Become A Job Ready DevOps Engineer

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DEVOPS ZERO TO HERO

ENGLISH BATCH 1

Course Content:

Introduction to DevOps

- Introduction to DevOps and Career opportunities

Linux for DevOps

- Setting up the VM and installation of Ubuntu
- What is Linux & it's History
- File system hierarchy for Linux
- Basic commands of Linux (File manipulation with Cat, Vim, Nano, Using grep, User Management, File Permissions)
- Shell Scripting Basics to advanced

Source Code Management

- Difference between CVCS and DVCS and Importance of Git.
- Git three stage Architecture.
- Detail explaination on Repository, Commit, Tags, Snapshots, Push-Pull Mechanism, Branching Strategy.
- Working with Git stash and Git pop
- Resolve Merge conflicts in Git
- Git Revert and Reset (Reset vs Revert)
- Git rebase
- Working with git Squash
- Git cherrypick
- What is Git fork ?

CI/CD (Jenkins)

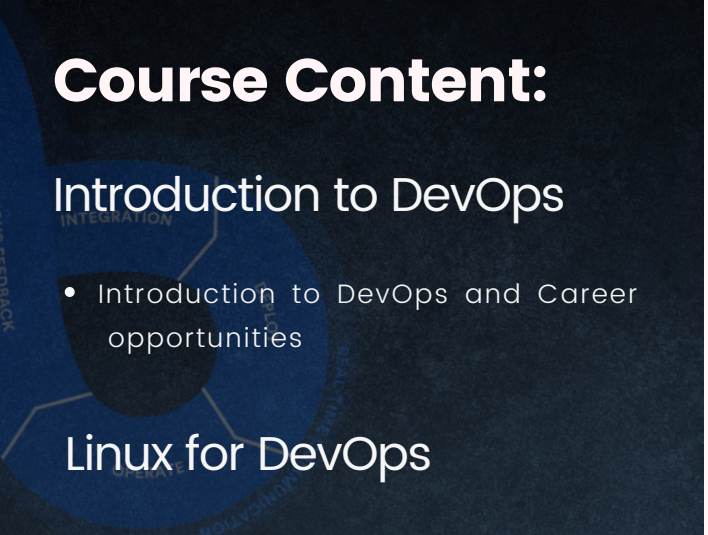
- What is CI/CD pipeline
- Jenkins History
- Getting started with Jenkins
- Jenkins installation on Cloud
- Workflow of Jenkins
- Jenkins UI
- User Management in Jenkins
- Jenkins-Linked Projects
- Source-code polling

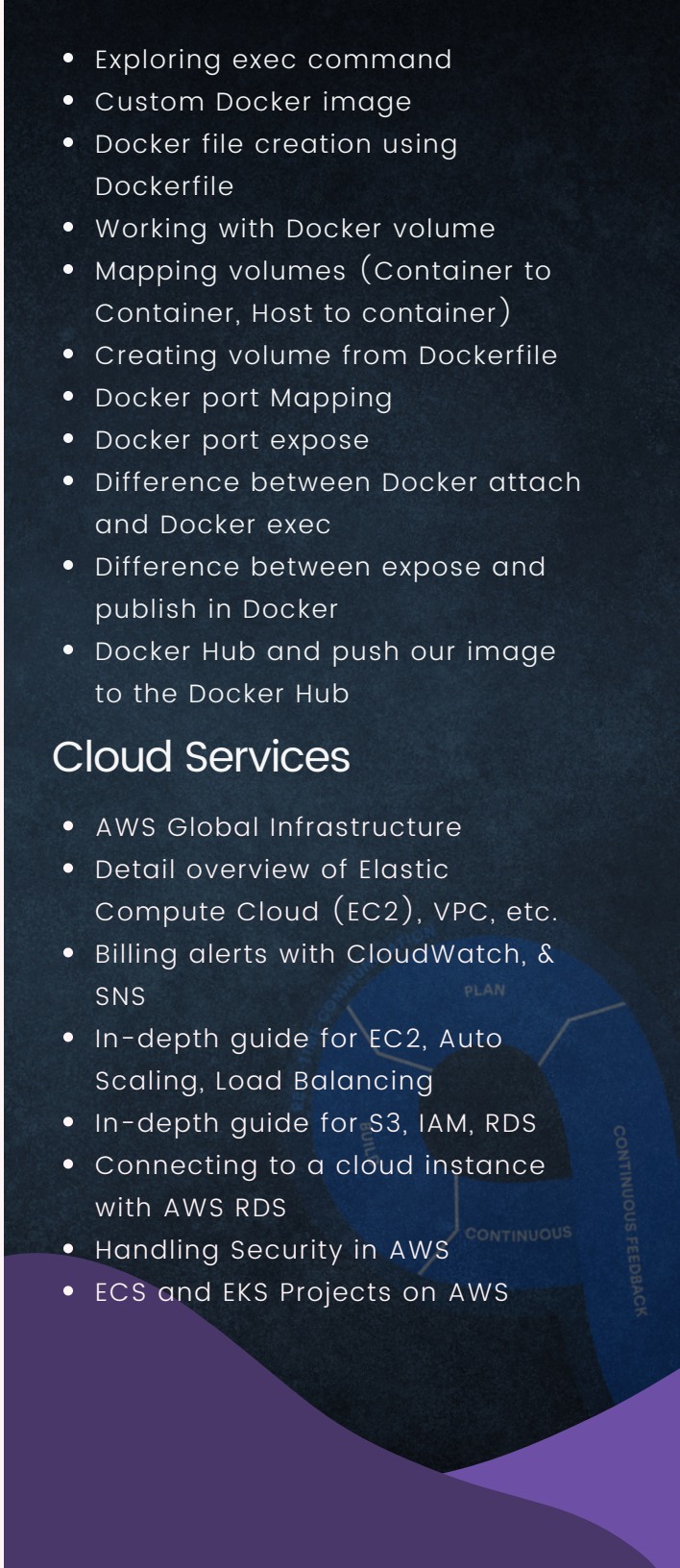
Containerization - Docker

- What is Virtualization before deep dive to the Containerization
- O.S level virtualization
- Docker vs Virtual Machine
- What is Docker and it's History
- Docker Architecture
- Advantages and limitations with Docker
- Components of Docker (Docker Daemon, Docker Client, Docker Host)
- Docker Image
- Docker lifecycle and PS
- Start and delete a container
- Exploring exec command
- Custom Docker image
- Docker file creation using Dockerfile
- Working with Docker volume
- Mapping volumes (Container to Container, Host to container)
- Creating volume from Dockerfile
- Docker port Mapping
- Docker port expose
- Difference between Docker attach and Docker exec
- Difference between expose and publish in Docker
- Docker Hub and push our image to the Docker Hub

Cloud Services

- AWS Global Infrastructure
- Detail overview of Elastic Compute Cloud (EC2), VPC, etc.
- Billing alerts with CloudWatch, & SNS
- In-depth guide for EC2, Auto Scaling, Load Balancing
- In-depth guide for S3, IAM, RDS
- Connecting to a cloud instance with AWS RDS
- Handling Security in AWS
- ECS and EKS Projects on AWS





Course Content:

Infra. As Code - Terraform

- Understand the concept of (IaC)
- Getting started with Terraform
- Terraform Basics
- Variables, Resources, Attributes and Dependencies
- Terraform State
- Terraform for-each and modules

Configuration Management with Ansible

- What is Configuration Management
- What is Ansible & it's History
- Ansible Architecture
- Advantages and limitation with Ansible
- Working with YAML
- Working with Ansible server, Modules, Task, Role, Fact, Inventory, Play, Handler, Notifier, Playbook, Host
- Working with Ansible inventory, Host pattern and establish ssh connection with nodes
- Maintain password less authentication with server and node
- Working with Ad-Hoc commands
- Working with Modules and Playbook
- Handlers, Variables and loops in Ansible
- Management of Ansible vault and Ansible roles
- What is conditions in Ansible

Container Orchestration - Kubernetes (K8s)

- What is Monolithic and Microservices Architecture
- What is kubernetes
- Introduction to Kubernetes
- Features of Kubernetes
- Kubernetes History
- Kubernetes Archtecture in depth
- Node & Pod
- Fundamental of Pods and it's Lifecycle
- Installing kubernetes on AWS
- Command with example (kubectl)
- Role of Master Node
- Components of Control Plane and explanation
- Installing kubectl and minikube
- Creation and deletion of a pod
- Kubernetes YAML Configuration
- Labels and Selectors in K8s
- Replication, Auto healing and working with deployment in K8s
- Deploying Microservices app to K8s cluster
- Kubernetes Networking, Services and Nodeport
- Volumes in Kubernetes
- Persistent Volume & LivenessProbe in K8s
- Namespaces in K8s

Monitoring

- Setting Up Prometheus
- Setting up Grafana cloud and Integrating it with Linux machines and Docker
- Live logging and Monitoring Hands-on

Live Projects

- Scrutiny of any Linux Server by Shell Script
- CICD Pipeline using Jenkins, AWS, Docker, Kubernetes
- CICD with AWS CodePipeline
- Web App Deployments through Ansible and Terraform
- Serverless Deployment for a 3-tier application (Production Level)
- Continuous Delivery via K8S cluster in Prod using AWS EKS