

Kubernetes Administration Using Docker

Duration: 3 Days

Prerequisites for this course: Basic Linux Knowledge

Hands-On Format: This hands-on class is approximately 80/20 lab to lecture ratio, combining engaging lecture, demos, group activities and discussions with comprehensive machine-based practical programming labs and project work.

Modules	Topic	
Module 1 - Docker Administration	<ul style="list-style-type: none"> - Introduction to Containers - Installing Docker - Building Docker Images - Public and Private registry - Data persistence with volume - Linux capabilities 	[Day-1]
Module 2 - Core Concepts of Kubernetes	<ul style="list-style-type: none"> - Introduction - Overview - Benefits - Setup and installation - Design Principles 	[Day-1]
Module 3 - Navigating Kubernetes Architecture	<ul style="list-style-type: none"> - Master/Node - Kubectl - Kubeadm - Kubelet - Kube-Proxy - etcd - API server - Scheduler - Controller 	[Day-2]
Module 4 - Using Kubernetes Features	<ul style="list-style-type: none"> - YAML introduction - Pods - Labels - Replica Set - Services - Deployment - Manual Scheduling 	[Day-2]
Module 4 - Other features	<ul style="list-style-type: none"> - Resource Management - Namespace - Resource limit - Resource quota 	[Day-2]
Module 5 - Storage	<ul style="list-style-type: none"> - EmptyDir - host volume - Persistent Volume - Persistent Volume Claim 	[Day-3]

**Module 6-
Environment Variables**

- Plain Key value
- ConfigMap
- Secrets

[Day-3]

**Module 7-
Extra workloads**

- Jobs
- CronJobs
- DaemonSets

[Day-3]

**Module 8-
Security**

- Security Context
- Authentication
- Service Account
- Authorization
- RBAC
- Roles
- Cluster Roles
- Role Bindings
- Cluster Role Bindings

[Day-3]