Kubernetes from Basic to Advanced

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Training Requirements

Training Requirements

- Conceptual understanding about containers
- Understand of containers lifecycle
- Experience with docker (or other container platform)
- Experience with using containers to deploy applications
- (Preferable) Experience with docker compose

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Agenda

Session #01

- Containers: Review
- Containers Orchestration
- Kubernetes
- Kubernetes Architecture

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Session #02

- Kubernetes Cluster: OnPrem vs. Cloud
- Dev Environments
- CLI Tooling
- Kubernetes Core Concepts: Pods
- Labs

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Session #03

- Namespaces
- Labels & Selectors
- ReplicaSets
- Deployments
- Deployments Lifecycle
- Labs

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Session #04

- Cluster Networking
- Pods Networking
- Services
- Ingress
- Labs

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Session #05

- ConfigMaps & Secrets
- Persistent Volumes
- Persistent Volume Claims
- Provisioning: Static vs Dynamic
- Labs

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Session #06

- Autoscaler: Horizontal vs. Vertical
- Probes: Liveness and Readiness
- Labs

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Session #07

- Mini Project: Phase 1
  - Pods
  - Deployments
  - Persistent Volumes
  - Persistent Volume Claims
  - Config Maps & Secrets
  - Autoscaler

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Session #08

- Kubernetes Scheduling
- Taints & Tolerations
- Affinity
- Static Scheduling
- Labs

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Session #09

- Jobs and CronJobs
- DaemonSets
- StatefulSets
- Labs

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Session #10

- Role-base Access Control
- Roles
- Service Account
- Security Context
- Labs

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Session #11

- Network Policies
- Labs

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Session #12

- Helm
- Labs

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Session #13

- Monitoring Cluster Components
- Kubernetes Dashboard
- GAP stack
- Labs

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Session #14

- Mini Project: Phase 2
  - Taints & Tolerations
  - StatefulSets
  - Jobs
  - Security
  - Network Policies
  - Helm
  - Monitoring

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Labs Requirements

Tech Requirements

- Windows / WSL / Linux / MacOS
- Docker
- Minikube
- Kubectl
- Code Editor: VS Code, …
- More details: https://github.com/tasb/docker-kubernetes-training#prerequisites
- Additional tooling needed will be shared on lab instructions

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