

# PostNord Strålfors: How we got into production

We implemented OpenShift – so now what?

2023-09-12

# Who are we?

Filip Jansson, Infrastructure Architect,  
[filip.jansson@stralfors.se](mailto:filip.jansson@stralfors.se)

Jonas Westlund, Development Manager,  
[jonas.westlund@stralfors.se](mailto:jonas.westlund@stralfors.se)

Maria Eneroth, Product Owner,  
[maria.eneroth@stralfors.se](mailto:maria.eneroth@stralfors.se)

# PostNord Strålfors

- Part of the PostNord Group
- Nordic presence: **Sweden, Finland, Norway and Denmark**
- Employees (FTE): ~ 700

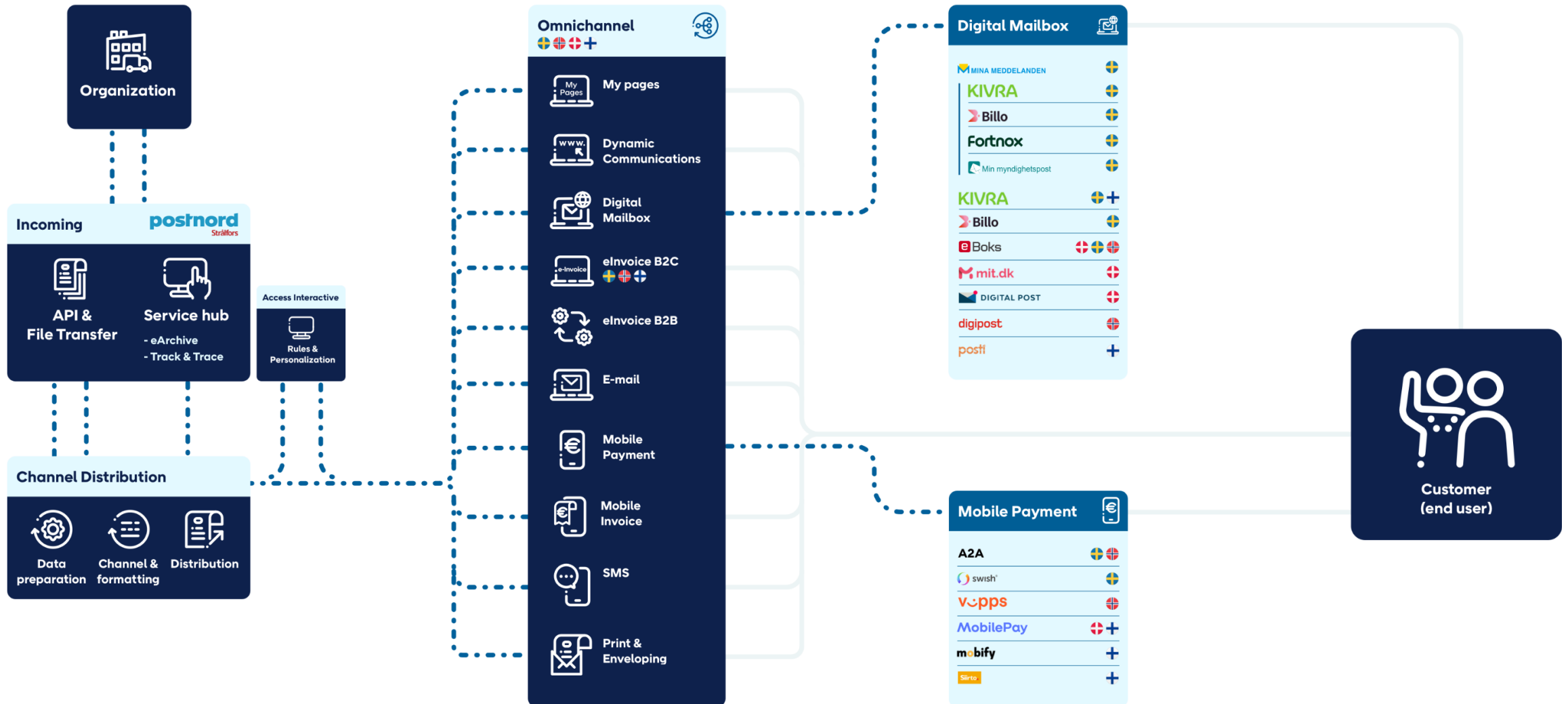




# We have a leading and important role in the Nordic communication infrastructure

*Every year we distribute about 1.3 billion communication messages, for our customers, to their consumers in the Nordic region*

# Our Nordic Omnichannel platform



# Application Login

Application Login ger dig en översikt över alla webbgränssnitt och verktyg som PostNord Strålfors kan erbjuda.

## Mina supportärenden

Via Mina supportärenden kan man enkelt kommunicera med PostNord Strålfors kundtjänst.

[Logga in →](#)

## Track & Trace

Med Track & Trace kan du enkelt följa dina transaktioner i realtid.

[Logga in →](#)

## eArkiv

PostNord Strålfors eArkiv erbjuder säker lagring av all fysisk och digital kommunikation.

[Logga in →](#)

## EDI-portalen

PostNord Strålfors erbjuder ett antal webbverktyg för att förenkla din dagliga hantering av dina EDI-flöden. Här finner du t.ex. EDI Track & Trace-verktyg för att följa dina transaktioner i realtid.

[Logga in →](#)

## Internetbanksfaktura-portalen

Med PostNord Strålfors tjänst Internetbankfaktura kan du enkelt skicka fakturor direkt till alla internetbanker som är anslutna till e-faktura.

[Logga in →](#)

## Access Interactive

Access interactive är ett webbgränssnitt för alla som arbetar med kundkommunikation. Du får full kontroll över dina utskick och kan anpassa innehåll och utseende både i digitala och fysiska kanaler.

[Logga in →](#)

## We Mail on Demand

Via vårt moderna webbgränssnitt We Mail On Demand skickar du enkelt brev till dina kunders fysiska eller digitala brevlådor.

[Logga in →](#)

## Webb EDI

Webb EDI är till för dig som vill erbjuda dina leverantörer ett sätt att kommunicera med dig elektroniskt. I sin enklaste form kan Webb EDI fungera som ett fakturaverktyg, men tjänsten kan även anpassas till att förmedla ordrar till leverantörer och enkelt få tillbaka orderbekräftelser och leveranviseringar.

[Logga in →](#)

## PostNord Strålfors webshop

PostNord Strålfors webshop är en lättanvänd webbportal där du och dina kollegor kan beställa lagervaror, trycksaker och marknadsmaterial.

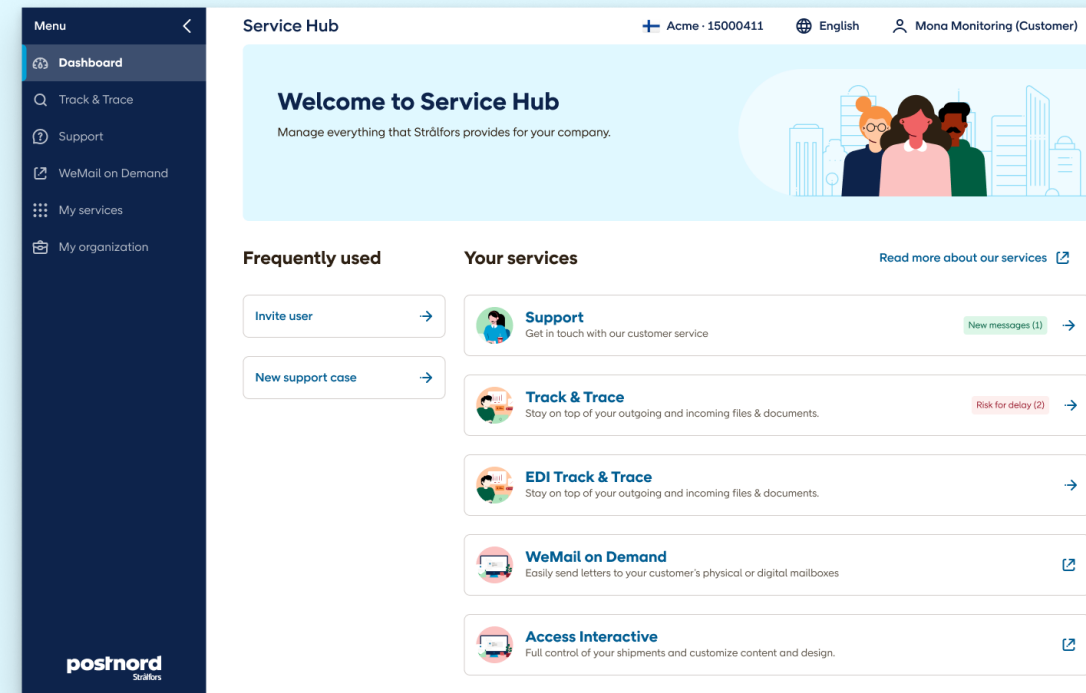
[Logga in →](#)

# Service Hub

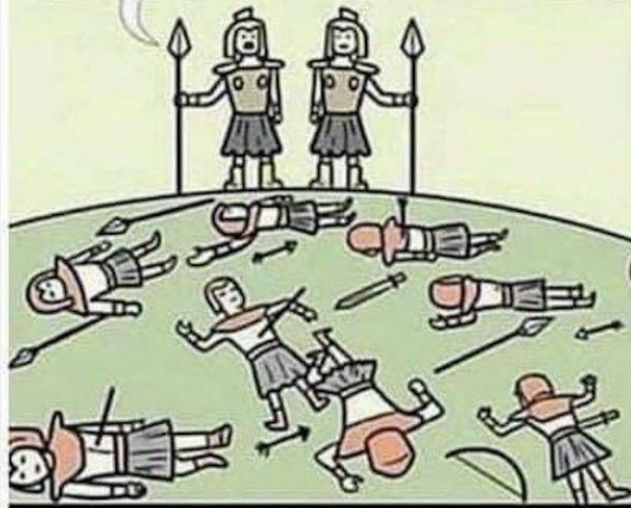
## Self-service portal

- MVP requirements
  - Be compatible
  - User friendly
  - Scalable
  - Build solution as microservices
  - Modern architecture
  - Easy to add functionality to go beyond MVP
  - Easy to onboard customers

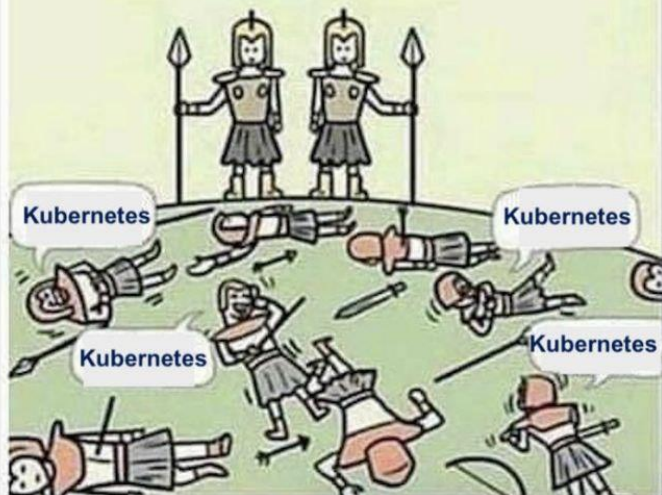
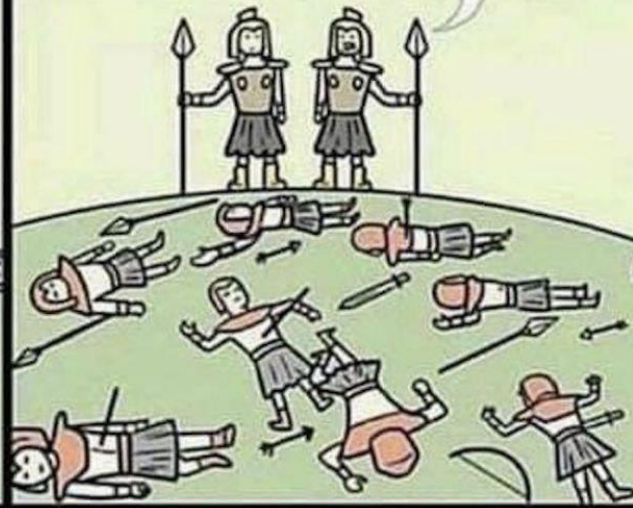
Target existing customers in Sweden, Norway, Denmark and Finland



HOW DO WE KNOW IF THEY'RE ACTUALLY DEAD OR JUST PRETENDING



Docker Swarm or Kubernetes






# Our Container adoption journey



Why change

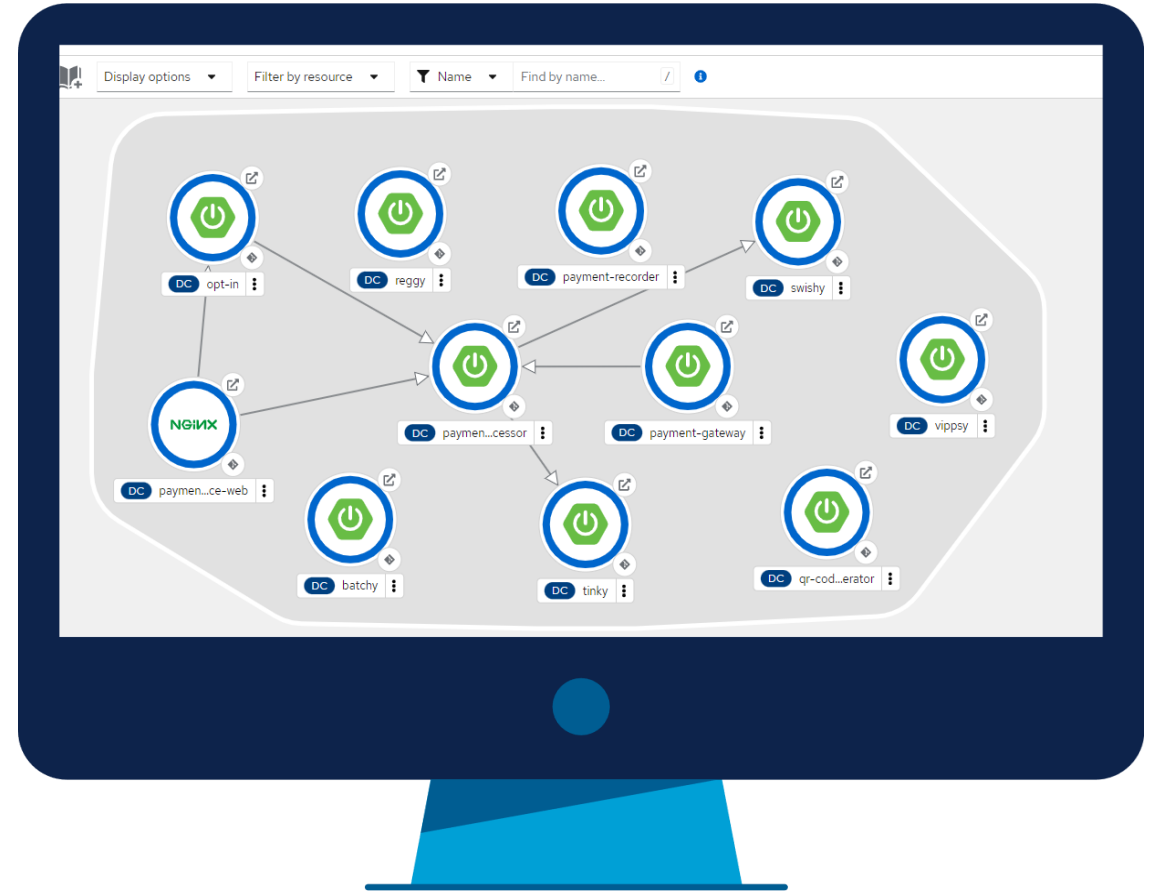


Not now, we are  
too busy

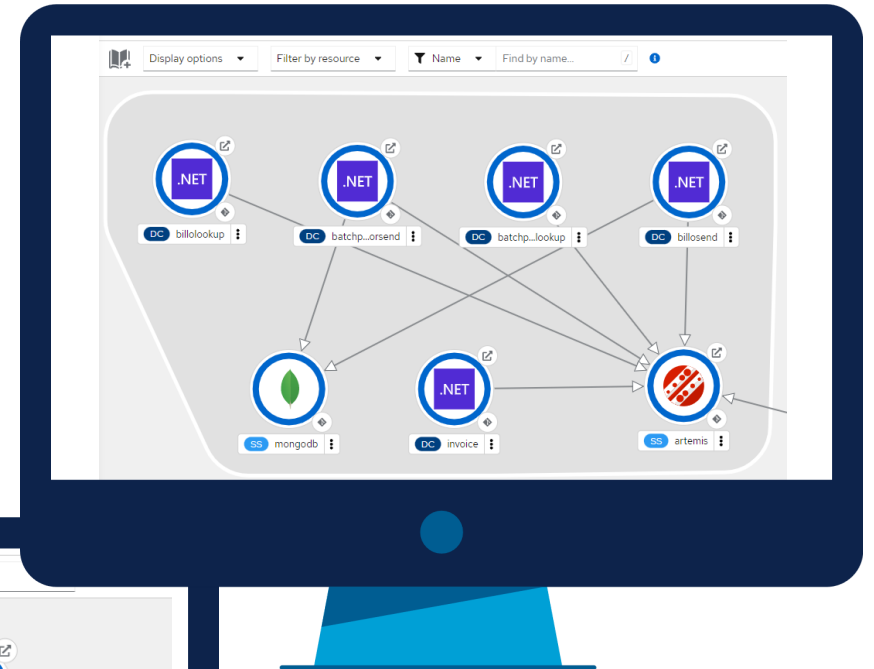
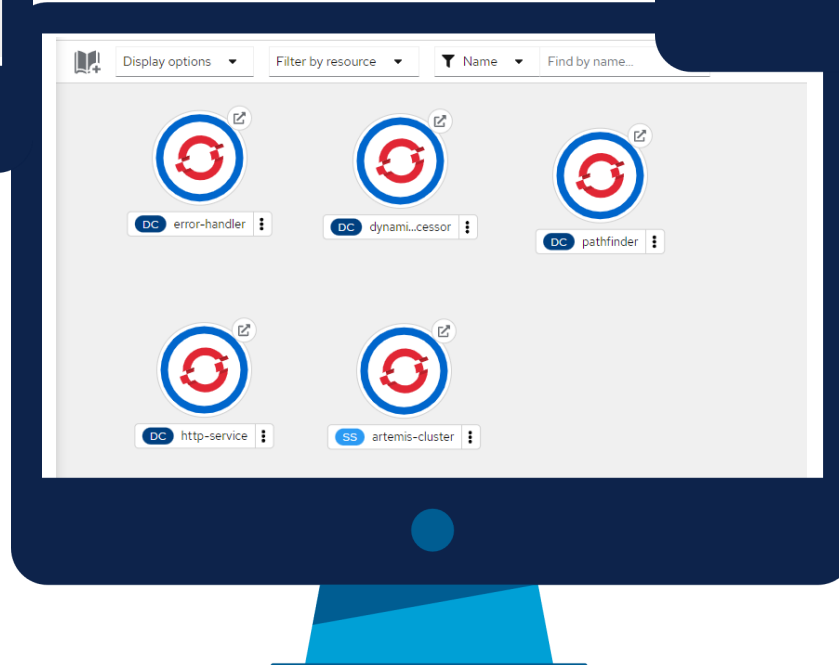
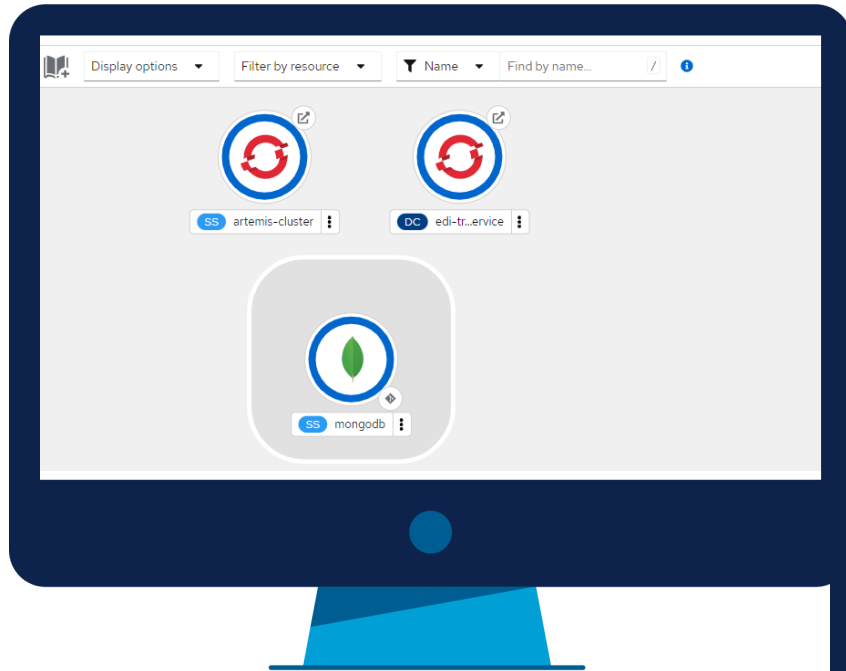


Commitment

# First live services on OpenShift



# Loads of microservices



# Achievements

## 1 year with OpenShift

12 working  
services in  
OpenShift

63 running  
pods in  
production

Working  
CI/CD  
pipeline

Modern  
toolbox

Better audit  
& security

Automation

Infra as  
code

GitOps

# Choosing a platform

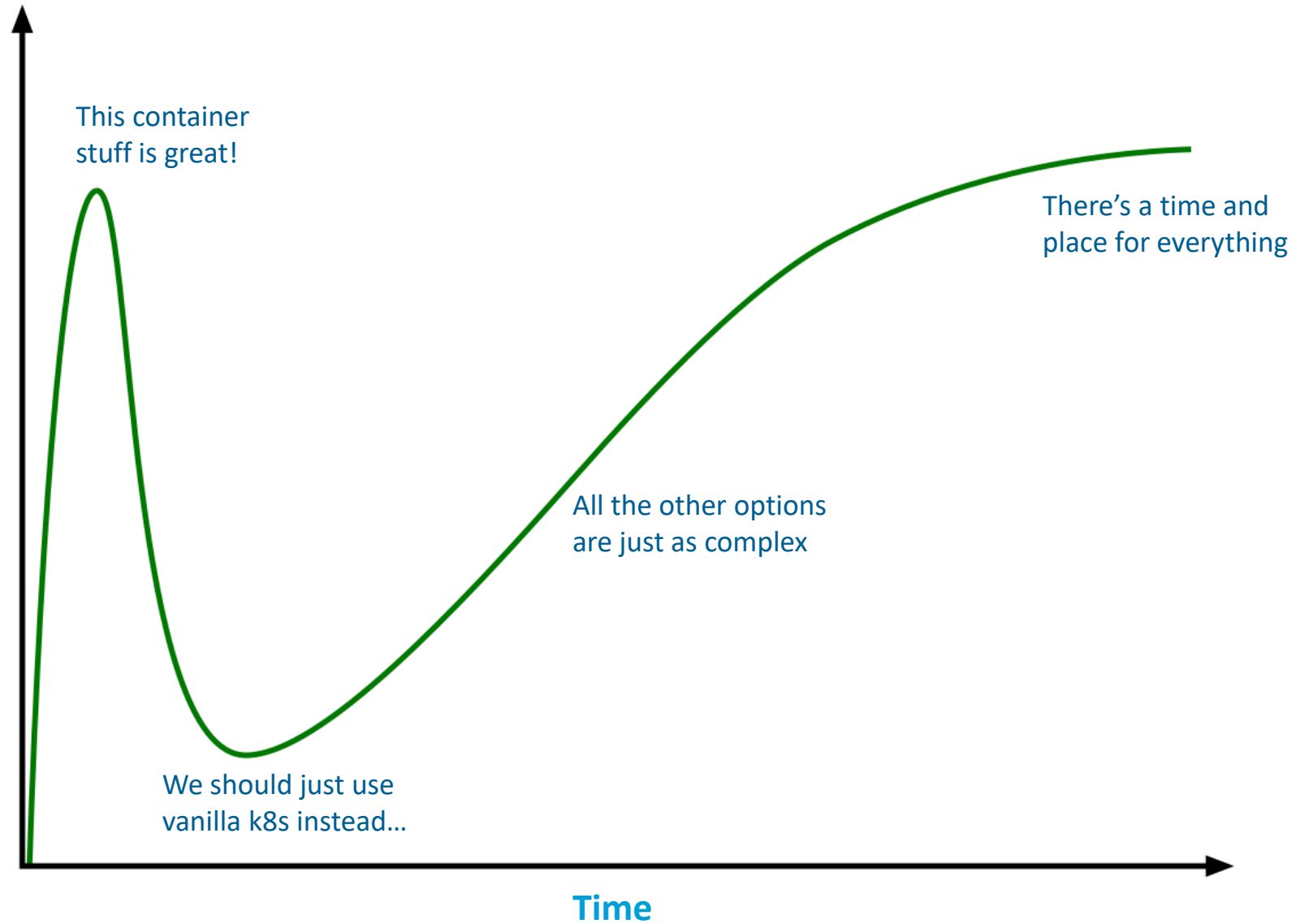
## The best things about OpenShift

- Easy to get started
- Portability
- “Batteries included” Kubernetes
- Platform configuration as code
- Great developer experience





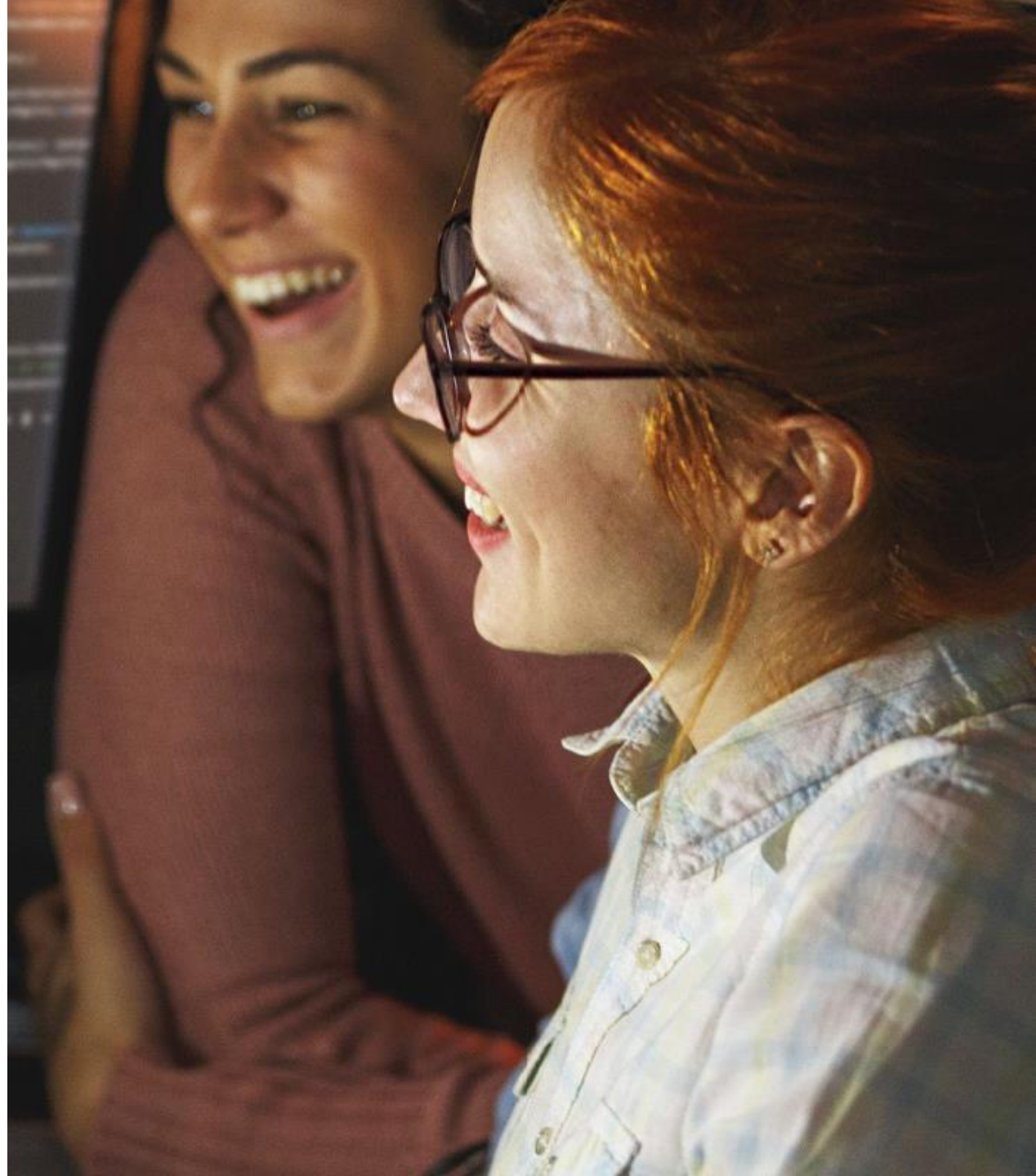
# My feelings for OpenShift



# Getting to production

## Prerequisites

- **GitOps**
- **Secrets management**
- **Monitoring**
- **...and many more**





# GitOps Principles

## 1. Declarative

A system managed by GitOps must have its desired state expressed declaratively.

## 2. Versioned and Immutable

Desired state is stored in a way that enforces immutability, versioning and retains a complete version history.

## 3. Pulled Automatically

Software agents automatically pull the desired state declarations from the source.

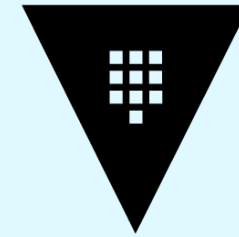
## 4. Continuously Reconciled

Software agents continuously observe actual system state and attempt to apply the desired state.



# Secrets management

- Secrets cannot exist as clear text in Git
- We needed:
  - A way to store secrets securely
  - A way to consume them from Kubernetes



HashiCorp  
**Vault**



# Example problem

```
kind: Secret
apiVersion: v1
metadata:
  name: alertmanager-main
  namespace: openshift-monitoring
type: Opaque
data:
  alertmanager.yaml: >-
```

```
Imdsb2JhbCI6CiAgInJlc29sdmVfdGltZW91dCI6CI1bSiklmluaGliaXRfcnVsZXMiOgotICJlcXVhbCI6CiAgLSAibm
FtZXNwYWwNIlloglC0glmFsZlJ0bmFtZSIKICAgIC291cmNIX21hdGNoZXJlZljoKICAtICJzZXZlcmI0eSA9IGNyaXRpY2F
slgogICJ0YXJnZXRfbWF0Y2hlcniMiOgogIC0glInNldmVyaXR5ID1+IHdhcm5pbmd8aW5mbylKLSAiZXF1YWwiOgo
glC0glm5hbWVzcGFjZSIKICAtICJhbGVydG5hbWUiCiAgInNvdXJjZV9tYXRjaGVycyl6CiAgLSAic2V2ZXJpdHkgPSB
3YXJuaW5nlgogICJ0YXJnZXRfbWF0Y2hlcniMiOgogIC0glInNldmVyaXR5ID0gaW5mbylKInJlY2VpdmVycyl6Ci0gl
m5hbWUiOiAiRGVmYXVsdCIKLSAibmFtZSI6ICJYXRjaGRvZyIKLSAibmFtZSI6ICJdcmI0aWNhbCIKInJvdXRlljoKIC
AiZ3JvdXBfYnkiOgogIC0glm5hbWVzcGFjZSIKICAgICZ3JvdXBfaW50ZXJ2YWwiOiAiNW0iCiAgImdyb3VwX3dhaXQi
OiAiMzBzlgogICJyZWwlaXZlciI6ICJlZlZhdWw0IlgogICJyZXBIYXRfaW50ZXJ2YWwiOiAiMTJ0IlgogICJyb3V0ZXMi
OgogIC0glm1hdGNoZXJlZljoKICAgIC0glmFsZlJ0bmFtZSA9IFdhGNoZG9nlgogICAgInJlY2VpdmVyljogIldhdGNo
ZG9nlgogIC0glm1hdGNoZXJlZljoKICAgIC0glInNldmVyaXR5ID0gY3JpdGljYWwiCiAgICAicmVjZWl2ZXIiOiAiQ3Jpd
GljYWwi
```

```
"global":
  "resolve_timeout": "5m"
"inhibit_rules":
- "equal":
  - "namespace"
  - "alertname"
  "source_matchers":
  - "severity = critical"
"target_matchers":
  - "severity =~ warning|info"
- "equal":
  - "namespace"
  - "alertname"
  "source_matchers":
  - "severity = warning"
  "target_matchers":
  - "severity = info"
"receivers":
- "name": "Default"
- "name": "Watchdog"
- "name": "Critical"
"route":
  "group_by":
  - "namespace"
  "group_interval": "5m"
  "group_wait": "30s"
  "receiver": "Default"
  "repeat_interval": "12h"
"routes":
- "matchers":
  - "alertname = Watchdog"
  "receiver": "Watchdog"
- "matchers":
  - "severity = critical"
  "receiver": "Critical"
```

# With External Secrets

apiVersion: external-secrets.io/v1beta1

kind: ExternalSecret

metadata:

name: alertmanager-main

namespace: openshift-monitoring

spec:

target:

name: alertmanager-main

template:

engineVersion: v2

templateFrom:

- target: Data

configMap:

name: alertmanager-config

items:

- key: alertmanager.yaml

templateAs: Values

data:

- remoteRef:

key: openshift-monitoring/opsgeenie-config

property: opsgeenie\_api\_key

secretKey: opsgeenie\_api\_key

- remoteRef:

key: openshift-monitoring/opsgeenie-config

property: opsgeenie\_heartbeat\_key

secretKey: opsgeenie\_heartbeat\_key

secretStoreRef:

kind: SecretStore

name: vault-backend

global:

resolve\_timeout: 5m

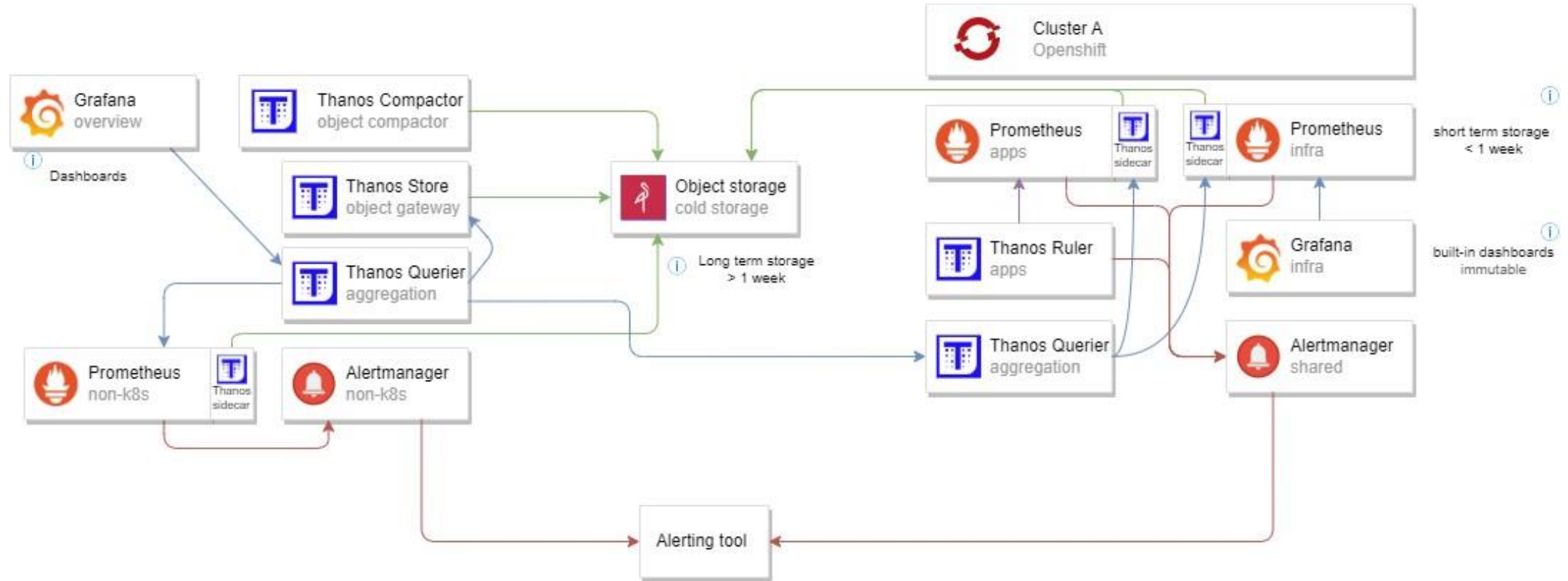
opsgeenie\_api\_url: {{ .Values.opsgeenie.api\_url }}

opsgeenie\_api\_key: {{ printf "{{ .opsgeenie\_api\_key }}" }}

...

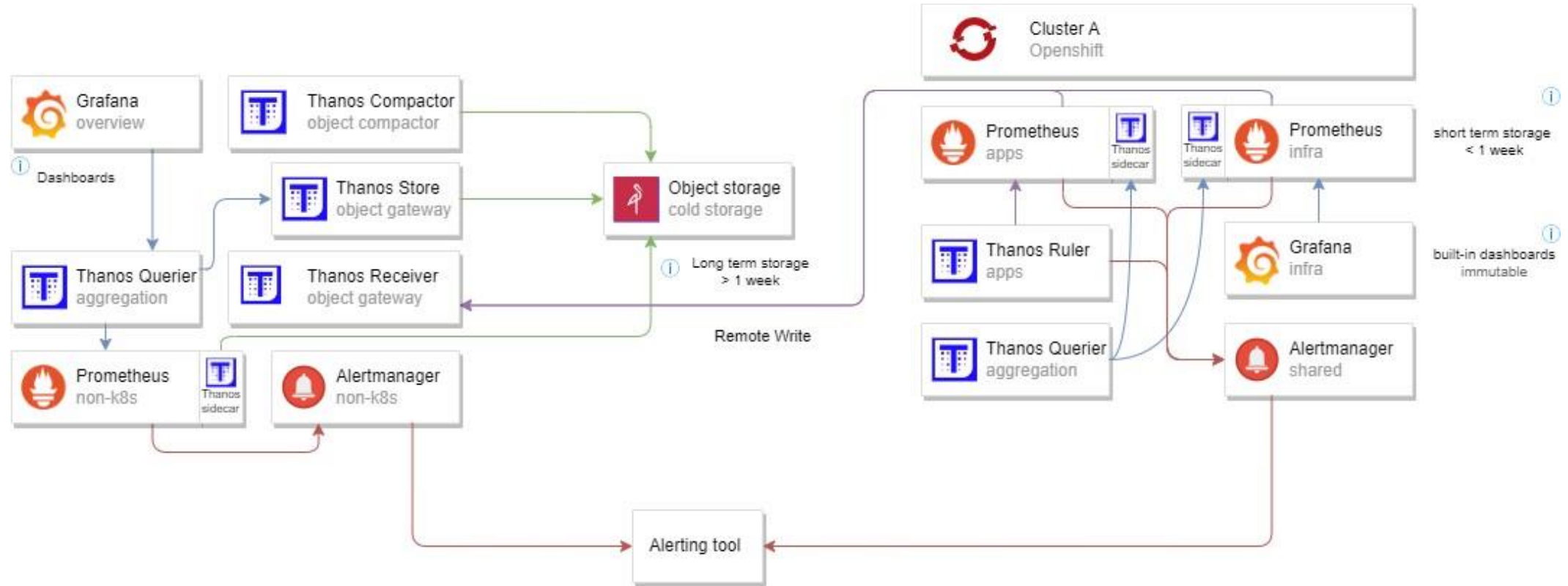
# Monitoring

## Our first draft

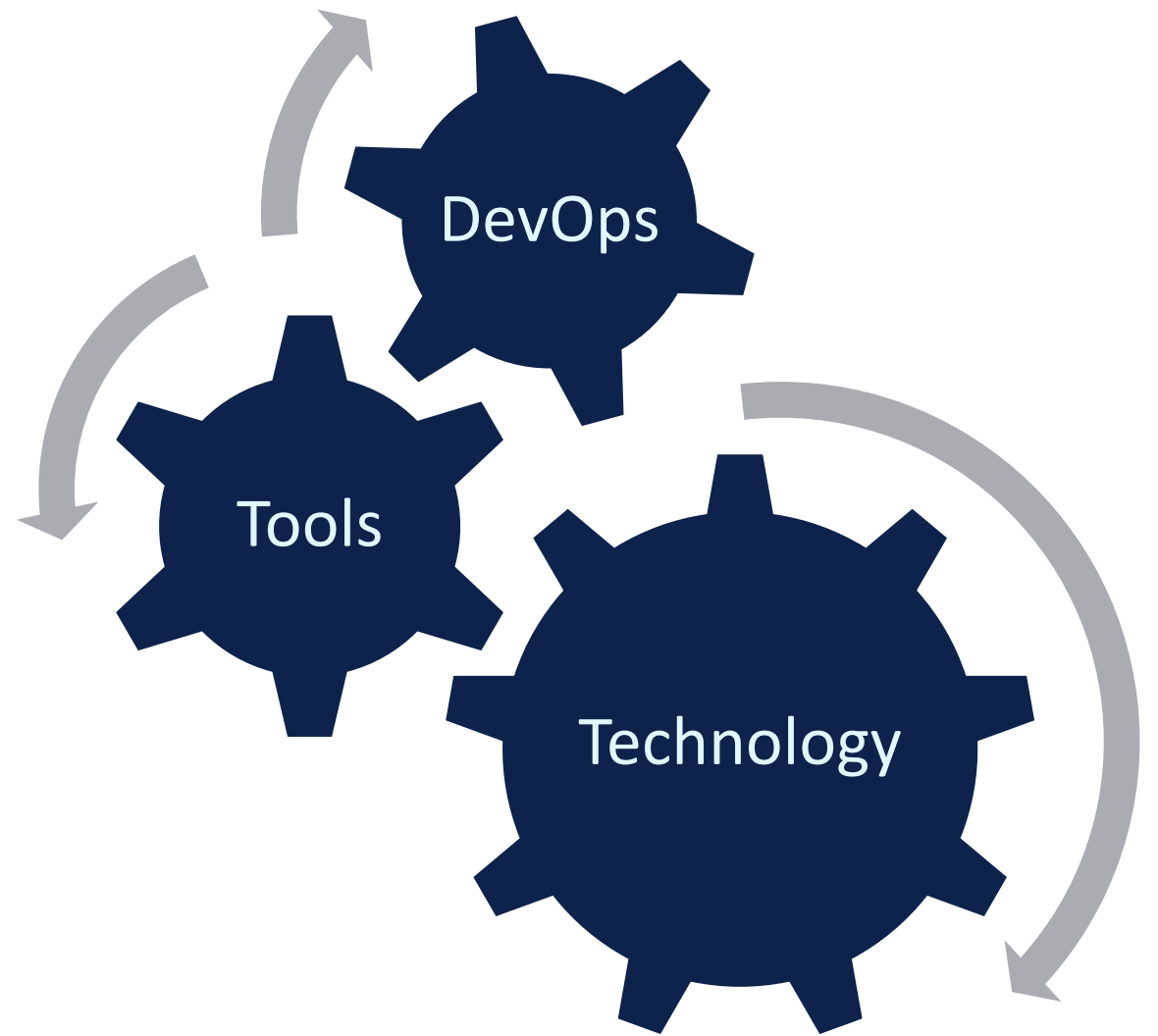


# Monitoring

## What we ended up with



# Streamlining

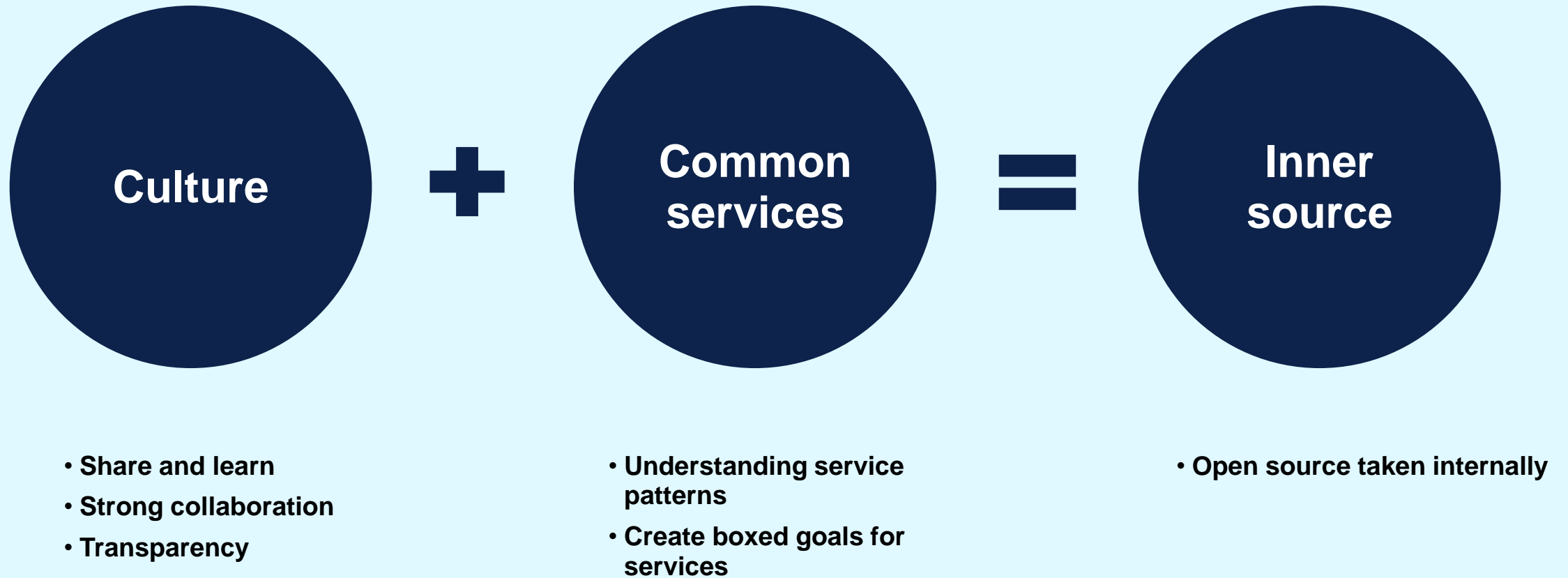


# Cultural change & building common capabilities





# Breaking the silos



# Service Hub

- Single Sign On to our main applications
- Modern look and feel
- Agile product development
- A Nordic Solution
- Continuous deployment shortens time to market

The screenshot displays the Service Hub dashboard. At the top, it shows the user's name 'Mona Monitoring (Customer)', the company 'Acme - 15000411', and the language 'English'. A dark blue sidebar on the left contains a 'Menu' with options: 'Dashboard', 'Track & Trace', 'Support', 'WeMail on Demand', 'My services', and 'My organization'. The main content area features a 'Welcome to Service Hub' banner with the text 'Manage everything that Strålfors provides for your company.' Below this, there are two sections: 'Frequently used' with buttons for 'Invite user' and 'New support case', and 'Your services' which lists 'Support', 'Track & Trace', 'EDI Track & Trace', 'WeMail on Demand', and 'Access Interactive', each with a brief description and a right-pointing arrow. The 'postnord Strålfors' logo is visible in the bottom left corner of the dashboard.

# Thank you!

## Questions?