

Working with Cloud watch and SNS to create a billing alert

Cloud watch

It is a monitoring and observability service provided by Amazon Web Services (AWS). It allows you to collect, monitor, and analyze various metrics, logs, and events from your AWS resources and applications.

Here are some key features and use cases of AWS Cloud Watch.

- **Metrics:** Cloud Watch provides a wide range of pre-defined metrics for AWS services, including EC2 instances, RDS databases, S3 buckets, and more. You can also create custom metrics to monitor specific aspects of your applications.
- **Alarms:** Cloud Watch alarms allow you to set thresholds on metrics and trigger actions when those thresholds are breached. For example, you can create an alarm to send a notification when CPU utilization exceeds a certain percentage.
- **Events:** Cloud Watch Events provides a stream of events from AWS services and custom applications. You can use these events to trigger automated actions and workflows, such as starting or stopping EC2 instances or invoking Lambda functions.
- **Dashboards:** Cloud Watch Dashboards allow you to create customized visualizations of your metrics, logs, and alarms. You can combine multiple metrics and logs into a single dashboard to gain a comprehensive view of your application's performance.

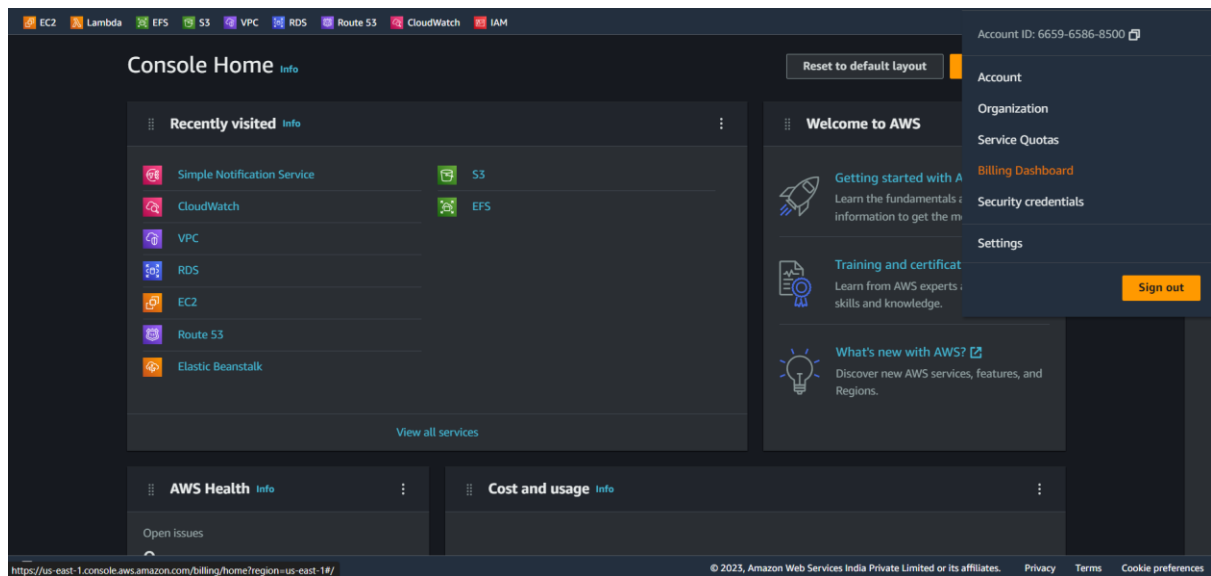


SNS

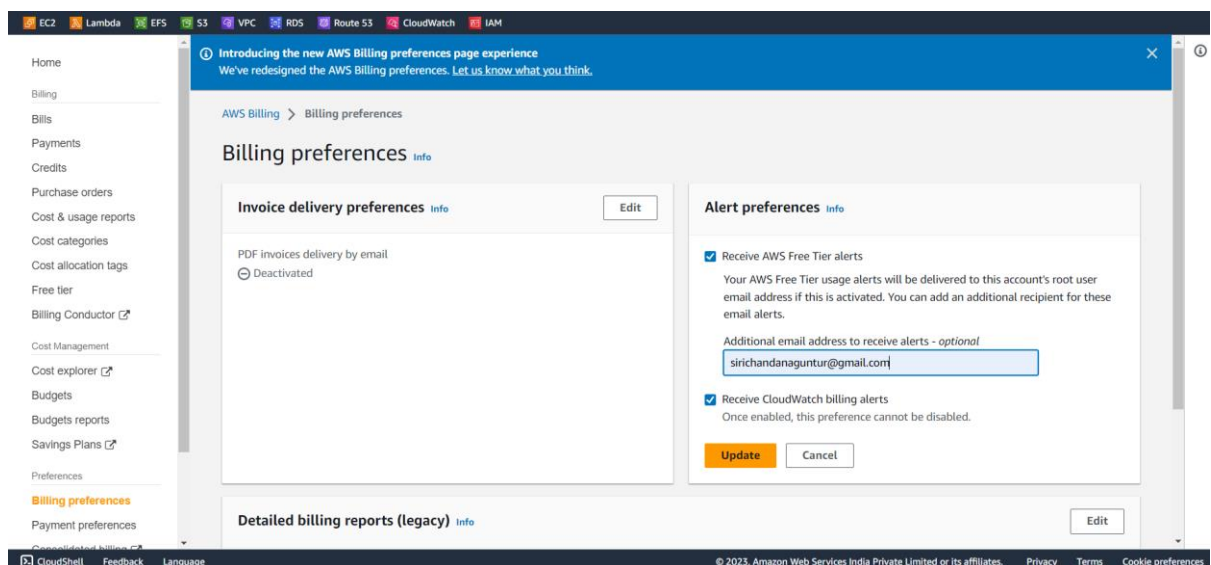
It enables you to send notifications and messages to a variety of endpoints, including email, SMS, mobile push notifications, and more.

- Pub/Sub Messaging
- Multiple Protocols
- Topic-Based Structure
- Flexible Message Filtering
- Mobile Push Notifications
- Message Fan-out

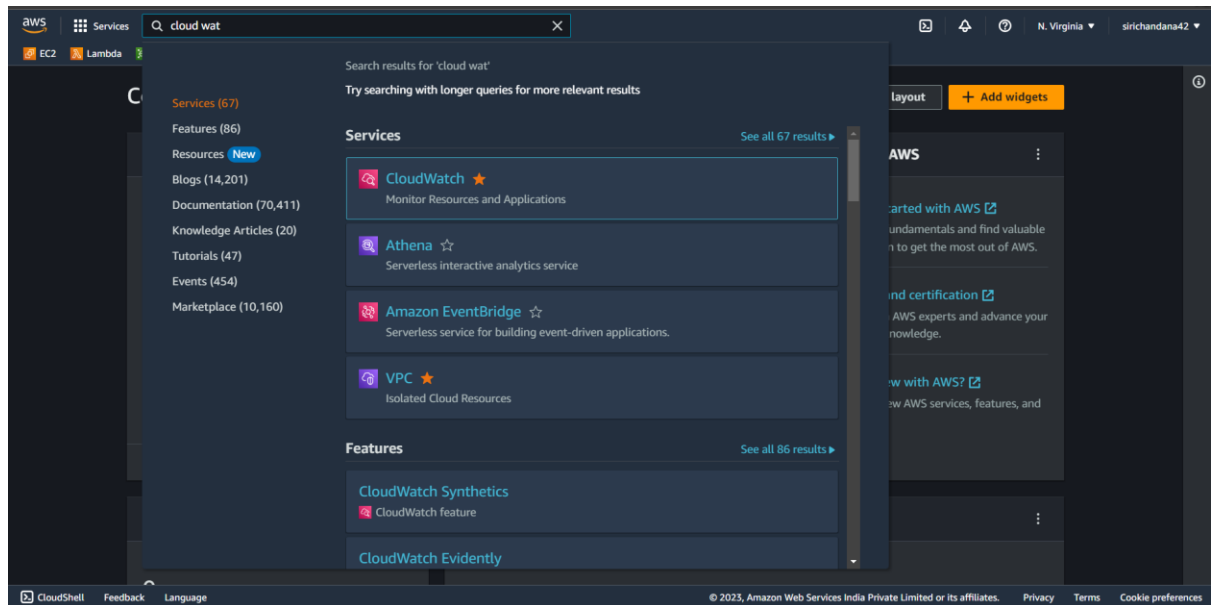
1. Sign in to the AWS Management Console using your AWS account credentials.
And navigate to billing dashboard



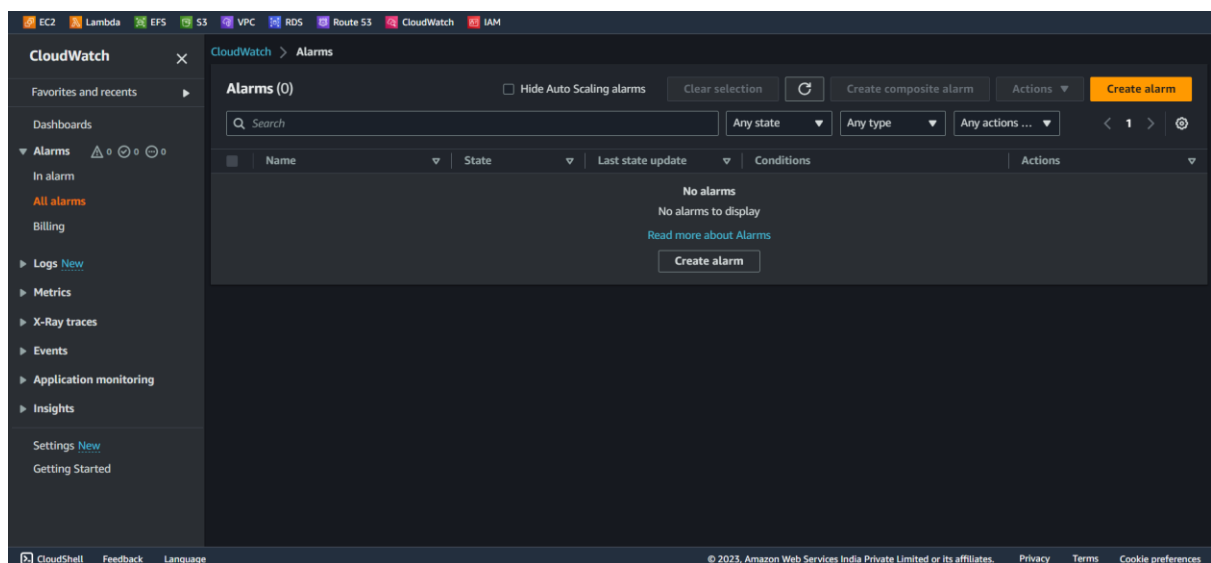
2. Go to billing preferences and click on edit preferences and then select the checkbox about cloud watch billing preferences and click on update.



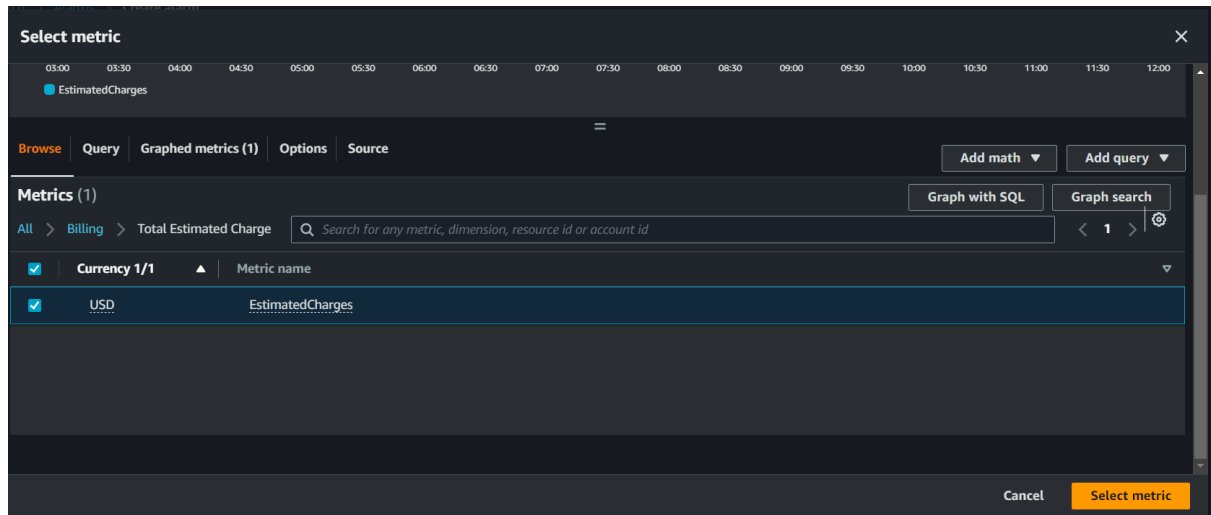
3. Open the Cloud Watch console by navigating to the Cloud Watch service.



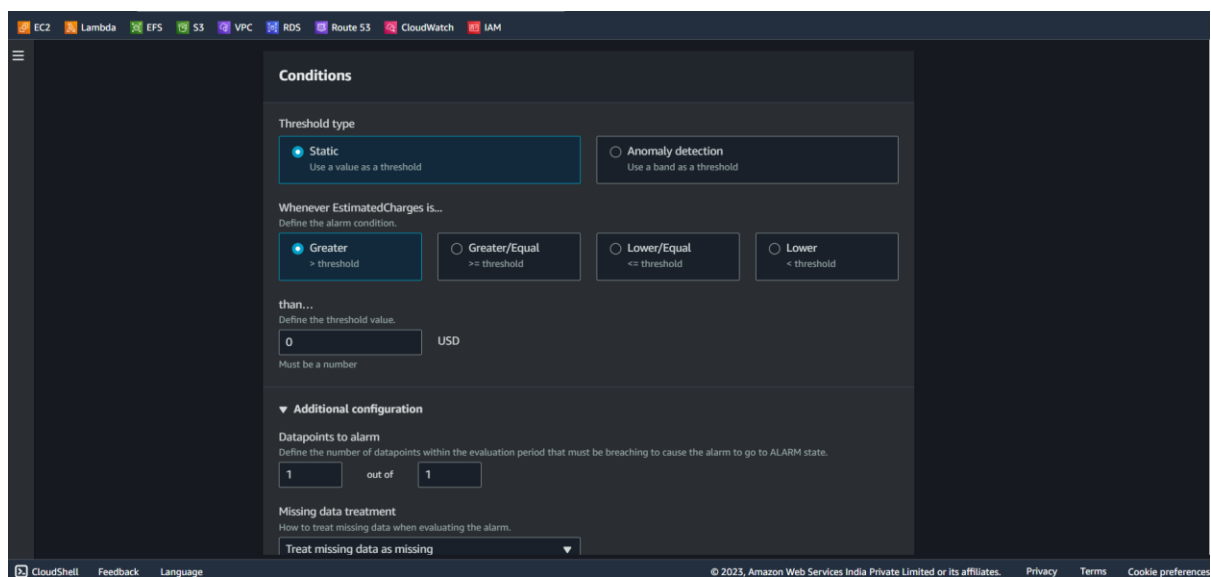
4. In the left navigation pane, click on "Alarms" and then click on the "Create alarm" button.



- On the "Create Alarm" page, under "Select metric", choose "Billing" from the list of services. Select the specific metric you want to set an alarm for, such as "Estimated Charges" or "CurrencyConversionRate".



- Specify the conditions for the alarm. For example, you can set a threshold to trigger the alarm when the estimated charges exceed a certain amount.



7. Configure the actions to take when the alarm state is triggered. In this case, you want to send a notification, so select "In alarm" for the state and choose the SNS topic you want to use if not create a new topic and click on next

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

Send a notification to the following 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 to notify other accounts

Create a new topic...
The topic name must be unique.

Default_CloudWatch_Alarms_Topic

SNS topic names can contain only alphanumeric characters, hyphens (-) and underscores (_).

Email endpoints that will receive the notification...
Add a comma-separated list of email addresses. Each address will be added as a subscription to the topic above.

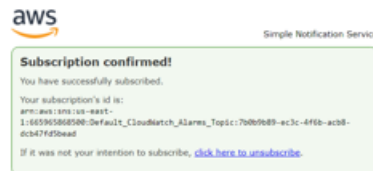
sirichandanaguntur@gmail.com

user1@example.com, user2@example.com

Create topic

Add notification

8. Confirm the SNS Notification subscription in your email ID



9. You can check confirmed option after enabling the subscription in AWS SNS

Amazon SNS

Dashboard

Topics

Subscriptions

▼ Mobile

Push notifications

Text messaging (SMS)

Origination numbers

Default_CloudWatch_Alarms_Topic

Edit Delete Publish message

Details

Name
Default_CloudWatch_Alarms_Topic

Display name
-

ARN
arn:aws:sns:us-east-1:665965868500:Default_CloudWatch_Alarms_Topic

Topic owner
665965868500

Type
Standard

< Subscriptions Access policy Data protection policy Delivery policy (HTTP/S) Delivery status logging Encryption Tags >

Subscriptions (1)

Edit Delete Request confirmation Confirm subscription Create subscription

Search

ID	Endpoint	Status	Protocol
7b0b9b89-ec3c-4f6b-acb8-dcb4...	sirichandanaguntur@gmail.com	Confirmed	EMAIL

10. Add name to your alarm and set description if required and click on next.

The screenshot shows the AWS CloudWatch 'Create alarm' console. The 'Add name and description' step is active. The 'Alarm name' field contains 'BillingAlarm'. The 'Alarm description - optional' field is empty. The 'Next' button is highlighted in orange.

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 [View formatting guidelines](#)

[Edit](#) [Preview](#)

This is an H1
double asterisks will produce strong character
This is [an example](https://example.com/) inline link.

Up to 1024 characters (0/1024)

Markdown formatting is only applied when viewing your alarm in the console. The description will remain in plain text in the alarm notifications.

Cancel Previous **Next**

11. Alarm will be set "In alarm" if it crosses the threshold also an email will be received to the respective email id.

The screenshot shows the AWS CloudWatch 'Alarms' console. A green banner at the top says 'Successfully created alarm BillingAlarm.' The 'Alarms (1)' table shows the 'BillingAlarm' in the 'In alarm' state. The 'Actions' column shows 'Actions enabled'.

CloudWatch > Alarms

Alarms (1) ☐ Hide Auto Scaling alarms [Clear selection](#) [Create composite alarm](#) [Actions](#) [Create alarm](#)

Any state Any type Any actions ... < 1 >

<input type="checkbox"/>	Name	State	Last state update	Conditions	Actions
<input type="checkbox"/>	BillingAlarm	In alarm	2023-06-26 12:40:26	EstimatedCharges > 0 for 1 datapoints within 6 hours	Actions enabled

The screenshot shows an email notification from AWS Notifications. The subject is 'ALARM: "BillingAlarm" in US East (N. Virginia)'. The email body contains details about the alarm state transition.

ALARM: "BillingAlarm" in US East (N. Virginia) [Inbox x](#)

AWS Notifications <no-reply@sns.amazonaws.com> 6:10 PM (1 minute ago) ☆ ↶ ⋮

You are receiving this email because your estimated charges are greater than the limit you set for the alarm "BillingAlarm" in AWS Account [XXXXXXXXXXXX](#).

The alarm limit you set was \$.00 USD. Your total estimated charges accrued for this billing period are currently \$.06 USD as of Monday 26 June, 2023 12:40:26 UTC. The actual charges you will be billed in this statement period may differ from the charges shown on this notification. For more information, view your estimated bill at: [https://aws.amazon.com/billing/](#)

More details about this alarm are provided below:

Amazon CloudWatch Alarm "BillingAlarm" in the US East (N. Virginia) region has entered the ALARM state, because "Threshold Crossed: 1 out of the last 1 datapoints [0.06 (26/06/23 06:40:00)] was greater than the threshold (0.0) (minimum 1 datapoint for OK -> ALARM transition)." at "Monday 26 June, 2023 12:40:26 UTC".

View this alarm in the AWS Management Console: [https://console.aws.amazon.com/cloudwatch/home?region=us-east-1:alarms:alarm=BillingAlarm](#)