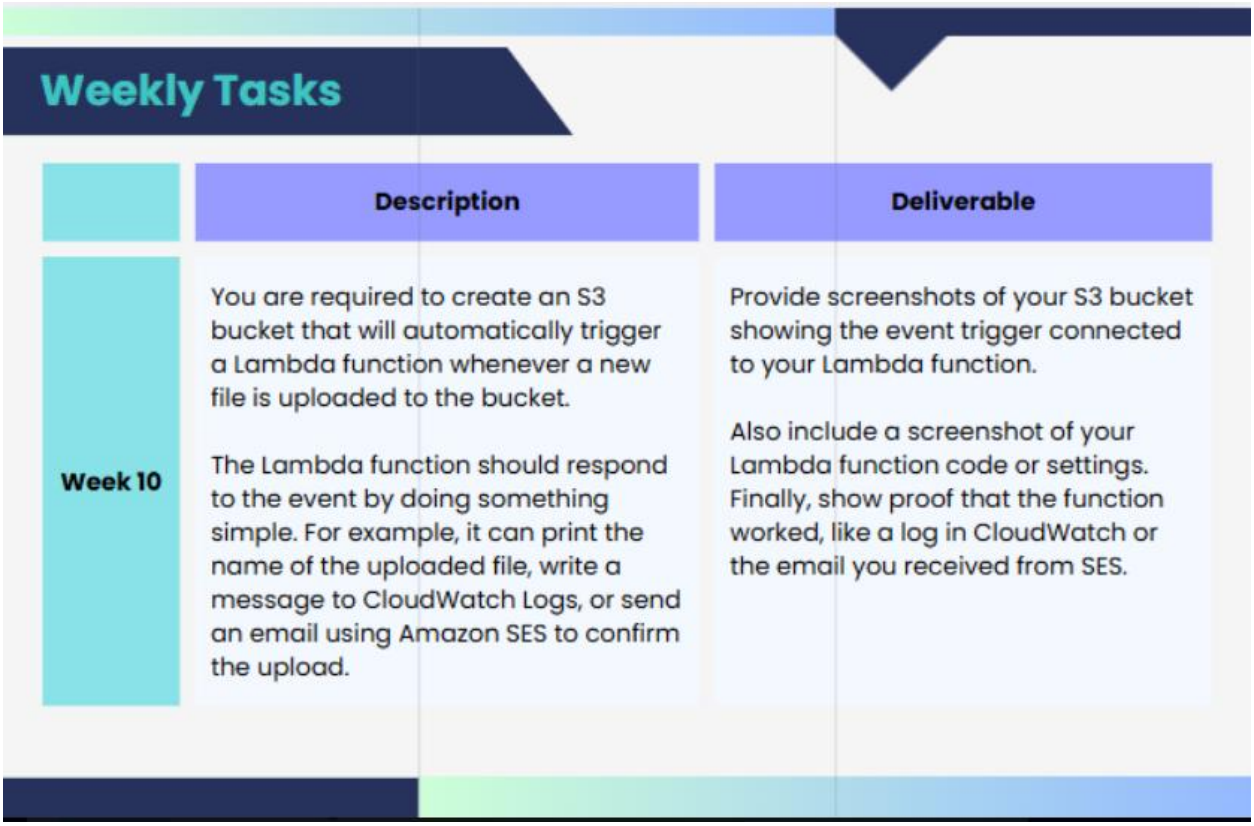


WEEK 10

Step 1: Create an S3 Bucket

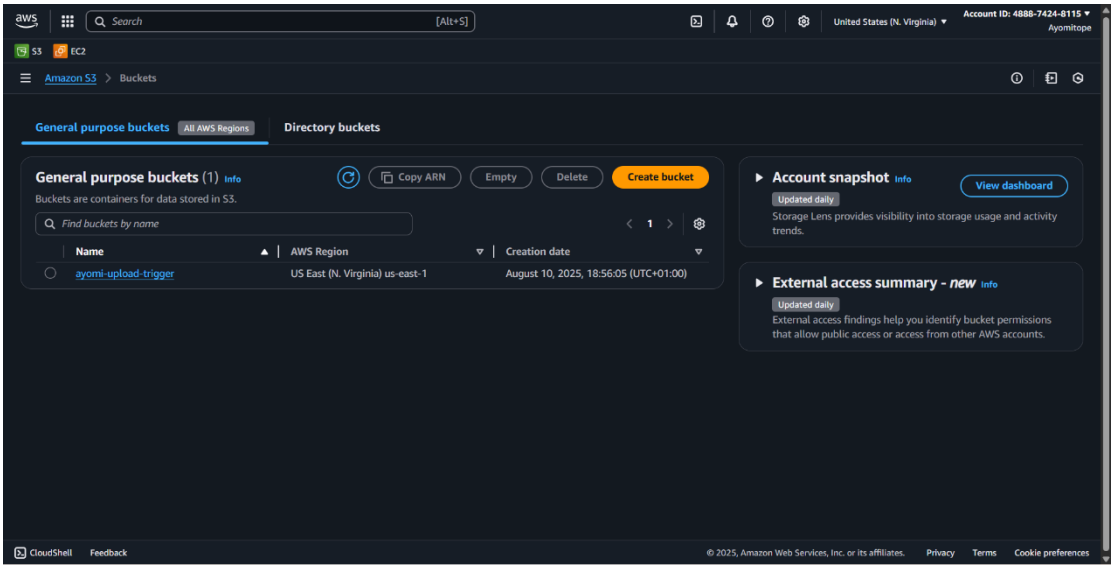
Go to the AWS Management Console and open the Amazon S3 service

Click "Create bucket"

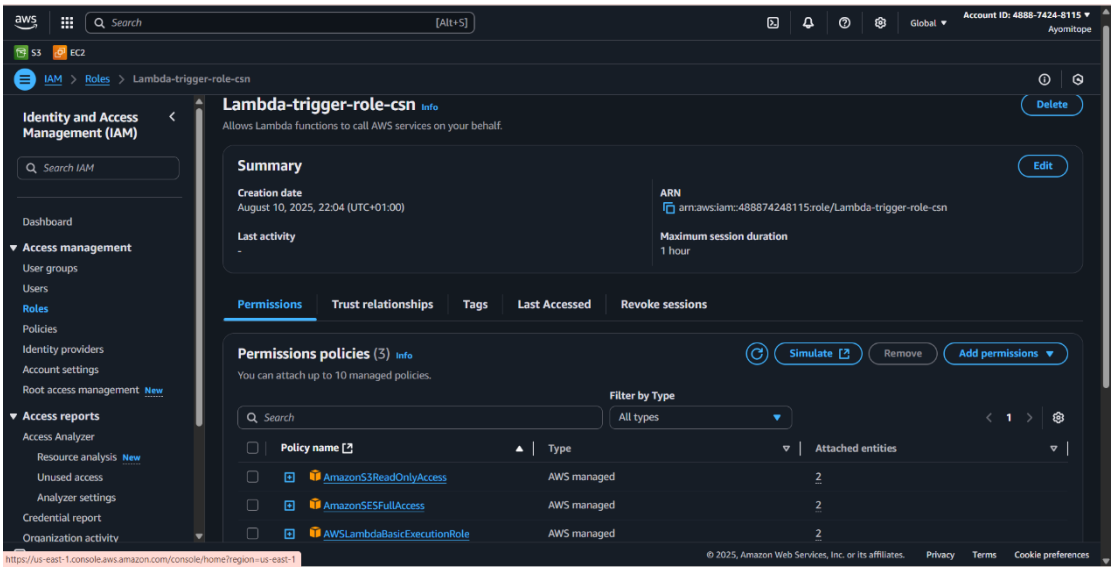
Name: ayomi-upload-trigger

Choose your preferred AWS Region

Keep all other settings as default and click "Create bucket"

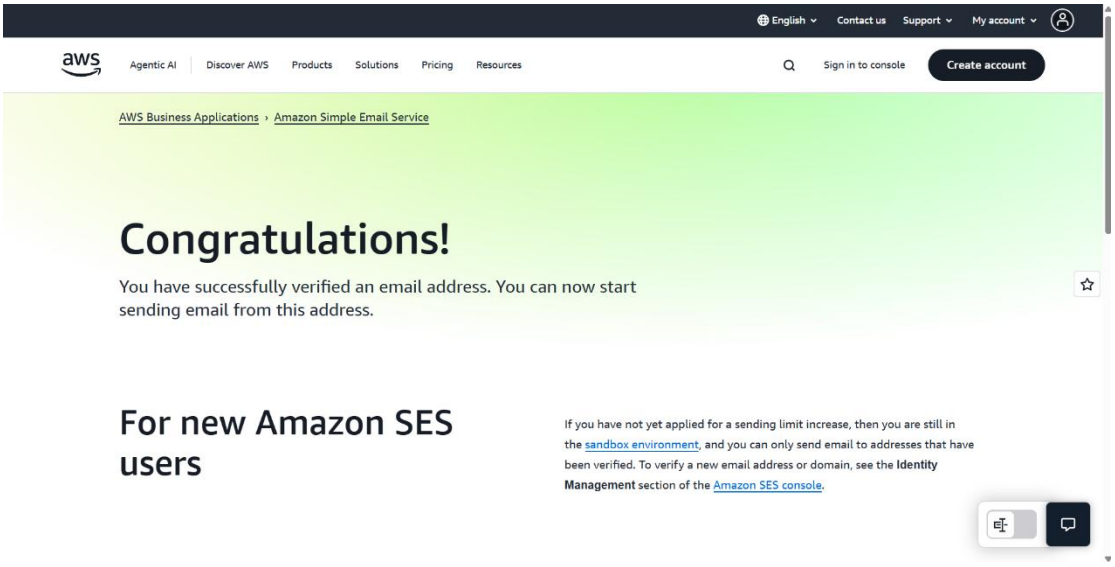


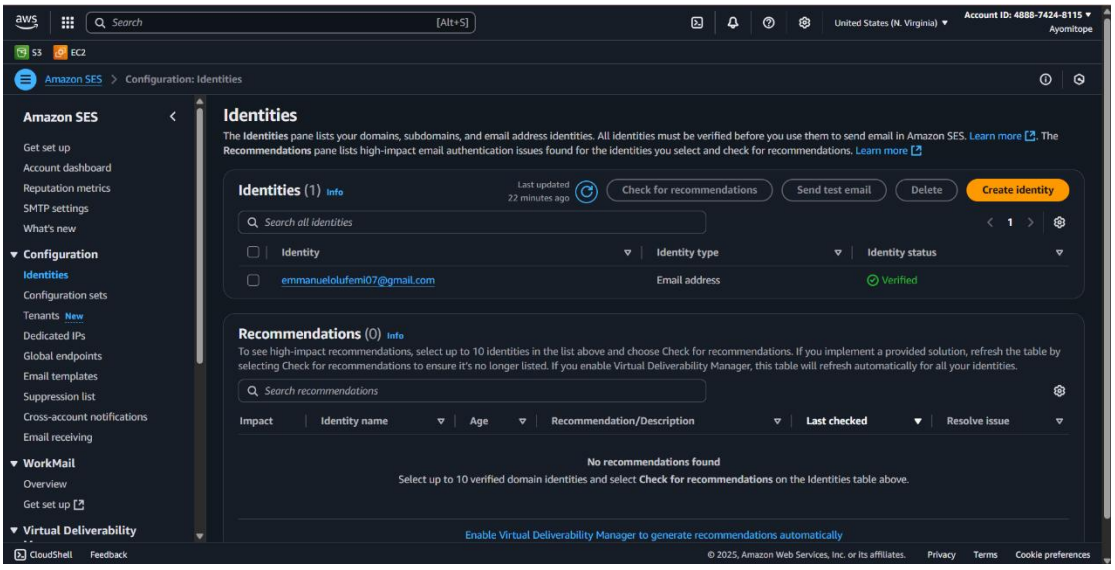
Step 2: Create an IAM Role for Lambda
Click "Roles" then "Create role"
Select "AWS service" as trusted entity type
Choose "Lambda" as the use case
Click "Next"
Attach the following policies:
AWSLambdaBasicExecutionRole (for CloudWatch logging)
AmazonS3ReadOnlyAccess (to read S3 event data)
AmazonSESFullAccess (SES for email notifications)
Click "Next"
Name the role: lambda-trigger-role-csn



Step 3: Verify SES Email Addresses
Go to the Amazon SES service

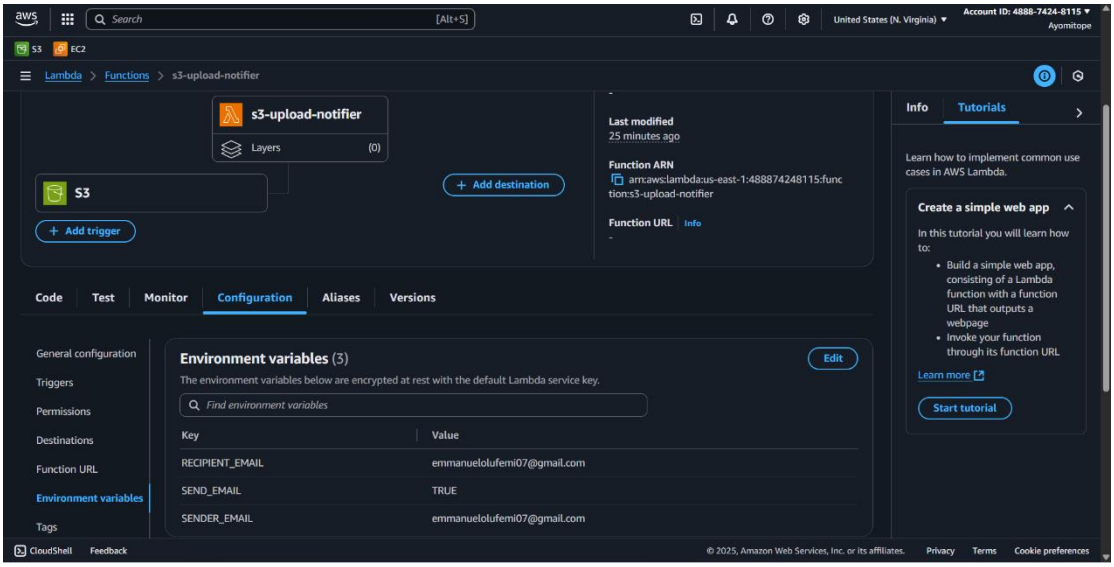
Click "Verified identities" in the left menu
Click "Create identity"
Choose "Email address" and enter your sender email
Click "Create identity"
Check your email inbox for a verification email and click the link





Step 4: Create the Lambda Function
Go to the AWS Lambda service
Click "Create function"
Choose "Author from scratch"
Enter a function name (e.g., "s3-upload-notifier")
Select Python 3.13 as runtime

Under "Permissions", choose "lambda-trigger-role-csn" and select the role you created
Click "Create function"



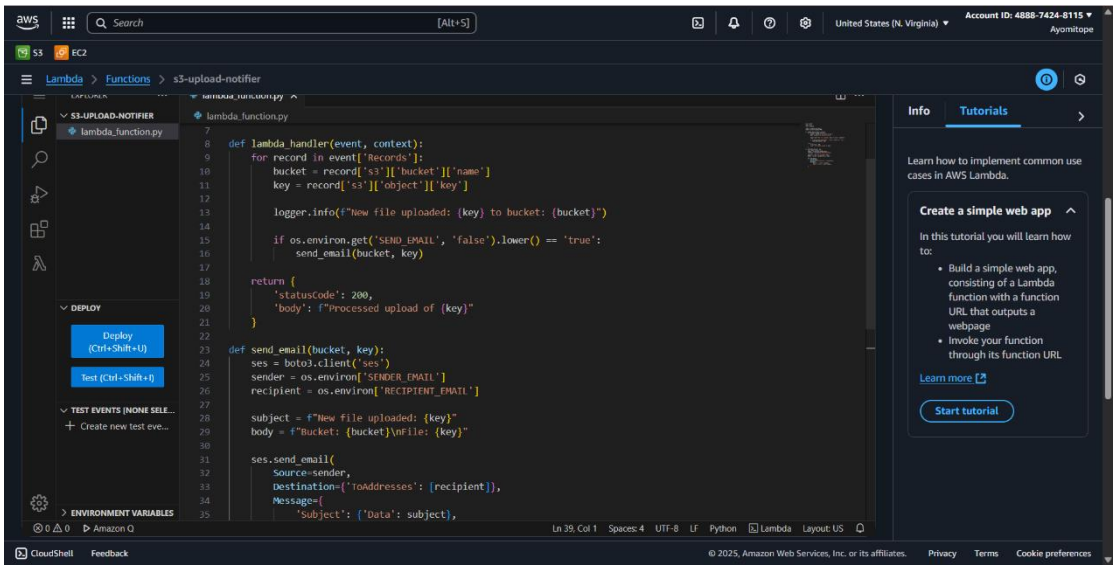
Step 5: Write the Lambda Function Code
Here's a Python Lambda function that logs the file name and sends an email:

```
import boto3

import os

import logging


logger = logging.getLogger()

logger.setLevel(logging.INFO)


def lambda_handler(event, context):

    for record in event['Records']:

        bucket = record['s3']['bucket']['name']

        key = record['s3']['object']['key']
```

```
        logger.info(f"New file uploaded: {key} to bucket: {bucket}")

        if os.environ.get('SEND_EMAIL', 'false').lower() == 'true':
            send_email(bucket, key)

    return {
        'statusCode': 200,
        'body': f"Processed upload of {key}"
    }

def send_email(bucket, key):
    ses = boto3.client('ses')
    sender = os.environ['SENDER_EMAIL']
    recipient = os.environ['RECIPIENT_EMAIL']

    subject = f"New file uploaded: {key}"
    body = f"Bucket: {bucket}\nFile: {key}"

    ses.send_email(
        Source=sender,
        Destination={'ToAddresses': [recipient]},
        Message={
            'Subject': {'Data': subject},
```

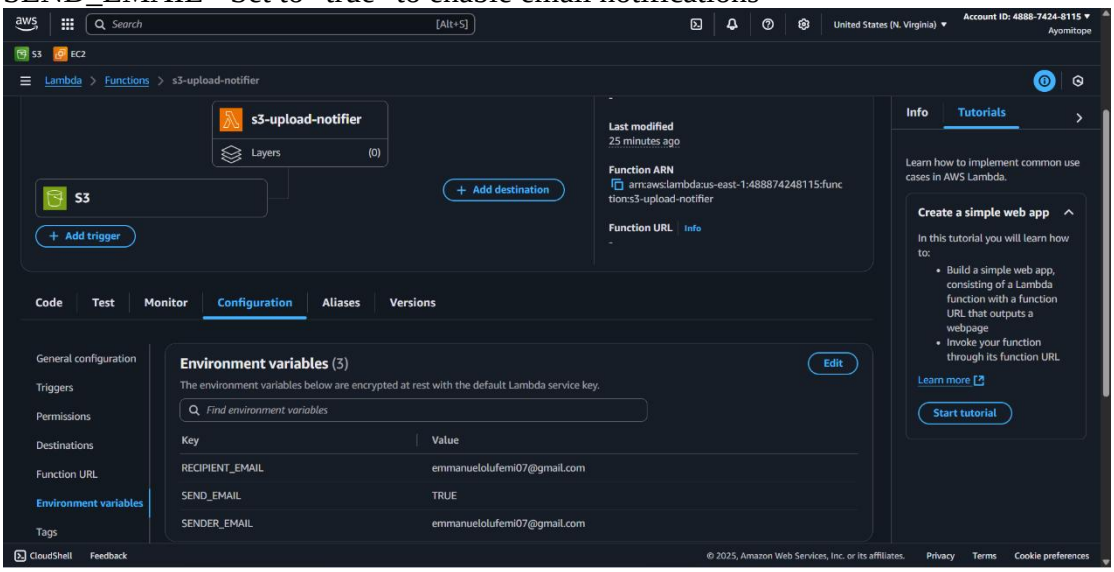
'Body': {'Text': {'Data': body}}

}



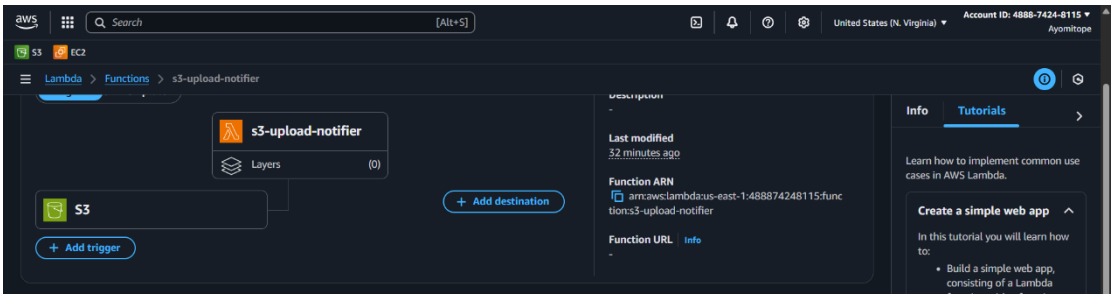
)

Step 6: Configure Lambda Environment Variables
In your Lambda function, go to the "Configuration" tab
Click "Environment variables"
Add the following variables:
SENDER_EMAIL - Your verified SES sender email
RECIPIENT_EMAIL - The email address to receive notifications
SEND_EMAIL - Set to "true" to enable email notifications

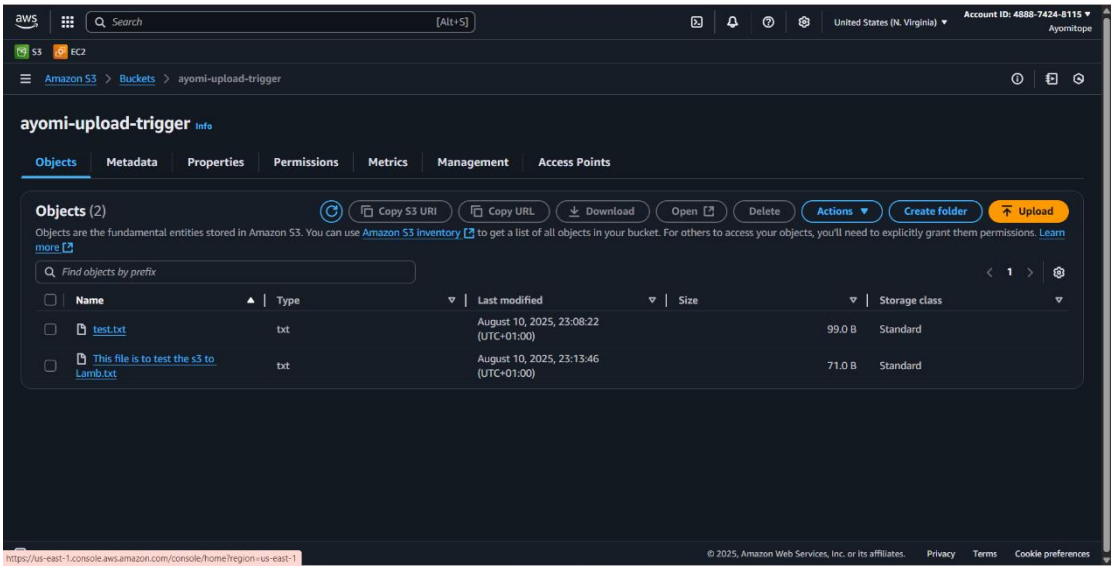


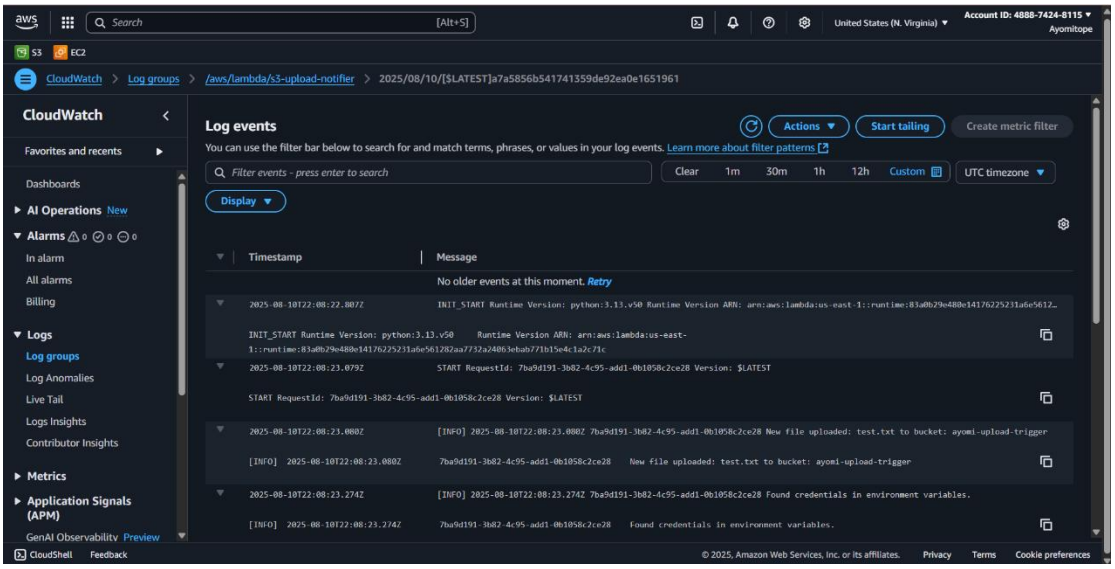
Step 7: Set Up S3 Trigger

In your Lambda function, go to the "Configuration" tab
Click "Add trigger"
Select "S3" as the trigger type
Choose your bucket from the dropdown
For "Event type", select "All object create events"
Optionally add a prefix/suffix filter if needed
Check "Recursive invocation" if you want subfolder events
Click "Add"



Step 8: Test the Setup
Upload files to your S3 bucket
I uploaded two files in my S3 buckets and checked the log from my CloudWatch and an email from AWS concerning the new files uploaded.




Search [Alt+S]
United States (N. Virginia)
Account ID: 4888-7424-8115
Ayomitope
S3 EC2
CloudWatch > Log groups > /aws/lambda/s3-upload-notifier > 2025/08/10/[$LATEST]a7a5856b541741359de92ea0e1651961
CloudWatch
Favorites and recents
Dashboards
AI Operations New
Alarms 0 0 0
In alarm
All alarms
Billing
Logs
Log groups
Log Anomalies
Live Tail
Logs Insights
Contributor Insights
Metrics
Application Signals (APM)
GenAI Observability Preview
Log events
Actions
Start tailing
Create metric filter
You can use the filter bar below to search for and match terms, phrases, or values in your log events. Learn more about filter patterns
Filter events - press enter to search
Clear 1m 30m 1h 12h Custom
UTC timezone
Display
Timestamp
Message
No older events at this moment. Retry
2025-08-10T22:08:22.807Z INIT_START Runtime Version: python:3.13.v50 Runtime Version ARN: arn:aws:lambda:us-east-1::runtime:83a0b29e488e1417622523 1a6e5612…
INIT_START Runtime Version: python:3.13.v50 Runtime Version ARN: arn:aws:lambda:us-east-1::runtime:83a0b29e488e1417622523 1a6e56128 2aa7732a2486 3eba b771b15e4c1a2c71c
2025-08-10T22:08:23.079Z START RequestId: 7ba9d191-3b82-4c95-add1-0b1058c2ce28 Version: $LATEST
START RequestId: 7ba9d191-3b82-4c95-add1-0b1058c2ce28 Version: $LATEST
2025-08-10T22:08:23.080Z [INFO] 2025-08-10T22:08:23.080Z 7ba9d191-3b82-4c95-add1-0b1058c2ce28 New file uploaded: test.txt to bucket: ayomi-upload-trigger
[INFO] 2025-08-10T22:08:23.080Z 7ba9d191-3b82-4c95-add1-0b1058c2ce28 New file uploaded: test.txt to bucket: ayomi-upload-trigger
2025-08-10T22:08:23.274Z [INFO] 2025-08-10T22:08:23.274Z 7ba9d191-3b82-4c95-add1-0b1058c2ce28 Found credentials in environment variables.
[INFO] 2025-08-10T22:08:23.274Z 7ba9d191-3b82-4c95-add1-0b1058c2ce28 Found credentials in environment variables.
CloudShell Feedback
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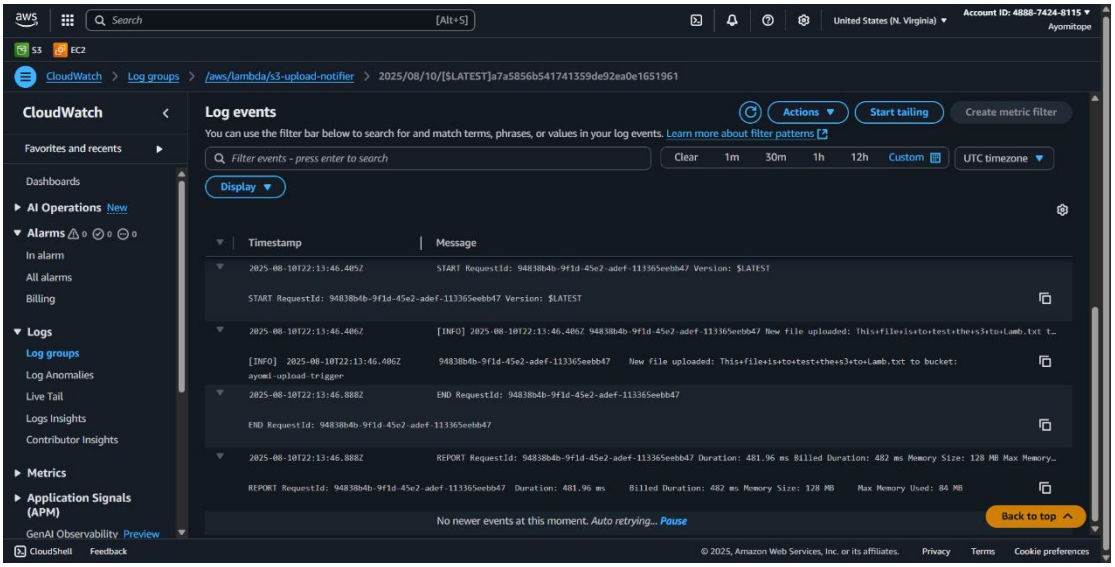
Search [Alt+S]
United States (N. Virginia)
Account ID: 4888-7424-8115
Ayomitope
S3 EC2
CloudWatch > Log groups > /aws/lambda/s3-upload-notifier > 2025/08/10/[$LATEST]a7a5856b541741359de92ea0e1651961
CloudWatch
Favorites and recents
Dashboards
AI Operations New
Alarms 0 0 0
In alarm
All alarms
Billing
Logs
Log groups
Log Anomalies
Live Tail
Logs Insights
Contributor Insights
Metrics
Application Signals (APM)
GenAI Observability Preview
Log events
Actions
Start tailing
Create metric filter
You can use the filter bar below to search for and match terms, phrases, or values in your log events. Learn more about filter patterns
Filter events - press enter to search
Clear 1m 30m 1h 12h Custom
UTC timezone
Display
Timestamp
Message
2025-08-10T22:13:46.405Z START RequestId: 94838b4b-9f1d-45e2-adef-113365eebb47 Version: $LATEST
START RequestId: 94838b4b-9f1d-45e2-adef-113365eebb47 Version: $LATEST
2025-08-10T22:13:46.406Z [INFO] 2025-08-10T22:13:46.406Z 94838b4b-9f1d-45e2-adef-113365eebb47 New file uploaded: This+file+is+to+test+the+s3+to+Lamb.txt t…
[INFO] 2025-08-10T22:13:46.406Z 94838b4b-9f1d-45e2-adef-113365eebb47 New file uploaded: This+file+is+to+test+the+s3+to+Lamb.txt to bucket: ayomi-upload-trigger
2025-08-10T22:13:46.888Z END RequestId: 94838b4b-9f1d-45e2-adef-113365eebb47
END RequestId: 94838b4b-9f1d-45e2-adef-113365eebb47
2025-08-10T22:13:46.888Z REPORT RequestId: 94838b4b-9f1d-45e2-adef-113365eebb47 Duration: 481.96 ms Billed Duration: 482 ms Memory Size: 128 MB Max Memory…
REPORT RequestId: 94838b4b-9f1d-45e2-adef-113365eebb47 Duration: 481.96 ms Billed Duration: 482 ms Memory Size: 128 MB Max Memory Used: 84 MB
No newer events at this moment. Auto retrying... Pause
Back to top
CloudShell Feedback
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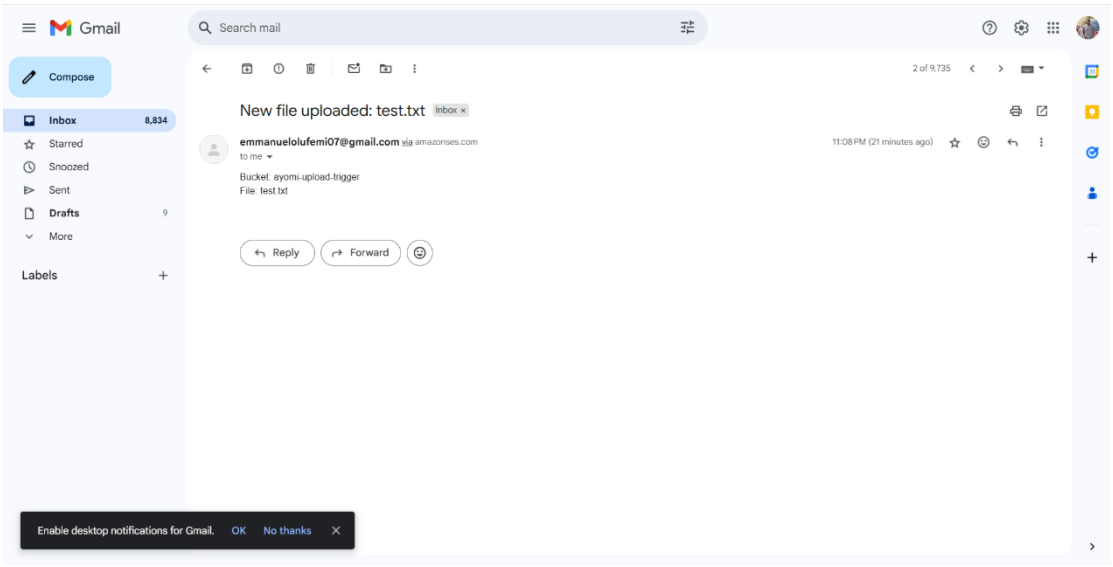
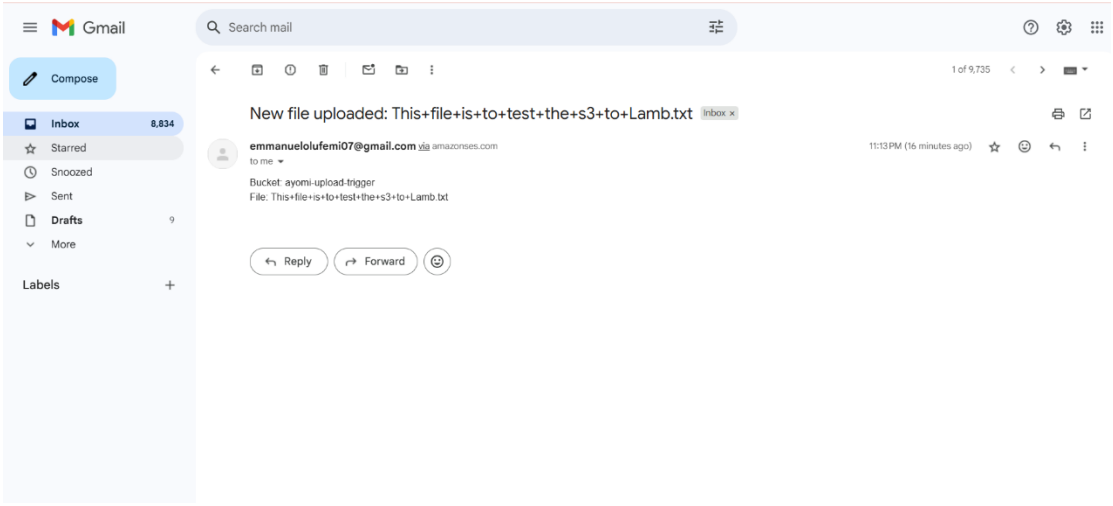

Gmail
Search mail
Compose
Inbox 8,834
Starred
Snoozed
Sent
Drafts 9
More
Labels
2 of 9,735
New file uploaded: test.txt
Inbox ×
emmanuelolufemi07@gmail.com via amazonses.com
to me
11:08 PM (21 minutes ago)
Bucket: ayomi-upload-trigger
File: test.txt
Reply
Forward
Enable desktop notifications for Gmail.
OK
No thanks


Gmail
Search mail
Compose
Inbox 8,834
Starred
Snoozed
Sent
Drafts 9
More
Labels
1 of 9,735
New file uploaded: This+file+is+to+test+the+s3+to+Lamb.txt
Inbox ×
emmanuelolufemi07@gmail.com via amazonses.com
to me
11:13 PM (16 minutes ago)
Bucket: ayomi-upload-trigger
File: This+file+is+to+test+the+s3+to+Lamb.txt
Reply
Forward