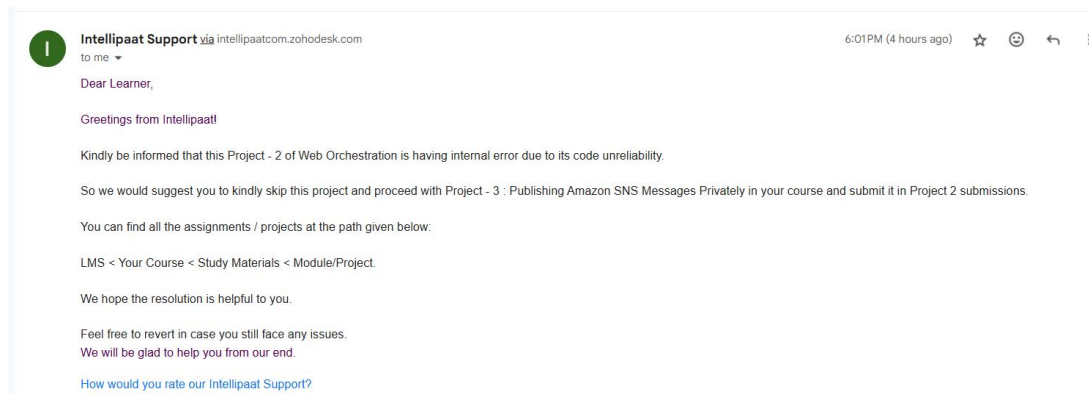


As per support I am doing project 3 instead of project 2



Industry: Healthcare

Problem Statement:

How to secure patient records online and send it privately to the intended party

Topics:

In this project, you will be working on a hospital project to send reports online and develop a platform so the patients can access the reports via mobile and push notifications. You will publish the report to an Amazon SNS keeping it secure and private. Your message will be hosted on an EC2 instance within your Amazon VPC. By publishing the messages privately, you can improve the message delivery and receipt through Amazon SNS.

Highlights:

1. AWS CloudFormation to create a VPC
2. Connect VPC with AWS SNS
3. Publish message privately with SNS

Step 1: we will launch vpc, ec2, sns via cloud formation

Here the yaml format which we used to launch the stack

```
AWSTemplateFormatVersion: '2010-09-09'
Description: Create VPC, EC2 instance, and SNS topic for secure patient records.
Resources:
```

```
VPC:
  Type: AWS::EC2::VPC
  Properties:
    CidrBlock: 10.0.0.0/16
    EnableDnsSupport: true
    EnableDnsHostnames: true
    Tags:
      - Key: Name
        Value: HospitalVPC
```

```
Subnet:
  Type: 'AWS::EC2::Subnet'
  Properties:
    VpcId: !Ref VPC
    CidrBlock: 10.0.1.0/24
    AvailabilityZone:
      !Select
      - 0
      - !GetAZs
    Tags:
      - Key: Name
        Value: HospitalSubnet
```

```
InternetGateway:
  Type: AWS::EC2::InternetGateway
  Properties:
    Tags:
      - Key: Name
        Value: HospitalInternetGateway
```

```
VPCGatewayAttachment:
  Type: AWS::EC2::VPCGatewayAttachment
  Properties:
    VpcId: !Ref VPC
    InternetGatewayId: !Ref InternetGateway
```

```
RouteTable:
  Type: AWS::EC2::RouteTable
  Properties:
    VpcId: !Ref VPC
    Tags:
      - Key: Name
        Value: HospitalRouteTable
```

```
SubnetRouteTableAssociation:
  Type: AWS::EC2::SubnetRouteTableAssociation
  Properties:
    RouteTableId: !Ref RouteTable
    SubnetId: !Ref Subnet
```

```
InternetGatewayRoute:
  Type: AWS::EC2::Route
  Properties:
    RouteTableId: !Ref RouteTable
    GatewayId: !Ref InternetGateway
    DestinationCidrBlock: 0.0.0.0/0
```

```
SecurityGroup:
  Type: AWS::EC2::SecurityGroup
  Properties:
    GroupDescription: Enable SSH and HTTP access
```

```

VpcId: !Ref VPC
SecurityGroupIngress:
  - IpProtocol: tcp
    FromPort: 22
    ToPort: 22
    CidrIp: 0.0.0.0/0
  - IpProtocol: tcp
    FromPort: 80
    ToPort: 80
    CidrIp: 0.0.0.0/0

```

```

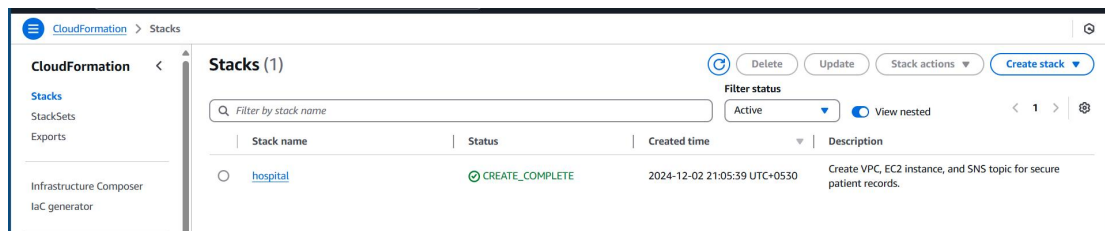
EC2Instance:
  Type: AWS::EC2::Instance
  Properties:
    InstanceType: t2.micro
    SecurityGroupIds:
      - !Ref SecurityGroup
    SubnetId: !Ref Subnet
    ImageId: ami-0453ec754f44f9a4a
    KeyName: vish_key
    UserData:
      Fn::Base64: |
        #!/bin/bash
        yum update -y
        yum install -y httpd
        systemctl start httpd
        systemctl enable httpd
        echo "Durga's Hospital Project" > /var/www/html/index.html

```

```

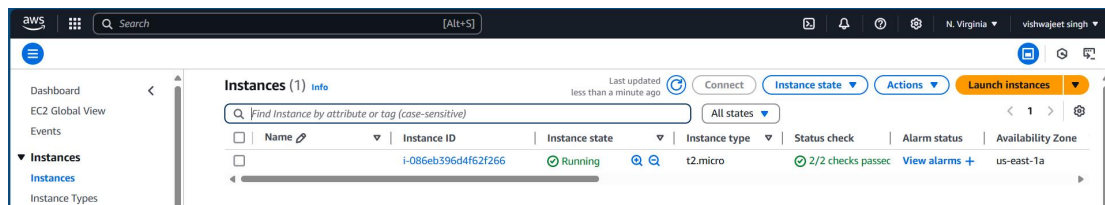
SNSTopic:
  Type: AWS::SNS::Topic
  Properties:
    TopicName: PatientReportsTopic
    Subscription:
      - Protocol: email
        Endpoint: patient@example.com

```



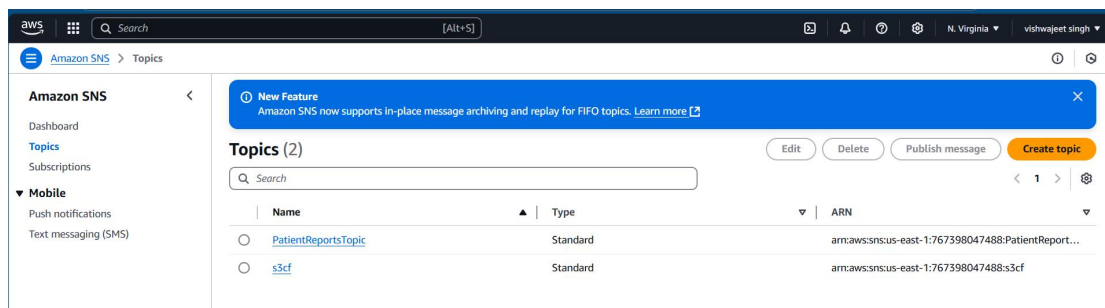
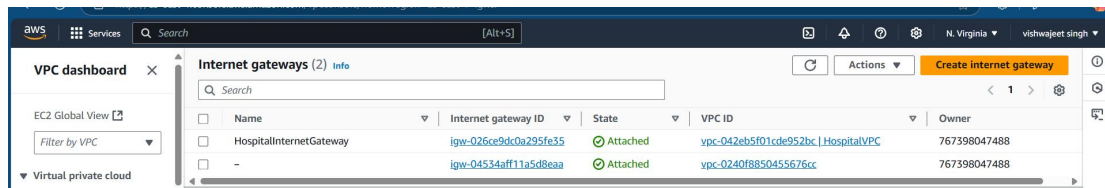
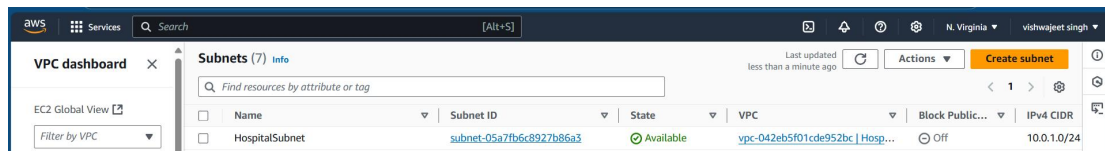
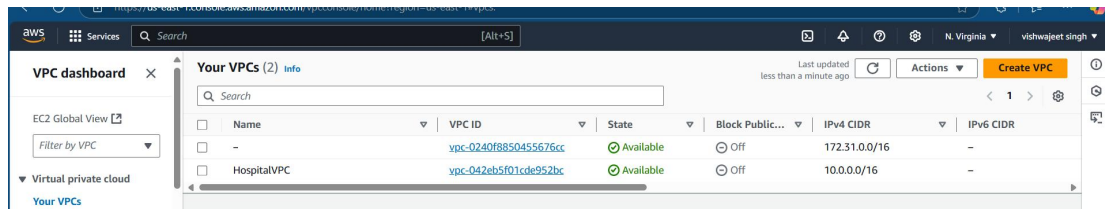
The screenshot shows the AWS CloudFormation console. On the left, there's a sidebar with 'CloudFormation' and 'Stacks' selected. The main area displays 'Stacks (1)' with a table containing one stack named 'hospital'. The stack is in the 'CREATE_COMPLETE' state, created on 2024-12-02 at 21:05:39 UTC+0530. The description reads: 'Create VPC, EC2 instance, and SNS topic for secure patient records.'

Stack name	Status	Created time	Description
hospital	CREATE_COMPLETE	2024-12-02 21:05:39 UTC+0530	Create VPC, EC2 instance, and SNS topic for secure patient records.

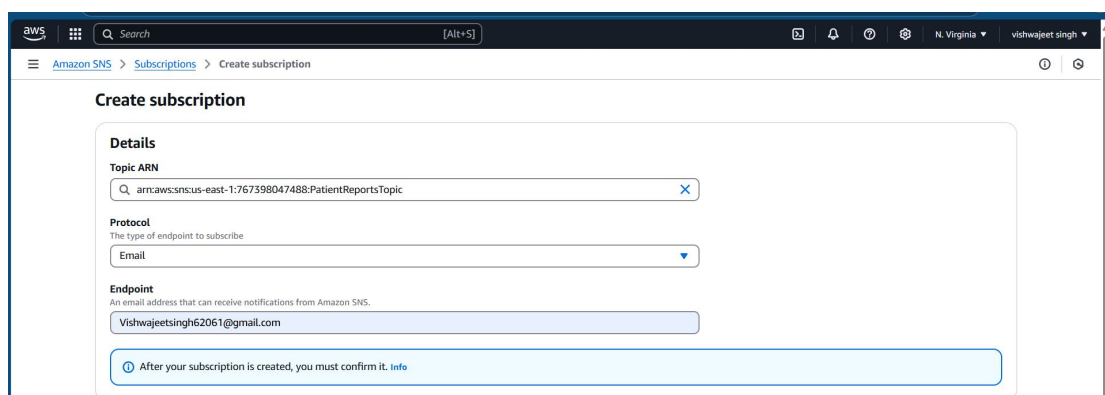
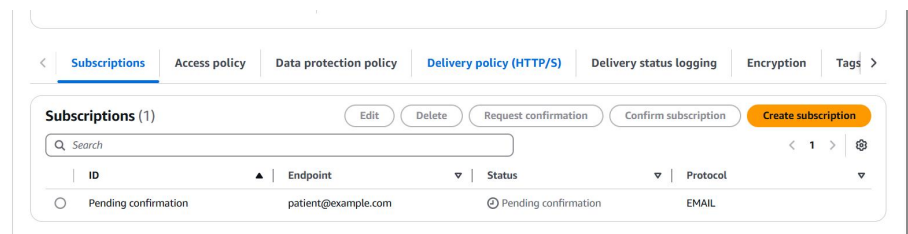


The screenshot shows the AWS Management Console. On the left, there's a sidebar with 'Instances' selected. The main area displays 'Instances (1)' with a table containing one instance named 'i-086eb396d4f62f266'. The instance is in the 'Running' state, of type 't2.micro', and is located in the 'us-east-1a' availability zone. The status check shows '2/2 checks passed'.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
	i-086eb396d4f62f266	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a



Step 2: go inside SNS and create the subscription



Go to email inbox and accept the subscription



Simple Notification Service

Subscription confirmed!

You have successfully subscribed.

Your subscription's id is:

arn:aws:sns:us-east-1:767398047488:PatientReportsTopic:181aa137-55fa-4913-bbf0-cf762a872cc2

If it was not your intention to subscribe, [click here to unsubscribe](#).

Subscriptions					
Access policy					
Data protection policy					
Delivery policy (HTTP/S)					
Delivery status logging					
Encryption					
Tags					
Subscriptions (2)					
Search					
Edit Delete Request confirmation Confirm subscription Create subscription					
ID Endpoint Status Protocol					
181aa137-55fa-4913-bbf0-cf762a... Vishwajeetsingh62061@gmail.com Confirmed EMAIL					
Pending confirmation patient@example.com Pending confirmation EMAIL					

Step 3: create vpc endpoint

Endpoints					
Info					
Search					
Name VPC endpoint ID Endpoint type Status Service name					
No endpoint found					

Services (1/1)				
Search				
Service Name = com.amazonaws.us-east-1.sns Clear filters				
Service Name Owner Type Service Region				
com.amazonaws.us-east-1.sns amazon Interface -				
Network settings				
Select the VPC in which to create the endpoint				
VPC				
Create the VPC endpoint in the VPC in the same AWS Region from which you will access a resource.				
vpc-042eb5f01cde952bc (HospitalVPC)				
Additional settings				
Subnets (1/6) Info				
Availability Zone Subnet ID Designate IP addresses IPv4 address IPv6 address				
us-east-1a (use1-az1) subnet-05a7fb6c8927b86a3				

Endpoints (1/1)					
Info					
Search					
Name VPC endpoint ID Endpoint type Status Service name					
hospital vpc-07f4b1bb9ae87d05d Interface Available com.amazonaws.us-					

Step 4 : connect with ec2 instance and run below command

```
aws sns publish --region us-east-1 --topic-arn arn:aws:sns:us-east-1:767398047488:PatientReportsTopic --message "we are executing project-3"
```

```
[ec2-user@ip-172-31-17-52 ~]$ aws sns publish --region us-east-1 --topic-arn arn:aws:sns:us-east-1:767398047488:PatientReportsTopic --message "we are executing project-3"
r15aba9a-63aa-5422-a874-e54d88c0023e
[ec2-user@ip-172-31-17-52 ~]$
```

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1 of 18,096

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AWS Notification Message inbox x



AWS Notifications <no-reply@sns.amazonaws.com>
to me ▾

10:36 PM (0 minutes ago) ☆ 😊 ↶ ⋮

we are executing project-3

--

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-1:767398047488:PatientReportsTopic:181aa137-55fa-4913-bbf0-cf762a872cc2&Endpoint=Vishwajeetsingh62061@gmail.com>

Please do not reply directly to this email. If you have any questions or comments regarding this email, please contact us at <https://aws.amazon.com/support>

↶ Reply

↷ Forward

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