Dockers and Kubernetes

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Prerequisites:

Proficiency with the Linux CLI. A broad understanding of Linux system administration.

Course Contents

Day 1

Introduction
* What can you use Docker for?
* How Docker fits into the development lifecycle
* How Docker ensures consistency from development through UAT and staging, and on to production
* Example use cases of Docker in the real world

The components of Docker * Underlying technology
* Docker client and server * Filesystem images
* Registries * Containers * Networking

Getting set up to start using Docker
* Getting set up on Windows
* Trying out our first container
* Getting set up for production on Linux
* Tweaking your production environment for best performance

Container management
* Container naming
* Starting and stopping containers
* Attaching to a container
* Seeing what is happening in a container
* Running a process inside a container
* Daemonizing a container
* Automatic container restarts
* Deleting containers when we are finished with them

Docker images and repositories

* Docker images explained
* How Docker images work
* Getting a list of images
* Searching for images on a repository * Pulling an image
* Creating our own image
* Specify an image in a Dockerfile
* Building Dockerfile images
* Using the build cache for templating
* Viewing the image we have created
* Launching a container using our new image

Registries
* What is the Docker hub?
* Pushing images to the Docker hub
    - Running your own internal Docker registry * Testing the internal registry
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Day 2

Docker Volumes
Creating own volumes
Using Volumes

Docker Networks
Host network configuration
Bridge network

Introduction to Kubernetes
Brief history of Deployment era
Features of Containers
Introduction to Kubernetes
Working of Kubernetes (overview)
Installation of Kubernetes
Kubernetes Architecture
Understand Kubernetes Architecture
What are Kubernetes objects?

What are YAML files?
Name, Namespaces, Labels & selectors , Annotations
Introduction to Pods and Services
What are Pods?
What are Replication Controllers?

Day 3

What is a Deployment?
Introduction to Kube Services and its types

Stateful and Demon sets
Jobs
Introduction to Volumes
What are volumes?
Types of volumes
Persistent volumes
Introduction to secrets
Taints and tolerations
Secrets
Config Object