

INFOSOFT IT SOLUTIONS

Training | Projects | Placements

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GCP KUBERNETES

Introduction to Kubernetes

- Overview of Kubernetes architecture
- Kubernetes key components (Pods, Services, Deployments, etc.)
- Comparing Kubernetes with other container orchestration tools

Setting Up Kubernetes on GCP

- Creating a Kubernetes cluster on Google Kubernetes Engine (GKE)
- Cluster management and configuration options
- Access control and authentication methods

Kubernetes Pods and Deployments

- Creating and managing Pods
- Deployments and ReplicaSets
- Rolling updates and rollback strategies

Services and Networking

- Kubernetes networking concepts (Services, Ingress, Network Policies)
- Service discovery and load balancing
- Configuring DNS and network security

Storage Management

- Persistent storage options in Kubernetes
- Configuring persistent volumes and claims
- StatefulSets and managing stateful applications

Monitoring and Logging

- Monitoring Kubernetes clusters with Stackdriver
- Setting up logging and monitoring alerts
- Analyzing cluster performance metrics

Security Best Practices

- Kubernetes security overview
- Securing cluster components and workloads
- Role-based access control (RBAC) in Kubernetes

Scaling and Autoscaling

- Horizontal and vertical scaling in Kubernetes
- Configuring autoscaling policies
- Cluster and application performance optimization

Continuous Integration and Deployment (CI/CD) with Kubernetes

- Integrating Kubernetes with CI/CD pipelines
- Deploying applications using GitOps principles
- Blue-green deployments and canary releases

Advanced Kubernetes Topic

- Kubernetes Operators and custom controllers
- Service mesh concepts
- Using Helm for package management