K.T. GROUP TRAINING CENTER

Azure DevOps - Course Content

Introduction to DevOps
What is DevOps
Overview of various DevOps Methodologies
Difference between Waterfall Model vs Agile vs Scrum
Understanding and Overview of various Azure Cloud services
Introduction to Azure
Creating Account
Explore Azure Portal
Azure Compute
Azure Networking
Azure Active Directory
Azure App services
Azure SQL Server
Azure Key-Vault
Azure Monitoring
Azure Container registry
Azure Kubernetes Services
Containerization using Docker (Pre-requisite)
Docker Architecture
Container Lifecycle
Port Binding
Detached and Foreground Mode
Dockerfile
Dockerfile Instructions
Docker Image
Docker Registry
Volumes
Docker Compose
Kubernetes - Container Orchestration Tool (Pre-requisite)
Kubernetes fundamentals with kubectl –Imperative
Understand Kubernetes Architecture
Introduction to Kubernetes Fundamentals
Introduction to Kubernetes Pods
Create a Pod, Understand about it and delete pod
Load Balancer Service Introduction

Create Pod and LoadBalancer Service and Test
Interact with pods, logs, connect to pod and cleanup
Introduction to Kubernetes ReplicaSets
Create ReplicaSet and Test it
Introduction to Kubernetes Deployments
Create Deployment, Expose with a Service, Scale Up and Down Replicas
Introduction to Services in Kubernetes

Services Demo with Cluster IP and Load Balancer Services
Kubernetes fundamentals wirh YAML – Declarative approach
ntroduction to creating Kubernetes Resources using declarative path
Create Pod Definition using YAML
Create Load Balancer Service using YAML
Create ReplicaSet and LoadBalancer Service with YAML and Test
Create Deployment and LoadBalancer Service with YAML and Test
Introduction to Azure Devops portal
Azure DevOps Boards
Getting started with Azure DevOps Demo generator
Azure Devops with Boards and backlogs
Exploring Azure DevOps Boards - Epics, Features and User Stories
Azure DevOps - Boards View vs Backlogs View
Understanding Sprints in Azure DevOps
Creating Azure DevOps Queries
Azure DevOps Repos
Exploring Files, Commits, pushes, Branches, Tags, Pull Requests
Azure DevOps – Continuous Integration CI - Pipelines
Introduction to Azure DevOps build pipelines
Azure Container Registry
Create a Local Repository, Check-In Files and Push to Remote Github Rep
Create ACR, Azure DevOps Organization and Project and Discuss
Create a Build Pipleline to Build and Push Docker Image to ACR
Make changes to index.html to V2, commit and push changes and review
Understand Namespaces in Azure Container Registry using Azure DevOps
Review Docker Build and Push Pipeline code on a high level
Azure Devops - Build Docker Image, Push to ACR and Deploy to Azure AKS
Deploy to AKS Introduction
Create Pre-built pipeline named Deploy to AKS
Review Build and Deploy Stage Logs, Kubernetes Pods Access Application
Deploy New Version of Application and review Pipeline stages Build, Deployment
Review Pipeline code for Build and Deploy Stages
Azure Devops – Create pipelines from scratch using Starter pipeline
Introduction to Azure starter pipeline

Create Semi customized Pipeline for Build, Push Docker Image to ACR
Create using Starter Pipeline for Build, Push Docker Image to ACR
Azure DevOps – Release Pipelines – Continuous Delivery
Release Pipelines Introduction
Create k8s Namespaces and Service Connections to those k8s Namespaces
Create Release Pipeline with Dev Stage and Map Artifacts from CI Build
Verify Image name in k8s manifest and Check-In new code and review
Change the Docker Image tag to Build.Source Version and test
Create QA, Staging and Prod Stages in Release Pipelines with email app
Check-In new code, review entire Build and Release Pipelines

Infrastructure as a code using Terraform
Install Pre-requisistes, Terraform, AZ CLI, set Azure Subscription
Understand Terraform Providers and Terraform Init Command
Understand Terraform plan, validate and apply commands
Make changes and apply like add tags, modify resource group
Understand Terraform refresh command in combination with tfstate files
Understand terraform show, providers and destroy commands
Introduction to Terraform Language Basics
Create Terraform Settings Block, Provide Block
Understand Terraform Input Variables
Understand Terraform Output Values
Deploy Terraform manifests and Verify
Migrate Terraform Local State to Azure Storage Account
Provision Azure AKS Cluster Introduction (Using Terraform)
Create SSH Keys, Windows Admin & Password, AKS latest version Datasource
Create Log Analytics Workspace and Azure AD Group Terraform Resources
Create AKS Cluster Manifest
reate Outputs, Provision AKS Cluster and Verify Outputs
Verify Access using default AKS Admin and Azure AD User associated to A
Create Windows and Linux Nodepools
Deploy Sample Apps, test and execute terraform destroy
Provision AKS Cluster with Custom VNET
Verify the cluster, nodepools and deploy sample apps, test and destroy

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