

KUBERNETES

CLOUD OPERATING SYSTEM



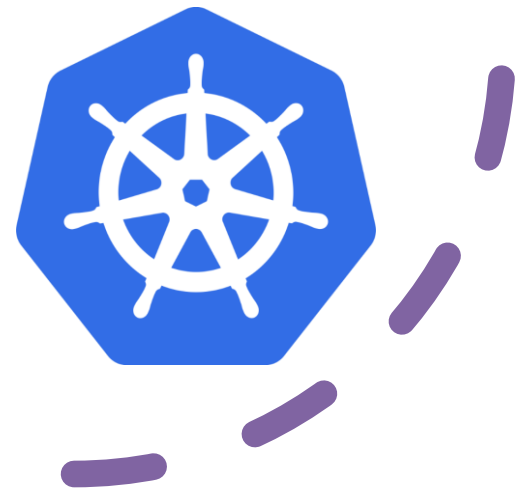
K8 ConfigMaps

Instructor: Magdy Salem



Agenda

- What is a ConfigMap?
- Use Cases
- Creating ConfigMaps
- Consuming ConfigMaps in Pods
- ConfigMap vs Secret
- Best Practices
- Demo and Lab



What is a ConfigMap?

- API object used to store non-sensitive configuration data
- Stores key-value pairs that can be injected into Pods
- Decouples configuration from container image
- Can be consumed as environment variables, files, or command args



Use Cases

- Application settings (e.g., log levels, URLs, ports)
- Feature flags
- Externalizing configuration data from containers
- Sharing common settings across multiple Pods



Creating ConfigMaps

- From literal values:
- From files or directories
- Declarative (YAML)



Consuming ConfigMaps in Pods

- As environment variables
- As mounted files



ConfigMap vs Secret

- ConfigMap: stores non-sensitive configuration
- Secret: stores sensitive data (e.g., passwords, tokens)
- Both support environment variables and volume mounts
- Secrets are base64 encoded and have RBAC restrictions



Best Practices

- Keep ConfigMaps small and focused
- Use versioning or naming conventions (e.g., config-v1)
- Avoid storing sensitive data in ConfigMaps
- Use annotations or labels for management and tracking



Demo



Lab

