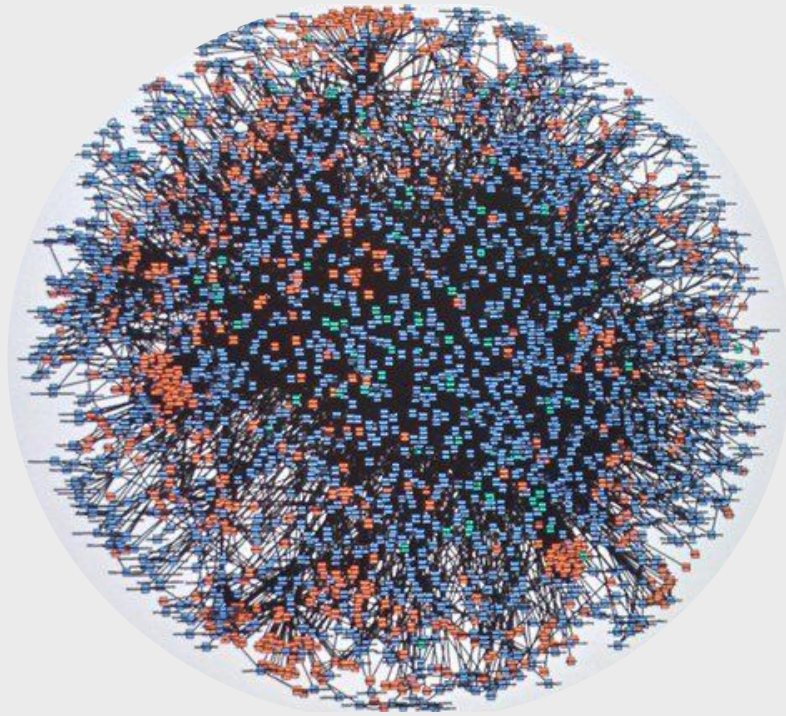
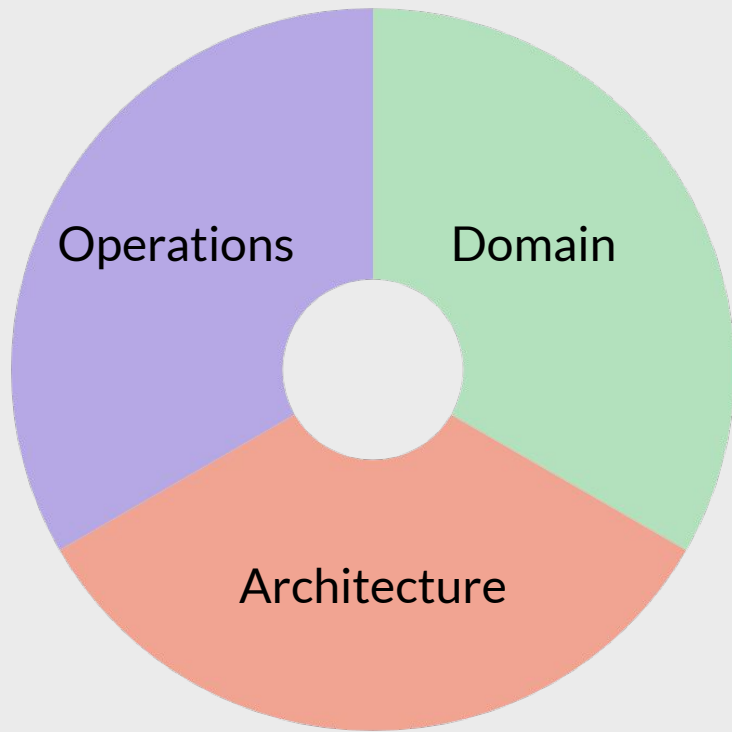


Improve Reliability of any Application using Kubernetes

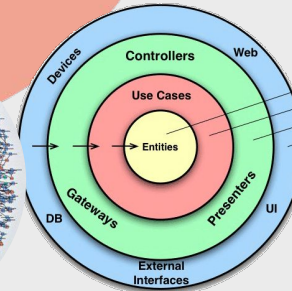
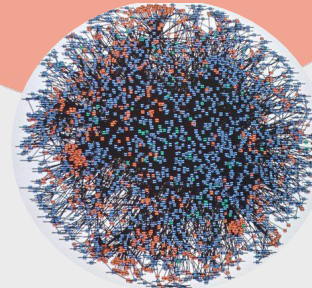
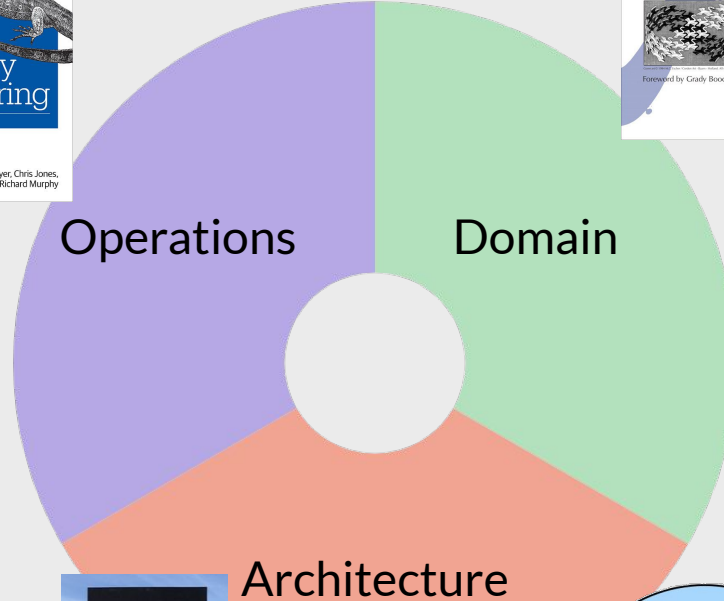
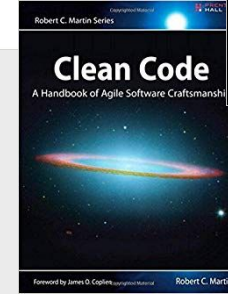
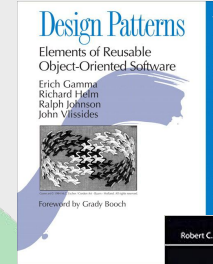
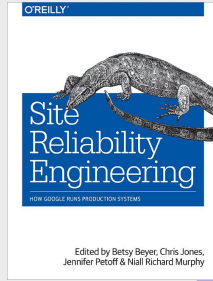
Davy Jones

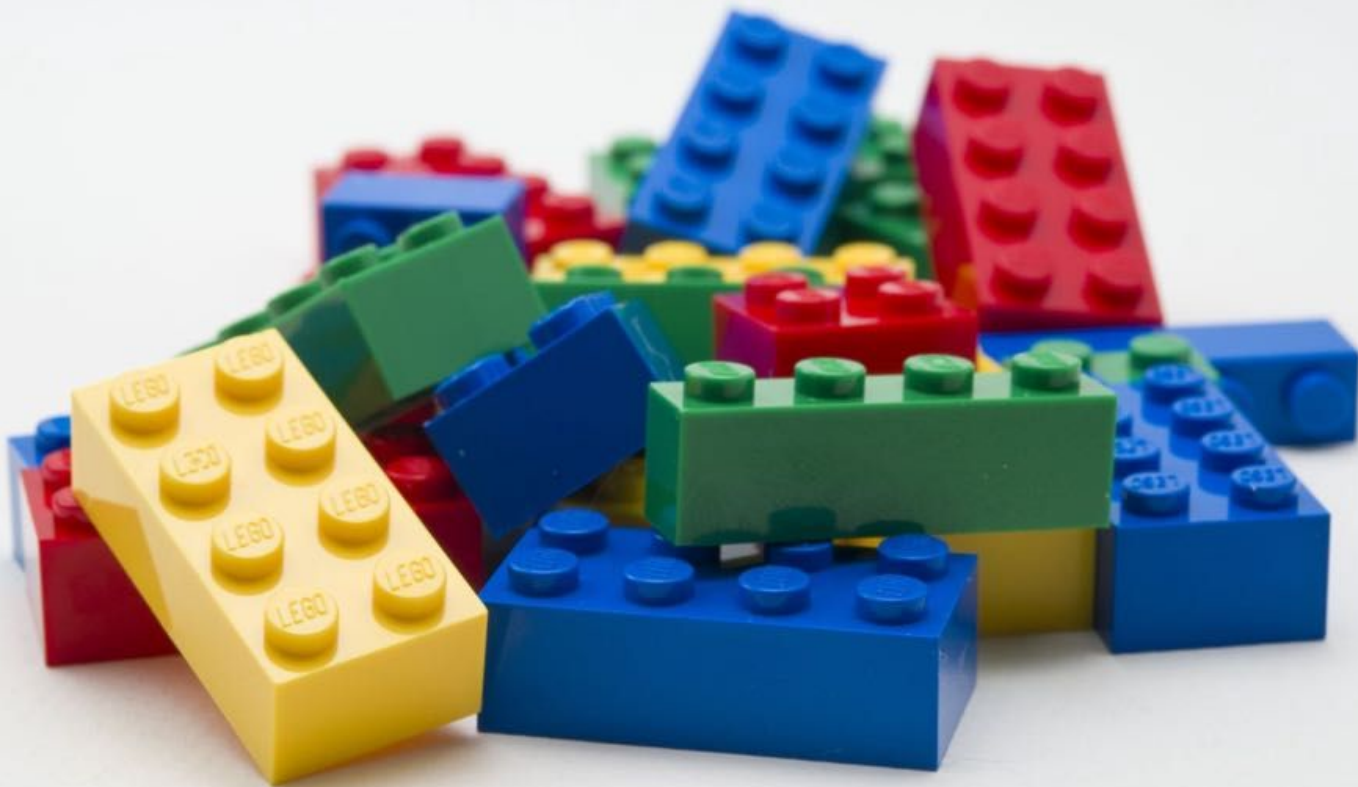


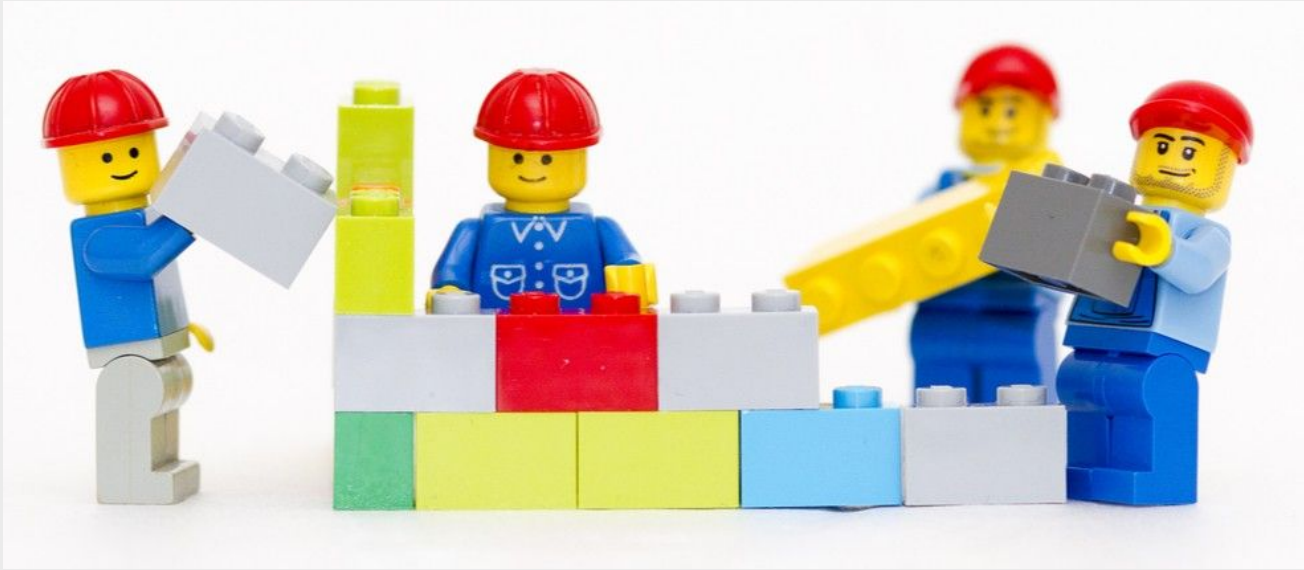
Complexity



Complexity

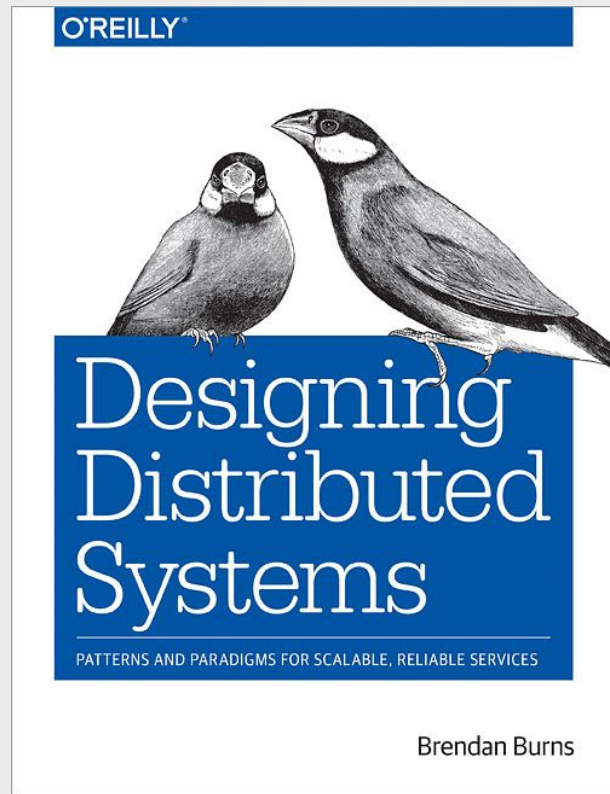






Design patterns for container-based distributed systems

Brendan Burns David Oppenheimer
Google



GO

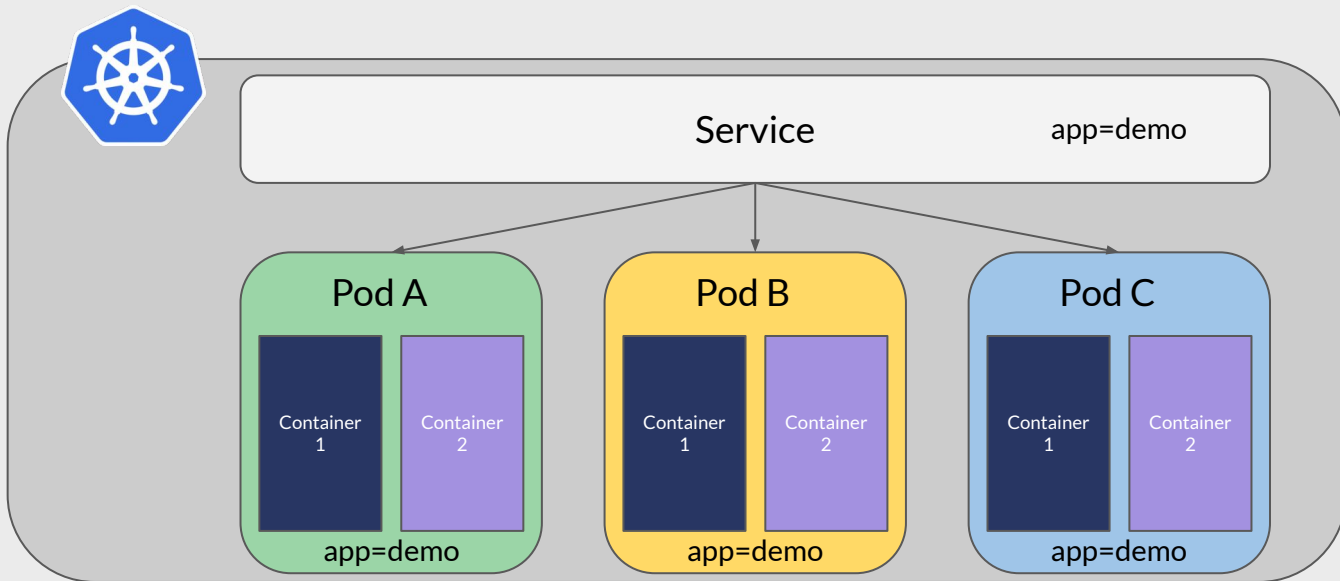




kubernetes

Kubernetes Pod

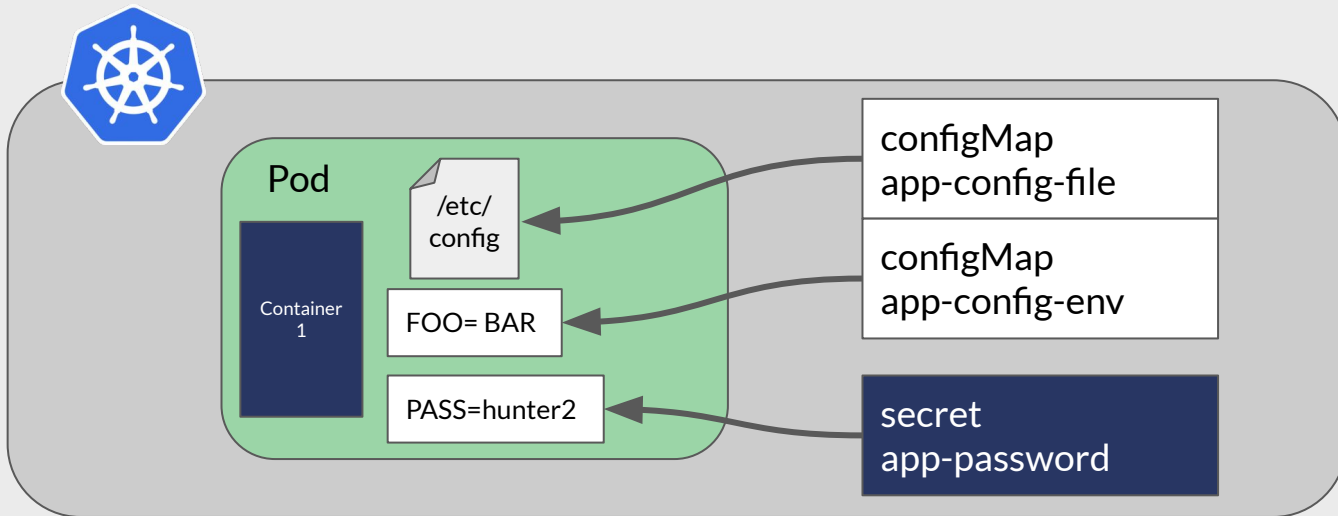
A *Pod* (as in a pod of whales or pea pod) is a **group of one or more containers**, with shared storage/network, and a specification for how to run the containers



ConfigMaps and Secrets

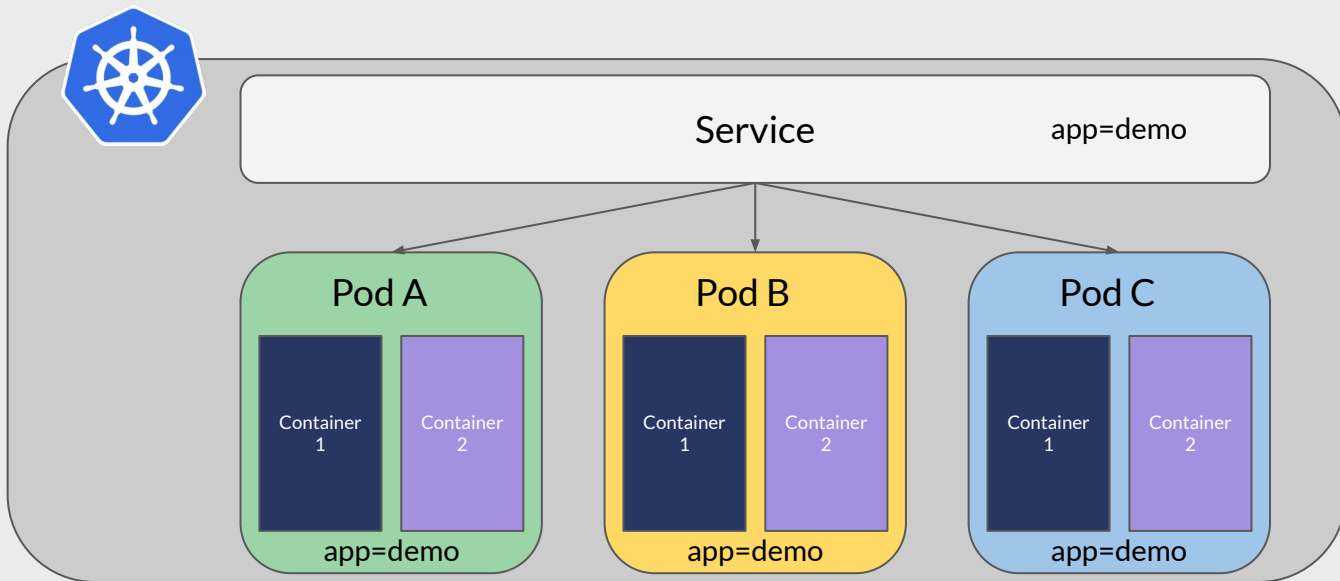
ConfigMap defines configuration that is added to a Pod as environment variables or mounted as a file

Secrets are encrypted ConfigMaps



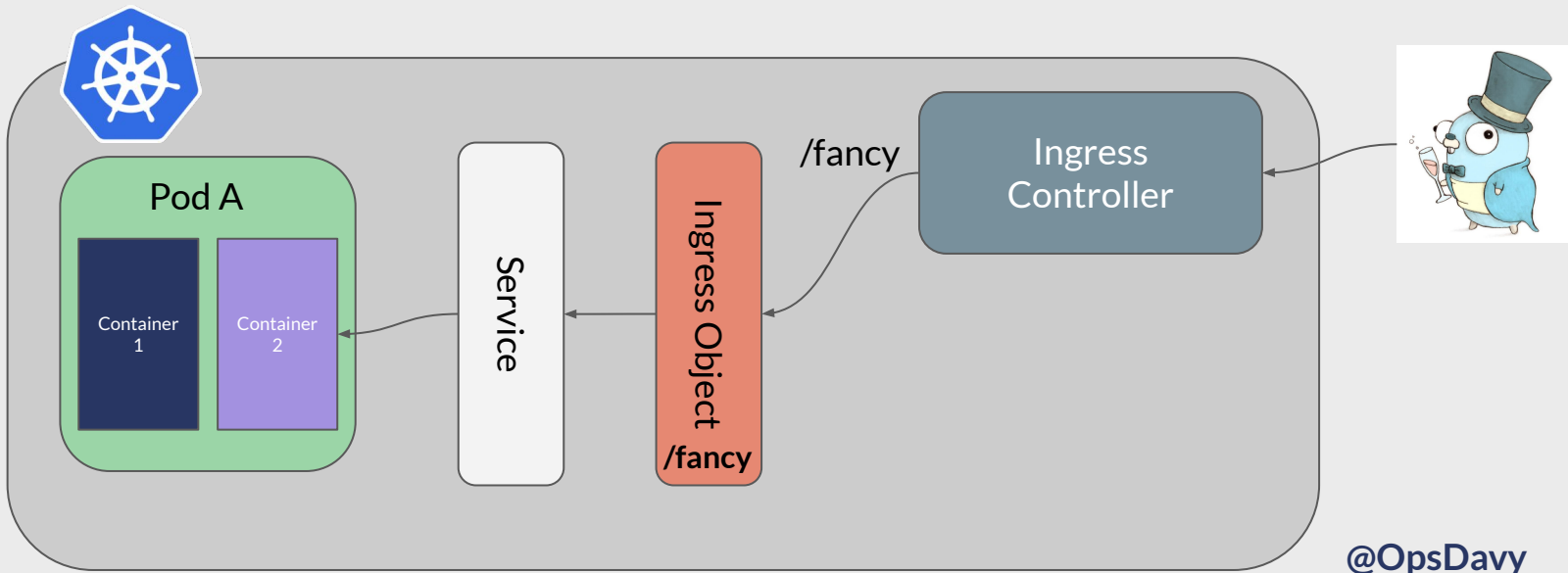
Kubernetes Services

Defines a logical set of pods using label selectors and provides a way to access them in a load balanced way over a Virtual IP.



Kubernetes Ingress

Manages external access to your services. Can provide TLS Termination and name based virtual hosting



RELIABILITY



**Your software is under
attack from the moment
you release it. - Michael Nygard**

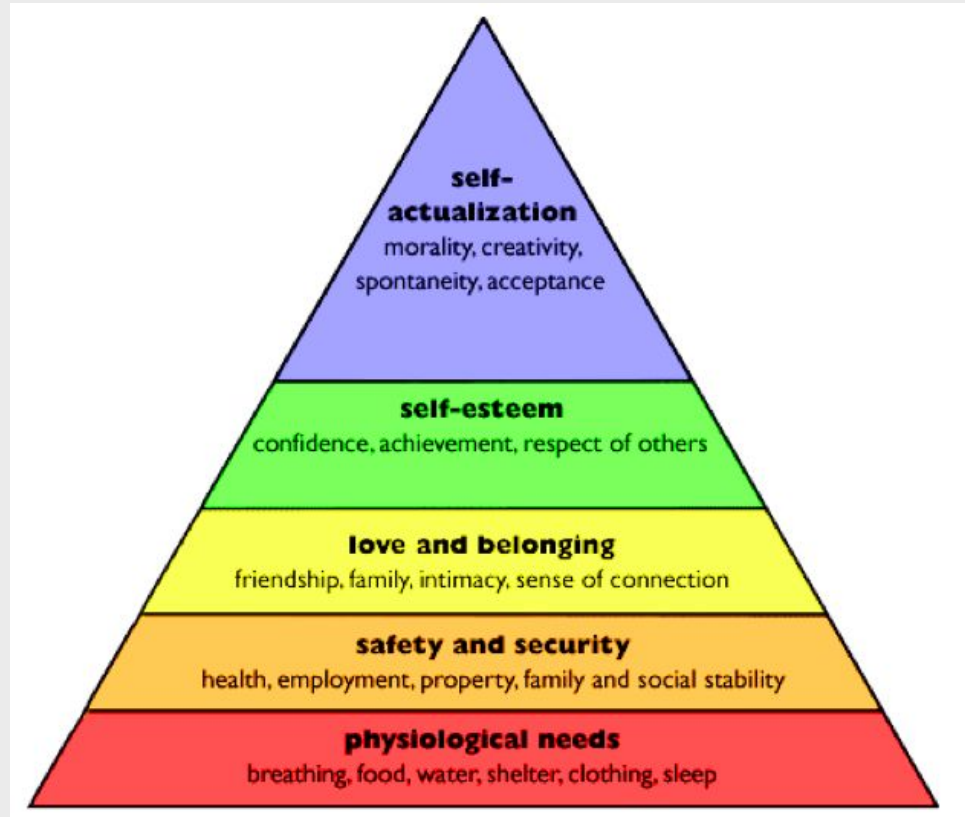
**Customers don't care how
complicated and micro
your services are** - Davy Jones

Customers don't care how
distributed and micro
services are

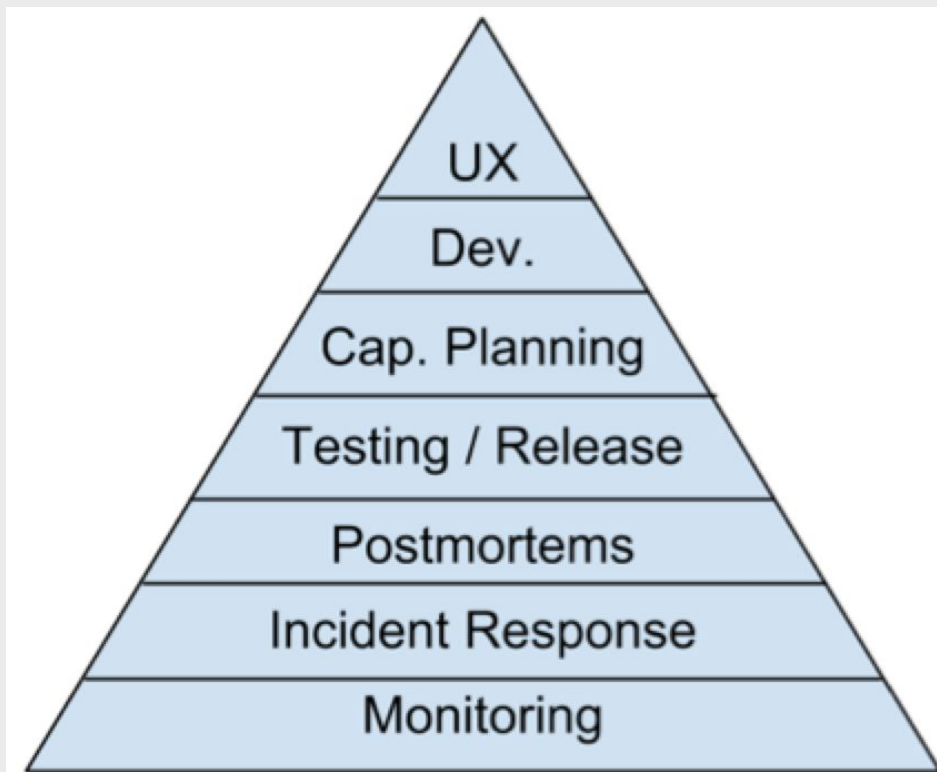
- Davy Jones

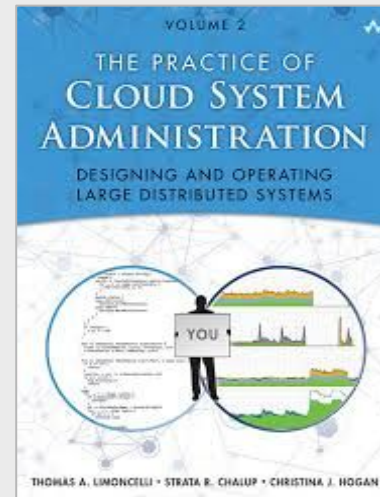
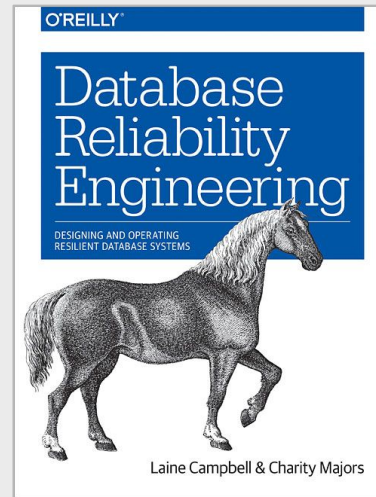
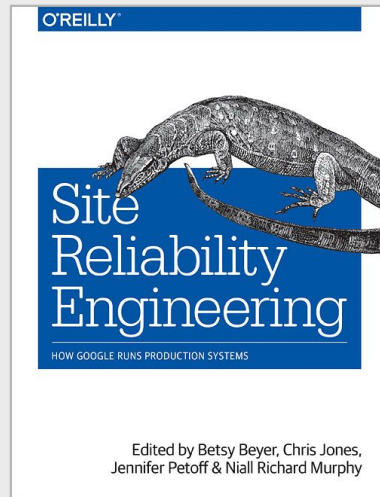
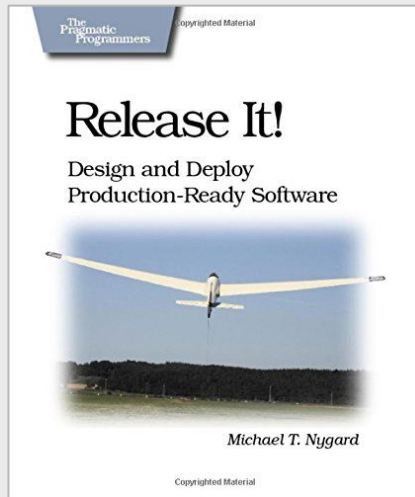


Human Needs



Reliability





<http://bit.ly/DavyGopherconUK>

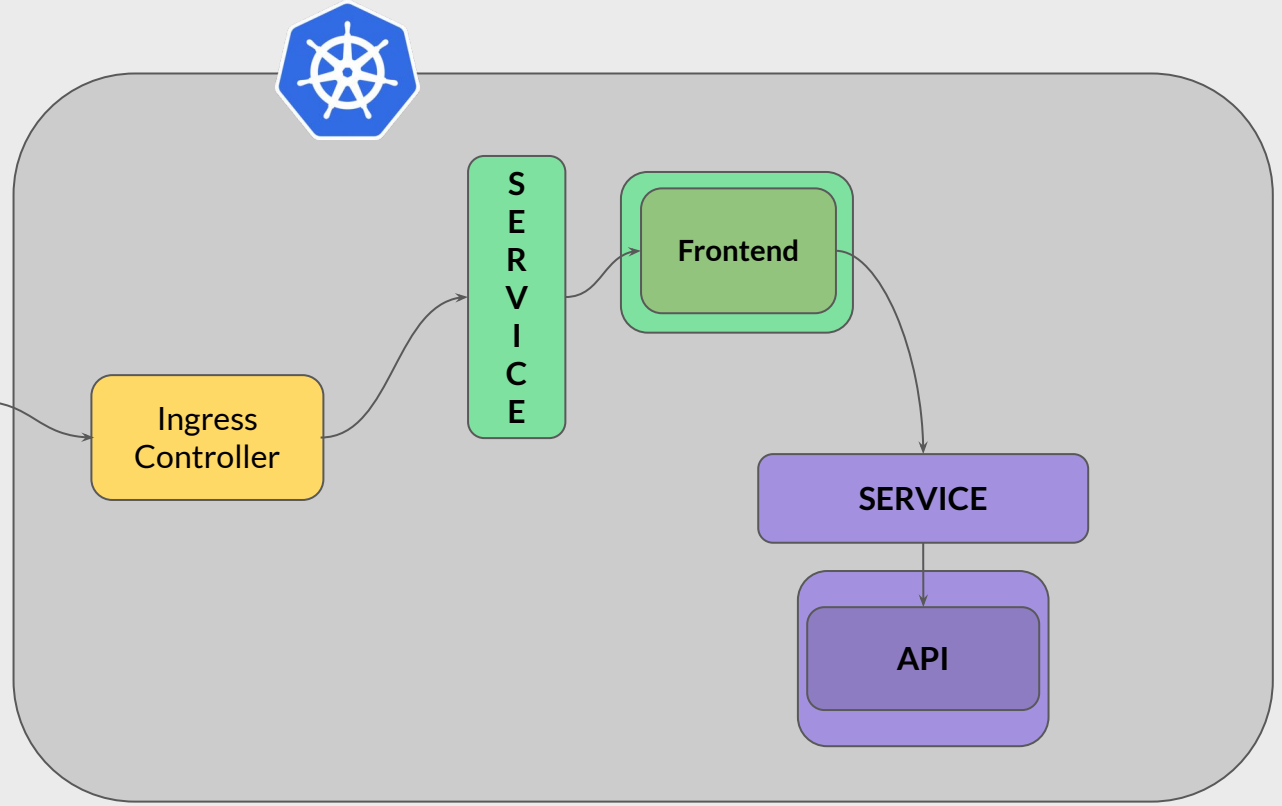
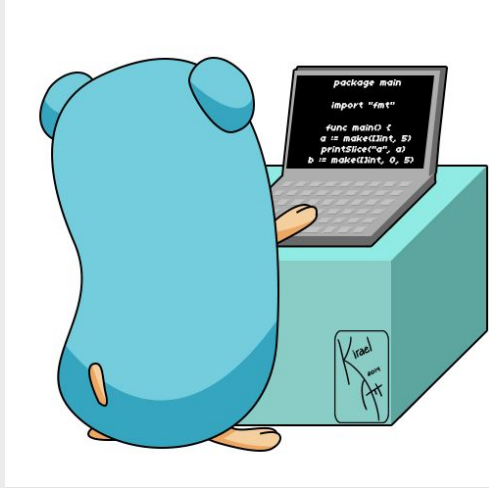


Image source:

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

Patterns

- Sidecar



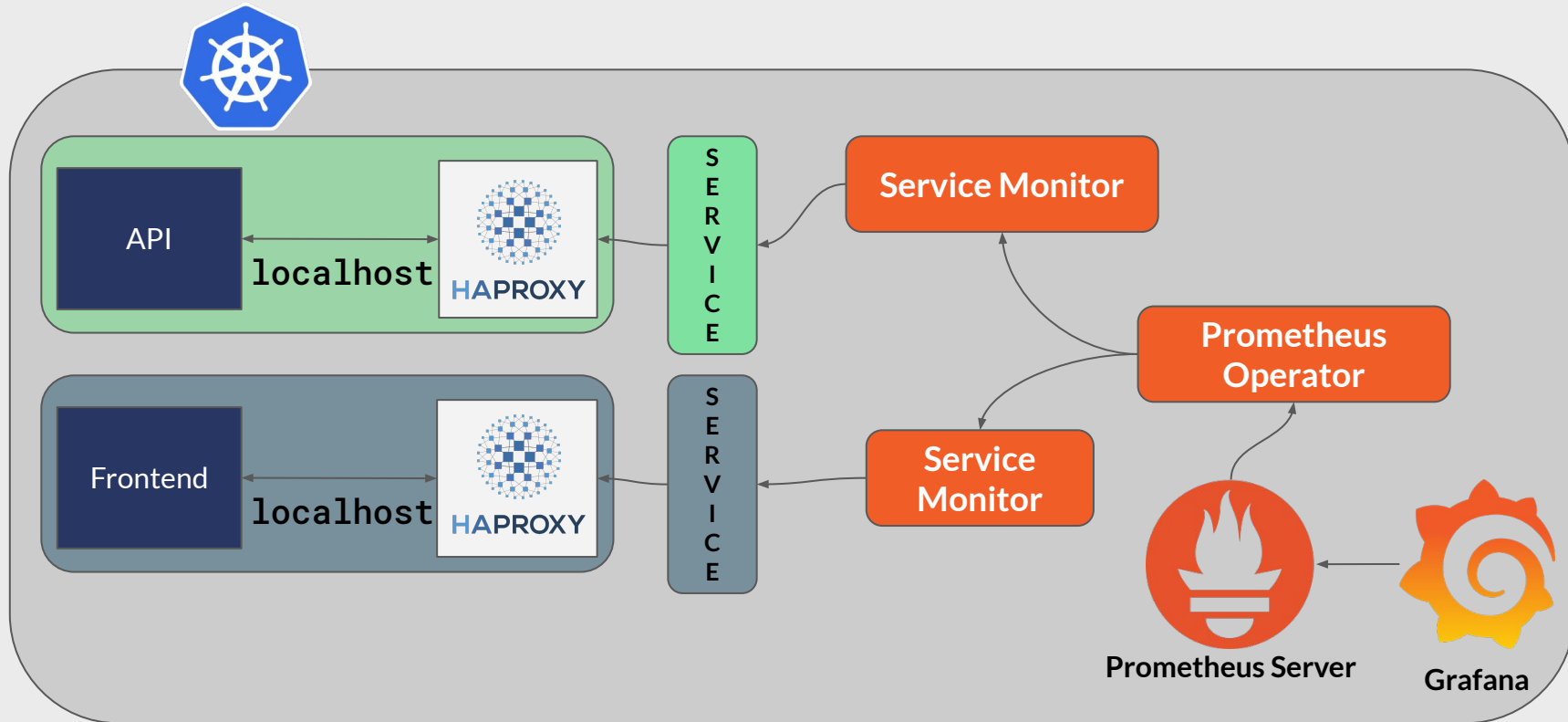
- Adapter



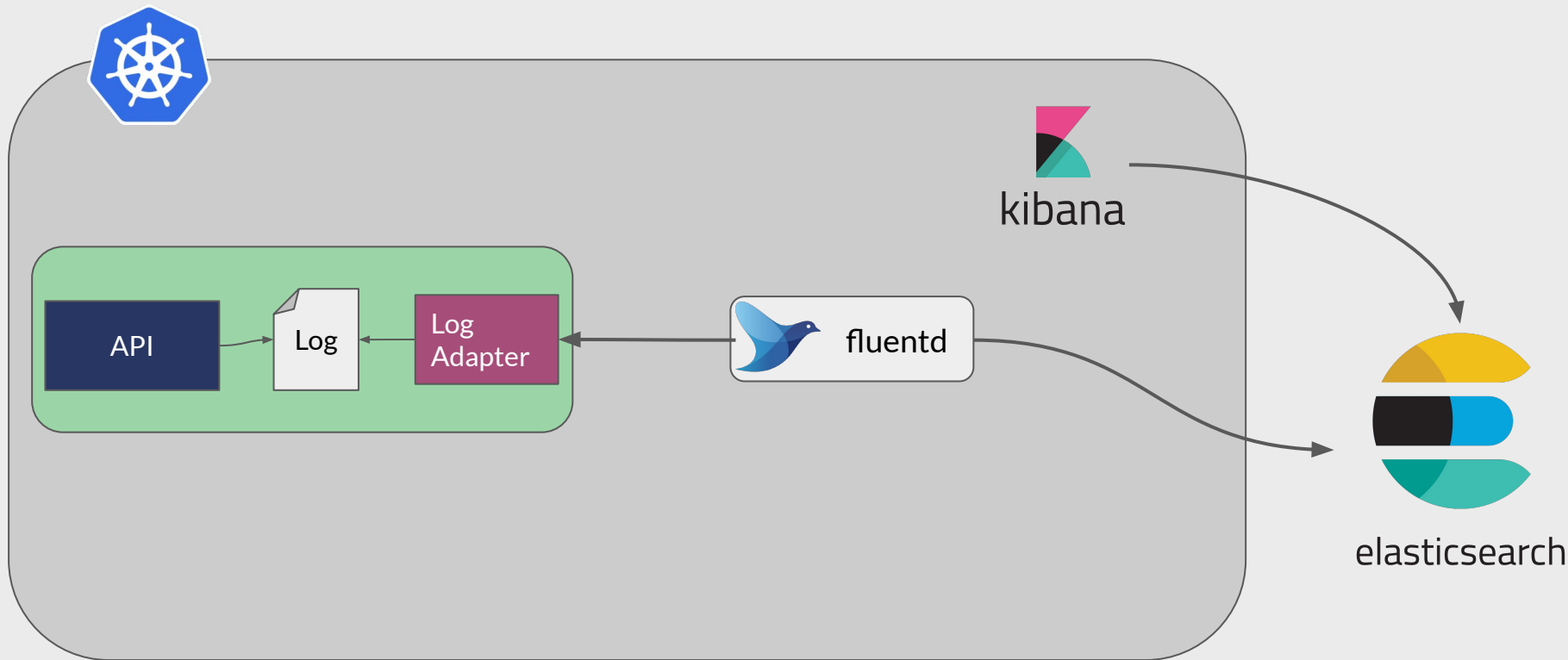
- Ambassador



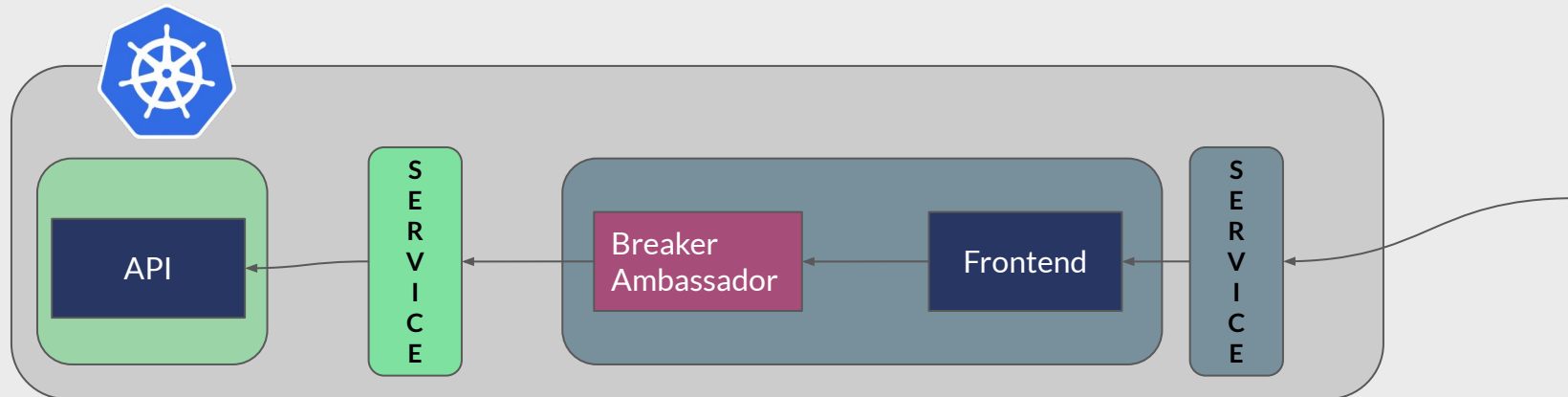
Proxy Sidecar



Log Adapter

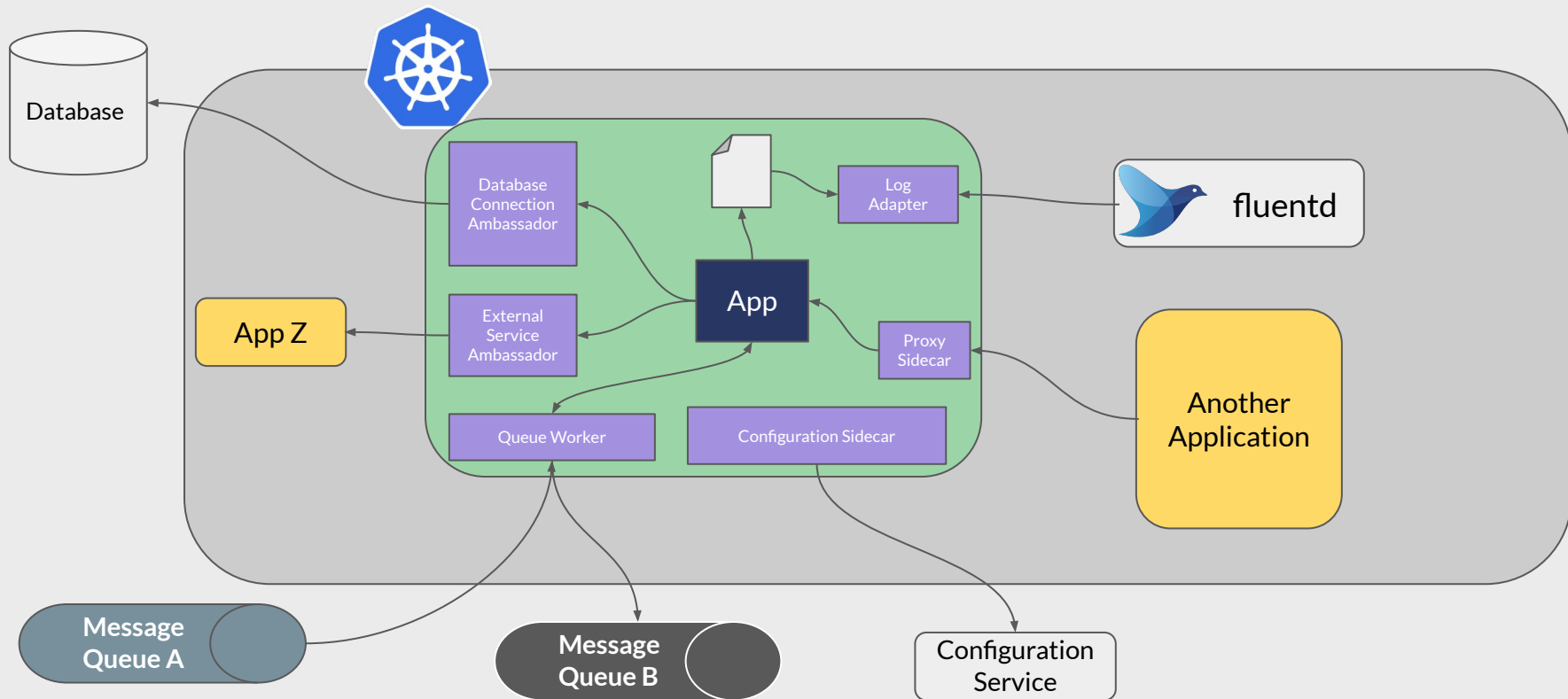


Circuit Breaker Ambassador



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](#)