

Task 1 - Azure Cloud infra

<https://www.youtube.com/watch?v=NKEFWyqJ5XA>

- Compute resources
- Network
- Storage

Task 2 - Continuous Integration and Continuous Delivery.

- Create a jenkins job which clones code from github repo and build the following app
 - <https://github.com/kevinsawicki/github-maven-example>
- Create a jenkins job which spins up VM and install LAMPP stack through Ansible and execute the deployment from the jenkins slave.

Task 3 - Containerization

- Create a Dockerfile to build <https://github.com/kevinsawicki/github-maven-example>
- Store the docker image in dockerhub registry
- Run docker image as container on port 8080

Task 4 - Container Orchestration

- Create kubernetes cluster using k3d
- Create a nginx manifest and install to k8s cluster
- Deploy nginx service with 4 replicas in k8s cluster via Jenkins

Task 5 - Infra and application monitoring

- Deploy monitoring for kubernetes cluster using Jenkins. Setup prometheus and grafana monitoring stack
- Create an alerting rule to send slack and email notification if the number of requests are exceeds 10 per seconds.
- Create a custom dashboard in grafana to depict nginx metrics.