

**Kubernetes in a Day**

**Course Number:** CLD-116
**Duration:** 1 day

**Overview**

This Kubernetes in a Day training course teaches attendees the fundamentals of Kubernetes and the patterns needed to develop, build, and deploy applications. Participants learn key concepts behind virtual machines, containers, and processes.

**Prerequisites**

All students must have a basic understanding of Linux/Unix and Python programming.

**Materials**

All Kubernetes training attendees receive comprehensive courseware.

**Software Needed on Each Student PC**

A complete remote environment is included for each student in the class. You will need Internet access, a modern web browser, and an SSH client to access the environment.

**Objectives**

* Understand the steps involved in DevOps methodology
* Deploy apps to Kubernetes
* Make Kubernetes YAML manifests and deploy using infrastructure-as-code methods
* Compare apps in Docker, Swarm, and Kubernetes and understand the pros/cons of each
* Develop locally while your code runs in a container
* Lead your team into the future with the latest Docker container skills
* Understand principal concepts and practices in DevOps methodology
* Use Docker, Compose, and Kubernetes on your machine for better software building and testing

**Outline**

* Introduction to Kubernetes
	+ Role: container/service orchestration
	+ Architecture, clusters
	+ Automated deployment and operations of containerized applications
* Kubernetes networking
	+ CNI
	+ Networks policies, workflow
	+ Examples: Flannel, Calico
* Automation based on helm charts (optional)
* Container/service image (registry and distribution)
* Introduction to service meshes
	+ Fundamentals: definition, drivers, and use cases
	+ Example: Envoy and Istio
* Use the practices on Cloud: Azure, Google Cloud, AWS
* Conclusion
	+ References and next steps