**My Serverless Project**

Ample Technologies is planning to migrate the employee registration application from on-premise to AWS cloud. You are working as an AWS solution architect, and your job is to help the team to design the cost architecture and help developers to deploy the solution on AWS.

As per your suggestions, the developer is ready with the code and will provide you the code.

Registration Application captures below details:

1. Name
2. Phone number
3. Email ID
4. Employee Code
5. ID card photo

**But for the sake of this project, I shall demonstrate ID card photo upload.**

**To-Dos:**

* Suggest your approach.
* Suggest AWS services can be used
* Design your plan
* Implement your plan

**Deliverables:**

* Submit your design document and demonstrate your POC

**Services needed**

Ec2

AWS lambda function (backend code)

API Gateway url (trigger)

SNS

AWS S3 Bucket

Github

**Step 1 – Github**

**Copy the code from**

[**https://github.com/hiral5577/UploadImageToS3**](https://github.com/hiral5577/UploadImageToS3) **by forking**

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Next create an amazon EC2 server, connect and run the following commands on the CLI

1. curl -o- https://raw.githubusercontent.com/nvm-sh/nvm/v0.34.0/install.sh | bash

2. . ~/.nvm/nvm.sh

3. nvm install 11.15.0

4. node -e "console.log('Running Node.js ' + process.version)"

5. sudo yum install git -y

6. git clone https://github.com/Ogunseripower/UploadImageToS3.git

7. cd UploadImageToS3/

8. npm install

9. npm run serve

**Note: //github.com/Ogunseripower/UploadImageToS3 is my repository after forking to copy code to my repository. So make sure you do same then replace your repo url in line 6.**

**Server is running at port 8080**

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Next is to go to s3 bucket and create a bucket

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Make sure you uncheck the block all public access and create bucket and acknowledge

Click to open bucket to see content.

In the permission section paste the following code as seen in image bellow in the cross-origin resource sharing edit section and save changes.

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**Next is to create a lambda function and paste the following code from github**

**https://github.com/aws-samples/s3-to-lambda-patterns/blob/master/videos-**

**samples/5-s3-uploader/app.js**

Note in line 49, replace the s3 bucket name with yours

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Then click on deploy to save the changes.

**Next is to configure the trigger**

Go to configuration section in lambda

In permission section click the IAM role

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Click on add permission for a drop down and attach policy

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Add **s3FullAccess** permission

Note: you enter **s3FullAccess** in the search bar

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Go back to lambda function, in the test section to test the function. It should return 200 when you click on test.

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**Next is to add trigger to the Lambda function**.

Select API gate, select open as the security and add

You can see the trigger in the configuration section. You will see the **API gateway name** and the **API url.**

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Next is to copy the url and go to the GitHub repository source folder. In the component folder, in the HelloWorld.vue file

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In line 29, replace the value with the API url you copied for the API\_ ENDPOINT and click on commit your changes.

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Next is to go back to ec2 instance and reconnect

Run the following command again

cd UploadImageToS3/

git pull

npm install

npm run serve

Note: The command git pull is to recommit the changes we made to the HelloWorld.vue file

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This is necessary because of the changes we recent made in the project as you can see the result of the npm install command.

After the last command, we get the server up and running again.

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Next, go back to the EC2 and copy the IPV4 address and paste in a new window as follows:

3.90.216.215:8080

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Click on choose file to upload an image to the s3 bucket

A person in a brown jacket

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Click upload image

A person in a brown jacket

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After click upload, the result is successful.

So, lets go to s3 bucket to check if the uploaded image is there.

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**Confirmed with the time and date**

Next is to create SNS to send a message to the user whenever an image is uploaded to the buckect.

First go to the service and create a topic, then click create topic.

Next is to create subscription

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Select Email and enter your email address and click Create subscription

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Go back to your email and confirm subscription

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Click on confirm subscription.

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You can its showing confirmed in the sns page

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Next is to configure the sns with lambda and s3 bucket.

Whenever the user uploads an image to the bucket, the user will receive an sns notification.

Lets go to lambda and create a function, but this time we have use select python 3.9 as the runtime and click create function.

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Next paste the code to communicate with the sns. Only replace the ARN with that of your sns and click deploy.

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Next is to add trigger to communicate with s3. Acknowledge and add it

My s3 bucket will be pre-selected

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Next is to go to configuration tab, in the permission pane, click on IAM role, add permissions, attach policies and add s3FullAccess and snsFullAccess.

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Go back to the trigger and delete it. Then add trigger again and choose API gateway.

Next copy the URL and re-paste in the line29 HelloWorl.vue file in the src/component folder. Then commit the changes.

Next re-connect the ec2 CLI and re-run the following

cd UploadImageToS3

npm run serve

So, lets try to upload another image.

Refresh the upload page and upload ima

Successful upload

Now let go to the email to see the notification.

A close-up of a card

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No go back to my email to check is a notification was sent.

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Well, at this time, the notification was not sent. Probably because of the code that was used. So, this is the only challenge in this project. I will figure it out shortly. But if you have any input, you can reach out to me. Thanks.

**Project Complete**