

From Mainframe to Kubernetes

Coop's Cloud Native Journey

Who am i?

Jeppe Johansen

- Hired by Coop a year ago
 - ◆ DevOps
- Currently employed at **Whyyy**
 - ◆ Head of Software Engineering

The logo for Coop, featuring the word "coop" in a bold, red, lowercase sans-serif font.The logo for Whyyy, featuring the word "Whyyy" in a bold, dark teal, lowercase sans-serif font.

@Jepp2078



@Jepp2078



@Jeppe-Johansen

What is Coop doing?

❖ What?

- Mainframe to SAP

❖ Why?

- Batch to Real Time

❖ When?

- Mainframe and SAP to co-exist for up to 8 years

❖ How?!

- 450 services in the pipeline

The department

Systems Integration

- Integrations To/From/Within Coop
- Focus on co-existence of SAP/Mainframe
- Technical decisions were taken before employees were hired

What we actually needed

1. Run on-premise
2. Service discovery
3. Horizontal scaling
4. Self-healing
5. Portability

On-premise “cloud”

“

”



How to tell management they were wrong, and that they should fully embrace OSS, for the first time ever?

1. You don't.
2. You build a proof of concept.
3. You show them the amazing new features they are getting for free.
4. They realise all the problems the old stack couldn't handle.
5. Everyone wins.

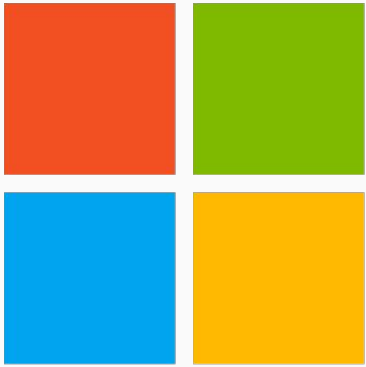
The plan



elastic



Hurdles



Microsoft

Hurdles

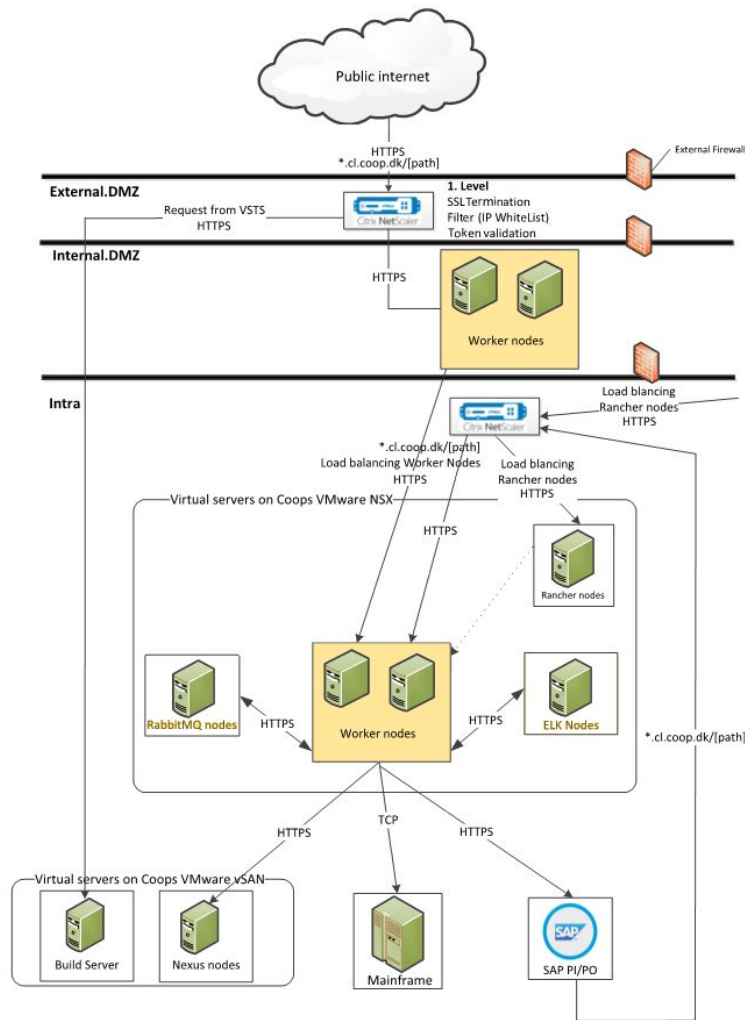
Internet

Hurdles

SSL Inspection

Network

- Network Topology
- NSX Network Topology
- Netscalers



Building our solution

- Elasticity
- Centralized Configuration
- Centralized Authn/Authz
- Shared Application State
- CI/CD
- Coop Integration Framework

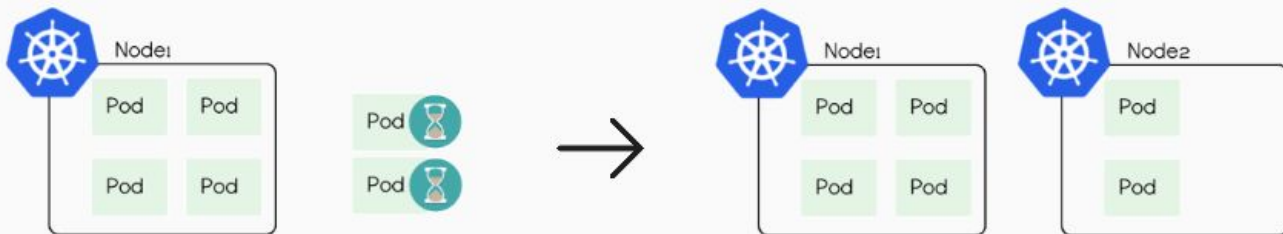
Elasticity

Official Kubernetes Autoscaler

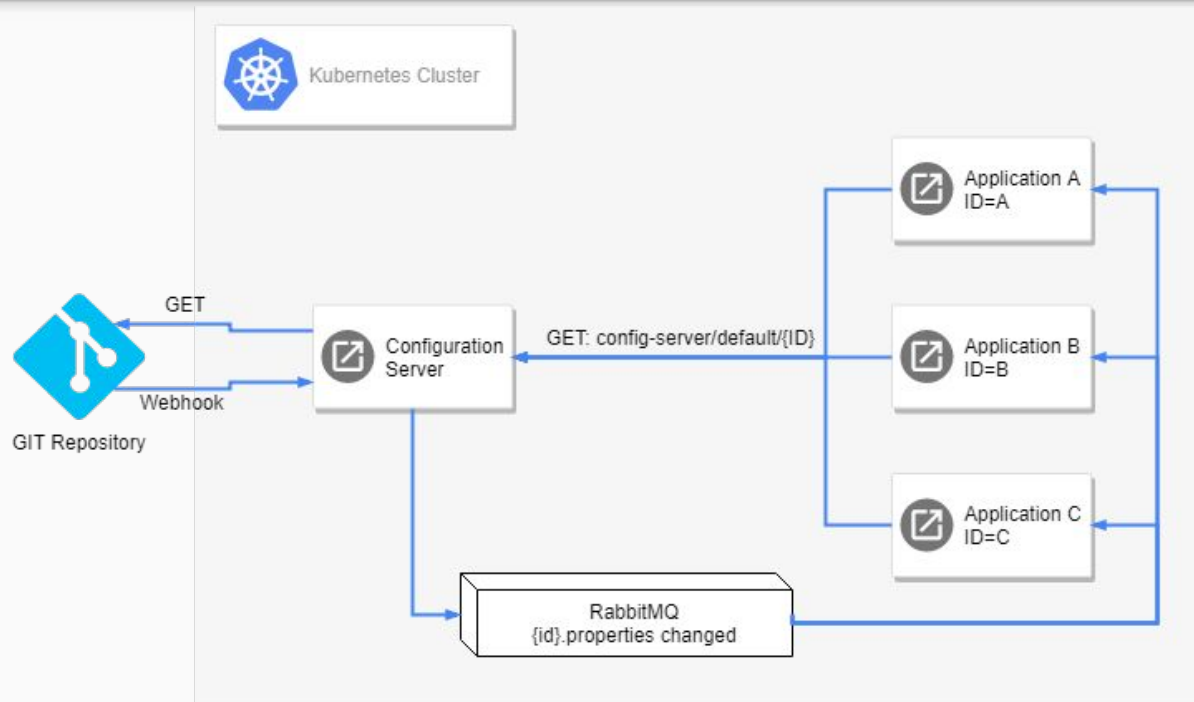
(github.com/kubernetes/autoscaler)

Custom Rancher Cloud Provider

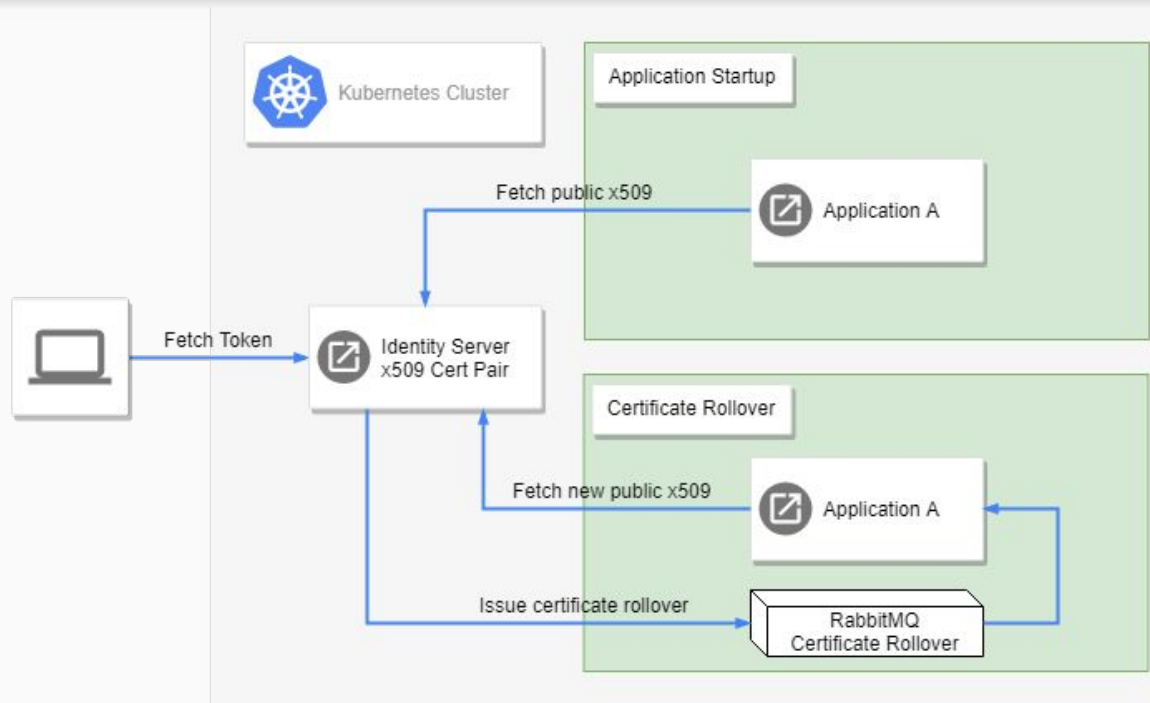
(github.com/jepp2078/autoscaler/tree/rancher-cloud-provider)



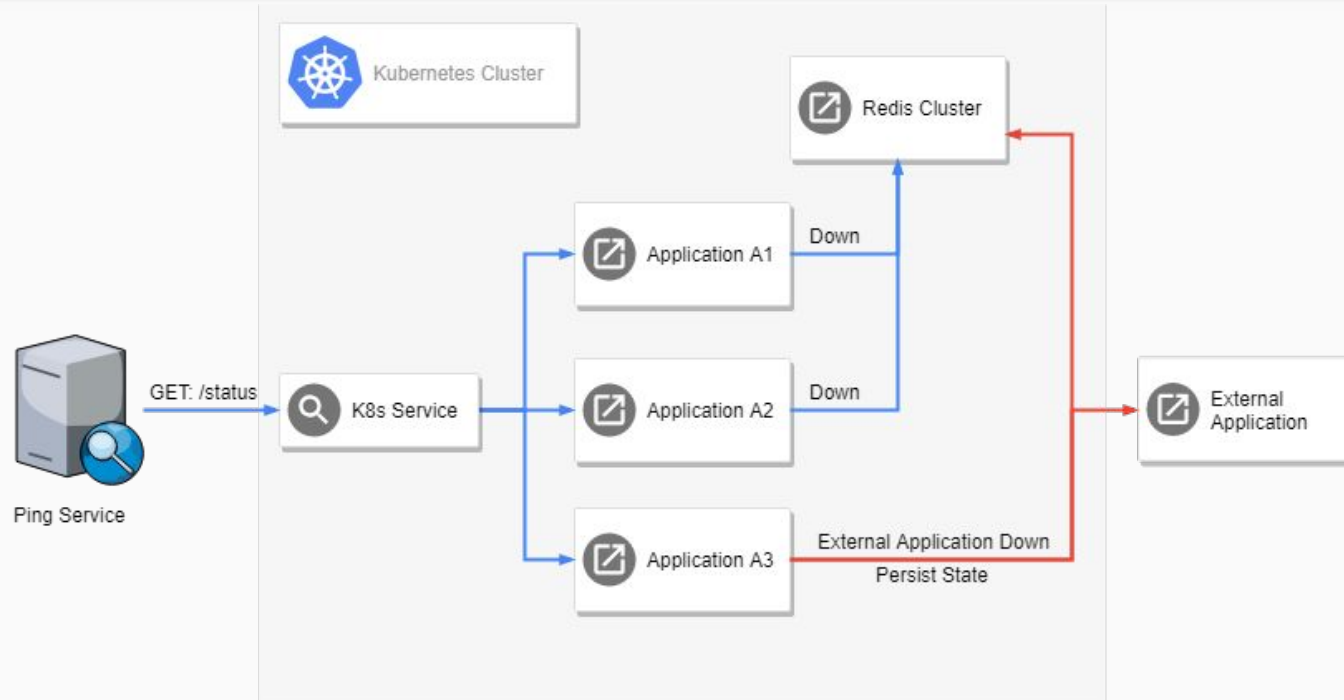
Centralized Configuration



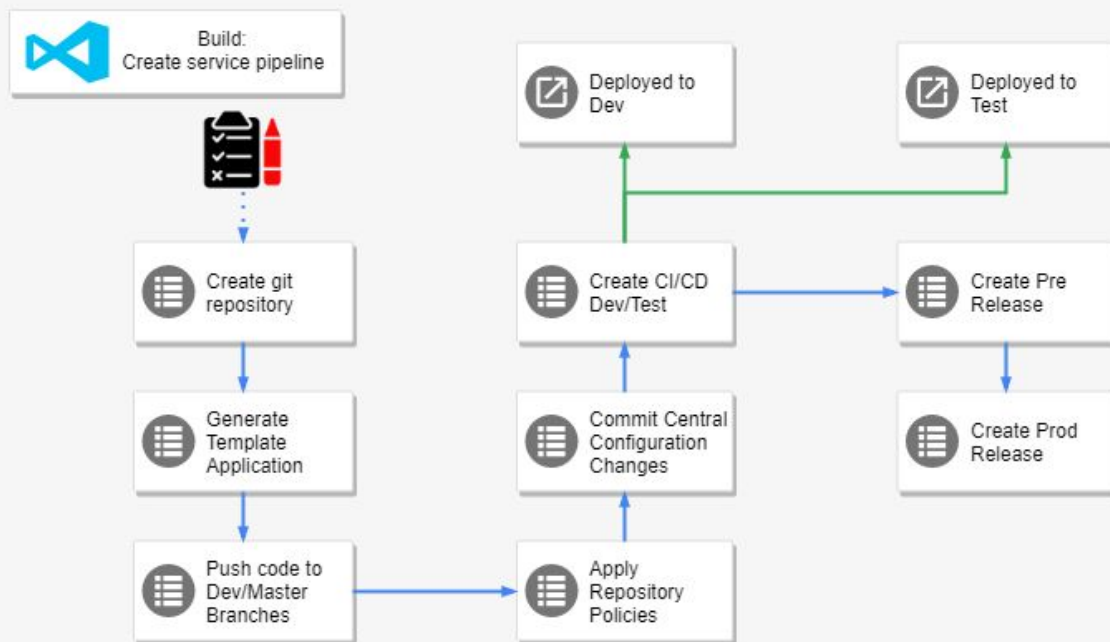
Centralized Authn/Authz



Shared Application State



CI/CD



Coop Integration Framework

- “Lightweight” framework built upon Spring Boot
- Automatic application context from Central Configuration
- Security context set on startup/Certificate rollover
- Application state based on error handling
- 20+ “Repositories”
- Automatic transaction tracing
- Automatic instrumentation

Organizational buy-in



Takeaways

We thought we were a special snowflake



Questions?



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