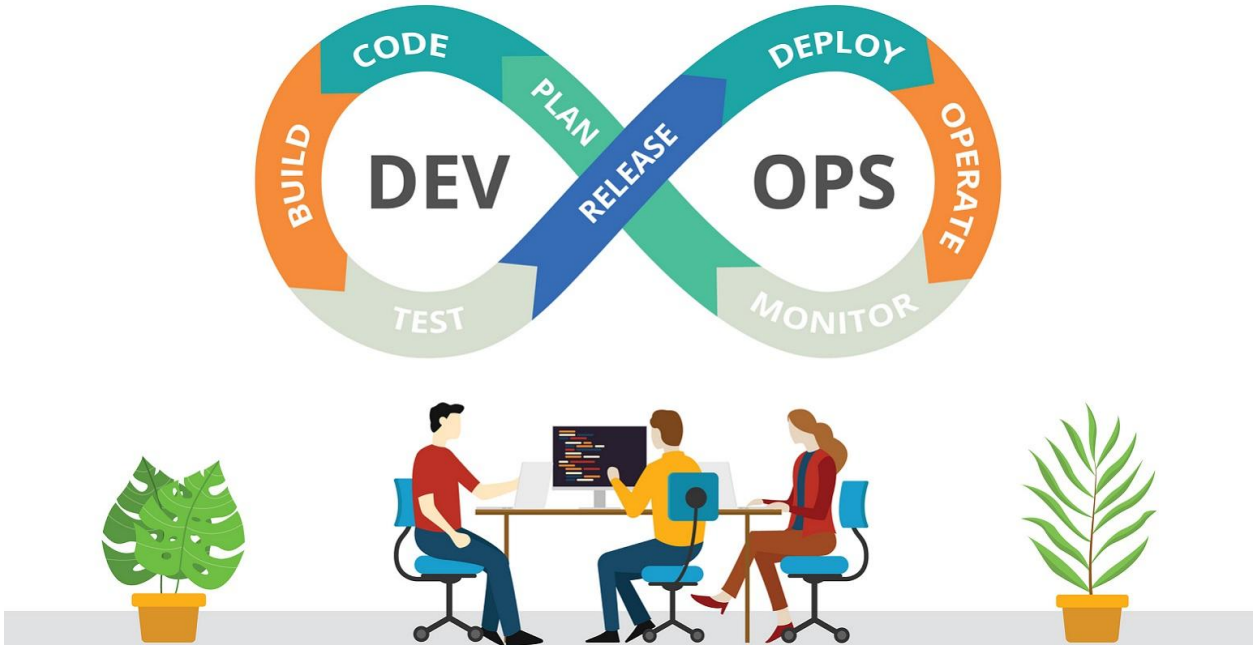

Secure DevOps - Project 2

Overview

In this project, you will use Docker, Docker Compose and Jenkin pipelines to build and deploy a simple Node.JS web application outputting a string of text to the screen.

What you need to complete this project

1. A Linux server running Ubuntu 20.04 with the latest Docker and Docker Compose installed.

   a. Other Linux distributions (Debian, etc) also work fine if you wish to use them.
   b. Slightly outdated versions of Docker and Docker Compose should also work.
   c. The server should have at least 1GB of RAM, 2 CPU cores and 10GB free space. The more the better.
2. A personal Github account. You should have this already while completing Project 1.

There is no Node.JS knowledge required to complete this project.

Tasks

1. (5 points) Fork this repo https://github.com/aws-samples/aws-elastic-beanstalk-express-js-sample in your personal Github.
2. (5 points) Create a new repo in your personal Github called `Project2-Compose`.
3. In the newly created repo, complete **only one of the options** below (for hints, see Week 6 Lab)
   - (30 points) Option 1: Create a Docker Compose file/stack to run:
     - A Docker-In-Docker (dind) container
     - A Jenkin container which uses the dind container to run a Jenkin pipeline
   - (20 points) Option 2: Add a text file containing 2 Docker run commands to run:
     - A Docker-In-Docker (dind) container
     - A Jenkin container which uses the dind container to run a Jenkin pipeline
4. (10 points) Depending on the option you chose in Step 2, **commit and push** either the Docker Compose file or the text file to the `main` branch of the `Project2-Compose` repo.
5. (20 points) In your forked `aws-elastic-beanstalk-express-js-sample` repo, create a `Jenkinsfile` and store it in the root of the repo. The `Jenkinsfile` needs to:
   - Use Node 16 Docker image as the build agent

- A build step that runs the command `npm install --save`
  If you are not sure about Jenkinsfile syntax, check out
  https://github.com/darinpope/jenkins-example-docker/blob/main/Jenkinsfile-1 and
  https://www.jenkins.io/doc/tutorials/build-a-node-js-and-react-app-with-npm/ (Search for `npm install`).

6. (10 points) **Commit and push** the Jenkinsfile to the `main` branch of your forked `aws-elastic-beanstalk-express-js-sample` repo.
7. (20 points) In your Jenkin setup, follow the guide here create a Pipeline project named `Your-Student-ID-Project-2-pipeline` which:
   - Uses the newly created Jenkinsfile for its pipeline definition (make sure you select `Pipeline script from SCM` option)

Make sure that your pipeline runs successfully (check the pipeline logs).

Submission

Deadline: 11:59PM on Sunday 9th October 2022. Extensions need to be applied at least 7 days before the deadline. Late extension application will be rejected.

Submission needs to be uploaded to Blackboard.

You will need to submit a Word/PDF document (Word, PDF, etc) containing:

1. Github repo links:
    - Your forked `aws-elastic-beanstalk-express-js-sample` repo. This will be used to assess your Jenkinsfile.
    - The `Project2-Compose` repo. This will be used to assess your Docker Compose or Docker run setup of Jenkins.
2. Screenshots showing the details of your Jenkins pipeline and the logs showing that the pipeline runs successfully

Helps

- Create your 1st Jenkins pipeline https://www.jenkins.io/doc/pipeline/tour/hello-world/
- Getting started with Jenkins pipeline https://www.jenkins.io/doc/book/pipeline/getting-started/
- Jenkinsfile basic https://www.jenkins.io/doc/book/pipeline/jenkinsfile/