

## AWS Solutions Architect Certification Training

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### AWS-Project-3-Publishing-Amazon-SNS-Messages-Privately COMPLETED by Nagesha KS

Please check the following screenshots for each question.

#### 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**



Key pairs | EC2 | us-east-1

aws-cloudformation-templates

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#KeyPairs:

Services

keypair

N. Virginia

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EC2 Dashboard

EC2 Global View

Events

Console-to-Code

Instances

Images

AMI Catalog

Key pairs (1/2)

Find Key Pair by attribute or tag

	Name	Type	Created	Fingerprint	ID
<input checked="" type="checkbox"/>	VPCE-Tutorial-KeyPair	rsa	2024/08/25 15:26 GMT+5:30	cb:c2:99:e2:89:44:45:e6:90:9...	key-045757e8514893145
<input type="checkbox"/>	Module2Keypair	rsa	2024/07/25 08:48 GMT+5:30	a1:c7:95:7c:1e:38:7f:2b:5f:bb...	key-05863d10ce050c492

Create key pair

CloudShell

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Services

Search

lambda

Navigation

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Filter by VPC

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Egress-only internet gateways

Carrier gateways

DHCP option sets

Elastic IPs

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Your VPCs (1/2)

Info

Last updated 7 minutes ago

Actions

Create VPC

Search

	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
<input type="checkbox"/>	-	<a href="#">vpc-00db21202326fb80a</a>	Available	172.31.0.0/16	-
<input checked="" type="checkbox"/>	VPCE-Tutorial-VPC-vpc	<a href="#">vpc-09defdca4aa1e590e</a>	Available	10.0.0.0/16	-

vpc-09defdca4aa1e590e / VPCE-Tutorial-VPC-vpc

Details

Resource map

CIDRs

Flow logs

Tags

Integrations

Details

VPC ID	State	DNS hostnames	DNS resolution
<a href="#">vpc-09defdca4aa1e590e</a>	Available	Enabled	Enabled
Tenancy	DHCP option set	Main route table	Main network ACL
Default	<a href="#">dopt-08e021c762653fd1f</a>	<a href="#">rtb-076f53f41ebcb884f</a>	<a href="#">acl-0b79812c441ee7ee6</a>
Default VPC	IPv4 CIDR	IPv6 pool	IPv6 CIDR (Network border group)
No	10.0.0.0/16	-	-

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us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#subnets;

aws

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Subnets (1/4)

Find resources by attribute or tag

	Name	Subnet ID	State	VPC
<input type="checkbox"/>	-	subnet-04f5f740b66ad91e3	Available	vpc-00db21202326fb80a
<input checked="" type="checkbox"/>	VPCE-Tutorial-VPC-subnet-public1-us-east-1a	subnet-0e0149e58c28011f4	Available	vpc-09defdca4aa1e590e   VPCE.
<input type="checkbox"/>	VPCE-Tutorial-VPC-subnet-private1-us-east-1a	subnet-0f1a3763b27c55d66	Available	vpc-09defdca4aa1e590e   VPCE.
<input type="checkbox"/>	VPCE-Tutorial-VPC-subnet-private2-us-east-1b	subnet-0408f31625ca41b3d	Available	vpc-09defdca4aa1e590e   VPCE.

subnet-0e0149e58c28011f4 / VPCE-Tutorial-VPC-subnet-public1-us-east-1a

Details

Flow logs

Route table

Network ACL

CIDR reservations

Sharing

Tags

Details

Subnet ID

subnet-0e0149e58c28011f4

Subnet ARN

arn:aws:ec2:us-east-1:289436155303:subnet/subnet-0e0149e58c28011f4

State

Available

IPv4 CIDR

10.0.0.0/20

Available IPv4 addresses

4091

IPv6 CIDR association ID

-

Availability Zone

us-east-1a

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us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#RouteTables:

aws

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Route tables (1/9)

Info

Last updated about 1 hour ago

Actions

Create route table

Find resources by attribute or tag

	Name	Route table ID	Explicit subnet associ...	Edge associations	Main
<input type="checkbox"/>	-	rtb-0b352723b6c7b84d0d	-	-	yes
<input type="checkbox"/>	project-rtb-public	rtb-0bf14e052dcab64bb	2 subnets	-	No
<input checked="" type="checkbox"/>	VPCE-Tutorial-VPC-rtb-private1-us-east...	rtb-01f009b3acbea767a	subnet-0f1a3763b27c55...	-	No
<input type="checkbox"/>	-	rtb-076f53f41ebcb884f	-	-	Yes
<input type="checkbox"/>	VPCE-Tutorial-VPC-rtb-public	rtb-0bad678a0b9c98f89	subnet-0e0149e58c2801...	-	No
<input type="checkbox"/>	VPCE-Tutorial-VPC-rtb-private2-us-east...	rtb-079b3697807bdcda1	subnet-0408f31625ca41...	-	No

rtb-01f009b3acbea767a / VPCE-Tutorial-VPC-rtb-private1-us-east-1a

Details

Routes

Subnet associations

Edge associations

Route propagation

Tags

Details

Route table ID

rtb-01f009b3acbea767a

Main

No

Explicit subnet associations

subnet-0f1a3763b27c55d66 / VPCE-Tutorial-VPC-subnet-

Edge associations

-

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us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#igws:

aws

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Internet gateways (1/3)

Info

Search

1

Create internet gateway

	Name	Internet gateway ID	State	VPC ID
<input type="checkbox"/>	-	igw-0a86a3213e1e95edd	Attached	vpc-00db21202326fb80a
<input type="checkbox"/>	project-igw	igw-0d93109aa1fe3ff4b	Attached	vpc-0e32e8b597bd748cb
<input checked="" type="checkbox"/>	VPCE-Tutorial-VPC-igw	igw-08e2cb602ad33560c	Attached	vpc-09defdca4aa1e590e   VPCE-Tutorial-VPC-vpc

igw-08e2cb602ad33560c / VPCE-Tutorial-VPC-igw

Details

Tags

Details

Internet gateway ID

igw-08e2cb602ad33560c

State

Attached

VPC ID

vpc-09defdca4aa1e590e | VPCE-Tutorial-VPC-vpc

Owner

289436155303

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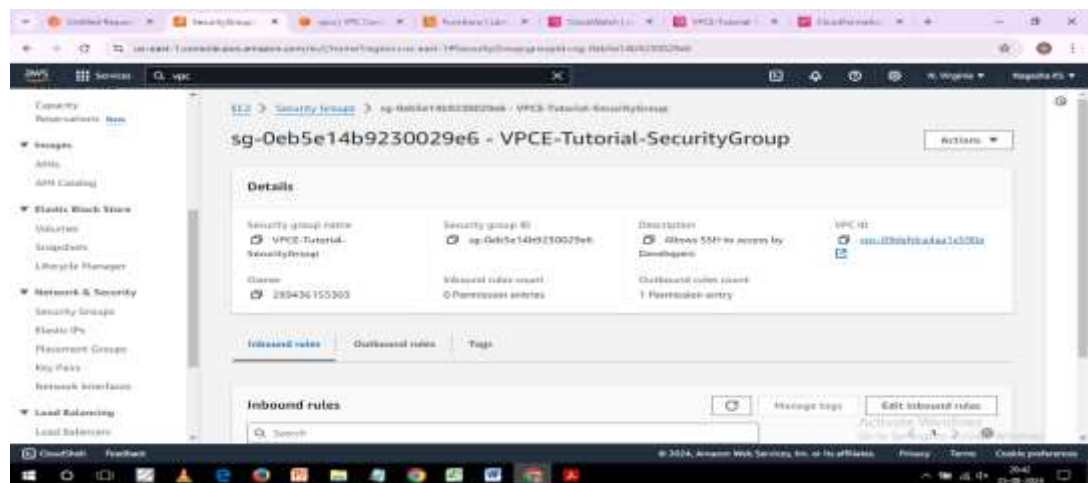
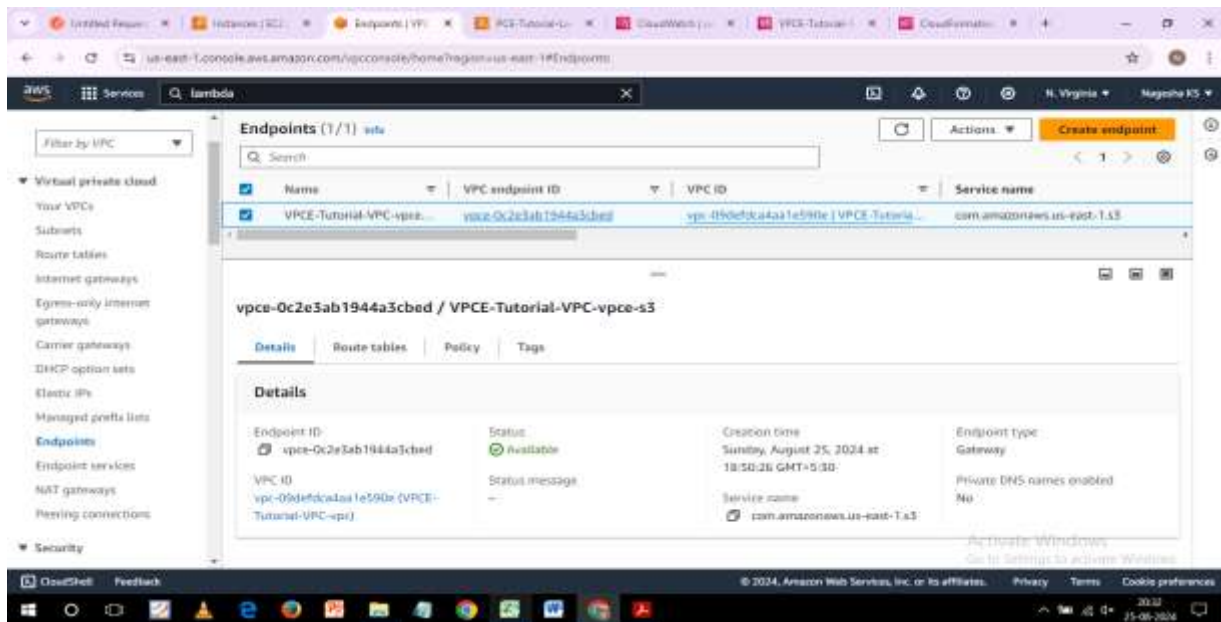
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Stacks | CloudFormation | us-east-1 x aws-cloudformation-templates x

github.com/aws-cloudformation/aws-cloudformation-templates/blob/main/SNS/SNSTopic.yaml

aws-cloudformation / aws-cloudformation-templates

Type to search

<> Code Issues 12 Pull requests Discussions Actions Projects Security Insights

Files

main + Q

Go to file t

- S3
- SNS
  - SNSTopic.json
  - SNSTopic.yaml**
- SQS
- ServiceCatalog
- Solutions
- VPC
- scripts
- .ctfintre
- .gitignore
- .pylintre

aws-cloudformation-templates / SNS / SNSTopic.yaml

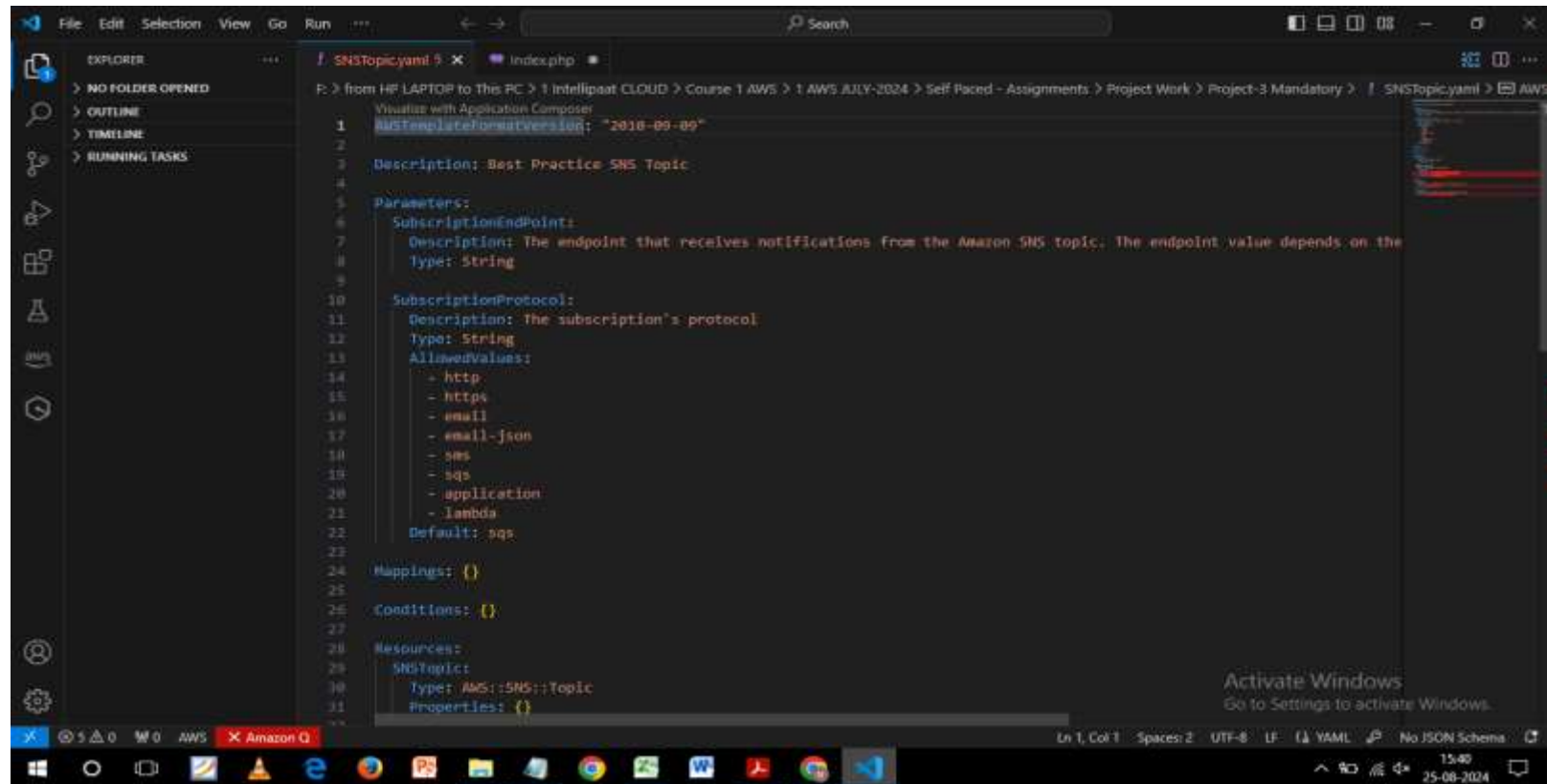
ericzbeard Move files around d92ae9b - 3 months ago History

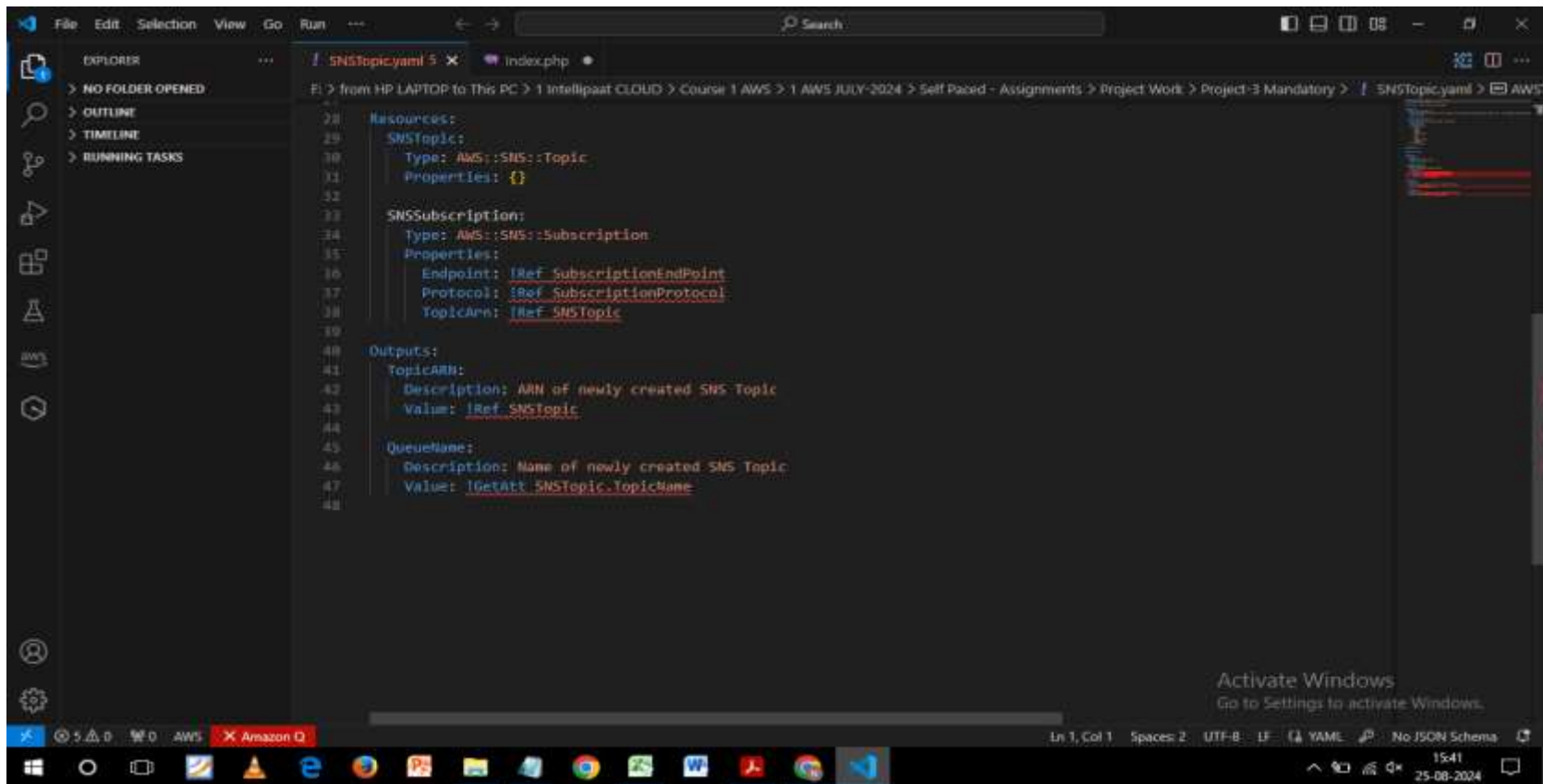
Code Blame 47 lines (38 loc) - 1 KB Raw Download Edit

```
1  AWSTemplateFormatVersion: "2010-09-09"
2
3  Description: Best Practice SNS Topic
4
5  Parameters:
6    SubscriptionEndPoint:
7      Description: The endpoint that receives notifications from the Amazon SNS topic. The endpoint value depends on the protocol that you
8      Type: String
9
10   SubscriptionProtocol:
11     Description: The subscription's protocol
12     Type: String
13     AllowedValues:
14       - http
15       - https
16       - email
17       - email-json
```

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15:37  
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us-east-1.console.aws.amazon.com/cloudformation/home?region=us-east-1#/stacks/events?stackId=arn%3Aaws%3Acloudformation%3Aus-east-1%3A289436155303%3Ast...

aws

Services

Search

[Alt+S]

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CloudFormation > Stacks > VPCE-Tutorial-Stack

Stacks (1)

Filter by stack name

Filter status

Active

View nested

Stacks

VPCE-Tutorial-Stack

2024-08-25 19:12:37 UTC+0530

CREATE\_IN\_PROGRESS

VPCE-Tutorial-Stack

DeleteUpdateStack actionsCreate stack

Stack infoEventsResourcesOutputsParametersTemplate

Events (1)

Detect root cause

Search events

Timestamp	Logical ID	Status	Detailed
2024-08-25 19:12:37 UTC+0530	VPCE-Tutorial-Stack	CREATE_IN_PROGRESS	

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19:12  
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us-east-1.console.aws.amazon.com/sns/v3/home?region=us-east-1#/topic/arn:aws:sns:us-east-1:289436155303:VPCE-Tutorial-Topic

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### Amazon SNS

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

## VPCE-Tutorial-Topic

Edit Delete Publish message

### Details

Name	VPCE-Tutorial-Topic	Display name	-
ARN	arn:aws:sns:us-east-1:289436155303:VPCE-Tutorial-Topic	Topic owner	289436155303
Type	Standard		

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

### Subscriptions (1)

Edit Delete Request confirmation Confirm subscription Create subscription

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us-east-1.console.aws.amazon.com/sns/v3/home?region=us-east-1#/subscription/am:aws:sns:us-east-1:289436155303:VPCE-Tutorial-Topic:84b4a069-0081-4693-9849-ff5f0f31f787

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### Amazon SNS

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

## Subscription: 84b4a069-0081-4693-9849-ff5f0f31f787

Edit Delete

### Details

ARN	arn:aws:sns:us-east-1:289436155303:VPCE-Tutorial-Topic:84b4a069-0081-4693-9849-ff5f0f31f787
Endpoint	arn:aws:sqs:us-east-1:289436155303:VPCE-Tutorial-MyQueue
Topic	VPCE-Tutorial-Topic
Subscription Principal	arn:aws:iam::289436155303:root
Status	Confirmed
Protocol	SQS
Raw message delivery	Disabled

Subscription filter policy Redrive policy (dead-letter queue)

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19:57  
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us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#Endpoints:

Servicescloudformation

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Endpoints (1/1) info

Search

ActionsCreate endpoint

Name	VPC endpoint ID	VPC ID	Service name
VPCE-Tutorial-VPC-vpce...	vpce-0c2e3ab1944a3cbcd	vpc-09defdca4aa1e590e   VPCE-Tutoria...	com.amazonaws.us-east-1.s3

DetailsRoute tablesPolicyTags

Details

Endpoint IDvpce-0c2e3ab1944a3cbcd

StatusAvailable

Creation timeSunday, August 25, 2024 at 18:50:26 GMT+5:30

Endpoint typeGateway

VPC IDvpc-09defdca4aa1e590e (VPCE-Tutorial-VPC-vpc)

Status message

Service namecom.amazonaws.us-east-1.s3

Private DNS names enabledNo

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← → ↻

us-east-1.console.aws.amazon.com/lambda/home?region=us-east-1#/functions/PCE-Tutorial-Lambda-1?tab=code

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aws

Services

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🎯

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☰

Lambda > Functions > PCE-Tutorial-Lambda-1

ⓘ

⌵

PCE-Tutorial-Lambda-1

Throttle

Copy ARN

Actions


▼ Function overview Info


Export to Application Composer

Download

Diagram

Template

 PCE-Tutorial-Lambda-1

 Layers (0)

+ Add trigger

+ Add destination


Description

-

Last modified

1 minute ago

Function ARN

 arn:aws:lambda:us-east-1:289436155303:function:PCE-Tutorial-Lambda-1

Function URL Info

-

Code

Test

Monitor

Configuration

Aliases

Versions

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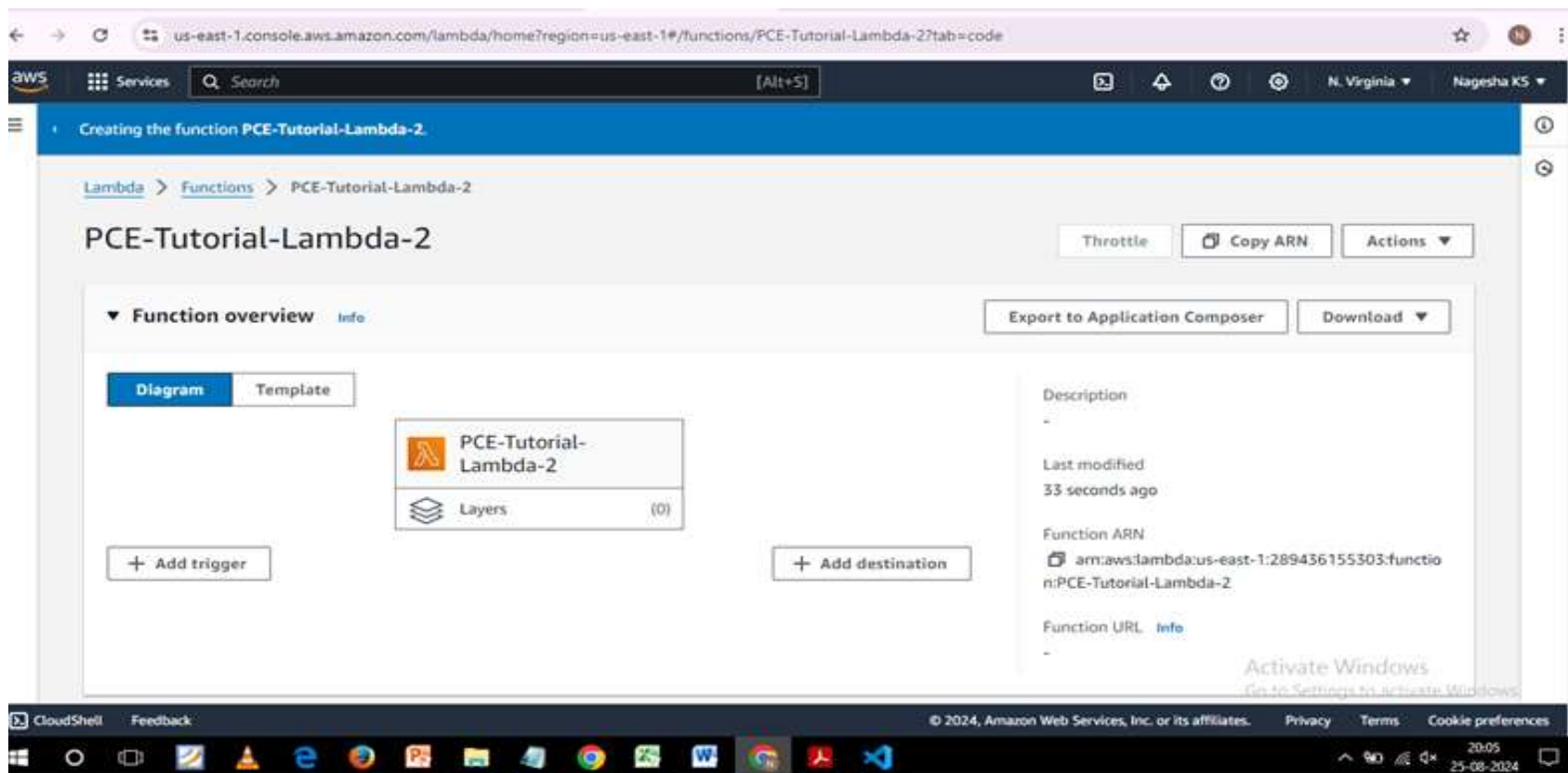
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Windows taskbar

20:05

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us-east-1.console.aws.amazon.com/cloudwatch/home?region=us-east-1#metricsV2?graph=~(period=60-metrics=~(AWS\*2fLambda~1Invocations~FunctionName~PCE...

Services

Search

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CloudWatch

Favorites and recents

Dashboards

Alarms 0 0 0 0

Logs

Metrics

All metrics

Explorer

Streams

X-Ray traces

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Application Signals New

Network monitoring

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Settings

CloudWatch > Metrics

Invocations

1h 3h 12h 1d 3d 1w Custom UTC timezone Actions Line

0.769 08-25 13:41

Add math Add query

Browse Multi source query Graphed metrics (1) Options Source

Add dynamic label Info

Statistic: Sum Period: 1 minute Clear graph

Label	Details	Statistic	Period	Y axis
Invocations	Region: us-east-1 • Lambda • Invocations	Sum	1 minute	

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