### **Project Overview**

### **S3 Bucket:** Stores uploaded files.

### **Lambda Function:** Triggered by S3 events (e.g., file upload) and processes the files.

### **SNS Topic:** Receives notifications from the Lambda function.

### **Step 1: Create an S3 Bucket**

1. **Navigate to S3**:
   * Go to the AWS Management Console and open the S3 service.
2. **Create a Bucket**:
   * Click on "Create bucket."
   * Enter a unique bucket name and select a region.
   * Click "Create bucket."

### **Step 2: Create an SNS Topic**

1. **Navigate to SNS**:
   * Go to the AWS Management Console and open the SNS service.
2. **Create a Topic**:
   * Click on "Create topic."
   * Choose "Standard" for the type and enter a name for the topic (e.g., YourSNSTopic).
   * Click "Create topic."

### **Step 3: Create a Lambda Function**

1. **Navigate to Lambda**:
   * Go to the AWS Management Console and open the Lambda service.
2. **Create a Function**:
   * Click on "Create function."
   * Choose "Author from scratch."
   * Enter a function name (e.g., YourLambdaFunction).
   * Select "Python 3.8" as the runtime.
   * Choose or create an execution role with basic Lambda permissions (e.g., AWSLambdaBasicExecutionRole).
3. **Add the Code**:
   * In the function code section, replace the default code with the following:

| import json import boto3  sns\_client = boto3.client('sns') sns\_topic\_arn = 'arn:aws:sns:your-region:your-account-id:YourSNSTopic'  def lambda\_handler(event, context):  # Extract bucket name and file key from the S3 event  bucket\_name = event['Records'][0]['s3']['bucket']['name']  file\_key = event['Records'][0]['s3']['object']['key']    # Log the bucket name and file key  print(f'File uploaded: {bucket\_name}/{file\_key}')    # Prepare the message  message = {  'bucket\_name': bucket\_name,  'file\_key': file\_key  }    # Publish the message to the SNS topic  response = sns\_client.publish(  TopicArn=sns\_topic\_arn,  Message=json.dumps(message),  Subject='New File Uploaded to S3'  )    return {  'statusCode': 200,  'body': json.dumps('Message sent to SNS topic')  } |
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1. **Deploy the Function**:
   * Click "Deploy" to save and deploy your function.

### **Step 4: Set Up S3 to Trigger Lambda**

1. **Navigate to S3**:
   * Open the S3 service and go to your created bucket.
2. **Enable Event Notifications**:
   * Click on the "Properties" tab.
   * Scroll down to "Event notifications" and click "Create event notification."
   * Name the event (e.g., FileUploadEvent).
   * Select "All objects create events" under "Event types."
   * Select the Lambda function created earlier.
   * Click "Save."

### **Step 5: Subscribe to the SNS Topic**

1. **Navigate to SNS**:
   * Open the SNS service and go to the topic you created.
2. **Create a Subscription**:
   * Click on the topic name to open it.
   * Click "Create subscription."
   * Choose a protocol (e.g., Email).
   * Enter the endpoint (e.g., your email address).
   * Click "Create subscription."
   * Confirm the subscription by checking your email and clicking the confirmation link.

### **Testing the Setup**

1. **Upload a File to S3**:
   * Go to your S3 bucket and upload a file.
   * Click "Upload," add files, and then click "Upload" again.
2. **Check the Lambda Logs**:
   * Go to the Lambda service.
   * Click on your function and then on "Monitor" and "View logs in CloudWatch" to see the logs and verify that the function was triggered.
3. **Check the SNS Notification**:
   * Check your email (or other chosen endpoint) to verify that you received the notification.

**Project 2 Link:** [**https://suneel.hashnode.dev/aws-lambda-project**](https://suneel.hashnode.dev/aws-lambda-project)