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EXPERIMENT 12

Aim: To create a Lambda function which will log “An Image has been added” once you add an object to a specific bucket in S3

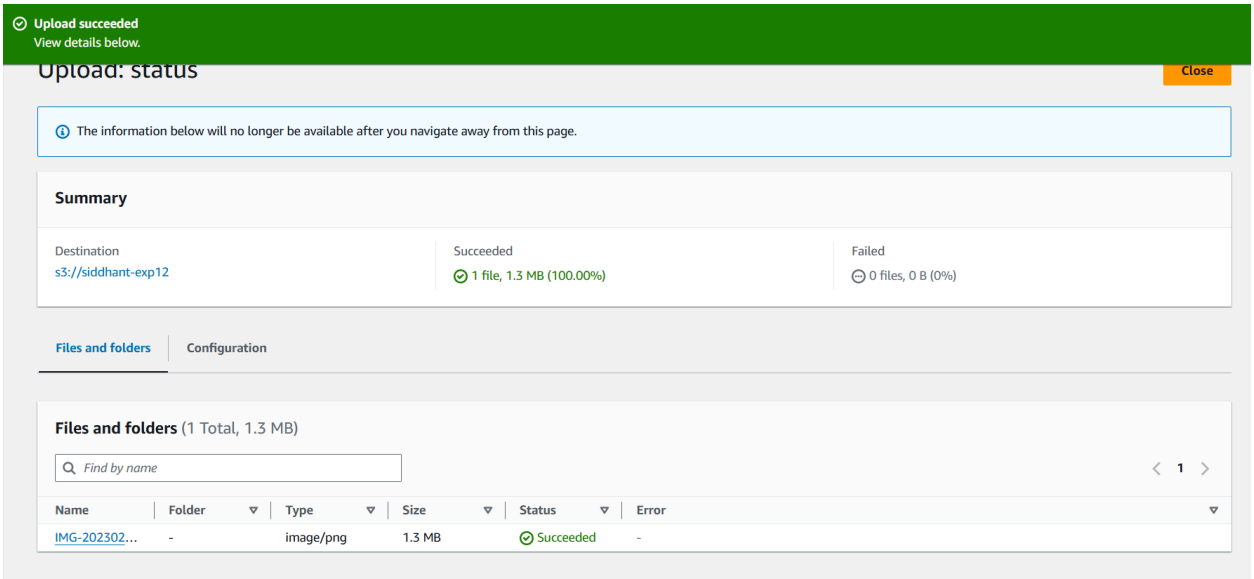
Theory:

AWS Lambda and S3 Integration: AWS Lambda allows you to execute code in response to various events, including those triggered by Amazon S3. When an object is added to an S3 bucket, it can trigger a Lambda function to execute, allowing for event-driven processing without managing servers.

Workflow:

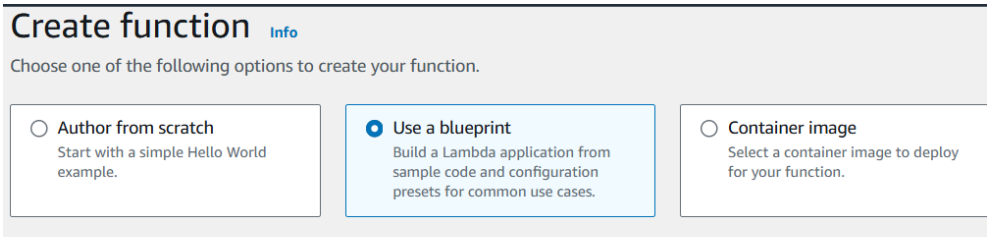
Step 1: Create an S3 Bucket:

○ First, create an S3 bucket that will store the objects. This bucket will act as the trigger source for the Lambda function.



Step 2:. Create the Lambda Function:

○ Set up a new Lambda function using AWS Lambda’s console. You can choose a runtime environment like Python, Node.js, or Java.



Basic information Info

Blueprint name

Get S3 object — python3.10
An Amazon S3 trigger that retrieves metadata for the object that has been updated.

Function name
Enter a name that describes the purpose of your function.

exp12

Function name must be 1 to 64 characters, must be unique to the Region, and can't include spaces. Valid characters are a-z, A-Z, 0-9, hyphens (-), and underscores (_).

Runtime
python3.10

Architecture
x86_64

Execution role
Choose a role that defines the permissions of your function. To create a custom role, go to the IAM console.

- ○ Create a new role with basic Lambda permissions
- ◉ Use an existing role
- ○ Create a new role from AWS policy templates

Existing role
Choose an existing role that you've created to be used with this Lambda function. The role must have permission to upload logs to Amazon CloudWatch Logs.

LabRole

View the LabRole role on the IAM console.

○ Write code that gets S3 object and logs a message that returns content type when triggered.

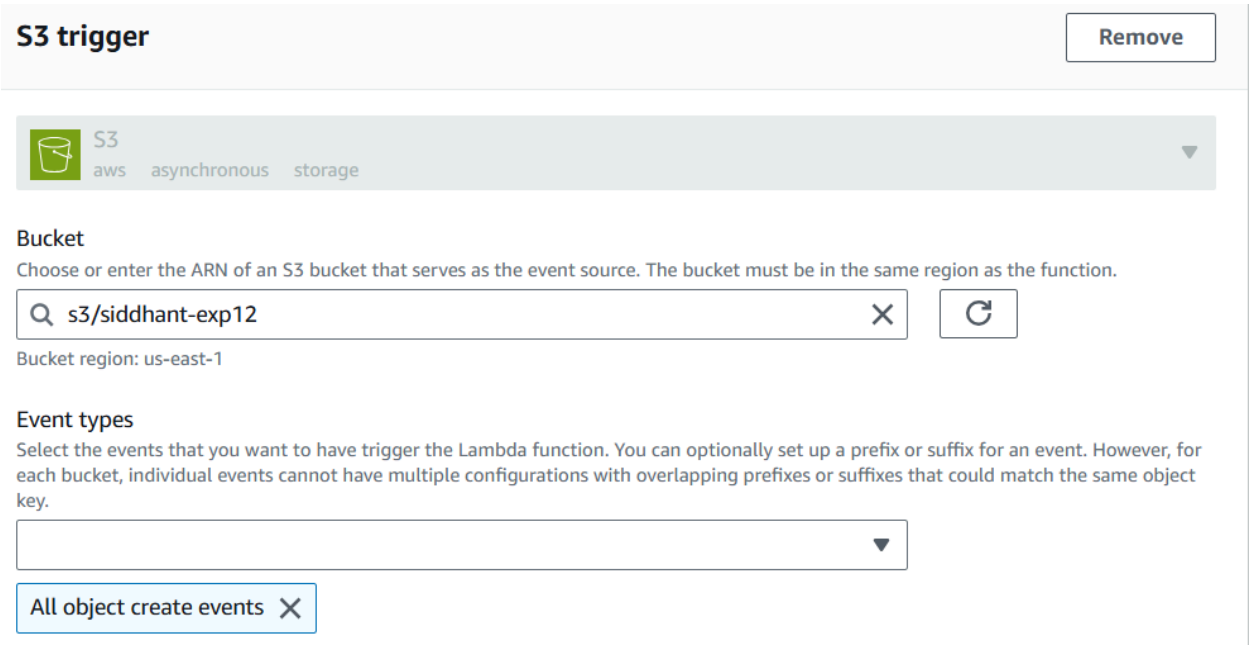
Lambda function code

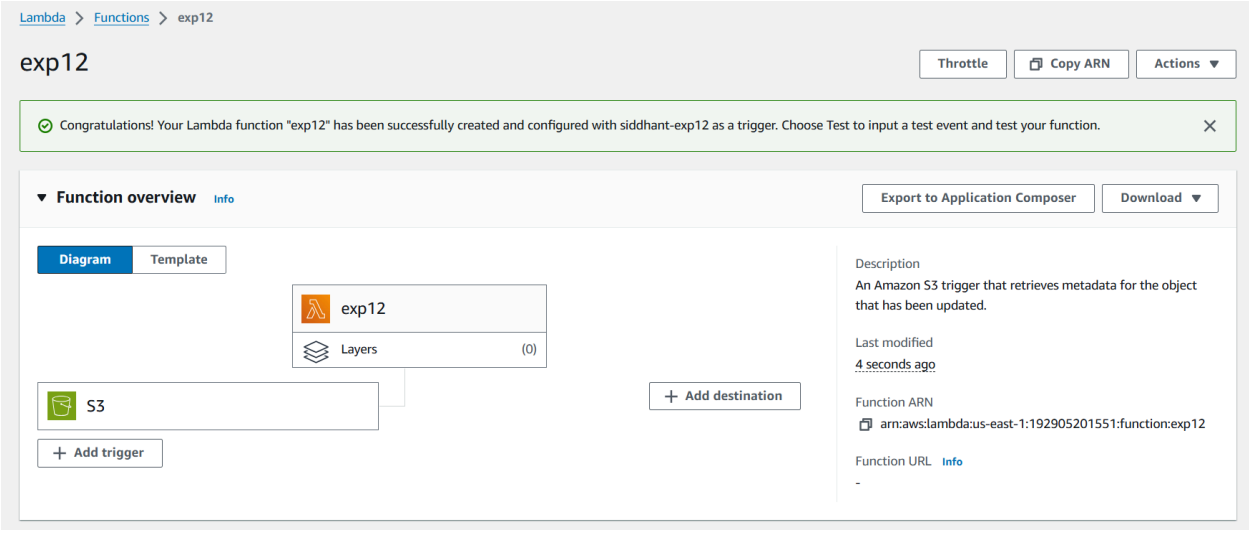
Code is preconfigured by the chosen blueprint. You can configure it after you create the function. Learn more about deploying Lambda functions.

```python
import json
import urllib.parse
import boto3

print('Loading function')

s3 = boto3.client('s3')


def lambda_handler(event, context):
    #print("Received event: " + json.dumps(event, indent=2))

    # Get the object from the event and show its content type
    bucket = event['Records'][0]['s3']['bucket']['name']
    key = urllib.parse.unquote_plus(event['Records'][0]['s3']['object']['key'], encoding='utf-8')
    try:
        response = s3.get_object(Bucket=bucket, Key=key)
        print("CONTENT TYPE: " + response['ContentType'])
        return response['ContentType']
    except Exception as e:
        print(e)
        print('Error getting object {} from bucket {}. Make sure they exist and your bucket is in the
        raise e

```

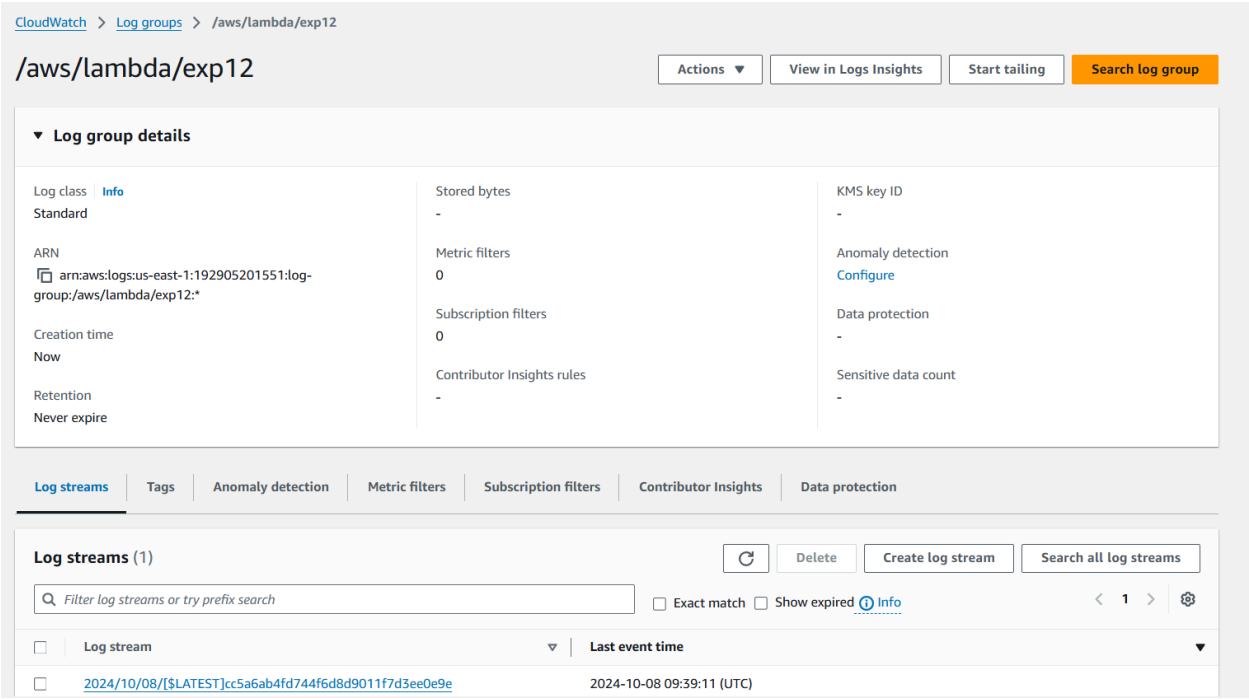
1:1 Python Spaces: 4

Step 3:. Configure S3 Trigger:
○ Link the S3 bucket to the Lambda function by setting up a trigger. Specify that the function should be triggered when an object is created in the bucket (e.g., when an image is uploaded).





Step 4 : Search for CloudWatch in services. After Selecting CloudWatch select log groups and then select your respecting lambda function.



Step 5:. Test the Setup:
○ Upload an object (e.g., an image) to the S3 bucket to test the trigger. The Lambda function should execute and log the message “An Image has been added” in AWS CloudWatch Logs.