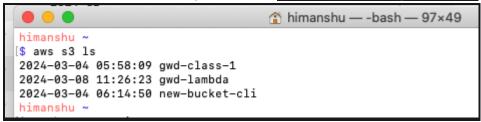A report documenting the creation process of the S3 bucket, IAM role, and Lambda function. Include any challenges encountered and how they were resolved.

S3 bucket was created using the CLI, below are the steps included in creation of bucket
Step 1: login to aws using command: `aws configure` and enter access key pairs.

Step 2: create s3 bucket using command: `aws s3 mb s3://gwd-lambda`

IAM role was created through Console, attached policies related to S3, cloudwatch and lambda.

New IAM role name: `gwd-aws-lambda-role`

Lastly created lambda function through console as well.
Name of lambda function: **lambda-assignment-1**
Below is the screenshot of lambda function configurations:

Code	Test	Monitor	Configuration	Aliases	Versions

General configuration

Triggers

Permissions

Destinations
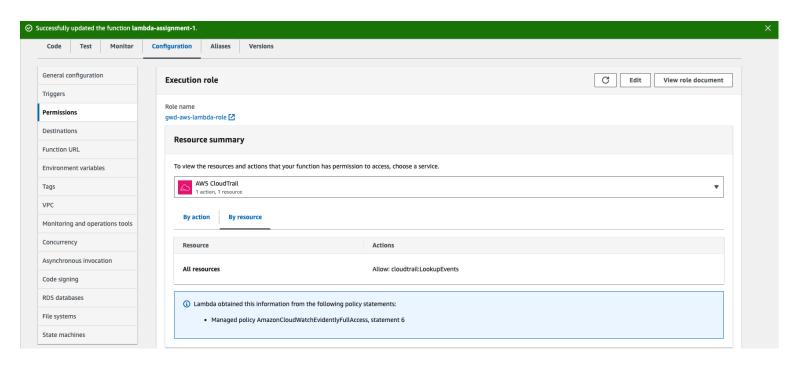
Function URL

Environment variables

Tags

VPC

Monitoring and operations tools

Concurrency

Asynchronous invocation

Code signing

RDS databases

File systems

State machines

Execution role   ⟳   Edit   View role document

Role name
gwd-aws-lambda-role ⧉

Resource summary

To view the resources and actions that your function has permission to access, choose a service.

▢ AWS CloudTrail
1 action, 1 resource   ▼

By action   **By resource**

Resource	Actions
All resources	Allow: cloudtrail:LookupEvents

ⓘ Lambda obtained this information from the following policy statements:

- Managed policy AmazonCloudWatchEvidentlyFullAccess, statement 6

Code	Test	Monitor	Configuration	Aliases	Versions

General configuration

Triggers

Permissions

Destinations

Function URL

Environment variables

Tags

VPC

Monitoring and operations tools

Concurrency

Asynchronous invocation

Code signing

RDS databases

File systems

State machines

General configuration   Info   Edit

Description	Memory	Ephemeral storage
-	128 MB	512 MB

Timeout	SnapStart Info	
0 min 30 sec	None	

Lambda > Functions > lambda-assignment-1

lambda-assignment-1

Throttle | ☐ Copy ARN | Actions ▼

▼ **Function overview**   Info

Export to Application Composer | Download ▼

| Diagram | Template |

lambda-assignment-1

Layers (0)

S3

+ Add trigger

+ Add destination

Description
-

Last modified
2 hours ago

Function ARN
☐ arn:aws:lambda:us-east-1:767398036887:function:lambda-assignment-1

Function URL   Info
-

Code | Test | Monitor | Configuration | Aliases | Versions

Trigger Details

Code | Test | Monitor | Configuration | Aliases | Versions

General configuration

Triggers

Permissions

Destinations

Function URL

Environment variables

Tags

VPC

Monitoring and operations tools

Concurrency

Asynchronous invocation

Code signing

RDS databases

File systems

State machines

Triggers (1)   Info

↻ | Fix errors | Edit | Delete | Add trigger

🔍 Find triggers

< 1 >

☐	Trigger

☐ **S3**: gwd-lambda
arn:aws:s3:::gwd-lambda

▼ Details

Bucket arn: **arn:aws:s3:::gwd-lambda**
Event types: **s3:ObjectCreated:***
Notification name: **5ea788ef-149c-4eeb-bc8c-29f3724ec0aa**
Service principal: **s3.amazonaws.com**
Source account: **767398036887**
Statement ID: **lambda-784d865a-395f-4422-be69-4e7184b61050**

lambda_function.py

```python
import logging
import json
import boto3
import os

default_log_args = {
    "level": logging.DEBUG if os.environ.get("DEBUG", False) else logging.INFO,
    "format": "%(asctime)s [%(levelname)s] %(name)s - %(message)s",
    "datefmt": "%d-%b-%y %H:%M",
    "force": True,
}
logging.basicConfig(**default_log_args)
log = logging.getLogger("")

def lambda_handler(event, context):

    source_bucket = 'gwd-lambda'
    s3 = boto3.client('s3')

    response_contents = s3.list_objects_v2(Bucket = source_bucket).get('Contents')
    sorted_rc = sorted(response_contents,key = lambda x:x['LastModified'],reverse=True)
    current_uploaded_file = sorted_rc[0]

    file_size = round(current_uploaded_file.get('Size')/1024**2,2)
    if file_size > 100:
        log.info(f"Uploaded file size is GREATER than 100 MB")
        log.info(f"File Name: {current_uploaded_file.get('Key')}")
        log.info(f"Size: {file_size}")
    else:
        log.info(f"Uploaded file size is SMALL than 100 MB")
        log.info(f"File Name: {current_uploaded_file.get('Key')}")
        log.info(f"Size of file {file_size}")

    return {
        'statusCode': 200,
        'body': json.dumps('Lambda triggered on file upload')
    }
```
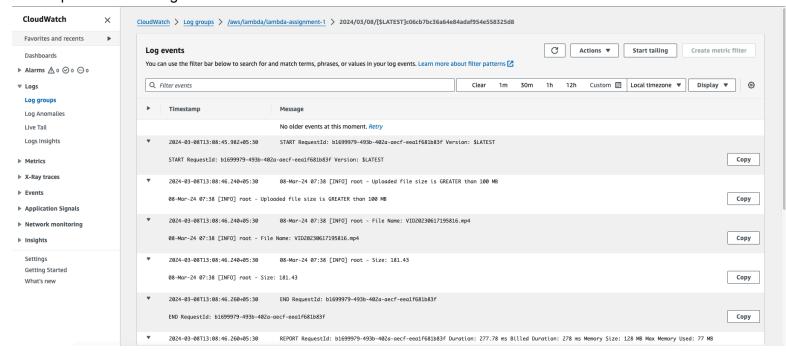
Cloud watch logs:

When uploaded file size greater than 100mb:

CloudWatch   ✕

CloudWatch > Log groups > /aws/lambda/lambda-assignment-1 > 2024/03/08/[$LATEST]c06cb7bc36a64e84adaf954e558325d8

Favorites and recents ▶

Dashboards

▶ Alarms ⚠ 0 ⊘ 0 ⊖ 0

▼ Logs

  Log groups

  Log Anomalies

  Live Tail

  Logs Insights

▶ Metrics

▶ X-Ray traces

▶ Events

▶ Application Signals

▶ Network monitoring

▶ Insights

Settings

Getting Started

What's new

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   Clear   1m   30m   1h   12h   Custom ▦   Local timezone ▼   Display ▼ ⚙

▶	Timestamp	Message
		No older events at this moment. *Retry*
▼	2024-03-08T13:08:45.982+05:30	START RequestId: b1699979-493b-402a-aecf-eea1f681b83f Version: $LATEST
		START RequestId: b1699979-493b-402a-aecf-eea1f681b83f Version: $LATEST Copy
▼	2024-03-08T13:08:46.240+05:30	08-Mar-24 07:38 [INFO] root - Uploaded file size is GREATER than 100 MB
		08-Mar-24 07:38 [INFO] root - Uploaded file size is GREATER than 100 MB Copy
▼	2024-03-08T13:08:46.240+05:30	08-Mar-24 07:38 [INFO] root - File Name: VID20230617195816.mp4
		08-Mar-24 07:38 [INFO] root - File Name: VID20230617195816.mp4 Copy
▼	2024-03-08T13:08:46.240+05:30	08-Mar-24 07:38 [INFO] root - Size: 181.43
		08-Mar-24 07:38 [INFO] root - Size: 181.43 Copy
▼	2024-03-08T13:08:46.260+05:30	END RequestId: b1699979-493b-402a-aecf-eea1f681b83f
		END RequestId: b1699979-493b-402a-aecf-eea1f681b83f Copy
▼	2024-03-08T13:08:46.260+05:30	REPORT RequestId: b1699979-493b-402a-aecf-eea1f681b83f Duration: 277.78 ms Billed Duration: 278 ms Memory Size: 128 MB Max Memory Used: 77 MB

When file size is less than 100 MB:

CloudWatch   ✕

CloudWatch > Log groups > /aws/lambda/lambda-assignment-1 > 2024/03/08/[$LATEST]cc4dad8c8a0245378fab3da6ac438905

Favorites and recents ▶

Dashboards

▶ Alarms ⚠ 0 ⊘ 0 ⊖ 0

▼ Logs

  Log groups

  Log Anomalies

  Live Tail

  Logs Insights

▶ Metrics

▶ X-Ray traces

▶ Events

▶ Application Signals

▶ Network monitoring

▶ Insights

Settings

Getting Started

What's new

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   Clear   1m   30m   1h   12h   Custom ▦   Local timezone ▼   Display ▼ ⚙

▶	Timestamp	Message
		No older events at this moment. *Retry*
▶	2024-03-08T13:14:21.982+05:30	INIT_START Runtime Version: python:3.9.v46 Runtime Version ARN: arn:aws:lambda:us-east-1::runtime:58f78ac89504821e52aa8fcb7a0dee3788f8487c225e5c5e08dd354d5e...
▶	2024-03-08T13:14:22.245+05:30	START RequestId: cc67f365-d0b9-42d2-a1f0-2192e78ed221 Version: $LATEST
▶	2024-03-08T13:14:22.423+05:30	08-Mar-24 07:44 [INFO] botocore.credentials - Found credentials in environment variables.
▶	2024-03-08T13:14:24.519+05:30	08-Mar-24 07:44 [INFO] root - Uploaded file size is SMALL than 100 MB
▶	2024-03-08T13:14:24.520+05:30	08-Mar-24 07:44 [INFO] root - File Name: Cleaned_data.csv
▶	2024-03-08T13:14:24.520+05:30	08-Mar-24 07:44 [INFO] root - Size of file 3.59
▶	2024-03-08T13:14:24.561+05:30	END RequestId: cc67f365-d0b9-42d2-a1f0-2192e78ed221
▶	2024-03-08T13:14:24.561+05:30	REPORT RequestId: cc67f365-d0b9-42d2-a1f0-2192e78ed221 Duration: 2316.15 ms Billed Duration: 2317 ms Memory Size: 128 MB Max Memory Used: 76 MB Init Duratio...
		No newer events at this moment. *Auto retry paused. Resume*