

AWS DevOps

by **Santhosh**

COURSE OUTLINE

INFRASTRUCTURE, OS & CLOUD

DC Basics

- Introduction to datacentre components (Compute, Storage, Networking)
- Introduction to OS, Virtualization, Cloud Computing & Containerization
- Introduction to DevOps, course as a whole & setting up context.

Linux Basics

- Introduction to UNIX, Linux, architecture & filesystem hierarchy.
- Users, groups & file-permissions
- Working with files top 30 most used commands as a DevOps engineer.
- Links, pipes, grep, find, awk, cut and sed
- Service administration, process administration & job automation
- Sudo, Backup & Restore, Remote user administration,
- Network administration.
- Brush up on stream wise important commands and module closure.

AWS Basics

- AWS Compute. (EC2,EKS,LAMDA)
- AWS Storage (EBS,S3,RDS,DynamoDB)
- AWS Networking (Everything)
- AWS IAM (Everything)
- AWS Monitoring & Logging (CloudWatch & SNS)
- AWS MISC Services (CloudFormation,CLI,Route53)

CI/CD

Git:GitHub:BitBucket

- Introduction to version control, GIT. SVN vs GIT
- Hands-on with GitHub
- Hands-on-with Bitbucket
- Complete GIT terminology – Overview and live walkthrough
- Most used git commands in the life of a DevOps engineer.
- Live demo with a real world use case depicting Git, GitHub, BitBucket.

Maven:Jenkins

- Building a project using Maven.

- Maven concepts (Project structure, goals, dependency management etc)
- Introduction to Continuous Integration & Jenkins
- Installation, setup, User access management, Plugin management.
- Node management, Managed files, Global Configuration.
- FreeStyle, Maven, Parameterized & DSL pipeline projects
- Best practices and Jenkins CI/CD pipeline live projects (2)

SonarQube:Artifactory

- What is SAST. SonarQube installation & Configuration.
- Sonar integration with GitHub & BitBucket.
- What is an Artifact. Installing and configuring Jfrog Artifactory.
- Integrating with Bitbucket & GitHub.
- Real world SAST & Artifactory use case with GitHub/Jenkins

Terraform:Ansible

- Introduction to IAAC & Terraform, Installation, providers & modules.
- Introduction to configuration management & Ansible, Installation, .
- Ansible playbooks, plays, roles, tasks etc.
- Walkthrough Ansible playbooks and terraform configuration files.
- Infrastructure provisioning and configuration on AWS using Terraform & Ansible.

Containers & Container Orchestration

Docker

- Introduction to containers, Docker, Installation, Setting up Docker-Hub
- Docker file, Docker image, Docker container
- Docker storage, networking and Docker security.
- Docker Swarm, Docker editions.

Kubernetes

- Introduction to container orchestration, Kubernetes architecture detailed walkthrough.
- K8s pods, deployment, service, config maps, secrets
- K8s PV, PVC, labels & selectors, taints & tolerations.
- Node affinity & Node selector. Static pods and schedulers.
- Kubernetes networking, logging & monitoring.

Logging & Monitoring

Prometheus:Grafana:ELK Stack

- Introduction Installation of Prometheus, Grafana & ELK stack.
- Prometheus, Grafana & ELK stack Architecture discussions.
- Looking at PromQL, Service Discovery , Prometheus Alerting.
- Configuring Open Source Grafana Dashboards

Automation

Bash:Python

- Introduction to Bash and day to day Bash scripts use cases.

- Introduction to Python and day today python automation use cases.

End to End CI/CD pipelines, Real world app deployments

- MicroServices, CNCF, DevOps incubation projects -GitOps - 1
- CNCF, DevOps incubation projects -Kubernetes incubation projects -1
- CI/CD pipelines - 1 & 2 & 3
- CI/CD pipelines - 4 & 5 & 6
- Career guidance and next steps – 1

SNO	MODULE	DAYS
1	Infrastructure, OS & Cloud	8
2	CI/CD	18
3	Containers & Container Orchestration	5
4	Logging & Monitoring	3
5	Automation	2
6	End to end Real world projects & Career guidance	5
TOTAL		41