

Multi Cloud with DevOps

SYLLABUS

YOUR ROADMAP TO DEVOPS SUCCESS | LEARN CLOUD PLATFORMS |
CONTAINERIZATION | CI/CD | MONITORING IN ONE COMPREHENSIVE
COURSE!

AWS

INTRO + AWS EC2
EC2 STATIC APP HOSTING
EC2 ADVANCE
AWS IAM
AWS S3
SNS, CW, KMS
AWS VPC
AWS VPC PEERING & TGW
AWS R53 & CLOUD FRONT
AWS ELB & AGS
AWS RDS & DYNAMODB
AWS SECRETS MANAGER &
AWS SYSTEM MANAGER
AWS ECS & ECR
AWS EKS
LAMBDA & EFS



WEEKEND MOCKS

AZURE

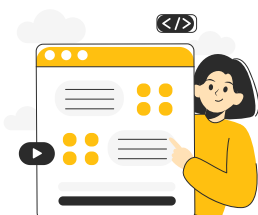
INTRO + AZURE VM
AZURE VMSS
AZURE WEBAPP, FUNCTIONS
AZURE STORAGE ACCOUNT
AZURE VNET
AZURE LOAD BALANCER
AZURE ACTIVE DIRECTORY
AZURE DNS, TM, CDN, FD, NW
AZURE KEY VAULT, WAF
AZURE SQL, REDIS
AZURE SITE RECOVERY
ARM TEMPLATES
AZURE ACR, ACI, AKS

GCP

INTRO + GCP CE
CE APP HOSTING
CE ADVANCE
STORAGE
GCP IAM & SERVICE ACCOUNTS
GCP VPC
GCP DATABASE
GCP LOAD BALANCER
GCP DNS
GCP CLOUD FUNCTIONS
GCP CLOUD RUN
GCP CONTAINER REGISTRY
GCP PUB/SUB
GCP G CLOUD COMMANDS
GCP GKE

DEVOPS

GIT & GITHUB
JENKINS
DOCKER
KUBERNETES
ANSIBLE
PROMETHEUS & GRAFANA
SPLUNK



RESUME PREPARATION

COMPLIMENTRY
SESSIONS

COURSE OBJECTIVES

To design Cloud Architecture.

To crack AWS Certification.

Additional Weightage to your CV.

AWS is available in Accenture, Cognizant, Wipro, TCS, HCL, Infosys, etc...

From Fresher's to all Experiences candidates.

INTRODUCTION TO CLOUD COMPUTING

Introduction to Cloud and AWS services

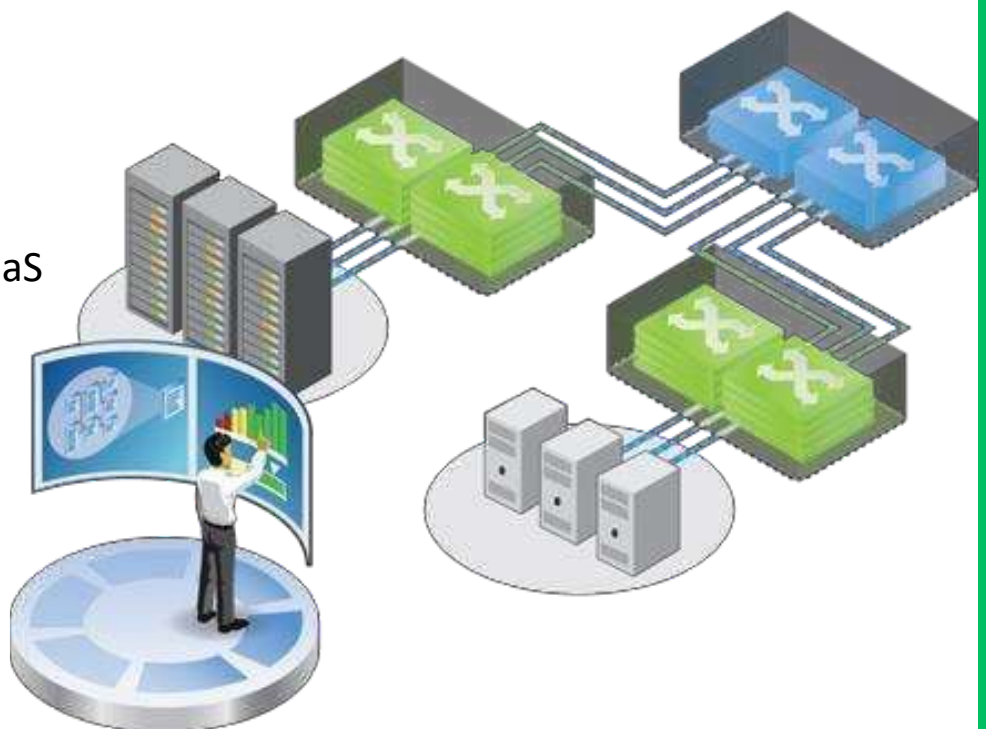
AWS History

Private vs Public

IaaS vs SaaS vs PaaS

Scope for AWS

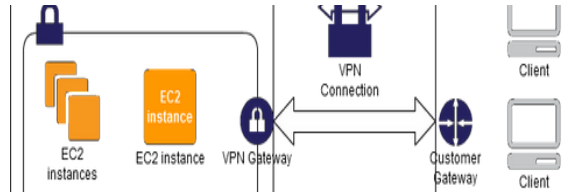
Features in AWS



Amazon Web Services (AWS)

1. ELASTIC COMPUTE CLOUD (EC2)

Introduction to EC2
Launching EC2 Server
Hosting Web Application
Elastic Block Store [EBS] use cases
Elastic IP creation
Amazon Machine Image [AMI]
Snapshots creation from Volume



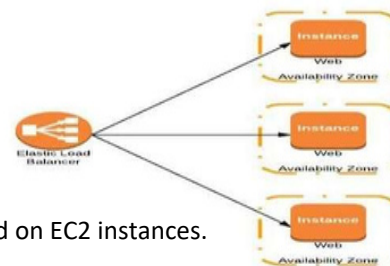
2. SIMPLE STORAGE SERVICES (S3)

Creating and deleting buckets
Adding, Getting, Deleting objects to buckets
Creation of a static website using S3 storage
Working with Permissions of S3.
Discussing lifecycles in s3
Accessing S3 storage via Tools Understanding Elastic File System



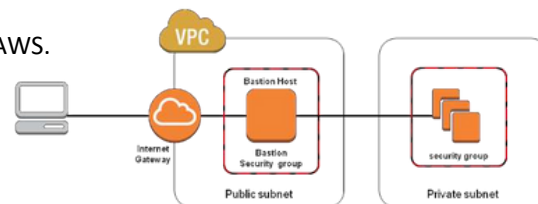
3. ELB & AUTO SCALING

What is auto scaling?
Autoscaling components
Benefits of Autoscaling
Creation of launch configuration
Configuration of Autoscaling policies based on the Load on EC2 instances.
Advantages of using Auto scaling with Elastic Load bal



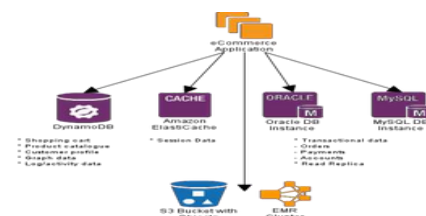
4. VIRTUAL PRIVATE CLOUD (VPC)

Different types of networks that can be setup in AWS.
Understanding Public vs Private Subnets.
Creating a new VPC
Setting up Routing Table, & Security Groups
Creation of Internet Gateway
Connecting to instances in the gateway
Usage of NAT gateway



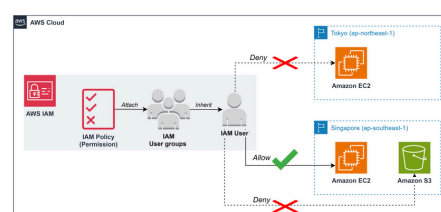
5. RELATIONAL DB SERVICE (RDS)

Selecting the Engine Type.
Configuring the Database Engine.
Creating your Database Setting up automatic backups
Authorizing access to the DB via DB SecurityGroups



6. IDENTITY & ACCESS MANAGEMENT (IAM)

Creation of user accounts in AWS
Setting up multi factor Authentication (MFA)
Roles in IAM
Groups in IAM
Delegation of permissions for users
Creation of custom policies for delegation
Account settings



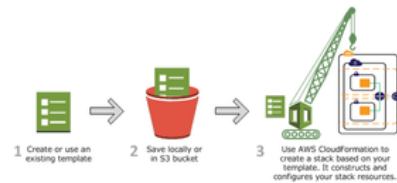
7. CLOUD FORMATION

Building AWS infrastructure as a code.

Utilization of Sample templates.

Creating an environment using Cloud Formation.

Introduction to JSON.



8. CLOUD WATCH

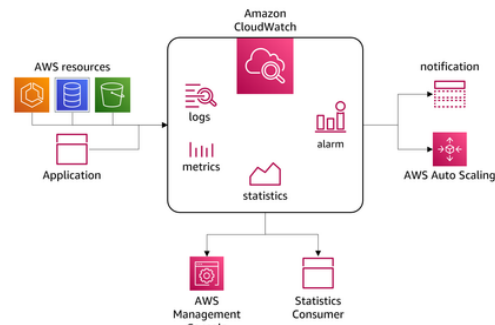
Debugging cloud related issues

Monitoring the AWS Service Health

Dashboard Monitoring with Cloud watch

Getting statistics for a specific EC2

instance Setting up notifications



9. CLOUD TRAIL

Introduction to Audit logs

Implementing Cloud Trail in AWS with use cases

10. SIMPLE NOTIFICATION SERVICES (SNS)

Introduction to SNS

Topic Creation & Subscription

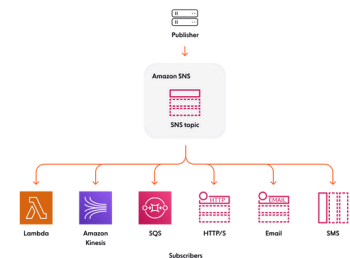
Message Publishing & Delivery Mechanisms

Subscription Protocols (Email, SMS, HTTP, Lambda, SQS, etc.)

Access Control & IAM Policies

Message Filtering & Attributes

SNS with Monitoring & Logging with CloudWatch



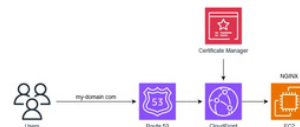
11. ROUTE 53

Describe Hosted zones and Domain Name.

understanding How to create Hosted zones.

Hosting a website with custom domain name.

Understanding routing policies.



12. CLOUD FRONT

Describe Cloud Front Creating a

cloud front distribution Accessing S3

from cloud front Implementing

global restrictions



13. DYNAMODB

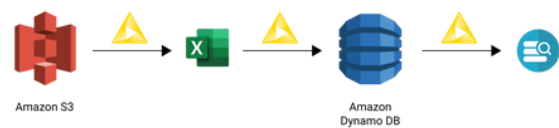
Creating a Dynamo DB

Adding data manually

Learn about strong and eventual consistency

Calculating Read Write consistency

Configuring Alarms



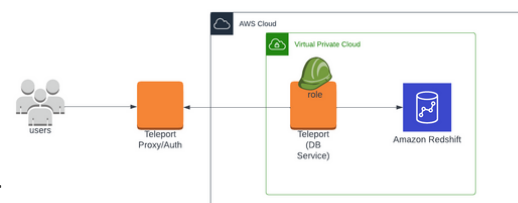
14. RED SHIFT

What is RedShift?

Creation of RedShift Cluster Connecting.

RedShift cluster with SQL Workbench.

Real-time Usecase for Redshift with Live Scenario.



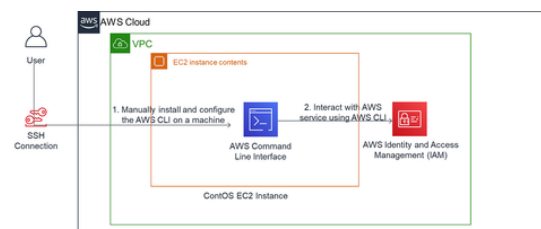
15. AWS COMMAND LINE INTERFACE

Installation of AWS CLI

AWS CLI Configuration

Creation of IAM User

Connecting EC2 with s3

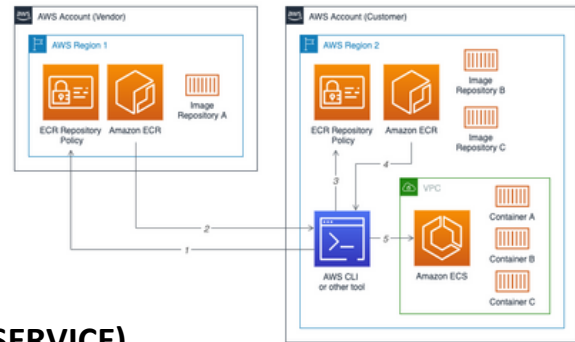


16. ECS: ELASTIC CONTAINER SERVICE

Overview about AWS - AMAZON WEB SERVICES
Define ECS Docker - Containerization
ECS Hands-on

17. ECR -ELASTIC CONTAINER REGISTRY

Build Docker Image
Create Registry in ECR
Push Docker Image to ECR



18. AMAZON EKS (ELASTIC KUBERNETES SERVICE)

Introduction to Kubernetes & EKS
EKS Cluster Setup & Configuration
Node Groups (Managed & Self-Managed)
Networking & Security (VPC, IAM, RBAC)
Deploying Applications on EKS
Auto Scaling (Cluster Autoscaler, HPA)
Monitoring & Logging with CloudWatch

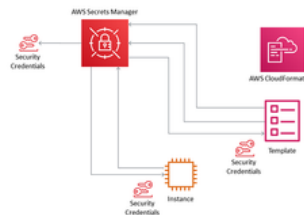
19. KMS : KEY MANAGEMENT SERVICE

Define: KMS
Define: Cryptography
Symmetric Vs Asymmetric
KMS Hands-on



20. AWS SECRETS MANAGER

Introduction to Secrets Management
Storing & Retrieving Secrets
Encryption with AWS KMS
Access Control (IAM Policies)
Rotation of Secrets



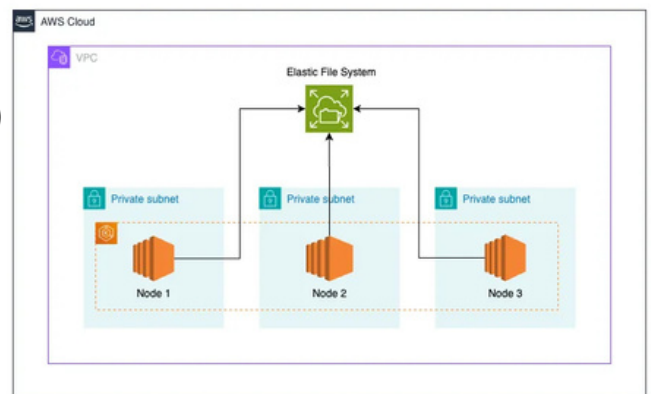
21. AWS LAMBDA

Introduction to Serverless Computing
Lambda Function Creation & Execution
Supported Languages & Runtimes
Event Sources & Triggers
IAM Roles & Permissions
Monitoring with CloudWatch
Error Handling & Retries



22. AMAZON EFS (ELASTIC FILE SYSTEM)

Introduction to EFS
EFS vs EBS vs S3
EFS Architecture & Storage Classes
Mounting EFS on EC2 Instances

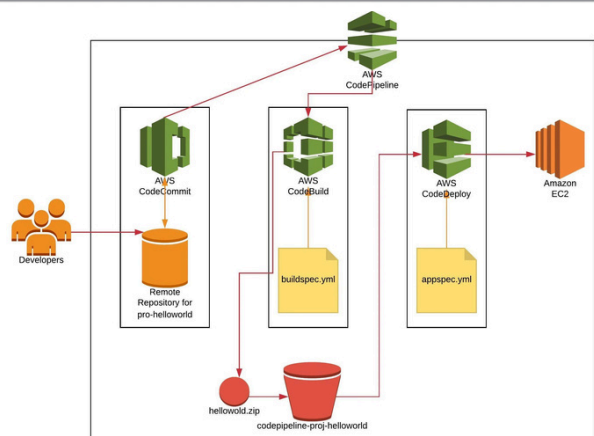


23. AWS CODEDEPLOY

Introduction to AWS CodeDeploy
CodeDeploy vs Other Deployment Services
Application Types (EC2, On-Prem, Lambda, ECS)
Deployment Strategies (In-Place, Blue/Green)
AppSpec File & Lifecycle Hooks
IAM Roles & Permissions
Integration with CodePipeline.

24. AWS CODEPIPELINE

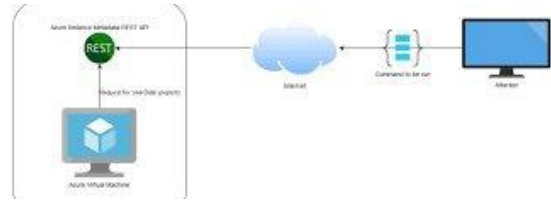
Introduction to AWS CodePipeline
Pipeline Architecture & Components
Source, Build, Test, and Deploy Stages
Deploying with CodeDeploy, EC2
IAM Permissions & Security Best Practices
Automating CI/CD with AWS DevOps Tools
Monitoring & Troubleshooting Pipelines



MICROSOFT AZURE

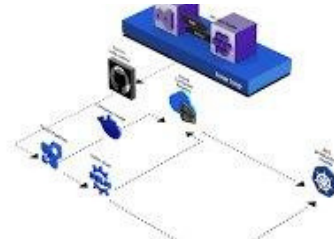
1. AZURE VIRTUAL MACHINES (VMS)

Azure Portal Overview Azure Regions Introduction to Azure VMs Creating and configuring Azure VMs Azure Disk encryption Fault domain & Update Domain Proximity group General Purpose Volume types Best practices for Azure VMs



2. VIRTUAL MACHINE SCALE SETS (VMSS)

Overview of VMSS Creating and configuring VMSS Autoscaling in VMSS Integrating VMSS with Azure Load Balancer



3. AZURE KUBERNETES SERVICE (AKS)

Introduction to AKS Creating and managing AKS clusters Kubernetes Overview - pods, Containers, Services, deployment, replicaset. kubernetes Architecture Deploying and managing containerized applications Integrating AKS with Azure Container Registry

4. AZURE CONTAINER INSTANCES (ACI)

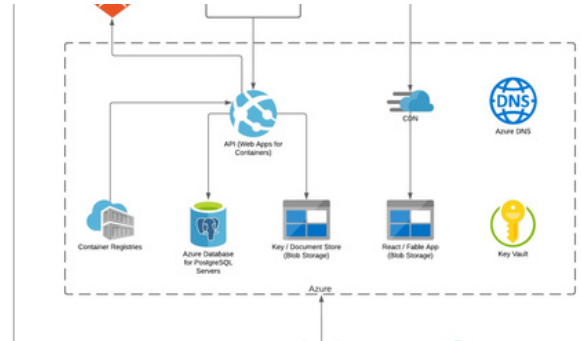
Overview of Azure Container Instances Creating and deploying containers in ACI Best practices for Azure Container Instances

5. Azure Web App

Introduction to Azure Web Apps Creating and configuring web apps Deployment slots in Azure Azure Web App security best practices

6. AZURE FUNCTIONS

Serverless computing overview Creating and deploying Azure Functions Trigger types and bindings



7. AZURE STORAGE ACCOUNT

Introduction to Azure Storage

Key benefits of using Azure Storage Overview of storage account types (General Purpose v1, General Purpose v2, Blob Storage)

Azure Blob Storage

Blob Storage concepts (Containers, Blobs) Blob Types (Block Blobs, Append Blobs, Page Blobs) Blob Storage security (Shared Access Signatures) Blob Storage lifecycle management Blob Storage versioning and soft delete

Azure Queue Storage

Queue Storage concepts (Queues, Messages) How to create and manage queues

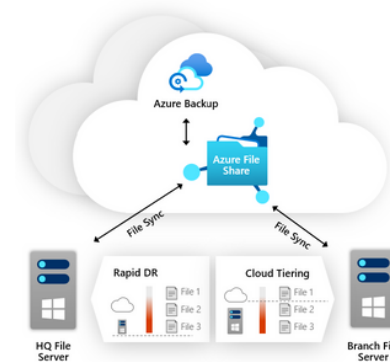


Azure Table Storage

Introduction to Table Storage
(Tables, Entities, Properties)
How to create and manage tables

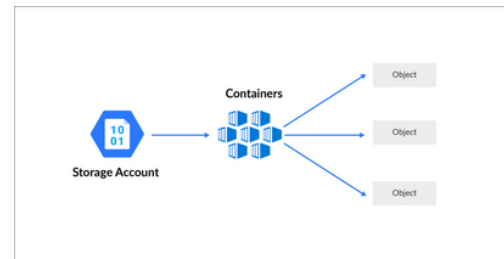
Azure Files

Introduction to Azure Files
Azure Files concepts (Shares, Directories, Files)
How to create and manage Azure Files
Practical exercises for Blob, Queue, Table, and Files Storage



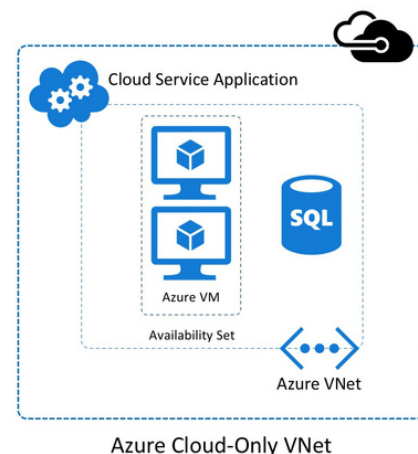
8. ACR

Introduction to Azure Container Registry (ACR) What is Azure Container Registry (ACR)? Benefits of ACR Creating an ACR instance Pushing Docker images to ACR



9. VIRTUAL NETWORKS (VNET)

Introduction to Microsoft Azure Networking
Basics of networking concepts in Azure
Creating and configuring Virtual Networks
Subnetting and address spaces
Network Security Groups (NSG)
Introduction to Network Security Groups
Creating and configuring NSGs
Implementing security rules and restrictions
Best practices for NSG usage
Introduction to (ASG)
Creating and configuring ASG Implementing security rules and restrictions, Best practices for ASG usage
Introduction to VNET Peering: Understanding Virtual Network Peering, Establishing VNET peering connections, Azure Network Watcher Overview, Monitoring and diagnosing network performance, Troubleshooting network connectivity issues, Implementing security recommendations and best practices



10. AZURE APPLICATION GATEWAY

Overview of Azure Application Gateway
features Configuration and deployment of Application Gateway
Load balancing techniques and routing methods
SSL termination and web application firewall (WAF)
integration Backend Pools and health probes Integrating WAF with application Gateway

11. AZURE LOAD BALANCER

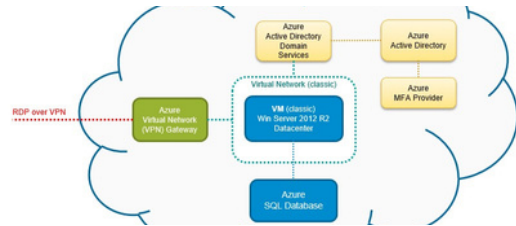
Understanding Azure Load Balancer Configuring Load Balancer for high availability Types of Load Balancing (Internal and External) Health probes and traffic distribution methods



12. AZURE DNS

Introduction to Azure DNS

Public hosted zone & Private hosted zone. Configuring DNS zones and records
DNS resolution



13. AZURE TRAFFIC MANAGER

Implementing DNS-based traffic routing Traffic routing methods (Priority, Weighted, Geographic, Performance)

14. AZURE FRONT DOOR

Introduction to Azure Front Door service

Configuring and managing Front Door for global load balancing Security features and routing policies

15. AZURE CONTENT DELIVERY NETWORK

Understanding Content Delivery Networks Configuring Azure CDN endpoint Content caching and delivery optimizations Monitoring and analytics for CDN performance



16. AZURE KEY VAULT

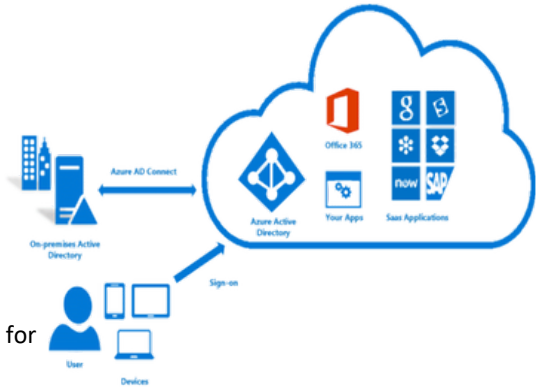
Importance of Security and Compliance in Cloud Introduction to Azure Key Vault Key Vault Architecture and Components

17. AZURE ACTIVE DIRECTORY (AZURE AD)

Overview of Azure AD

Azure AD Identity and Access Management

Azure AD Multi-Factor Authentication



18. AZURE WEB APPLICATION FIREWALL (WAF)

Introduction to Azure WAF WAF Policies and Rules Configuring WAF for Application Security

19. AZURE POLICIES

Introduction to Azure Policies Defining and Assigning Azure Policies
Custom Policy Definitions Remediation Actions with Azure Policies

20. AZURE BACKUP

Creating and configuring backup policies
Configuring backup for Azure Virtual Machines
Configuring backup for Azure Files
Managing backup data retention Reviewing backup reports
Implementing encryption for backup data



21. AZURE SITE RECOVERY

RTO & RPO Planning for Azure Site Recovery
Recovery deployment
Initiating failover and failback operations
Azure Site Recovery integration with
Azure Virtual Machines
Configuring recovery plans



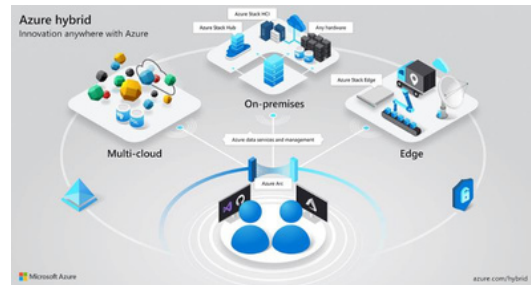
22. AZURE SQL DATABASE

Understanding the Basics of Databases
Types of Databases: SQL vs. NoSQL
Overview of SQL Database and Cosmos DB
Relational Databases and SQL
Basics Introduction to Relational Databases
Overview of NoSQL databases
Introduction to Azure Cosmos DB
SQL Language Fundamentals, Data Types, Operators, and Expressions
Basic SQL Queries: SELECT, INSERT, UPDATE, DELETE



23. ARM TEMPLATES

What are ARM templates?
Why use ARM templates for Azure resource deployment?
Template structure and syntax
Key components of an ARM template
Best practices for collaboration and versioning
Overview of ARM template functions
Single resource deployments



AZURE DEVOPS

24. AZURE REPOS & ARTIFACTS

Source Code Management with Azure
Repos Overview of Azure Repos & Artifact
Working with Repos Cloning repositories
Creating and managing branches

25. AZURE PIPELINES

Continuous Integration with Azure Pipelines
Introduction to CI/CD
Configuring Build Pipelines
Continuous Deployment with Azure Pipelines
Introduction to Deployment
Creating Release Pipelines
Configuring stages and tasks

Azure DevOps



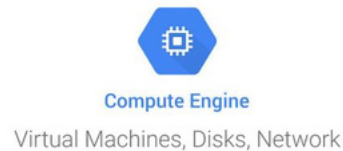
26. AZURE BOARDS

Overview of Azure Boards
Customizing boards
Dashboards and reports
CICD Integration project using Azure DevOps.

GOOGLE CLOUD PLATFORM (GCP)

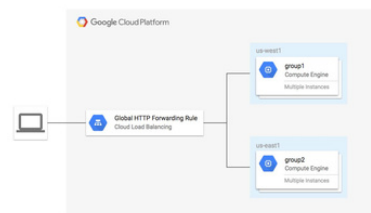
1. GOOGLE COMPUTE ENGINE

- Machine Types & Images in GCE
- Static Web Hosting on GCE
- GCE in Advanced
- Static-IP
- Startup Script
- Instance Templates
- Custom-Images
- Identity & API Access(Service Account)



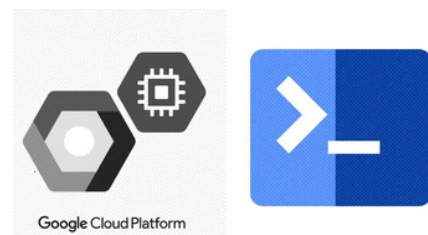
2. INSTANCE GROUPS & LOAD BALANCER

- Managed Instance Group (MIG)
- Managed Instance Group With Rolling Update
- GC Load Balancer and its Protocols(HTTP,HTTPS,UDP & TCP)
- Features of GC Load Balancer
- Load Balancer Across MIG in Multiple Regions



3. GOOGLE CLOUD SHELL

- Connecting to GCP
- Gcloud command structure & playing with services
- List and Describe commands
- Playing with compute instances, Instance Templates, Instance Groups
- Managing Databases
- Creation/Deletion/Modification of Resources
- Deployment using cloudshell



4. GOOGLE APP ENGINE

- App Engine environments & component Hierarchy
- App Engine - Cronjob
- Playing with App Engine
- Deploying new versions without Downtime
- App Engine - Request Routing
- Playing with App Engine Instances
- Playing with App Engine Services and Versions



5. GOOGLE CLOUD CONTAINERS & CONTAINER REGISTRY

- Understanding Cloud containers
- Understanding Container Registry
- Integration with CI/CD Tools



6. GOOGLE CLOUD K8S ENGINE

- Understanding Kubernetes components
 - Pods, Deployments, Replicaset, Service
- Deploy Microservice to Kubernetes
- Scaling the deployed Microservice
- Scaling nodes for Kubernetes cluster
- Setup Autoscaling for kubernetes cluster
- Setup configmaps for Application configuration
- Setup secrets for password configuration



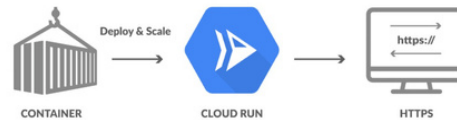
7. GOOGLE CLOUD FUNCTIONS & GEN 2

Understanding Cloud Functions
Understanding Events & Triggers
Deploying Node.js application triggered by event
Understanding Cloud Functions GEN 2
Demo of GEN 2
Deployment using gcloud-2



8. GOOGLE CLOUD RUN

Understanding Cloud Run
Deploy a new container with Cloud Run
Adjust Traffic assignments



9. GOOGLE CLOUD KMS

Create and Manage Cryptographic Keys
Use of keys in applications and GCP Services
Understanding of its integration with GCP services



Key Management Service

10. GOOGLE CLOUD STORAGE AND ITS TYPES : BLOCK STORAGE & FILE STORAGE

Storage Classes in GCP & its comparison
Features across Storage Classes
Types of Storages available in GCP
Playing with MACHINE Images - CLI
Playing with Disks - CLI
Comparison of Different Storages in GCP
Shared cloud Filestore
Signed URL & static website hosting



11. GOOGLE CLOUD WITH CLOUD IAM

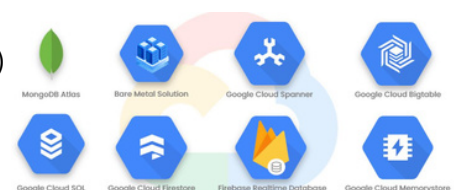
Understanding Cloud IAM
Creation of Roles & Policies
Understanding Predefined roles
Playing with IAM
Understanding Service Accounts in GCP
Service accounts Demo
ACL (Access Control Lists)

Identity and Access Management



12. GOOGLE CLOUD DATABASES

Understanding Different Types of Databases in GCP
Database - snapshots
Demo for Disaster recovery in database (Transaction Logs, Add a standby)
Understanding RTO and RPO
Relational Databases
Cloud Pub/Sub
Cloud Memorystore



13. NOSQL DATABASES IN GCP

Understanding Cloud Datastore & Firestore
Understanding Cloud BigTable
Creating tables with bigtable
Table operations (Create,read,write) through shell commands
cli commands in BigTable

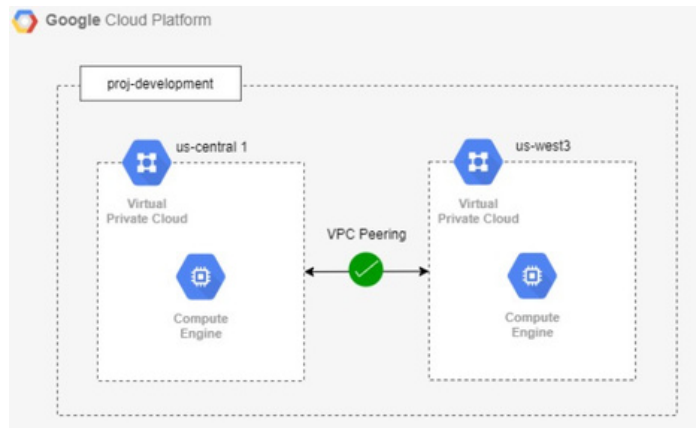


14. GOOGLE CLOUD VPC

Understanding Google Cloud VPC & its scopes
Creating VPC's and subnets
CIDR blocks
Firewall Rules (Ingress & Egress Rules)

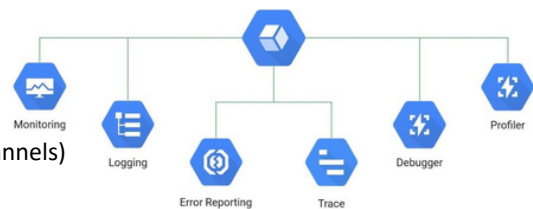
15. GOOGLE CLOUD PEERING

Understanding Google Cloud Peering
Connecting different VPC's from different projects
Cloud VPN
Cloud Interconnect
Direct Peering



16. GOOGLE CLOUD MONITORING & LOGGING

Monitoring in GCP
Configure Alerts
Create visualizations
Define Alerting policies (Condition & Notifications - Multiple channels)
Monitoring Workspace
Cloud Logging
Real time cloud logging
Integration with various services in GCP



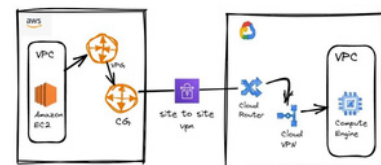
17. GOOGLE CLOUD DATA WARE HOUSING BIGQUERY

Understanding BigQuery
Its use cases in different types of business's
Sample application demo



18. GCP CLOUD MIGRATION

Understanding Cloud Migration Architecture
Migrate service in GCP
VPC, VPN & Firewall rules configuration for migration
Real time demo of onprem to GCP Migration



18. GCP CLOUD MIGRATION

Understanding Cloud Migration Architecture
Migrate service in GCP
VPC, VPN & Firewall rules configuration for migration
Real time demo of onprem to GCP Migration

DEVOPS

1. GITHUB

MODULE 1: INTRODUCTION TO GIT & GITHUB

What is Git? What is GitHub?

Installing Git & Setting Up GitHub

Basic Git Commands (git init, git status, git add, git commit)

Creating a GitHub Repository & Connecting it to Git

Cloning a Repository

MODULE 2: WORKING WITH REPOSITORIES

Viewing Commit History

Branching & Merging (git branch, git checkout, git merge)

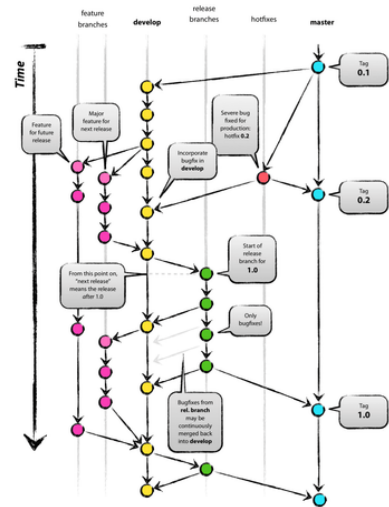
Pull Requests & Code Reviews

MODULE 3: COLLABORATION & TEAMWORK

Forking & Cloning Repositories

Working with Remote Repositories (git push, git pull, git fetch)

Managing Merge Conflicts



2. JENKINS

MODULE 1: INSTALLATION & RUNNING SCHEDULED JOBS

Introduction to Jenkins & Its Use Cases

Installing Jenkins on Linux Server

Setting Up Jenkins & First-Time Configuration

Installing Essential Plugins

Creating & Managing Jenkins Jobs

Scheduling Jobs with Cron Expressions

MODULE 2: MASTER & NODE SETUP

Understanding Jenkins Master-Slave Architecture

Adding & Configuring Nodes (Agents)

Connecting Nodes to Jenkins Master

Running Jobs on Specific Nodes

Load Balancing & Distributed Builds

MODULE 3: DEPLOYING JAVA APPLICATION IN TOMCAT

USING JENKINS

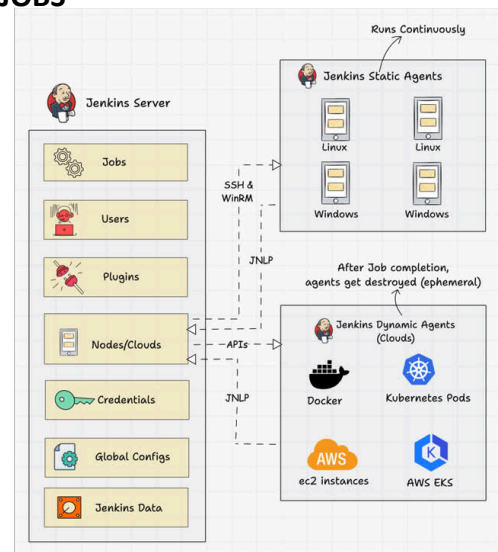
Setting Up Apache Tomcat for Deployment

Configuring Jenkins for Continuous Deployment

Writing a Simple Jenkins Pipeline for Java Applications

Deploying a Java WAR File to Tomcat using Jenkins

Automating the Deployment Process with Post-Build Actions



3. DOCKER

MODULE 1: INTRODUCTION TO DOCKER

What is Docker? Why Use It?

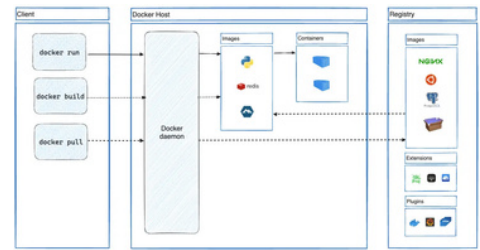
Understanding Containers vs. Virtual Machines

Understanding Docker Architecture & Container Lifecycles

Installing Docker on Linux Server

Basic Docker Commands (docker run, docker ps, docker stop, docker rm)

Working with Docker Images (docker pull, docker images, docker rmi)



MODULE 2: WORKING WITH DOCKER IMAGES & CONTAINERS

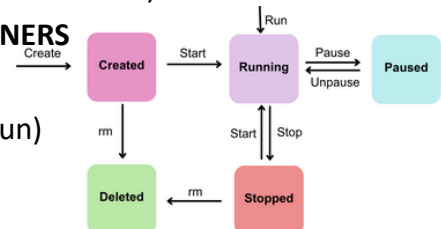
Creating Custom Docker Images (Dockerfile Basics)

Building & Running Docker Images (docker build, docker run)

Managing Data with Volumes & Bind Mounts

Networking in Docker (docker network)

Environment Variables & Configuration



MODULE 3: DOCKER COMPOSE & MULTI-CONTAINER APPLICATIONS

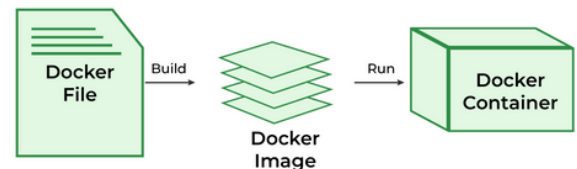
Introduction to Docker Compose

Writing a docker-compose.yml File

Running Multi-Container Applications

Managing Services with docker-compose up/down

Scaling Applications with Compose



MODULE 4: DOCKER NETWORKING & SECURITY

Understanding Docker Networking (Bridge, Host, None, Macvlan, IPvlan & Overlay Networks)

MODULE 5: RESOURCE MANAGEMENT

Understanding Docker Shared Volumes (Bind, Named, Anonymous, Tmpfs Mounts)

Reducing Docker Image Size Using MultiStage Builds

Building application using Multistage Builds

Introduction to Docker Swarm for Container Orchestration

4. ANSIBLE

MODULE 1: INTRODUCTION & INSTALLATION

What is Ansible? Why Use It?

Key Components: Control Node, Managed Nodes, Inventory

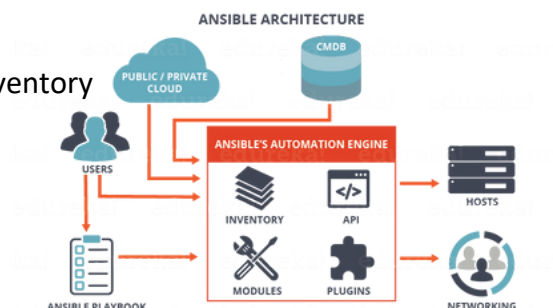
Ansible vs. Other Configuration Management Tools

Real-World Use Cases of Ansible

Installing Ansible on Linux

Setting Up SSH Access for Ansible

Configuring Ansible Inventory (/etc/ansible/hosts)



MODULE 2: AD-HOC COMMANDS & PLAYBOOKS

What Are Ad-Hoc Commands & When to Use Them?

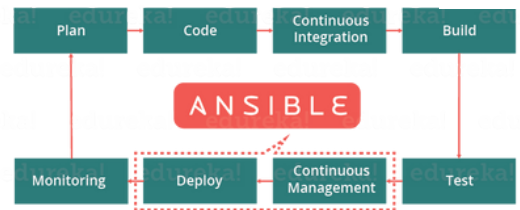
Using Ansible Modules

Managing Files, Users, and Services

Introduction to YAML & Playbook Structure

Writing Basic Playbooks (tasks, handlers, vars)

Using Loops & Conditionals in Playbooks



MODULE 3: ROLES & VAULT (SECRETS MANAGEMENT)

Understanding Role-Based Automation

Creating & Using Roles

Role Directory Structure (tasks, handlers, vars, templates)

Importing & Reusing Roles in Playbooks

Using Ansible Galaxy for Pre-Built Roles

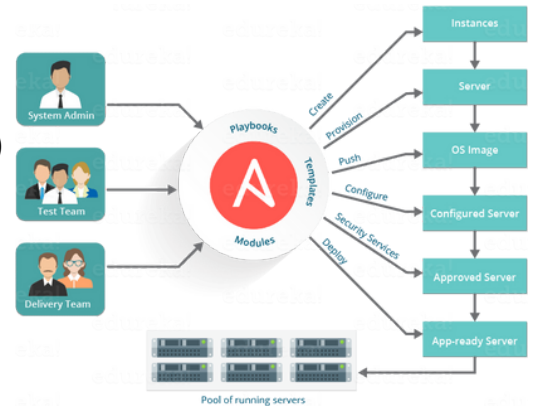
Introduction to Ansible Vault for Secure Data Handling

Encrypting & Decrypting Files

Editing & Viewing Encrypted Files

Using Vault in Playbooks

Automating Vault with Password Files



5. LOGGING AND MONITORING SERVICES

I. PROMETHEUS

MODULE 1: INTRODUCTION & INSTALLATION

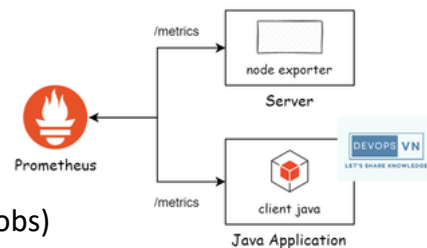
What is Prometheus? Why Use It?

Prometheus Architecture & Components

Installing Prometheus on Linux Server

Configuring Prometheus (prometheus.yml, Targets, Jobs)

Running Prometheus



MODULE 2: PROMETHEUS METRICS & DATA COLLECTION

Understanding Prometheus Metrics

Working with Prometheus Node Exporter

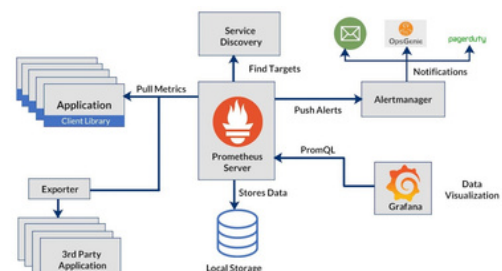
MODULE 3: ALERTING & INTEGRATIONS

Setting Up Prometheus Alerts with Alertmanager

Configuring Alerting Rules & Notifications

Sending Alerts via Email

Integrating Prometheus with Other Monitoring Tools (Grafana)



II. GRAFANA

MODULE 1: INTRODUCTION & INSTALLATION

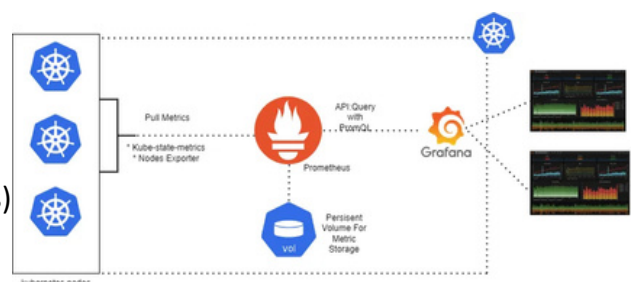
What is Grafana? Why Use It?

Installing Grafana on Linux Server

Overview of Grafana UI & Navigation

Connecting to Different Data Source (Prometheus)

User Management & Permissions



MODULE 2: CREATING & CUSTOMIZING DASHBOARDS

Understanding Grafana Panels & Queries

Creating & Modifying Dashboards

Adding & Configuring Visualization Panels (Graphs, Gauges, Tables)

Working with Time-Series Data

Setting Up Thresholds & Alerts

MODULE 3: ADVANCED FEATURES & INTEGRATIONS

Setting Up Notification Channels (Email)

Implementing Role-Based Access Control

Best Practices for Dashboard Performance Optimization



III. SPLUNK

MODULE 1: INTRODUCTION & INSTALLATION

What is Splunk? Why Use It?

Splunk Architecture (Indexer, Forwarder, Search Head)

Installing Splunk on Linux Server

Splunk Web Interface Overview

Configuring Data Inputs & Monitoring Files

MODULE 2: WORKING WITH DATA & SEARCH QUERIES

Understanding Splunk Processing Pipeline

Using Search Processing Language (SPL)

Running Basic Search Queries

Filtering & Formatting Search Results

Working with Fields, Stats, and Event Types

MODULE 3: DASHBOARDS, ALERTS & REPORTING

Creating & Customizing Splunk Dashboards

Using Panels, Graphs, and Charts

Setting Up Scheduled Reports

Configuring Alerts & Notifications

Best Practices for Performance Optimization



6. TERRAFORM

MODULE 1: INTRODUCTION TO TERRAFORM

What is Terraform?

Infrastructure as Code (IaC) Concepts

Installing & Configuring Terraform

MODULE 2: VPC CREATION USING TERRAFORM SCRIPT

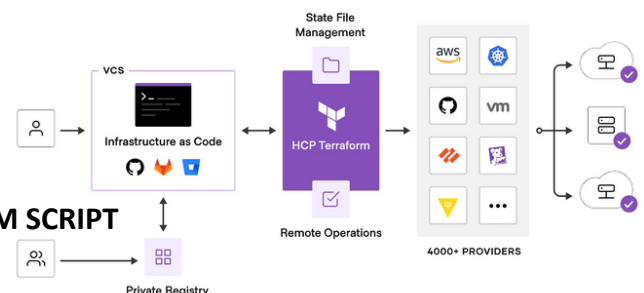
Writing Terraform Code for VPC Creation

Managing Subnets, Internet Gateways, and Route Tables

MODULE 3: CREATING INFRASTRUCTURE USING JENKINS PIPELINES & TERRAFORM

Integrating Terraform with Jenkins

Automating Infrastructure Deployment Using CI/CD



7. KUBERNETES

MODULE 1: INTRODUCTION & CLUSTER CREATION

Overview of Kubernetes & Its Architecture

Setting Up a Kubernetes Cluster (Minikube/Kubeadm/EKS)

Module 2: Objects in Kubernetes (Theory + Practical)

Understanding Kubernetes Objects

Working with Pods, Deployments, ReplicaSets, and Namespaces

MODULE 3: SERVICES IN KUBERNETES (THEORY + PRACTICAL)

ClusterIP, NodePort, LoadBalancer, and Ingress Services

Exposing Applications in Kubernetes

MODULE 4: KUBERNETES CONFIGURATIONS & STORAGE

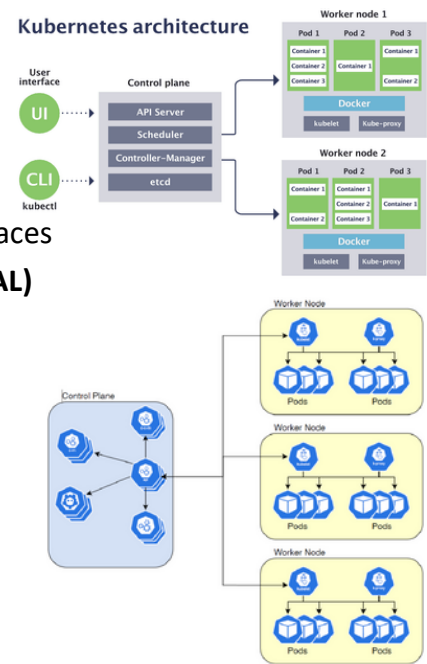
Secrets & ConfigMaps

Persistent Volumes (PV) & Persistent Volume Claims (PVC)

MODULE 5: HELM PACKAGE MANAGER

Introduction to Helm & Chart Repositories

Creating & Deploying Helm Charts



COMPLEMENTARY SESSIONS

1. LINUX BASICS

2. PYTHON BASICS

3. PROJECT SESSIONS

4. RESUME PREPARATION

5. MOCK INTERVIEWS