DEVOPS

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- ➢ Continuous Integration using Jenkins
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- ➢ Configuration Management with Ansible
- ➢ IAC Tool - Terraform
- ➢ Application Monitoring with Prometheus & Grafana
- ➢ Log monitoring with Splunk
- ➢ Python
- ➢ Orchestration Tool – Kubernetes
- ➢ CI-CD Project Pipeline

INTRODUCTION TO DEVOPS

- ➢ Why DevOps?
- ➢ What is DevOps?
- ➢ DevOps Market Trends
- ➢ DevOps Engineer Skills
- ➢ DevOps Tool chain
- ➢ dressing Challenges through DevOps
- ➢ Workflow of DevOps
- ➢ DevOps Delivery Pipeline
- ➢ DevOps Ecosystem

VERSION CONTROL WITH GIT

- ➢ What is version control
- ➢ What is Git
- ➢ Why Git for your organization
- ➢ Install Git ¬ Common commands in Git
- ➢ Working with Remote Repositories

➢ Advantages of Distributed VCS

GIT, JENKINS & MAVEN INTEGRATION

➢ Branching and Merging in Git
➢ Git workflows
➢ Git cheat sheet
➢ What is CI
➢ hy CI is Required
➢ Introduction to Jenkins (With Architecture)
➢ Introduction to Maven

CONTINUOUS INTEGRATION USING JENKINS

➢ Jenkins Management Preview
➢ Adding a slave node to Jenkins
➢ Build & Delivery Pipeline
➢ AutoDeploymentin Jenkins
➢ Pipeline as a Code
➢ Implementation of Jenkins in the Project

CONTAINERIZATION WITH DOCKER

➢ Docker overview
➢ Installing docker
➢ Pulling images (docker pull)
➢ Running images (docker run)
➢ Docker build and deployment-Connecting to running images (docker exec)
➢ Exposing volumes and ports
➢ Inspecting system (docker ps, docker status)
➢ Using docker-compose to connect containers
➢ Exposing volumes and ports CONFIGURATION MANAGEMENT WITH ANSIBL

CONFIGURATION MANAGEMENT WITH ANSIBLE

➢ Introduction to Ansible.Ansible mechanism.

➤ Ansible installation in AWS instance.Ansible configuration.Playing with ansible adhoc commands.Creating simple play book.Playbook advanced - variables, loop, condition, debug.Ansible roles

IAC TOOL - TERRAFORM

➤ Introduction to terraform.
➤ Installation of terraform
➤ Merging terraform with AWS.
➤ Creating TF file.
➤ Building full cloud architecture using terraform.
➤ Terraform backend.
➤ Terraform variables.
➤ Terraform state.
➤ Terraform locals.
➤ Terraform destroy

APPLICATION MONITORING WITH PROMETHEUS & GRAFANA PROMETHEUS:

➤ Used for Event Monitoring & Alerting

➤ Records real-time metrics in a Time Series Database(TSDB)

➤ Built using a HTTP pull model, with flexible queries and real-time alerting

➤ Node Exporter - Software that you can install on *NIX kernel (Linux, OpenBSD, FreeBSD or Darwin)

➤ GRAFANA: Grafana is a multi-platform open source analytics and interactive visualization web application. ¬ Provides charts, graphs, and alerts for the web when connected to supported data source

LOG MONITORING WITH SPLUNK

➤ Introduction to Splunk
➤ Necessity of Logs
➤ Why Splunk?
➤ Splunk Components
➤ SearchHeads

- ➢ Indexes
- ➢ Forwarders
- ➢ Installation of Splunk
- ➢ Installation of Splunk Forwarder
- ➢ Splunk Search
- ➢ Splunk Alerts
- ➢ Splunk Dashboard

PYTHON

- ➢ Introduction
- ➢ Why Python?
- ➢ History of Python
- ➢ Installation
- ➢ Basics
- ➢ Data types
- ➢ Flow control
- ➢ List,Tuples & Dictionary
- ➢ Import modules
- ➢ Functions
- ➢ Read & Write files
- ➢ Programming

ORCHESTRATION TOOL -KUBERNETES

- ➢ Kubernetes Introduction & Architecture
- ➢ Kubernetes Installation - KOPS Method
- ➢ Kubernetes - Clusters, Pod, Namespace
- ➢ Deployment in Kubernetes
- ➢ Kubernetes - Replicaset, DemonSet, ConfigMap, Secrets
- ➢ Services in K8s - Nodeport, ClusterIP, Loadbalancer, Ingress service
- ➢ Persistent Volume, Persistent Volume Claim
- ➢ Dashboards in Kubernete