

# INFOSOFT IT SOLUTIONS

## Training | Projects | Placements

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## Kubernetes

### Kubernetes Fundamentals

- What is Kubernetes
- What does that mean though?
- Where did Kubernetes come from?
- What Kubernetes is not!

### Kubernetes Architecure

- Kubernetes Cluster
- Kubernetes Node
- Kubernetes Objects
- Names
- Namespaces
- Labels and Selectors
- Annotations
- Recommended Labels

### Running Kubernetes

- Turnkey Cloud Solutions
- AWS
- Azure
- GCP

- Custom Cloud Solutions
- KOPS
- On Premises Turnkey
- Rancher
- Kubeadm
- Minikube
- Kubectl
- Commandline Tricks

## **Pods**

- Pod Overview
- Pod Manifest
- Creating Pods
- Pod Lifecycle
- Pod Logs
- Describing Pods

## **Controllers**

- ReplicationController
- ReplicaSet
- Deployments

## **Services**

- Overview
- Publishing Services
- NodePort

## **Package Management**

- The Problem
- Helm

- How Helm Works
- Initialization
- Stable Repo
- Installing a Chart
- Creating a Chart

## **Ingress**

- Overview
- Simple Ingress
- Complex Ingress

## **Config Maps**

- Overview
- Creating a ConfigMap
- Using a ConfigMap
- ConfigMap as a Volume

## **Secrets**

- Overview
- Creating a Secret from file
- Secret types
- Viewing a Secret
- Create a Secret from a manifest
- Decoding a Secret
- Using Secrets as Volumes
- Using Secrets as Env Vars
- Encrypting Secrets at rest

## **Namespaces**

- Overview

- Creating Namespaces
- Using Namespaces
- Setting the Context Namespace
- Objects that support Namespaces
- Objects that don't support Namespaces

## **Volumes**

- Overview
- Volume Types
- ConfigMap as a Volume
- hostPath Volume
- emptyDir Volume
- Subpaths
- Mount Propagation

## **Persistent Volumes**

- Overview
- PV vs PVC
- Persistent Volume Plugins
- Static Provisioning
- Dynamic Provisioning
- Phases

## **Networking**

- Networking Problems
- Docker Networking
- Kubernetes Networking
- Networking Implementations
- Overlay Network
- Network Policy

- Flannel

## **Security**

- Best Practices
- Controlling API Access
- TLS
- Users
- API Authentication
- API Authorization
- RBAC
- RoleBinding & ClusterRoleBinding
- Service Accounts
- Pod Security Policies
- Authentication Providers
- Authorization Providers
- Admission Controllers
- Additional Security Precautions