

# CLOUD COMPUTING LABORATORY- 11

## AWS ACADEMY LAB 09

### Amazon Web Services

Name: Drishti.

Roll No: 1928228

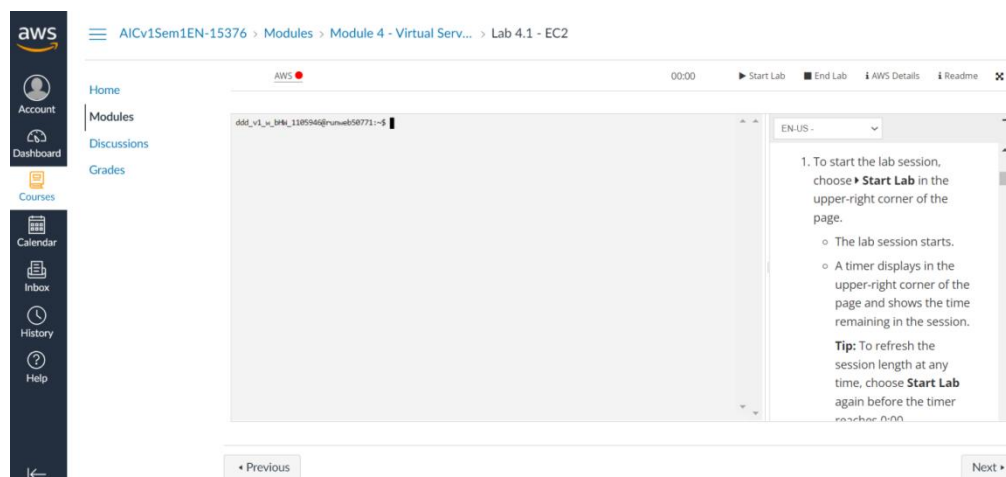
Date: 30/03/2022

**Aim:** Create an Amazon CloudWatch alarm to notify you when the account has spent over a certain amount of money. The alarm sends a message to Amazon Simple Notification Service (Amazon SNS) to send an email or text notification.

**Time Duration:** Approximately 1 hour 20 minutes.

**Requirements:** - AWS account (access to AWS console dashboard)  
- Internet connection

1. If we use AWS academy to log in, we go to LAB 9 and click on start lab, allowing the light beside AWS to turn green, before clicking on AWS on the left side, which automatically displays the AWS console dashboard.



2. We go to <https://aws.amazon.com> , click on ‘Sign in to Console’, and login with our root account.



#### Sign in

##### ☒ Root user

Account owner that performs tasks requiring unrestricted access. [Learn more](#)

##### ☐ IAM user

User within an account that performs daily tasks. [Learn more](#)

Root user email address

1928228@kii.ac.in

Next

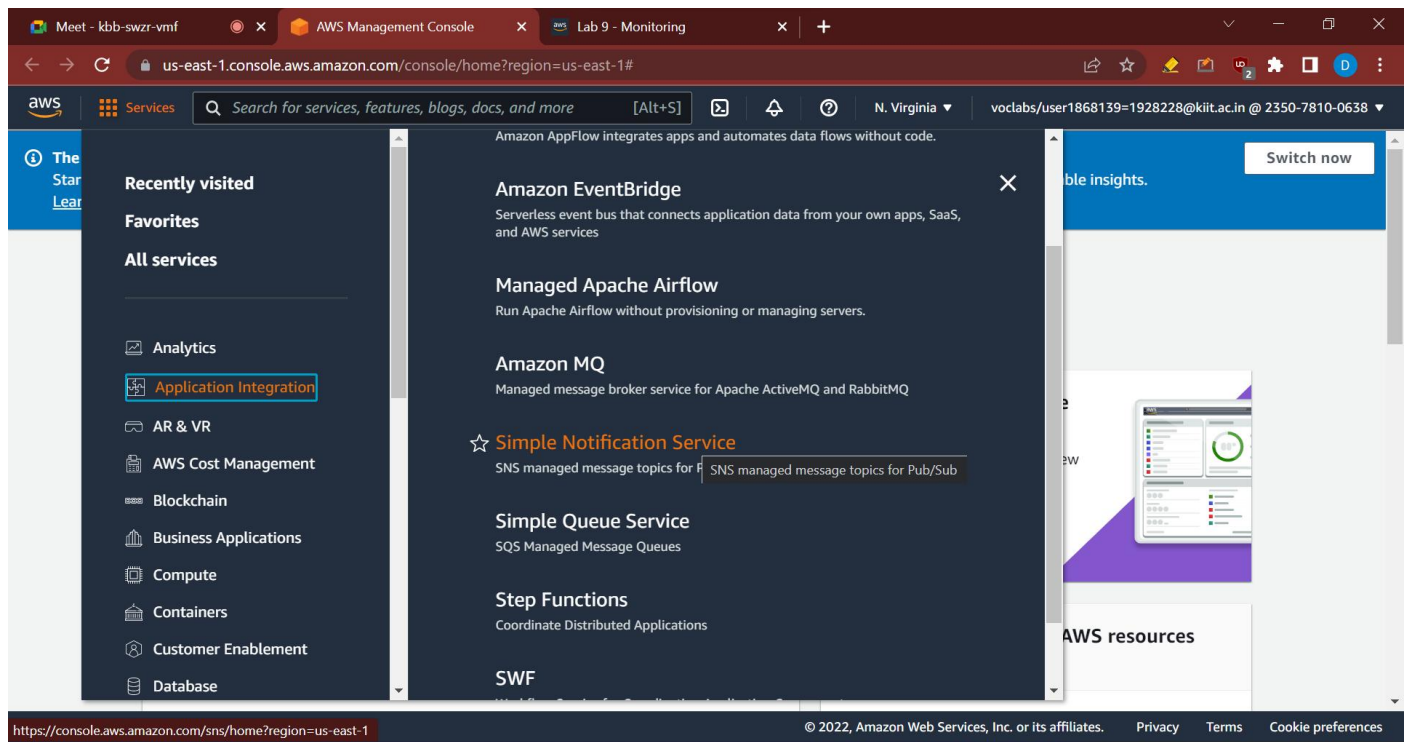
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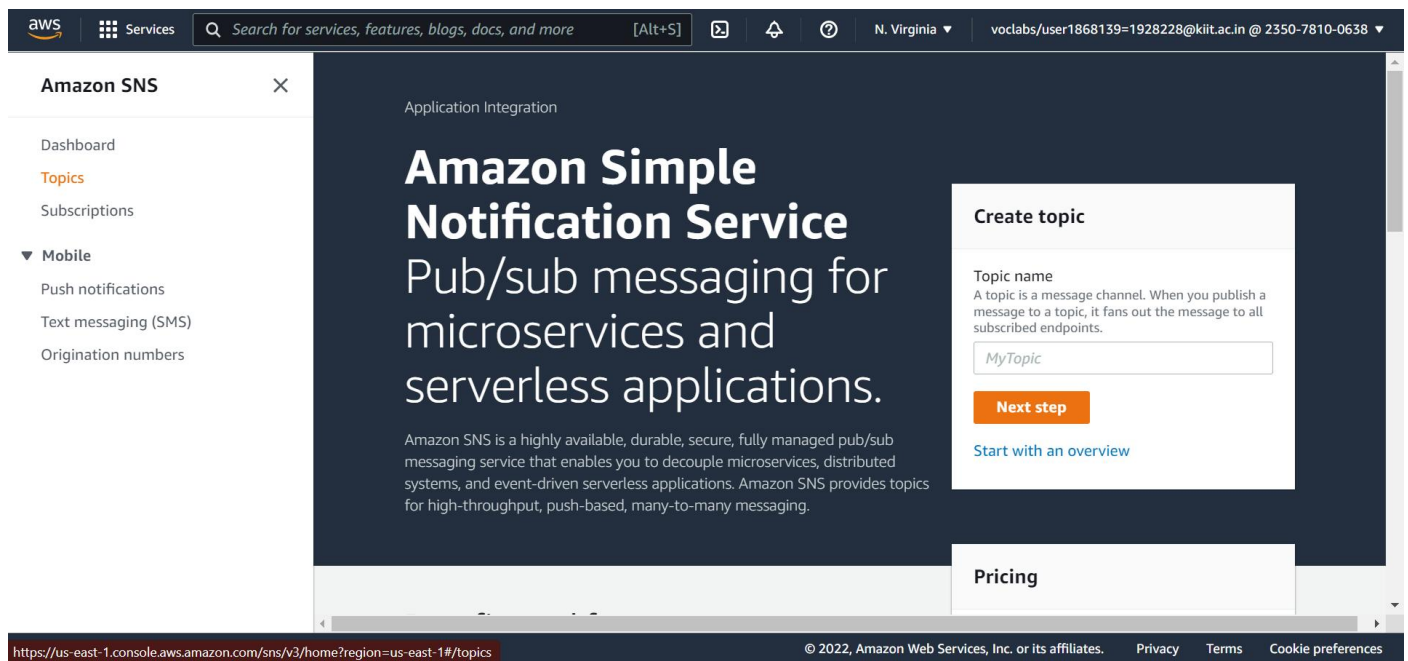


## Create and subscribe to an SNS topic

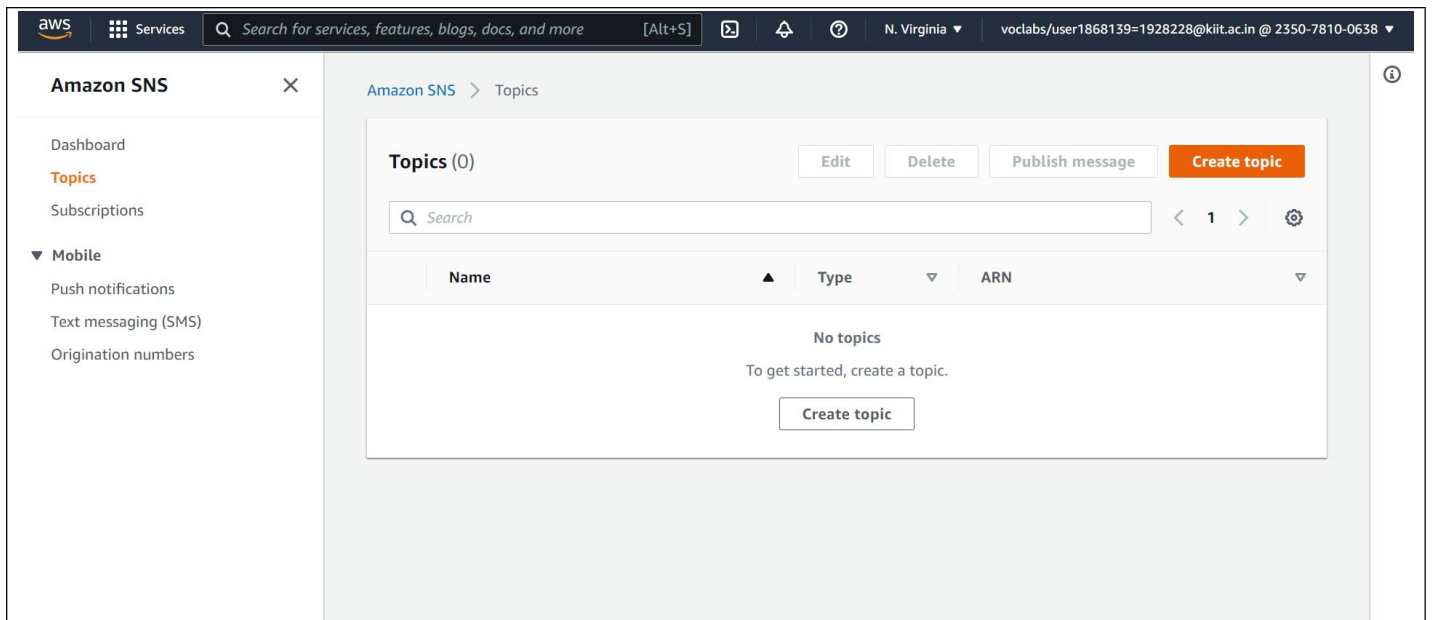
3. Choose the Services menu, locate the Application Integration section, and choose Simple Notification Service.



4. In the left navigation pane, select Topics.
5. Note: If you don't see the left navigation pane, choose the hamburger menu icon.

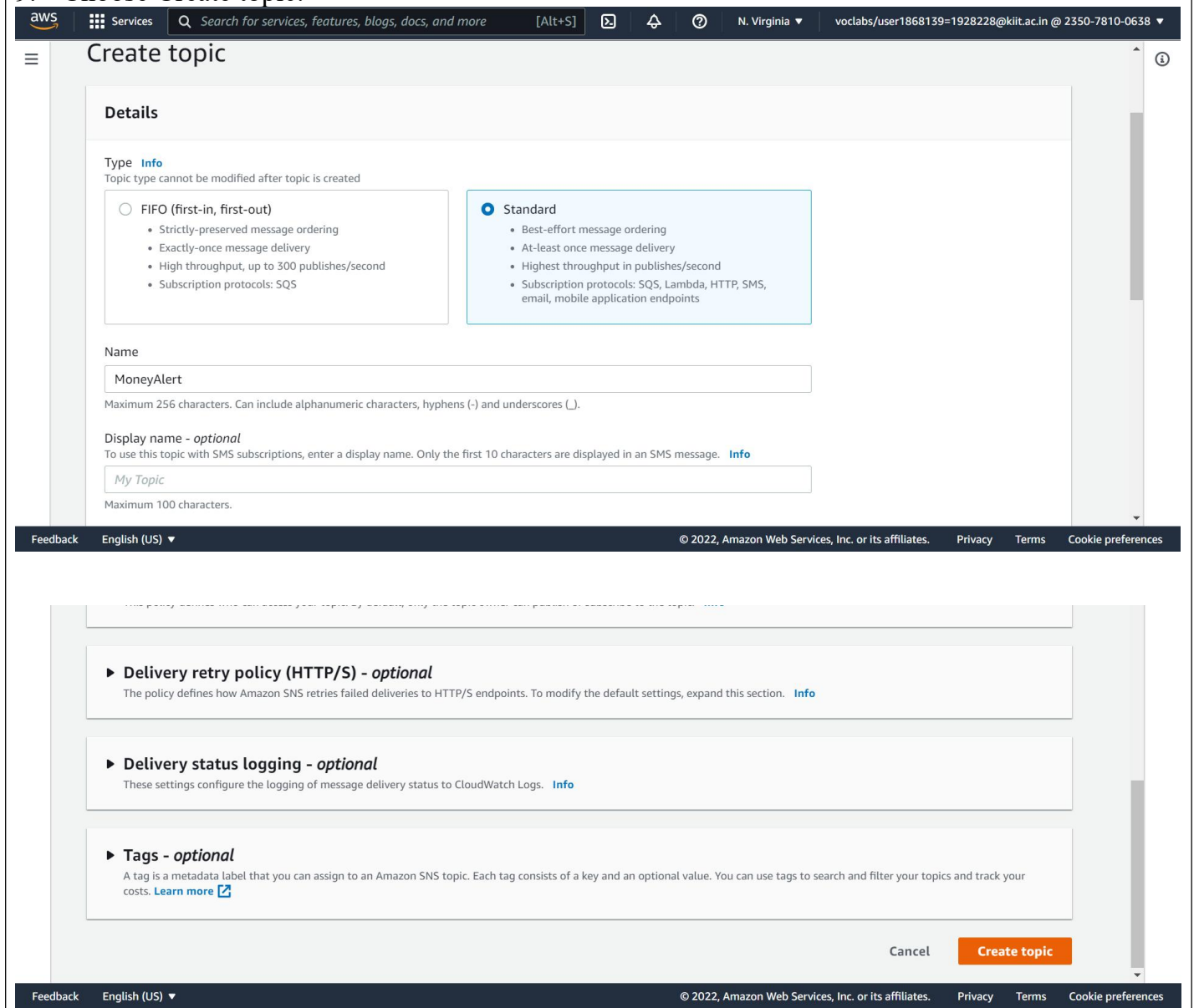


6. Select Create topic.



*A Topic acts as a communication channel where messages from alerts and events can be posted.*

7. For Type, select Standard.
8. For Name, enter MoneyAlert
9. Choose Create topic.



10. Now, you will subscribe to that topic so when a message is posted to the topic, it will be pushed to your phone or email.

The screenshot shows the Amazon SNS console. A green banner at the top states: "Topic MoneyAlert created successfully. You can create subscriptions and send messages to them from this topic." The left sidebar shows the navigation menu with "Topics" selected. The main content area displays the "MoneyAlert" topic details. The details are as follows:

| Details      |   |
|--------------|---|
| Name         | MoneyAlert                                    |
| Display name | -   |
| ARN          | arn:aws:sns:us-east-1:235078100638:MoneyAlert |
| Topic owner  | 235078100638                                  |
| Type         | Standard                                      |

Buttons for "Edit", "Delete", and "Publish message" are visible at the top right of the details section.

11. In the Subscriptions section, choose Create subscription.

The screenshot shows the Amazon SNS console with the "Subscriptions" section selected. The "Create subscription" button is highlighted in orange. Below the button, there is a search bar and a table with the following columns: ID, Endpoint, Status, Protocol, and Topic. The table is currently empty, and a message states "No subscriptions found".

12. For Topic ARN, select the MoneyAlert topic you created.

13. For Protocol, select Email to get an email alert.

14. For Endpoint, enter your email address or phone number, depending on what you selected for Protocol.

The screenshot shows the "Create subscription" form in the Amazon SNS console. The form has the following fields:

- Topic ARN:** A dropdown menu showing "arn:aws:sns:us-east-1:235078100638:MoneyAlert".
- Protocol:** A dropdown menu showing "Email".
- Endpoint:** A text input field containing "1928228@kiit.ac.in".

Below the form, there is a blue box with an information icon and the text: "After your subscription is created, you must confirm it. Info".

## 15. Select Create subscription.

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Protocol  
The type of endpoint to subscribe

Email

Endpoint  
An email address that can receive notifications from Amazon SNS.

1928228@kiit.ac.in

After your subscription is created, you must confirm it. [Info](#)

► Subscription filter policy - optional  
This policy filters the messages that a subscriber receives. [Info](#)

► Redrive policy (dead-letter queue) - optional  
Send undeliverable messages to a dead-letter queue. [Info](#)

Cancel Create subscription

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## 16. A confirmation message displays at the top of the page.

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Amazon SNS

Dashboard  
Topics  
Subscriptions  
▼ Mobile  
Push notifications  
Text messaging (SMS)  
Origination numbers

Subscription to MoneyAlert created successfully.  
The ARN of the subscription is arn:aws:sns:us-east-1:235078100638:MoneyAlert:711ef303-d032-40d3-a1d1-2d0f7b67696c.

Amazon SNS > Topics > MoneyAlert > Subscription: 711ef303-d032-40d3-a1d1-2d0f7b67696c

Subscription: 711ef303-d032-40d3-a1d1-2d0f7b67696c

Edit Delete

Details

|   |                                |
|---|--------------------------------|
| ARN<br>arn:aws:sns:us-east-1:235078100638:MoneyAlert:711ef303-d032-40d3-a1d1-2d0f7b67696c | Status<br>Pending confirmation |
| Endpoint<br>1928228@kiit.ac.in  | Protocol<br>EMAIL              |
| Topic<br>MoneyAlert   |                                |

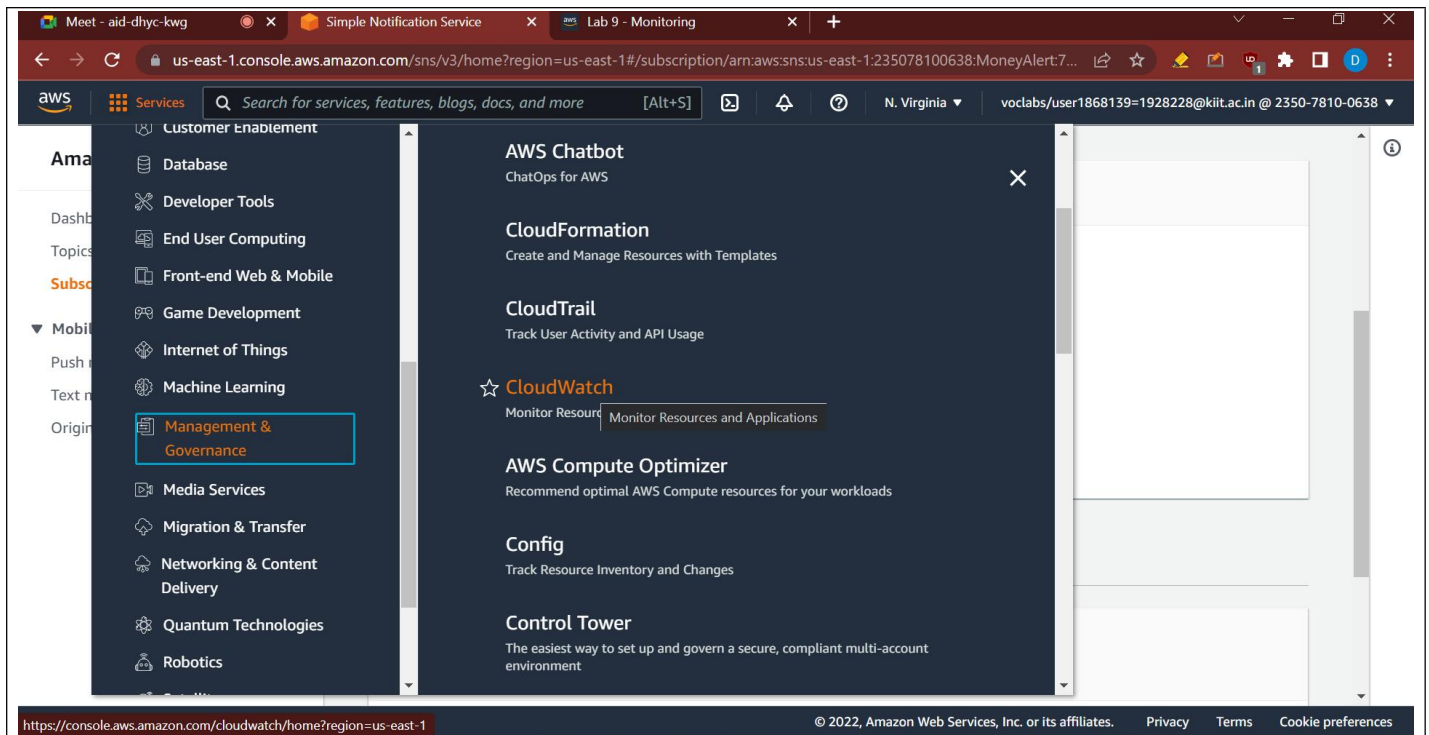
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## Create a CloudWatch alarm

*Now you will create the billing alert.*

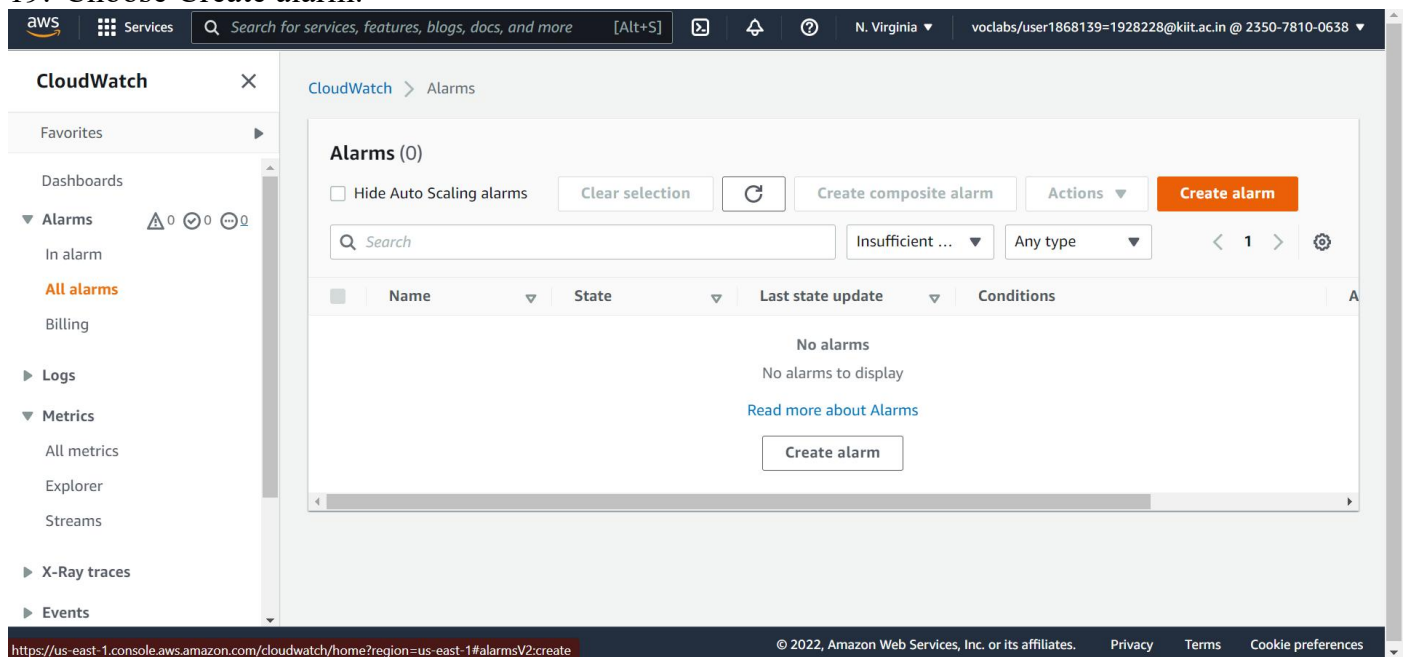
17. Choose the Services menu, locate the Management & Governance section, and choose CloudWatch.



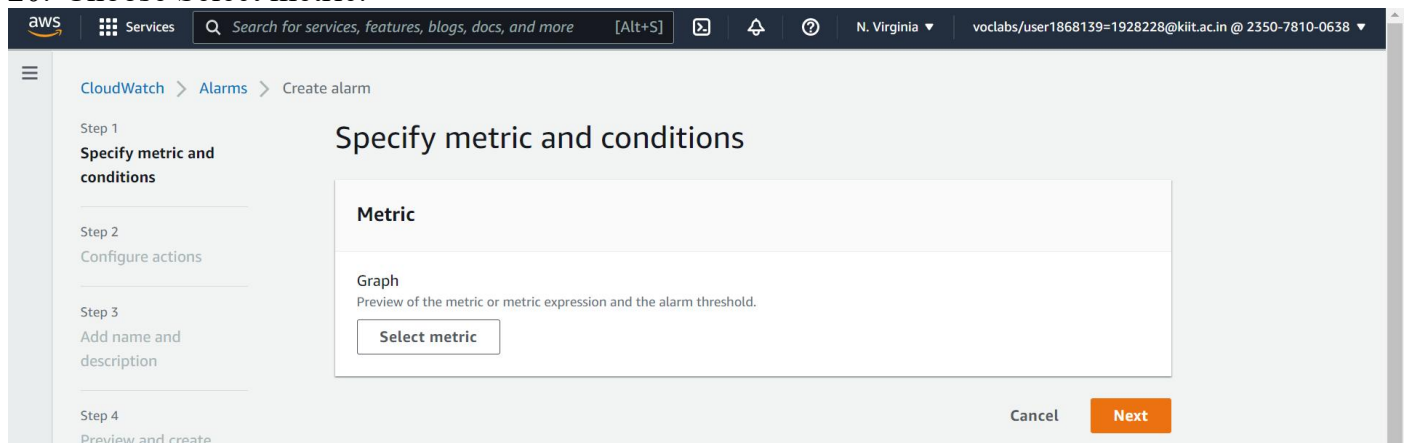


18. In the left navigation pane, select Alarms.

19. Choose Create alarm.



20. Choose Select metric.



## 21. Select Billing.

21. Select Billing.

## 22. Select Total Estimated Charge.

22. Select Total Estimated Charge.

## 23. Check the box for EstimatedCharges.

## 24. Choose Select metric.

23. Check the box for EstimatedCharges.

24. Choose Select metric.

## 25. In the Conditions section, configure the following:

- For Threshold type, select Static.
- For Whenever EstimatedCharges is..., select Greater.

- c) For than..., enter 100 into the textbox.
26. Choose Next.

The screenshot shows the AWS CloudWatch 'Create alarm' wizard, specifically the 'Specify metric and conditions' step. The interface is divided into a left sidebar with steps and a main content area.

**Left Sidebar:**

- Step 1: Specify metric and conditions (Active)
- Step 2: Configure actions
- Step 3: Add name and description
- Step 4: Preview and create

**Main Content Area:**

### Specify metric and conditions

**Metric** [Edit]

**Graph**  
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 6 hours.

**No unit** [X]

**Namespace**  
AWS/Billing

**Metric name**  
EstimatedCharges

**Currency**  
USD

**Statistic**  
Maximum

**Conditions**

**Threshold type**

- ☒ **Static**  
Use a value as a threshold
- ☐ **Anomaly detection**  
Use a band as a threshold

**Whenever EstimatedCharges is...**  
Define the alarm condition.

- ☒ **Greater**  
> threshold
- ☐ **Greater/Equal**  
>= threshold
- ☐ **Lower/Equal**  
<= threshold
- ☐ **Lower**  
< threshold

**than...**  
Define the threshold value.

USD

Must be a number

**Additional configuration**

**Buttons:** Cancel, Next

27. In the Notification section, configure the following:
- a) For Alarm state trigger, choose In alarm.
  - b) For Select an SNS topic, choose Select an existing SNS topic.
  - c) For Send a notification to..., choose the MoneyAlert topic.
28. Choose Next.



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Step 2  
**Configure actions**

Step 3  
Add name and description

Step 4  
Preview and create

### Notification

Alarm state trigger  
Define the alarm state that will trigger this action.

☒ **In alarm**  
The metric or expression is outside of the defined threshold.

☐ **OK**  
The metric or expression is within the defined threshold.

☐ **Insufficient data**  
The alarm has just started or not enough data is available.

[Remove](#)

Select an SNS topic  
Define the SNS (Simple Notification Service) topic that will receive the notification.

☒ **Select an existing SNS topic**

☐ Create new topic

☐ Use topic ARN

Send a notification to...

Only email lists for this account are available.

Email (endpoints)  
**1928228@kiit.ac.in** - [View in SNS Console](#)

[Add notification](#)

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[Add Auto Scaling action](#)

### EC2 action

This action is only available for EC2 Per-Instance Metrics.

[Add EC2 action](#)

### Systems Manager action [Info](#)

This action will create an Incident or OpsItem in Systems Manager when the alarm is **In alarm** state.

[Add Systems Manager action](#)

[Cancel](#) [Previous](#) [Next](#)

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29. For Alarm name, enter MoneyAlertAlarm

30. Choose Next.

Meet - aid-dhyc-kwg CloudWatch Management Console Lab 9 - Monitoring

us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#alarmsV2:create?~(Page~Details~AlarmType~MetricAlarm...

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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

### Add name and description

**Name and description**

Alarm name

Alarm description - optional

Up to 1024 characters (0/1024)

[Cancel](#) [Previous](#) [Next](#)

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### 31. Review the settings. Scroll down and choose Create alarm.

The screenshot shows the 'Preview and create' step in the AWS CloudWatch console. The left sidebar lists four steps: 'Specify metric and conditions' (active), 'Configure actions', 'Add name and description', and 'Preview and create'. The main area is titled 'Step 1: Specify metric and conditions' and contains a 'Metric' section. Under 'Graph', it states: 'This alarm will trigger when the blue line goes above the red line for 1 datapoints within 6 hours.' Below this is a line graph with a red line at 100 and a blue line at 0. The 'Namespace' is 'AWS/Billing', the 'Metric name' is 'EstimatedCharges', the 'Currency' is 'USD', and the 'Statistic' is 'Maximum'. At the bottom, there is a 'Description' field with a minus sign, and three buttons: 'Cancel', 'Previous', and 'Create alarm'.

### 32. Congratulations! You have set up a CloudWatch alarm that uses Amazon SNS to send an alert when the cost of services reaches \$100.

The screenshot shows the AWS CloudWatch console after the alarm has been created. A green banner at the top says 'Successfully created alarm MoneyAlertAlarm.' with a 'View alarm' button. The left sidebar shows the 'Alarms' section with a count of 1. The main area is titled 'Alarms (1)' and shows a table with one alarm: 'MoneyAlertAlarm'. The table has columns for Name, State, Last state update, and Conditions. The state is 'Insufficient data' and the conditions are 'EstimatedCharges > 100 for 1 datapoints within 6 hours'.

The screenshot shows the AWS CloudWatch console with a blue banner at the top that says 'Some subscriptions are pending confirmation' and 'Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed'. There is a 'View SNS Subscriptions' button. The rest of the console is the same as the previous screenshot, showing the 'MoneyAlertAlarm' in the 'Alarms (1)' table.

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CloudWatch

CloudWatch > Alarms > MoneyAlertAlarm

Alarms MoneyAlertAlarm

Details

|                 |  |                  |  |
|-----------------|--|------------------|--|
| Name            | State  | Namespace        | Datapoints to alarm                                  |
| MoneyAlertAlarm | Insufficient data                                      | AWS/Billing      | 1 out of 1   |
| Type            | Threshold  | Metric name      | Missing data treatment                               |
| Metric alarm    | EstimatedCharges > 100 for 1 datapoints within 6 hours | EstimatedCharges | Treat missing data as missing                        |
| Description     | Last change  | Currency         | Percentiles with low samples evaluate                |
| No description  | 2022-03-30 04:16:17                                    | USD              |  |
|                 | Actions  | Statistic        | ARN  |
|                 | Actions enabled  | Maximum          | arn:aws:cloudwatch:us-east-1:235078100638:alarm:Mone |
|                 |  | Period           | yAlertAlarm  |
|                 |  | 6 hours          |  |

View EventBridge rule

https://console.aws.amazon.com/cloudshell/home?region=us-east-1

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mail.google.com/mail/u/0/?ik=c2f5e17404&view=pt&search=all&permmsgid=msg-f%3A1728696359216871415&simpl=msg-f%3A...

228\_Drishti <1928228@kiit.ac.in>

## AWS Notification - Subscription Confirmation

**AWS Notifications** <no-reply@sns.amazonaws.com>  
To: 1928228@kiit.ac.in

Wed, Mar 30, 2022 at 9:38 AM

You have chosen to subscribe to the topic:  
**arn:aws:sns:us-east-1:235078100638:MoneyAlert**

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](#)

## Lab complete

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CloudWatch

CloudWatch > Alarms

Alarms (1)

☐ Hide Auto Scaling alarms

Clear selection

Create composite

Search

Any state

| State | Last state update   | Conditions                                    |
|-------|---------------------|---|
| OK    | 2022-03-30 09:47:01 | EstimatedCharges > 100 for 1 c within 6 hours |

Account ID: 2350-7810-0638

Federated user: voclabs/user1868139=1928228@kiit.a c.in

Account

Organization

Service Quotas

Billing Dashboard

Switch role

Sign out



228\_Drishti <1928228@kiit.ac.in>

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## AWS Notification - Subscription Confirmation

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**AWS Notifications** <no-reply@sns.amazonaws.com>  
To: 1928228@kiit.ac.in

Wed, Mar 30, 2022 at 9:38 AM

You have chosen to subscribe to the topic:

**arn:aws:sns:us-east-1:235078100638:MoneyAlert**

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](#)