

# Kubernetes: 2-day Boot camp

The primary objective of the Kubernetes boot camp is to give people a solid understanding of Docker and Kubernetes technologies. All of Kubernetes's core features are covered, such as Pods, Labels, Volumes, Replication Controllers, Services, and more. During the session, people will learn how to install, manage, and use Kubernetes objects through a mix of lecture and hands-on lab exercises.



This course is for people and teams who want to learn Kubernetes foundation and containers orchestration requirements to build services that are secure, robust, highly available, resilient, and self-healing.

- Developers / Operations /DevOps Engineers
- IT Project Team

## Instructor:

[Bashir Ahmed Zeeshan](#), A Technical Training Specialist is a Certified Kubernetes Application Developer (CKAD) and Multi-Cloud Enthusiast with multiple certifications on his badge.

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## Training Content

Here is the curriculum of the course including, but not limited to;

### 1. Getting started with Kubernetes

- The big Picture of K8s.
- What is Kubernetes for?
- Brief overview of other installations' options
- Kubernetes background & future

- Introduction and Need & importance of Kubernetes

## 2. Containerization Need to Know

- Microservices, What, Why, and How
- Containerization and Kubernetes
- Docker & Containers lifecycle
  - Working with Docker images
  - Pulling an image from the internet

## 3. Kubernetes: The Terminology

- Overview of Kubernetes architecture & its main components
- Cluster Architecture (Masters and worker nodes)
- Brief overview of other installations' options
- Kubernetes core concepts:
  - Pods, Labels, Services, Persistent Data Volumes, Namespaces

## 4. Resources / API Objects

- Deployments, jobs, and services
- Pods, labels/selectors, replication controllers, services, API
- Declarative vs imperative mode
- Getting Started with YAML
- Interacting with kubectl

## 5. Play with Kubernetes

- Creating Kubernetes pods, volumes and deployments
- Working on Some Key resources of Kubernetes
  - persistent volumes, pods, Deployment,
  - Strategies for creating and interacting with objects
  - Label selectors & filtering
  - Annotations

## 6. Service Types and Use Cases

- Effective networking. LivenessProbes & ReadinessProbes. Healthchecks.
- Pod Lifecycles. Labels. Environment Variables

## 7. Application Deployment lab

- Getting an application up and running
- Deployment of applications and services on a Kubernetes

## 8. Shooting the troubles

- Diagnosing and fixing common Kubernetes issues
  - Application/Node failure.
  - Networking issues.

## 9. BONUS Topics

- Managed Kubernetes
- Getting Started with Kubernetes on EKS
- Building A Kubernetes Cluster On EKS (demo)
- Troubleshooting best practices
- Guide to pass **CKAD** exam

## Format of the boot camp

Part lecture, part discussion, exercises, and lots of hands-on practice.

## Duration & Schedule

Two days (usually 14 hours including breaks), 30<sup>th</sup> & 31<sup>st</sup> July 2020

## Requirements

- Familiarity with the Linux command line
- An understanding of networking concepts
- Know-how of web applications work