Dilraj Bal WA

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Software Experience

Containerized Flask API deployed on Kubernetes

Containerized and deployed a Flask API to Kubernetes using **Docker**, **AWS EKS**, **CodePipeline** and **CodeBuild**

- **Build & Test** – Built a Flask API with three exposed **REST** endpoints performing CRUD operations such as **retrieve** health check, **create** JWT token for a given email/password and **retrieve** an un-encrypted content of the JWT token. **Containerized** the application and tested it locally using Gunicorn. **(Docker, Flask, Python**)

- **Deployment** – Deployed service to an EKS cluster with 3 worker nodes. (**AWS EKS, CLI, EKSCTL, KUBECTL**)

- **End-to-end Pipeline** – Created a **CI/CD** pipeline using CodePipleline and CodeBuild which triggered upon merging in GitHub. Relevant permissions allocated to CodeBuild to create and store container image on **AWS ECR**. Endpoints tested using curl (**AWS CodePipeline, CodeBuild, Parameter Store**)

Serverless Application on AWS Lambda

Developed a **CloudFormation** template that deploys AWS Resources to create a Chuck Norris joke emailer

- **GET and sent bad jokes** – Created a **serverless** application using **AWS Lambda**. Application retrieved content from an **opensource API** and sent it to the subscribed users via **SNS topic** based on a 24 hour **event trigger**. (**AWS Lambda, SNS, APIs, Python**)

- **Sub/Unsub Users** – Second Lambda function configured to handle Sub/Unsub requests from API Gateway and to add or remove users from the SNS topic using respectively exposed **REST** endpoints. **(AWS Lambda, API Gateway, IAM role & SNS topic, Python, Postman)**

- **CloudFormation Template** – Entire stack encapsulated in a **Cloudformation** template that deployed all the **AWS** resources including API Gateway and endpoints, 2 Lambda functions, SNS Topic and necessary **IAM roles**. (**AWS Cloudformation, Lambda, API Gateway, Python**)

Work Experience

OCT 2019 – PRESENT
Manufacturing Test Engineer / Enersys

- Developed multiple Bed-of-Nails(BON) fixtures meeting **deadlines** amidst requirements and schedule changes
- Yield data analysis using Python to determine test software bug and recommended fix (**Python**)

JAN 2018 – OCT 2019
Systems Engineer / Systima Technologies

- Project Engineer on Lockheed Martin's separation system. **Managed** schedule and cost, coordinated across multiple teams, assigning **responsibilities**, **communicating** project status to stakeholders and customers directly.
- Developed project dev **testing plans** outlining scope, program and facilities requirements, procedures, and schedule

Education

AUGUST 2015 – JUNE 2017
(B.S) Aerospace Engineering / University of Washington, Seattle

GPA: 3.34/4.0 – Capstone Project: Wildland Firefighting UAV Startup

Skills

Languages/Courses: Python, C, Matlab, SQL, PostgreSQL, CSS, HTML, Data Structures & Algorithm