ABOUT KUBERNETES

Kubernetes is an open-source orchestrator which is used to create, manage, and deploy containerized applications (microservices). It supports container APIs with quick shipping and scaling with decoupled architecture. It acts as a self-service platform that creates a hardware abstraction layer for the development team. Thereby, they can quickly access the resources as well as handle the additional load.

KUBERNETES VIRTUAL TRAINING BY DECCANSOFT

The goal of our Kubernetes LIVE Training course is to deliver high-quality training that covers solid fundamental knowledge of core concepts with a practical approach. Attend this LIVE training and explore your cloud-native career with Kubernetes.

OUR TRAINING METHODOLOGY

Our star trainer Mr. Sandeep Soni, having 27+ years of experience in the IT industry, has compiled this course along with its courseware. He will be himself delivering it.
The teaching methodology of Mr. Sandeep Soni is very simple but comprehensive, every topic in the Kubernetes begins with in-depth concepts. You will get a comfortable state about what is being talked about as every topic is covered with practical demos and case studies. All the topics and their features will be incorporated in real-time situations.

PRE-REQUISITE

- Understanding of containerization
- Basic understanding of Docker and its CLI
- Basic aptitude with shell

WHO CAN DO THIS COURSE?

- Developers, who are mostly involved in developing Microservices Architected applications.

- DevOps Engineers, who would be involved in deploying applications using CI/CD Pipelines

- Solution Architects, looking forward to building Kubernetes containers-based applications.

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ABOUT CKAD EXAM

The Certified Kubernetes Application Developer (CKAD) exam is a certification offered by the Cloud Native Computing Foundation (CNCF). It is designed to validate the skills and knowledge of developers who work with Kubernetes. The CKAD exam is a practical, performance-based test that typically lasts for two hours. It is a hands-on exam where candidates are given a set of tasks to perform in a live Kubernetes cluster.

To prepare for the CKAD exam, candidates often engage in hands-on practice using a Kubernetes cluster. Our course will help candidates prepare for the exam as we take a complete practical approach while teaching and participants will be fully involved with hand-on practice on every topic.

KUBERNETES COURSE OUTLINE

Introduction to Kubernetes and its Architecture

- Why Orchestration
- What is Kubernetes
- Why Kubernetes
- Kubernetes features
- Kubernetes Architecture
- Kubernetes Master
- Worker Nodes
- Overview of Kubernetes Objects

Setup Kubernetes Cluster

- Install Docker for Desktop / Minikube
- Creating AKS/EKS Cluster
- Understanding Kubernetes Config file
- Switching Context using Kubectl

Working with Pods and Kubectl Imperative and Declarative Commands

- Create out first pod with kubectl
- Basic Kubectl Commands

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- Inspecting Kubernetes Objects using kubectl

- About Kubernetes Generators

- Imperative vs Declarative Commands

- Exploring YAML Syntax

  - Name and Metadata

  - Labels and Label Selectors

- Kubernetes Namespace

- Working with Dashboard

Understanding and working with Kubernetes Objects

- Pods

- Multi-container Pod design patterns

- Replication Controller

- Replica Sets

- Self-Healing Applications.

- Creating Deployment

- Handling Rolling Updates and Rollbacks

- Best practices in rolling upgrades

Services, Ingress and Networking

- Service Types

  - Creating a ClusterIP Service

  - Creating a NodePort

  - LoadBalancer Service

- Canary Deployment, Blue-Green deployment

- Working with Ingress

- Ingress Controllers

- Ingress Annotations and rewrite target

- Kubernetes Services DNS

- Understanding Network Policies

Advanced Kubernetes Objects

- configMap and Environment Variables

- Working with Secrets and sensitive information

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- Kubernetes Shared Volumes
- Persistent Volumes and Persistent Volume Claims
- StatefulSet and Headless Service
- DaemonSets
- Jobs
- Scheduling using Cron Jobs

Azure Kubernetes Service

- About AKS
- Creating AKS Cluster using Portal
- Creating AKS Cluster using CLI
- Connecting to AKS Cluster using Kubectl
- Deploying Kubernetes Objects to AKS
- Pulling Images from ACR and DockerHub
- System Nodes vs User Nodes
- AKS Networking: Azure CNI vs Kubenet
- AKS Logging and Monitoring

Miscellaneous Topics

- Resource Limits
- Limit Ranges
- Configure Memory and CPU Quotas for a Namespace
- Manual and Auto Scaling
- Termination Grace Period
- Init Containers
- Node Selector
- Affinity
- Taints and Tolerations
- Working with Probes

Kubernetes Security

- Authentication and Authorization
- Understand ServiceAccounts

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- Understand SecurityContexts
- Role Based Access Control

Cluster Observability

- Cluster metrics
- Application monitoring
- Utilize container logs
- Debugging in Kubernetes

Helm Packages

- What is Helm?
- Why to use Helm?
- Helm Commands
- Understanding and creating Helm Charts
- Helm Templates
- Functions and Pipelines
- Implement Logic in Helm Charts
- Helm Repositories

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