SETC Training Corporate Logo

Cloud Training: Mastering Kubernetes (KUBEIMP, 4 jours)

Tarifs

- Tarification: $3,750/person
- Rabais de 10% lorsque vous inscrivez 3 personnes.

Plan de cours

Getting things Ready: Docker

- Containerization vs Virtualization
- Getting Excited about Docker
- Architecture of Images
- Spinning up a Container
- About Container Lifetime
- Understanding Volumes and Bind Mounts
- Understanding Container Networking
- Building a Swarm
- About Dockerfile and Docker Compose
- Creating an Image
- Creating a Repository

Introduction: Kubernetes Architecture and Components

- The Role of Kubernetes: Docker and Microservice Delivery
- Exploring Cluster Architecture: Master and Node
- Master Services: etcd, kube-apiserver, kube-controller-manager, kube-scheduler and cloud-controller-manager
- Node Services: Docker, kubelet and kube-proxy
- Objects and Workloads: Pods, Replication Sets and Controllers, Deployments, Stateful Sets, Daemon Sets, Jobs
- More to Explore: Services, Volumes, Labels and Annotations
- Putting it all Together

Setting up the Kubernetes Cluster

- Preparing the Servers: Required Software and Configuration
- Setting up the Host Network and Firewall
- Adding the Kubernetes Repo
- Installing kubeadm and other Services
- Initializing the Master and Joining the Nodes
- Configuring Users and Security
- Exploring Networking Options
- Configuring Pods

The World of Pods

- Pod Design Principles for Enterprise Applications
- Pods: Concepts and Networking
- Exploring yaml Descriptors and kubectl
- Creating a Pod
- Configuring Pod Access
- Organizing Pods with Labels
- Exploring Label Operations
- Scheduling Pods to Nodes

Working with Annotations and Namespaces
Managing Pod Lifecycle

Replication, Controllers and Daemon Sets

Component Overview
Working with Liveness Probes
Exploring Replication Controllers and The Replication Process
Creating a Replication Controller
Working with the Replication Controller
Exploring ReplicaSets and Pods
Creating and Managing a ReplicaSet
Creating and Managing a DaemonSet
Creating and Managing a Job
Exploring Use Cases in and Enterprise Context

Exploring Services

About Services and Service Entry Points
Creating and Managing Services
Connecting Services to the Outside World
Making Services accessible to External Clients
Exploring NodePort for External Service Delivery
Exploring JsonPath for External Service Delivery
Exploring Ingress Resources for External Service Delivery
Launching the Service
About Headless Services

Managing Storage

Providing External Storage: Overview and Architecture
About Volumes and Volume Types
Sharing Data between Containers
Accessing the Worker Node Filesystem
Using Persistent Storage
Implementing Pod Independent Storage

Kubernetes to Container Information Exchange

Architecture and Concepts
Passing Command Line Arguments to Applications
Setting Environment Variables for a Container
Creating and Using a ConfigMap for Configuration
Passing Sensitive Data to Containers using Secret
Exploring the Downward API
Exploring the Kubernetes REST API
Authentication and Server Verification
Accessing the API server from a Container

Deployments

Concepts and Use
Upgrading Pods
Creating and Using Deployment Resources
Managing Pod Rollouts and their Lifecycle
Deploying Stateful Clustered Applications
Creating Pod Replicas
Managing Pod Replicas: Storage, Name and Hostname
About Certificates and Security
About Performance and Available Resources