Module 8: CloudFormation

Assignment - 3

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Course Offered: -Advanced Cloud Computing and Devops
Assignment By: -Intellipaat
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Date Of Submission: -11/11/2024

Problem Statement:

You work for XYZ Corporation. Your team is asked to deploy similar architecture multiple times for testing, development, and production purposes.

Implement CloudFormation for the tasks assigned to you below.

Tasks To Be Performed:

1. Use the template from CloudFormation task 1.

2. Add Notification to the CloudFormation stack using SNS so that you get a notification via mail for every step of the stack creation process.
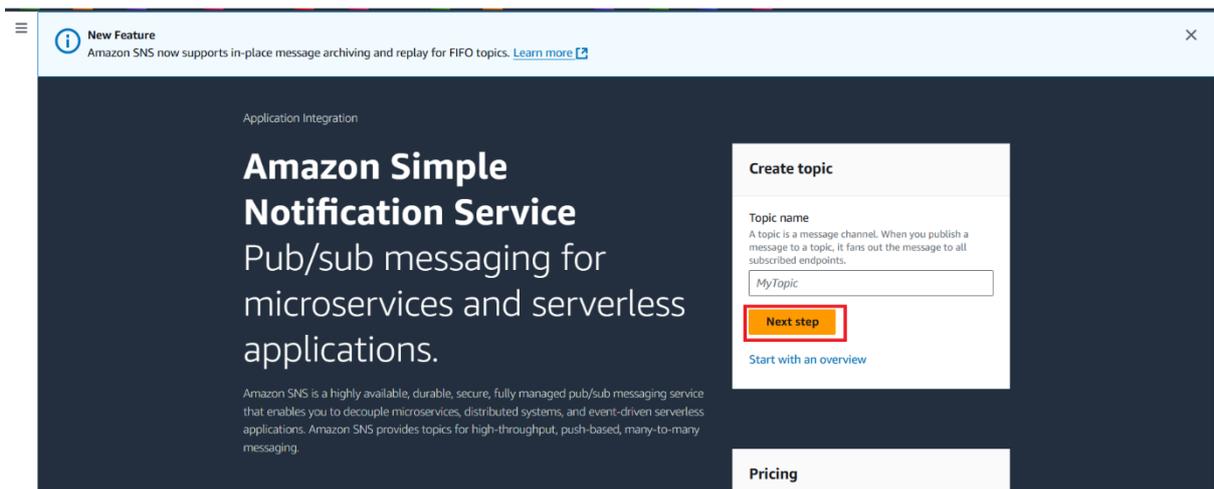
ANSWER:

1. Use the template from CloudFormation task 1.

Login to AWS Management Console then Search SNS.you will see the Simple Notification Service and click the Simple Notification Service.
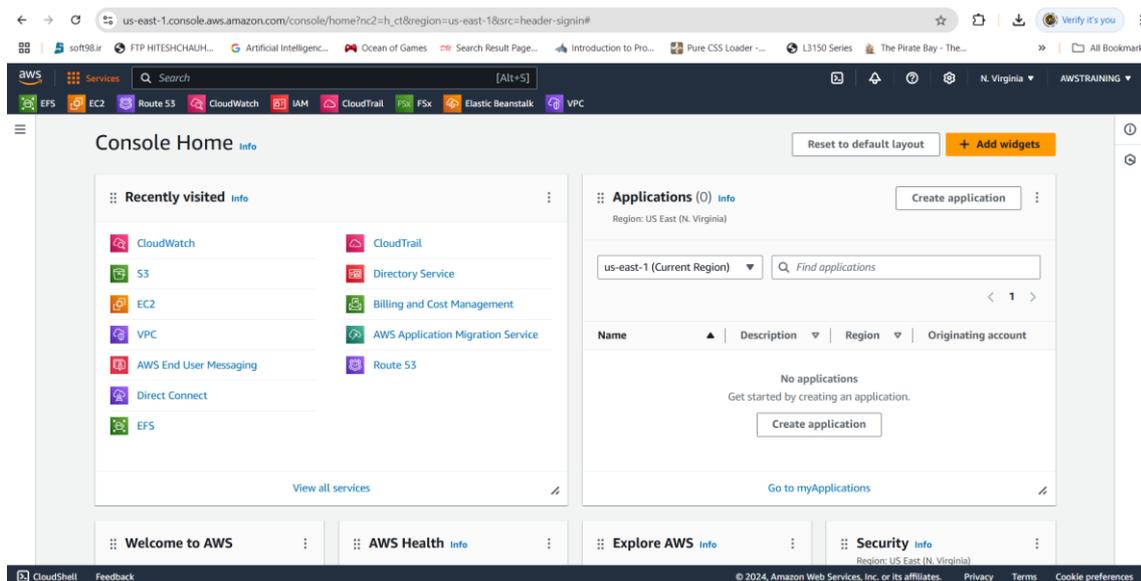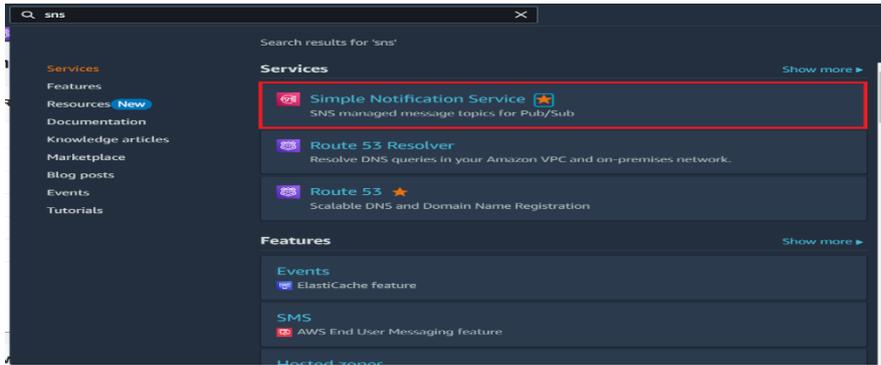
Then Open This Page

Create Topic>Next Step

Then You will See this Option to create the Topic.

Create Topic And There is two type

1.FIFO(First In First Out)

2.Standard

In my case I choose STANDARD.

In This Topic Name Will be **HiteshSNS**

Create topic

Details

Type | Info
Topic type cannot be modified after topic is created

○ **FIFO (first-in, first-out)**
  - Strictly-preserved message ordering
  - Exactly-once message delivery
  - High throughput, up to 300 publishes/second
  - Subscription protocols: SQS

● **Standard**
  - Best-effort message ordering
  - At-least once message delivery
  - Highest throughput in publishes/second
  - Subscription protocols: SQS, Lambda, HTTP, SMS, email, mobile application endpoints

Name

HiteshSNS

Maximum 256 characters. Can include alphanumeric characters, hyphens (-) and underscores (_).

Display name - *optional* | Info
To use this topic with SMS subscriptions, enter a display name. Only the first 10 characters are displayed in an SMS message.

From SNS

Maximum 100 characters.

There is nothing will be and click create topic.

▶ **Access policy - *optional*** Info
This policy defines who can access your topic. By default, only the topic owner can publish or subscribe to the topic.

▶ **Archive policy - *new, optional*** Info
This policy tells Amazon SNS how long to store your messages so that they can be resent to a subscription. By default, Amazon SNS does not retain your messages.

▶ **Delivery status logging - *optional*** Info
These settings configure the logging of message delivery status to CloudWatch Logs.

▶ **Tags - *optional***
A tag is a metadata label that you can assign to an Amazon SNS topic. Each tag consists of a key and an optional value. You can use tags to search and filter your topics and track your costs. Learn more ☑

▶ **Active tracing - *optional*** Info
Use AWS X-Ray active tracing for this topic to view its traces and service map in Amazon CloudWatch. Additional costs apply.

Cancel   **Create topic**

After Create the topic you will see the Details of topic like

Name:-HiteshSNS

ARN:- arn:aws:sns:us-east-1:207567757353:HiteshSNS

Type:-Standard

Topic Owner:-20757757353.

Then You will below This is the other section of sns.

You will see Many more options like

Subscriptions, Access Policy,Archieve Policy, Delivery Status Logging,Encrytion,Tags And Integration.
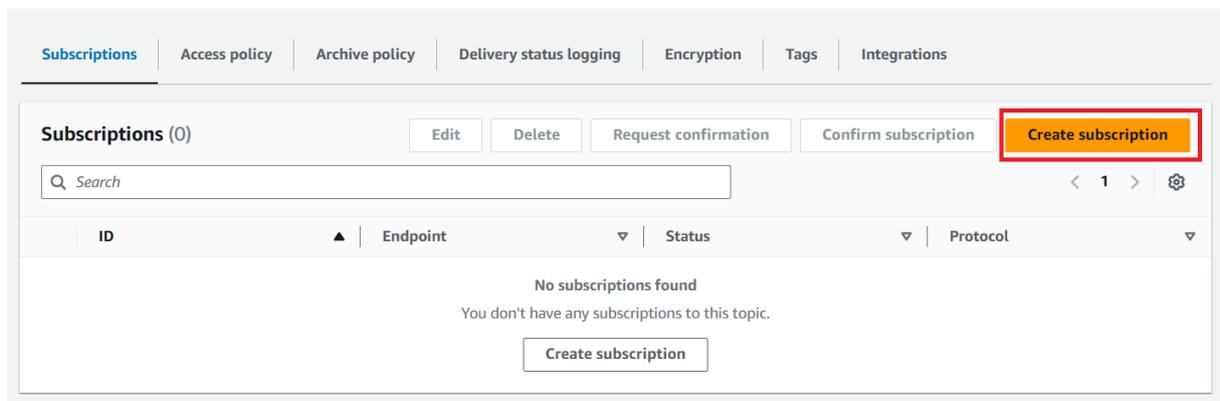

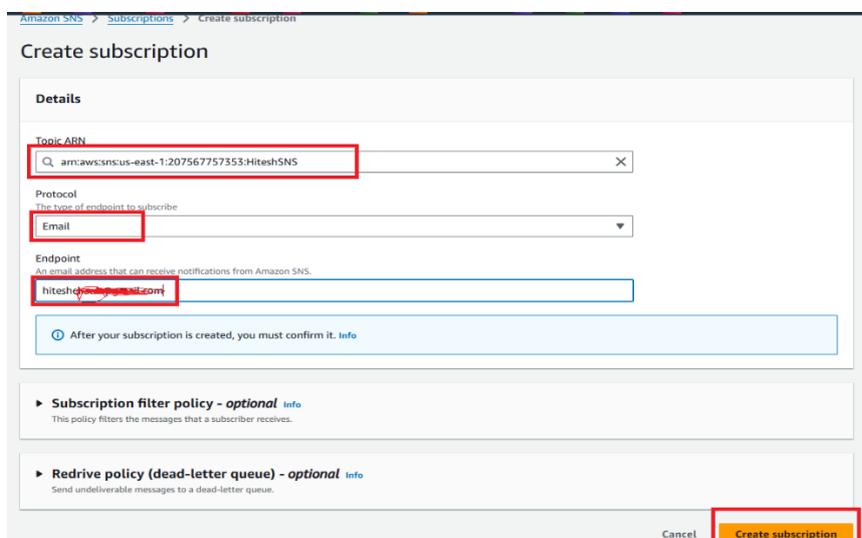We need To Choose As per task **Create Subscription** Option.

After Create Subscription.

The Topic ARN: arn:aws:sns:us-east-1:207567757353:HiteshSNS

Protocol Will Be Used:Email

Endpoint will be: my email id.

Then Confirm Subscription

After The Create The Subscription You will be subscribed the SNS topics.

SNS Subscription will be send notification to given email then you will see the Pending Confirmation from sender email id.

In my case sender is me so I used to subscribed the SNS from email notification.

This is SNS Push Notification to My Email id and subscribed this sns service.
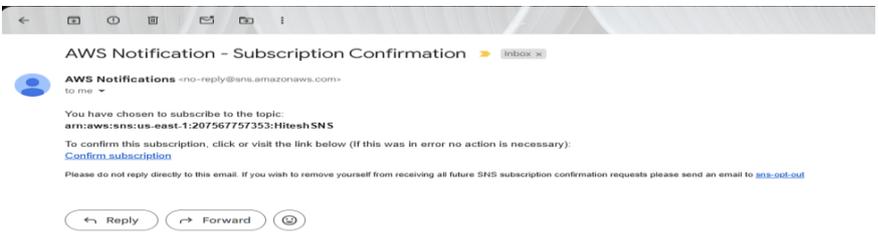
This is Subscription confirmed by me.

After Subscription Confirmed you will see in sns.
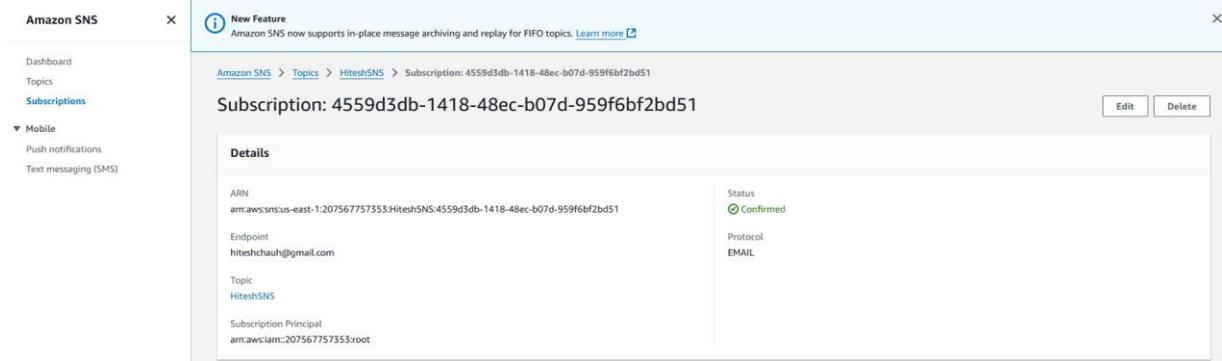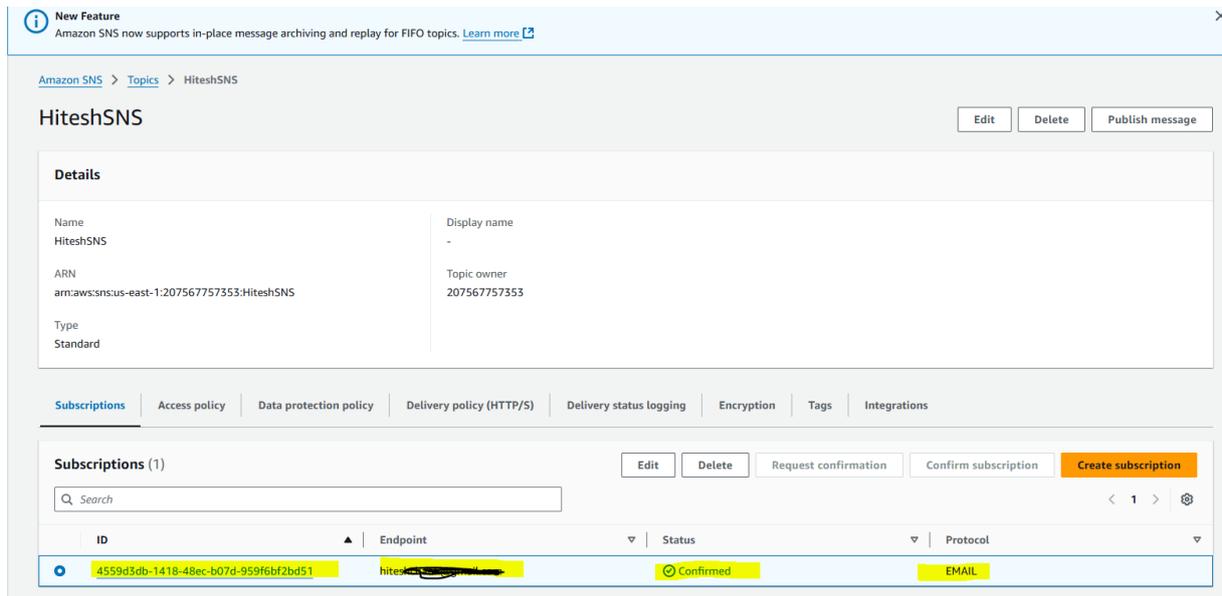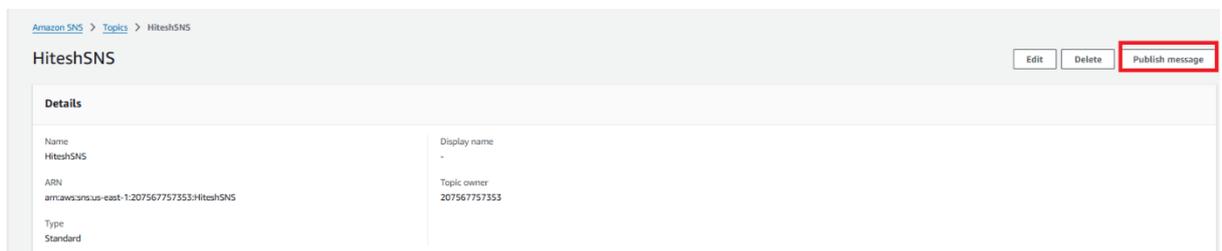
In Subscription Section you will there is ID generated,endpoint means my email id,status has been confirmed and protocol is email.

After Confirmed The SNS Subscription.you go to Amazon SNS Then Click Topics And Click HiteshSNS

Note:-This SNS Created my me.when you created SNS So you will be Your SNS.

After Click The HiteshSNS,Click Publish Message.

After Click the Publish Message You will see like this screen and Go to Subject.

In my case Subject is **Hi This is Test Message For SNS.**

Time To Live(TTL) will be 1.

In Message Body Section You will see there is two options

1.Message Structure and 2.Custom Payload for each delivery protocol

In My Case I choose Message Structure and message body to send to the endpoint means my email id
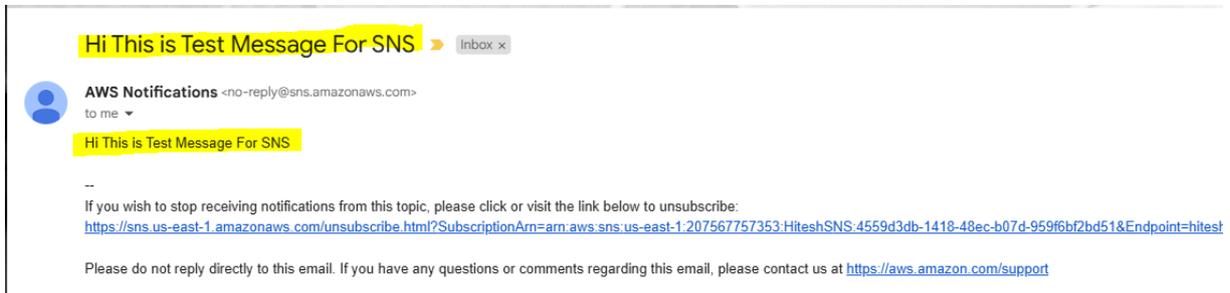
So my message is Hi This is Test Message For SNS.After Send the Publish Message.

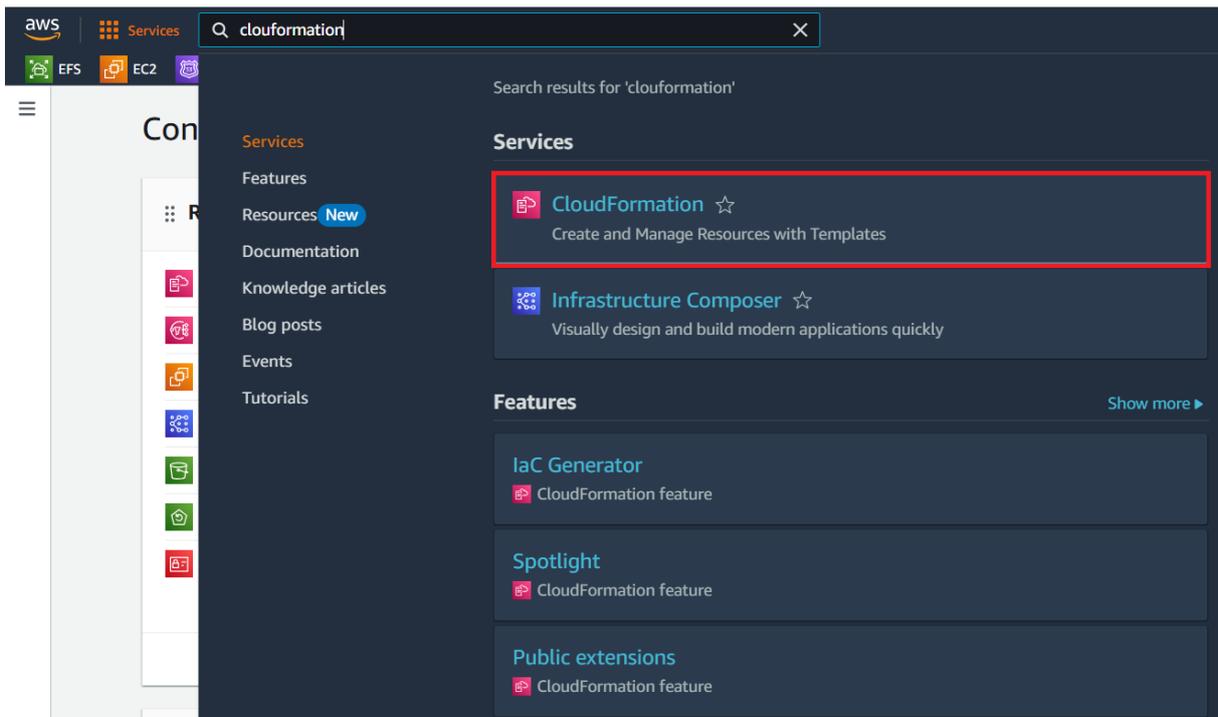After Send the message will be notification given by sns.

Then You have received one mail of the same subject as we have set in message detail.
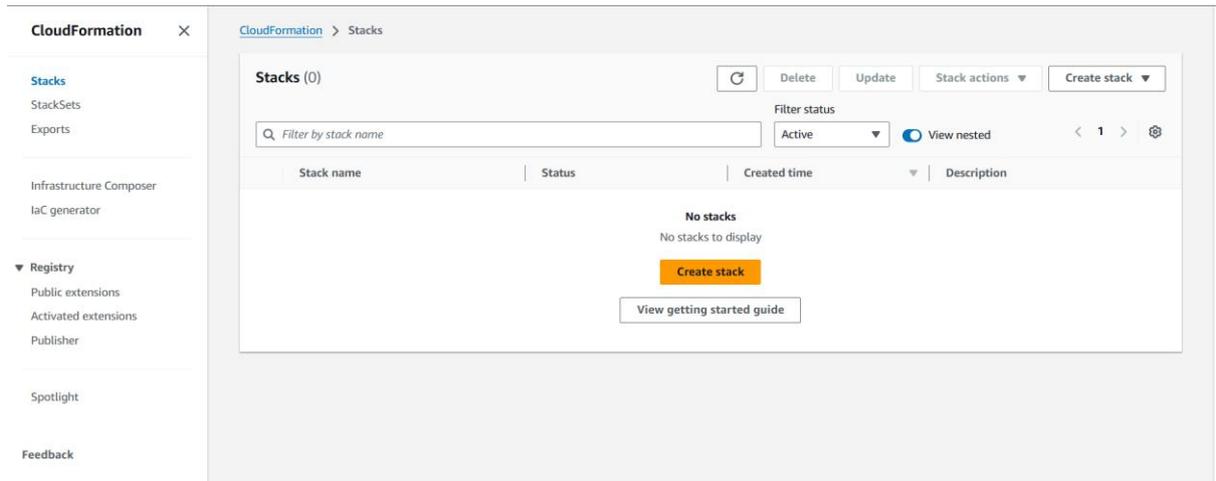

2. Add Notification to the CloudFormation stack using SNS so that you get a notification via mail for every step of the stack creation process.

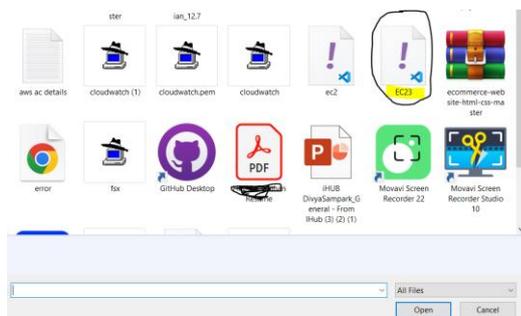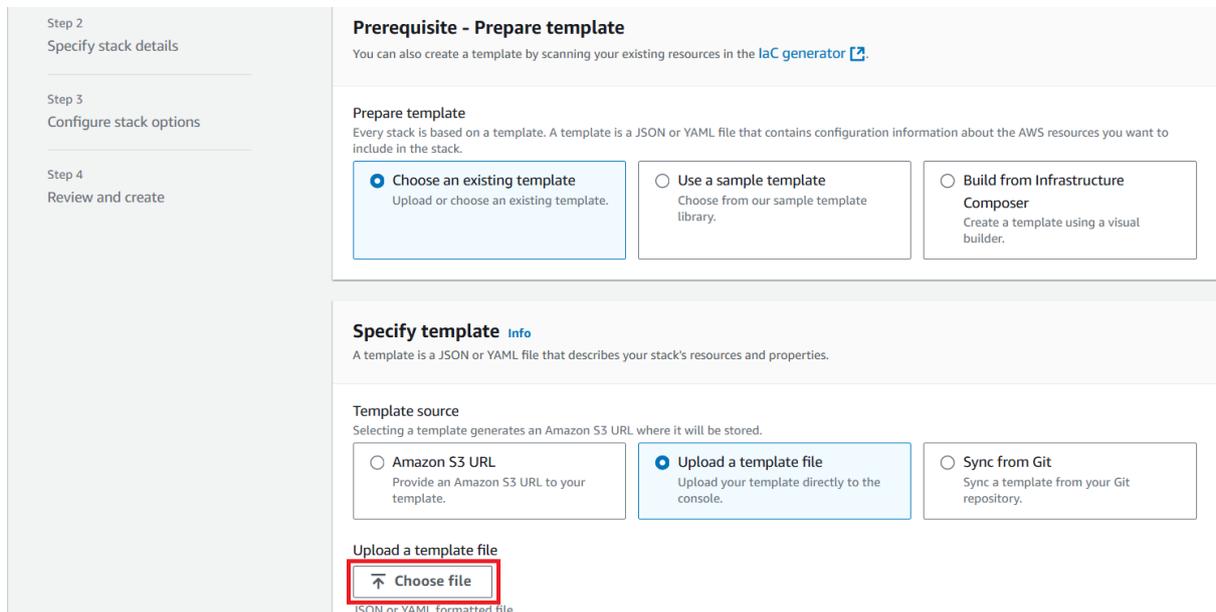Go to Aws Dashboard And Search the CloudFormation Service.

After Open the CloudFormation Service open like this.

After Open the ClouFormation,Click Create Stack.

In This Case Choose an Existing Template the Click Upload a template file.

I have Uploaded the templates in cloudformation.

Uploaded the template in .YAML format.

Provided the stack name.

Step 1
Create stack

Step 2
Specify stack details

Step 3
Configure stack options

Step 4
Review and create

Configure stack options

Tags - *optional*
Tags (key-value pairs) are used to apply metadata to AWS resources, which can help in organizing, identifying, and categorizing those resources. You can add up to 50 unique tags for each stack.

No tags associated with the stack.

Add new tag

You can add 50 more tag(s)

Permissions - *optional*
Specify an existing AWS Identity and Access Management (IAM) service role that CloudFormation can assume.

IAM role - optional
Choose the IAM role for CloudFormation to use for all operations performed on the stack.

| IAM role name ▼ | Sample-role-name ▼ | Remove |

Stack failure options

Behavior on provisioning failure
Specify the roll back behavior for a stack failure. Learn more 🔗

⦿ Roll back all stack resources
Roll back the stack to the last known stable state.

◯ Preserve successfully provisioned resources
Preserves the state of successfully provisioned resources, while rolling back failed resources to the last known stable state. Resources without a last known stable state will be deleted upon the next stack operation.

Delete newly created resources during a rollback
Specify whether resources that were created during a failed operation should be deleted regardless of their deletion policy. Learn more 🔗

⦿ Use deletion policy
Retains or deletes created resources according to their attached deletion policy.

◯ Delete all newly created resources
Deletes created resources during a rollback regardless of their attached deletion policy.

In Advanced Option,there is 4 options

1.Stack Policy(Optional)

2.Rollback Configuration(Optional)

3.Notification option(Optional)

4.Stack Creation option(Optional)

I Choose Notification Options

Then After Dropped the Notification option You Will see like this.

In Notification Option.I Choosed SNS Topic ARN before I created in SNS Service.

Select this SNS Topic.

After Select the SNS Topic,Click Next.

Then Review and create

Step 1
Create stack

Step 2
Specify stack details

Step 3
Configure stack options

Step 4
Review and create

Review and create

Step 1: Specify template   [Edit]

Prerequisite - Prepare template

Template
Template is ready

Template

Template URL
https://s3.us-east-1.amazonaws.com/cf-templates-2jwhgbwpj8cw-us-east-1/2024-11-11T171237.831Zlv4-EC23.YAML

Stack description
-

Step 2: Specify stack details   [Edit]

Provide a stack name

Stack name
ec2

Parameters (1)

[Q Search]   < 1 >   ⚙

Key ▲	Value ▽
EC2InstanceType	t2.micro

Step 3: Configure stack options   [Edit]

Tags

[Q Search tags]   < 1 >

Key ▲	Value ▽
No tags	
There are no tags defined for this stack	

Permissions

No permissions
There is no IAM role associated with this stack

Stack failure options

Rollback on failure
Activated

Delete newly created resources during a rollback
Deactivated

Stack policy

No stack policy
There is no stack policy defined

Then You will selected your sns topic.

Rollback configuration

Monitoring time
-

CloudWatch alarm ARN
-

Notification options

SNS topic ARN
arn:aws:sns:us-east-1:207567757353:HiteshSNS

Stack creation options

Timeout
-

Termination protection
Deactivated

Quick-create link

Use quick-create links to get stacks up and running quickly from the AWS CloudFormation console with the same basic configuration as this stack. Copy the URL on the link to share. Learn more

Open quick-create link

Create change set   Cancel   Previous   Submit

Then Click Submit.

After Click The Submit Cloud Formation has started creating the resources as per template.

CloudFormation > Stacks > ec2

ec2

Stacks (1)

Filter by stack name

Filter status
Active   View nested

< 1 >

Stacks

ec2
2024-11-11 22:48:49 UTC+0530
CREATE_IN_PROGRESS

ec2

Delete   Update   Stack actions ▼   Create stack ▼

Stack info   Events   Resources   Outputs   Parameters   Template   Change sets

Events (1)

Detect root cause

Search events

Timestamp	Logical ID	Status	Detailed status
2024-11-11 22:48:49 UTC+0530	ec2	CREATE_IN_PROGRESS	-

When Resources is created you will be notified by email.

StackId='arn:aws:cloudformation:us-east-1:207567757353:stack/ws/702be480-a04f-11ef-a030-125402017eaf'
Timestamp='2024-11-11T17:07:31.760Z'
EventId='702e5580-a04f-11ef-a030-125402017eaf'
LogicalResourceId='ws'
Namespace='207567757353'
PhysicalResourceId='arn:aws:cloudformation:us-east-1:207567757353:stack/ws/702be480-a04f-11ef-a030-125402017eaf'
PrincipalId='207567757353'
ResourceProperties='null'
ResourceStatus='CREATE_IN_PROGRESS'
ResourceStatusReason='User Initiated'
DetailedStatus=''
ResourceType='AWS::CloudFormation::Stack'
StackName='ws'
ClientRequestToken='Console-CreateStack-dfbf636d-95b9-bd72-18a4-ee7dc9a25518'

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If you wish to stop receiving notifications from this topic, please click or visit the link below to unsubscribe:
https://sns.us-east-1.amazonaws.com/unsubscribe.html?SubscriptionArn=arn:aws:sns:us-east-1:207567757353:HiteshSNS:4559d3db-1418-48ec-b07d-959f6bf2bd51&Endpoint=hiteshchauh@gmail.com