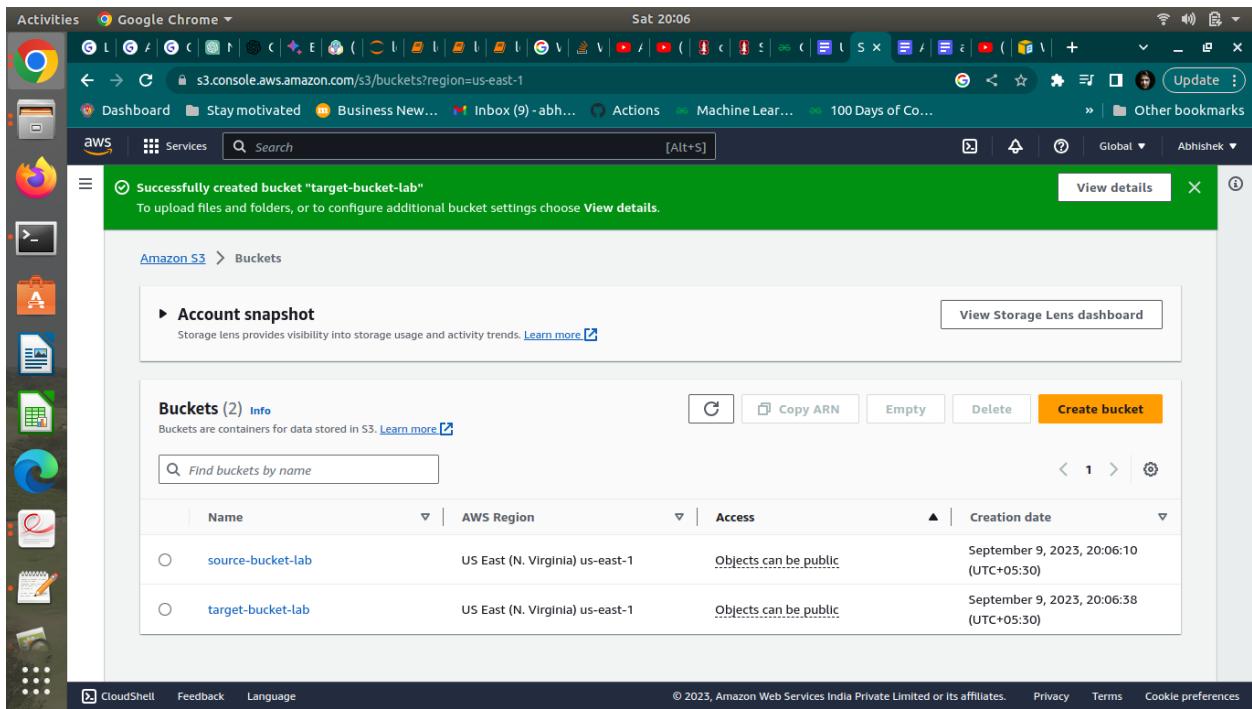


Step 1: SNS and S3 topic creation

a. Creation of Source and target buckets



The screenshot shows the AWS S3 console in a Google Chrome browser. A green success message at the top states: "Successfully created bucket 'target-bucket-lab'. To upload files and folders, or to configure additional bucket settings choose View details." Below this, the "Buckets" section displays two buckets:

Name	AWS Region	Access	Creation date
source-bucket-lab	US East (N. Virginia) us-east-1	Objects can be public	September 9, 2023, 20:06:10 (UTC+05:30)
target-bucket-lab	US East (N. Virginia) us-east-1	Objects can be public	September 9, 2023, 20:06:38 (UTC+05:30)

b. Creation of SNS subscription

Activities Google Chrome ▾ Sat 20:08

us-east-1.console.aws.amazon.com/sns/v3/home?region=us-east-1#/topic/arm:aws sns us-east-1:032286224389:S3toEC2Topic

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

Amazon SNS Edit Delete Publish message

S3toEC2Topic

Details

Name	S3toEC2Topic	Display name	-
ARN	arn:aws:sns:us-east-1:032286224389:S3toEC2Topic	Topic owner	032286224389
Type	Standard		

Subscriptions (0)

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[Create subscription](#)

This screenshot shows the AWS SNS console. On the left, there's a sidebar with links like Dashboard, Topics, Subscriptions, Push notifications, Text messaging (SMS), and Origination numbers. The main area is titled 'S3toEC2Topic' under the 'Details' section. It shows the topic's name, ARN, and type (Standard). Below this, there's a tabbed navigation bar with 'Subscriptions' selected, showing '(0)' subscriptions. At the bottom, there are buttons for 'Edit', 'Delete', 'Request confirmation', 'Confirm subscription', and a prominent orange 'Create subscription' button.

Activities Google Chrome ▾ Sat 20:08

us-east-1.console.aws.amazon.com/sns/v3/home?region=us-east-1#/create-topic

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

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

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.

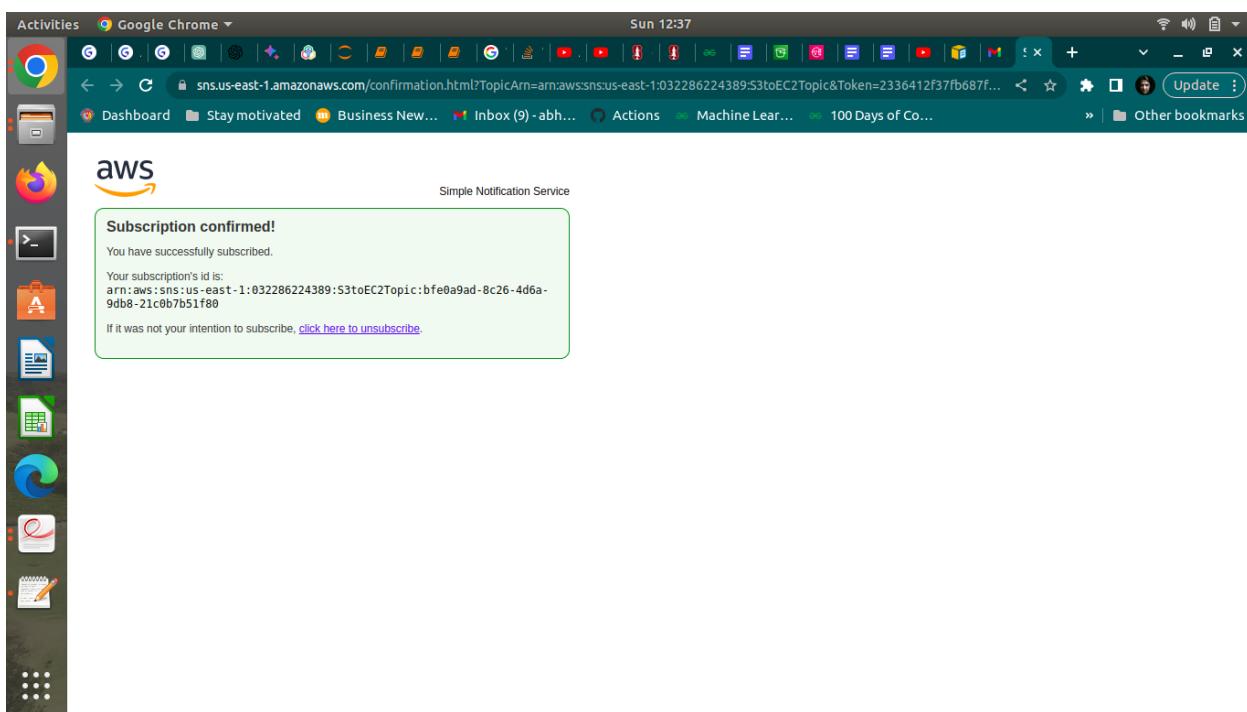
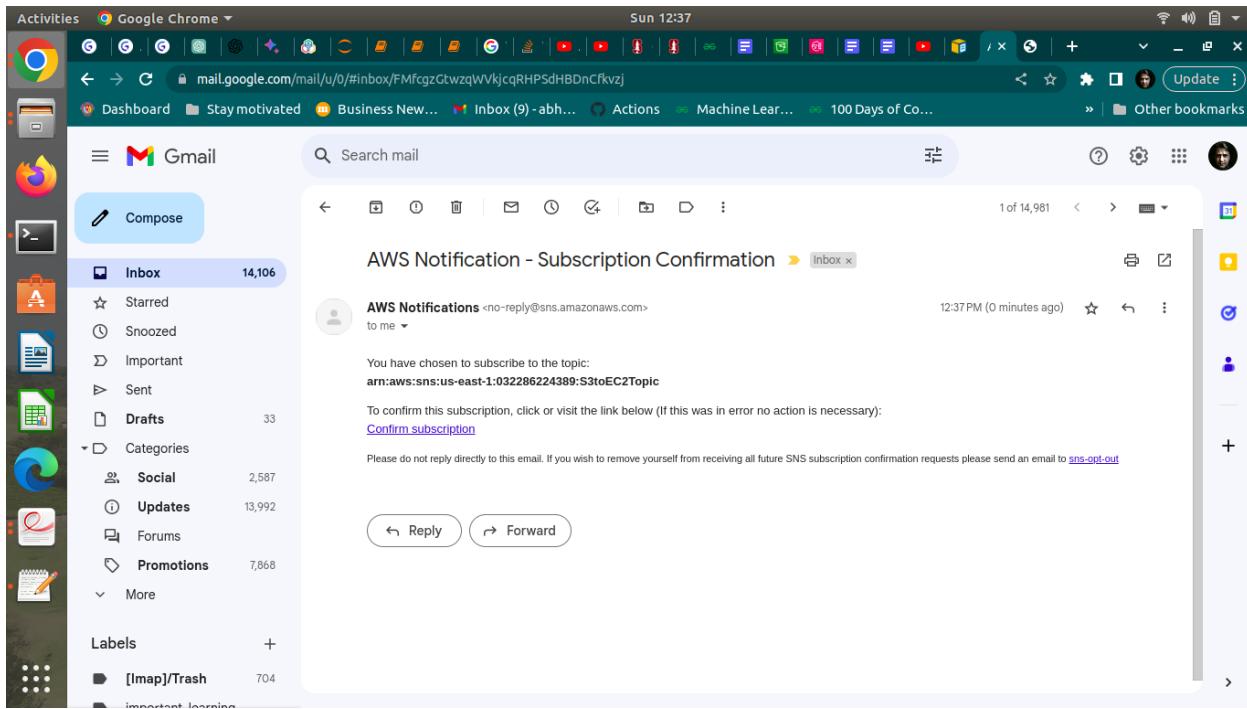
Encryption - optional

Amazon SNS provides in-transit encryption by default. Enabling server-side encryption adds at-rest encryption to your topic.

Access policy - optional [Info](#)

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This screenshot shows the 'Create topic' wizard. It starts with a comparison between 'FIFO (first-in, first-out)' and 'Standard' message delivery types. The 'Standard' type is selected and highlighted with a blue border. Below this, there are fields for 'Name' (set to 'S3toEC2Topic') and 'Display name' (set to 'My Topic'). There are also sections for 'Encryption' and 'Access policy', both of which are currently set to 'optional'. At the bottom, there are standard navigation buttons for CloudShell, Feedback, Language, and links to Privacy, Terms, and Cookie preferences.



C. Modification of SNS Access Policy

Activities Google Chrome ▾ Sat 20:13

us-east-1.console.aws.amazon.com/sns/v3/home?region=us-east-1#/edit-topic/arm:aws:sns:us-east-1:032286224389:S3toEC2Topic

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

Encryption - optional

Amazon SNS provides in-transit encryption by default. Enabling server-side encryption adds at-rest encryption to your 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.

JSON editor

```
8     "Principal": {
9         "Service": "s3.amazonaws.com"
10    },
11    "Action": [
12        "SQS:SendMessage"
13    ],
14    "Resource": "arn:aws:sns:us-east-1:032286224389:S3toEC2Topic",
15    "Condition": {
16        "ArnLike": {
17            "aws:SourceArn": "arn:aws:s3:::source-bucket-lab"
18        },
19        "StringEquals": {
20            "aws:SourceAccount": "bucket-owner-account-id"
21        }
22    }
}
```

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Activities Google Chrome ▾ Sun 12:25

us-east-1.console.aws.amazon.com/sns/v3/home?region=us-east-1#/edit-topic/arm:aws:sns:us-east-1:032286224389:S3toEC2Topic

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

▼ 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.

JSON editor

```
18     "SNS>ListSubscriptionsByTopic",
19     "SNS>Publish"
20 ],
21 "Resource": "arn:aws:sns:us-east-1:032286224389:S3toEC2Topic",
22 "Condition": {
23     "StringEquals": {
24         "AWS:SourceOwner": "032286224389"
25     },
26     "ArnLike": {
27         "aws:SourceArn": "arn:aws:s3:::source-bucket-lab"
28     }
29 }
30 ]
31 }
32 }
```

► Data protection policy - optional Info

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d. Configuring SNS notifications for S3

Activities Google Chrome ▾ Sun 12:30

s3.console.aws.amazon.com/s3/bucket/source-bucket-lab/property/notification/create?region=us-east-1

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co...

aws Services Search [Alt+S]

Event types

Specify at least one event for which you want to receive notifications. For each group, you can choose an event type for all events, or you can choose one or more individual events.

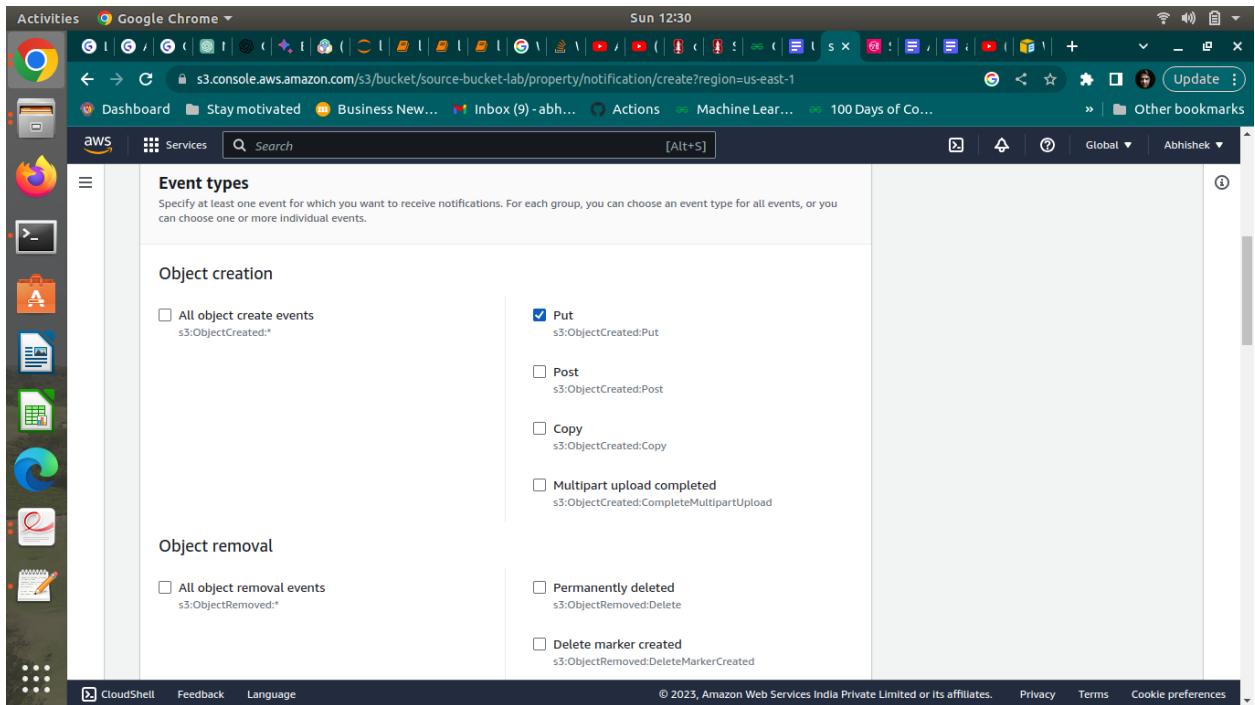
Object creation

All object create events s3:ObjectCreated:
 Put s3:ObjectCreated:Put
 Post s3:ObjectCreated:Post
 Copy s3:ObjectCreated:Copy
 Multipart upload completed s3:ObjectCreated:CompleteMultipartUpload

Object removal

All object removal events s3:ObjectRemoved:
 Permanently deleted s3:ObjectRemoved:Delete
 Delete marker created s3:ObjectRemoved:DeleteMarkerCreated

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Activities Google Chrome ▾ Sun 12:31

s3.console.aws.amazon.com/s3/bucket/source-bucket-lab/property/notification/create?region=us-east-1

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co...

aws Services Search [Alt+S]

Destination

Before Amazon S3 can publish messages to a destination, you must grant the Amazon S3 principal the necessary permissions to call the relevant API to publish messages to an SNS topic, an SQS queue, or a Lambda function. [Learn more](#)

Destination

Choose a destination to publish the event. [Learn more](#)

Lambda function Run a Lambda function script based on S3 events.

SNS topic Fanout messages to systems for parallel processing or directly to people.

SQS queue Send notifications to an SQS queue to be read by a server.

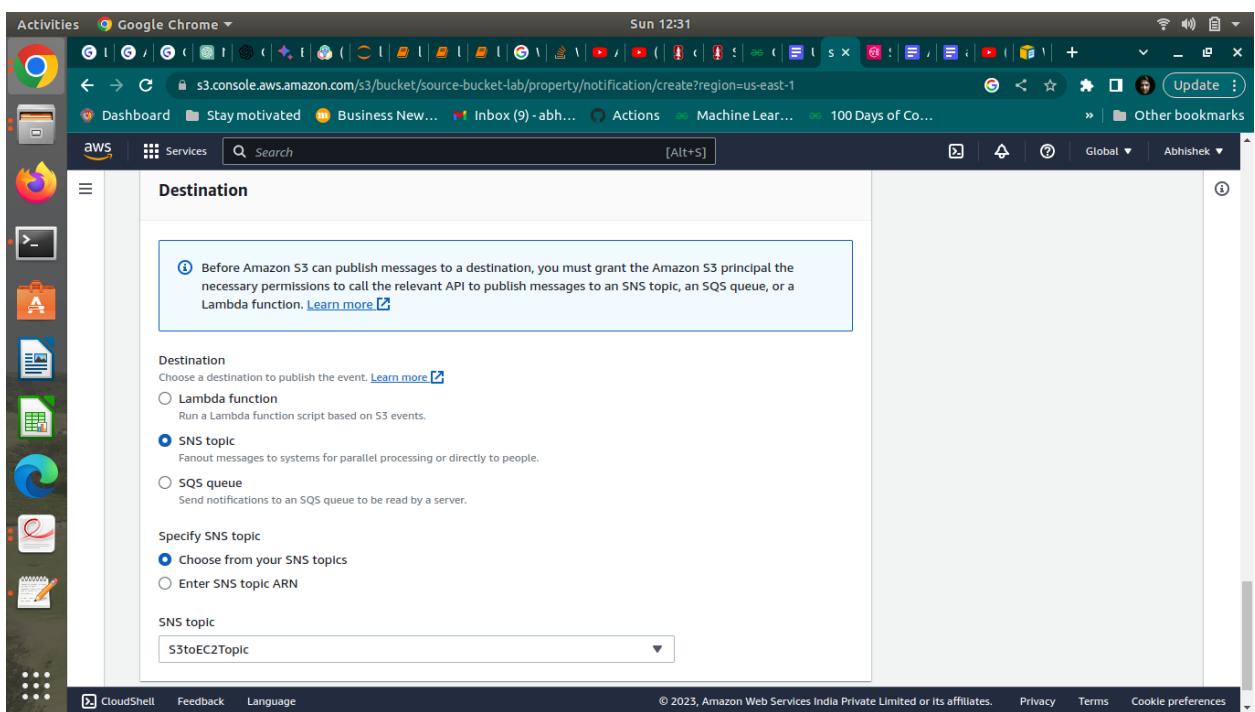
Specify SNS topic

Choose from your SNS topics
 Enter SNS topic ARN

SNS topic

S3toEC2Topic

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Activities Google Chrome ▾ Tue 15:56

s3.console.aws.amazon.com/s3/bucket/source-bucket-lab/property/notification/create?region=us-east-1

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

General configuration

Event name: S3PutEvent
Event name can contain up to 255 characters.

Prefix - optional: Images/
Limit the notifications to objects with key starting with specified characters.

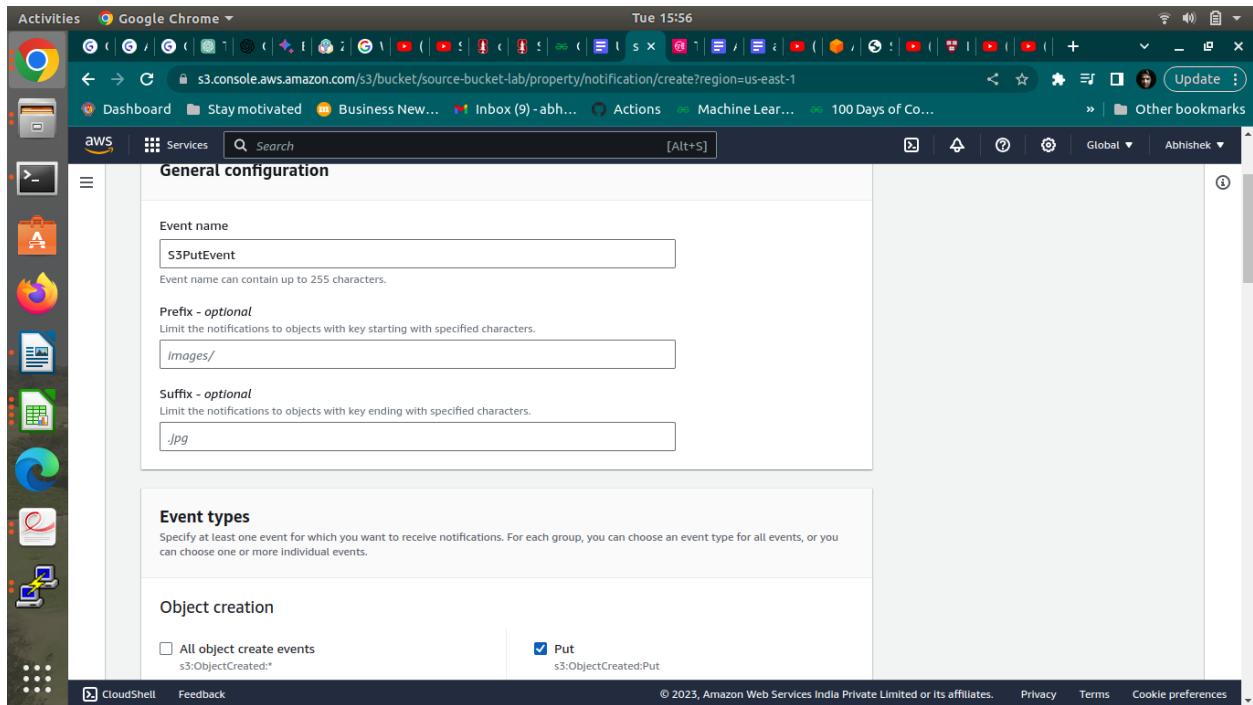
Suffix - optional: .jpg
Limit the notifications to objects with key ending with specified characters.

Event types: Specify at least one event for which you want to receive notifications. For each group, you can choose an event type for all events, or you can choose one or more individual events.

Object creation

All object create events s3:ObjectCreated:
 Put s3:ObjectCreated:Put

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Activities Google Chrome ▾ Tue 15:57

s3.console.aws.amazon.com/s3/buckets/source-bucket-lab?region=us-east-1&tab=properties

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

Successfully created event notification "S3PutEvent".
Operation successfully completed.

Amazon S3 > Buckets > source-bucket-lab

source-bucket-lab info

Objects Properties Permissions Metrics Management Access Points

Bucket overview

AWS Region US East (N. Virginia) us-east-1	Amazon Resource Name (ARN) arn:aws:s3:::source-bucket-lab	Creation date September 9, 2023, 20:06:10 (UTC+05:30)
---	--	--

Bucket Versioning
Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

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Activities Google Chrome ▾ Tue 17:26

mail.google.com/mail/u/0/#inbox/FMfcgzGtxddkxwMTfpzDTxwMLkFBksfk

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

Gmail Search mail

Compose

Inbox 14,573

Starred Snoozed Important Sent Drafts 33 Categories Social 2,604 Updates 14,453 Forums Promotions 8,102 More Labels + [Imap]/Trash 704

Amazon S3 Notification > inbox x

AWS Notifications <no-reply@sns.amazonaws.com>
to me 3:56 PM (1 hour ago)

{"Service":"Amazon S3","Event":"s3:TestEvent","Time":"2023-10-17T10:26:56.831Z","Bucket":"source-bucket-lab","RequestId":"RJTWBRYY18PKP0FS","HostId":"Vz1W440l27mloP2QUsP9A3Fq8RuEtcEfq6CoPljy9+Xs/Dut8o0ezrBq8tsn2QKlaqbwE7mt3g="}

--
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-1:032286224389:S3toEC2Topic-bfe0a9ad-8c26-4d6a-gdb8-21c0b7b51f80&Endpoint=inquisitivereckoner@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

Step 2: Run the custom program in the EC2 instance
a. Creation of the EC2 instance and RDS instance

Activities Google Chrome ▾ Tue 17:35

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

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

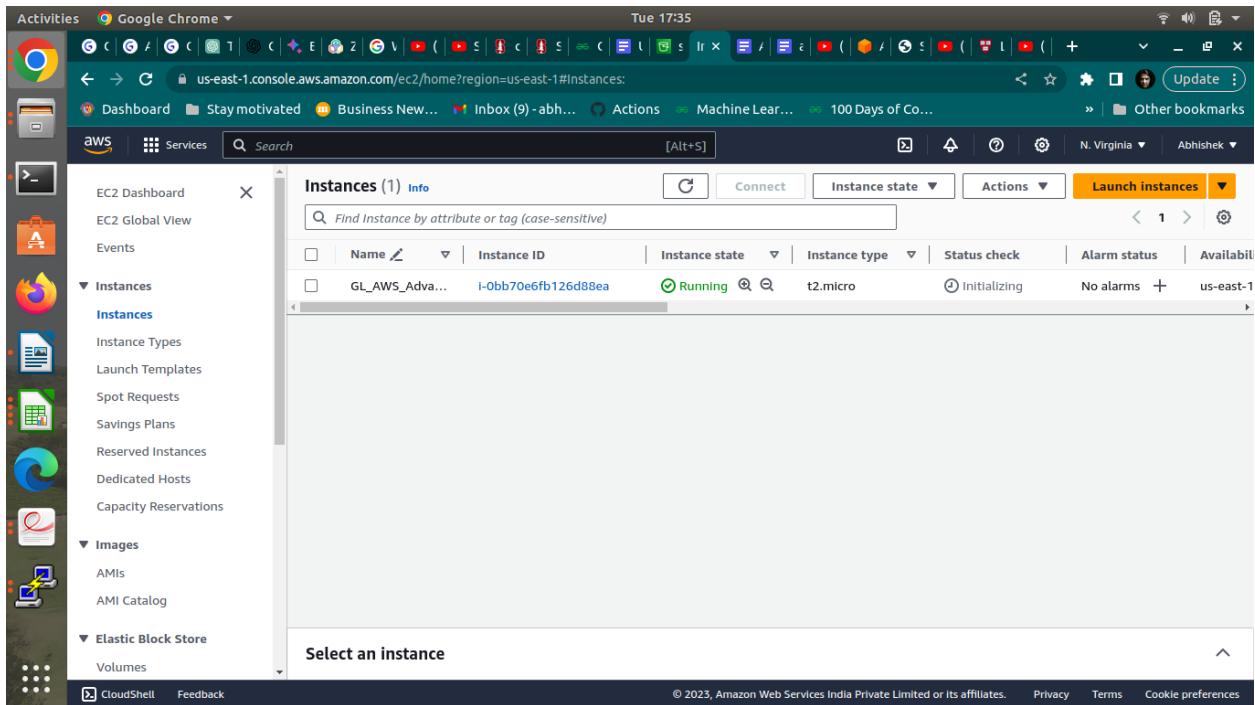
Instances (1) Info

Find Instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
GL_AWS_Adva...	i-0bb70e6fb126d88ea	Running	t2.micro	Initializing	No alarms	us-east-1

EC2 Dashboard EC2 Global View Events Instances Instances Instance Types Launch Templates Spot Requests Savings Plans Reserved Instances Dedicated Hosts Capacity Reservations Images AMIs AMI Catalog Elastic Block Store Volumes Select an instance

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Activities Google Chrome ▾ Tue 17:41

us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#launch-dbinstance;jsHermesCreate=true

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

aws Services Search [Alt+S]

Show versions that support the Multi-AZ DB cluster Info
Create a Multi-AZ DB cluster with one primary DB instance and two readable standby DB instances. Multi-AZ DB clusters provide up to 2x faster transaction commit latency and automatic failover in typically under 35 seconds.

Show versions that support the Amazon RDS Optimized Writes Info
Amazon RDS Optimized Writes improves write throughput by up to 2x at no additional cost.

Engine Version MySQL 8.0.33

MySQL

MySQL is the most popular open source database in the world. MySQL on RDS offers the rich features of the MySQL community edition with the flexibility to easily scale compute resources or storage capacity for your database.

- Supports database size up to 64 TiB.
- Supports General Purpose, Memory Optimized, and Burstable Performance Instance classes.
- Supports automated backup and point-in-time recovery.
- Supports up to 15 Read Replicas per Instance, within a single Region or 5 read replicas cross-region.

Templates Choose a sample template to meet your use case.

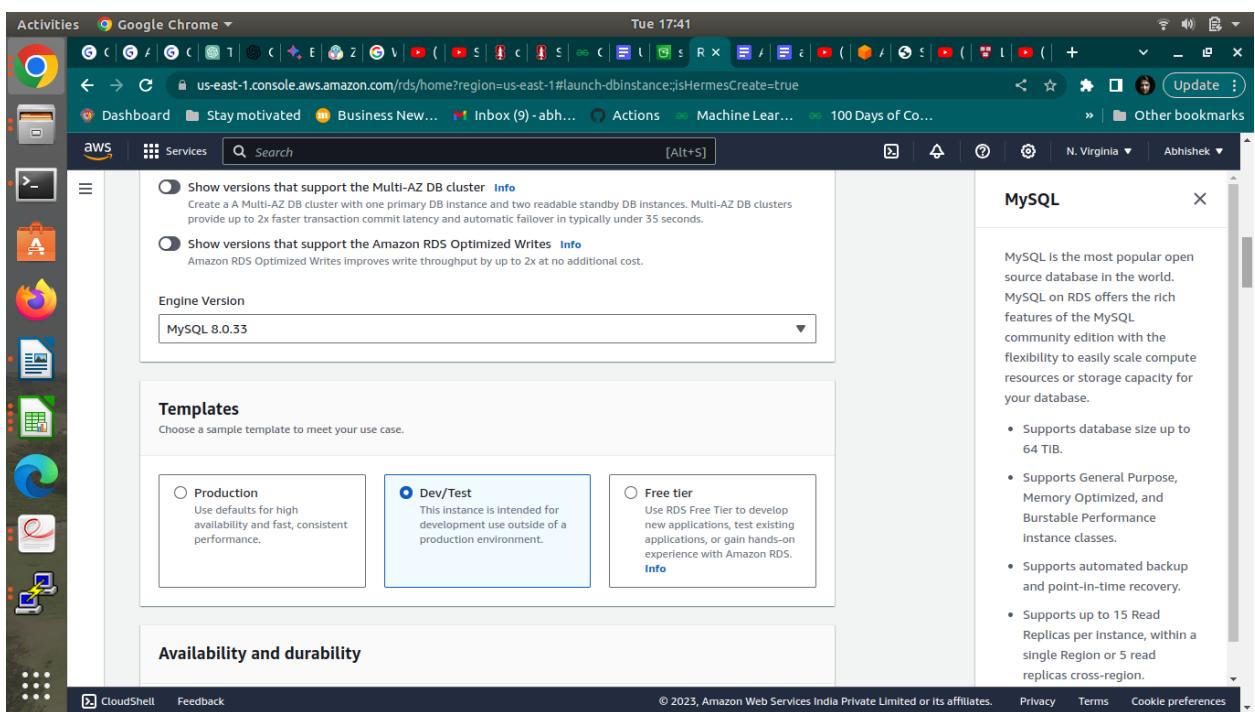
Production Use defaults for high availability and fast, consistent performance.

Dev/Test This instance is intended for development use outside of a production environment.

Free tier Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. Info

Availability and durability

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Activities Google Chrome ▾ Tue 17:52

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

Dashboard Stay motivated Business News... Inbox (9) - abh... Actions Machine Lear... 100 Days of Co... Other bookmarks

AWS Services Search [Alt+S]

Amazon RDS

Creating database database-1

Your database might take a few minutes to launch.

You can use settings from database-1 to simplify configuration of [suggested database add-ons](#) while we finish creating your DB for you.

View credential details X

RDS > Databases

Consider creating a Blue/Green Deployment to minimize downtime during upgrades.

You may want to consider using Amazon RDS Blue/Green Deployments and minimize your downtime during upgrades. A Blue/Green Deployment provides a staging environment for changes to production databases. [RDS User Guide](#) [Aurora User Guide](#)

Databases (1)

Group resources C Modify Actions Restore from S3 Create database

Filter by databases

DB identifier	Status	Role	Engine	Region & AZ	Size	Actions
database-1	Creating	Instance	MySQL Community	-	db.t3.micro	-

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The screenshot shows the AWS RDS (Relational Database Service) console within a Google Chrome browser window. The URL is us-east-1.console.aws.amazon.com/rds/home?region=us-east-1#databases:. The left sidebar lists various RDS management options like Dashboard, Databases, Query Editor, etc. The main content area displays a message about creating a database named 'database-1'. It includes a note about using suggested database add-ons and a warning about potential downtime during upgrades. Below this is a table showing the database details: DB identifier is 'database-1', Status is 'Creating', Role is 'Instance', Engine is 'MySQL Community', Region & AZ is listed as a dash, Size is 'db.t3.micro', and Actions show a minus sign. At the bottom, there are links for CloudShell, Feedback, and copyright information.

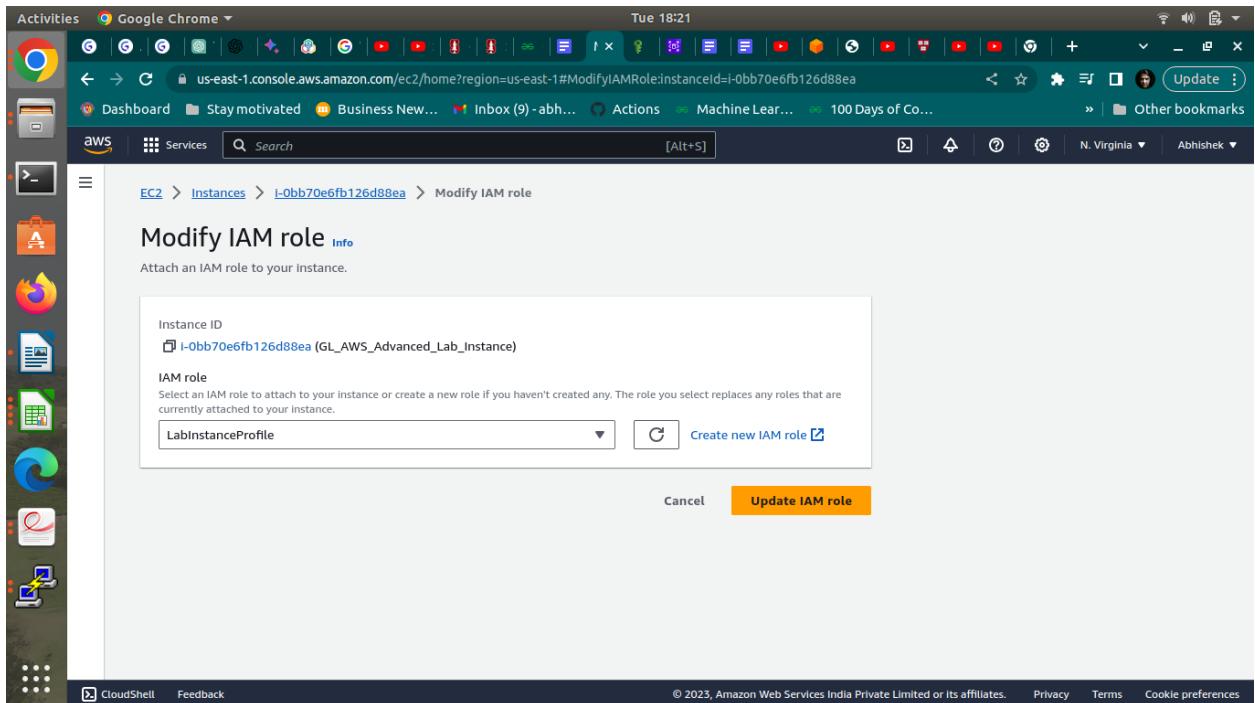
The screenshot shows the AWS RDS console in Google Chrome. A success message at the top states "Successfully created database database-1". Below it, a note encourages creating a Blue/Green deployment. The main table lists one database entry:

DB identifier	Status	Role	Engine	Region & AZ	Size	Actions
database-1	Backing-up	Instance	MySQL Community	us-east-1d	db.t3.micro	-

The screenshot shows the AWS RDS console in Google Chrome, identical to the previous one but with a different timestamp (Tue 18:22). The database status has changed from "Backing-up" to "Available". The table now shows:

DB identifier	Status	Role	Engine	Region & AZ	Size	Actions
database-1	Available	Instance	MySQL Community	us-east-1d	db.t3.micro	2 Actions

b. Assignment of IAM role for EC2 instance



c. Configuration and Uploading of custom program

```
# -*- coding: utf-8 -*-
#
# *****
# Author - Abhishek Singh
# To run the application use the following
# ubuntu@ip-172-31-17-36:/opt/docproc$ python manage.py runserver 0:8080
# *****

from django.http import HttpResponse
from django.views.decorators.csrf import csrf_exempt
from botocore.exceptions import ClientError
from boto3.dynamodb.conditions import Key, Attr
import json
import boto3
import datetime
import mysql.connector

hostname = 'database-1.cllu0ao8uxlz.us-east-1.rds.amazonaws.com'
username = 'admin'
password = 'Admin123'
database = 'database-1'

s3_target_bucket = 'target-bucket-lab'

#
# Below methods are the handlers for the web http endpoint
# *****
#This is the main method that is mapped to the URI (in urls.py)
#CSRF is needed for the SNS to make a call from another domain
@csrf_exempt
def message(request):
    print '***** Incoming request *****',
    print_request(request)
    #SNS http end point will have the notification details in the body
    #Check the http header and see if the sns header details are present, if so proceed else throw except
    process_document(request.body)
```

Activities Terminal ▾

Tue 22:19

ec2-user@ip-172-31-17-33:/opt/docproc-new

```

File Edit View Search Terminal Tabs Help
abhishek@linux:~ abhishek@linux:~ abhishek@linux:~/Documents/My Do... ec2-user@ip-172-31-17-33:/opt/docpr...
Last login: Tue Oct 17 16:25:56 2023 from 106.195.53.77
[ec2-user@ip-172-31-17-33 ~]$ sudo cp -r docproc-new /opt
[ec2-user@ip-172-31-17-33 ~]$ sudo chown ec2-user:ec2-user -R /opt
cd /opt/docproc-new
sudo yum update
sudo yum install python-pip -y
Last metadata expiration check: 4:43:45 ago on Tue Oct 17 12:04:45 2023.
Dependencies resolved.
Nothing to do.
Complete!
Last metadata expiration check: 4:43:46 ago on Tue Oct 17 12:04:45 2023.
Dependencies resolved.
=====
Package Architecture Version Repository Size
=====
Installing:
python3-pip noarch 21.3.1-2.amzn2023.0.5 amazonlinux 1.8 M
Installing weak dependencies:
libcrypt-compat x86_64 4.4.33-7.amzn2023 amazonlinux 92 k
Transaction Summary
=====
Install 2 Packages
Total download size: 1.9 M
Installed size: 11 M
Downloading Packages:
(1/2): libcrypt-compat-4.4.33-7.amzn2023.x86_64.rpm 990 kB/s | 92 kB 00:00
(2/2): python3-pip-21.3.1-2.amzn2023.0.5.noarch.rpm 13 MB/s | 1.8 MB 00:00
-----
Total
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing...
=====

```

Activities Terminal ▾

Tue 23:00

ec2-user@ip-172-31-17-33:/opt/docproc-new

```

File Edit View Search Terminal Tabs Help
abhishek@linux:~ abhishek@linux:~ abhishek@linux:~/Documents/My Do... ec2-user@ip-172-31-17-33:/opt/docpr...
File "/opt/docproc-new/api/views.py", line 34
    print '***** Incoming request *****'
          ^
SyntaxError: Missing parentheses in call to 'print'. Did you mean print('***** Incoming request *****')
*, end="")?
^C(djangodev) [ec2-user@ip-172-31-17-33 docproc-new]$ ls -al
total 44
drwxr-xr-x. 4 ec2-user ec2-user 67 Oct 17 16:58 .
drwxr-xr-x. 4 ec2-user ec2-user 36 Oct 17 16:47 ..
drwxr-xr-x. 4 ec2-user ec2-user 142 Oct 17 16:49 api
-rw-r--r--. 1 ec2-user ec2-user 37888 Oct 17 17:05 db.sqlite3
drwxr-xr-x. 3 ec2-user ec2-user 93 Oct 17 17:13 docproc
-rw-r--r--. 1 ec2-user ec2-user 805 Oct 17 17:05 manage.py
(djangodev) [ec2-user@ip-172-31-17-33 docproc-new]$ ls docproc/
__init__.py __pycache__ settings.py urls.py wsgi.py
(djangodev) [ec2-user@ip-172-31-17-33 docproc-new]$ vi api/views.py
[!]>4:m(djangodev) [ec2-user@ip-172-31-17-33 docproc-new]$ python manage.py runserver 0:8080
Watching for file changes with StatReloader
Performing system checks...
System check identified some issues:
WARNINGS:
?: (2_0.W001) Your URL pattern '^sns$' [name='message'] has a route that contains '(?P<', begins with a '^', or ends with a '$'. This was likely an oversight when migrating to django.urls.path().
System check identified 1 issue (0 silenced).
You have 5 unapplied migration(s). Your project may not work properly until you apply the migrations for app(s): admin, auth.
Run 'python manage.py migrate' to apply them.
October 17, 2023 - 17:29:58
Django version 4.2.6, using settings 'docproc.settings'
Starting development server at http://0.0.0.0:8080
Quit the server with CONTROL-C.

```

Step 3: Creation and Verification of SNS subscription and Generation of CSV file

a. Starting the EC2 custom program

```

Activities Terminal Tue 23:12
abhishek@linux:~ abhishek@linux:~ abhishek@linux:~/Documents/My Do... ec2-user@ip-172-31-17-33:/opt/docproc-new
File Edit View Search Terminal Tabs Help
abhishek@linux:~ Applying auth.0011_update_proxy_permissions... OK
Applying auth.0012_alter_user_first_name_max_length... OK
(djangodev) [ec2-user@ip-172-31-17-33 docproc-new]$ python manage.py runserver 0:8080
Watching for file changes with StatReloader
Performing system checks...
System check identified some issues:
WARNINGS:
?: (2_0.W001) Your URL pattern '^sns$' [name='message'] has a route that contains '(?P<', begins with a '^', or ends with a '$'. This was likely an oversight when migrating to django.urls.path().
System check identified 1 issue (0 silenced).
Error: That port is already in use.
(djangodev) [ec2-user@ip-172-31-17-33 docproc-new]$ lsof -i :8080
COMMAND PID USER FD TYPE DEVICE SIZE/OFF NODE NAME
python 15801 ec2-user 4u IPv4 70478 0t0 TCP *:webcache (LISTEN)
(djangodev) [ec2-user@ip-172-31-17-33 docproc-new]$ kill 15801
(djangodev) [ec2-user@ip-172-31-17-33 docproc-new]$ lsof -i :8080
(djangodev) [ec2-user@ip-172-31-17-33 docproc-new]$ python manage.py runserver 0:8080
Watching for file changes with StatReloader
Performing system checks...
System check identified some issues:
WARNINGS:
?: (2_0.W001) Your URL pattern '^sns$' [name='message'] has a route that contains '(?P<', begins with a '^', or ends with a '$'. This was likely an oversight when migrating to django.urls.path().
System check identified 1 issue (0 silenced).
October 17, 2023 - 17:42:10
Django version 4.2.6, using settings 'docproc.settings'
Starting development server at http://0.0.0:8080/
Quit the server with CONTROL-C.

```

b. Creation of SNS subscription

```

Request method = POST
The S3 JSON is {
    "Type" : "SubscriptionConfirmation",
    "MessageId" : "e722ac5c-a966-45c0-a9ca-ebfdccfffff7",
    "Token" : "2336412f37fb687f5d51e6e2425f004b472693bc7d0c6d168cef09768be9b444fdb6794cb8d583eeecfbcc045dfa0acd2b6eed8c7b37e8e802ec94014c69f2feaf771df69e3d8577
f5a51de93d0c970d619381e5b04ff20a2b61f",
    "TopicArn" : "arn:aws:sns:us-east-1:916317828206:S3toEC2Topic",
    "Message" : "You have chosen to subscribe to the topic arn:aws:sns:us-east-1:916317828206:S3toEC2Topic.\nTo confirm the subscription, visit the SubscribeURL
    "SubscribeURL" : "https://sns.us-east-1.amazonaws.com/?Action=ConfirmSubscription&TopicArn=arn:aws:sns:us-east-1:916317828206:S3toEC2Topic&Token=2336412f37f
9768be9b444fdb6794cb8d583eeecfbcc045dfa0acd2b6eed8c7b37e8e802ec94014c69f2feaf771df69e3d8577e22871755cd3e7a5e7ee3e983a5dd1445768beaa2ef5a51de93d0c970d619381e5
    "Timestamp" : "2020-11-14T11:26:54.820Z",
    "SignatureVersion" : "1",
    "Signature" : "SfsVxpXGjRqbMjnDwzYk2RL5ARfNiW92ojyjdsJbHptfJrTs45T7vdnmB2cZ5MIIrlLiE3invQqQnf/xsDchRCe+CrMBU2hyR672V0t40XiW34JQ4wKNUEJs+wfd8hCGTUUiUEK
lcVF9v6P9JzaIoJ/ZwylgxhGSXlK93zh1oeIADYJvTxSA8KZJSPBC0xfJenlssUAT9@0ahgC7qBCdZefbrrem3wyefwBU6H8wRXYxTn7GcDMnWxFwLwnFD7eVi5RP21+aiXKRp+doqjkaUTFxJt3reOs
    "SigningCertURL" : "https://sns.us-east-1.amazonaws.com/SimpleNotificationService-a86cb10b4e1f29c941702d737128f7b6.pem"
}
Internal Server Error: /sns
Traceback (most recent call last):
  File "/home/ubuntu/.virtualenvs/djangodev/local/lib/python2.7/site-packages/django/core/handlers/exception.py", line 41, in inner
    response = get_response(request)
  File "/home/ubuntu/.virtualenvs/djangodev/local/lib/python2.7/site-packages/django/core/handlers/base.py", line 187, in _get_response
    response = self.process_exception_by_middleware(e, request)
  File "/home/ubuntu/.virtualenvs/djangodev/local/lib/python2.7/site-packages/django/core/handlers/base.py", line 185, in _get_response
    response = wrapped_callback(request, *callback_args, **callback_kwargs)
  File "/home/ubuntu/.virtualenvs/djangodev/local/lib/python2.7/site-packages/django/views/decorators/csrf.py", line 58, in wrapped_view
    return view_func(*args, **kwargs)
  File "/opt/docproc-new/api/views.py", line 33, in message
    process_document(request.body)
  File "/opt/docproc-new/api/views.py", line 80, in process_document
    s3 = json.loads(json.loads('Message'))
  File "/usr/lib/python2.7/json/_init_.py", line 339, in loads
    return _default_decoder.decode()
  File "/usr/lib/python2.7/json/decoder.py", line 364, in decode
    obj, end = self.raw_decode(s, idx=_w, obj=obj)
  File "/usr/lib/python2.7/json/decoder.py", line 382, in raw_decode
    raise ValueError("No JSON object could be decoded")
ValueError: No JSON object could be decoded

```

c. Generation of CSV file

target-bucket-lab

Objects (1)

Name	Type	Last modified	Size	Storage class
59247132171_sm-LK0080145_inv_00001.csv	csv	October 18, 2023, 12:06:39 (UTC+05:30)	157.0 B	Standard

Answer the following questions

Q1:

Which of the following properties of an AWS resource is sufficient and necessary to uniquely identify it across all of AWS?

- a) ARN
- b) Region and ARN
- c) ARN and Account number
- d) Depends on the resource used

Enter your answer here :

Q2

Which of the following step numbers in Step 1 allowed S3 to publish to the SNS topic created?

- a) 1(a)
- b) 1(c)
- c) 1(d)
- d) 1(b)

Enter your answer here

b

Q3

Which port is being used by SNS to send the notification to the custom program?

- a) 8081
- b) 80
- c) 8080
- d) 8065

Enter your answer here:

c

Q4

How many IAM roles can be attached to an EC2 instance at a time?

- a) 2
- b) 3
- c) 1
- d) Depends on the policies required

Enter your answer here

c

Q5

As a product manager, how would you describe the benefits of this architecture to an client, as compared to an equivalent on-premises architecture?

Suggestion:

This cloud architecture offers several benefits over an equivalent on-premises setup. It provides built-in triggers for seamless event management, facilitating efficient coordination between storage and computing resources. The architecture incorporates a built-in messaging service, streamlining communication between components. Moreover, it leverages a managed database service, eliminating the complexities associated with database administration. These advantages enhance scalability, flexibility, and overall operational efficiency for the client, making it a more dynamic and resource-efficient solution compared to traditional on-premises architectures.