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# Kubernetes Advanced

## Course Outline

- Quick summary of Kubernetes Basics
- Advance work with Pods
    - Advanced scheduling (selectors, affinities, taints), manual scheduling
    - Pod priority and preemption, QoS
    - Pod disruption budgets
    - Container hooks
    - Security context
    - Capabilities
- Advance work with Volumes
    - Volumes recap
    - Volume Snapshots
    - Backup using Kasten
    - Backup using Tergum
- Networkings in Kubernetes
    - Networking basics
    - Network plugins
    - Network Policies
    - LoadBalancers
        - MetalLB
        - KubeVIP
- Advance work with Helm
    - Helm recap
    - Deep down to Helm template languages
    - Helm for ArgoCD
- Operators
    - What are Kubernetes Operator
    - How operators works
    - Using operators (example with Kafka, Elastic)
    - Writing own operator
        - Helm
        - Ansible
        - Go
    - Operator Framework
    - Operator Lifecycle Management (OLM)
- Kubernets SSO
    - Kubernetes SSO using OIDC
    - Example implementation using Keycloak
- Kubernetes Hardening Guide (by NSA)