

goto;

GOTO

**Copenhagen 2022**

**#GOTOcph**

# Building a Managed Platform – Maintaining a Good Developer Experience

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Platform Development Specialist



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> whoami



**Thor Anker Kvisgård Lange**  
Platform Development Specialist

## Bridging Dev and Ops.

- 20+ years of experience as developer and architect
- Working with Kubernetes 5+ years
- Working with Netic Kubernetes offerings



in/thor-lange-26b388



@langecode

# Agenda.

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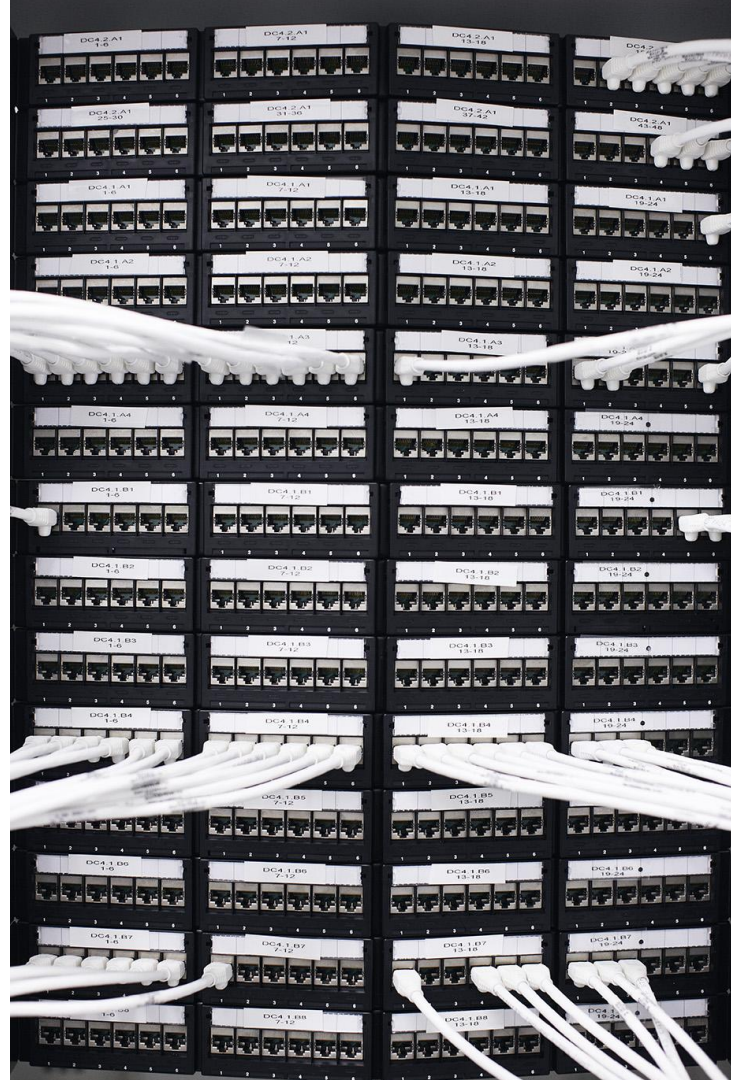
Setting the stage: Running application on Kubernetes

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Demo: Deploying on Netic Kubernetes platform

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Wrap Up



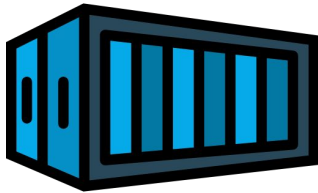
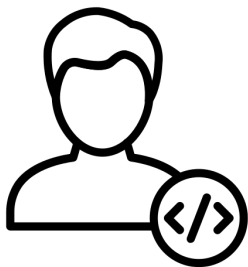




# Setting the Stage

— Running application on  
Kubernetes

## Building and Deploying.

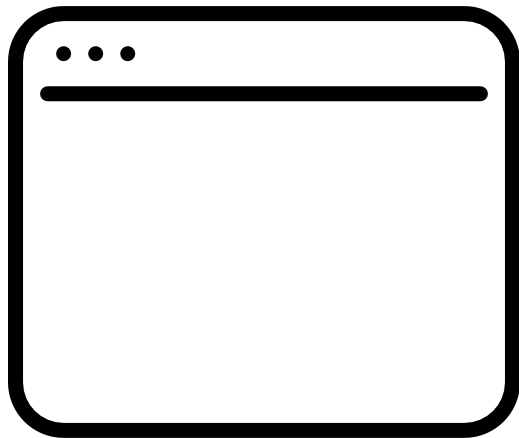


kubectl apply?  
CI server?  
Gitops?

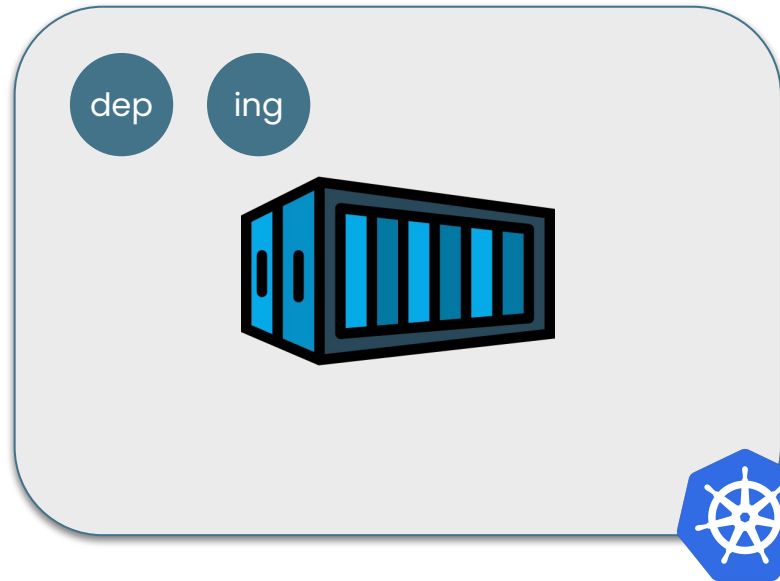
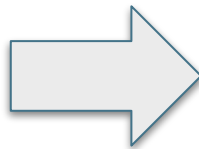
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Setting the stage

# Ingress.



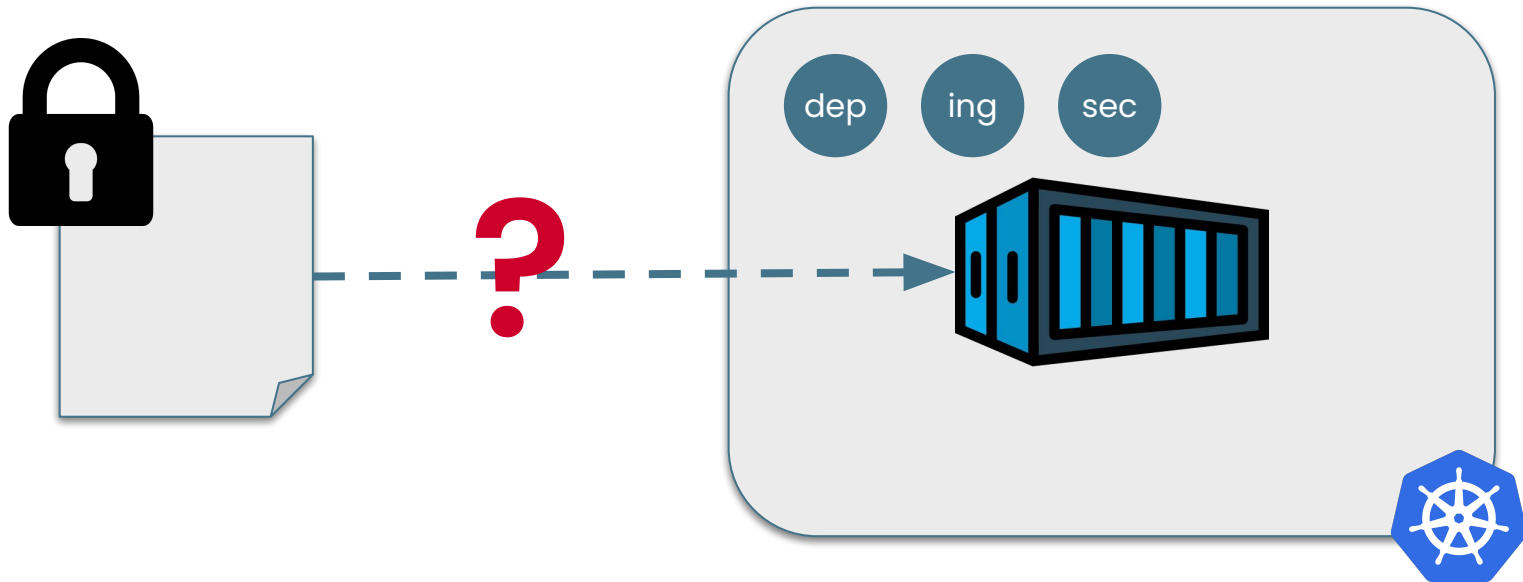
<https://???>



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Setting the stage

# Secrets.

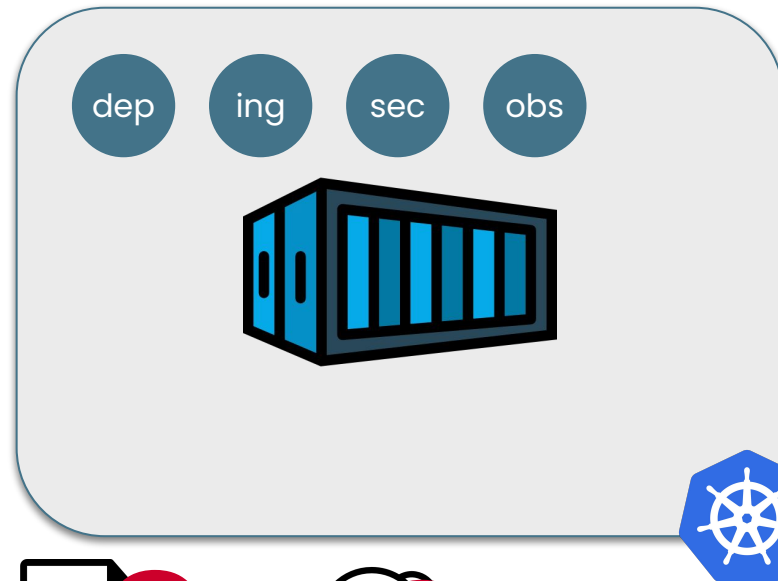
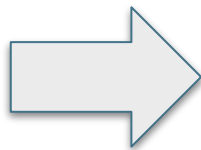
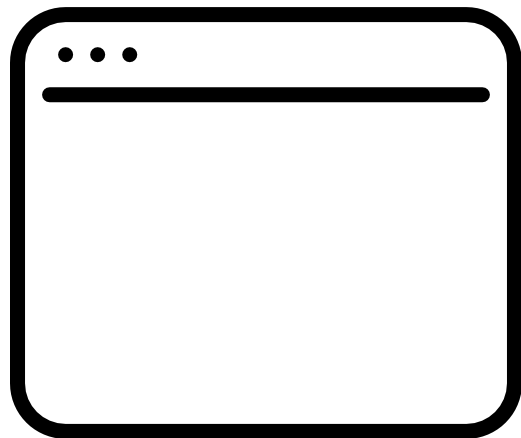




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Setting the stage

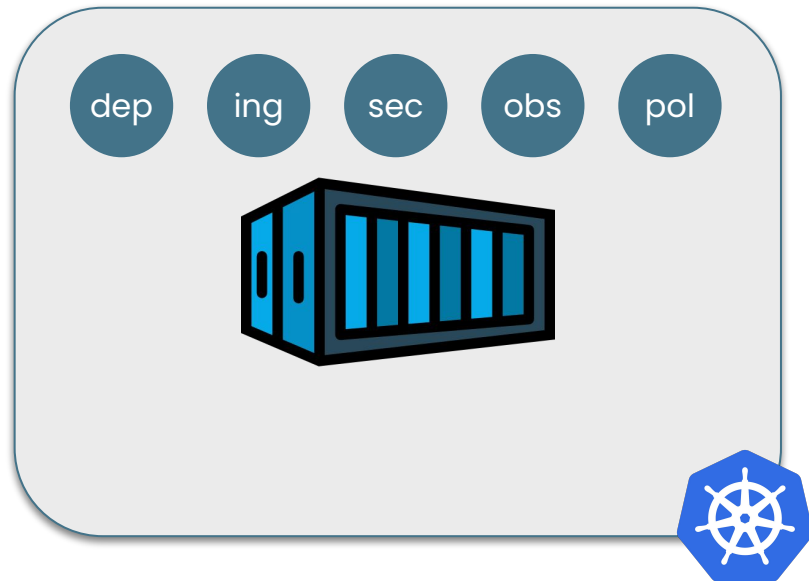
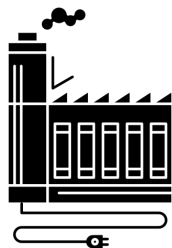
# Observability.



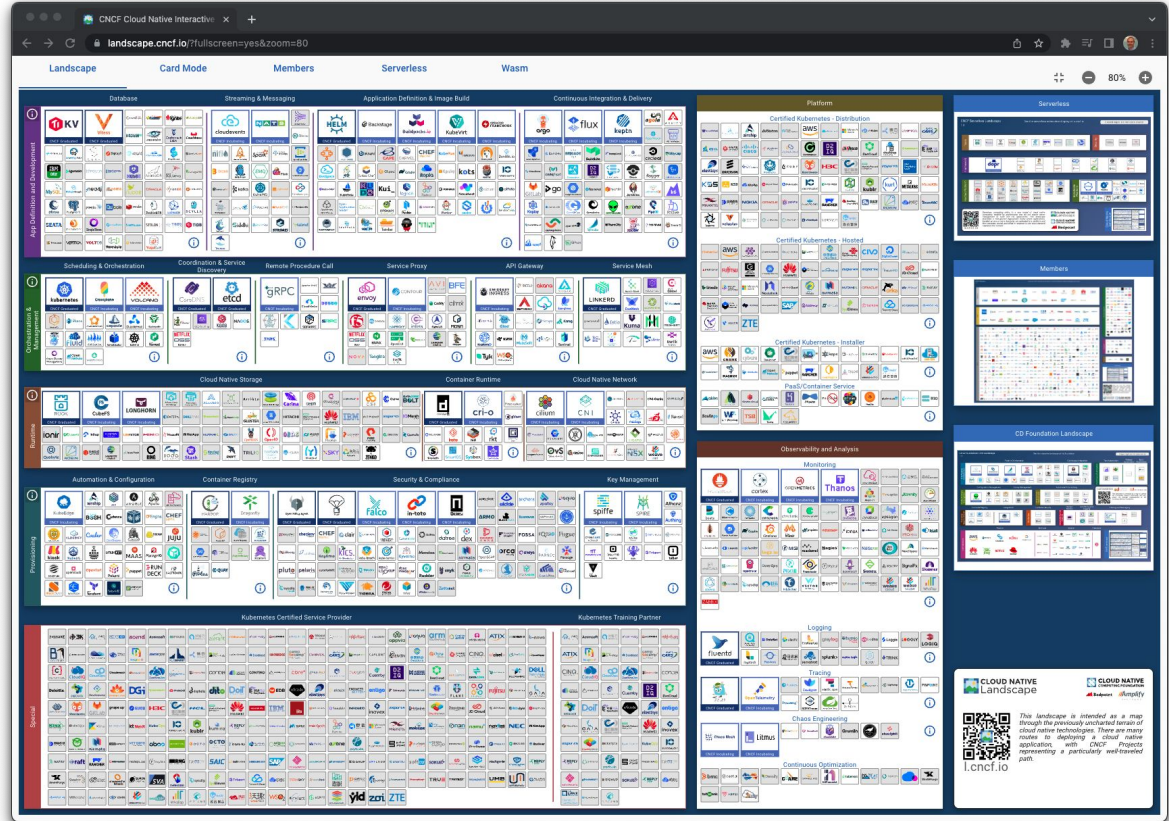
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Setting the stage

# Policies.



## Cloud Native Landscape



# Demo: Deploying on Netic Kubernetes platform

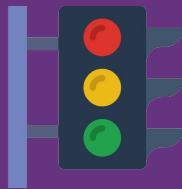
— Show, don't tell...

## Secure Cloud Stack.

Security & Compliance



Traffic Management



Continuous Deployment



Observability & Analysis



# The Application.

```
func httpHandler(w http.ResponseWriter, r *http.Request) {  
    fmt.Fprintf(w, "Hello, World!")  
}
```

```
func main() {  
    handler := http.HandlerFunc(httpHandler)  
    telemetryHandler := otelhttp.NewHandler(handler, ServiceName)  
    http.Handle("/hello", telemetryHandler)  
    ...  
    http.ListenAndServe(":8080", handlers.LoggingHandler(os.Stdout, http.DefaultServeMux))  
}
```



## Creating a new Namespace.

- Setting up new gitops repository including flux reconciliation
- Setting up quotas
- Setting up network policies
- Setting up roles and role-bindings
- Setting up external-secrets configuration
- Optional database and tracing



# Namespace Operator.

- Creating new gitops repository
- Generating and registering ssh keys
- Setting up namespace

```
apiVersion: project.tcs.trifork.com/v1alpha1
kind: ProjectBootstrap
metadata:
  name: netic-goto-app
  namespace: netic-gitops-system
spec:
  namespace: netic-goto-app
  config:
    ref: default
    size: medium
  git:
    branch: main
    path: deploy
```

---

Demo

# Deployment.

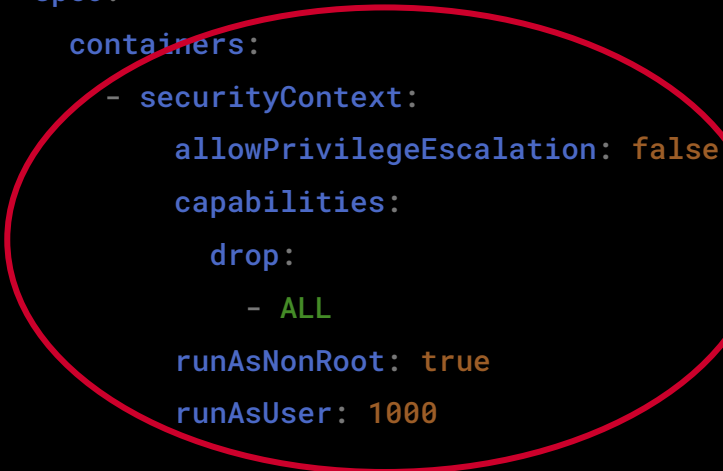
```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: hello-service
spec:
  replicas: 1
  template:
    spec:
      containers:
        - name: app
          image: ghcr.io/langetcode/hello-service:main
          ports:
            - name: http
              containerPort: 8080
              protocol: TCP
```

# Adjust Deployment.

- Security context
- Resource requests/limits
- Health checks

```
apiVersion: apps/v1
kind: Deployment
...
spec:
  template:
    spec:
      containers:
        - securityContext:
            allowPrivilegeEscalation: false
            capabilities:
              drop:
                - ALL
            runAsNonRoot: true
            runAsUser: 1000
...

```



# Ingress.

```
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  annotations:
    cert-manager.io/cluster-issuer: letsencrypt
    kubernetes.io/tls-acme: "true"
  name: hello-service
  namespace: netic-goto-app
spec:
  rules:
    - host: hello.goto.netic.dk
  ...
```

# Observability.



Metrics

Logs

Traces



# Observability.

```
apiVersion: v1
kind: Pod
metadata:
  name: hello-service
  annotations:
    sidecar.opentelemetry.io/inject: "true"
  labels:
...

```

```
apiVersion: monitoring.coreos.com/v1
kind: ServiceMonitor
metadata:
  name: hello-service
...

```



So, to wrap up...

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## Wrap up

- There is more to production Kubernetes than “kubectl apply” – obviously
- Building, operating, and managing a platform costs: Focus the effort where it counts
- Make sure the platform is fit for purpose: Must be easy to follow “the right path”
- Avoid late surprises: Apply production defaults early on

# Thank you.

<https://github.com/neticdk>

<https://github.com/langetcode/hello-service>



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company/netic-as

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