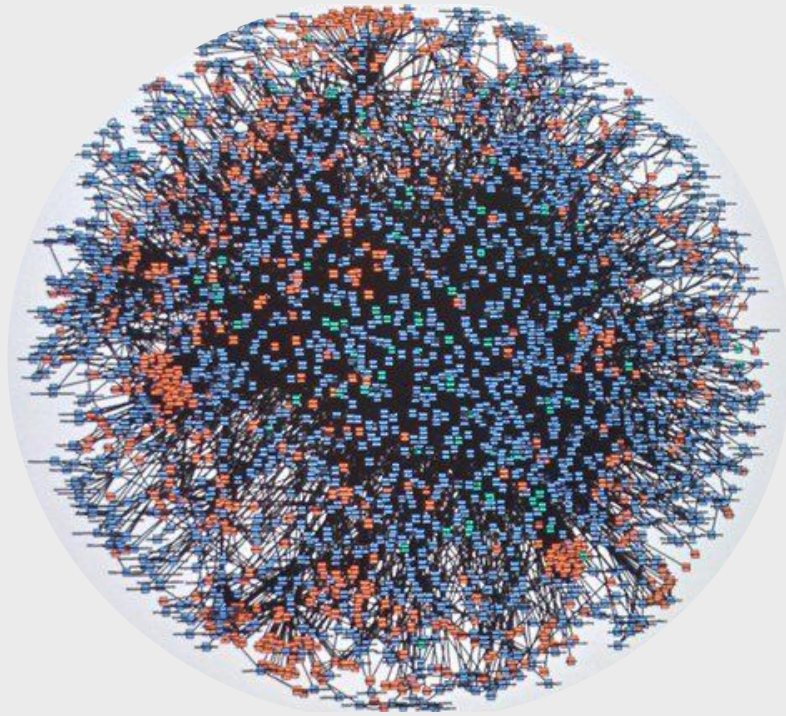
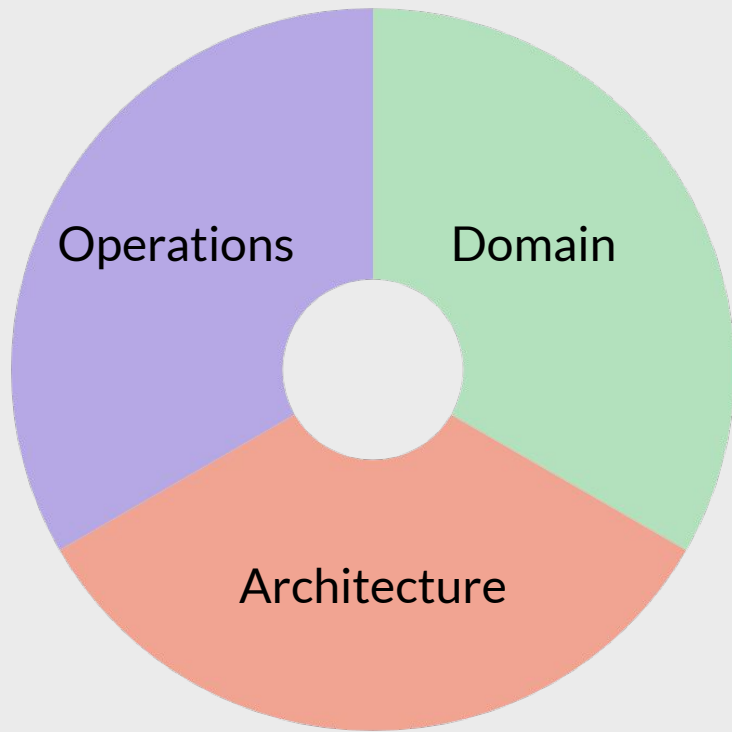


Improve Reliability of any Application using Kubernetes

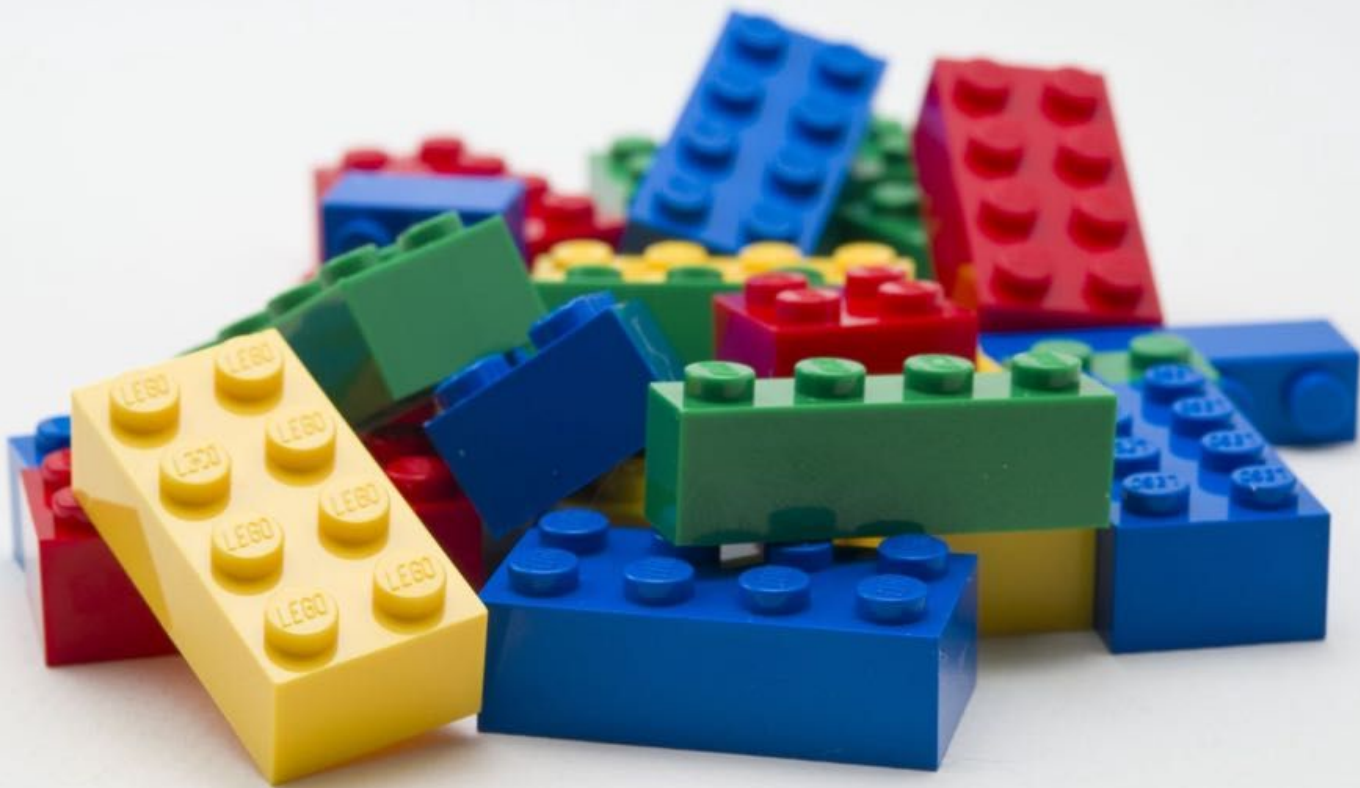
Davy Jones

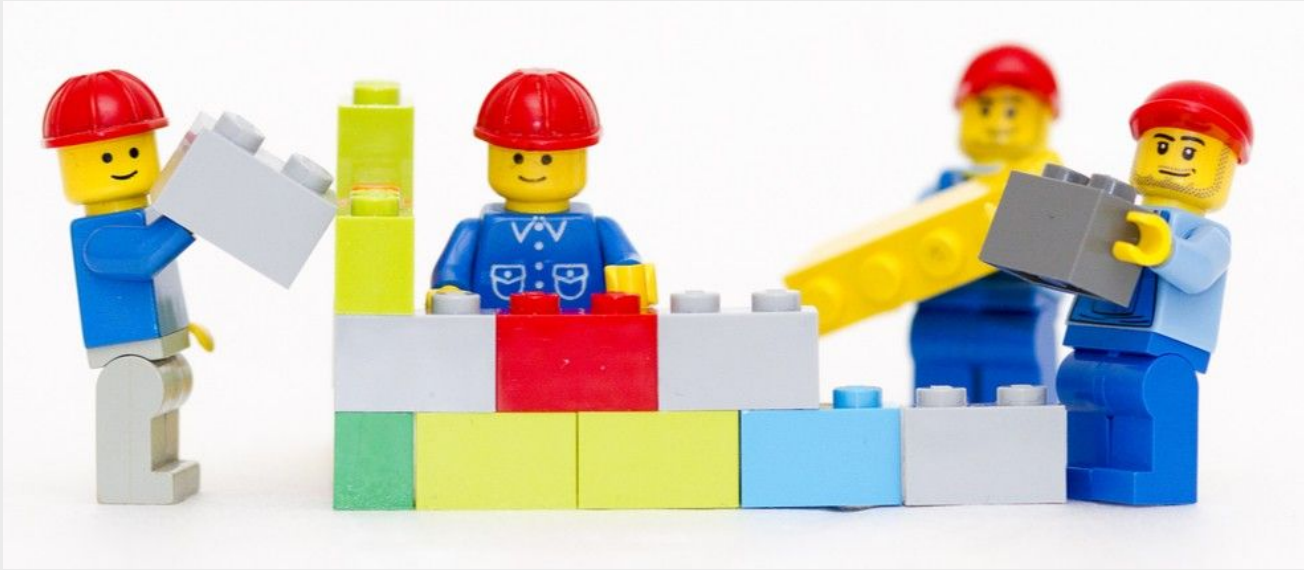


Complexity



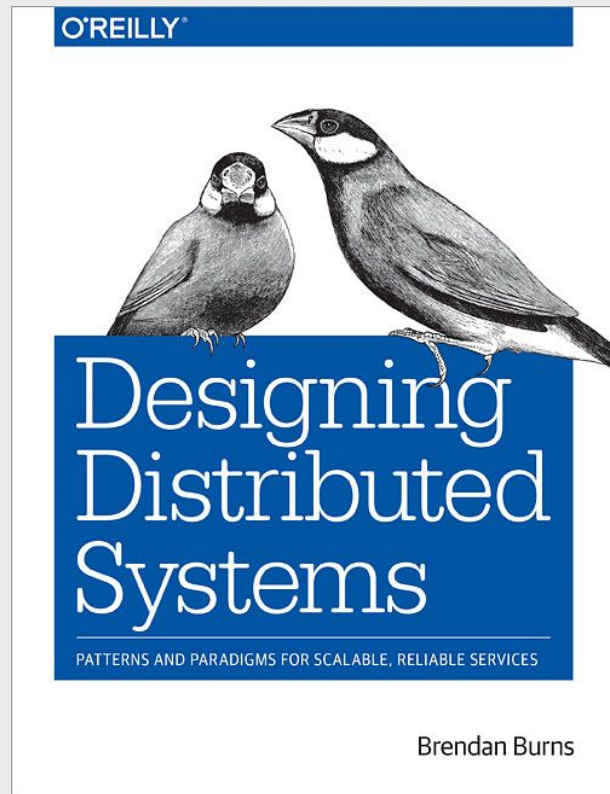
Complexity





Design patterns for container-based distributed systems

Brendan Burns David Oppenheimer
Google



GO

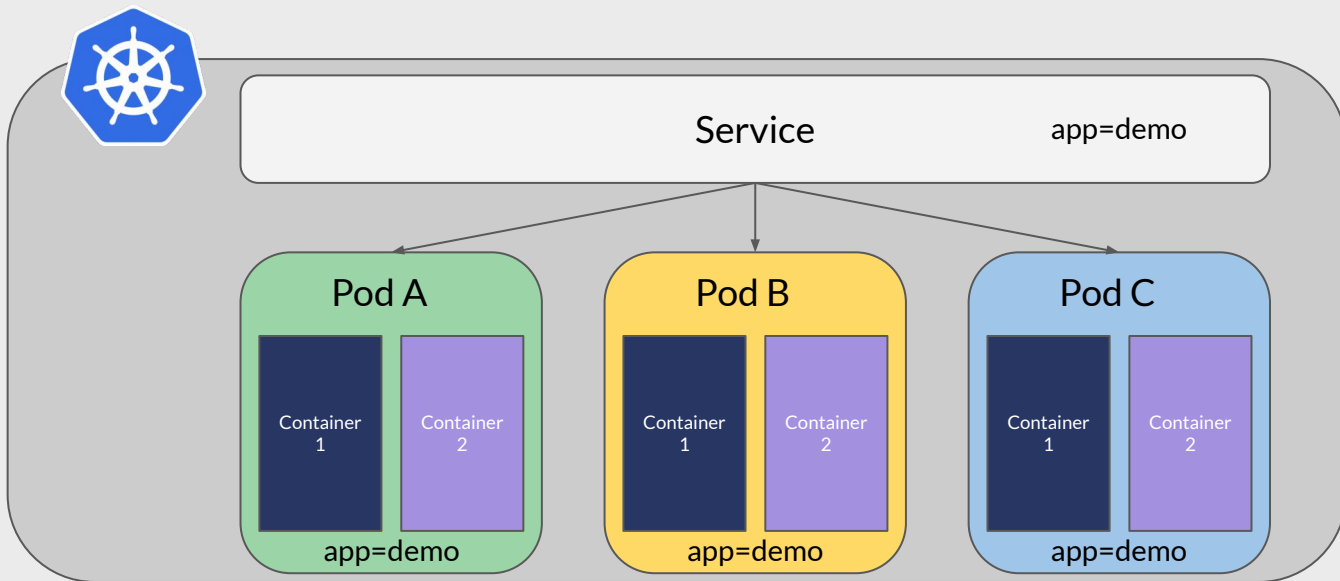




kubernetes

Kubernetes Pod

A *Pod* (as in a pod of whales or pea pod) is a **group of one or more containers**, with shared storage/network, and a specification for how to run the containers



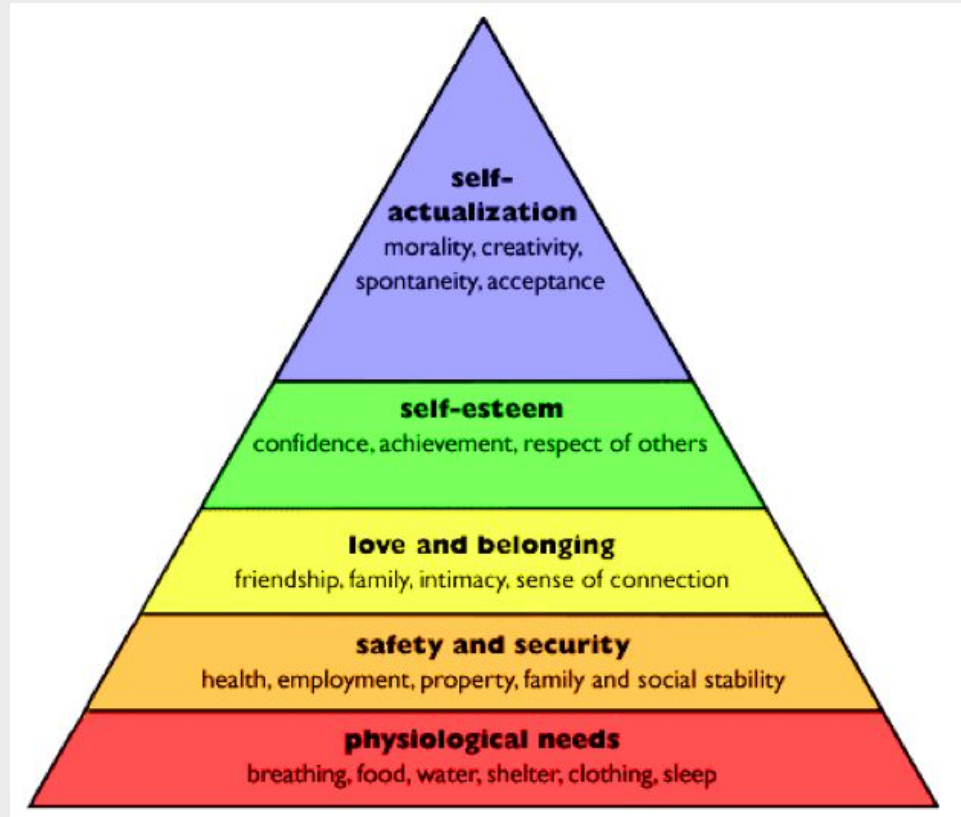
Kubernetes

- Resource Requests and Limits
- Liveness and Readiness Checks
- Config Maps and Secrets
- Services
- Ingress

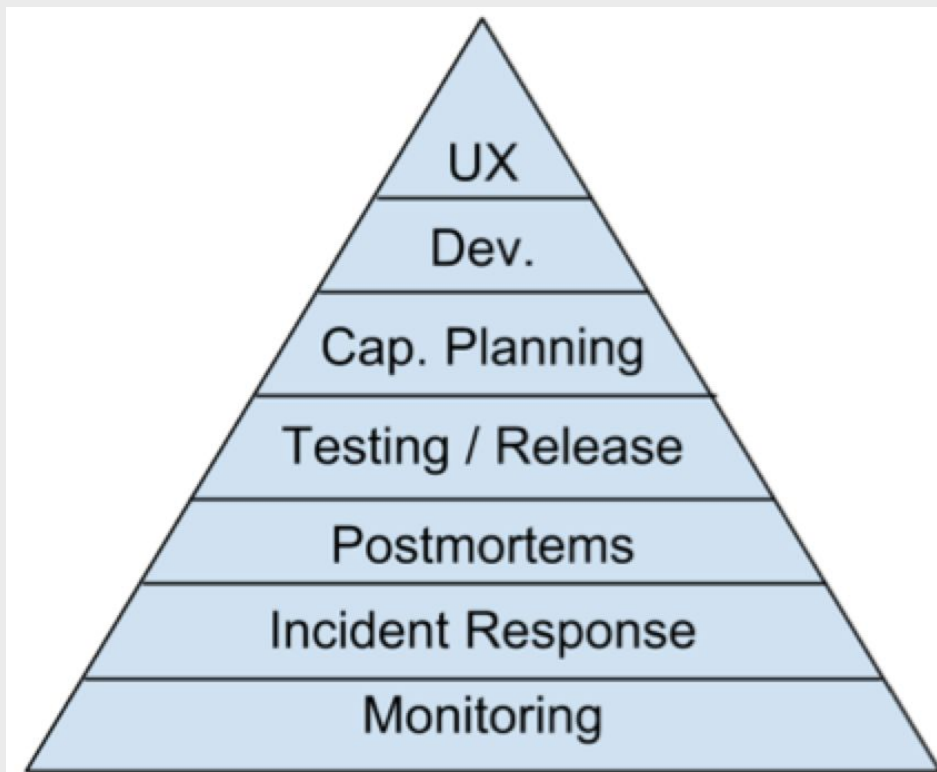
RELIABILITY

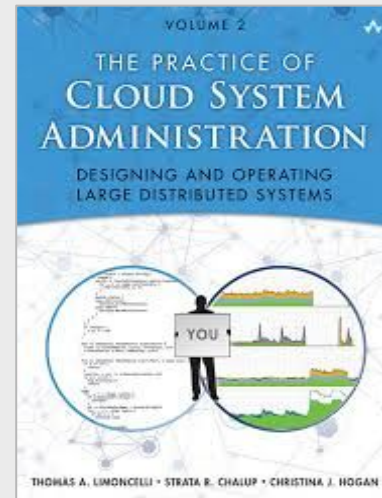
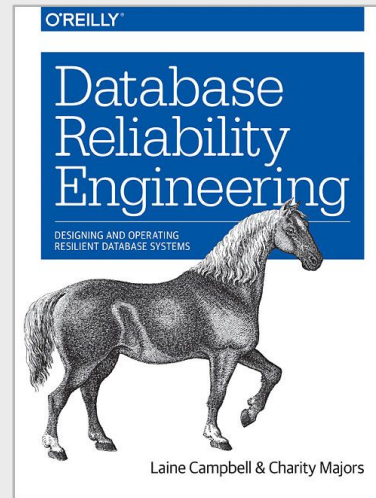
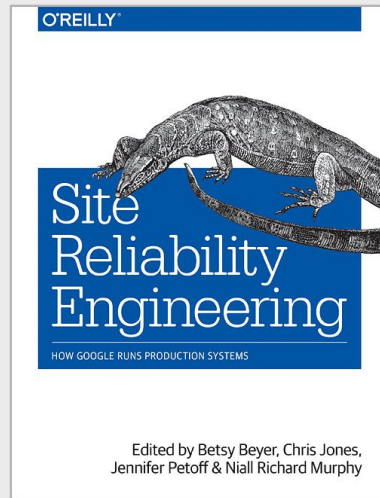
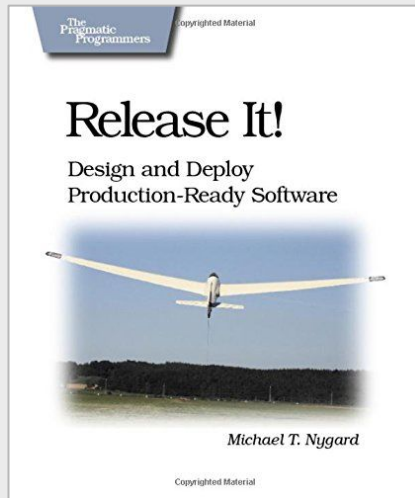


Human Needs



Reliability





<http://bit.ly/DavyGopherconUK>

Reliability

A reliable service can:

- be in a degraded state *without affecting customer experience*
- be deployed *regularly*, without downtime, in isolation and in an automated way
- scale *elastically* as demands change
- be *debugged* easily

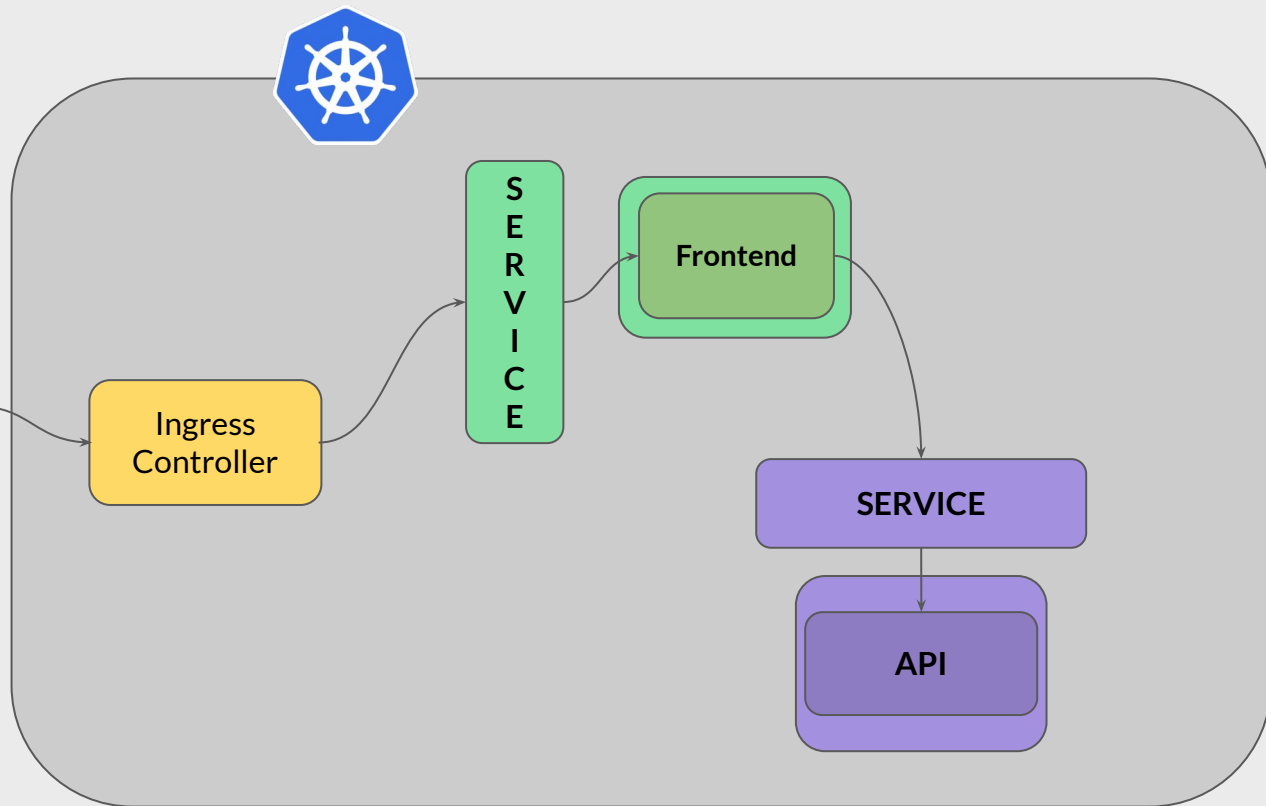
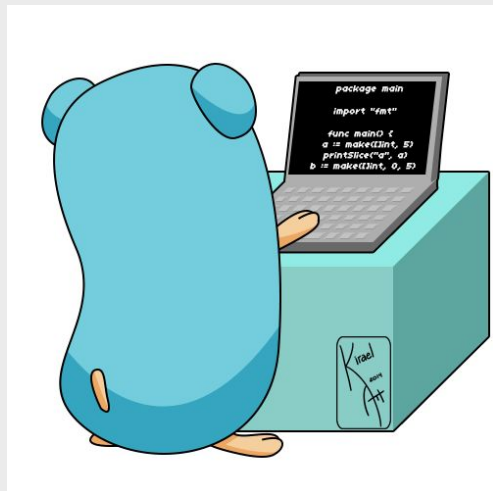


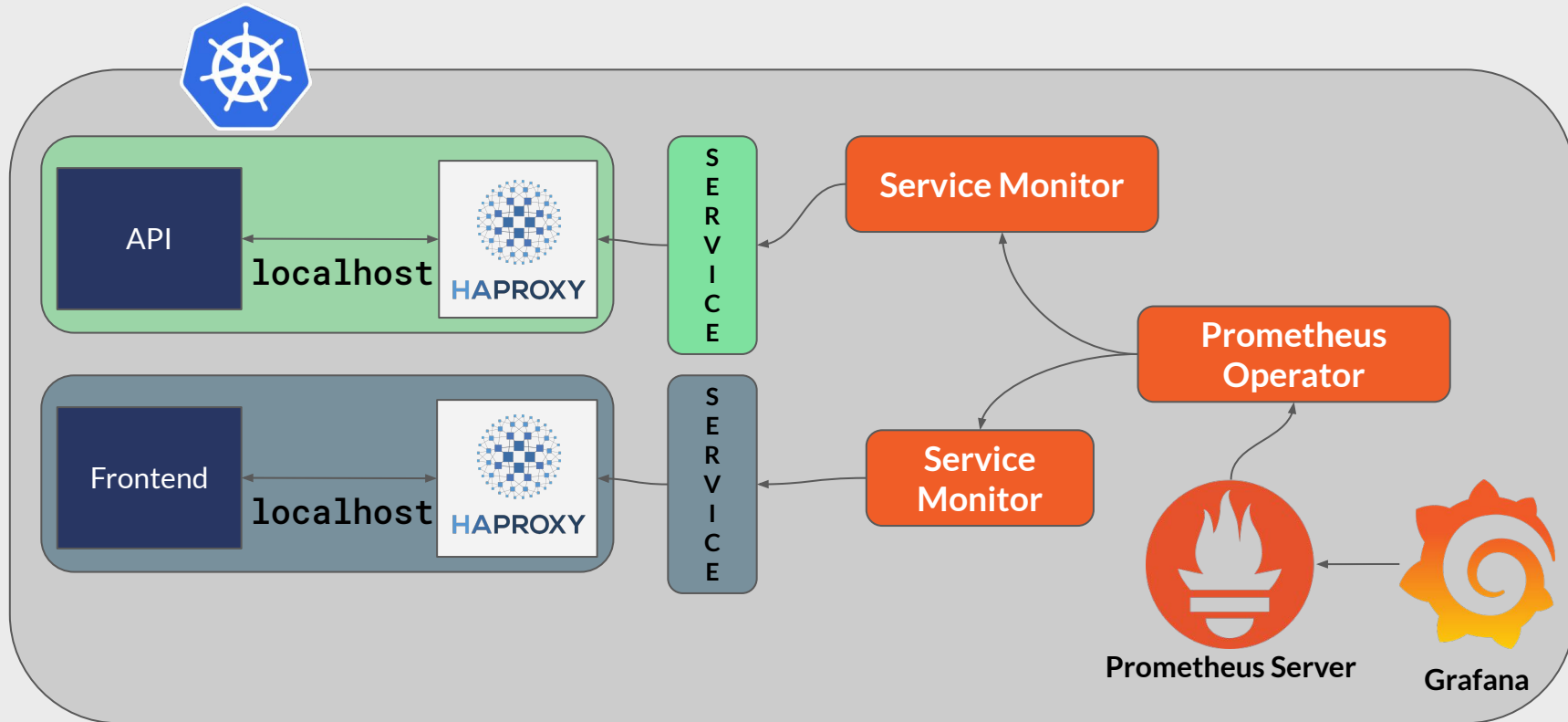
Image source:

<https://www.deviantart.com/kirael-art/art/Go-lang-Mascot-458285682>

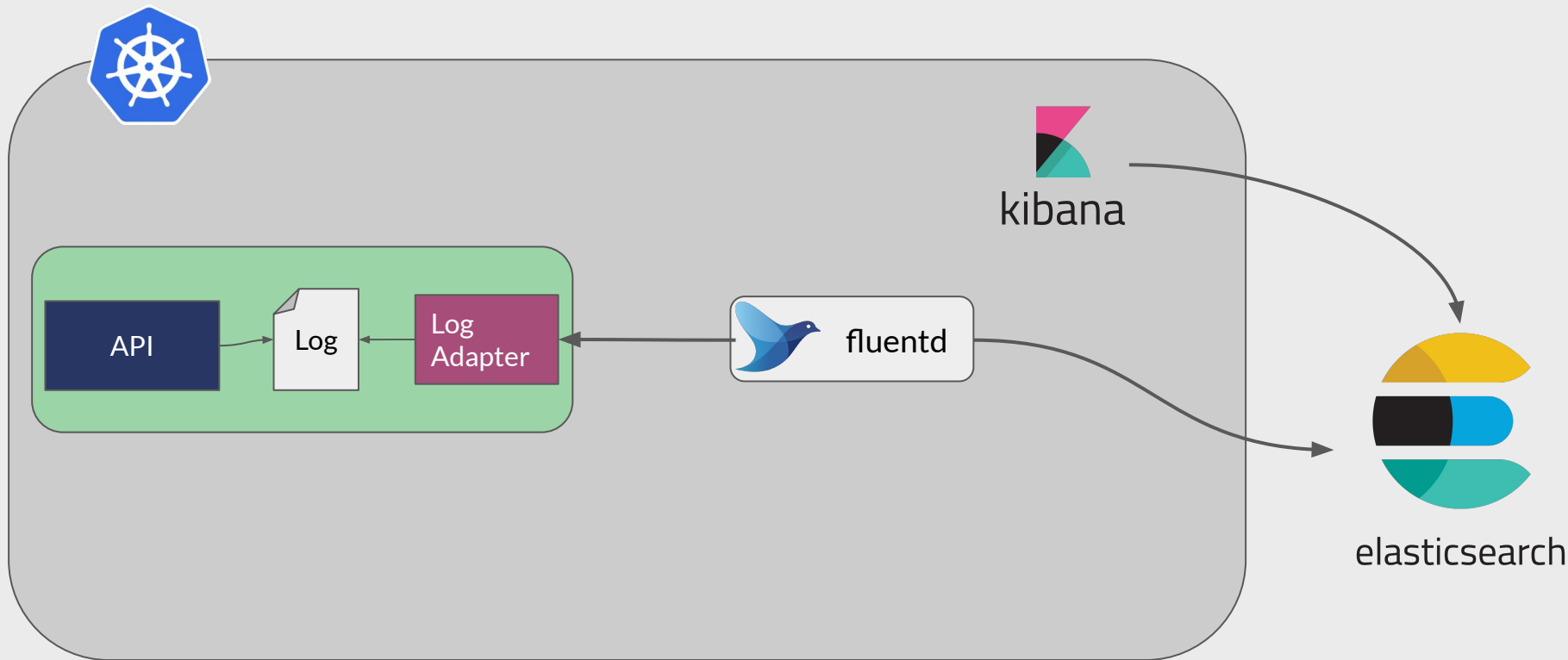
Patterns

- Sidecar
- Adapter
- Ambassador

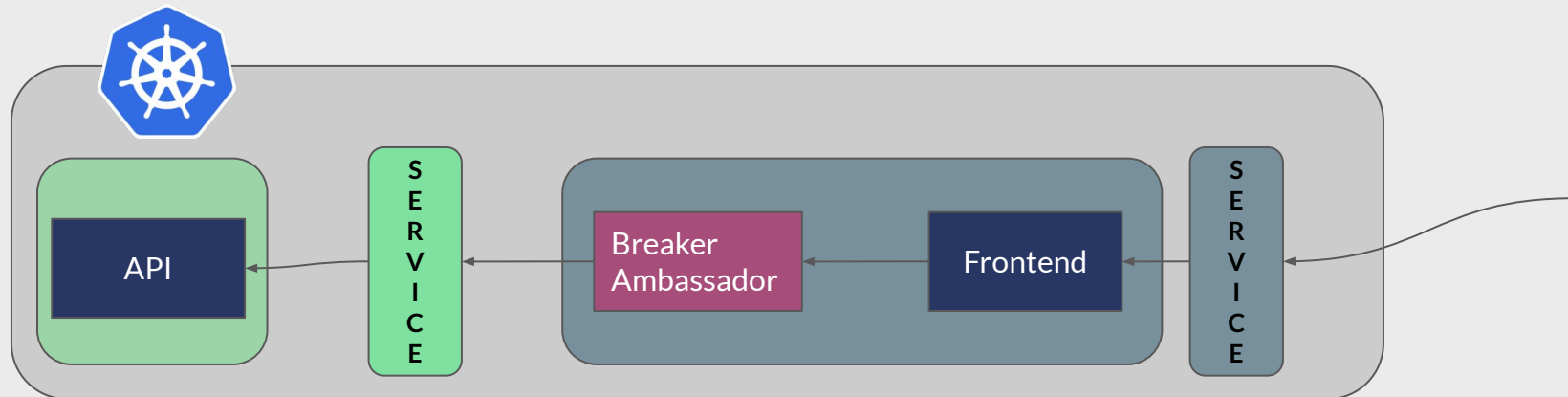
Proxy Sidecar



Log Adapter

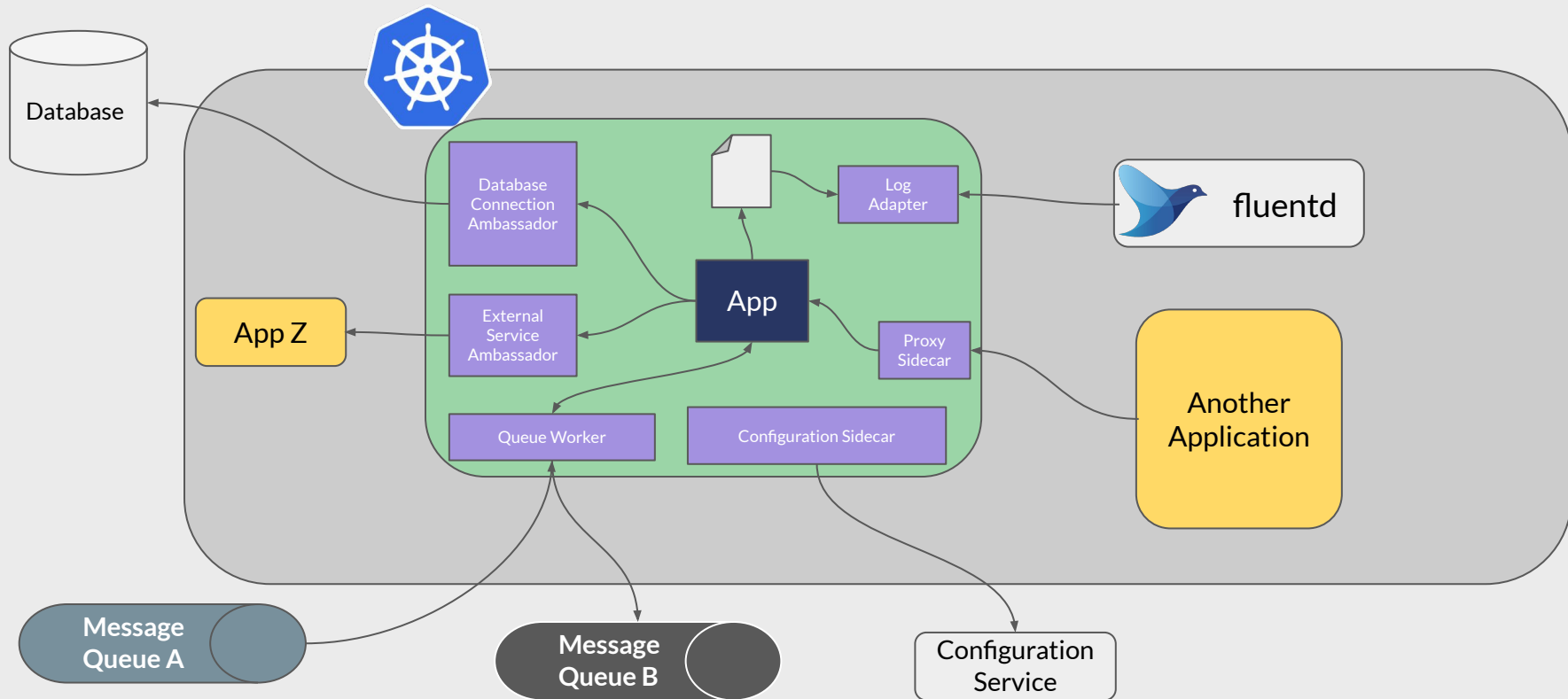


Circuit Breaker Ambassador



Circuit Breaker





Service Meshes



linkerd



Istio



envoy

Summary

Thank you!

Any questions?



Slides

<http://bit.ly/DavyGopherconUK>

Links

- [Example Code for Talk](#)
- [PagerDuty Incident Response Docs](#)
- [Burns, Oppenheimer - Design patterns for container-based distributed systems](#)
- [The SRE Book - Beyer et al](#)
- [Mikey Dickerson Velocity NY 2014 Keynote: "One Year After healthcare.gov..."](#)
- [The RED Method - Weaveworks](#)
- [Resilience Engineering Youtube Playlist - Allspaw](#)
- [Release It! - Nygard](#)
- [Database Reliability Engineering - Campbell, Majors](#)

Links

- [Resilience Roundup - Thai Wood](#)
- [Monitoring Weekly - Mike Julian](#)
- [SRE Weekly - Lex Neva](#)
- [How Complex Systems Fail - Cook](#)
- [Alerting on SLOs like Pros - Soundcloud](#)
- [Failure, it's a matter of when - O'Reilly](#)
- [Large Cluster Management at Google with Borg - Verma et al](#)
- [Istio](#)
- [Linkerd](#)
- [Prometheus](#)