# The Tech Update will begin shortly...

While you wait, please answer this question
and submit your answer in the chat:

Is your organization running one or more applications in a hybrid environment?

# Hybrid Cloud

## Get the best of both worlds without compromising security and operational efficiency

Today's speakers:

**Frederik Mogensen -** Cloud Native Architect, Trifork

**Claus Albøge -** Senior Cloud & Containerization Architect, Netic

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# Introduction

*Hybrid Cloud becoming the new normal - or at least a natural stepping stone towards “true” Cloud Native*

Today’s host: Morten Olsson - Head of Marketing, Netic

# A few practical notes

1

## Recording

We will be recording this Tech Update which you will be able to receive afterwards

2

## Chat and Q&A

We will be using the chat to engage with you during the event

3

## Post-webinar survey

We will be looking to get your feedback after the Tech Update

# Agenda

- The FUT Project
- Managing Hybrid Cloud Infrastructure
- Developing on Hybrid Cloud
- Conclusions
- Q&A

# The FUT Project

# FUT - National Telemedicine Platform

- Helping chronically ill patients to live at home
- National platform for telemedicine, by all 5 regions and 98 municipalities
- Platform and infrastructure developed by Systematic, Trifork, and Netic
- Telemedicine applications for COPD ('KOL'), complex pregnancies, complicated wounds, etc being developed by CGI, EWII, Telecare, KMD, MedWare, and Tunstall

# FUT - Technology Stack

## APPLICATION

## PLATFORM

## INFRASTRUCTURE

# What is Hybrid Cloud anyway?

*Hybrid cloud is an IT architecture that incorporates some degree of* ***workload portability****,* ***orchestration****, and* ***management*** *across 2 or more environments. -* ***redhat.com***

# Private, Public, or Hybrid Cloud?

*Things to consider*


### Regulatory Requirements

- Data must be in Denmark
- Physical Data Center Audit

### Flexibility

- Scale: Up *and* down - fast
- Cost: ‘Pay as you go’

### Scalability and Availability

- ‘Unlimited’ capacity
- Scale beyond classic 2-center
- Customer proximity


### Managed Services

- Leverage managed services (databases, queues, etc)
- Vendor lock-in

# Why Hybrid Cloud - in FUT?

*Best of both worlds*

## Production and pre-production environments

- Maintain access to and control of the entire infrastructure stack
- Production data stays in DK

## Development and Test environments

- Provision complete environments within an hour
- Rapid development of new infrastructure and platform services

# The Infrastructure

*Building infrastructure in multiple clouds...*

Billede af @Sam fra unsplash

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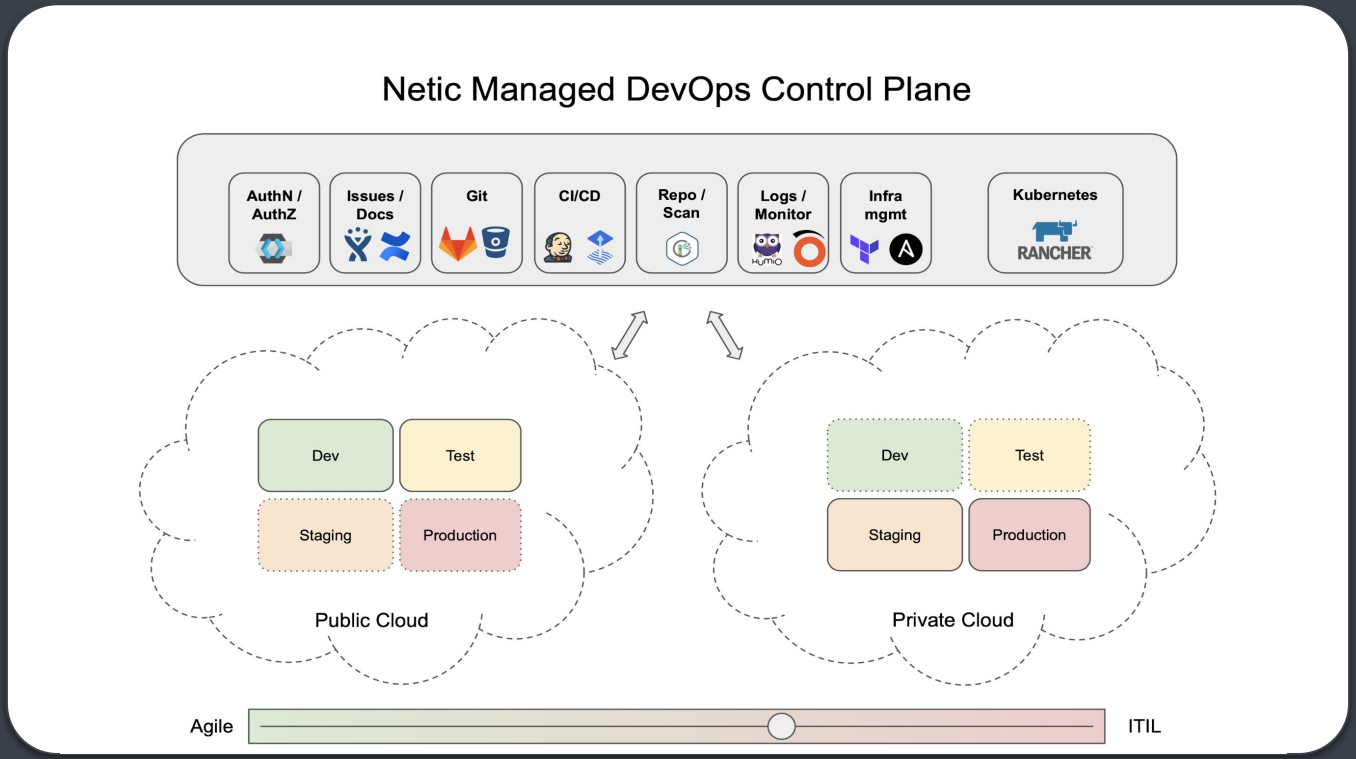
# Hybrid Cloud Control Plane

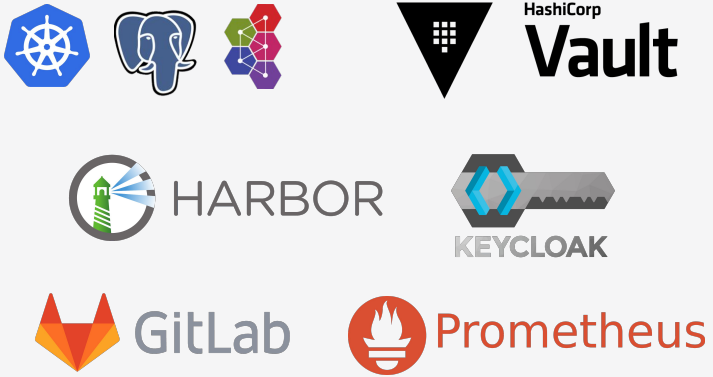


# Hybrid Cloud Governance

*How to manage a hybrid cloud environment*

- Define Common Interfaces
  - Open and standard
  - Managed Services vs DIY
- Define Shared Services
  - IAM, Repos, Pipelines, Logging, and Monitoring

**Cloud Agnostic Interfaces and Services**



# Cloud Provisioning

*How to create and manage the same environment in multiple different clouds?*

- Provision resources manually
- Using the Cloud PaaS options
- Use 3rd party tools to create a uniform environment
- Infrastructure as Code

| Everything | Kubernetes |
| --- | --- |
| Terraform | RANCHER |
| pulumi | Anthos |
| ANSIBLE | OPENSHIFT |

# Developing on Hybrid Cloud

*Leveraging the possibilities without slowing down*

# Build and Run

*How do we run applications in a Hybrid Cloud setup, so that it is easy for the developers?*

- Use the same interface everywhere.
- This allows the same code and config to run everywhere.
- On the Laptop, public cloud, and private cloud

**Common interfaces**

kubernetes




# Build and Run

**APPLICATION**

*Common Interface*

**PLATFORM**

*Managed or DIY services*

**INFRASTRUCTURE**

*Private or Public Cloud*

# Deployment

*How do we deploy applications on multiple different Clouds?*

- Define desired applications in code / config
- Use deployment framework to achieve the desired state
- All run on common interface:

**kubernetes**

**Deployment frameworks**



# Manage and Monitor

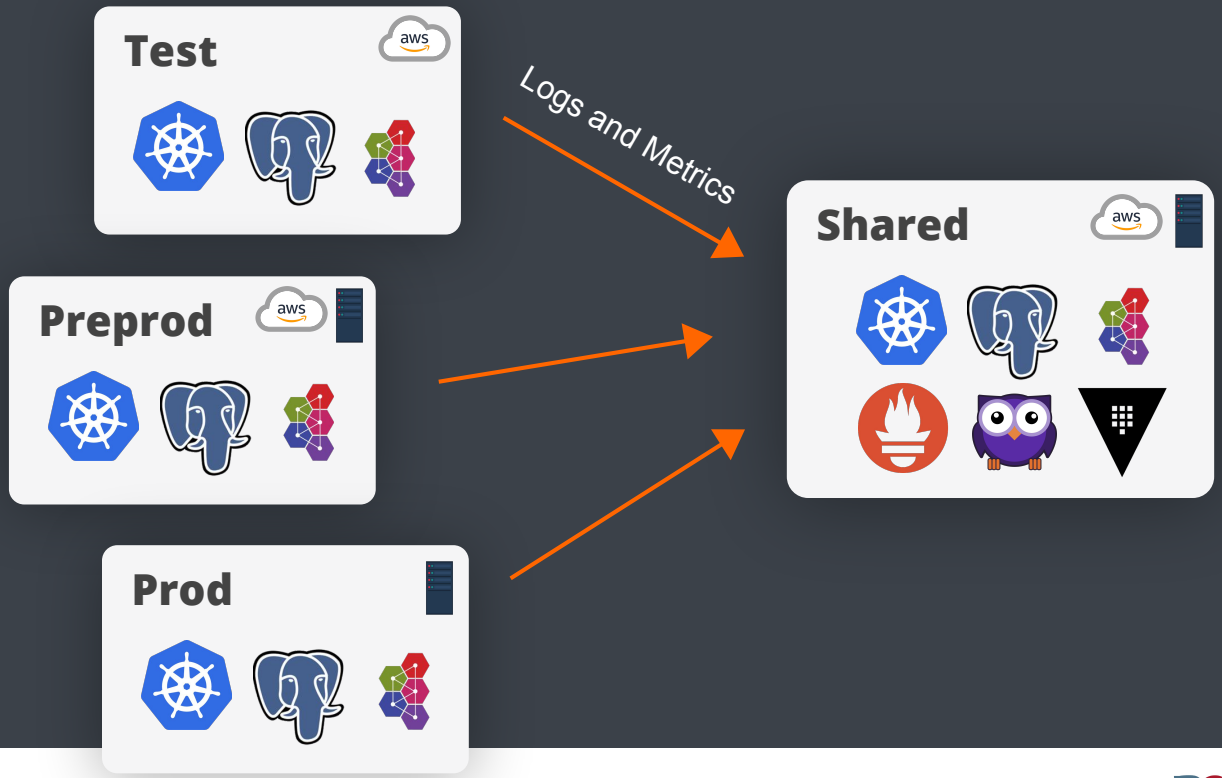
*How do we operate and monitor applications running in multiple different Clouds?*

- Predefined shared interface
- Shared infrastructure operating across all Clouds

**Shared infrastructure**




# Environments and Shared Infrastructure



# Conclusion

Photo by Emily Morter on Unsplash

# The Hybrid Cloud Recipe

## Identify your needs and requirements

*Regulatory Requirements / Scalability / Flexibility / Managed Services*

## Choose the Common Interfaces

*Kubernetes / Databases / Queues ...*

## Everything as Code

*Infrastructure / Platform / Applications / Configuration*

## Educate your people

*Operations / Security / Development*

# Questions?

Photo by Emily Morter on Unsplash

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# Thank You

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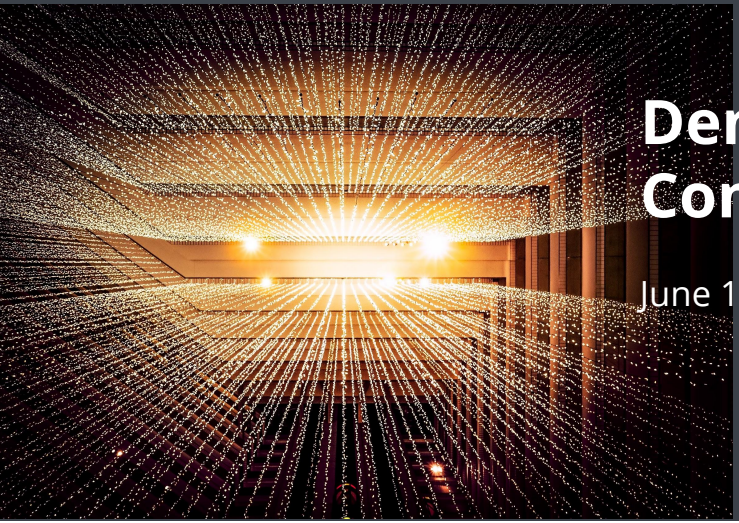
# See you next time!



## Demystifying Quantum Computing

June 10, 2020