

Lab Assignment 7:

Aspects of any website:

1. Highly Available

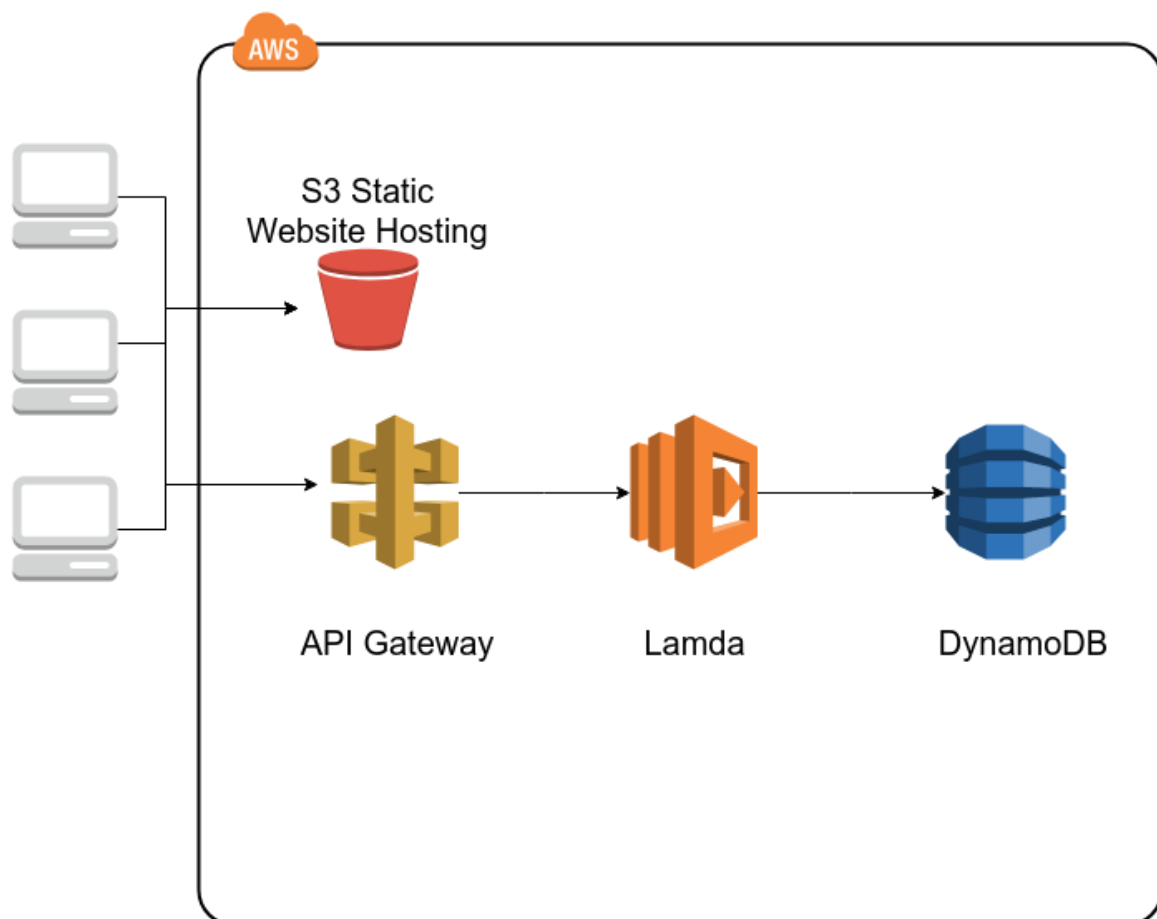
2. Scalable

3. Fault Tolerable

4. Low Latency

Lab Objective:

To create a dynamic web application as per the given AWS architecture.



Lab Activities for the given Scenario

Task 0: Login to AWS account and go to AWS console.

Task 1: Create a S3 bucket as any name.

- 1.1 upload two object as html.index and error.index (both the files are attached)
- 1.2 html.index and error.index objects should be public
- 1.3 Enable Static website fuction from S3 properties by supplying both the files.
name.
- 1.4 Copy the end points the properties of Static website function and check the
webpage display through the web browser

Task 2: Go to AWS Lambda function and create the function as name helloworld by choosing python runtime environment.

- 2.1 Lambda function python code is attached as HelloWorldFunction.
- 2.2 Configure the test event by creating HelloWorldTest event.
- 2.3 Check for all changes done successfully.

Task 3: Go to Amazon API Gateway and Select REST API and create new API

- 3.1 Click on new API give the name as HelloworldAPI
- 3.2 Select Edge Optimized and create API
- 3.4 Go to action and Create Method, Choose Post Method by choosing Lambda
function name as the Integration Type
- 3.5 Go to actions and Enable the CORS (for cross region connectivity for end users)
- 3.6 Click on Enable the CORS button
- 3.7 Go to Deploy API from the Action and give the New Stage and stage name as
dev then click on deploy and click on save changes
- 3.8 Check the invoke URL of API using Web browser or Postman. Whether it is
being hit by lambda function or not.

Task 4: Go to DynamoDB and Create Table as HelloWorldDatabase and Primary Key is as ID.

4.1 Copy the ARN point of DynamoDB table (The ARN point will be accessible by the lambda function as per the IAM policy)

Task 5: Now go to the Created Lambda function and click on permission Tab

5.1 Now you will be reaching in IAM role and policy for the Lambda Function

5.2 Click on Add Inline policy the choose the JSON editor will be open

5.3 Copy the custom policy as attached separately (iam_lambda_dynamodb_policy)

5.4 In the policy JSON editor supply the ARN point of DynamoDB table as resource name then review policy and give the name to policy.

Task 6: Go back to the created Lambda function click on configure the Lambda Editor will open then copy the python code that is attached in the file named as HelloWorldFunction (Please Note: try to understand the python code on Lambda Function)

6.1 Save/deploy the lambda function

6.2 Go to DynamoDB table and check the one item is there or not?

Task 7: Go to created S3 bucket and upload the index.html file (This is the second file which code is some new and extended as compared to previous index.html file that was displaying hello world message) (Please note that the Object and Bucket both should be in public access)

Task 8: When new website page will open by sing the same URL then provide some input the input field and check the DynamoDB table that data items are being stored or not?

Please Note That: Try to understand the Java Code of final Index.html file this will help you to do in better way.

Task 9: Take the snapshots of all performed tasks. Then create a doc/pdf of your enrolment number_lab07(Ex: E18CSE072_Lab07) and upload the file on LMS.

Please note the:

If Data is not getting stored in my DynamoDB then check the python code

In the python code line, ensure you input your db table. in this line,

`table = dynamodb.Table(' ').`

You Tube Video Link:

https://www.youtube.com/watch?v=95C9PkSwM1Q&ab_channel=CodeWithVijay

Additional resources:

Other Web links for the similar projects: (The Students should try by their own as home work this is not the part of LAB 7)

Full Static website on serverless Infrastructure using more than 5 AWS services.

1. <https://aws.amazon.com/getting-started/hands-on/build-serverless-web-app-lambda-apigateway-s3-dynamodb-cognito/>

Create Dynamic Contact Forms for S3 Static Websites Using AWS Lambda, Amazon API Gateway, and Amazon SES

2. <https://aws.amazon.com/blogs/architecture/create-dynamic-contact-forms-for-s3-static-websites-using-aws-lambda-amazon-api-gateway-and-amazon-ses/>

3. An AWS project for beginners where you will learn how to deploy end to end website on AWS from scratch.

https://www.youtube.com/watch?v=7Gym2XVcA5A&feature=youtu.be&ab_channel=Intellipaat