kubernetes

The Course

Kubernetes is the tool that's pushing the containerization revolution – largely driven by Docker – to another level. If Docker has paved the way for greater agility and control in the way we organize and manage our infrastructure, Kubernetes goes further, by helping you to orchestrate and automate container deployments on a massive scale. Kubernetes really does think big – and it's time you did too! Kubernetes training courses demonstrate through hands-on practice how to automate, scale, and manage the containerized applications within a Kubernetes cluster.

The Rulepaper Promise

Our training methodologies promises to give the students hands on art enterprise skills to delve deeper into the technologies from a practical and enterprise point of view. Extreme Hands-on-Lab with a self doable on the fly practical based training approaches makes transformation of the student from a no vice to a capable experienced cloud computing engineer.

The Eligibility

Passionate Technology Enthusiasts with a minimal knowledge on IT and Operating Systems.

Good to have basic knowledge on Windows, OS & IT Infrastructure.

The Instructor

Enterprise Architect with huge experience on Private and Public Cloud Technologies. The trainers are advisors and members of larger Cloud Computing Forums and seasoned integrators of IT Cloud Computing technologies with more than 12+ years in global large enterprise giants.

Course Contents

Module 1

Kubernetes and Container Operations

Topics

- A brief overview of containers
- What is a container?
- Why are containers so cool?
- Advantages to Continuous Integration/Continuous
- Deployment
- Resource utilization
- Micro services and orchestration
- Future challenges
- Advantages of Kubernetes
- Our first cluster
- Kubernetes UI
- Grafana
- Swagger
- Command line
- Services running on the master
- Services running on the minions
- Tear down cluster
- Working with other providers
- Resetting the cluster

Module 2

Kubernetes – Core Concepts and Constructs

Topics

- The architecture
- Master
- Node (formerly minions)
- Core constructs
- Pods
- Pod example
- Labels
- The container's afterlife
- Services
- Replication controllers
- Our first Kubernetes application
- More on labels
- Health checks
- TCP checks
- Life cycle hooks or graceful shutdown
- Application scheduling
- Scheduling example

Course Contents

Module 3

Core Concepts – Networking, Storage, and Advanced Services

Topics

- Kubernetes networking
- Networking comparisons
- Docker
- Docker plugins (libnetwork)
- Weave
- Flannel
- Project Calico
- Balanced design
- Advanced services
- External services
- Internal services
- Custom load balancing
- Cross-node proxy
- Custom ports
- Multiple ports
- Migrations, multicluster, and more
- Custom addressing
- Service discovery
- DNS
- Persistent storage
- Temporary disks
- Cloud volumes
- GCE persistent disks
- AWS Elastic Block Store
- Other PD options
- Multitenancy
- Limits

Module 4

Updates and Gradual Rollouts

Topics

- Example set up
- Scaling up
- Smooth updates
- Testing, releases, and cutovers
- Growing your cluster
- Scaling up the cluster on GCE
- Autoscaling and scaling down
- Scaling up the cluster on AWS
- Scaling manually

Module 5

Continuous Delivery

Topics

- Integration with continuous delivery
- Gulp.js
- Prerequisites
- Gulp build example
- Kubernetes plugin for Jenkins
- Prerequisites
- Installing plugins
- Configuring the Kubernetes plugin

Course Contents

Module 6

Monitoring and Logging

Topics

- Monitoring operations
- Built-in monitoring
- Exploring Heapster
- Customizing our dashboards
- FluentD and Google Cloud Logging
- FluentD
- Maturing our monitoring operations
- GCE (StackDriver)
- Sign-up for GCE monitoring
- Configure detailed monitoring
- Alerts
- Beyond system monitoring with Sysdig
- Sysdig Cloud
- Detailed views
- Topology views
- Metrics
- Alerting
- Kubernetes support
- The Sysdig command line
- The csysdig command-line UI

Module 7

OCI, CNCF, CoreOS, and Tectonic

Topics

- The importance of standards
- Open Container Initiative
- Cloud Native Computing Foundation
- Standard container specification
- CoreOS
- rkt
- etcd
- Kubernetes with CoreOS
- Tectonic
- Dashboard highlights

Module 8

Towards Production-Ready

Topics

- Ready for production
- Security
- Ready, set, go
- Third-party companies
- Private registries
- Google Container Engine
- Twistlock
- Kismatic
- Mesosphere (Kubernetes on Mesos)
- Deis
- OpenShift

The Duration

Duration of the Course is 40 hours.

The Lab Requirements

Students must bring their own laptops with basic configuration

The cost of the Training

Please send an email or contact us at enquiry@rulepaper.com to know more about the cost and next batch schedules.

The certifications

Once the training is completed the student have to enroll with Kubernetes Learning Certification to get certified and it helps build professional career in Kubernetes