Instructions for Setting up AWS Backend for Percept

Part 1: Create stack resources

Step 1.1 – Log In:

You will first need to create the stack of resources for the backend. Go to https://aws.amazon.com/ and sign in. If you do not have an account, you will need to create one.

Step 1.2 – Visit S3:

Once you log in, your web page should look like this:

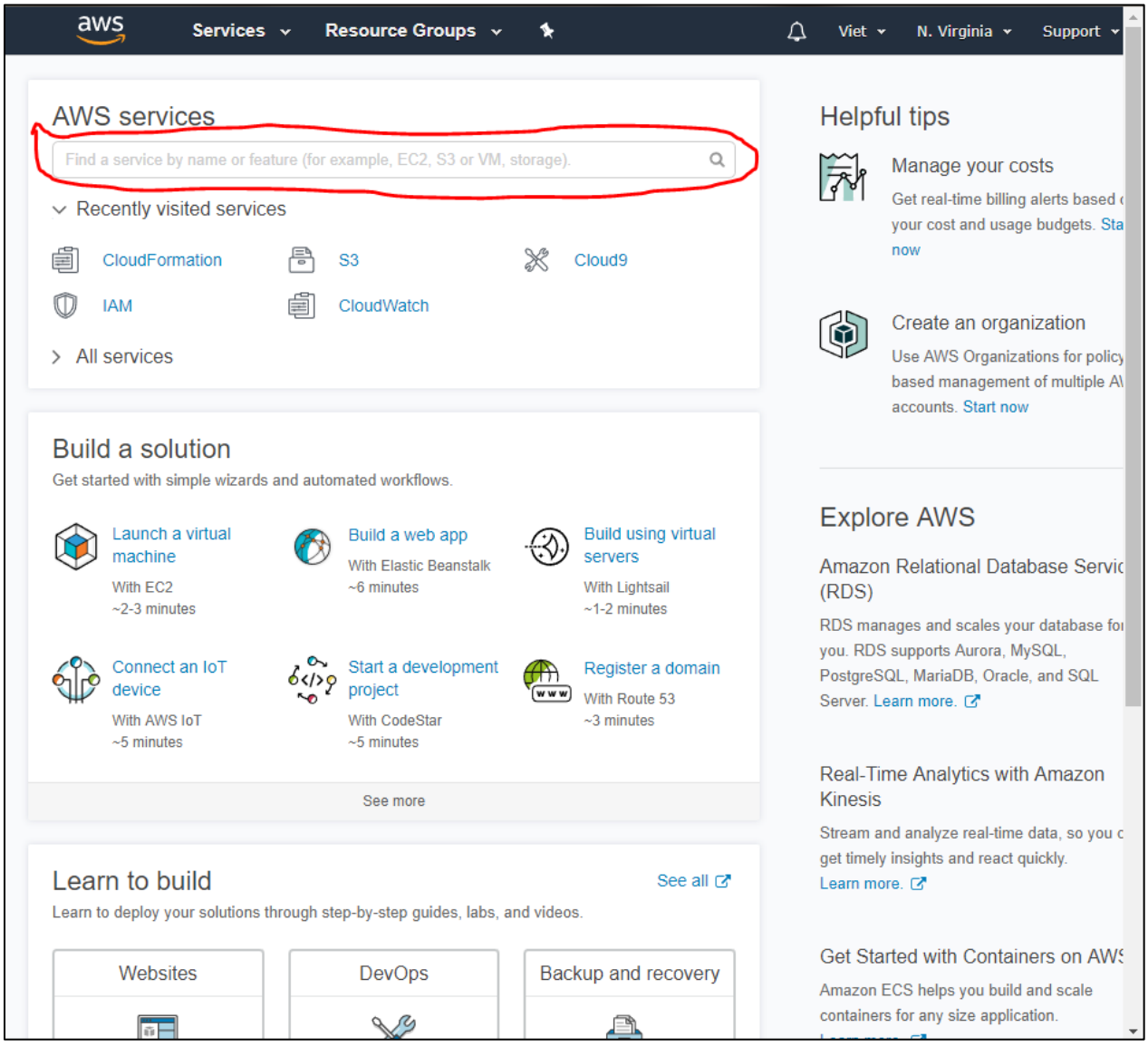

Figure 1 AWS Landing Page

Type in S3 into the search bar circled red.

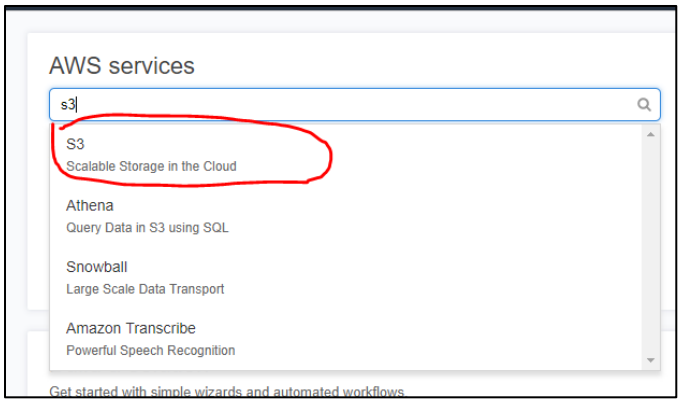

Figure 2 Search Bar

Select **S3.**

Step 1.3 – Create a Bucket:

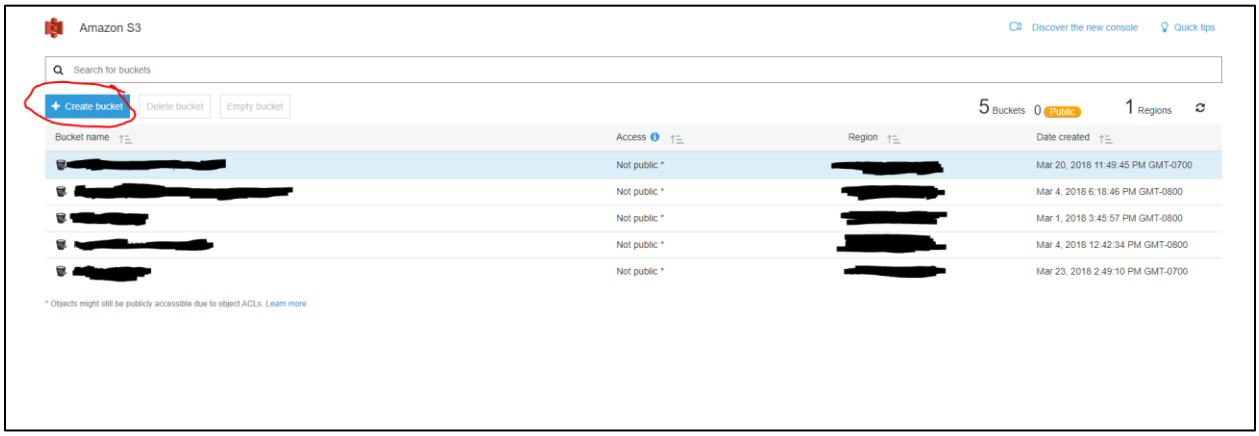

Figure 3 Amazon S3 Page. Personal details removed.

Click the button labeled “Create Bucket”, then choose a unique name for that bucket. **WRITE THE NAME DOWN. YOU WILL NEED IT LATER.** Keep pressing “Next” until you are at the summary, which should look like this:

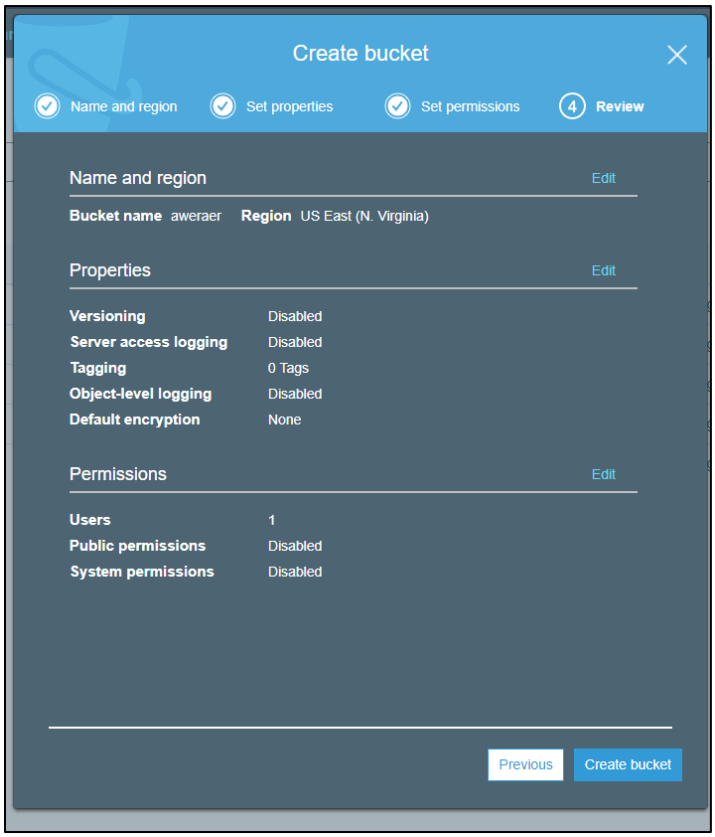

Figure 4 S3 Bucket Summary

Click “Create Bucket”.

Step 1.4 – Upload Code into Bucket:

Click on the bucket that you created. In my case, the bucket's name was "test1234notunique".

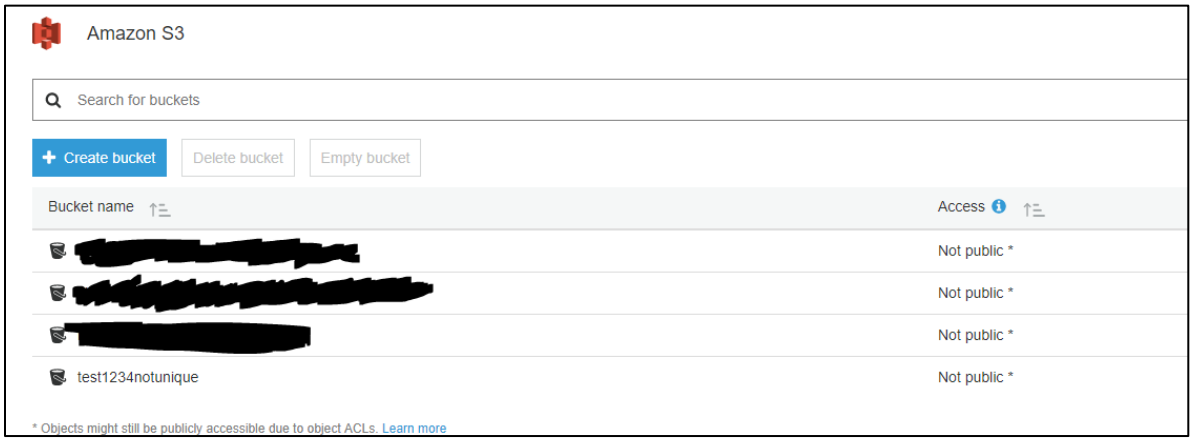

Figure 5

The screen should look like this:

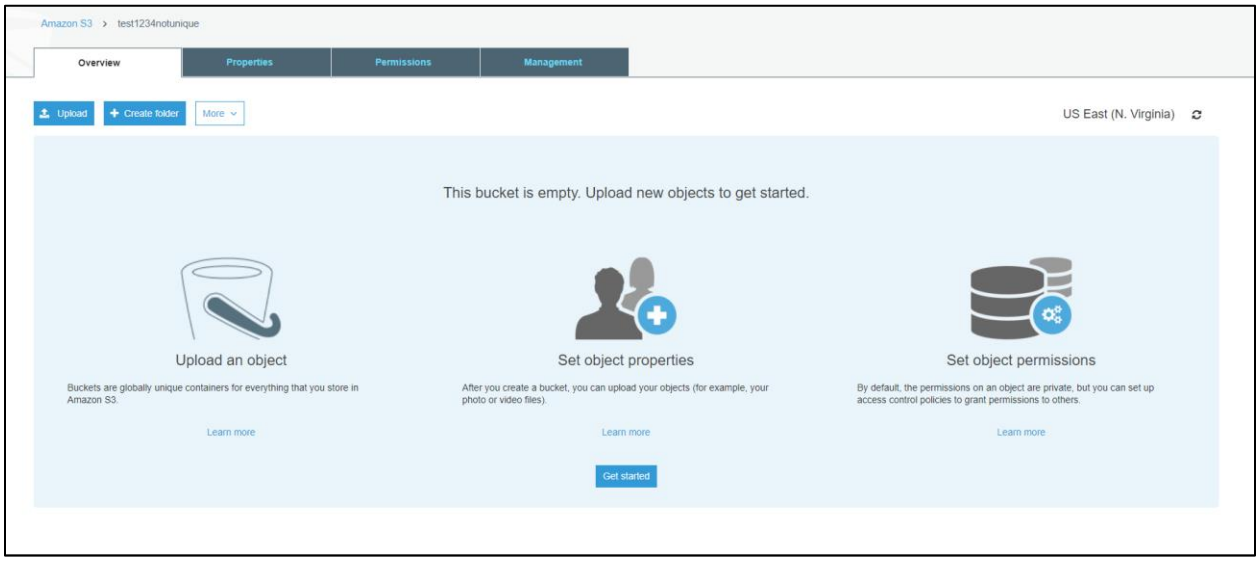

Figure 6

Drag the three folders in the Github repo labeled **graphcreator.zip**, **sd2db.zip**, and **sd2es.zip** into the bucket to upload them. Alternatively, you can upload them using the "Upload" button.

Step 1.5 – Generate stack using AWS Cloudformation

Go back to the landing page of aws.amazon.com. It should be the same page as depicted in Step 1.2, Figure 1. Use the search bar to find AWS Cloudformation.

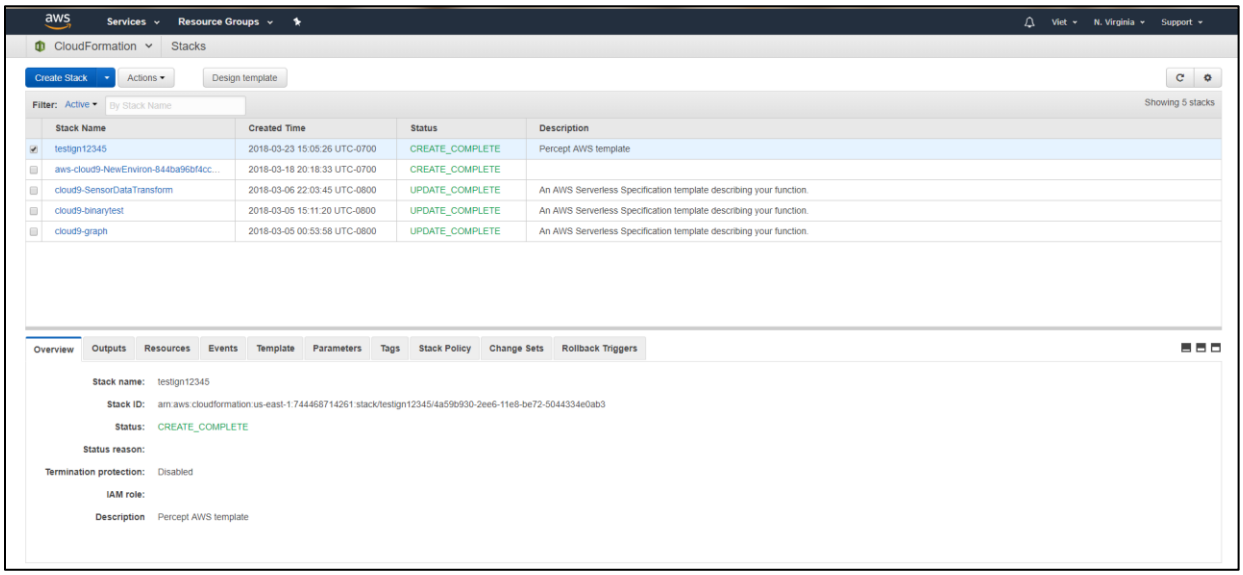

Figure 7 Cloudformation Landing Page

Click “Create Stack”.

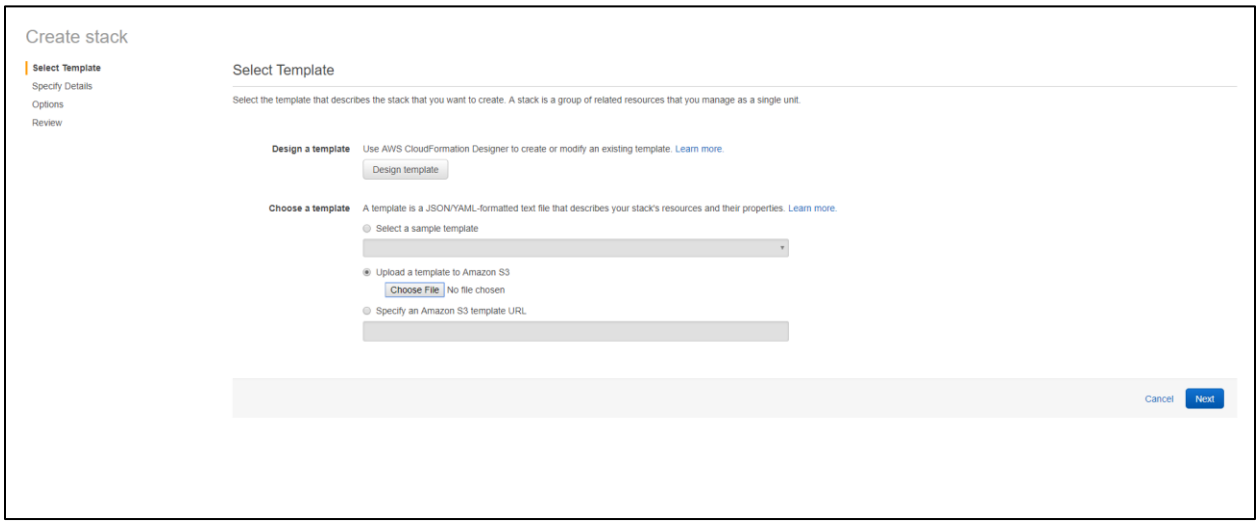

Figure 8 1st Page of Stack Creation

Choose “Upload a template to Amazon S3”. Upload **cloudformation.yaml** from the Github repo. Press “Next”.

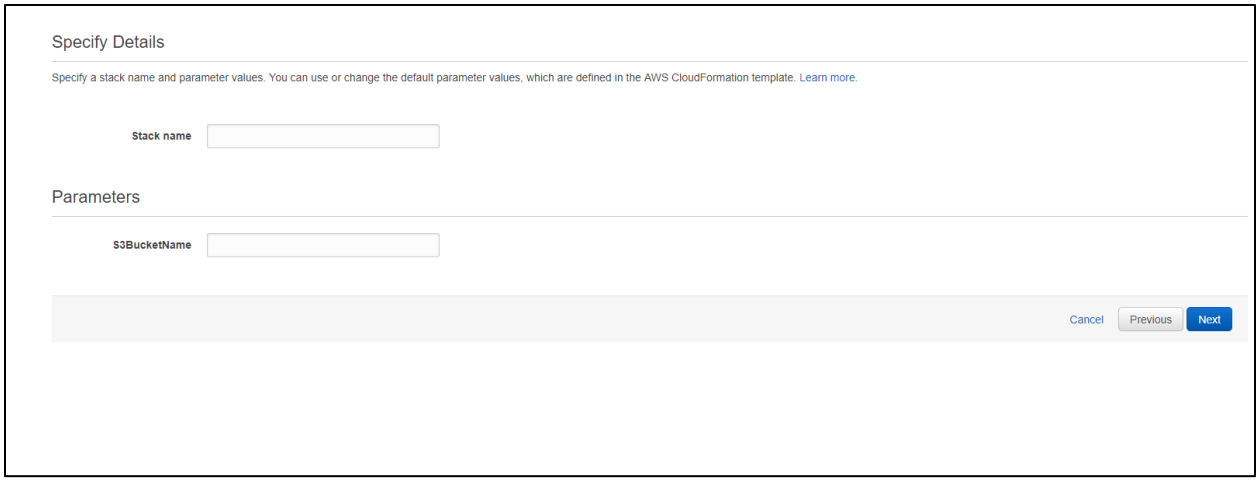

Figure 9 Stack Parameters

Choose a stack name. It must follow the regex pattern [a-z][a-z0-9\-]+. For "S3BucketName", input the bucket name you created in Step 1.3 – Create a Bucket. Press "Next".

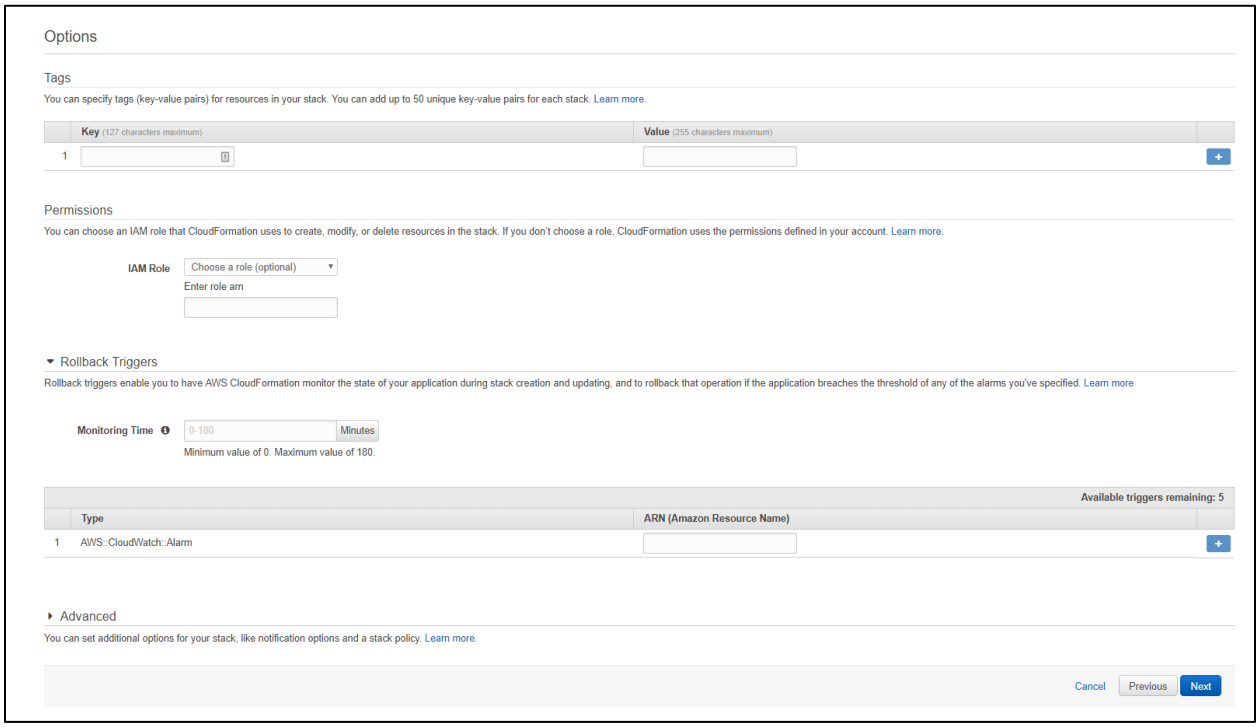

Figure 10

Press "Next".

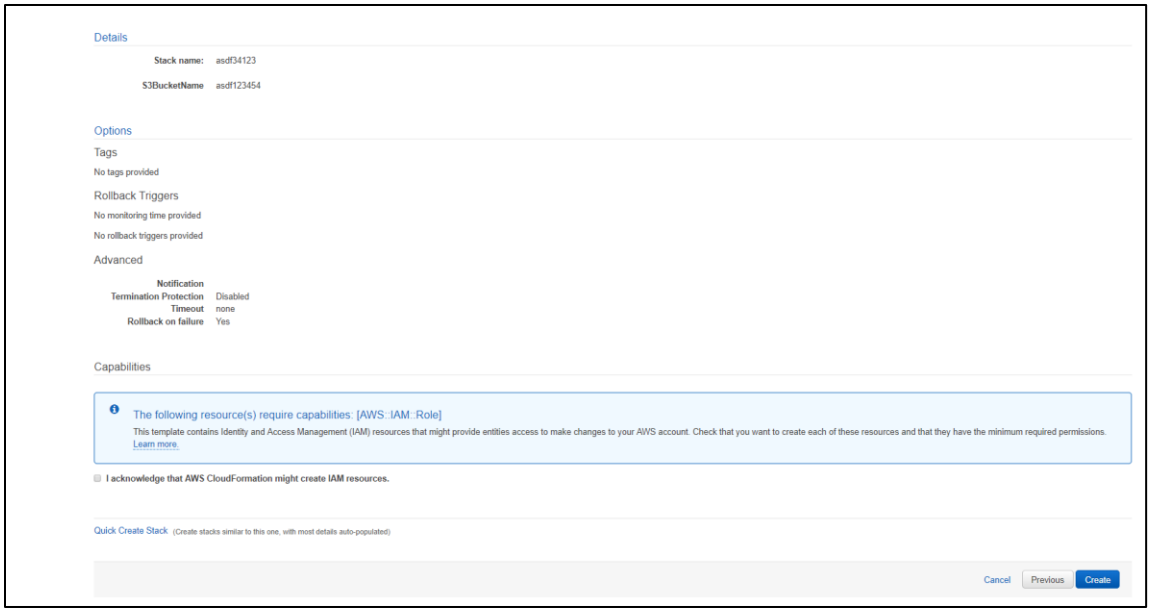

Figure 11

Check the box labeled “I acknowledge that AWS Cloudformation might create IAM resources. Press “Create”.

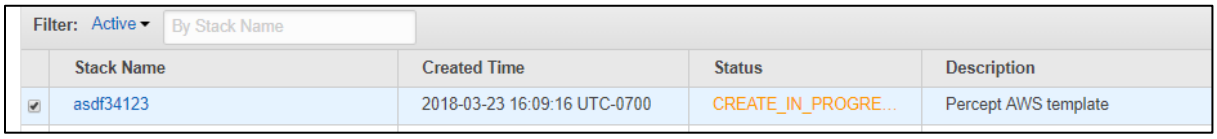

Figure 12

Wait until “CREATE_IN_PROGRESS” switches to “CREATE_COMPLETE”. You may need to refresh the page.

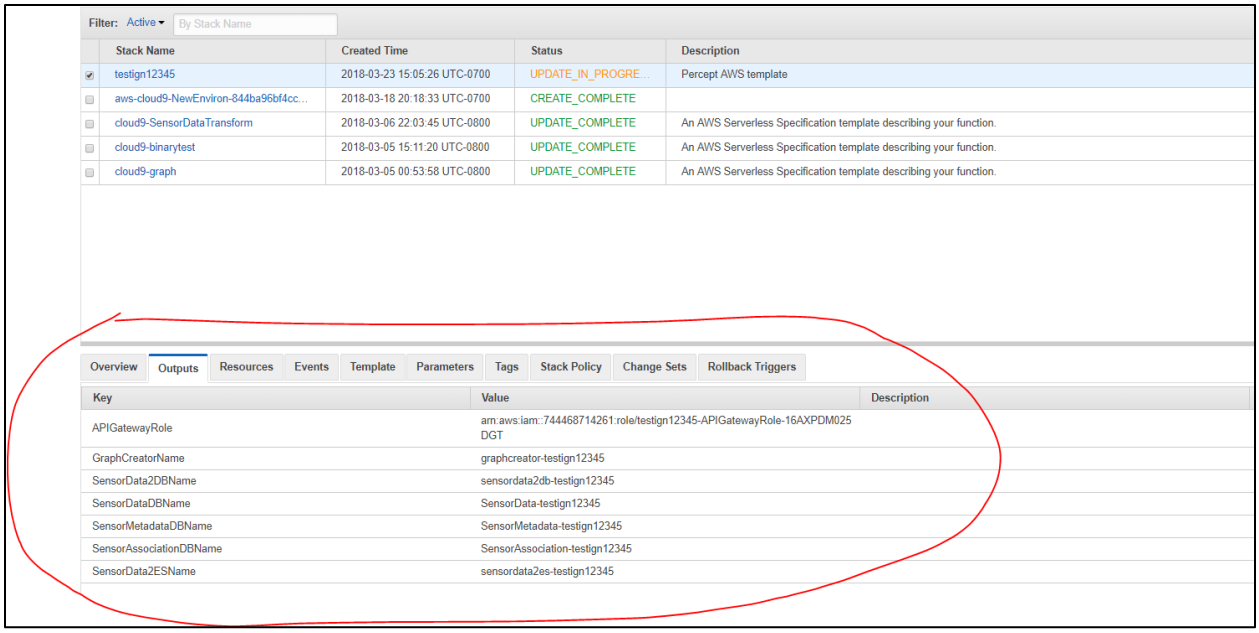

Figure 13

Select that stack and click on the "Outputs" tab on the bottom page. **Keep track of all the Keys and their corresponding Values. You will need them later.**

Part 2 – Set up REST API

Step 2.1 – Go to API Gateway:

Go back to the landing page of aws.amazon.com. It should be the same page as depicted in Step 1.2, Figure 1. Use the search bar to find API Gateway.

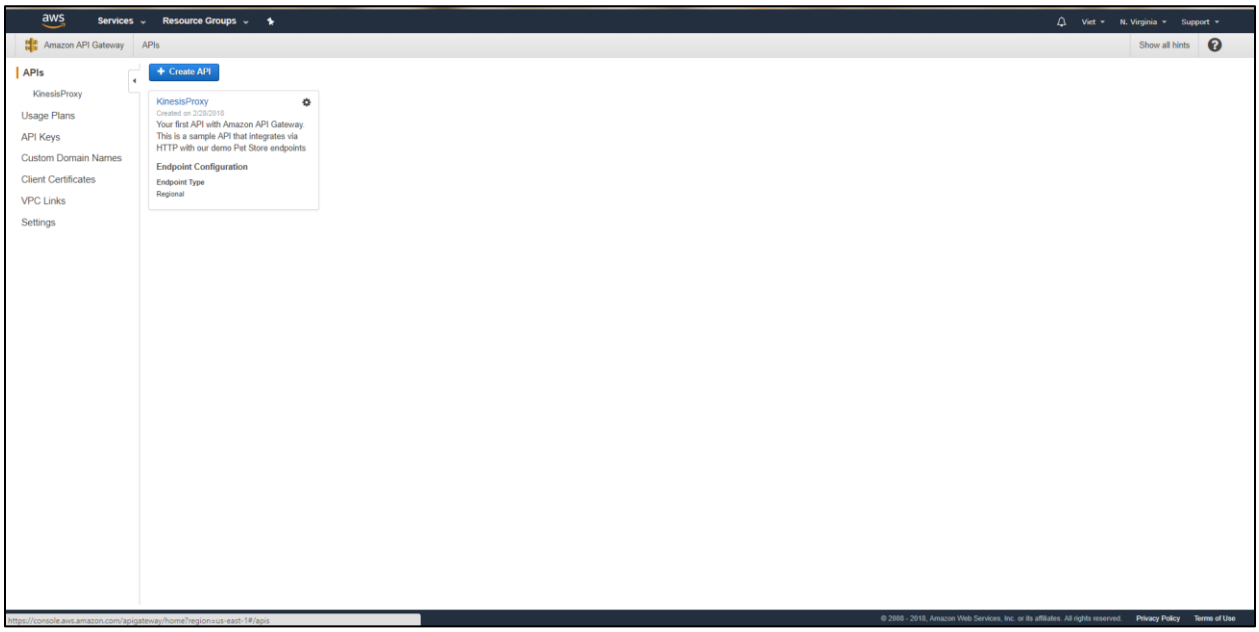

Figure 14

Step 2.2 – Create a new API:

Create a new API using the “Create API” button.

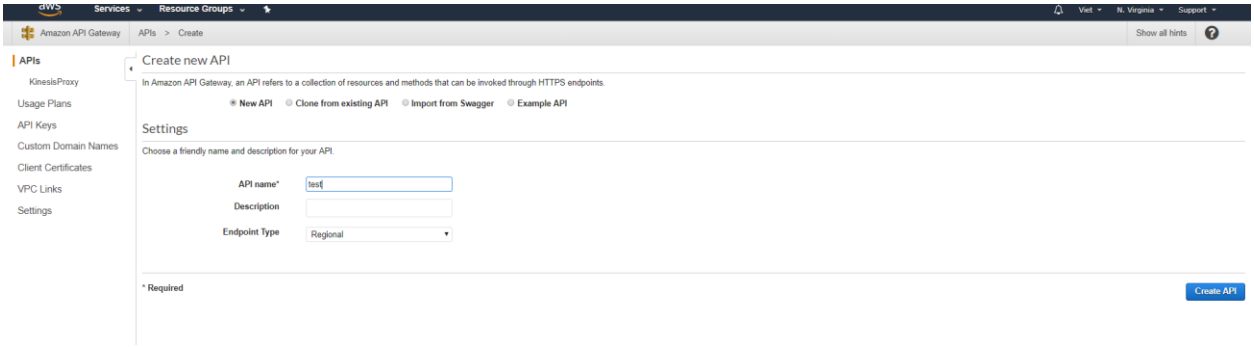

Figure 15

Choose “New API” and a API name. Click “Create API”.

Step 2.3 – Create Resources:

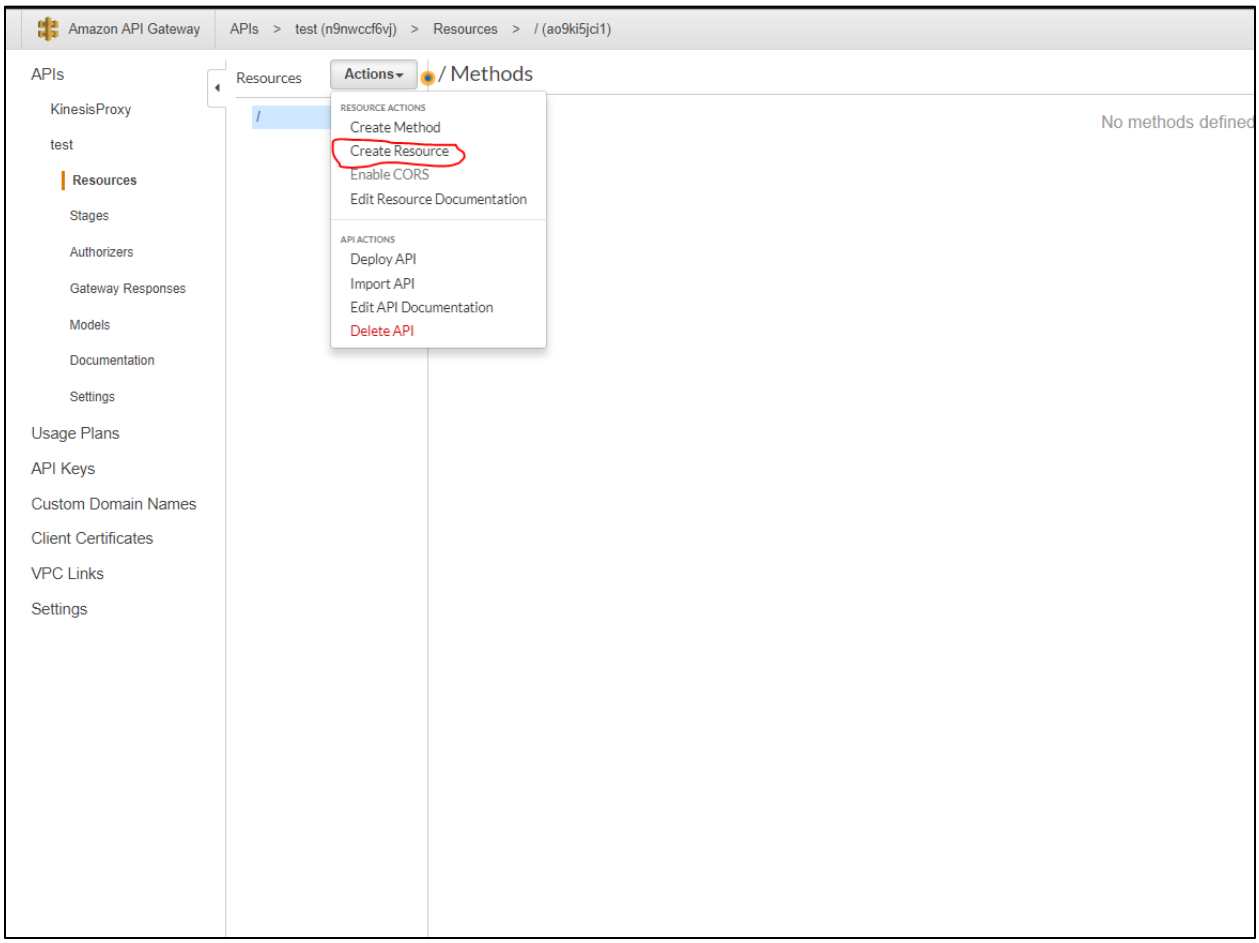

Figure 16

Select Create Resource. Make sure the existing resource "/" is selected.

Figure 17

For resource name, input "graph". Press "Create Resource". Repeat this step to create three other resources: "set-sensor", "sensor-association", and "sensordata". It should look like this now:

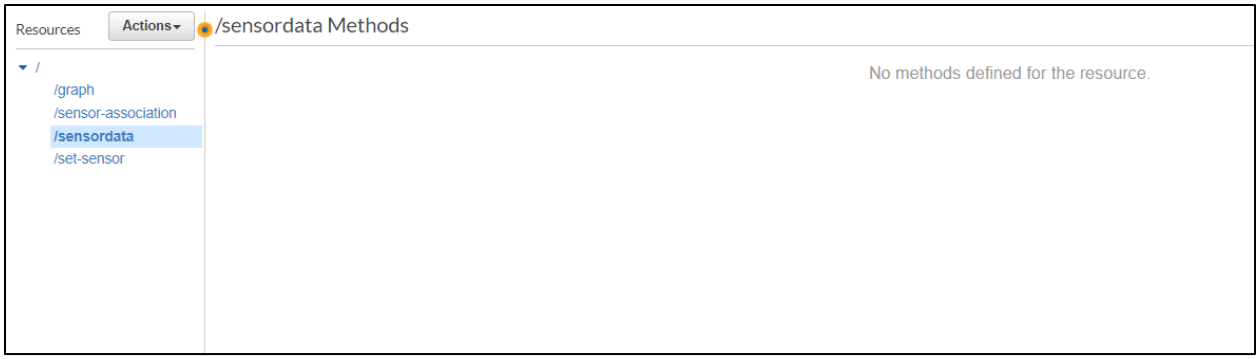

Figure 18 Resource Creation finished

Step 2.4 – Create Resource Methods for /graph

Select **/graph**. Create a GET method.

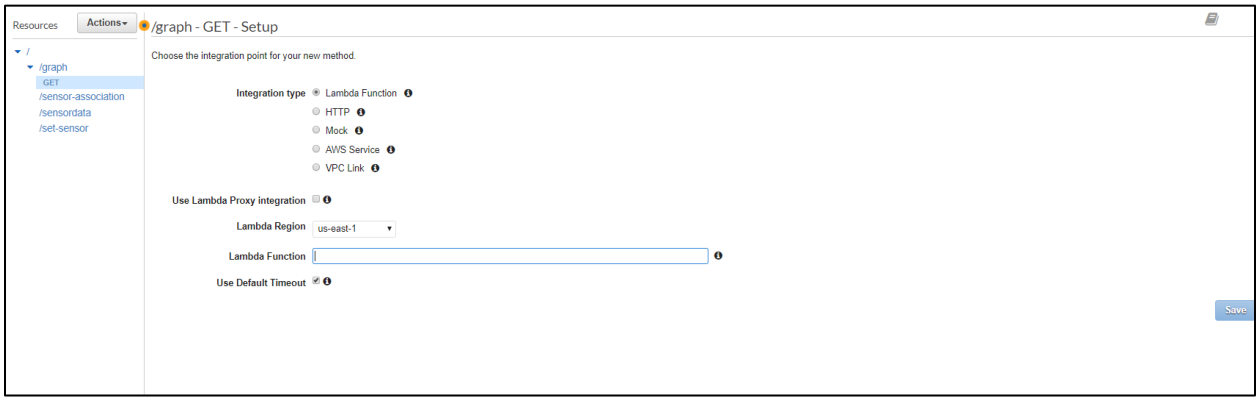

Figure 19

For the lambda function name, input the **GraphCreatorName** key from the Outputs in Step 1.5, Figure 13. Press Save.

Step 2.5 – Create Resource Methods for /set-sensor

Select **/set-sensor**. Create a POST method. Select **AWS Service** for Integration Type. Choose the AWS region in which you deployed your stack. Select DynamoDB for **AWS Service.** Select POST for the **HTTP Method**. For **Action**, input "PutItem". Copy and paste the **APIGatewayRole** value you got from the stack in Step 1.5. Press Save.

Step 2.6 – Create Method for /sensordata

Select **/sensordata**. Create a POST method. For the AWS Lambda function, input the **SensorData2ESName** value from Step 1.5.

Step 2.7 – Create Resource Methods for /sensor-association

Select **/sensor-association**. Create a POST method. Select **AWS Service** for Integration Type. Choose the AWS region in which you deployed your stack. Select DynamoDB for **AWS Service.** Select POST for the **HTTP Method**. For **Action**, input "PutItem". Copy and paste the **APIGatewayRole** value you got from the stack in Step 1.5. Press Save.

Great! You're all done. Go ahead and use some of the items in the test folder to test it out.