DevOps Hands-On Lab

Why should we have hands-on practice ?

Is this question making any sense for you, If yes then definitely we are on same page.

- We need Hands-On practice of technologies to understand technologies in better way.
- To work in any organization independently
- To know the technologies best practices
- To design costume infrastructure and many more.

I just mention 4 points, But I am pretty much sure Hand-On make big impact to grab the opportunity in today job market.

So here Techmartguru comes with an awesome solution for you all, No need to struggle with Interview rejections. Let's start implementing the technologies with each other.

Go through the list of projects choose the project and start working on it. Implement the technologies and break the boundaries of implementation.

We will give you architecture diagram of each projects and also give you the best practice industries recognize solutions of every projects,At the end you will be a good DevOps product.

Find the below offering from Techmartguru, Enroll your self for any projects or package of projects. I guarantee you after completing the projects definitely you will feel the difference in your self.

We offer you end to end guidance to complete this projects with proper architecture diagram, Also will help you to prepare your resume for your DevOps jobs with mock Interview and many more. So don't wait till ....the opportunity goes away from you.

Hands-On Project for Real Time Exposure in AWS and DevOps Domain

These projects are designed to give you a real time experience to create and setting up aws and Devops tools. After completing the projects you will be able to work on real time integration of aws and Devops tools.

Project 1

As a product lead I want a infrastructure for my three tier application. Where my static content store in S3 and serve through CDN & Route 53 only.

My Application is PHP, so please create a Elastic-beanstalk environment to deploy my application on multicontainer Docker. Also use Mysql-db to store the dynamic content and MySQL instance should be in cluster.

Use AWS Code-Pipeline to manage all build and deploy.

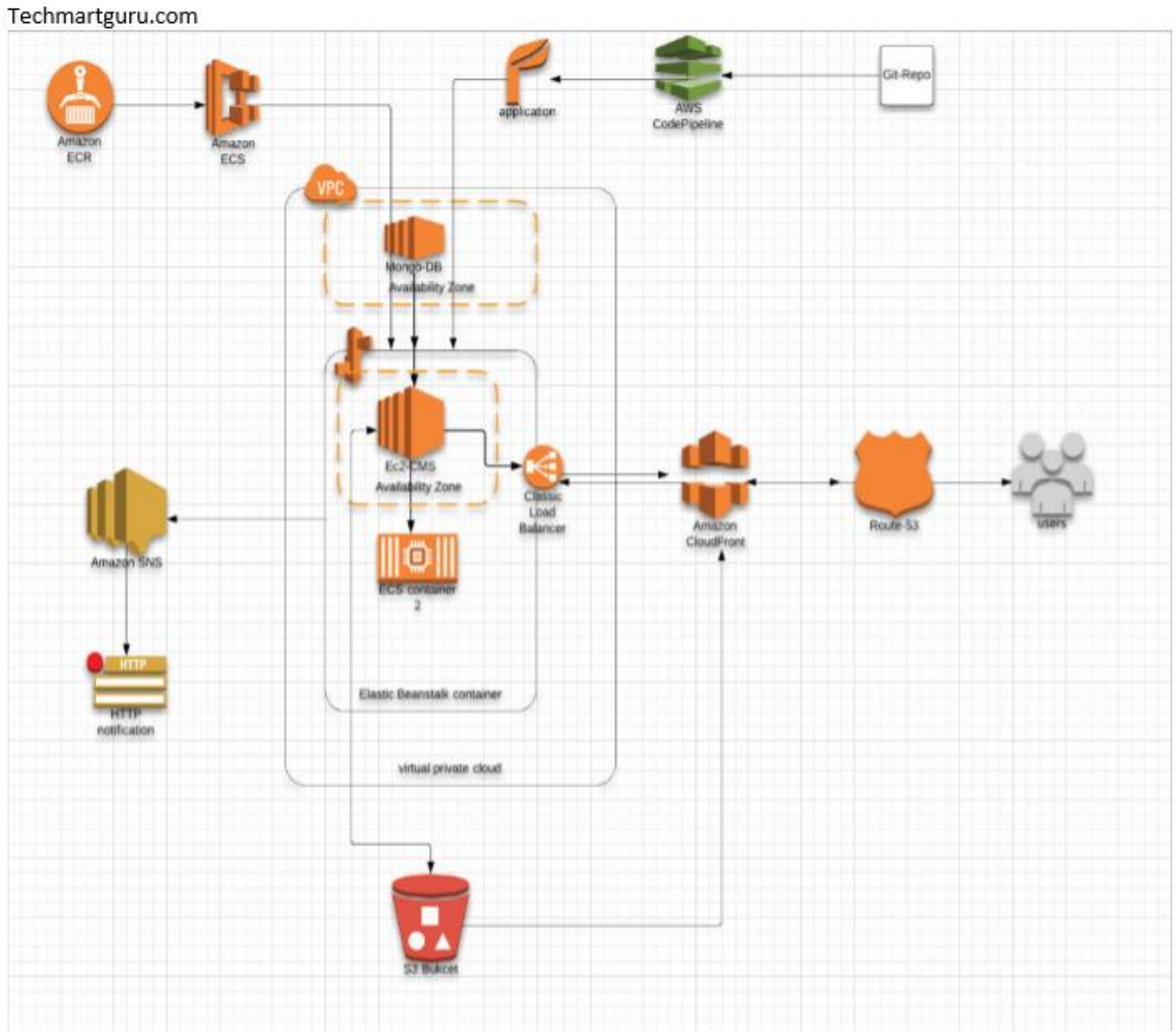
Also I want to serve my content only from AWS CDN, so please restrict access to serve content through S3 bucket directly.

All the Ec2 instances should be in private subnet which is not accessible publicly, Only Elastic Load Balancer should be in Public subnet.

Technology Involve:

- Elastic Beanstalk
- Docker
- ECS / ECR
- Git-Hub
- Code-Pipeline
- Elastic Beanstalk
- Docker
- ECS / ECR
- Git-Hub
- Code-Pipeline
- Code-Build
- IAM Roles
- SNS
- S3 Bucket
- AWS CDN
- Route 53

Architecture diagram which you are going to implement :



Project 2

As a product owner I need a running CI/CD setup where my code store in GitHub and for CI/CD I want to use Jenkins.

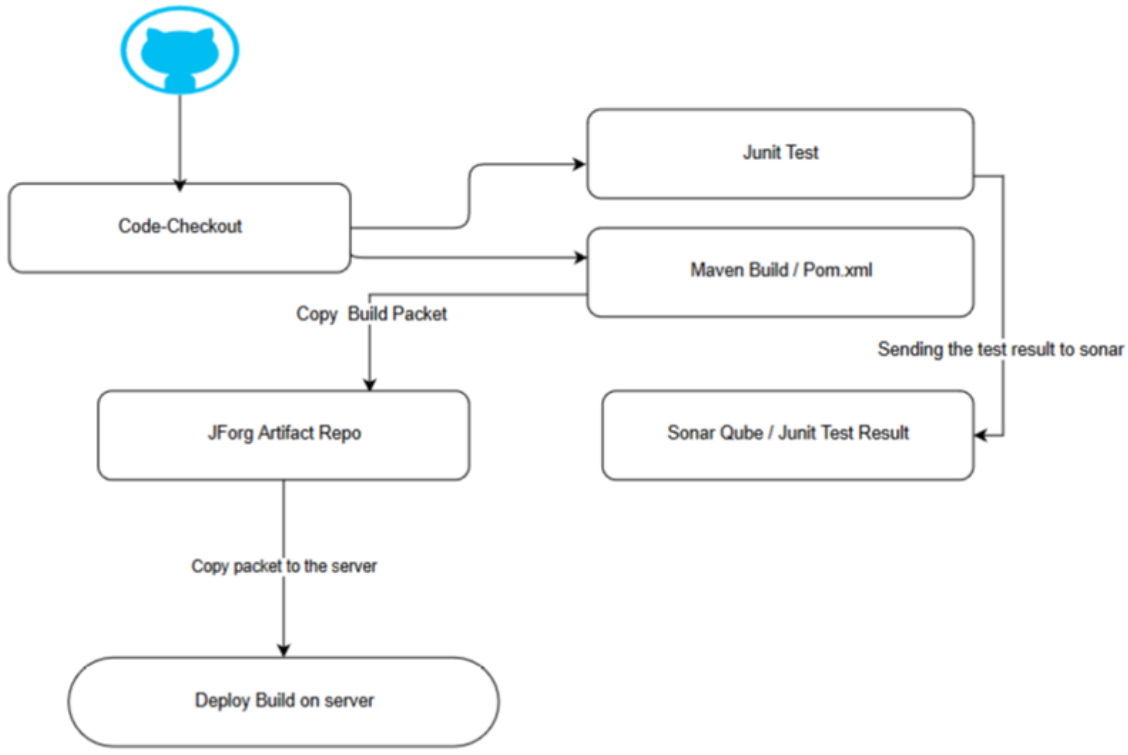
Once my code build has been done there should be a test run by Junit. Where report of Junit will publish in sonar-qube. To store Artifacts please use JForg repository.

At the time of deployment I want to create a Docker image which should deploy on Docker swarm which is running locally.

Technology Involve:

- GitHub - Repo
- Jenkins - CI/CD
- Artifacts repository [Jforg or Nexsus]
- Sonar - For Analysis the code quality
- Docker - Container Service
- Docker- local registry
- Docker Swarm
- Groovy scripts - Additional technology to create the Jenkins jobs.

Architecture diagram for project two which you are going to implement.



Project 3

Create Cloud Formation templates to launch a three tier infrastructure network VPC.

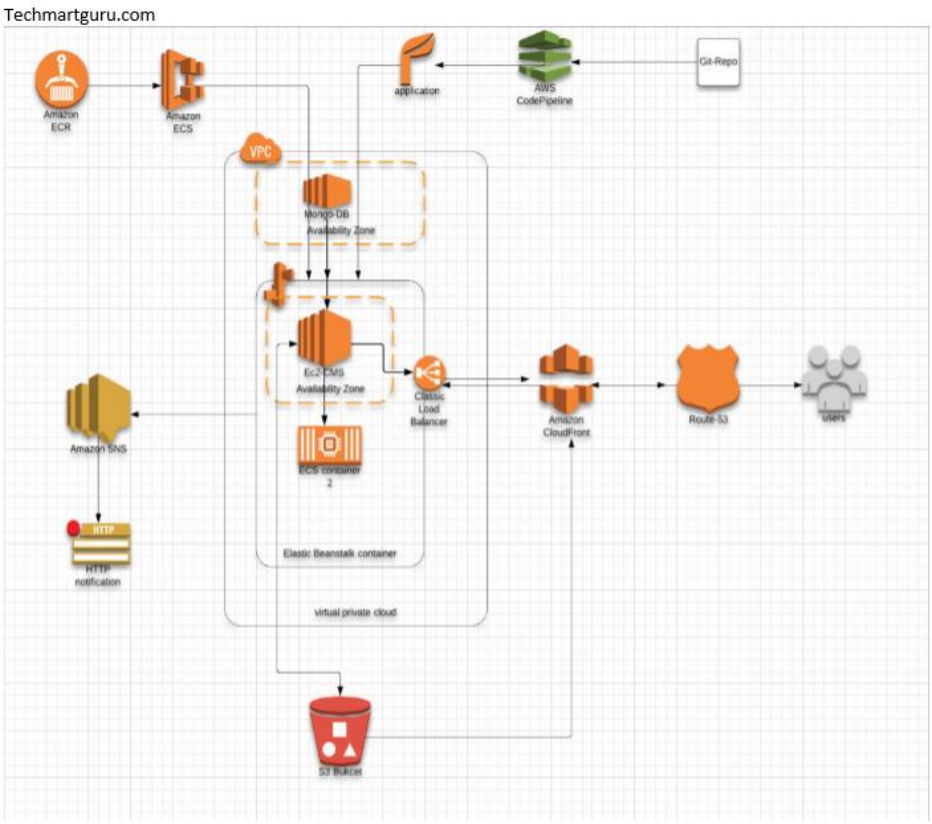
I need 6 subnets one is for web-server, which should be public and 2 subnets group for DB and application which are in private.

So create the vpc and subnets including all route tables' entry only using the Cloud-formation templates.

Technology Involve:

- VPC
- NAT-Gateway
- EIP
- Internet Gateway
- Subnets
- Cloud Formation Template
- Cloud Formation Stack
- Aws cli
- Cloud Formation Stack creation using aws cli

Architecture diagram for project 3.



Project 4

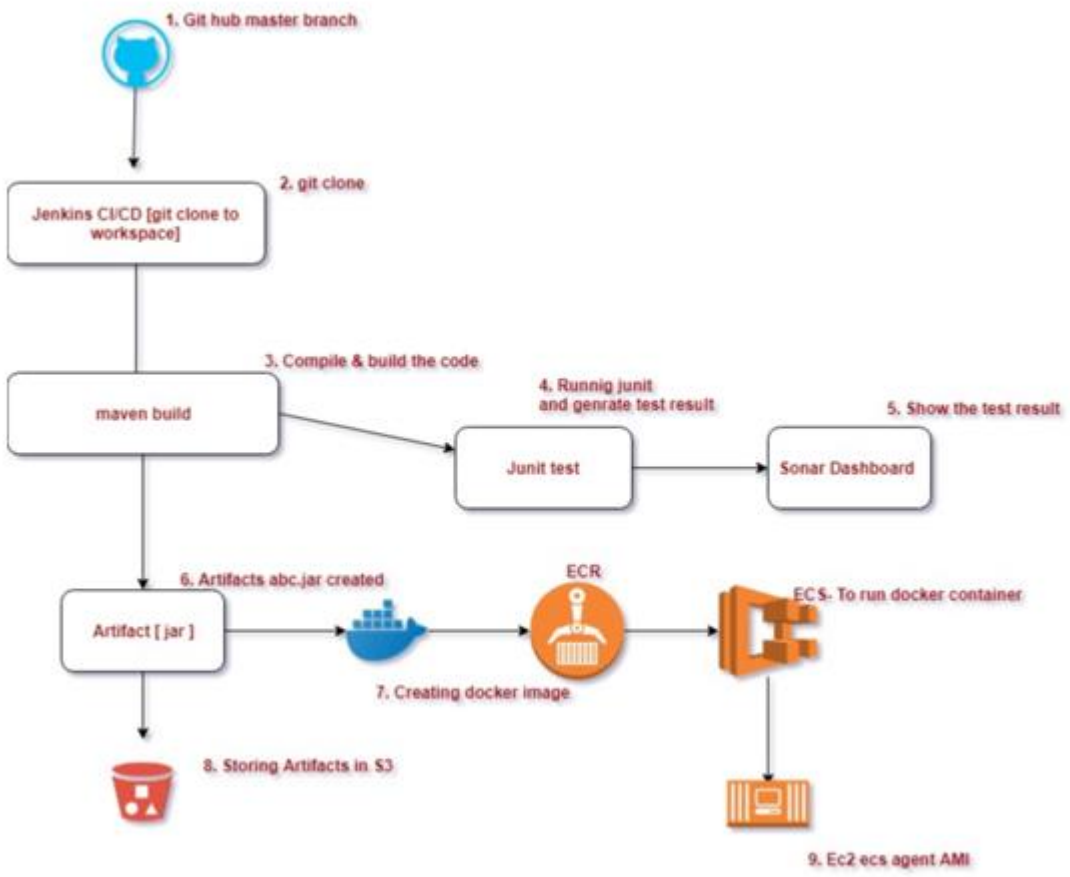
As a product owner I want an infrastructure which suits to deploy my java based micro services

To run the micro-services I want ECS orchestration tool of aws to orchestrate my all Docker container. The Docker containers should be scalble in nature and the infrastructure deployed on private subnets. For the database please use embedded db.

Technology Involve:

- Java – Micro-service Spring-Boot
- ECS – Container Service AWS
- ECR – Container Registry AWS
- Docker File
- S3
- Jenkins CI/CD

Architecture diagram for project 4.



Project 5

Create VPC with private and public subnet and Launch ECS Cluster in Private subnet.

Configure Load Balancer for ECS

Deploy any sample application in ECS cluster which should accessible through Load Balancer.

Create Automation Script for 1 and 2 points.

Note:

Application should be deployed in private Subnet only. Ec2 instances should be accessible via ssh.

Automation script can in Ansible or Terraform only.

Technology Involve:

- Ansible
- ECS
- ECR
- ALB
- Terraform
- Ec2
- AWS Cli

Project 6

I have Micro-services running architecture in my organization I want to use JMeter & Taurus to test load and performance of my application.

Also my performance engineers are not going to install JMeter on their local machine, please integrate it with Jenkins. So at every build performance test also should be run and share the result.

Technology Involve:

- Jenkins
- Docker containers / Docker Images
- Spring-boot application
- Jmeter
- Taurus

Project 7

I have a Micro-services application I want a Kubernetes environment to deploy my applications, Please create an infrastructure for same.

This project focused on setup of K8 and deploy the application of K8 manually. The Infrastructure should be hosted on AWS only.

Technology Involve:

- Ec2
- Kubernetes
- RT53
- Free Domain
- Micro-services-Spring-boot

Project 8

This project having tasks which are listed below

1. Integrate the S3 bucket with confluence so I can see all my S3 data on confluence only.

2. Make sure all the user in AWS account have MFA enabled , Need to create custom policy, So every user have forced MFA enabled in their account.

3. Create a script and put it to your local for IAM key-pair rotation.

Technology Involve:

- AWS-IAM
- S3
- Confluence
- Jenkins
- Jira
- Shell Script
- Docker Container

Project 9

Setup Open-shift infrastructure for spring-boot & node application. Please setup this infrastructure on GCP use Open-Shift origin.

Cluster should be load balanced Master & Node cluster.

Setup Jenkins to deploy the application on the cluster, use Github for scm.

Make the website available for world , so do the proper DNS hosting for it.

Technology Involve:

- Open-shift Origin
- GitHub
- Spring-boot application
- Node-application
- Docker Container

Project 10

Setup monitoring tool ELK to monitor the logs on server which are running on Open-shift cluster.

My applications are running on open-shift cluster, I want to monitor the logs of the servers.

Infrastructure is running on GCP cloud, micro-services are deployed on the OC cluster. For this project use GIT-HUB as scm tool.

Technology Involve:

- Open-shift Origin
- GitHub
- Spring-boot application
- ELK
- Docker Container
- File beat - log shipper

Project 11

Setup Janitor monkey in the AWS account to clean the unused resources from the account.

Janitor monkey summery : This tool is invented by Netflix to remove unused aws resources from aws account .

Technology Involve:

- Janitor-Monkey
- SNS
- Ec2
- SES

Project 12

Setup CIS Benchmark in AWS account to secure aws account and services .

Configure cloud-trail to log all activity which is going to happen on the aws account.

Technology Involve:

- CIS Benchmark
- Cloud-trail
- IAM

- KMS
- Cloud-trail
- Cloud watch