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Task: Deployment #1 Documentation – Setting up of Pipeline for CCI/CD

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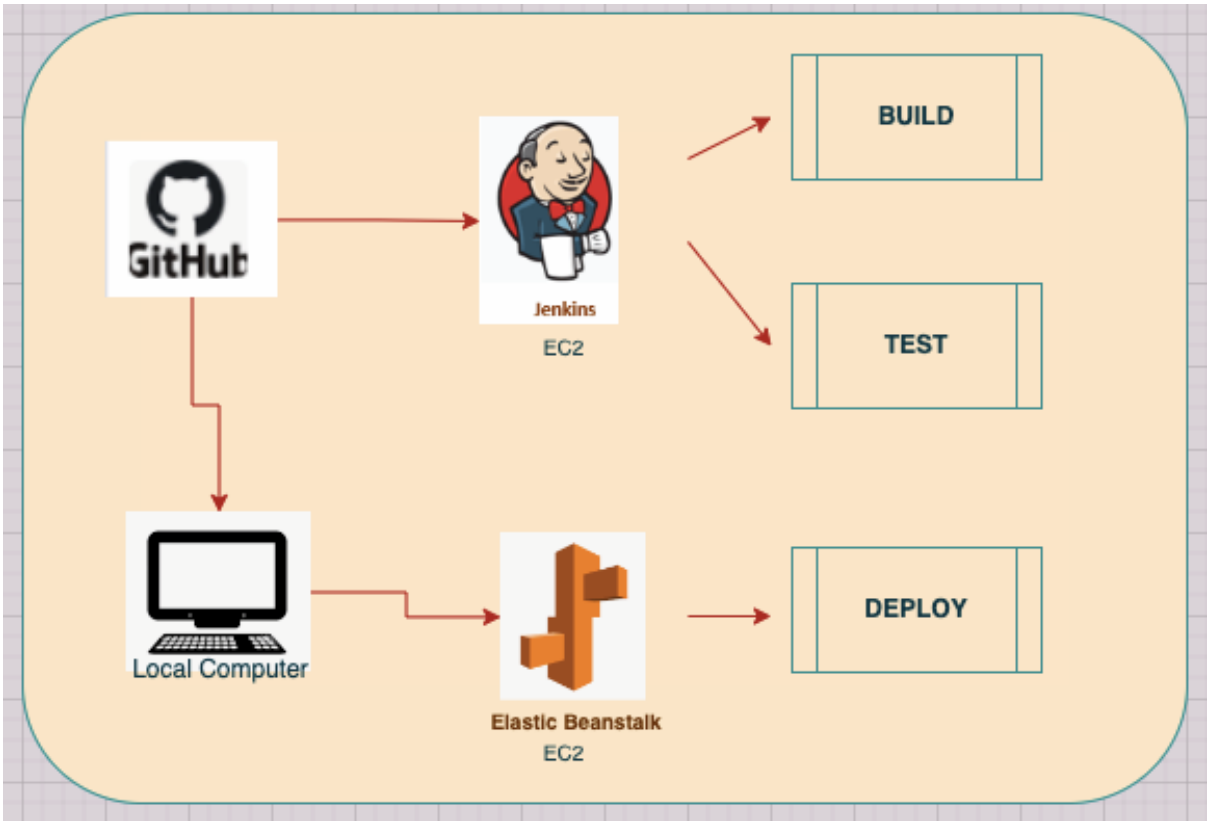
DIAGRAM



DOCUMENTATION

This deployment utilized the following tools/services:

- GitHub Repository
- AWS EC2
- Jenkins
- Elastic Beanstalk

GitHub

GitHub essentially is a code hosting platform for version control and collaboration. The code to build the url-shortner web site was stored in a GitHub repository. The source repository was first forked to enable a copy of the original repository to reside in my repository.

Subsequently, my repository was cloned to enable the files to be places on my local machine. There was a command line to zip these files [../kuralabs_deployment_1.zip -r *]. It did not quite work for me, certain hidden files kept being included in the zipped folder. I resorted to manually zipping the folder in file explorer.

AWS EC2

Amazon Elastic Compute Cloud (EC2) instance or virtual machine is a quick and inexpensive way to get a server up and running on which continuous integration (CI) and continuous deployment (CD) servers can be installed. Two EC2 instances were launched, one ran Jenkins and the other ran Elastic Beanstalk. Three ports were opened: port 80 (HTTP), port 22 (SSH) and port 8080 (Jenkins).

Two packages python3-pip and python3-10-venv were installed in the virtual environment to update it with the necessary libraries and dependencies.

Jenkins

Jenkins is an open-source free automation tool used that was used in this deployment to build and test the application. The Jenkins server was set up and installed in the virtual environment. A multibranch pipeline build was selected with GitHub being the designated branch source. The server would automatically discover, manage, and execute pipelines for branches which contain a Jenkinsfile in source control. With the URL validated and build configuration mode and script path set to Jenkinsfile, Jenkins ran the build and test process of the url-shortner app successfully.

Elastic Beanstalk

Elastic Beanstalk (EB) is a service used to deploy and scale web applications, in the case, the url-shortner application. This service is normally used to grab code already stored in a repository like GitHub and automatically deploy it. In this deployment, the code was uploaded from my local machine as a zipped file and the application was deployed successfully. Among some of the automatic configurations (cloud formations) I observed were 5-minute monitoring interval of instances, load balancing and auto scaling environment type, scale down and scale up increments of -1 and 1 respectively to name a few.