

Prerequisites -- Kubernetes Foundations

- 1.Containers
- 2.Linux Kernel Features
- 3.Container User Experience
- 4.New Container Capabilities
- 5.Gaps using Containers in Production
- 6.Microservices
- 7.DevOps

Course Content

1. DOCKER ADMINISTRATION & OPERATIONS

- Installing the Docker Engine
- Creating our first Docker container
- Building Docker images
- Storing and retrieving Docker images from Docker Hub
- Building containers from images
- Networking Docker containers
- Data persistence with Volumes
- Using Docker into a Continuous Integration and Deployment process

2. Core Concepts of Kubernetes

- 1.Cluster Orchestration
- 2.Looking at K8S Origination at Google
- 3.Open Source

4.Benefits

5.Design Principles

3. Navigating Kubernetes Architecture

1.Master/Node

2.Kubectl

3.Replication Controller

4.Kubelet

5.Kube-Proxy

6.Persistent Volumes

7.Etcd

8.High Availability

4. Using Kubernetes Features

1.Pods

2.Labels

3.Services

4.Namespaces

5.Resource Quota

5. Security and Kubernetes

1.Goals

2.Roles

3.Attribute Based Access Control

4.Policies

5.Service Accounts

6.Secrets

6. Networking and Kubernetes

1.Docker Networking

- 2.Kubernetes Networking
- 3.Pod to Pod
- 4.Exposing Services
- 5.IP Per Pod
- 6.Inter Pod Communication
- 7.Intra Pod Communication

7. Cluster Add-ons

- 1.Cluster DNS
- 2.Logging with Elasticsearch and Fluentd
- 3.Container Level Monitoring
- 4.cAdvisor
- 5.InfluxDB
- 6.Prometheus

8. Practical Kubernetes Examples

- 1.Hello World
- 2.Wordpress
- 3.Guestbook
- 4.3 Tier App
- 5.Http/Https Load Balancing

9. Continuous Integration with Kubernetes

- 1.Canary Release
- 2.Blue Green Deployment
- 3.A/B Testing
- 4.Rolling Update
- 5.Jenkins Plugin

10. Roadmap/Beta

1.Ingress

2.Deployments

3.Autoscaling

4.Jobs

5.DaemonSets

6.Network Plugins

7.DNS