

Kubernetes Administration Using Docker

1. Docker Administration

1. Introduction to Containers
2. Introduction to Docker
3. Downloading and Installing Docker
4. Docker Essential Commands
5. Docker Engine
6. Understanding Docker Images
7. Building Docker Images
8. Storing and Retrieving Docker Images from Docker Hub
9. Private Registry
10. Managing Cgroups
11. Building Containers from Images
12. Understand Storage Plugins
13. Networking Docker Containers
14. Data Persistence with Volumes
15. Linux Capabilities
16. Creating and Managing Certificates

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.Role 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

7. Logging/Monitoring

1. Monitor Cluster Components
2. Monitor Applications
3. Container Level Monitoring
4. Manage Cluster and Application Logs
5. Prometheus

8. Practical Kubernetes Examples

1. Hello World
2. Guestbook
3. Metal Load Balancer

9. Application Lifecycle Management

1. Understand Deployments and how to perform rolling updates and rollbacks.
2. Know various ways to configure applications.
3. Know how to scale applications.
4. Understand the primitives necessary to create a self-healing application.

10. Roadmap/Beta

1.Ingress

2.Deployments

3.Jobs

4.DaemonSets

5.Network Plugins

6.DNS