

KEYPAIR CREATION

The screenshot shows the 'Create Key Pair' page in the AWS Management Console. The browser address bar displays the URL: `https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateKeyPair:`. The page header includes the AWS logo, a 'Services' menu, a search bar, and navigation links for EC2, VPC, CloudWatch, Route 53, and RDS. The main content area is titled 'Name' and contains a text input field with the value 'VPCE-Tutorial-KeyPair'. Below this, a note states: 'The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.' The 'Key pair type' section has two radio buttons: 'RSA' (selected) and 'ED25519'. The 'Private key file format' section has two radio buttons: '.pem' (selected) and '.ppk'. Below this, a note says: 'No tags associated with the resource.' There is an 'Add new tag' button and a note: 'You can add up to 50 more tags.' At the bottom right, there are 'Cancel' and 'Create key pair' buttons.

← → ↻ `https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#CreateKeyPair:` ☆

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Name

VPCE-Tutorial-KeyPair

The name can include up to 255 ASCII characters. It can't include leading or trailing spaces.

Key pair type [Info](#)

☒ RSA ☐ ED25519

Private key file format

☒ .pem For use with OpenSSH

☐ .ppk For use with PuTTY

Tags - optional

No tags associated with the resource.

Add new tag

You can add up to 50 more tags.

Cancel Create key pair

STACK CREATION

The screenshot shows the 'Create Stack' page in the AWS CloudFormation console. The browser address bar displays the URL: `https://us-east-1.console.aws.amazon.com/cloudformation/home?region=us-east-1#/stacks/create`. The page header includes the AWS logo, a 'Services' menu, a search bar, and navigation links for EC2, VPC, CloudWatch, Route 53, and RDS. The main content area is titled 'Specify template' and contains a section 'Template source' with three radio buttons: 'Amazon S3 URL', 'Upload a template file' (selected), and 'Sync from Git - new'. Below this, there is a 'Choose file' button and a text input field with the value 'vpctutorial'. A note states: 'JSON or YAML formatted file'. At the bottom, there is an 'S3 URL' field with the value: `https://s3.us-east-1.amazonaws.com/cf-templates-hgqwn0dgyu4-us-east-1/2024-01-16T111559.686Z0d3-vpctutorial` and a 'View in Designer' button.

← → ↻ `https://us-east-1.console.aws.amazon.com/cloudformation/home?region=us-east-1#/stacks/create` ☆

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Configure stack options

Step 4 Review

Include in the stack.

☒ Template is ready ☐ Use a sample template ☐ Create template in Designer

Specify template

A template is a JSON or YAML file that describes your stack's resources and properties.

Template source

Selecting a template generates an Amazon S3 URL where it will be stored.

☐ Amazon S3 URL Provide an Amazon S3 URL to your template.

☒ Upload a template file Upload your template directly to the console.

☐ Sync from Git - new Sync a template from your Git repository.

Upload a template file

Choose file

vpctutorial

JSON or YAML formatted file

S3 URL: `https://s3.us-east-1.amazonaws.com/cf-templates-hgqwn0dgyu4-us-east-1/2024-01-16T111559.686Z0d3-vpctutorial`

View in Designer

←

→

↺

https://us-east-1.console.aws.amazon.com/cloudformation/home?region=us-east-1#/stacks/create

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EC2

VPC

CloudWatch

Route 53

RDS

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Step 2

Specify stack details

Step 3

Configure stack options

Step 4

Review VPCE-Tutorial-Stack

Provide a stack name

Stack name

VPCE-Tutorial-Stack

Stack name can include letters (A-Z and a-z), numbers (0-9), and dashes (-).

Parameters

Parameters are defined in your template and allow you to input custom values when you create or update a stack.

KeyName

Name of an existing EC2 KeyPair to enable SSH access to the instance

VPCE-Tutorial-KeyPair ▼

SSHLocation

The IP address range that can be used to SSH to the EC2 instance

0.0.0.0/0

Cancel Previous Next

←

→

↺

https://us-east-1.console.aws.amazon.com/cloudformation/home?region=us-east-1#/stacks/create

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EC2

VPC

CloudWatch

Route 53

RDS

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Timeout

-

Termination protection

Deactivated

▶ Quick-create link

Capabilities

📘

The following resource(s) require capabilities: [AWS::IAM::Role]

This template contains Identity and Access Management (IAM) resources. Check that you want to create each of these resources and that they have the minimum required permissions. In addition, they have custom names. Check that the custom names are unique within your AWS account. [Learn more](#)

☒ I acknowledge that AWS CloudFormation might create IAM resources with custom names.

Create change set Cancel Previous Submit

← → ↻

https://us-east-1.console.aws.amazon.com/cloudformation/home?region=us-east-1#/stacks/events? ☆

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🏠 EC2

🖥️ VPC

📺 CloudWatch

📡 Route 53

🗄️ RDS

☰

CloudFormation > Stacks > VPCE-Tutorial-Stack

Stacks (1) ↻

🔍 Filter by stack name

Filter status
Active ▾

🔵 View nested

< 1 >

Stacks

VPCE-Tutorial-Stack

2024-01-16 12:20:44 UTC+0100

🟢 CREATE_COMPLETE

VPCE-Tutorial-Stack

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🔍 🔍

Stack info | **Events** | Resources | Outputs | Parameters | >

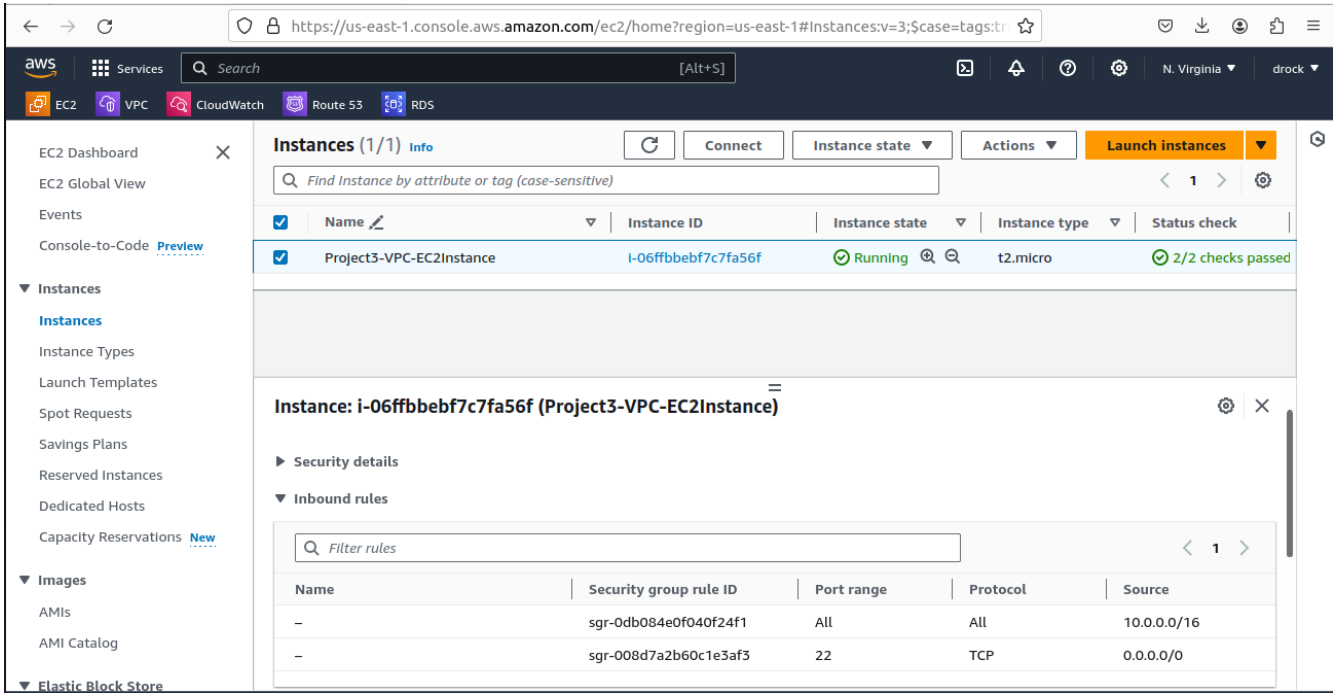
Events (62) 🔍 Detect root cause ↻

🔍 Search events

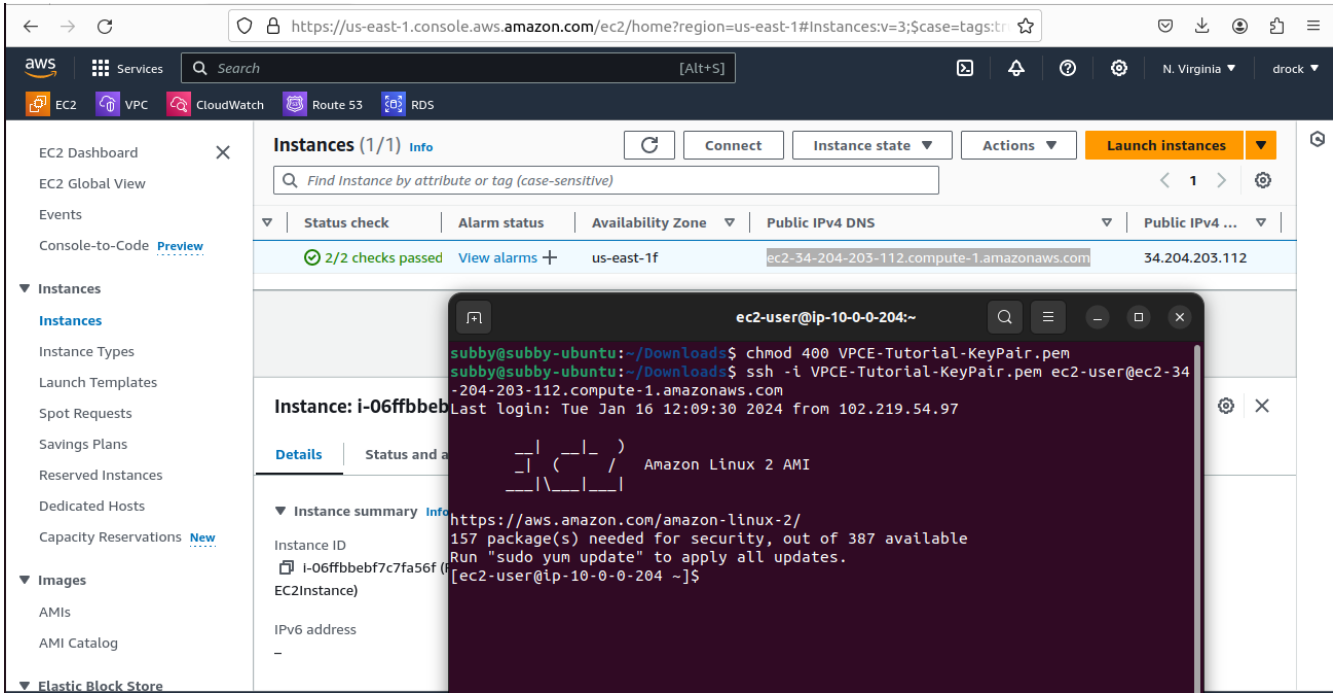
⚙️

Timestamp	Logical ID	Status
2024-01-16 12:23:56 UTC+0100	VPCE-Tutorial-Stack	🟢 CREATE_COMPLETE
2024-01-16 12:23:55 UTC+0100	EC2Instance	🟢 CREATE_COMPLETE
2024-01-16 12:23:29 UTC+0100	SubnetRouteTableAssoci	🟢 CREATE_COMPLETE

Confirm that your Amazon EC2 Instance lacks internet access SG ALLOWS ONLY PORT:22



SSH CONNECTION



Verify that the instance lacks internet connectivity

```
subby@subby-ubuntu:~/Downloads$ chmod 400 VPCE-Tutorial-KeyPair.pem
subby@subby-ubuntu:~/Downloads$ ssh -i VPCE-Tutorial-KeyPair.pem ec2-user@ec2-34-204-203-112.compute-1.amazonaws.com
Last login: Tue Jan 16 12:09:30 2024 from 102.219.54.97

  _ | _ | _ | _ |
  _ | ( _ | /   ) Amazon Linux 2 AMI
  _ | \ _ | _ | _ |

https://aws.amazon.com/amazon-linux-2/
157 package(s) needed for security, out of 387 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-10-0-0-204 ~]$ ping amazon.com
PING amazon.com (54.239.28.85) 56(84) bytes of data:
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=1 ttl=250 time=0.694 ms
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=2 ttl=250 time=0.727 ms
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=3 ttl=250 time=0.709 ms
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=4 ttl=250 time=0.777 ms
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=5 ttl=250 time=0.716 ms
^C
--- amazon.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4080ms
rtt min/avg/max/mdev = 0.694/0.724/0.777/0.040 ms
[ec2-user@ip-10-0-0-204 ~]$
```

ALSO ATTEMPT TO PUBLISH MESSAGE TO THE TOPIC

copy ARN OF SNS ALREADY CREATED BY CLOUSFORMATION

The screenshot shows the AWS Management Console for Amazon SNS. The main content area displays the details for a topic named 'Project3-SNS-Topic'. The details include the Name, Display name, ARN, Topic owner, and Type. The ARN is 'arn:aws:sns:us-east-1:051875392745:Project3-SNS-Topic' and the Type is 'Standard'. The page also features a 'New Feature' banner at the top and a sidebar with navigation options like Dashboard, Topics, Subscriptions, and Mobile.

Details	
Name	Project3-SNS-Topic
Display name	Project3-SNS-Topic
ARN	arn:aws:sns:us-east-1:051875392745:Project3-SNS-Topic
Topic owner	051875392745
Type	Standard

```
aws sns publish --region us-east-1 --topic-arn arn:aws:sns:us-east-1:051875392745:Project3-SNS-Topic --message "Hello World"
```

```
subby@subby-ubuntu:~/Downloads$ chmod 400 VPCE-Tutorial-KeyPair.pem
subby@subby-ubuntu:~/Downloads$ ssh -i VPCE-Tutorial-KeyPair.pem ec2-user@ec2-34-204-203-112.compute-1.amazonaws.com
Last login: Tue Jan 16 12:09:30 2024 from 102.219.54.97

 _ _ | _ _ | _ _ |
 _ _ | _ _ | _ _ | Amazon Linux 2 AMI

https://aws.amazon.com/amazon-linux-2/
157 package(s) needed for security, out of 387 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-10-0-0-204 ~]$ ping amazon.com
PING amazon.com (54.239.28.85) 56(84) bytes of data:
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=1 ttl=250 time=0.694 ms
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=2 ttl=250 time=0.727 ms
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=3 ttl=250 time=0.709 ms
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=4 ttl=250 time=0.777 ms
64 bytes from 54.239.28.85 (54.239.28.85): icmp_seq=5 ttl=250 time=0.716 ms
^C
--- amazon.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4080ms
rtt min/avg/max/mdev = 0.694/0.724/0.777/0.040 ms
[ec2-user@ip-10-0-0-204 ~]$ aws sns publish --topic-arn arn:aws:sns:us-east-1:051875392745:Project3-SNS-Topic --message "Hello World"
You must specify a region. You can also configure your region by running "aws configure".
[ec2-user@ip-10-0-0-204 ~]$ aws sns publish --region us-east-1 --topic-arn arn:aws:sns:us-east-1:051875392745:Project3-SNS-Topic --message "Hello World"
{
  "MessageId": "f4f06d91-a82e-5572-83ca-33b1d234be07"
}
[ec2-user@ip-10-0-0-204 ~]$
[ec2-user@ip-10-0-0-204 ~]$
```

(did it twice because I did not include 'region in the first command')

Met VPC ENDPOINT ALREADY CREATED

The screenshot displays the AWS Management Console for the 'us-east-1' region. The main content area shows the 'Endpoints (1)' page, which lists a single VPC endpoint: 'vpc-0fee7ba72696ecb21' for 'Project3-VPC'. The endpoint is in the 'Available' state. The left sidebar shows the 'VPC dashboard' with various VPC-related services listed. The top navigation bar shows the AWS logo, 'Services' menu, and search bar. The bottom status bar shows '© 2024, Amazon Web Services, Inc. or its affiliates.' and links to 'Privacy', 'Terms', and 'Cookie preference'.

I Attempted to create Vpc Endpoint but... there was error; details of the process and the error is pasted below:

CREATE VPC ENDPOINT

← → ↻ <https://us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateVpcEndpoint:> ☆

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Name tag - optional
Creates a tag with a key of 'Name' and a value that you specify.
vpc-endpoint

Service category
Select the service category

☒ **AWS services**
Services provided by Amazon

☐ **PrivateLink Ready partner services**
Services with an AWS Service Ready designation

☐ **AWS Marketplace services**
Services that you've purchased through AWS Marketplace

☐ **EC2 Instance Connect Endpoint**
An elastic network interface that allow you to connect to resources in a private subnet

☐ **Other endpoint services**
Find services shared with you by service name

Services (1/1) ↻

Search

Service Name = com.amazonaws.us-east-1.sns X Clear filters

Service Name	Owner	Type
com.amazonaws.us-east-1.sns	amazon	Interface

← → ↻ <https://us-east-1.console.aws.amazon.com/vpcconsole/home?region=us-east-1#CreateVpcEndpoint:> ☆

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Subnets (1/6) [Info](#)

Availability Zone	Subnet ID	Designate IP addresses	IPv4 address	IPv6 address
<input checked="" type="checkbox"/> us-east-1f (use1-az5)	subnet-0c051a4e3b...	<input checked="" type="checkbox"/>	10.0.0.115	

IP address type

☒ **IPv4**

☐ IPv6

☐ Dualstack

Security groups (1/2) [Info](#)

Search

Group ID	Group name	VPC ID	Description
<input checked="" type="checkbox"/> sg-05054738da4a13851	Project3 Security Group	vpc-03967d3fe5210d0ef	Security group for Project3
<input type="checkbox"/> sg-0e4e209470c784419	default	vpc-03967d3fe5210d0ef	default VPC security group

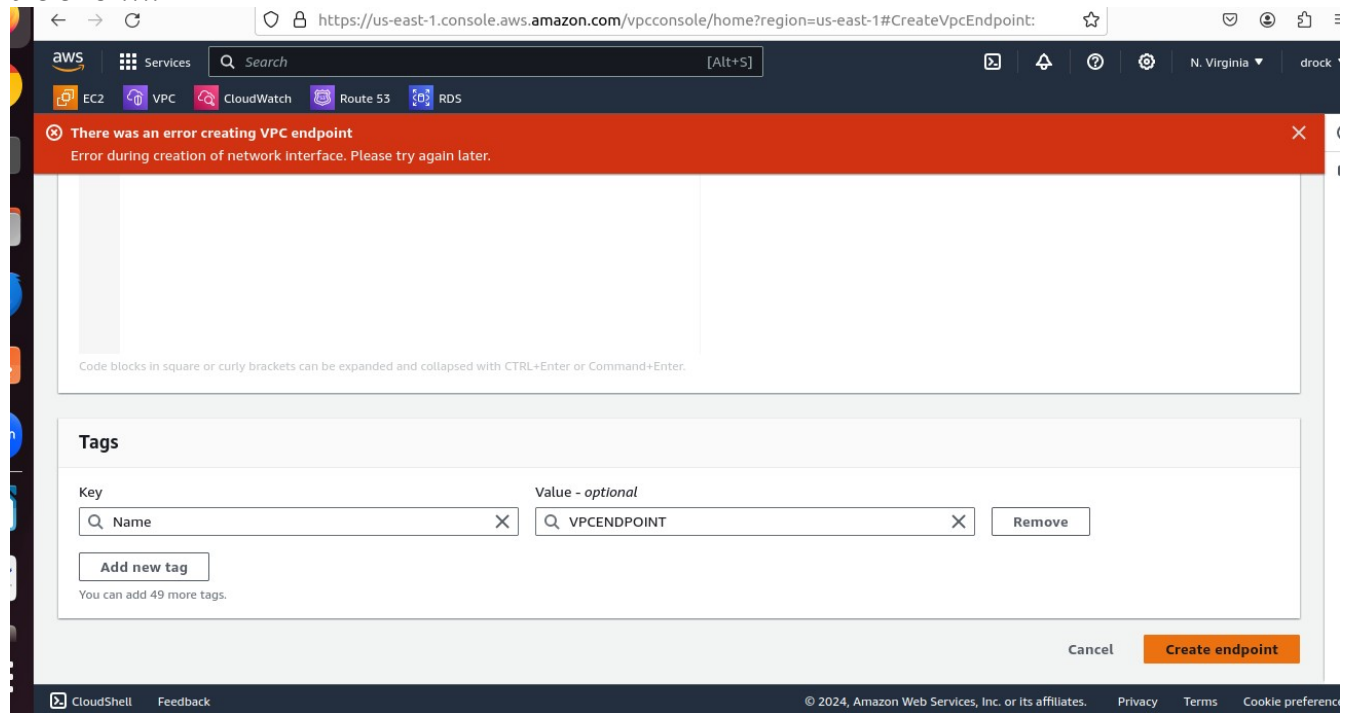
sg-05054738da4a13851 X

Policy [Info](#)

VPC endpoint policy controls access to the service.

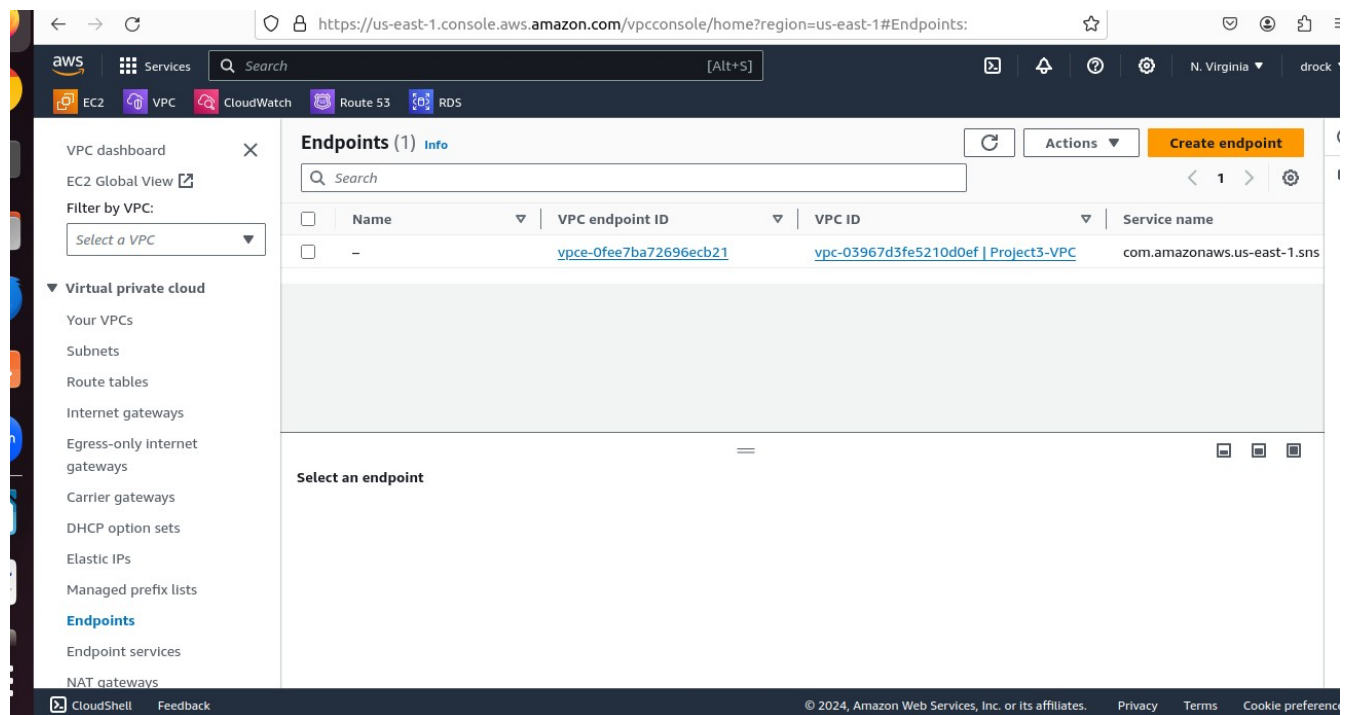
CloudShell Feedback © 2024, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

the error....



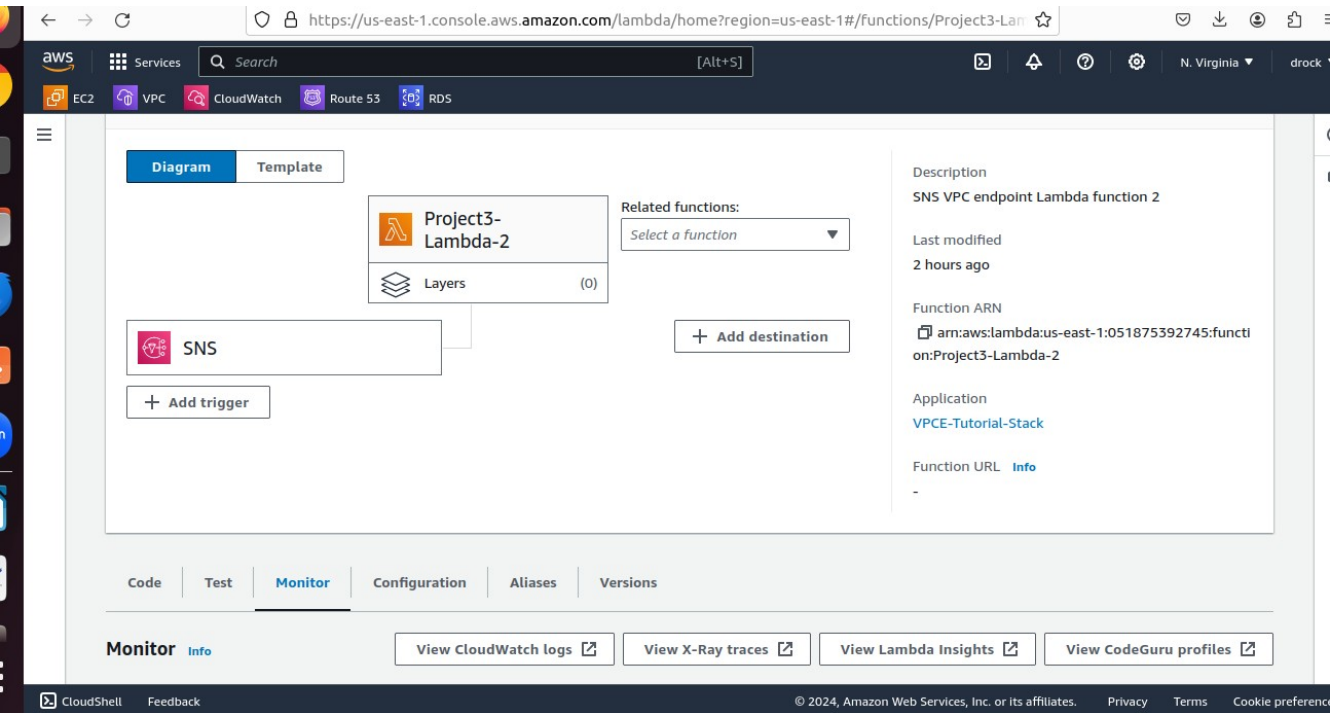
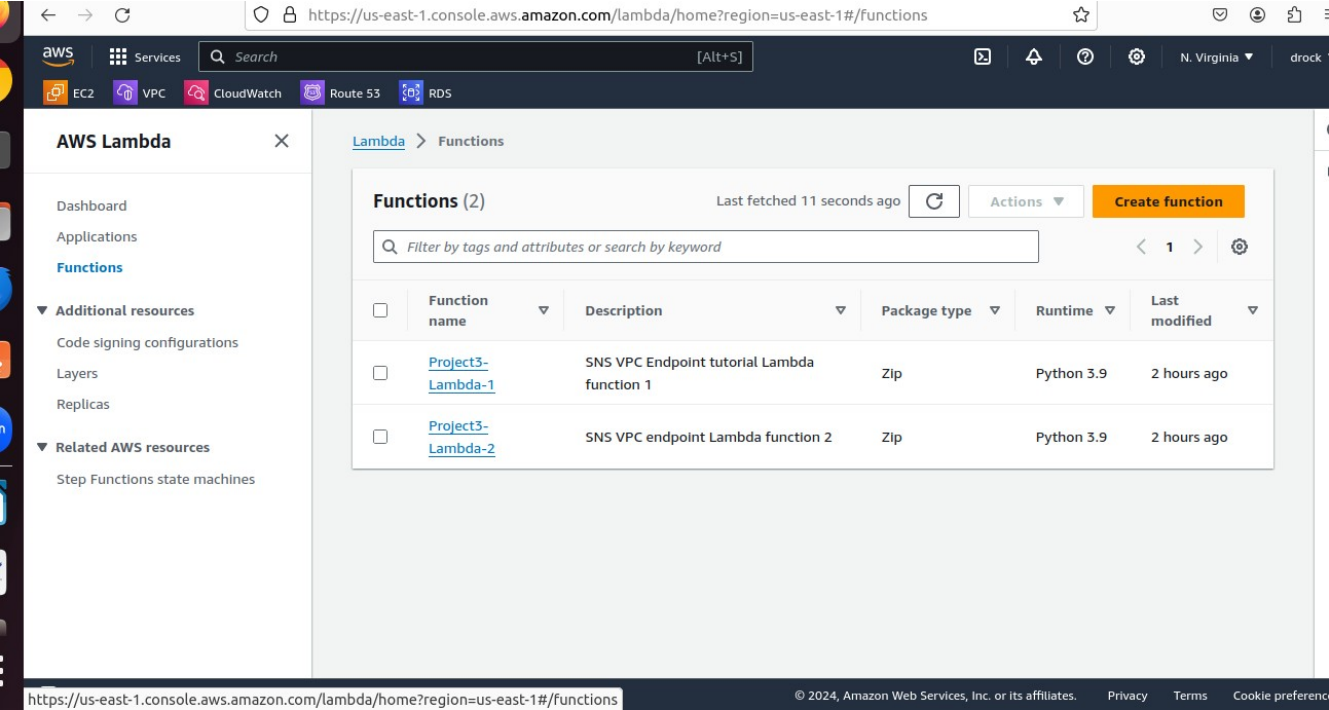
(Guessbecause it has been created already).

I will be working with the vpc endpoint I met on the VPV ENDPOINT PAGE

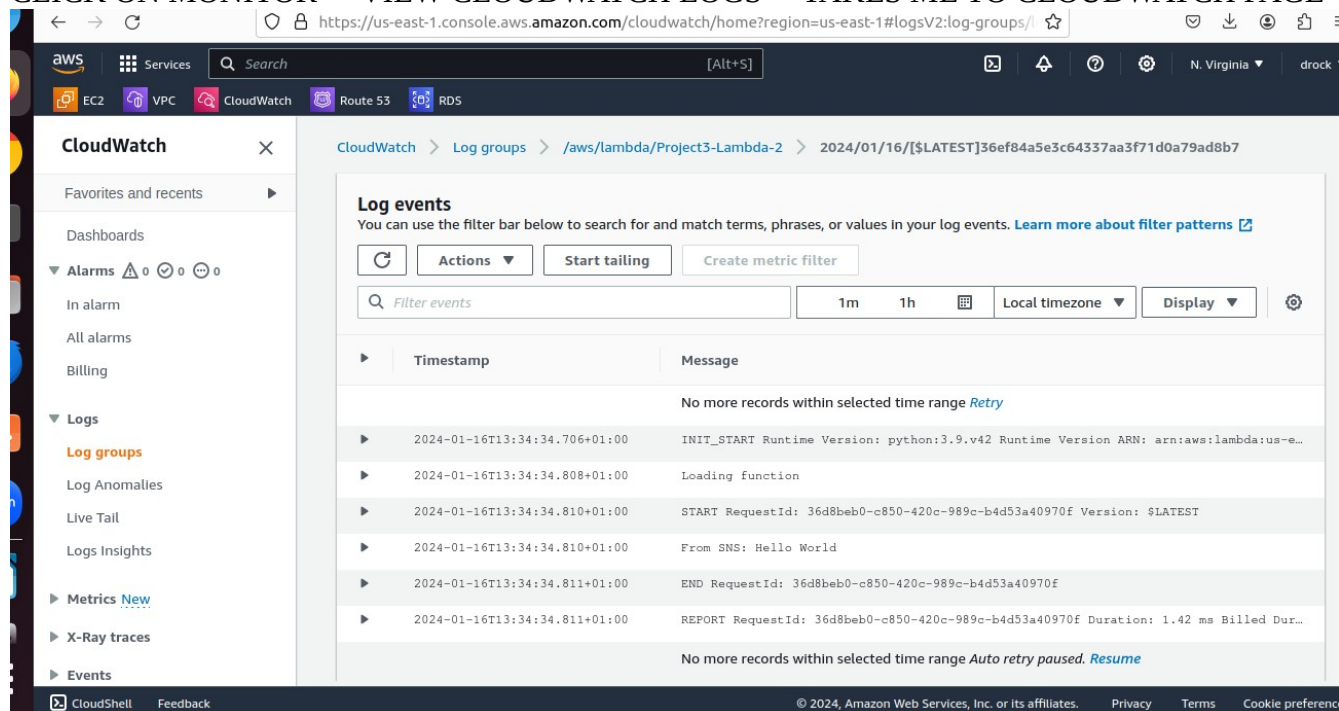


GO TO LAMBDA PAGE: CLICK ON FUNCTION

FUNCTIONS CAN BE SEEN, CLICK THE RECENT FUNCTION



CLICK ON MONITOR----VIEW CLOUDWATCH LOGS--- TAKES ME TO CLOUDWATCH PAGE

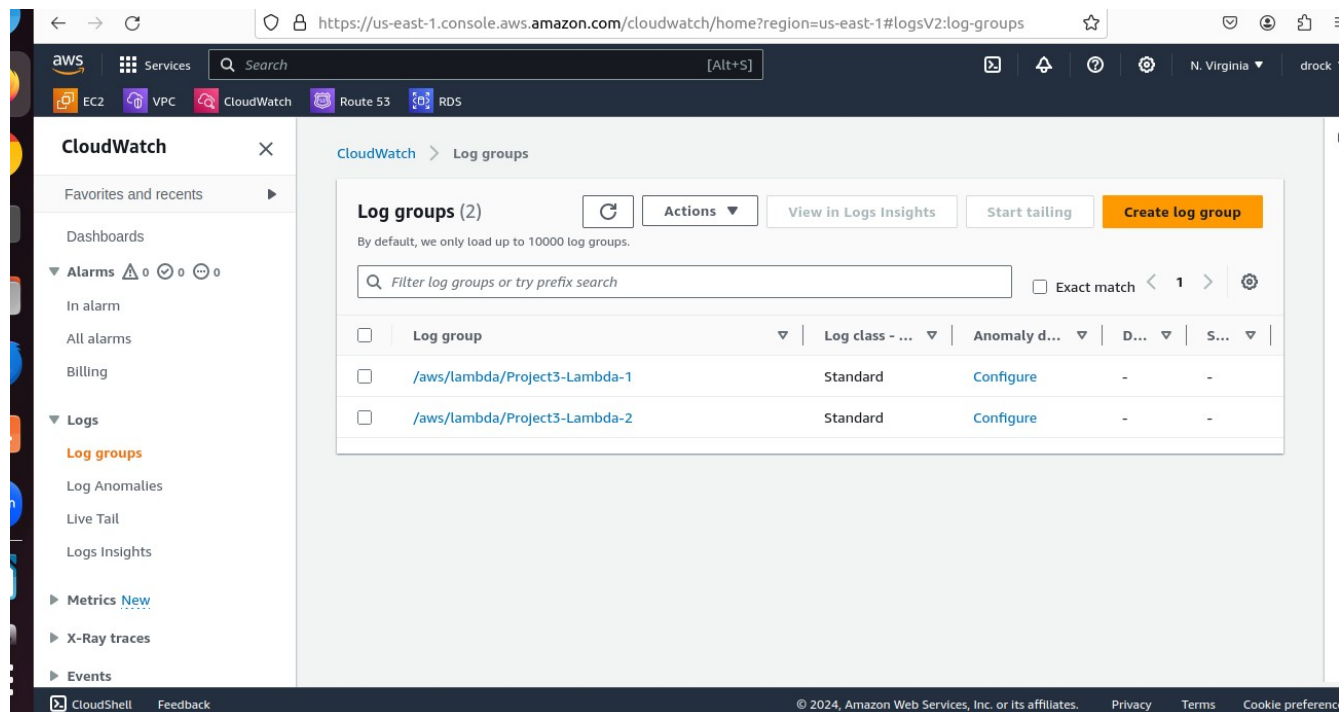


The screenshot shows the AWS CloudWatch console. The left sidebar contains navigation options: CloudWatch, Favorites and recents, Dashboards, Alarms, Logs, Metrics, X-Ray traces, and Events. The main content area displays the 'Log events' page for the log group `/aws/lambda/Project3-Lambda-2`. The page shows a list of log events with columns for Timestamp and Message. The events include: INIT_START Runtime Version: python:3.9.v42 Runtime Version ARN: arn:aws:lambda:us-e...; Loading function; START RequestId: 36d8beb0-c850-420c-989c-b4d53a40970f Version: \$LATEST; From SNS: Hello World; END RequestId: 36d8beb0-c850-420c-989c-b4d53a40970f; and REPORT RequestId: 36d8beb0-c850-420c-989c-b4d53a40970f Duration: 1.42 ms Billed Dur... The 'From SNS: Hello World' message is highlighted.

MESSAGE 'Hello World':the log includes the entry From SNS: Hello

OR

GO TO CLOUDWATCH PAGE: CLICK ON LOG



The screenshot shows the AWS CloudWatch console. The left sidebar contains navigation options: CloudWatch, Favorites and recents, Dashboards, Alarms, Logs, Metrics, X-Ray traces, and Events. The main content area displays the 'Log groups' page. The page shows a list of log groups with columns for Log group, Log class, Anomaly detection, and D... The log groups listed are `/aws/lambda/Project3-Lambda-1` and `/aws/lambda/Project3-Lambda-2`. The 'Log group' column is highlighted.

LOG-STREAMS

The screenshot shows the AWS CloudWatch console interface. The left sidebar contains navigation links for CloudWatch, Alarms, Logs, Metrics, X-Ray traces, and Events. The main content area displays the path `CloudWatch > Log groups > /aws/lambda/Project3-Lambda-2`. Below the path, there are buttons for `Actions`, `View in Logs Insights`, `Start tailing`, and `Search log group`. The `Log group details` section is active, showing a tab for `Log streams`. Below this, there is a search bar for log streams and a table with one log stream: `2024/01/16/[$LATEST]36ef84a5e3c64337aa3f71d0a79ad...` with a last event time of `2024-01-16 13:34:34 (UTC+01:00)`.

The screenshot shows the AWS CloudWatch console interface, specifically the `Log events` view for the selected log stream. The left sidebar is the same as the previous screenshot. The main content area displays the path `CloudWatch > Log groups > /aws/lambda/Project3-Lambda-2 > 2024/01/16/[$LATEST]36ef84a5e3c64337aa3f71d0a79ad8b7`. Below the path, there are buttons for `Actions`, `Start tailing`, and `Create metric filter`. The `Log events` section is active, showing a search bar and a table with log events. The table has two columns: `Timestamp` and `Message`. The events are as follows:

Timestamp	Message
No more records within selected time range Retry	
2024-01-16T13:34:34.706+01:00	INIT_START Runtime Version: python:3.9.v42 Runtime Version ARN: arn:aws:lambda:us-e...
2024-01-16T13:34:34.808+01:00	Loading function
2024-01-16T13:34:34.810+01:00	START RequestId: 36d8beb0-c850-420c-989c-b4d53a40970f Version: \$LATEST
2024-01-16T13:34:34.810+01:00	From SNS: Hello World
2024-01-16T13:34:34.811+01:00	END RequestId: 36d8beb0-c850-420c-989c-b4d53a40970f
2024-01-16T13:34:34.811+01:00	REPORT RequestId: 36d8beb0-c850-420c-989c-b4d53a40970f Duration: 1.42 ms Billed Dur...
No more records within selected time range Auto retry paused . Resume	