Creating a REST API with AWS API Gateway and AWS Lambda

This guide demonstrates how to create a REST API using AWS API Gateway and AWS Lambda. By the end of this tutorial, you will have a working REST API accessible via a public URL.

Prerequisites

- An AWS account.
- Basic knowledge of AWS Lambda and API Gateway.
- AWS CLI or AWS Management Console access.

Step-by-Step Guide

Step 1: Create a "Hello World" Lambda Function

1. Log in to the AWS Management Console.
2. Navigate to the **Lambda** service.
3. Click on **Create function**.
4. Choose **Author from scratch** and configure the following:
    - **Function name**: `HelloWorldFunction`
    - **Runtime**: `Python 3.x` (or your preferred language)

In the code editor, add the following code:

```
def lambda_handler(event, context):
    return {
        'statusCode': 200,
        'body': 'Hello, World!'

    5.      }
    6. Click Deploy to save your changes.
```

Step 2: Set Up a New REST API in API Gateway

1. Navigate to the **API Gateway** service in the AWS Management Console.
2. Click **Create API**.

3. Select **HTTP API** and click **Build**.
4. Name your API (e.g., `HelloWorldAPI`) and configure any additional settings if needed.
5. Click **Create** to finish setting up the API.

Step 3: Create a GET Method to Invoke the Lambda Function

1. In the **API Gateway** dashboard, select your newly created API.
2. Click on **Routes** and then **Create**.
3. Configure the route:
   - **Resource path**: `/hello`
   - **Method**: `GET`
4. Save the route.
5. Click on the route you just created and set up the **Integration**:
   - Select **Add integration**.
   - Choose **Lambda function**.
   - Select the `HelloWorldFunction` you created earlier.
6. Save your changes.

Step 4: Test the API Gateway GET Method

1. In the API Gateway console, go to the **Stages** section.
2. Deploy the API:
   - Click **Deploy API**.
   - Name the stage (e.g., `dev`) and deploy.
3. Copy the **Invoke URL** displayed for the stage.
4. Use a tool like Postman, cURL, or your browser to send a GET request to the `/hello` endpoint:
   curl -X GET <INVOKE-URL>/hello

Verify the response:

```
{
   "statusCode": 200,
   "body": "Hello, World!"

5. }
```

Step 5: Deploy the API to Make It Publicly Accessible

1. Ensure the API is deployed to a public stage (e.g., `dev`).
2. Confirm the permissions of the Lambda function allow invocation via API Gateway.
3. Test the public URL as described in Step 4.

Conclusion

I have successfully created a REST API with AWS API Gateway and AWS Lambda. This API can serve as a foundation for building more complex serverless applications.