DevOps in K8s

① Basics

Containers

- Docker ↗
- Container Image + Dockerfile ↗
- Image Efficiency ↗
  - .dockerignore
  - Avoid unnecessary
  - Small base image
  - Ephemeral containers
  - Build from stdin
  - Multi-stage build
  - Chain RUN commands
  - Order instructions wisely
  - Prefer COPY over ADD
  - Prefer Array over String
- Storage ↗
  - Volume
  - Bind Mount
  - tmpfs
- Namespace ↗
  - IPC
  - UTS
  - NET
- Cgroups ↗
  - Hierarchy
  - Controllers
  - Tasks
  - Resource limits
  - Event notifications
  - File system
- Status
  - Waiting
  - Running
  - Terminated
- Probe
  - LivenessProbe
  - ReadinessProbe
  - StartupProbe

Pod

- Pod basics
  - Why pod
  - Design patterns
    - Sidecar
    - Adapter
    - Ambassador
    - Batch job
    - Process
  - Implementation principle
- Status ↗
  - Pending
  - Running
  - Succeeded
  - Failed
  - Unknown
- Restart Strategy ↗
  - Always (default)
  - OnFailure
  - Never
- Probe ↗
  - Readiness
  - Liveness
  - Startup
- Init container/Pod hook ↗
- QoS
  - Guaranteed —— limits == requests
  - Burstable —— limits > requests
  - BestEffort —— No limits/requests defined
- Ephemeral Containers ↗
  - Troubleshooting
  - Log collection
  - Security scanning
  - Backup and restore