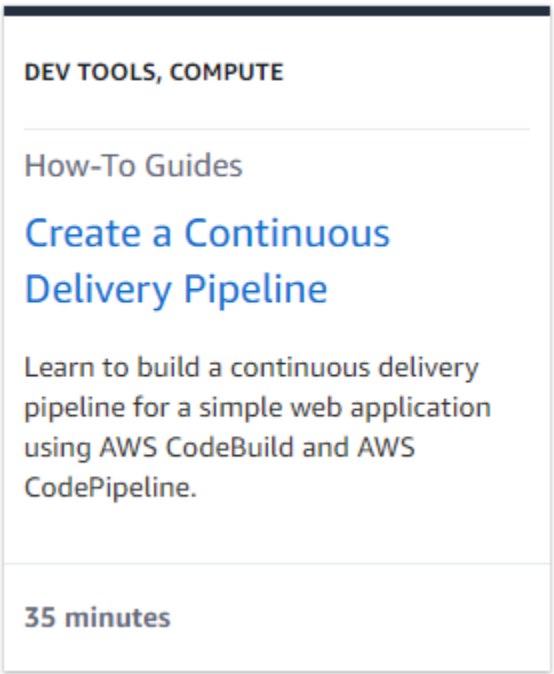
Loc Nguyen

CS.4650.02

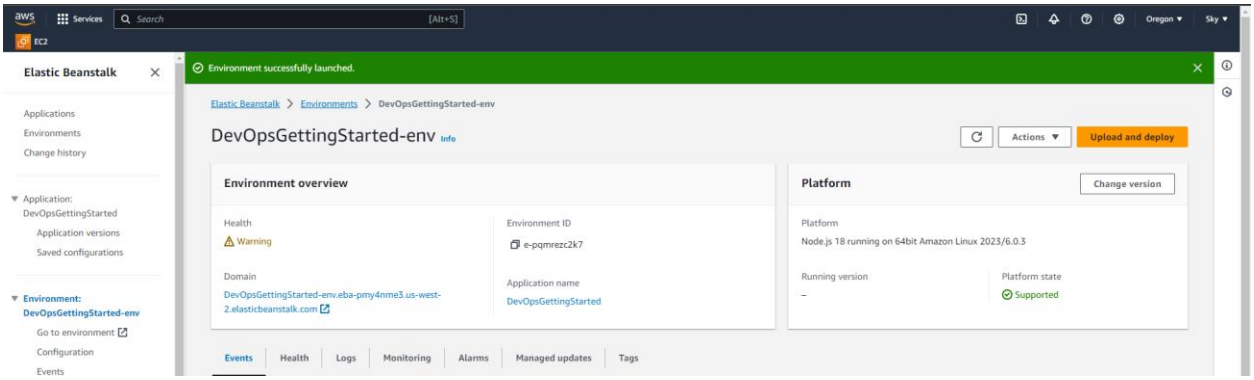
Professor Johanssen

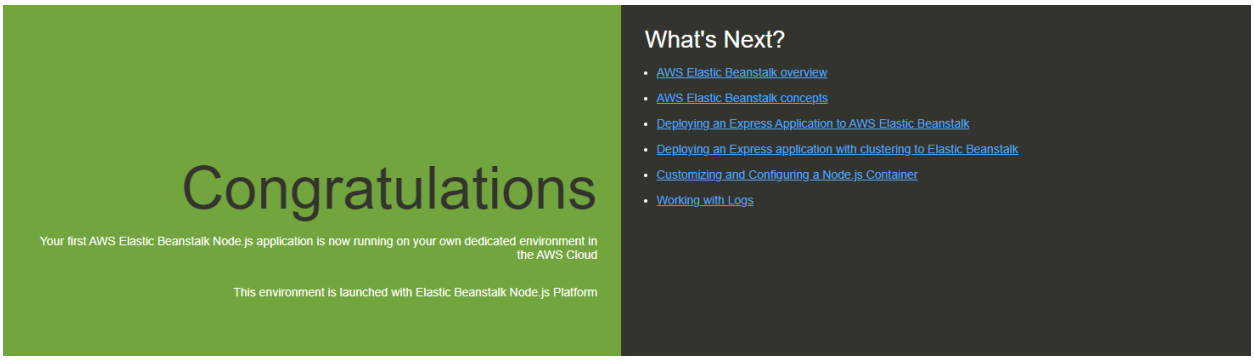
Tutorial 1 – Setting up Continuous Delivery Pipeline



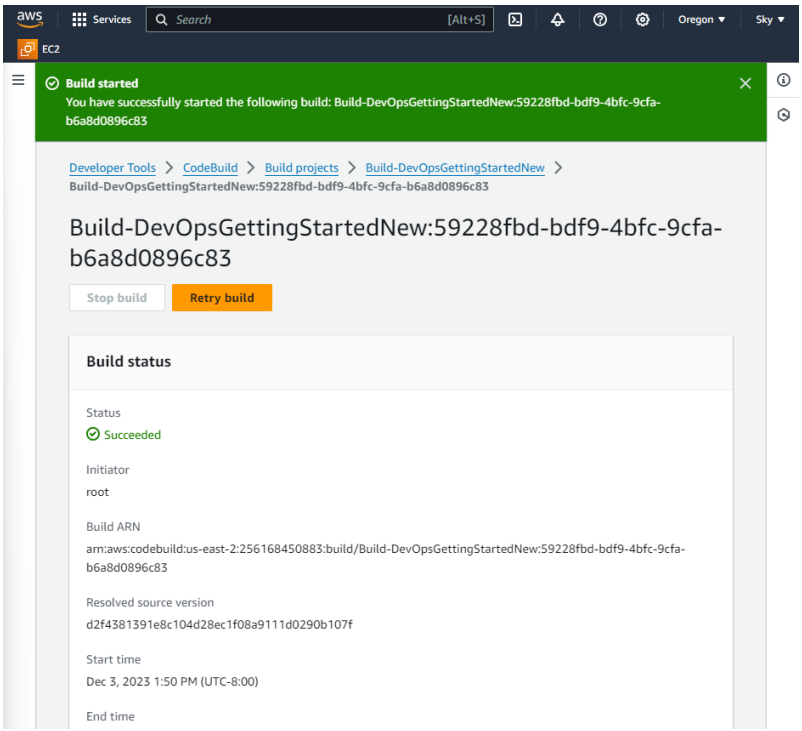
Background – Currently, I'm working on a web application that deploys continuously from GitHub. However, that deployment is with GitHub workflows and is only 1-way, from GitHub repo to AWS EC2 instance. Users data will be written onto the live server database but that information doesn't get written back to the GitHub database repo file. Hence, every time new patches are pushed, the server database which contains data will get overwritten by the GitHub empty database file. This is a good opportunity for me to learn proper CI/CD pipeline.

1. Launching a web-app with NodeJS using AWS Elastic Beanstalk

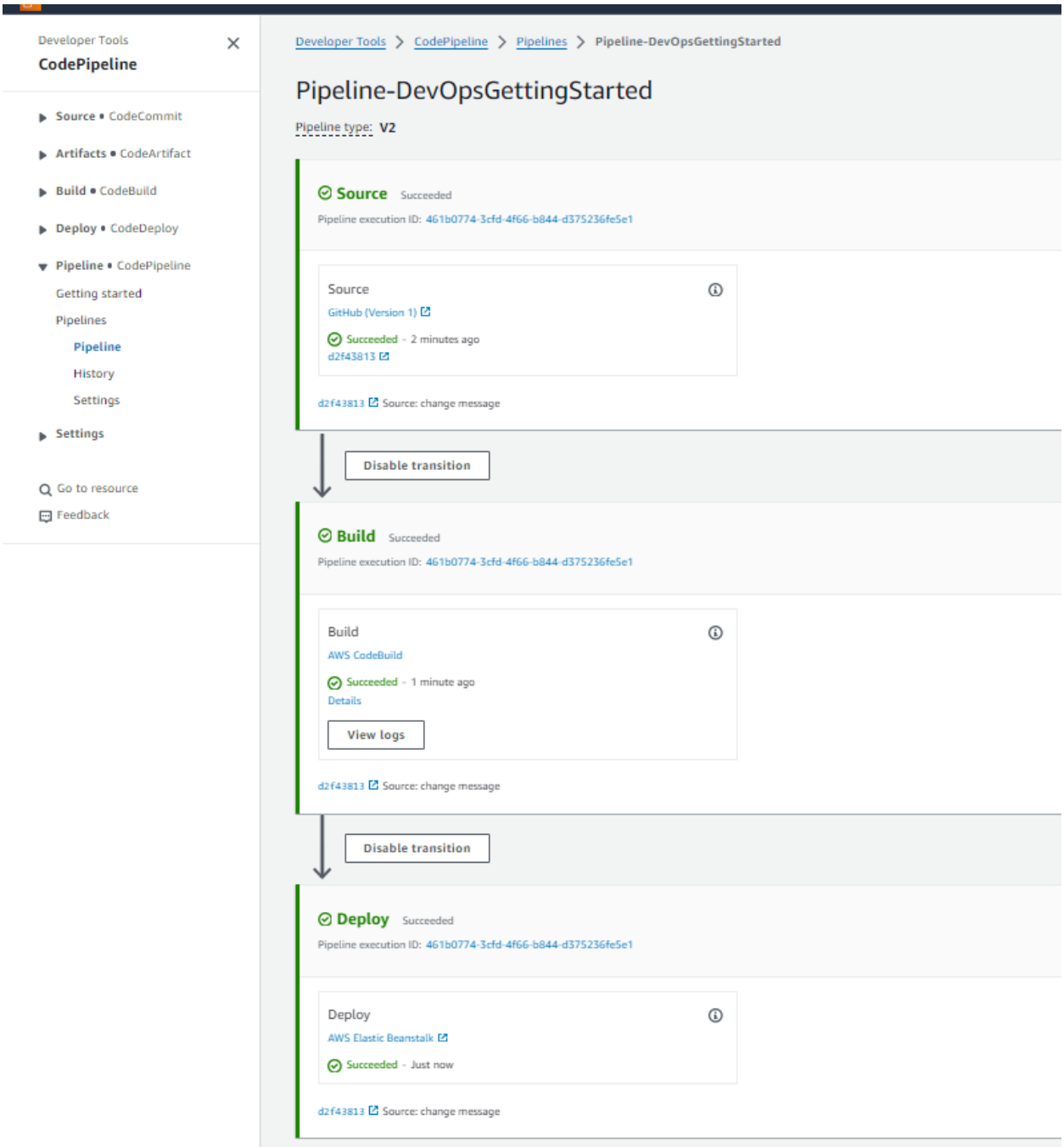




2. Using CodeBuild for continuous integration using GitHub as source repo

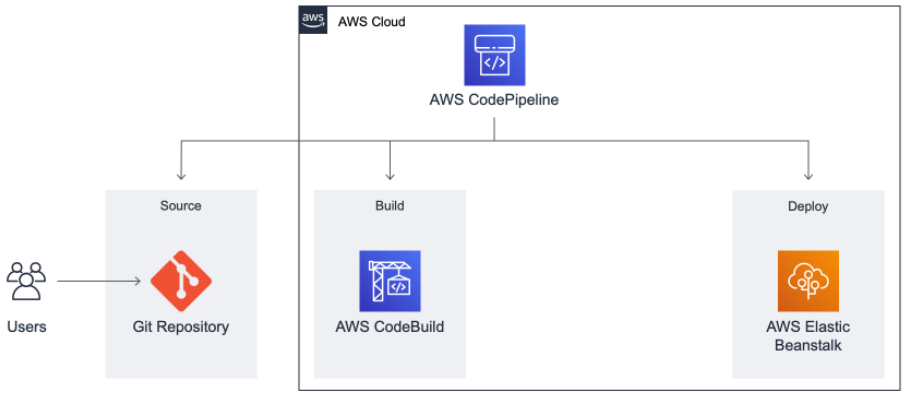


3. Use CodePipeline for continuous deployment with GitHub as source repo and CodeBuild for auto build and testing

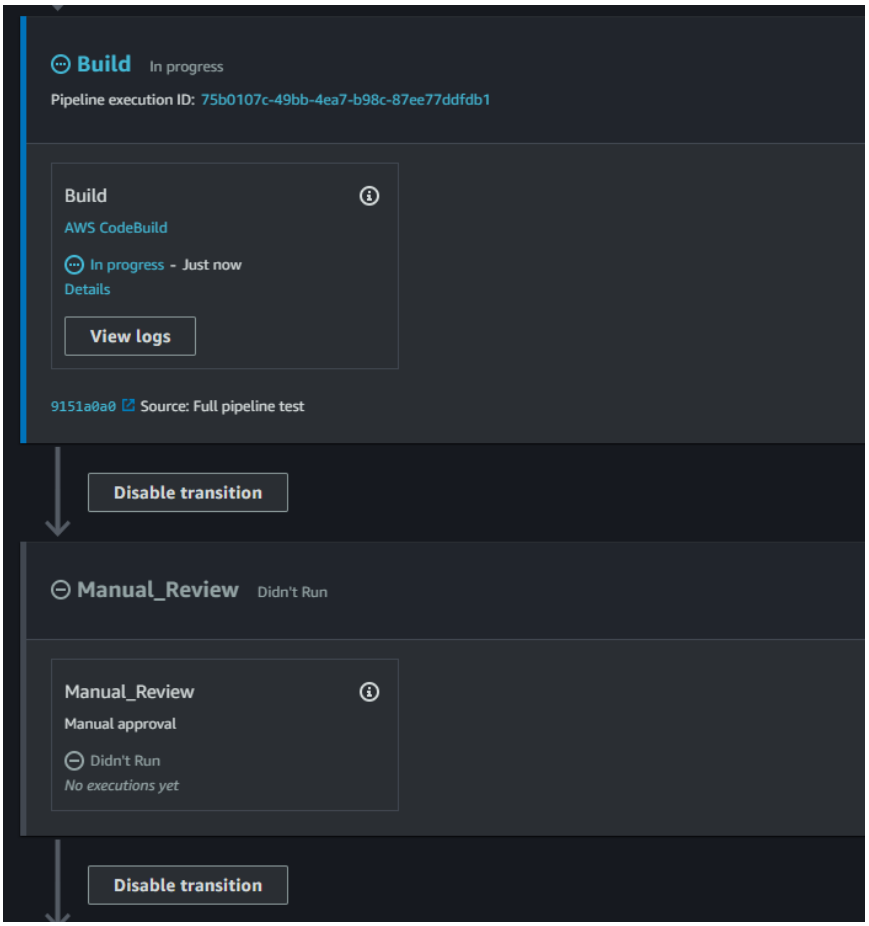


Application architecture

Here's what our architecture looks like now:



4. Adding manual review as a step to code deployment pipeline. Print out a line “I love blue” to test the pipeline

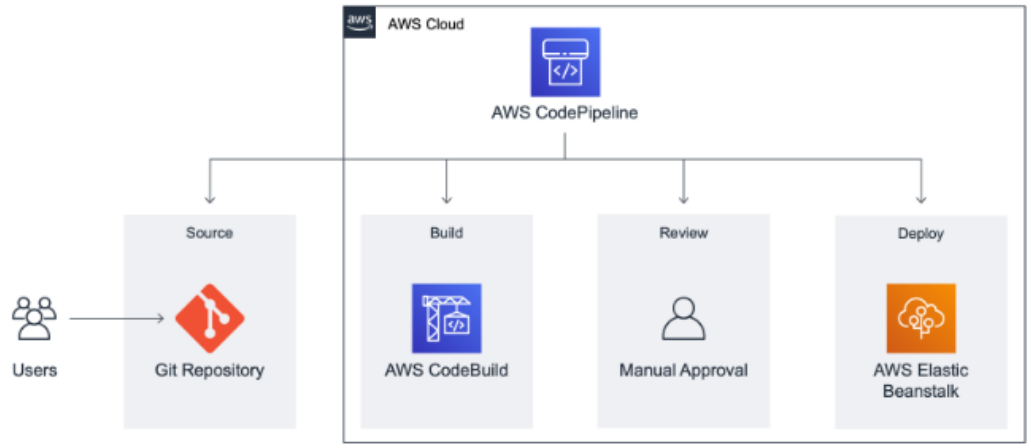


> I love blue

5. Winding down and deleting resources
6. Final architecture

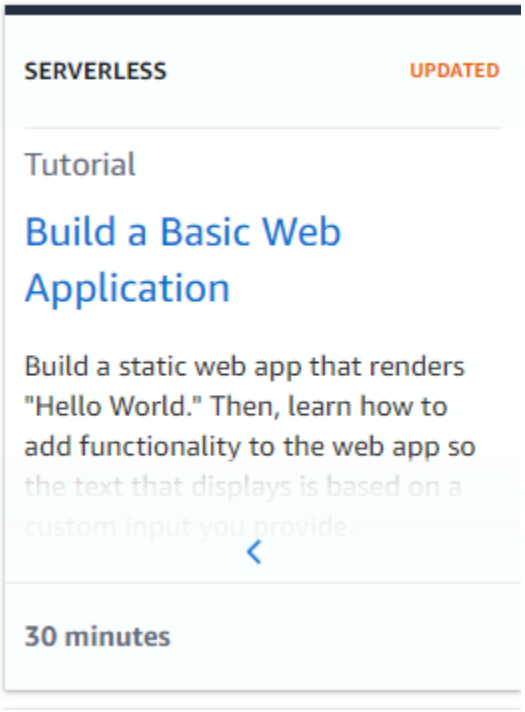
Application architecture

With all modules now completed, here is the architecture of what you built:



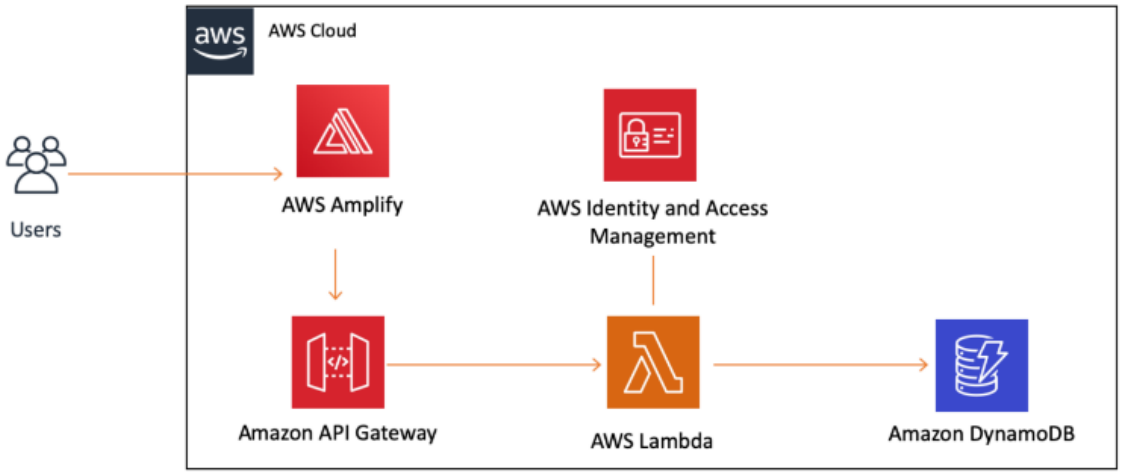
I'm super proud that I know a little bit more about how to deploy code secured and fast with AWS microservices. I do want to learn more about domain registration and firewall policies when deploying a production websites versus a development website.

Tutorial 2 – Build a Basic Web Application Static and serverless

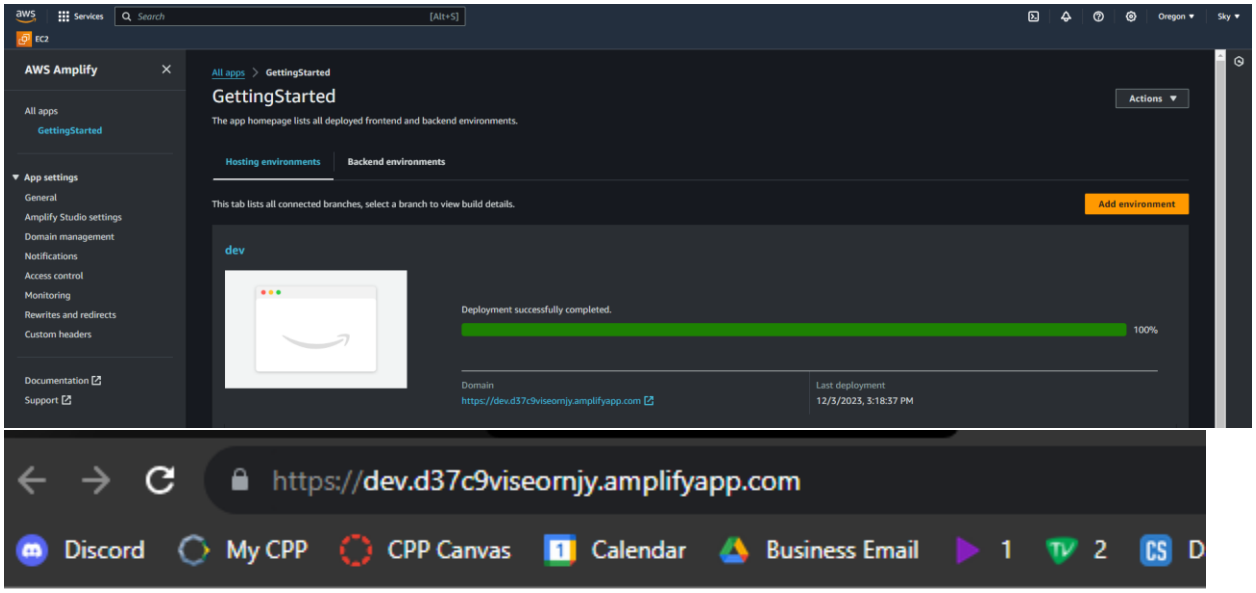


Background – Web application are great for new businesses. I'm excited to learn more about different ways to create web app

1. Overall architecture

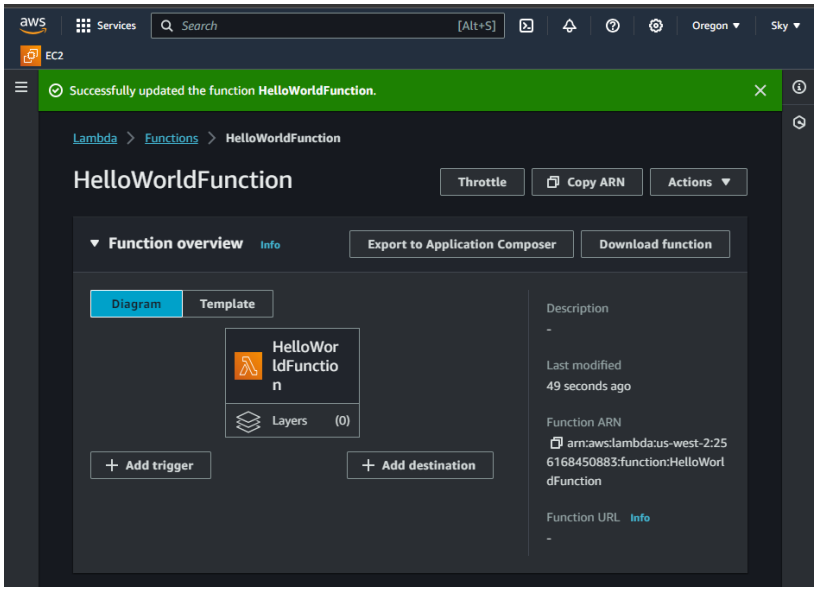


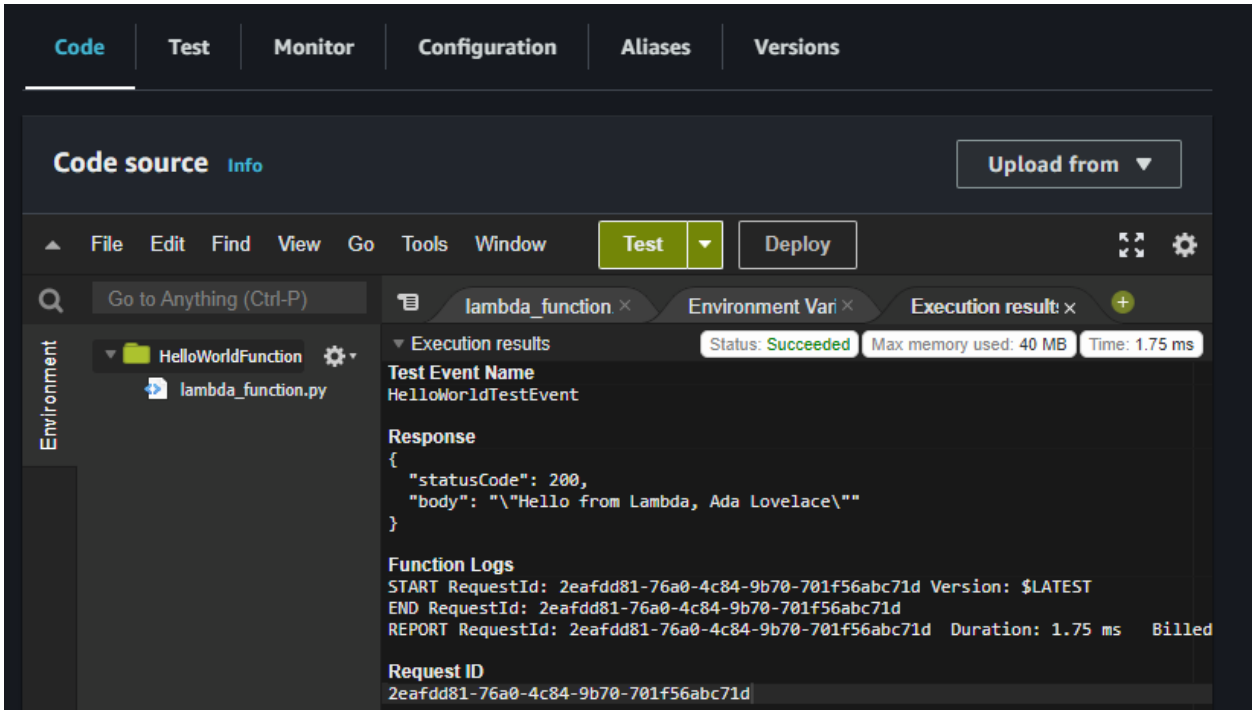
2. Deploy the web app with zip file index.html with AWS Amplify



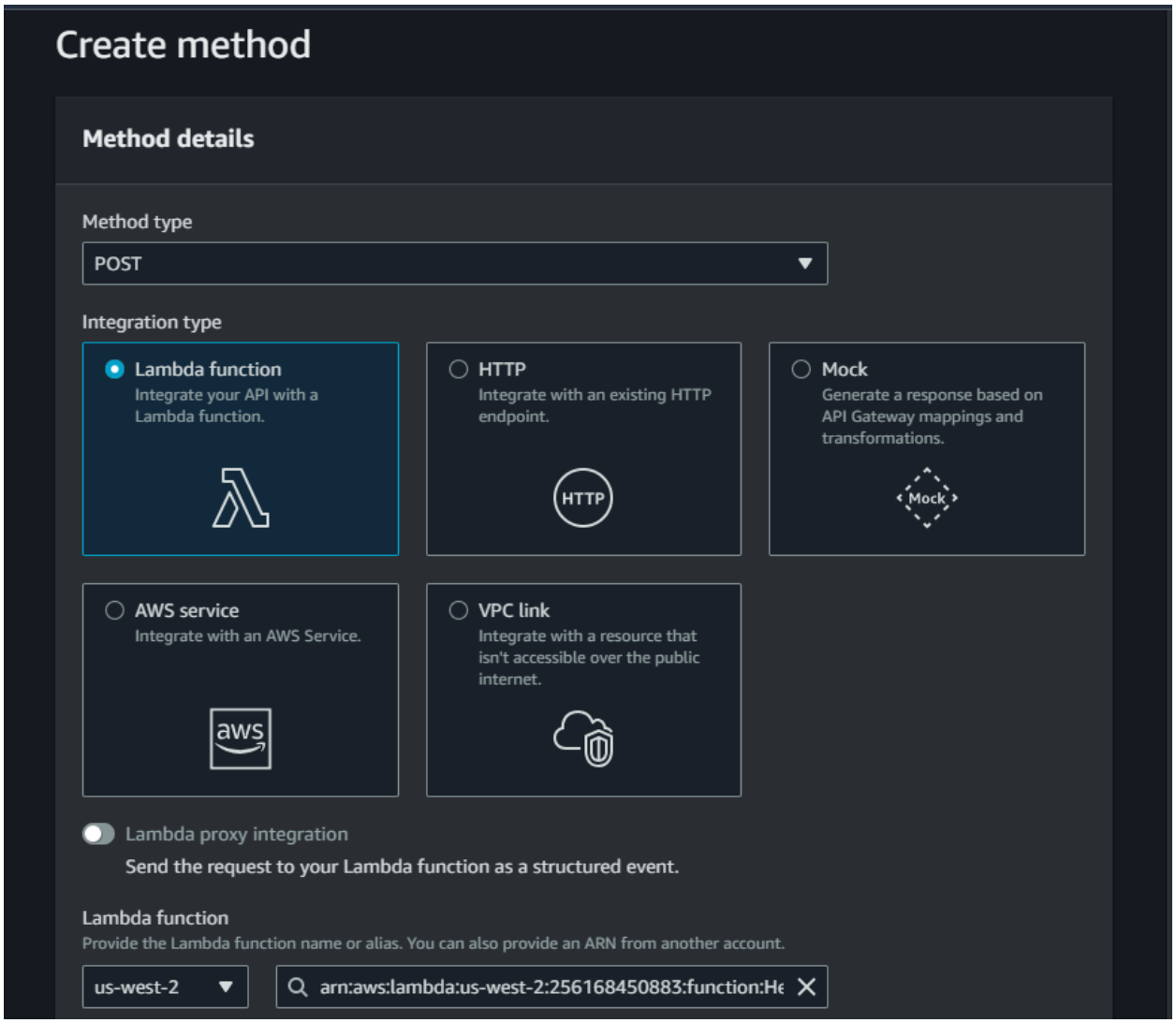
Hello World

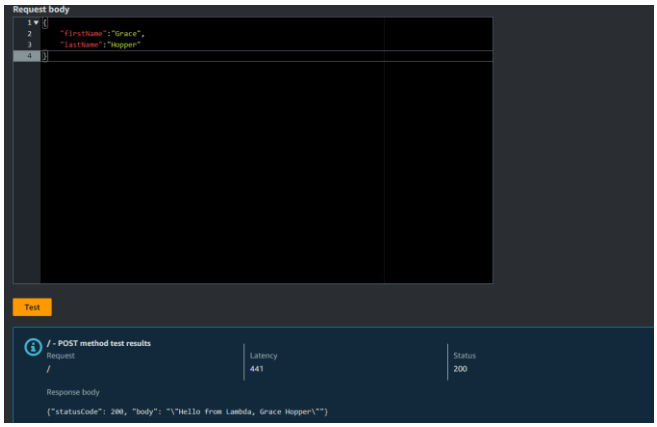
3. Create serverless functions with AWS Lambda and test it



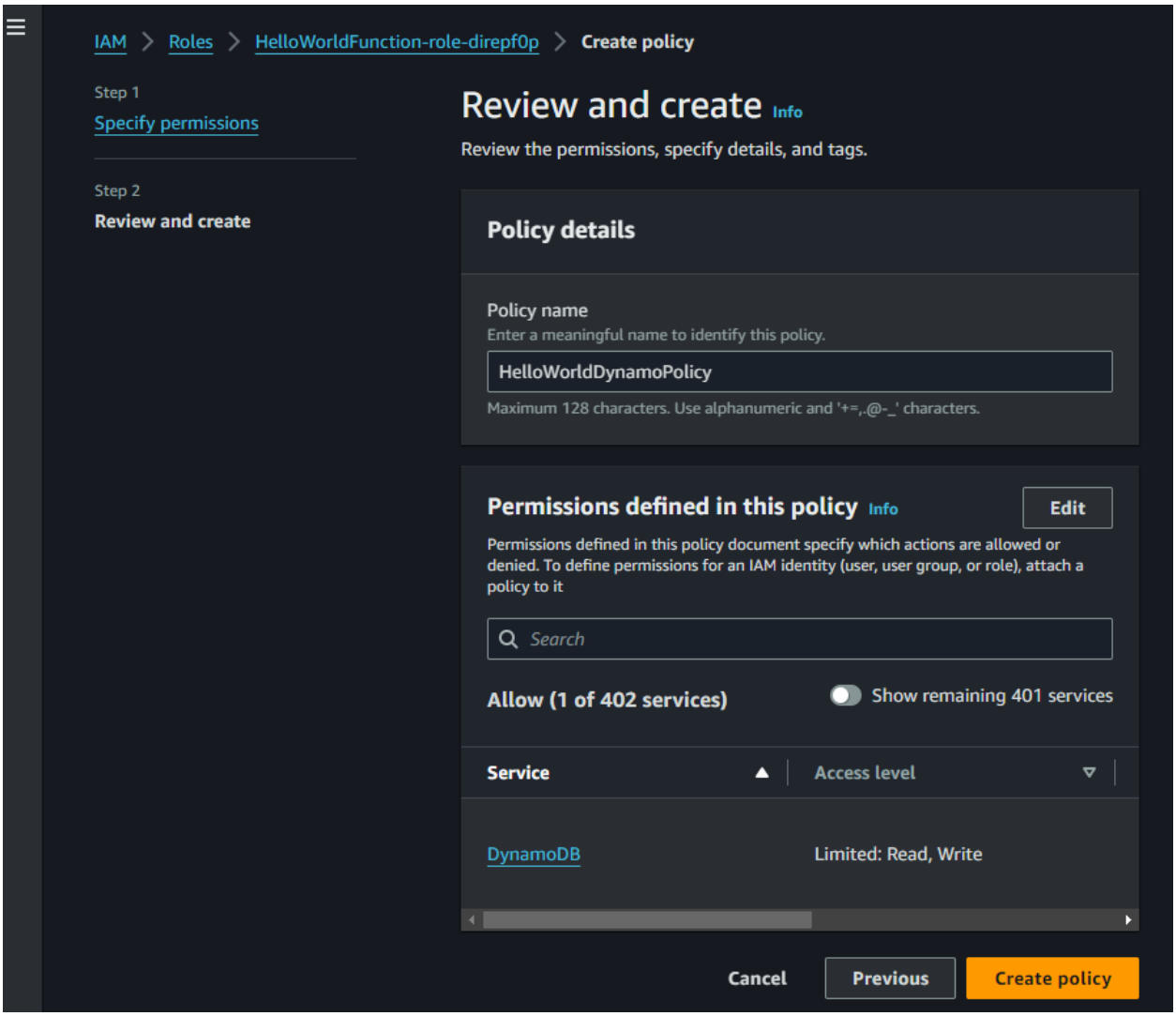


4. Use Amazon API Gateway to create RESTful API to make calls to Lambda function from web client. Successfully deployed an API and tested it. Response with code 200 OK.

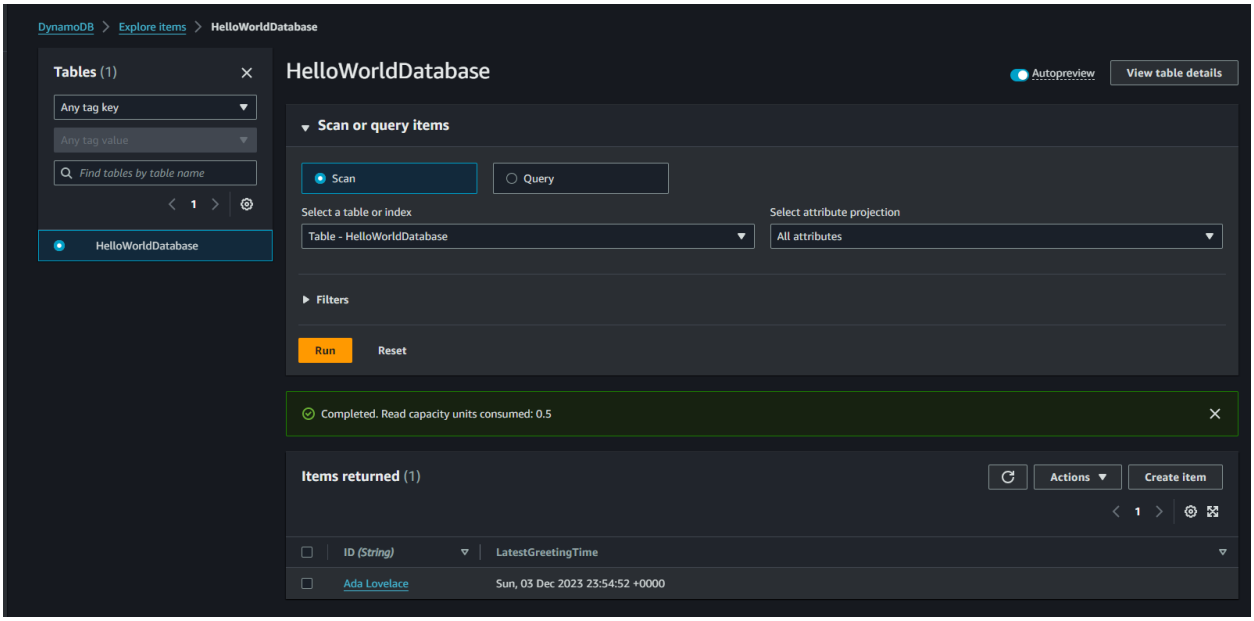




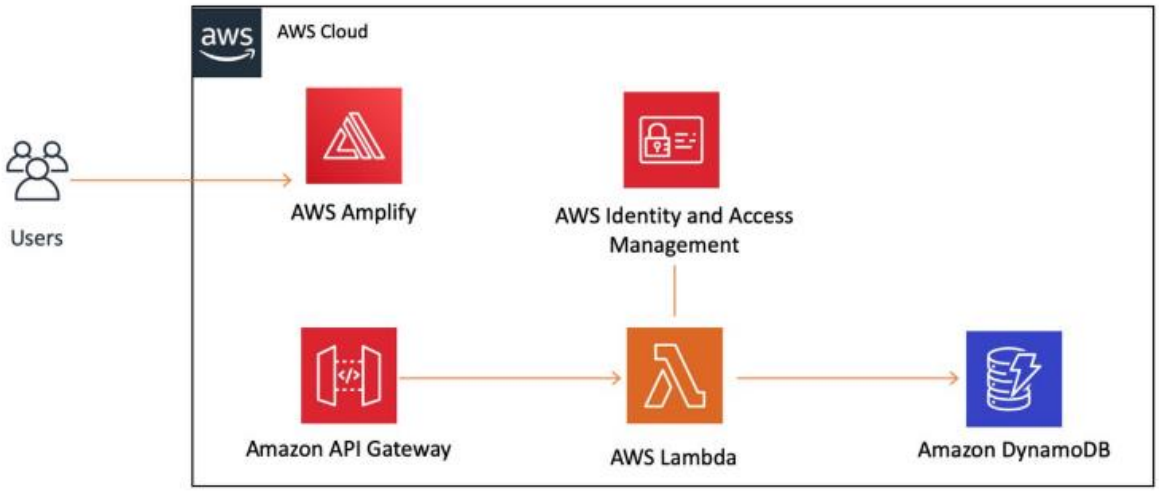
5. Use DynamoDB to store data. Use AWS IAM to give services permissions to interact with each other.
   Created a DynomoDB table and IAM policy



Tested and made sure data is written into the DB



Current Architecture

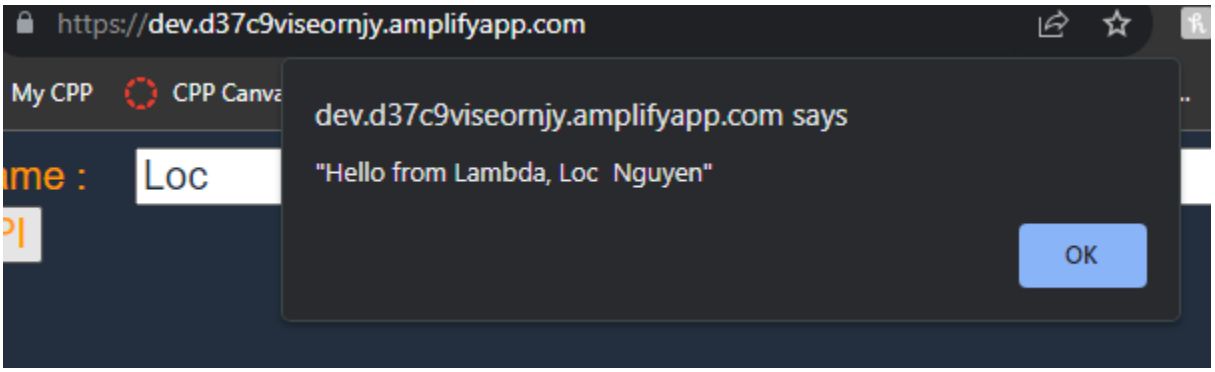


6. Call an API Gateway from an HTML image

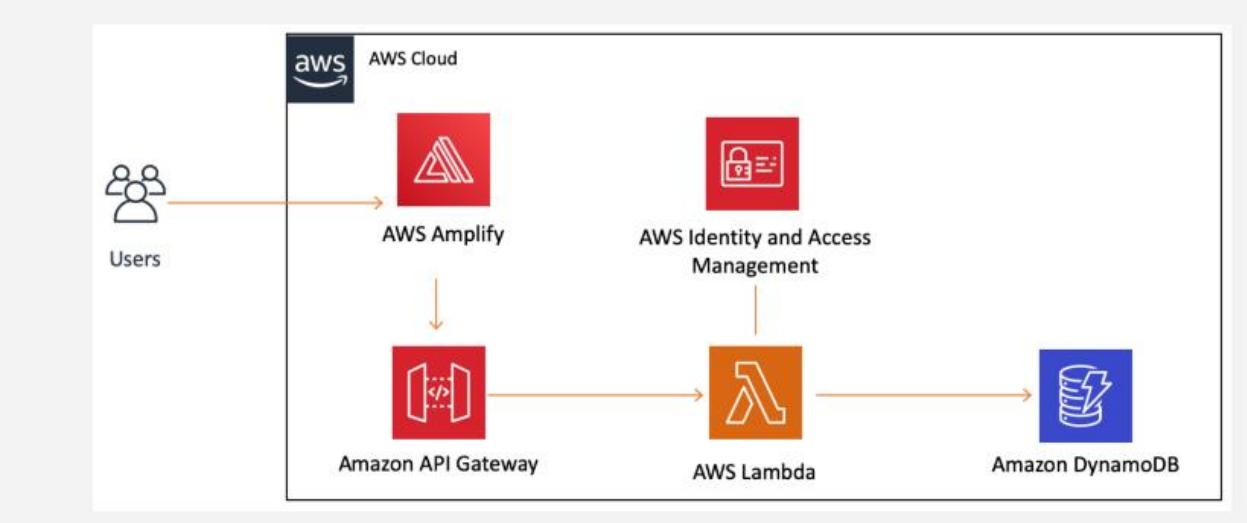
Modify the original HTML to call the API Gateway using the invoke URL - https://2jl7k63sh2.execute-api.us-east-2.amazonaws.com/dev and deploy it on AWS Amplify

```
        redirect: 'follow'
    };
    // make API call with parameters and use promises to get response
    fetch("https://2jl7k63sh2.execute-api.us-east-2.amazonaws.com/dev", requestOptions)
    .then(response => response.text())
    .then(result => alert(JSON.parse(result).body))
    .catch(error => console.log('error', error));
```

Tested the interactive website with an API call



Final application architecture



End of lesson takeaway – super stoked to learn how web applications deployment work and will incorporate my learning into future projects. I'm curious about limitations behind this process and thinking about how I can utilize this to make a weather app calling the OpenWeather API that's has 1000 free API call everyday.