**Production grade Deployment and Operation of Kubernetes**

The Kubernetes in Production (KP300) is a 2-day advanced training focused on production grade architecture, operational best practices, and cluster management. This training is based on a set of widely adopted open source tools proven in production such as Helm, Prometheus, and Kubeadm.

All Mirantis courses emphasize hands-on experience. The majority of class time will be spent with students working in a live Kubernetes environment where they will practice and explore the details of the tools and patterns presented in this course. Short lectures will be interspersed throughout the workshop to introduce ideas, promote discussion and answer questions as a group.

**Course Details**
- Duration: 2 Days
- Hours: 9:00 a.m. - 5:00 p.m.

**Target Audience**
- DevOps and Infrastructure & Deployment Engineers looking for hands-on experience in deploying and managing a production grade Kubernetes cluster
- Cloud Architects evaluating their future or existing Kubernetes solutions

**Prerequisites**
- KD250 Course Experience or Similar
- Strong Linux command line skills
- Basic understanding of git and GitHub
- Basic understanding of JSON and YAML
- Basic understanding of distributed application development and deployment
- Basic understanding of networking and Linux network namespaces
- Basic understanding of Network Attached Storage (NAS)

**Course Objectives**
- After completing this course you will be able to:
  - Use kubespray/kubeadm to deploy, scale and upgrade a highly available Kubernetes cluster from scratch
  - Use Helm to template and deploy sophisticated Kubernetes applications
  - Deploy and customize logging, alerting and monitoring instrumentation for Kubernetes infrastructure and workloads via Elasticsearch, Kibana, Fluentd, Prometheus, Grafana and Alertmanager
  - Perform cluster backups using Velero
  - Implement gitops-compliant continuous delivery for Kubernetes applications using Flux and Flagger

Learn more at training.mirantis.com
Course Syllabus

Module 1
Kubernetes Architecture
Recap
Theory
- Kubernetes components
- Networking requirements
- HA requirements
- Bootstrapping and scaling a cluster with Kubespray

Module 2
Application Management
Theory
- Automated healthchecking
- Load balancing
- Constraining resource consumption
- Establishing pod disruption budgets
- Packaging applications with Helm

Module 3
Logging & Monitoring
Theory
- Instrumenting applications for logging & monitoring
- Logging with elasticsearch and kibana
- Monitoring with prometheus, grafana and alertmanager

Module 4
Backups, Upgrade & Disaster Recovery
Theory
- Instrumenting applications for logging & monitoring
- Logging with elasticsearch and kibana
- Monitoring with prometheus, grafana and alertmanager

Module 5
Gitops & Continuous Deployment
Theory
- Gitops management patterns
- Continuous Deployment with Flux
- Progressive CD with Flagger

This course is currently under development and is expected to launch in Q2'2020