TRUNG TÂM ĐÀO TẠO VIỄN THÔNG VÀ CÔNG NGHỆ THÔNG TIN TEL4VN

ĐỀ THI KẾT THÚC KHÓA HỌC
(Hình thức thi thực hành)

Khóa học: DevOps Online

Lớp: TOOA09 **Thời gian thi:** 1 tuần

ĐỀ THI

Part I : Configuration Management

You team receive a request that prepare a Dev environment for a new project. Project Manager decided that tools using to create environment is Vagrant. The environment will be contain three VMs.

- Control (Will instance ansible to manage in project)
- Web server : apache will be choose
- Database server: MySQL will be choose
- These server will have private network (you can use public if you are in special case)

So your task is setup this environment for project. It will be required that every server need to be installed docker as well.
Note: You will need Vagrant with provisioner to prepare infrastructure first then using ansible to manage the rest.

Part II : Build Infrastructure

In this part you will receive a request from your company to prepare an CI/CD environment for new coming project. The environment will be include : Git Server (Gitlab will be prefer); CI Server (Jenkins will be consider); Dev Environment (K8s will be choose). In order to help project you need do build an environment that have three components. Vagrant will be the one that you need to create everything. You should create separate Vagrant environments for these. (3 Vagrantfile)

You can find Vagrantfile HERE

1. Create a GitLab Server for store every codes from the project.
   - You should config webhook to allow Gitlab to push trigger event to Jenkins
2. Create a CI Server Jenkins
   - Jenkins should install some plugin bellow to archive this exam
   - Docker Plugin
   - Kubernetes Continuous Deploy Plugin
   - Gitlab API Plugin/ Gitlab Hook Plugin
3. Create a K8s Cluster
   - You can find the manual to install full K8s in the link above

Part III: Build Automation

In this part, after your CI/CD ready. Let's developers push their project to you Gitlab Server.

You can find Project Source Codes HERE

Your responsible is create a Jenkins Pipeline for build automation. That mean whenever Developers commit a changes to Gitlab. You CI Server need to be auto trigger and do the build automation. You should write a Jenkinsfile for this part.

Part IV : Continuous Delivery

Containerization is becoming more popular to run the application so that you receive a request to create other stage in your current Jenkins Pipeline to package your code into container image. What you need is write a Dockerfile and add one stage call "Build Docker Image" in your current Jenkinsfile.
After build success you should push your image to your Docker Hub.

Part V: Continuous Deployment

The Kubernetes (K8s) is leading in Orchestration so that your project planning to make some deployment testing the application into K8s. Your next step is add one stage to current Jenkins Pipeline call "Deployment" stage.
You don't need to write the k8s manifest for deployment step. That file you can find in the project code. "application_manifest.yml"

After install K8s done in Part I you should create manual end to end test to ensure your cluster is working correctly
Please note:

If you need any question that make you not clear about the requirement of the Exam. Please don't hesitate to contact me through group chat of TOOA09 Class on Zalo to find some help or useful information

========== Good luck & Have Fun ==========