SWE645 - Assignment 2

Teammates

- Chandra Kiran Viswanath Balusu - G01351345
- Hemanth Kumar Reddy Tiyyagura - G01350509
- Anusha Bhavanam - G01348764
- Bharat Chandra Nimmala - G01346154
- Siva Satyanarayana Raju Pusapati - G01355494

Contributions

- Chandra Kiran Viswanath Balusu - `Wrote the jenkins file and configured the jenkins`
- Hemanth Kumar Reddy Tiyyagura - `Provisioned the kubernetes cluster in GCP and wrote the k8 manifest`
- Anusha Bhavanam - `Wrote the docker file for the multi stage build and pushed into the container registry`
- Siva Satyanarayana Raju Pusapati - `Worked on the Rancher Deployment and managed the servies for the public account in GCP`
- Bharat Chandra Nimmala - `Worked on git hub web hooks and git hub commit status`

Installation and Setup

- Jenkins
  - Provisioned a VM on GCP and Starting it as a jenkins system service using `systemctl`
  - Using a Caddy Reverse Proxy to expose the port `8080` to the web using the generated ssl certificated
  - Our Jenkins is deployed at `https://jenkins.chandu.ml`
  - Installed everything thats required to run the pipe line i.e `git`, `docker` and some jenkins modules
  - Wrote the `Jenkinsfile` and Confifured a Job that can complete CI/CD when a web hook is received from the github
  - We made a four stage CI/CD (Git Checkout, Docker Image Build, Docker Image Push, Push Changes to K8s
  - We Used Service Accounts which are robot accounts provided by google for authorization purpose with their API's
- Rancher
  - We created another Virtual Machine in GCP and installed docker in it
  - We Provisoned Rancher Kubernetes Engine Using the Official Docker image provided by the Rancher
  - The Same Service Accounts are used to Authorize to GKE here
  - Our Rancher Instance is available at `https://rancher.chandu.ml`

Github Repository

- Github - Private Repository

Video Demonostration

- Youtube

AWS EC2 of Part 1

- AWS S3 URL

K8s Load Balancer URL

- GCP K8s URL