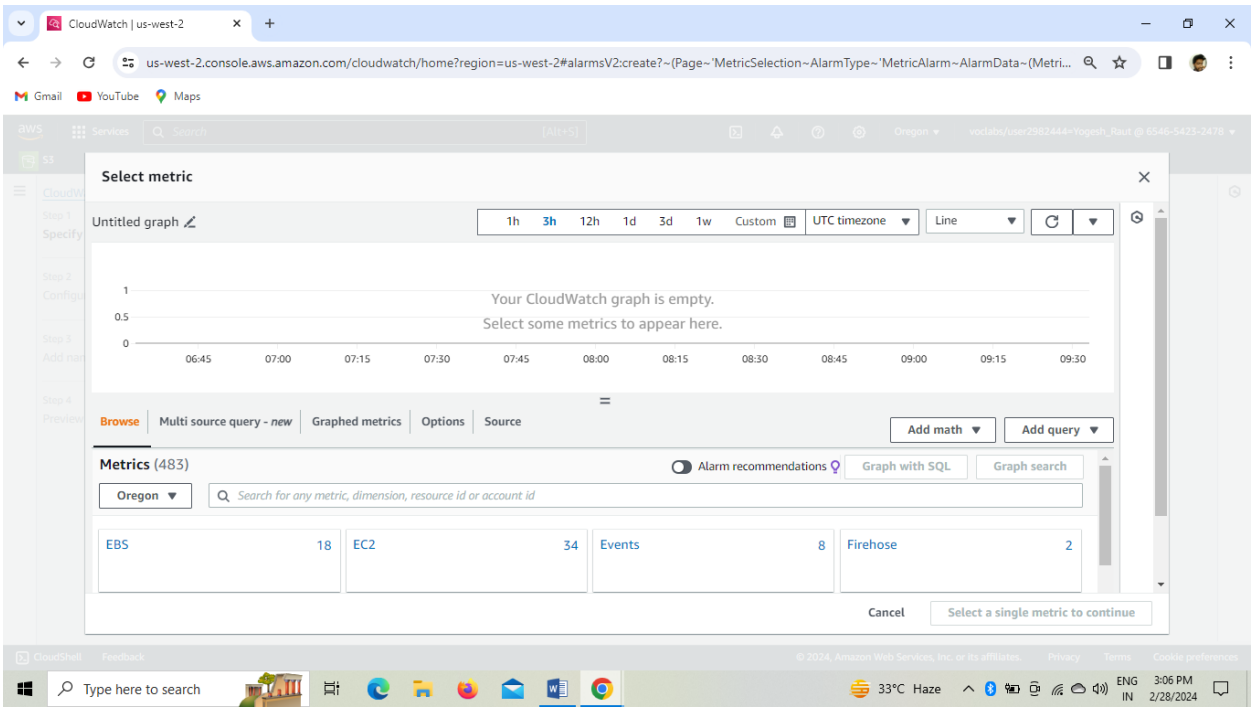
2. In the left navigation pane, choose the **Alarms** dropdown list, and then choose **All alarms** where you will find **Create alarm** option.



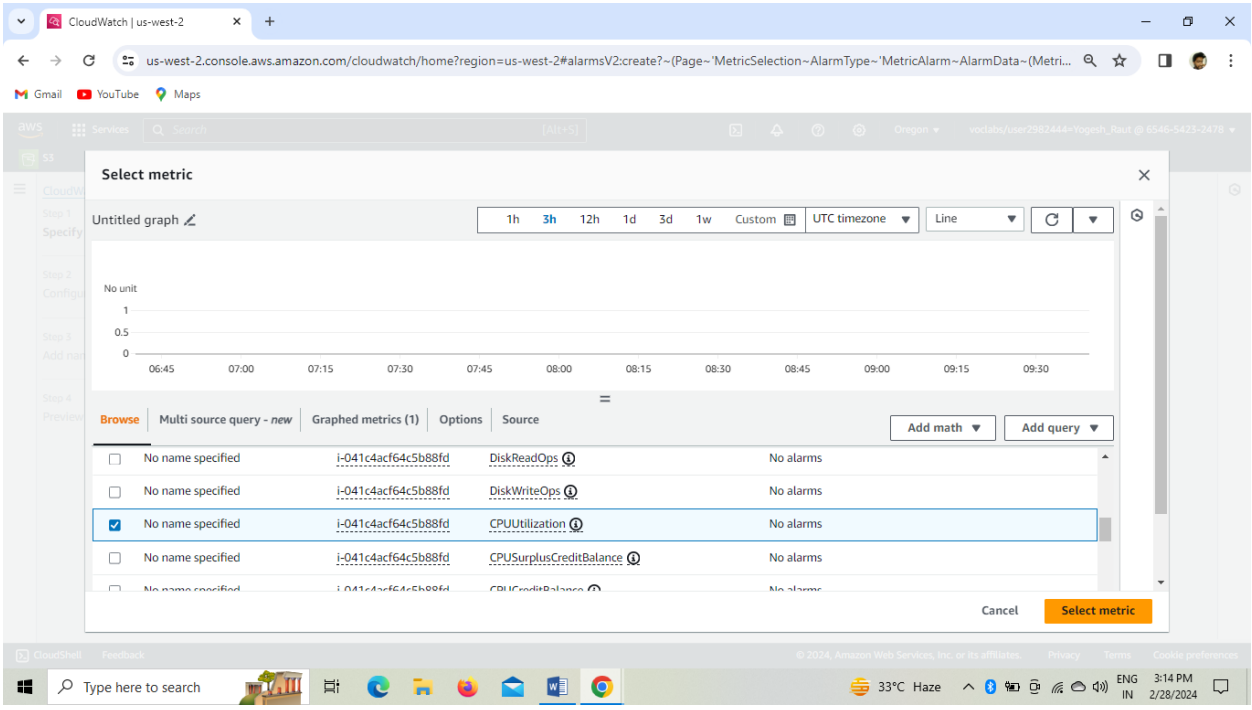
3. Now we need to configure the alarm based on our **instance metric,** the parameter to be monitored.



4. Once you click on **Select metric,** it takes you to an interface as shown below, where you need to select **EC2** first and **per Instance Metrics** the next.



5. Now we need to choose the desired metric from the list, which in our case is **CPUUtilization**.

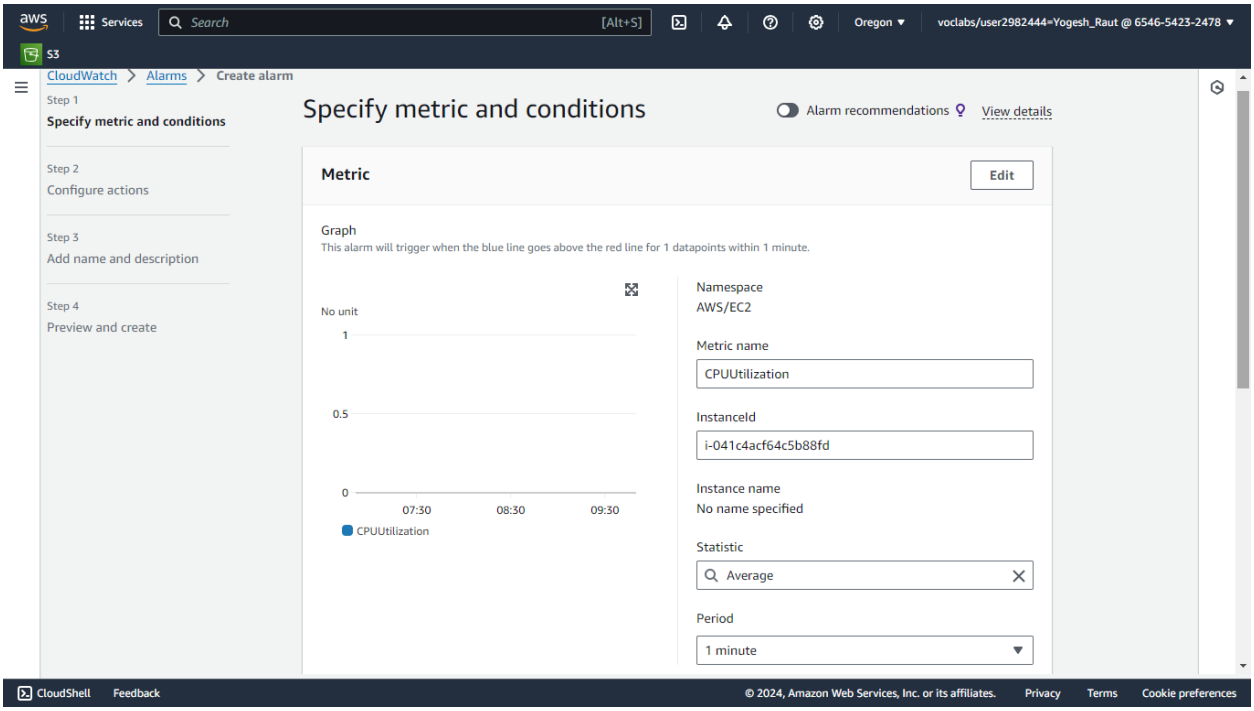


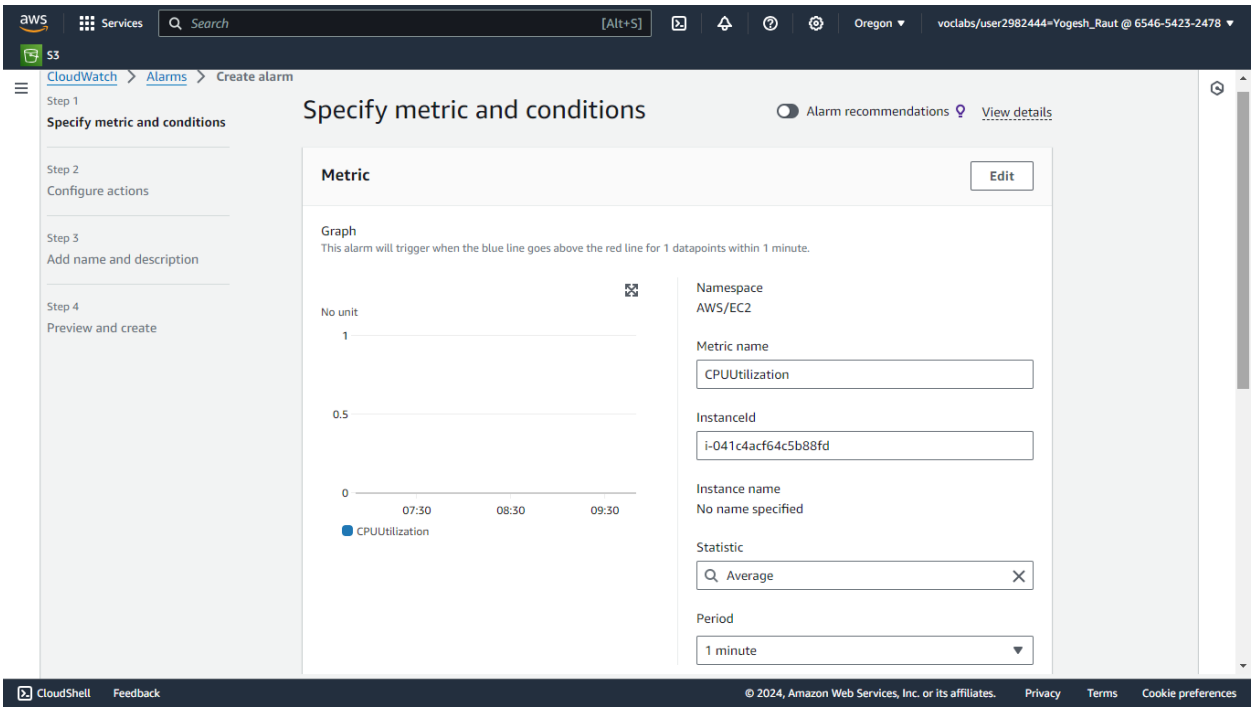
6. Once your metric is selected, configure the alarm as follows:
   - **A. Metric :**
     - **i. Metric Name:** CPUUtilization

ii. **Instance ID:** In this case, because we have a single instance it will take ID by default.
iii. **Statistic:** Average
iv. **Period:** 1 minute

B. Conditions:

i. **Threshold Type:** Static
ii. **Whenever CPUUtilization is...:** Greater > threshold
iii. **than... Define the threshold value:** 60

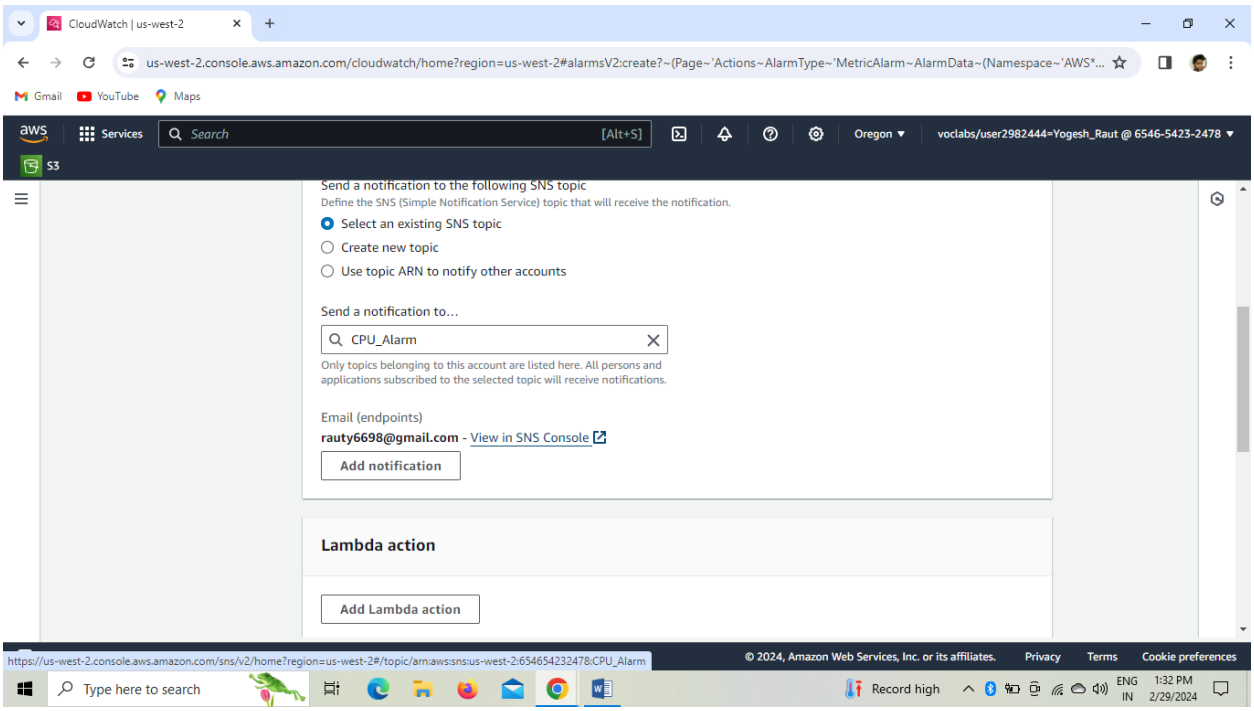




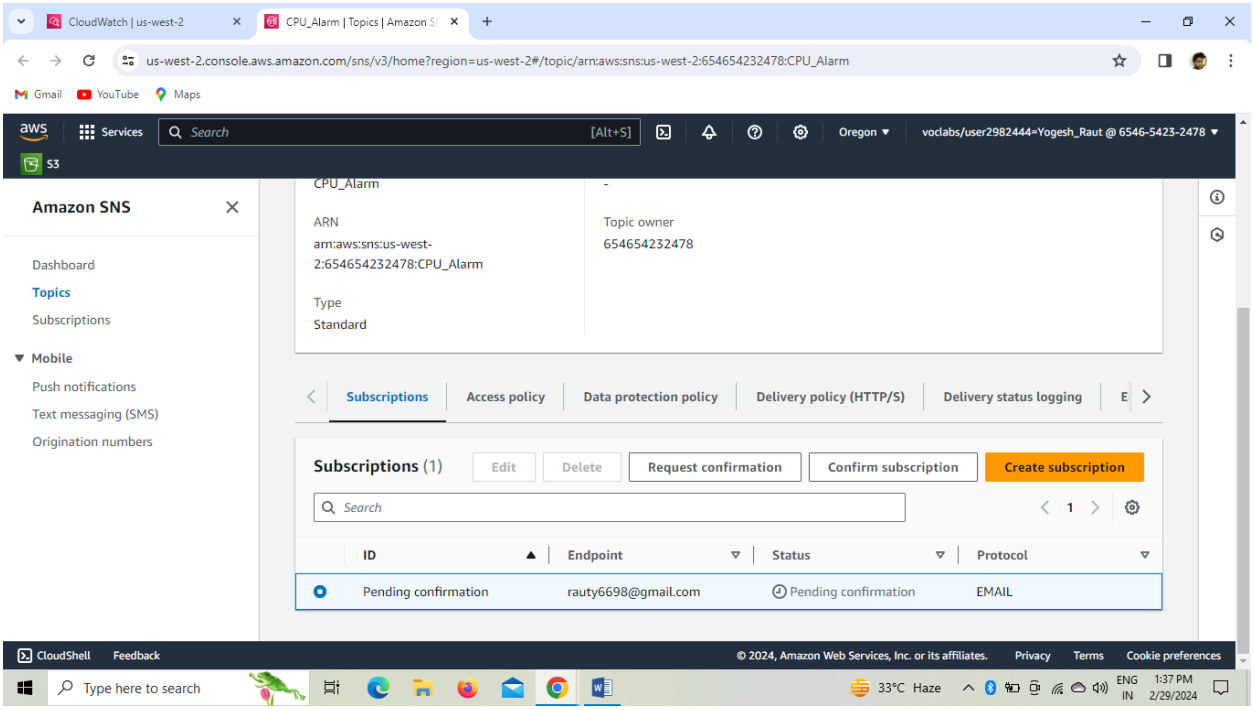
7. Now we move to the next **Configure actions** phase, where we need to configure the notification settings to get notified of the alarm as follows:
    i. **Alarm state trigger:** In alarm
    ii. **Select SNS topic:** Create new topic
        a. **Name:** CPU_Alarm
        b. **Email endpoints:** Enter any valid email, where you'll be notified.

    After configuration, select **create topic.**

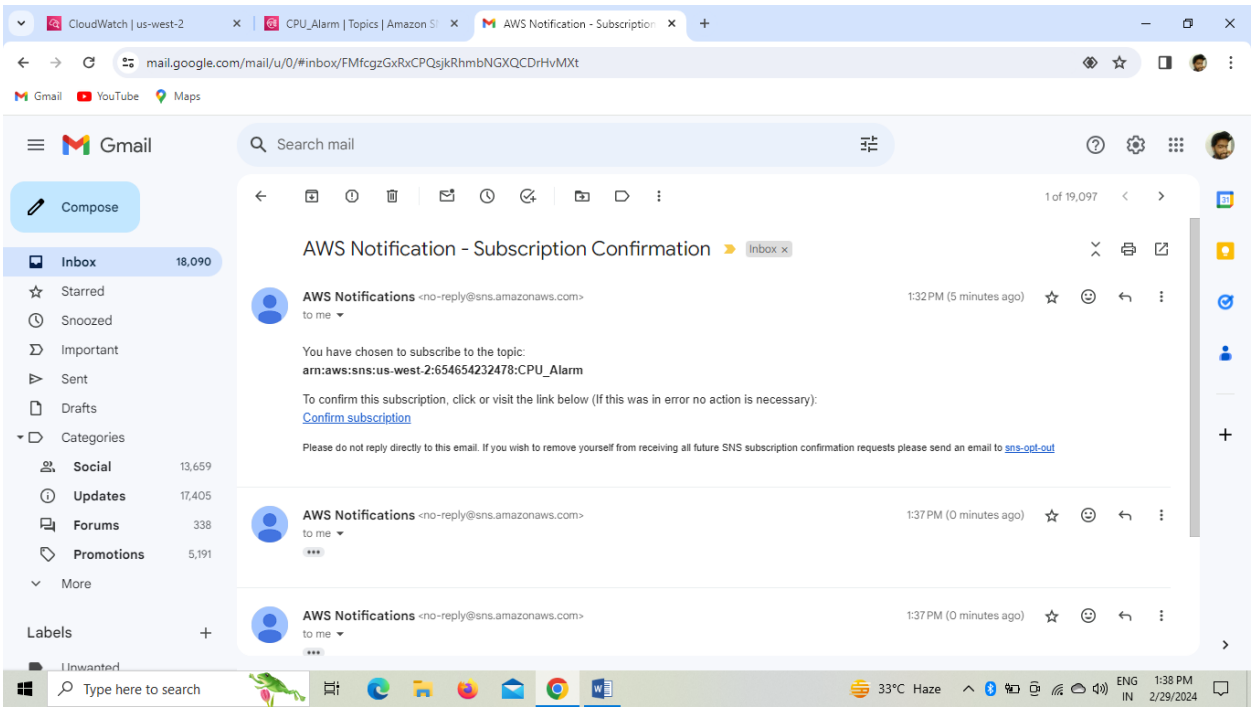
8. Once you create a topic, we need a way for AWS to notify us, so we need to request confirmation from **SNS**, we can directly click on the **SNS Console link**, in blue as shown.



9. Once you click the link, you'll get redirected to **SNS**, where you'll find **pending confirmations** as you scroll down.



10. You now have to **Request Confirmation** by clicking on that tab, after which you get a mail to confirm subscription, and the state changes once you confirm subscription via mail as shown.


CloudWatch | us-west-2
CPU_Alarm | Topics | Amazon S
AWS Notification - Subscription
mail.google.com/mail/u/0/#inbox/FMfcgzGxRxCPQsjkRhmbNGXQCDrHvMXt
Gmail
YouTube
Maps
Search mail
Compose
Inbox 18,090
Starred
Snoozed
Important
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Drafts
Categories
Social 13,659
Updates 17,405
Forums 338
Promotions 5,191
More
Labels
1 of 19,097
AWS Notification - Subscription Confirmation
Inbox
AWS Notifications <no-reply@sns.amazonaws.com>
to me
1:32 PM (5 minutes ago)
You have chosen to subscribe to the topic:
arn:aws:sns:us-west-2:654654232478:CPU_Alarm
To confirm this subscription, click or visit the link below (If this was in error no action is necessary):
Confirm subscription
Please do not reply directly to this email. If you wish to remove yourself from receiving all future SNS subscription confirmation requests please send an email to sns-opt-out
AWS Notifications <no-reply@sns.amazonaws.com>
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AWS Notifications <no-reply@sns.amazonaws.com>
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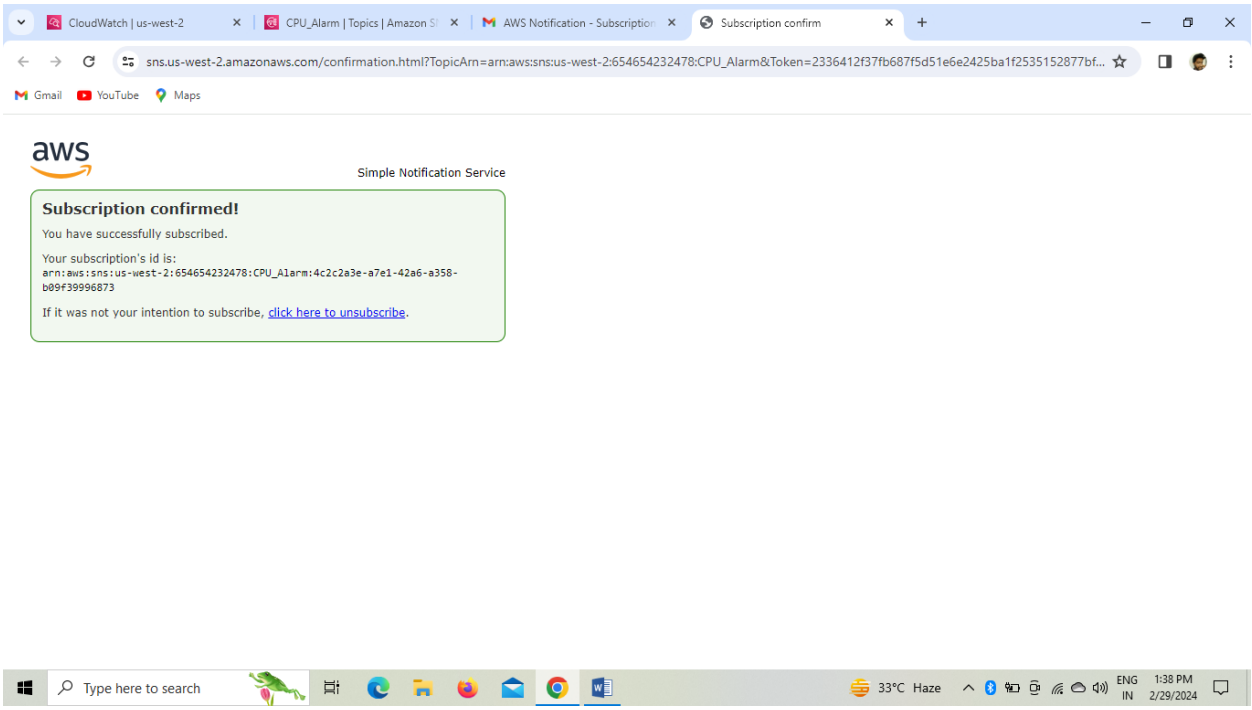
CloudWatch | us-west-2
CPU_Alarm | Topics | Amazon S
AWS Notification - Subscription
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Gmail
YouTube
Maps
aws
Simple Notification Service
Subscription confirmed!
You have successfully subscribed.
Your subscription's id is:
arn:aws:sns:us-west-2:654654232478:CPU_Alarm:4c2c2a3e-a7e1-42a6-a358-b09f39996873
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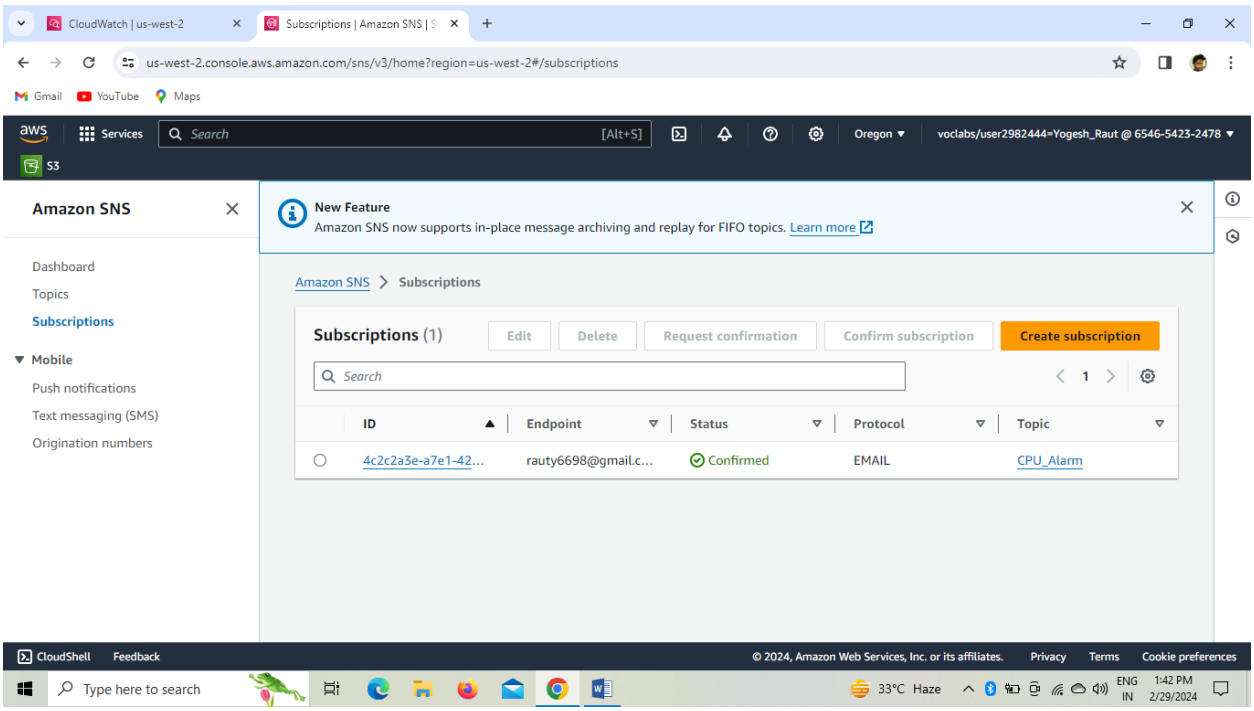
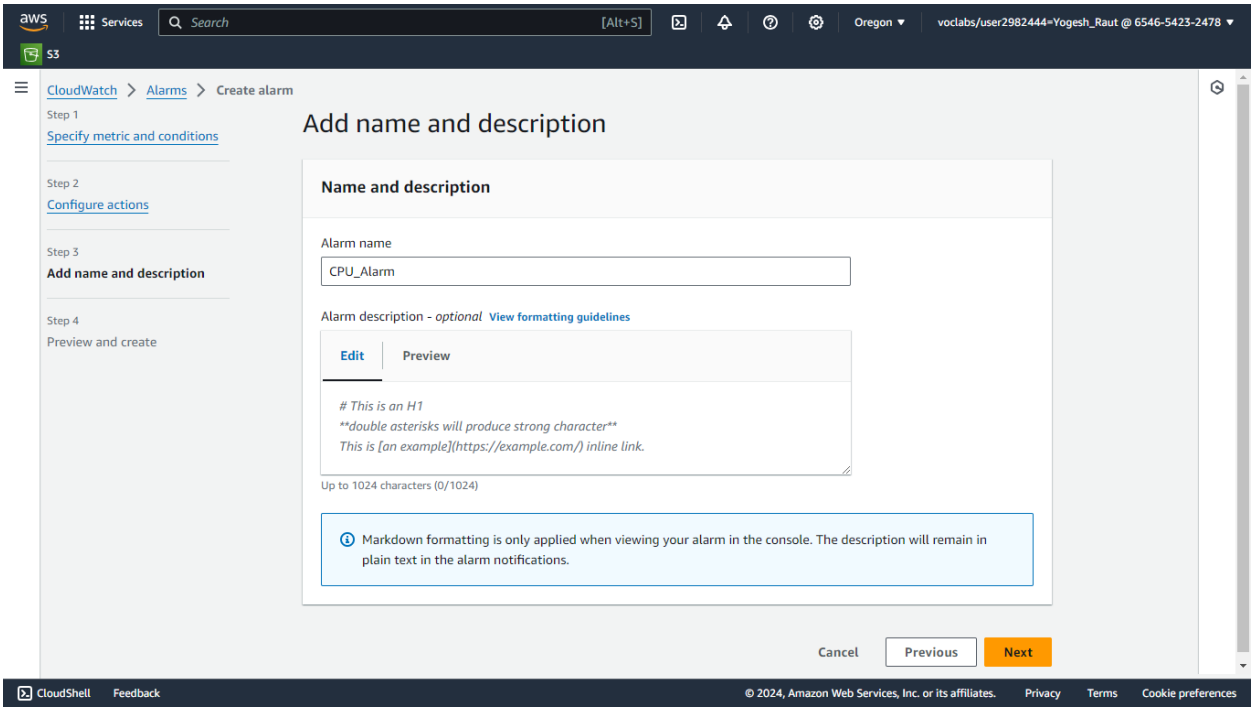
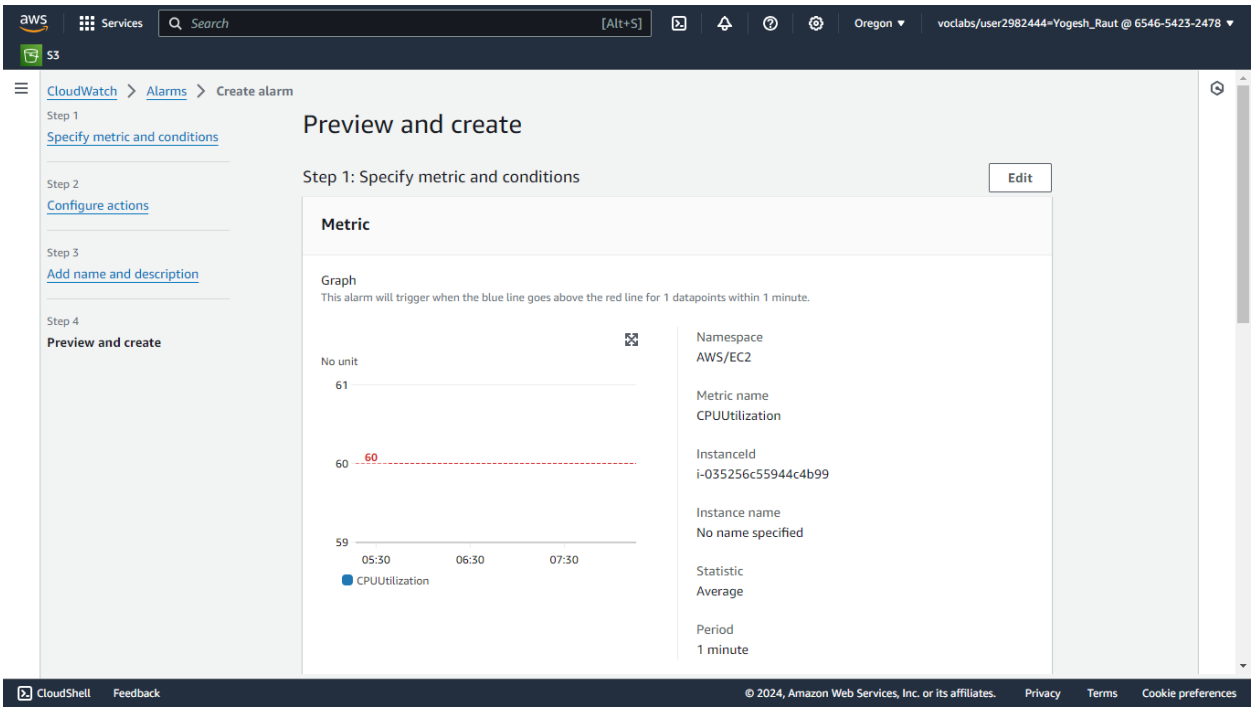
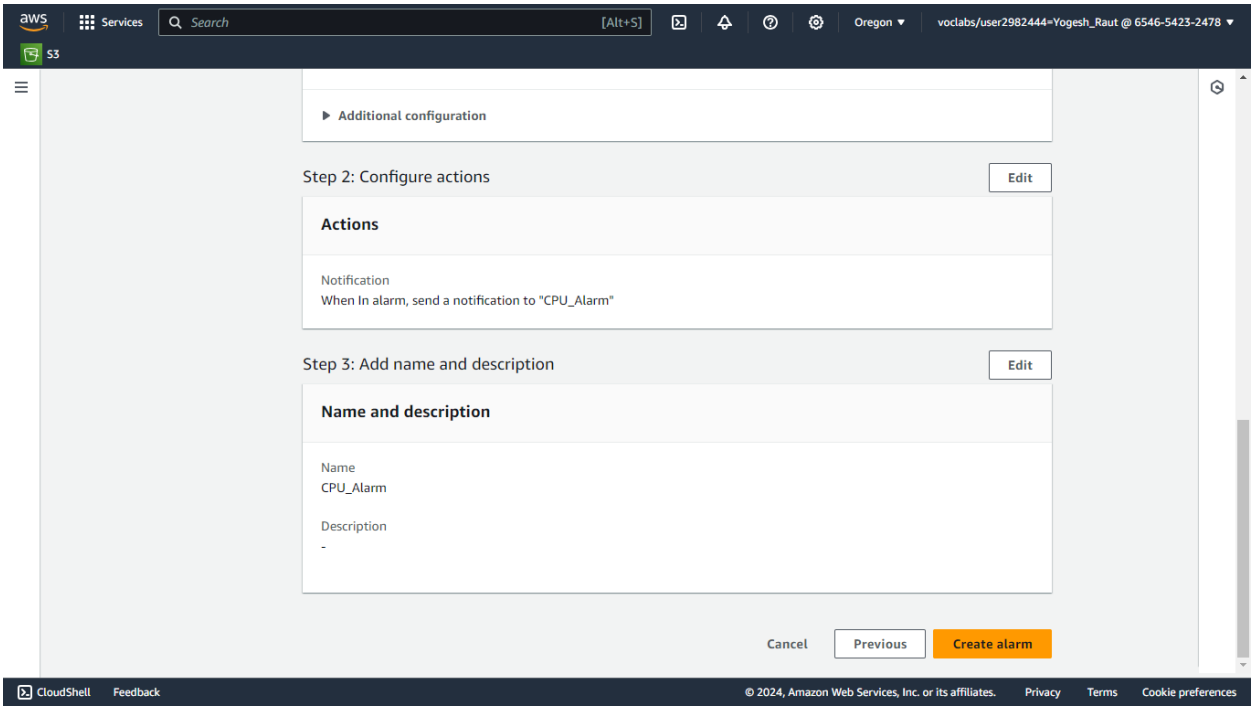


11. After confirming subscription, we move forward to next phase, **add name and description** and configure as illustrated.



12. Next step will provide an overview of your settings as you create the alarm.


Services
Search
[Alt+S]
Oregon
voclabs/user2982444=Yogesh_Raut @ 6546-5423-2478
S3
CloudWatch
Alarms
Create alarm
Step 1
Specify metric and conditions
Step 2
Configure actions
Step 3
Add name and description
Step 4
Preview and create
Preview and create
Step 1: Specify metric and conditions
Edit
Metric
Graph
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 1 minute.
No unit
61
60
60
59
05:30
06:30
07:30
CPUUtilization
Namespace
AWS/EC2
Metric name
CPUUtilization
InstanceId
i-035256c55944c4b99
Instance name
No name specified
Statistic
Average
Period
1 minute
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


Services
Search
[Alt+S]
Oregon
voclabs/user2982444=Yogesh_Raut @ 6546-5423-2478
S3
Additional configuration
Step 2: Configure actions
Edit
Actions
Notification
When In alarm, send a notification to "CPU_Alarm"
Step 3: Add name and description
Edit
Name and description
Name
CPU_Alarm
Description
-
Cancel
Previous
Create alarm
CloudShell
Feedback
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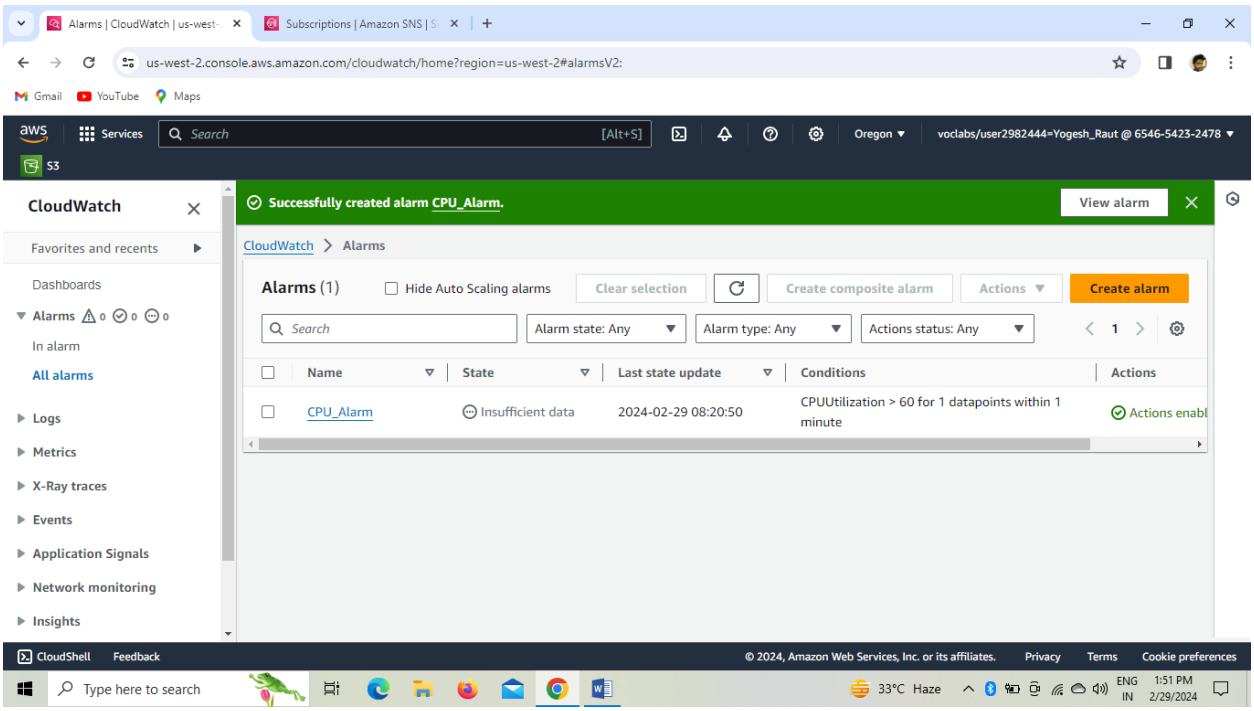
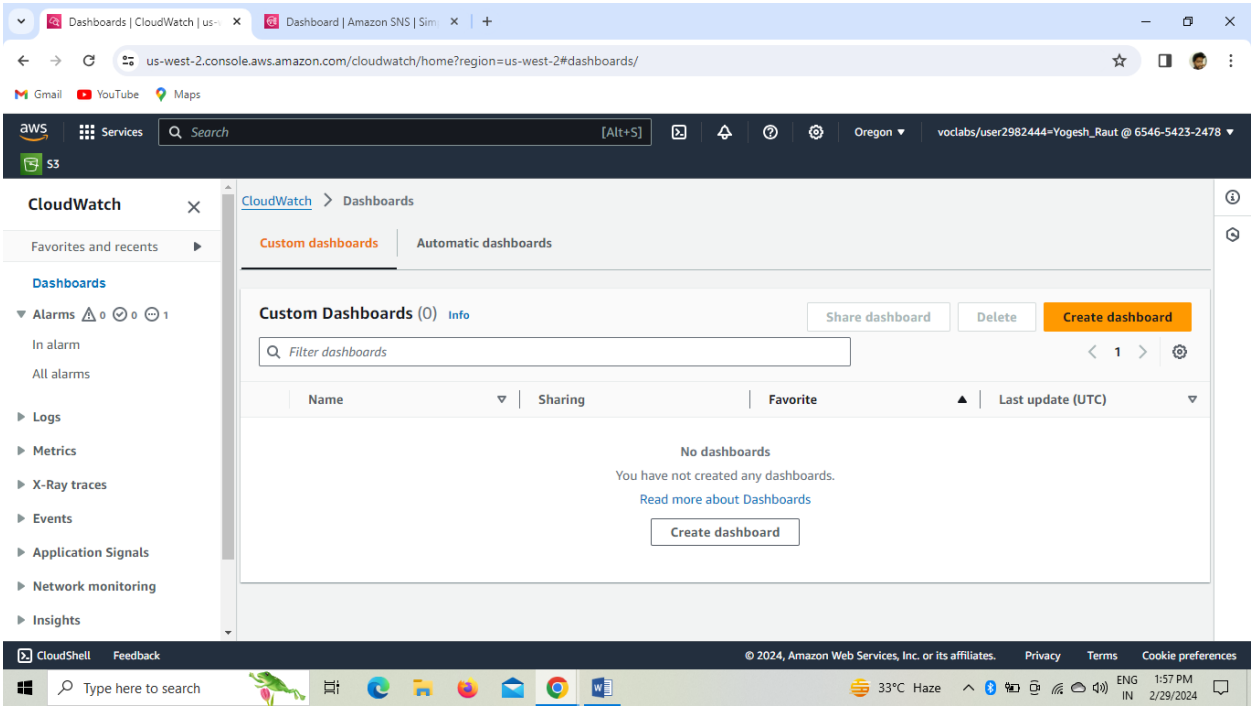
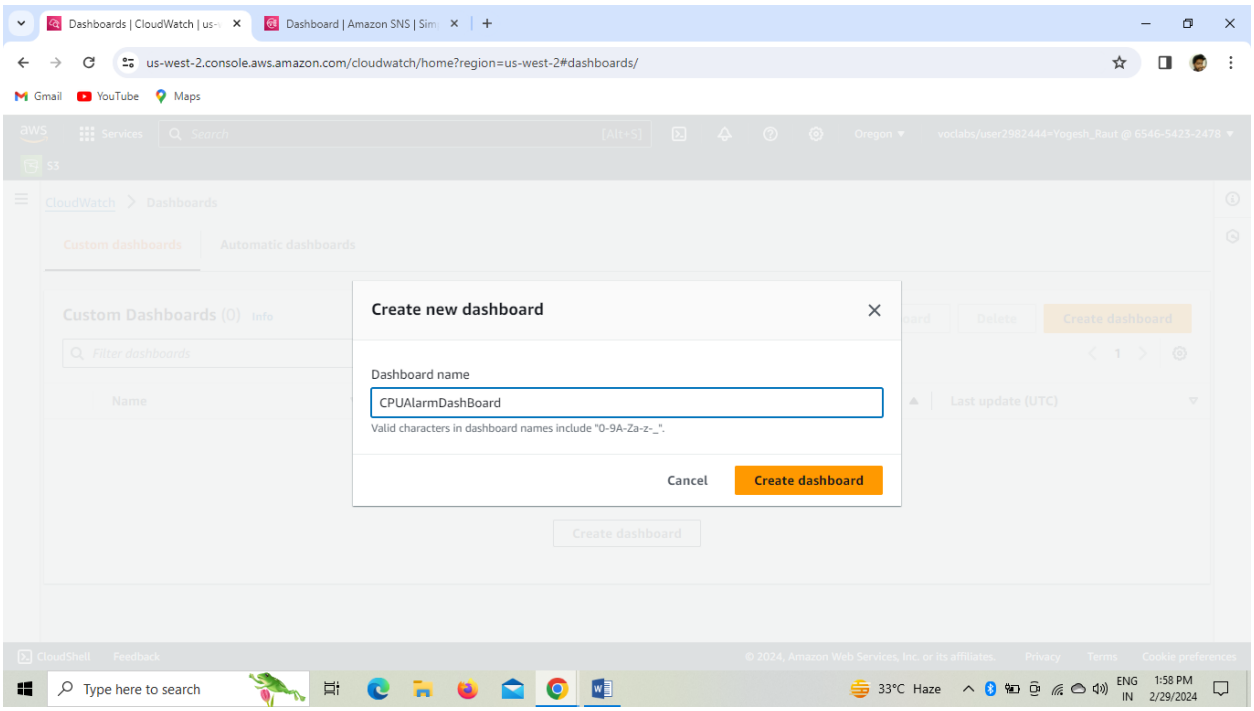
Privacy
Terms
Cookie preferences

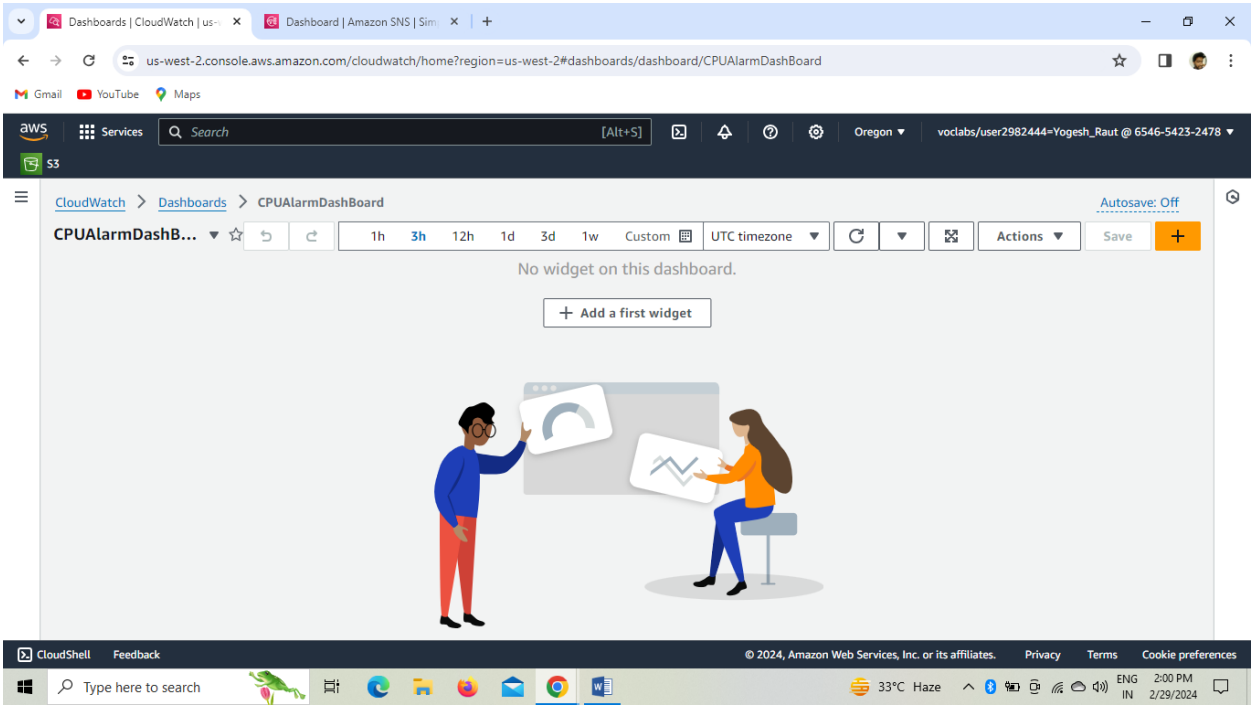


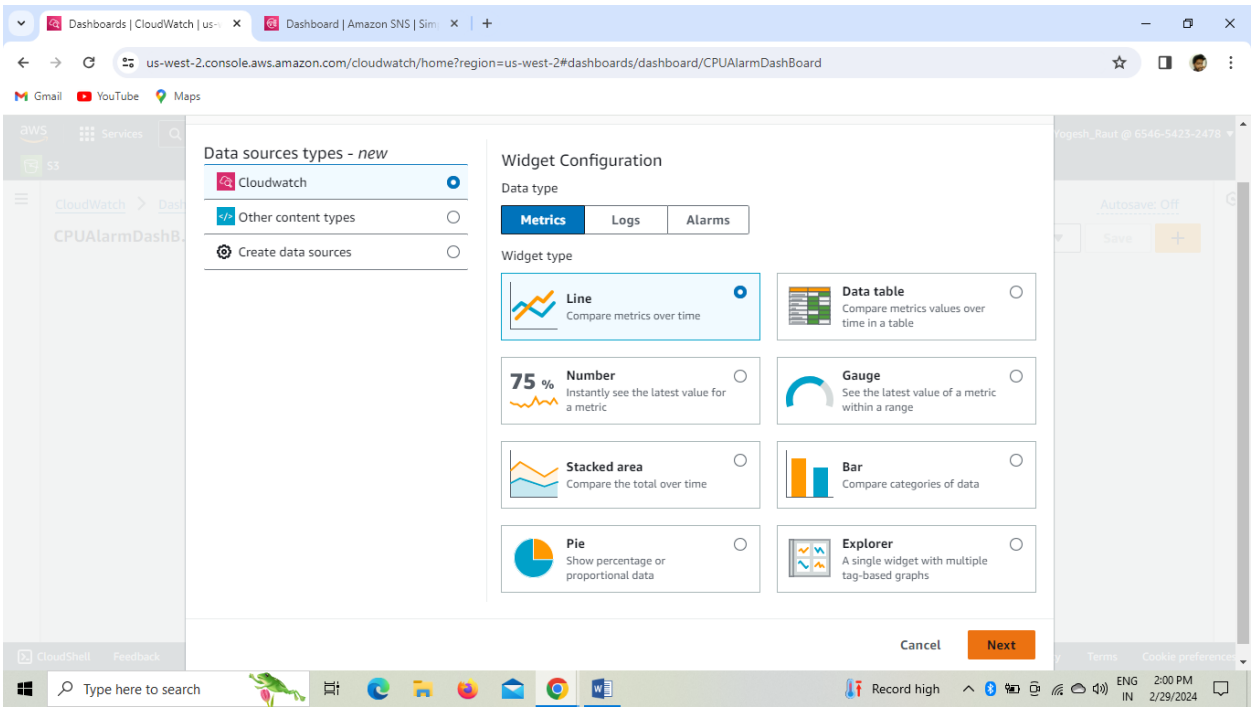
13. With our alarm created, we now need to create its widget on the dashboard. So we move on to creating new dashboard and then a widget for the alarm as illustrated.

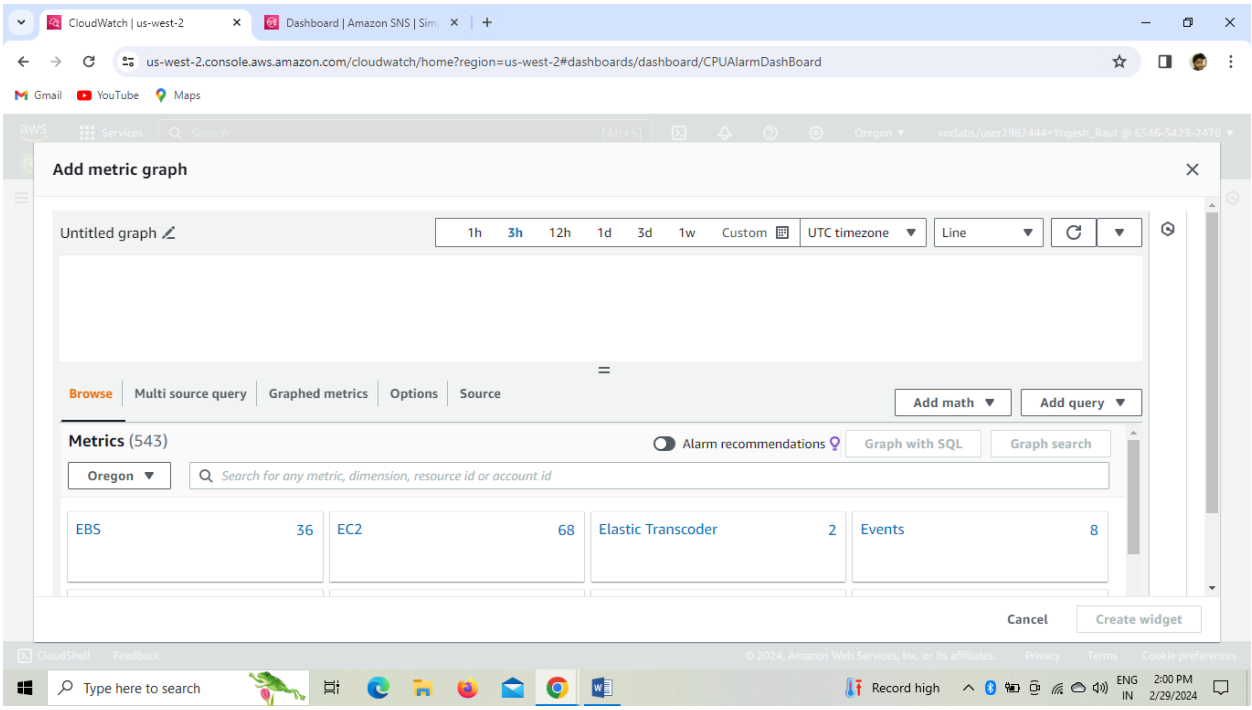


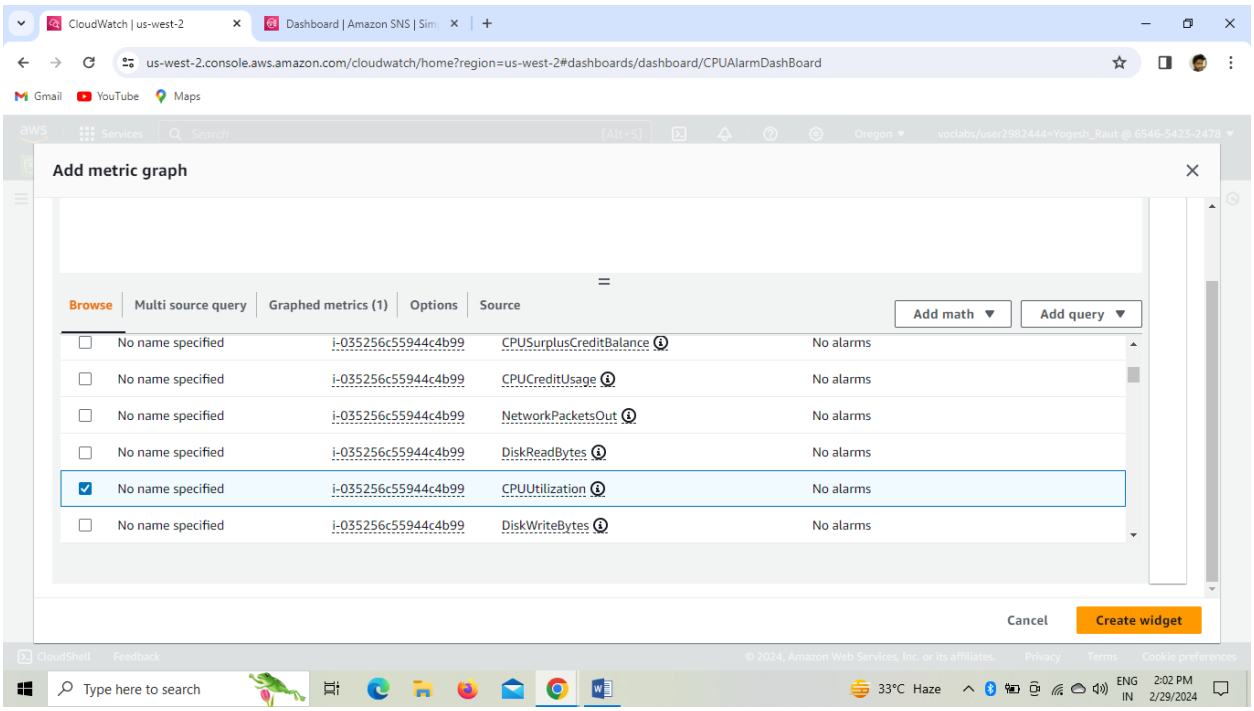


14. Now in our newly created dashboard, we add a widget to monitor the CPU usage as shown.

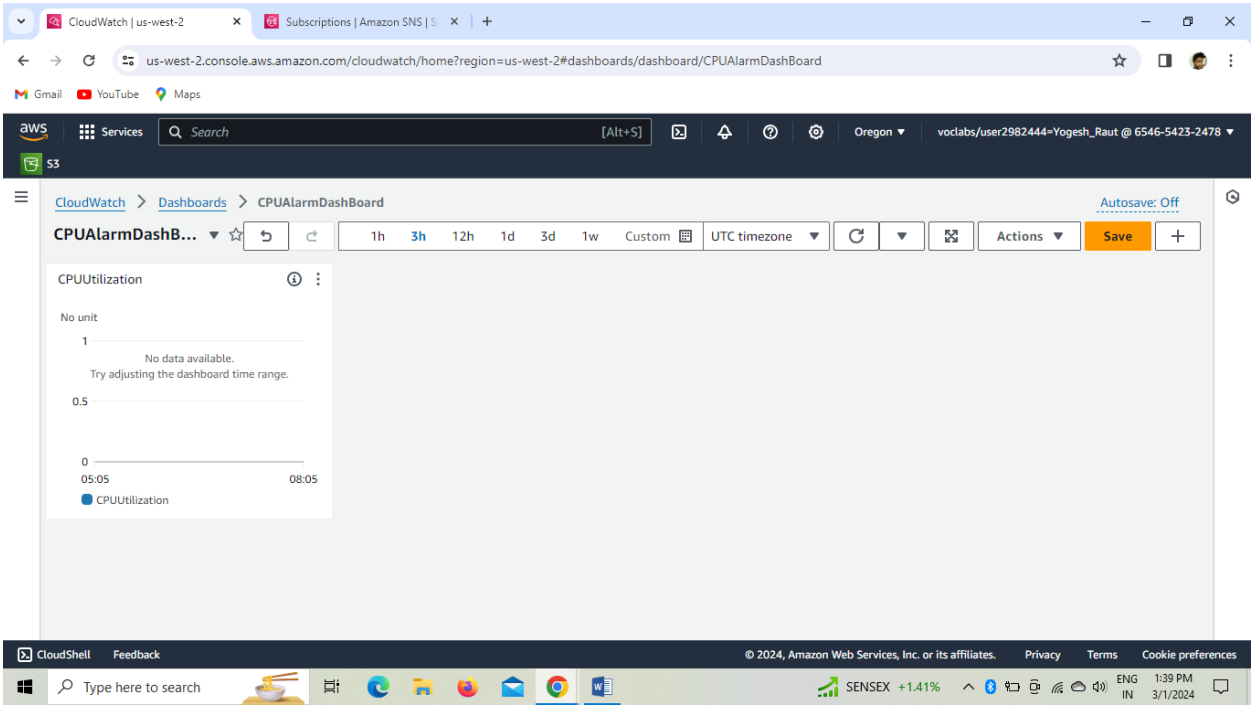



Dashboards | CloudWatch | us-
Dashboard | Amazon SNS | Sim
us-west-2.console.aws.amazon.com/cloudwatch/home?region=us-west-2#dashboards/dashboard/CPUAlarmDashBoard
Gmail
YouTube
Maps
Data sources types - new
Cloudwatch
Other content types
Create data sources
Widget Configuration
Data type
Metrics
Logs
Alarms
Widget type
Line
Compare metrics over time
Data table
Compare metrics values over time in a table
75 %
Number
Instantly see the latest value for a metric
Gauge
See the latest value of a metric within a range
Stacked area
Compare the total over time
Bar
Compare categories of data
Pie
Show percentage or proportional data
Explorer
A single widget with multiple tag-based graphs
Cancel
Next
Type here to search
Record high
ENG
IN
2:00 PM
2/29/2024

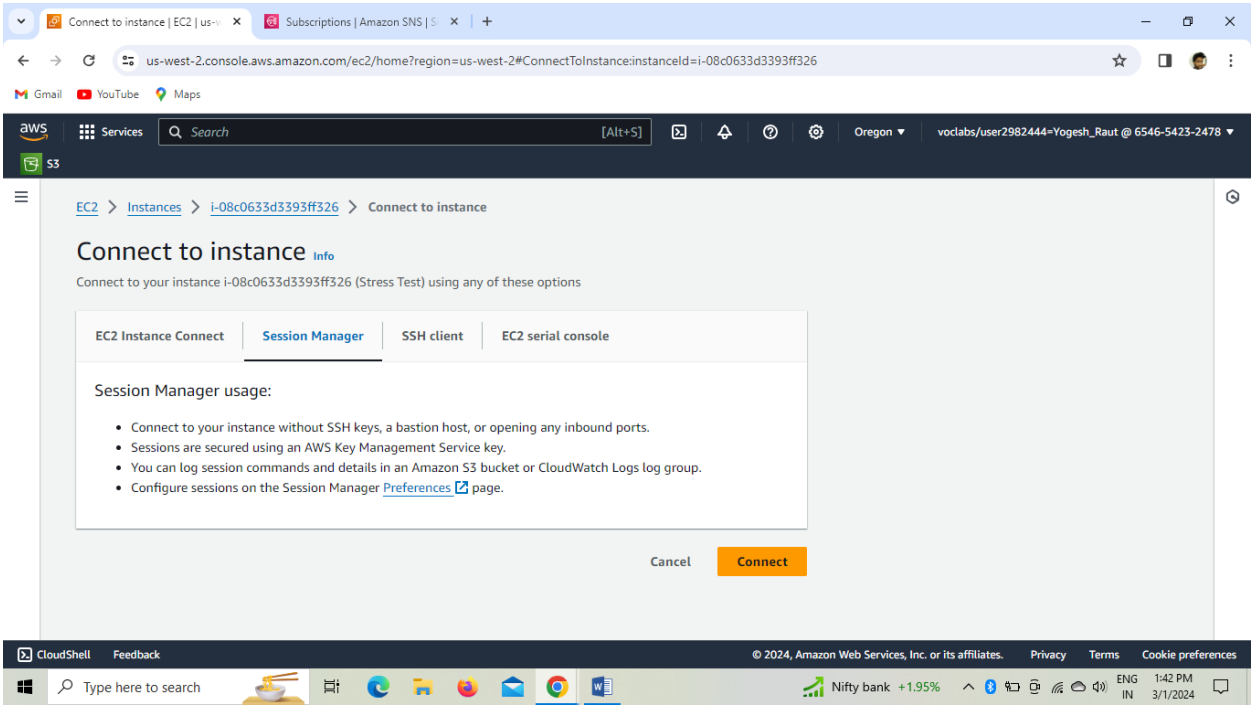

CloudWatch | us-west-2
Dashboard | Amazon SNS | Sim
us-west-2.console.aws.amazon.com/cloudwatch/home?region=us-west-2#dashboards/dashboard/CPUAlarmDashBoard
Gmail
YouTube
Maps
Add metric graph
Untitled graph
1h
3h
12h
1d
3d
1w
Custom
UTC timezone
Line
Browse
Multi source query
Graphed metrics
Options
Source
Add math
Add query
Metrics (543)
Alarm recommendations
Graph with SQL
Graph search
Oregon
Search for any metric, dimension, resource id or account id
EBS
36
EC2
68
Elastic Transcoder
2
Events
8
Cancel
Create widget
Type here to search
Record high
ENG
IN
2:00 PM
2/29/2024

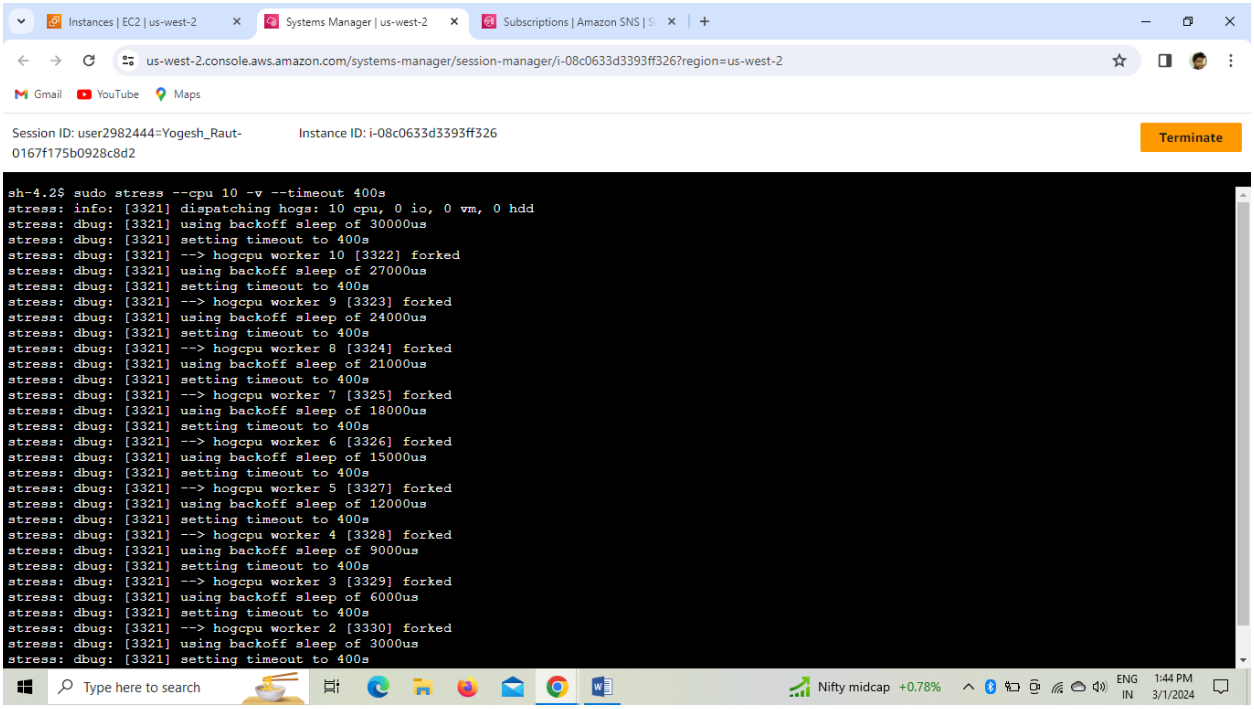


15. Now you will surely be able to monitor instance from dashboard widget.



16. With alarm at the ready, we must **check the alarm.** For that, connect to your instance via **Session Manager** and try to load up your instance as shown.





17. After some time, you will see the **CPU Utilization** on your widget. As soon as the threshold breaches, the widget will turn **red.**

18. Also, if you now check your mail, you can find a notification mail of the alarm alerting you of the same.

There we are!! Now we can monitor our instance as per our needs!!