Project Overview

This project sets up a basic system where any new file uploaded to an S3 bucket triggers a Lambda function. The Lambda function processes the event and sends a notification through SNS, ensuring you are alerted whenever a new file is added. This setup is useful for scenarios where monitoring file uploads is critical, such as tracking document submissions or new data uploads.

Project Name: File Upload Notification System

Objective: Automatically send a notification whenever a new file is uploaded to an S3 bucket.

Components

1. **Amazon S3**: Used to store files.
2. **AWS Lambda**: Processes the file upload event.
3. **Amazon SNS**: Sends notifications about the file upload.

Workflow

1. **File Upload**: A file is uploaded to an S3 bucket.
2. **Trigger Lambda**: The upload event triggers an AWS Lambda function.
3. **Send Notification**: The Lambda function sends a notification via SNS.

Steps to Implement

Step 1: Set Up S3 Bucket

1. Go to the S3 console in the AWS Management Console.
2. Click on "Create bucket."
3. Provide a unique name for your bucket and choose the region.
4. Configure options as needed and create the bucket.

Step 2: Set Up SNS Topic

1. Go to the SNS console in the AWS Management Console.
2. Click on "Create topic."
3. Choose "Standard" for the topic type.
4. Provide a name for your topic and create it.
5. Create a subscription for the topic:
    - Choose the protocol (e.g., Email).
    - Enter the endpoint (e.g., your email address).
    - Confirm the subscription in your email.

Step 3: Create Lambda Function

1. Go to the Lambda console in the AWS Management Console.
2. Click on "Create function."
3. Choose "Author from scratch."
4. Provide a name for your function (e.g., `S3UploadNotification`).
5. Choose the runtime (e.g., Python 3.9).
6. Create a new role with basic Lambda permissions.

Step 4: Add S3 Trigger to Lambda Function

1. In the Lambda function, go to the "Configuration" tab.
2. Click on "Triggers."
3. Click "Add trigger" and choose "S3."
4. Select the bucket you created earlier.
5. Choose the event type as "All object create events."
6. Add the trigger.

Step 5: Write Lambda Function Code

1. In the Lambda function's "Code" tab, replace the default code with the following:

Link to lambda code: https://github.com/synthetico/ile-Upload-Notification-System.git

2. Replace `YOUR_REGION`, `YOUR_ACCOUNT_ID`, and `YOUR_TOPIC_NAME` with the SNS topic **ARN**

Step 6: Set Up IAM Role Permissions

1. Go to the IAM console in the AWS Management Console.
2. Find the role created for your Lambda function.
3. Attach the following policies to the role:
   - **AmazonS3ReadOnlyAccess**
   - **AmazonSNSFullAccess**

Step 7: Test the Setup

1. Upload files to your S3 bucket.
2. Check the CloudWatch logs for your Lambda function to ensure it executed correctly.
3. Verify that you receive the notification from SNS.

In conclusion this project can be automated with advance resources where objects are uploaded to an S3 bucket, process by another lambda function and the end result is sent to another S3 bucket.

Example: The New York Times uses AWS Lambda in combination with other AWS services to process images for their online publications.

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