



AWS Cloudwatch and SNS – SendQuick Cloud Integration Guide

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SendQuick Pte Ltd

76 Playfair Road

#08-01 LHK2 Building

Singapore 367996

Tel : +65 6280 2881 Fax : +65 6280 6882

Email : info@SendQuick.com

www.SendQuick.com

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1.0 Introduction

1.1 About SendQuick Pte Ltd

SendQuick™ develops and offers **enterprise mobile messaging solutions** to facilitate and improve business workflow and communication, and is widely used in areas such as IT alerts & notifications, secure remote access via 2-Factor Authentication, emergency & broadcast messaging, business process automation and system availability monitoring.

In addition to functionality, SendQuick's messaging solutions have also been developed with other key features in mind. These include **security** and **confidentiality** of company information, and **ease in mitigating disruption** during unplanned system downtime such as that arising from cyberattacks.

1.2 About SendQuick Cloud

SendQuick Cloud is a cloud based Software-as-a-Service (SaaS) application to monitor and notify for cloud based incidents with omni-channel messaging capability. It has ability to monitor using ICMP Ping, Port check and URL check. It has policy based notifications using Email and Webhook, supporting any applications as well as Cloud Providers like AWS, Azure, Alibaba Cloud, Google Cloud and Oracle. Given the above integration methods, SendQuick Cloud is able to work with any applications to send notifications. Supporting notification channels include SMS, Telegram, Slack, Facebook Messenger and others. Lastly, there is Roster for messaging based on duties and time frame for each recipients, reducing alert fatigue.

1.3 Purpose of Document

This document is a guide on how to integrate SendQuick Cloud with AWS Cloudwatch and Simple Notification Service (SNS) to send message notifications and alerts. In this guide, we will be using SendQuick Cloud for the integration.

AWS Cloudwatch and SNS is available at the AWS Console. You will need to login to **AWS Console** and select **Services** and is presented with all the AWS options. Select **Cloudwatch** and **SNS** to configure. You will need to configure the SNS first as these are the notification services that you can select for Cloudwatch monitoring. We will explain on the SNS and Cloudwatch configuration in the following sections.

There are two ways to send alert messages from AWS to SendQuick Cloud. You can use any of the following methods

- Email method (SMTP)
- Webhook method

2.0 Configure in SendQuick Cloud

SendQuick Cloud (SendQuick) is designed to complement the systems, virtual instances, devOps and other applications on the cloud for sending message notifications when an event happen. This will your services uptime for your cloud services.

2.1 Email Filters in SendQuick Cloud

SendQuick can receive any emails (SMTP) from any applications, apply the configured filters (policies) and if the condition matches, messages will be sent to the recipients. When starting to configure, create an account in SendQuick and go to **Email Filter** (left Menu) and **Create New Mail Filter Rule**. You will be presented with the interface as shown below.

You will notice the Email Address **TO** as the first Policy item. The email address is pre-assigned by SendQuick and will follow the name of your account name. This email address cannot be changed and will be used to configure in AWS SNS as explained in section 3.1.

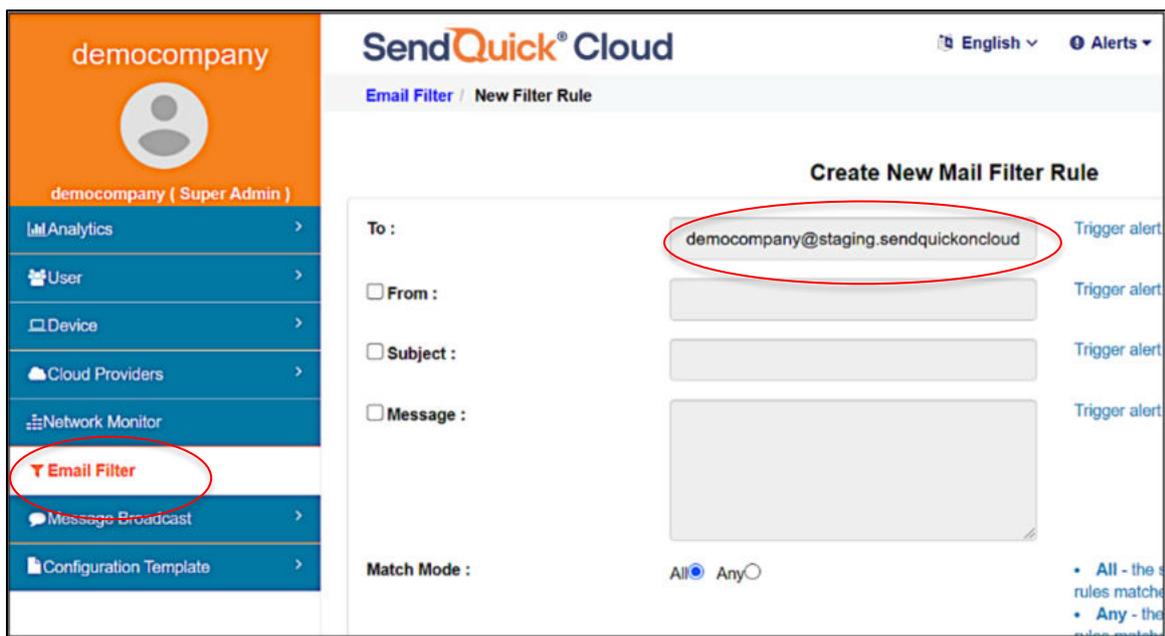
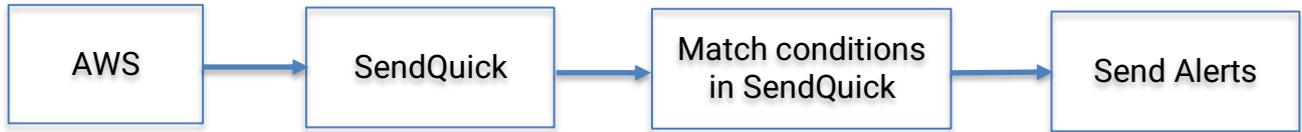


Figure 2.1: SendQuick Cloud Email Filter

2.2 Cloud Provider in SendQuick Cloud using Webhook

The second method to integrate between AWS SNS and SendQuick is using Webhook method. This is via an Application Programming Interface (API) where the event information is sent to SendQuick and SendQuick will process and check against the pre-configured policies (conditions). If the conditions are met, it will trigger an alert to the assigned users.

In summary, the flow is as below:



The webhook to send to SendQuick is found on the Service Configuration for Cloud Provider in SendQuick. This is depicted in interface below.

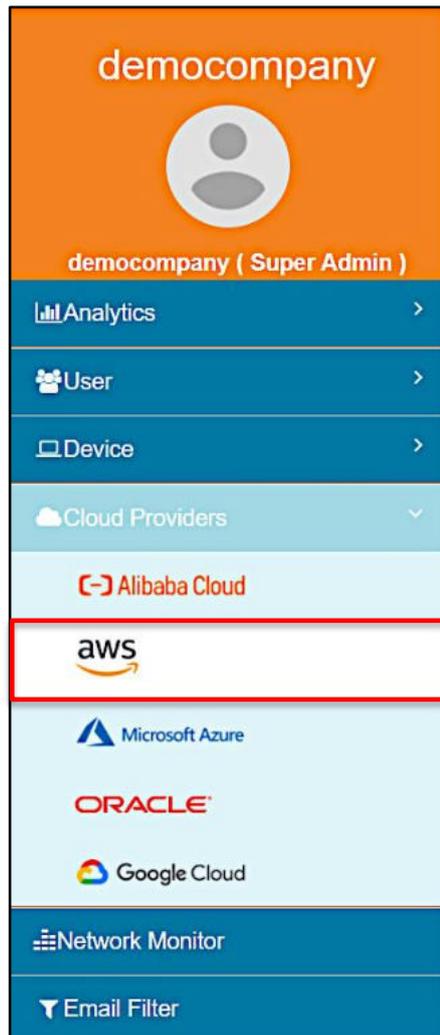


Figure 2.2: SendQuick Cloud Menu (left)

Chose the Cloud Provider as shown on the left Menu in the diagram above.

Copy the Integration URL as shown on the top of the Integration page. This is the URL to be configured in AWS SNS as shown in section 4.0.



3.0 Configure AWS Simple Notification Service (SNS)

When any event happens or there is a need to send a notification alert, AWS Cloudwatch can trigger an email to SendQuick Cloud (SendQuick). SendQuick will then convert the email message to alerts and send to mobile phone based on the policy (filter) rules assigned. The email messages are sent from AWS Cloudwatch via SNS Subscription to SendQuick for processing based on the rules configured in Cloudwatch.

In AWS, it is required to configure the notification method using SNS first, creating new Subscriptions and Topics in SNS. Once this is created, the Topic can be used in the Cloudwatch > Notifications configuration that we will explain later.

3.1 Configure Email Delivery on AWS SNS

On the dashboard of AWS SNS, choose **Topics** and **Create Topic**. This is shown in the Figure below.

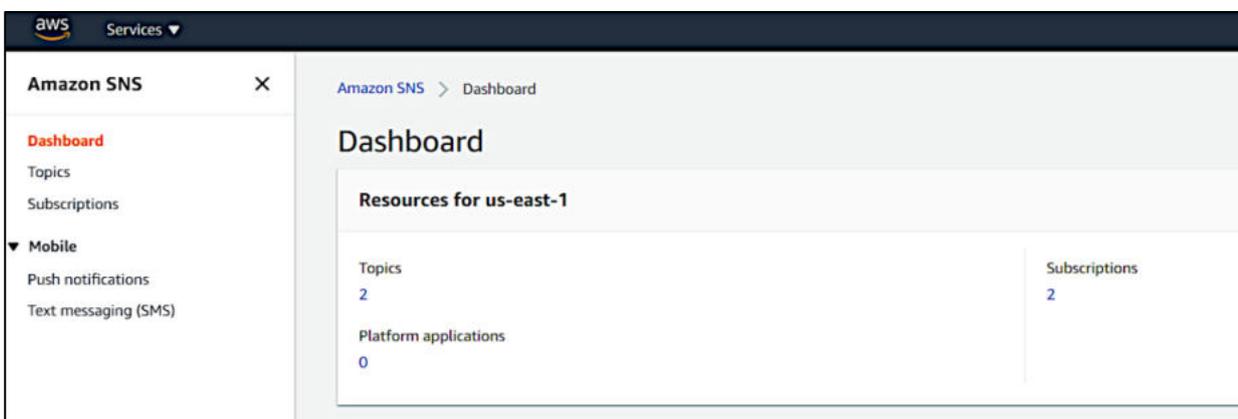


Figure 3.1: AWS SNS Dashboard

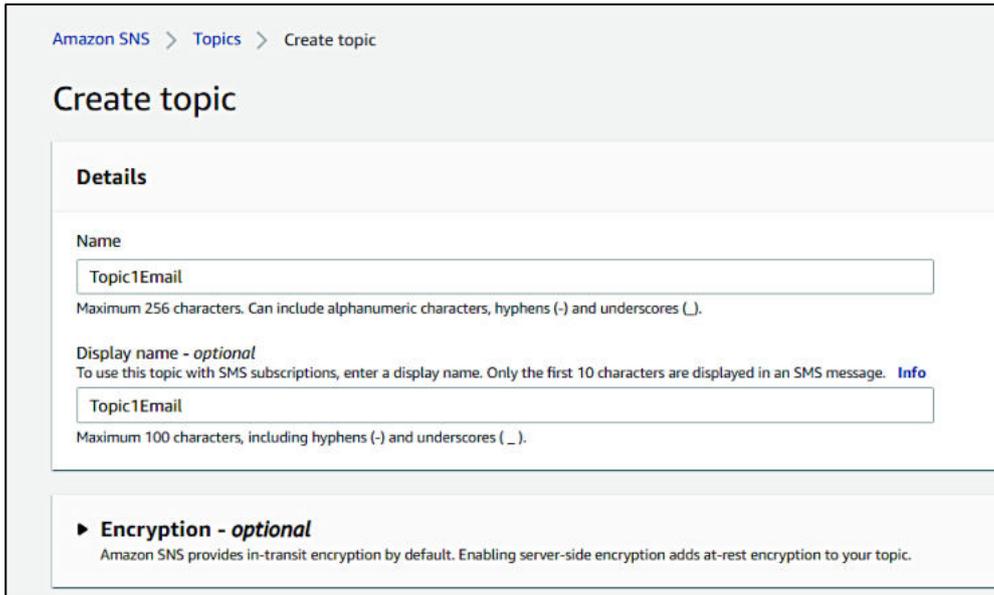


Figure 3.2: Create Topic

Insert a **Topic Name** and **Display Name** and then **Create Topic**. The new topic will be created as shown below.

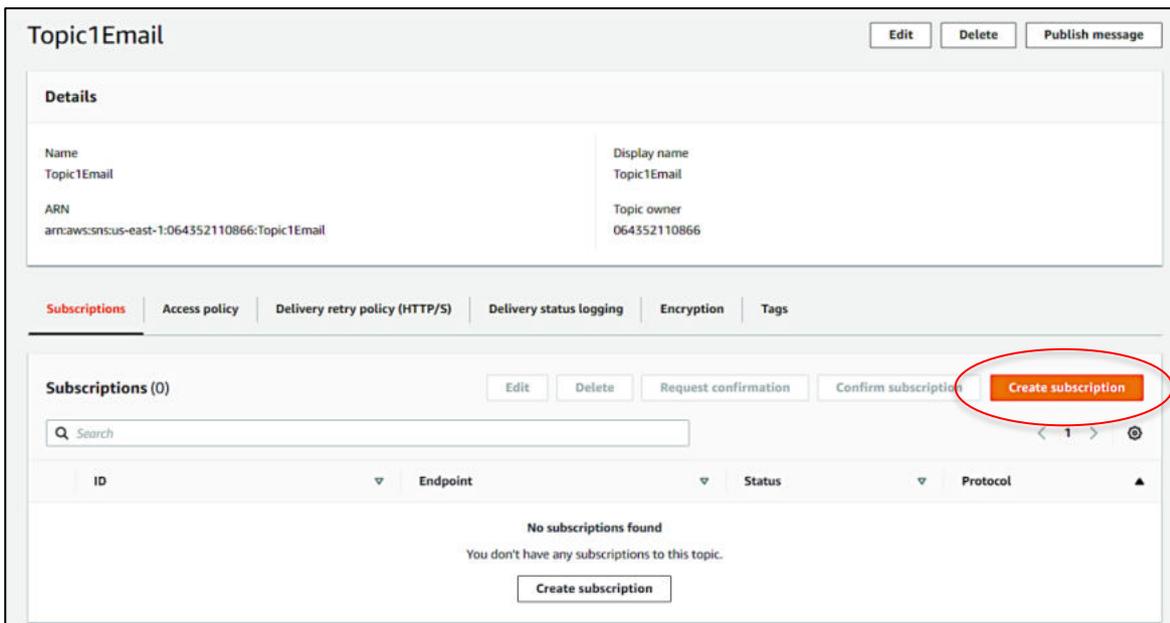


Figure 3.3: Insert a Topic Name and Display Name and then Create Topic

Then select the **Topic** and then **Create Subscription**. The Topic ARN is automatically assigned and you will need to choose a Protocol for this subscription. There is a dropdown list to choose. We will document two methods in this document: **Email** and **HTTPS**. First, choose **Email** as shown below.

Amazon SNS > Subscriptions > Create subscription

Create subscription

Details

Topic ARN
arn:aws:sns:us-east-1:064352110866:Topic

Protocol
The type of endpoint to subscribe

Select protocol ▲

- HTTP
- HTTPS
- Email**
- Email-JSON
- Amazon SQS
- AWS Lambda
- Platform application endpoint
- SMS

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

Figure 3.4: Create Subscription

Then, **Enter the End Point**, which is the email address (destination email address in SendQuick) which was shown in section 2.1 above. Once you have entered the email address, select **Create Subscription**. The subscription is created and requires confirmation.

Under **Menu > Subscriptions**, select the desired subscription (radio button) and select **Request Confirmation**. A confirmation email will be sent to the configured email.

The next two Figures illustrates the steps required.

SendQuick Cloud has an **Inbox** to receive the confirmation email from AWS. This allow for easy email confirmation. Login to SendQuick Cloud account, go to **Email Filter** and look for **Inbox**, as shown in the Figures below.

Create subscription

Details

Topic ARN
arn:aws:sns:us-east-1:064352110866:Topic

Protocol
The type of endpoint to subscribe
Email

Endpoint
An email address that can receive notifications from Amazon SNS.
democompany@sg.sendquiconcloud.com

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**

Figure 3.5: Enter End Point and Create Subscription

Confirmation request was sent successfully.
The ARN of the subscription is arn:aws:sns:us-east-1:064352110866:Topic1Email:cd64945d-b610-4aca-9cf1-a50b7d4d733b.

Amazon SNS > Topics > Topic1Email

Topic1Email Edit Delete Publish message

Details

Name	Topic1Email	Display name	Topic1Email
ARN	arn:aws:sns:us-east-1:064352110866:Topic1Email	Topic owner	064352110866

Subscriptions Access policy Delivery retry policy (HTTP/S) Delivery status logging Encryption Tags

Subscriptions (1) Edit Delete **Request confirmation** Confirm subscription Create subscription

Search

ID	Endpoint	Status	Protocol
Pending confirmation	democompany@sg.sendquiconcloud.com	Pending confirmation	EMAIL

Figure 3.6: Request for Confirmation



Inbox in SendQuick Cloud Email Filter

Figure 3.7: SendQuick Cloud Email Filter

From	Subject	Content	Date & Time
no-reply@sns.amazonaws.com	AWS Notification - Subscription Confirmation	You have chosen to subscribe to the topic: arn:aws:sns:us-west-1:064352110866:test To confirm this subscription...	26 Jan 2021, 16:33 PM
monitor-sg@monitor.alibabacloud.com	Alibaba Cloud Monitor-Email activation code	Alibaba Cloud Monitor-Email check code ...	26 Jan 2021, 16:27 PM
noreplyf02@mail01.huawei.com	SMN-Confirming Your Subscription	Dear Sir or Madam,Welcome to Simple Message Notification (SMN) service.You are invited to subscribe to the topic: ...	26 Jan 2021, 16:03 PM
noreply@notification.us-phoenix-1.oci.oraclecloud.com	Oracle Cloud Infrastructure Notifications Service Subscription Confirmation	You have chosen to subscribe to the topic: test_email (Topic OCID: ocid1.onstopic.oc1.phx.aaaaaaa7thq7mckml4betyzc...	26 Jan 2021, 15:42 PM
noreply@notification.us-	Oracle Cloud	Please do not reply directly to this email. If you have any questions or	26 Jan

Figure 3.8: SendQuick Cloud Email Inbox

Select the AWS email as shown above and you will be able to view the email details below. Click on the Confirm Subscription and the confirmation page will show as seen below.

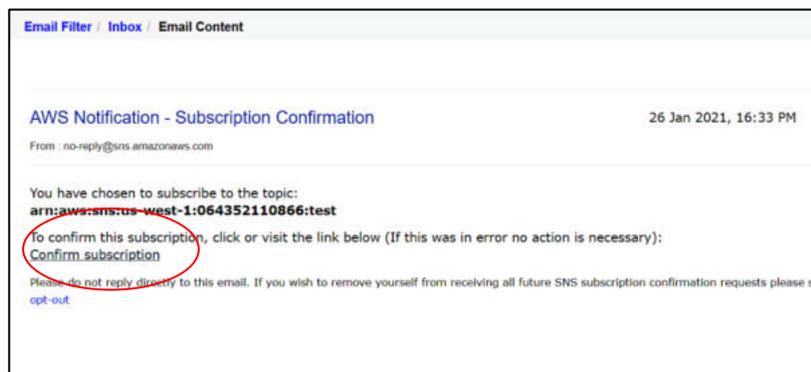


Figure 3.9: AWS Email



Figure 3.10: Amazon Page

Once the confirmation is completed, the SNS subscription is ready to use.

3.2 Configure Webhook on AWS SNS

Another method to send notifications from SNS is using the Webhook method. The steps to configure in SNS is the same as described in Section 3.1. When choosing the protocol, select HTTP or HTTPS as below. You should choose **HTTPS**.

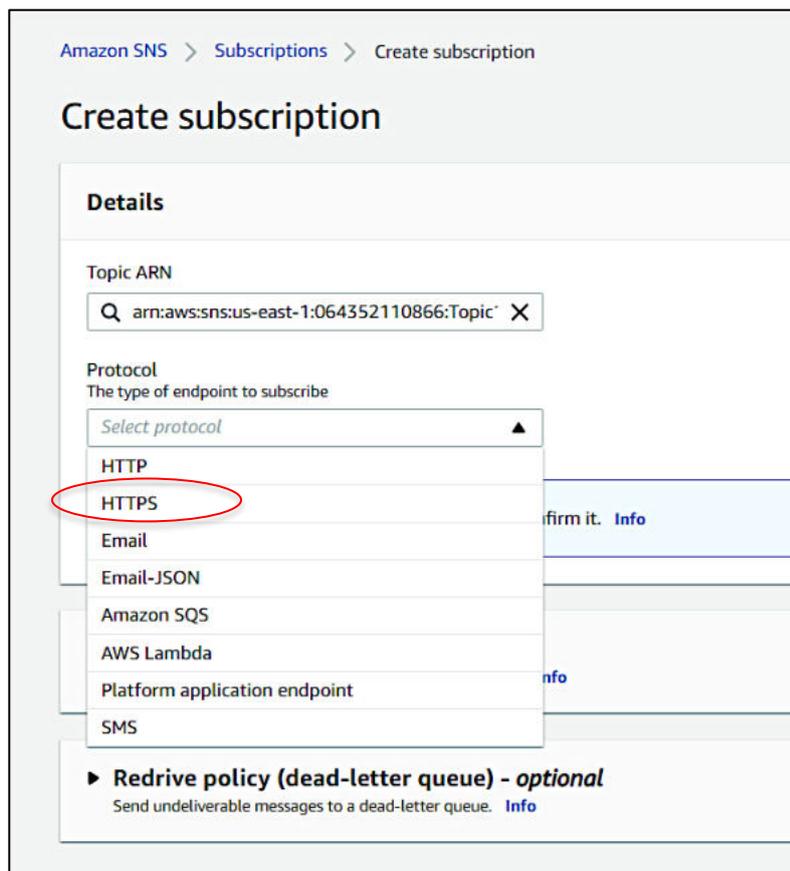


Figure 3.11 Add HTTPS Webhook Topic

After selecting the protocol, enter the URL from SendQuick (as shown below) and **Create Subscription**. The URL is the same URL from Section 2.2, Integration URL.

Details

Topic ARN

Protocol
 The type of endpoint to subscribe

Endpoint
 A web server that can receive notifications from Amazon SNS.

Enable raw message delivery

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

Figure 3.12: Insert SendQuick Cloud Endpoint URL

Once the information is Saved, a confirmation request is sent from AWS to SendQuick to confirm the URL Webhook. Go to **Subscription** and you will see the webhook is confirmed.

Subscriptions (5) Edit Delete Request confirmation Confirm subscription Create subscription

ID	Endpoint	Status	Protocol	Topic
<input type="radio"/> Pending confirmation	democompany@sg.sendquiconcloud.com	<input type="clock"/> Pending confirmation	EMAIL	Default_CloudWatch_Alarms_Topic
<input type="radio"/> Pending confirmation	democompany@sg.sendquiconcloud.com	<input type="clock"/> Pending confirmation	EMAIL	topic1
<input type="radio"/> Pending confirmation	democompany@sg.sendquiconcloud.com	<input type="clock"/> Pending confirmation	EMAIL	Topic1Email
<input type="radio"/> c4fab47b-9dbe-4a24-9778-a24aee897ca9	https://sg.sendquiconcloud.com/aws/aws_process.php?coy=democompany&key=e42a79c7546b33fa00a52bcec59ae4b196bd6b3823f5daafd2a93a8ff4db5888	<input checked="" type="checkbox"/> Confirmed	HTTPS	webhookHTTPS

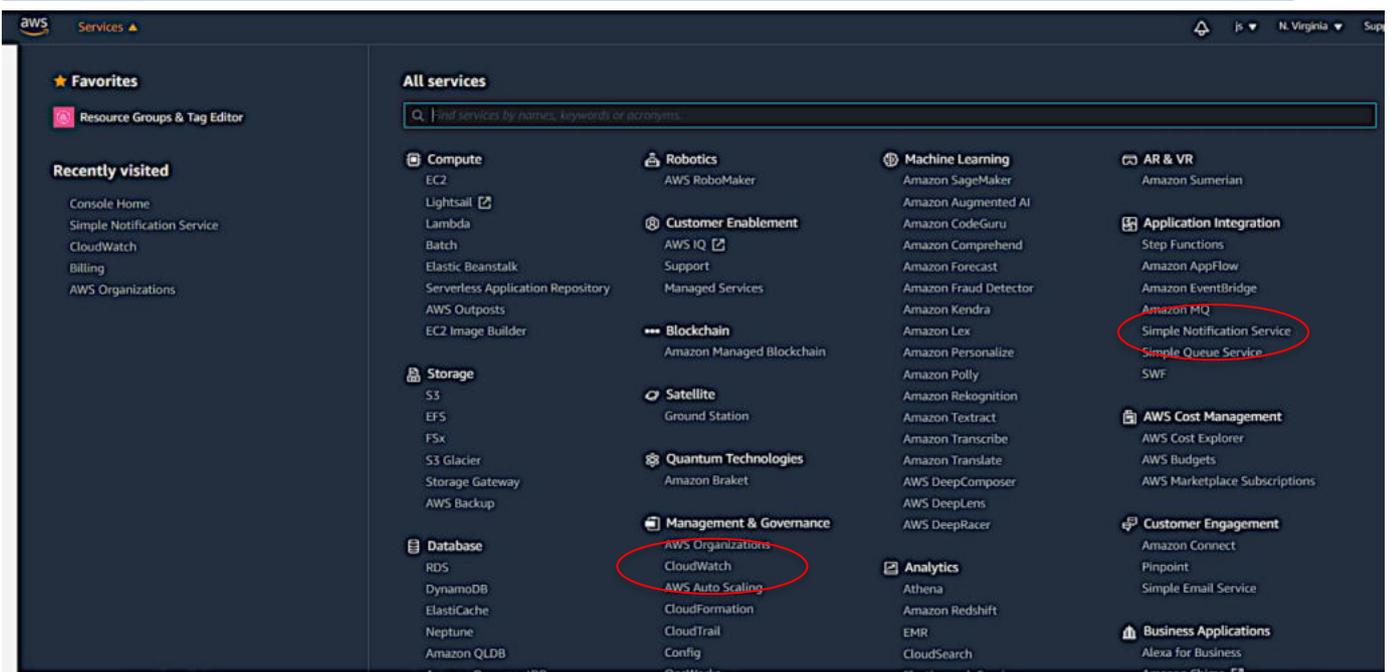
[https://staging.sendquiconcl](#)

Figure 3.13: Webhook Topic Created

Once this step is completed, the Subscriptions and Topics are available in Cloudwatch for configuration.

4.0 Send Email to SendQuick Cloud (SMTP Delivery)

When any event happens or there is a need to send a notification alert, AWS Cloudwatch can trigger the message to SendQuick and will send as messages to the recipients. The first method is using the Email (SMTP) method.



There are two parts to configure.

Management and Governance > Cloudwatch; and **Application Integration > Simple Notification Service.**

Section 3 has explained the Simple Notification Service (SNS) and how to configure Email and HTTPS protocol in SNS. This section will explain on Cloudwatch configuration.

Once you are in Cloudwatch, select **Alarms > Create Alarm > Select Metric > Select a service to configure the Metric and click on Select Metric.** The steps are shown in the Figures below.

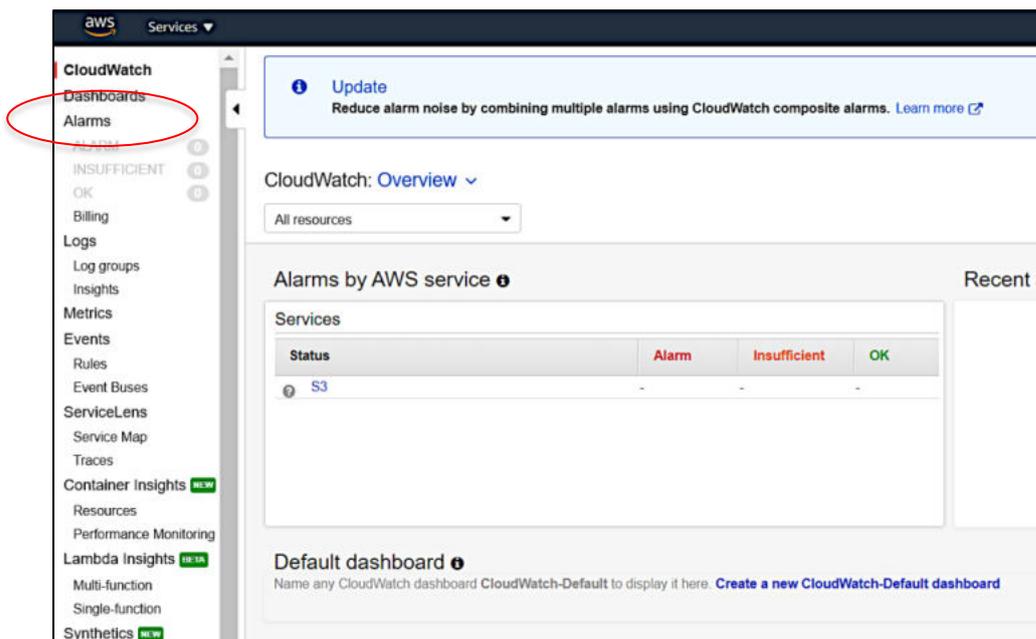


Figure 4.1: Select Alarm in Cloudwatch

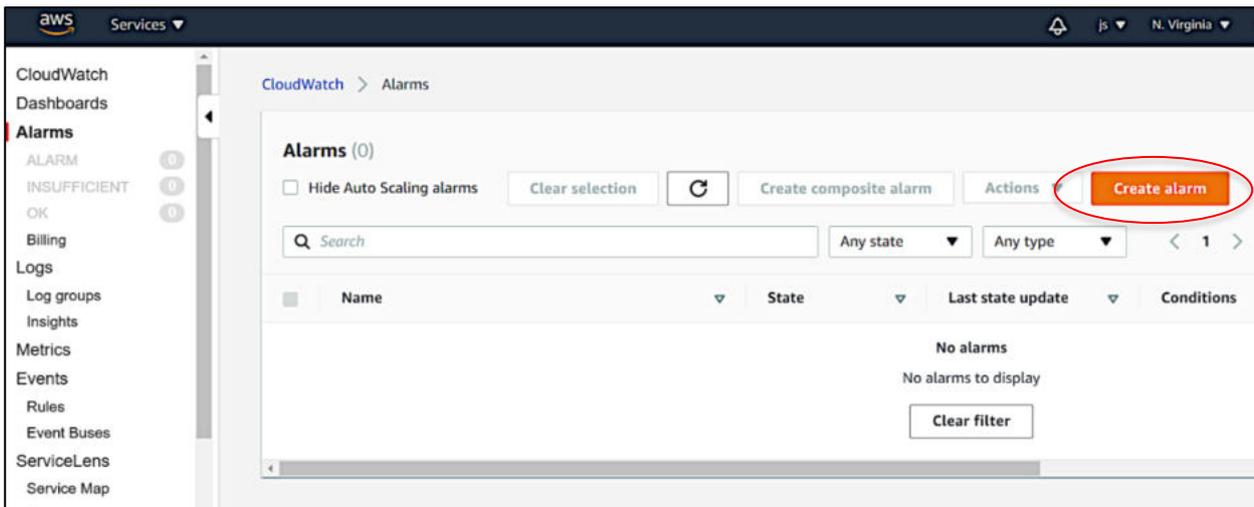


Figure 4.2: Create Alarm

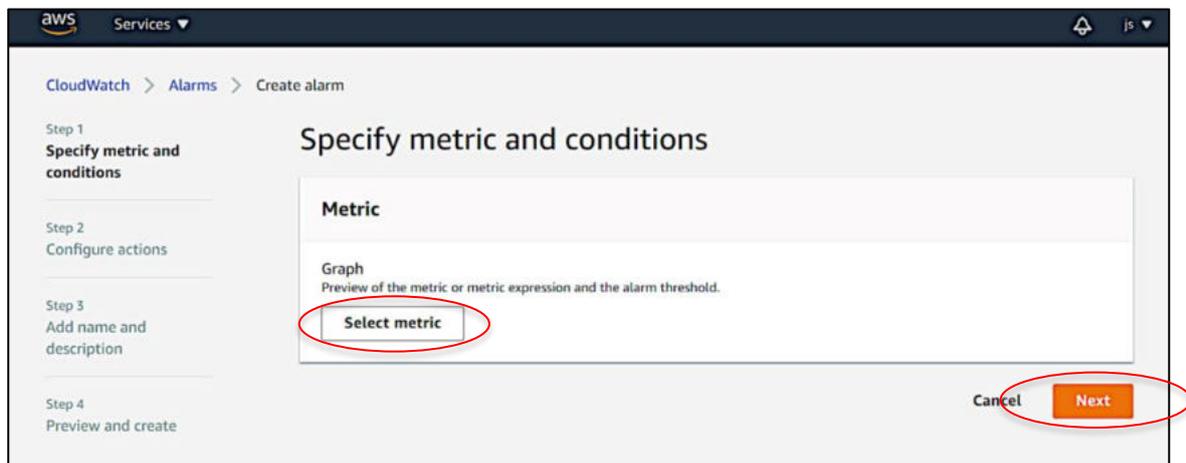


Figure 4.3: Select Metric

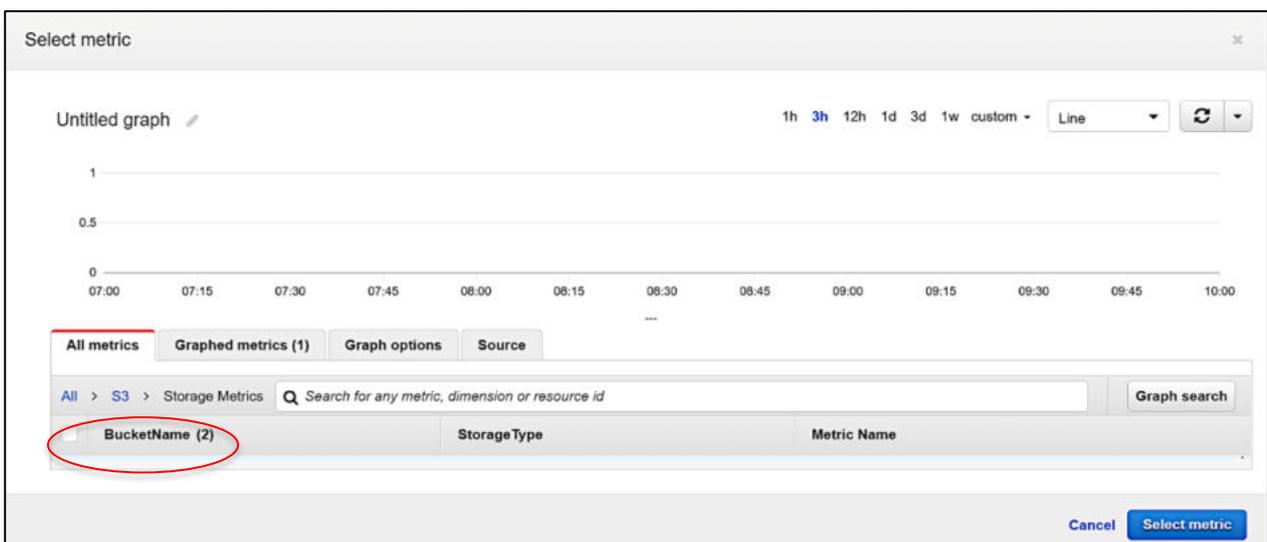


Figure 4.4: Choose the Metric types and Service to Monitor

Then, configure the **Notifications**. In this step, you can choose between **Select a SNS Topic** from **Existing Topic**, **Create a New Topic** or **use ARN**.

Since we had explained (in Section 3) how to configure SNS, you can select an existing Subscription/Topic from SNS. You can choose Existing Topic. The existing topic can be configured as Email (SMTP) or HTTPS or other types of protocol. In SendQuick, we use either Email or HTTPS.

You can create a new topic if you do not wish to use existing topic. The new topic will be using Email (SMTP). You will need to insert the recipient email address in the space provided. The new topic will be automatically added to the SNS topic and a confirmation step is still required. These are shown in the two Figures below.

Notification

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

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.

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...

🔍 Default_CloudWatch_Alarms_Topic ✕

Only email lists for this account are available.

Email (endpoints)
democompany@sg.sendquiconcloud.com - [View in SNS Console](#)

Add notification

Figure 4.5: Using Existing Topic

Notification

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

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.

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

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.

democompany@sg.sendquickoncloud.com

user1@example.com, user2@example.com

Create topic

Add notification

Figure 4.6: Creating a New Topic

Once completed the steps, **Save** and the configuration is completed.

5.0 Send Notification via Webhook Method

Similarly, notification alerts can be sent to SendQuick from AWS Cloudwatch using Webhook or HTTPS method. The steps are similar to the previous (Email) configuration except for **SNS Topic** configuration.

5.1 Configure Notification using Webhook/HTTPS

In the Cloudwatch Alarm, after setting the Metrics, you can configure to send the metrics using Webhook/HTTPS. In Notification, select an Existing SNS Topic and from the dropdown list, select the Webhook Topic name that was configured in SNS earlier as shown in the interface below.

The screenshot shows the 'Notification' configuration panel in AWS CloudWatch. It includes three radio buttons for 'Alarm state trigger': 'In alarm' (selected), 'OK', and 'Insufficient data'. Below this is the 'Select an SNS topic' section with three radio buttons: 'Select an existing SNS topic' (selected), 'Create new topic', and 'Use topic ARN'. A search box labeled 'Send a notification to...' is open, showing a list of topics: 'Default_CloudWatch_Alarms_Topic', 'Topic1Email', 'Topic1Webhook' (selected), and 'webhookHTTPS'. A 'Remove' button is located in the top right corner.

Figure 5.1: Select Webhook/HTTPS from SNS

Select the desired Webhook and complete the configuration. As the webhook is already confirmed in SNS, the service is ready to use once this is completed.

You are ready to receive messages from Cloudwatch and receive notifications/alerts in SendQuick and send messages to your phone.

You can start using SendQuick Cloud and configure all the filter/policies and user roster to receive the alerts on their phones. For more SendQuick Cloud configuration, refer to SendQuick Cloud User Manual or Video Tutorial.