goto;

GOTO
AARHUS 2022

#GOTOaar

Building a Managed Platform - Maintaining a Good Developer Experience

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Platform Development Specialist

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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

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@langecode

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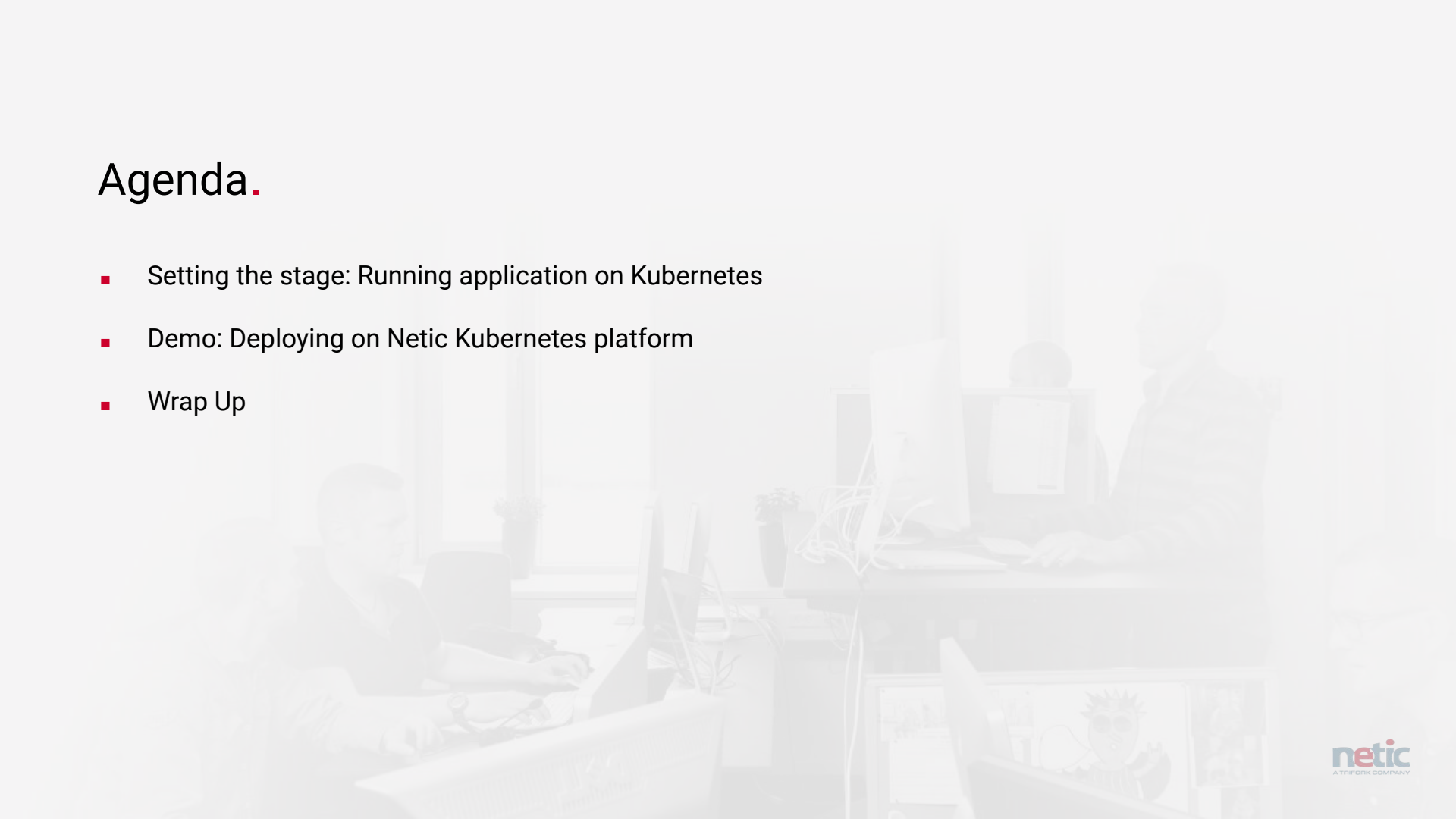
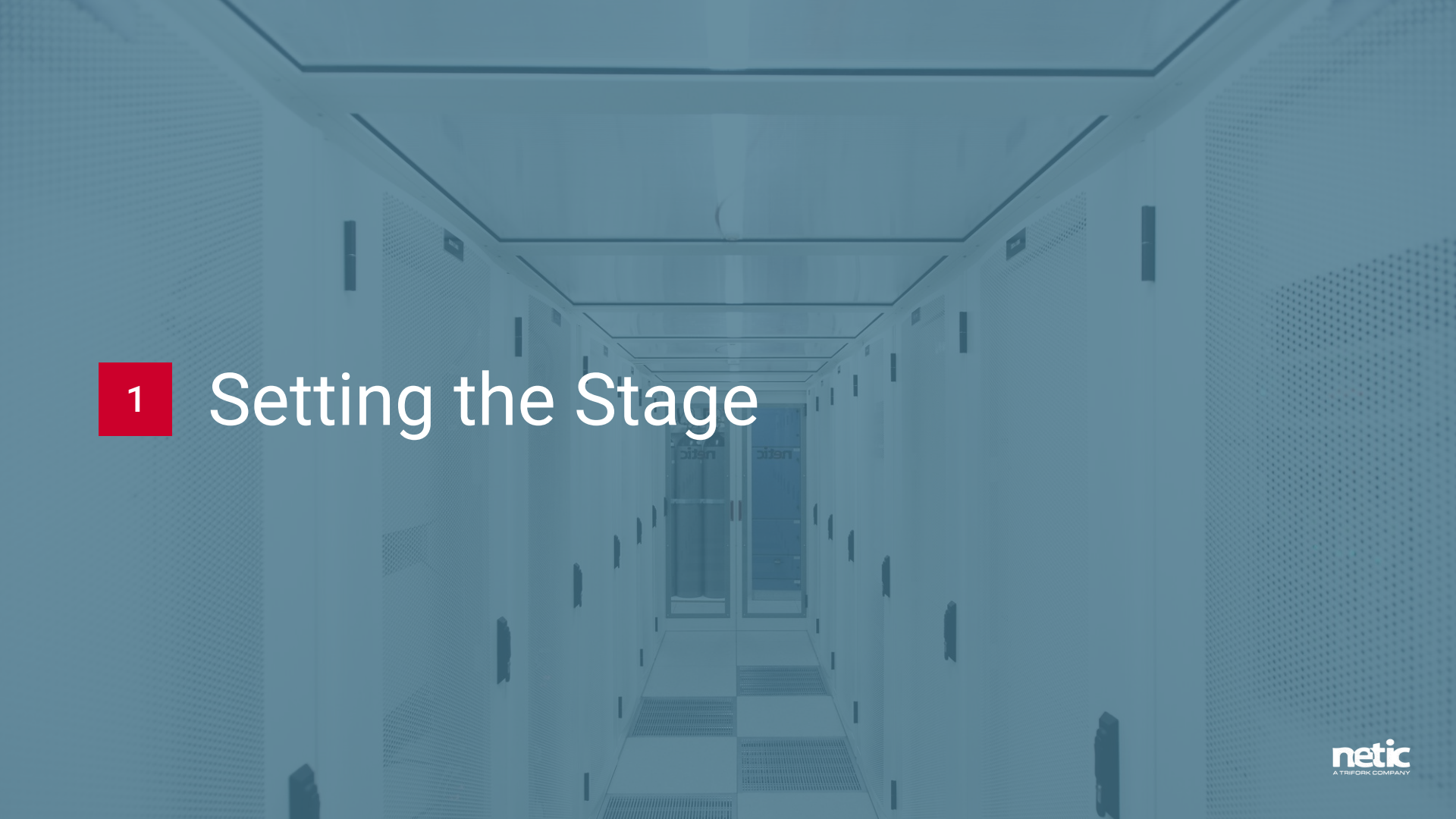
Agenda.

- Setting the stage: Running application on Kubernetes
- Demo: Deploying on Netic Kubernetes platform
- Wrap Up





1 Setting the Stage

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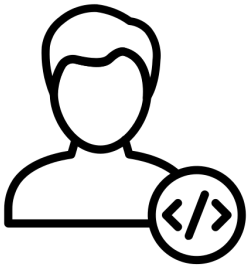
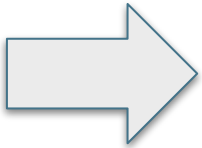
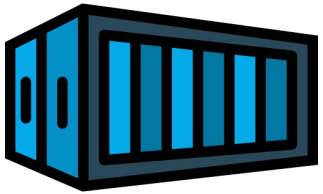
Building and Deploying.

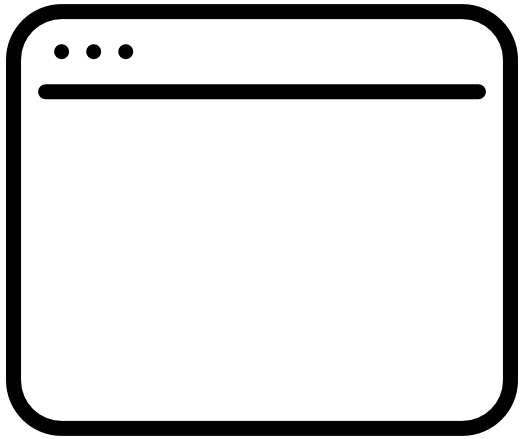


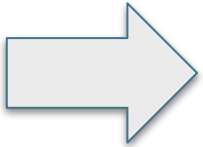


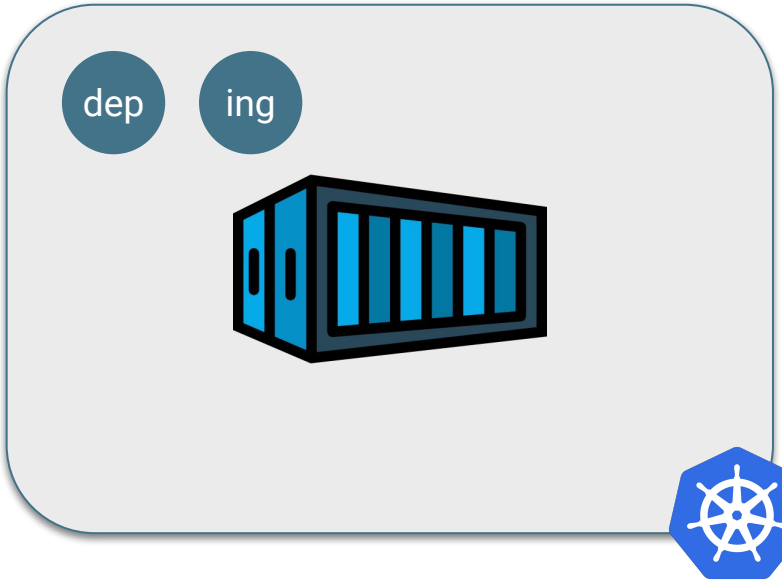


`kubectl apply`?
CI server?
Gitops?

Ingress.

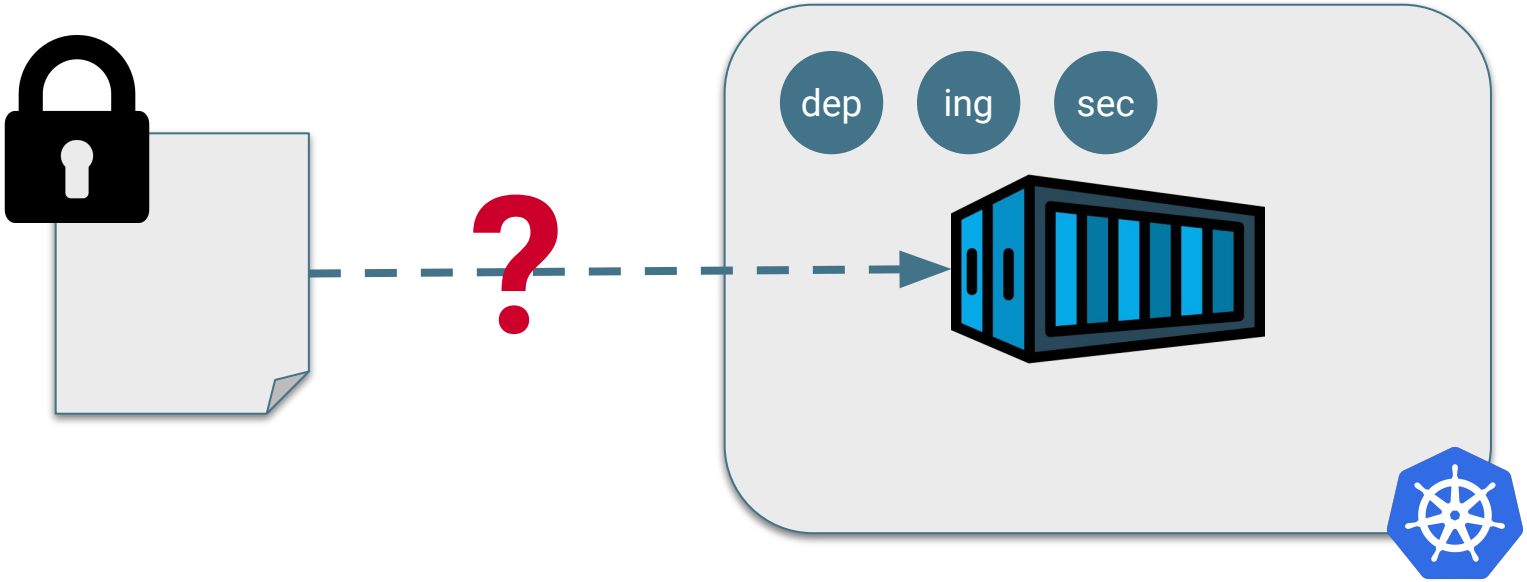




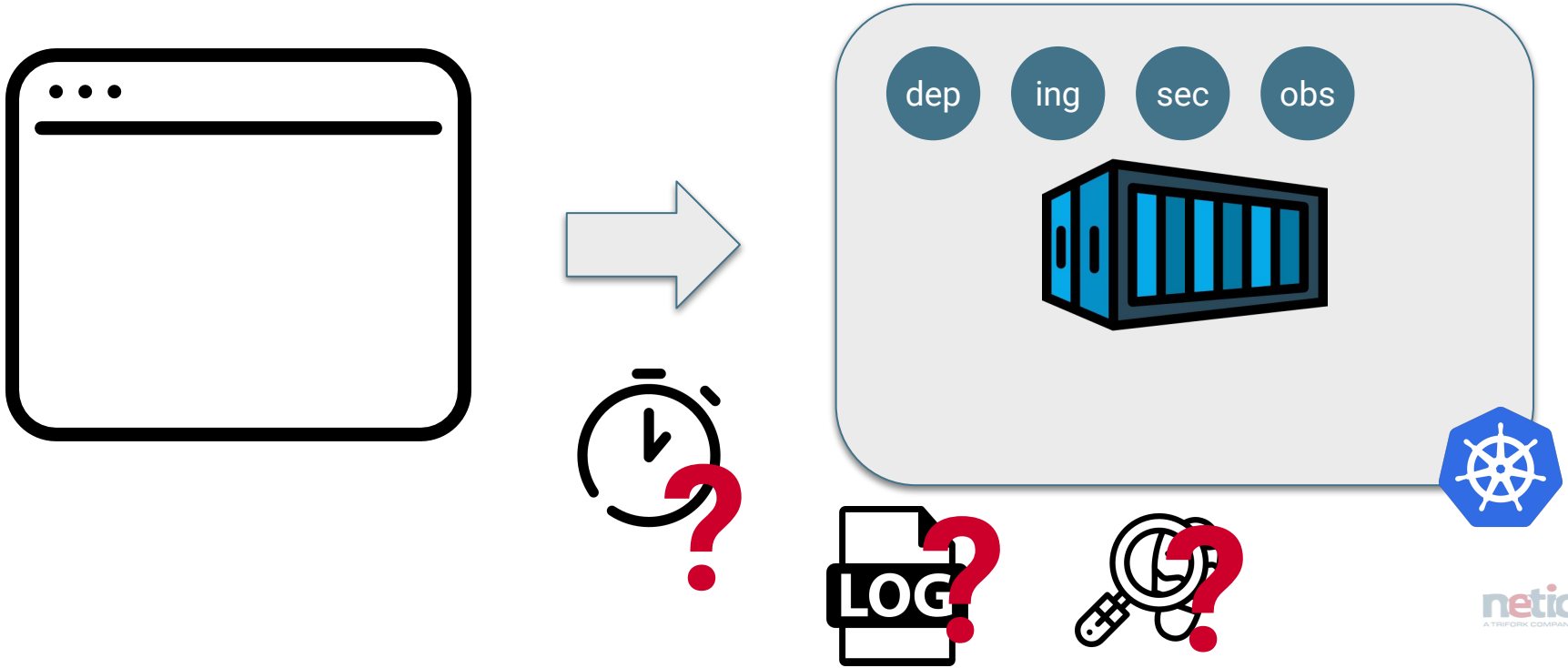


https://???

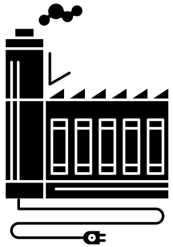
Secrets.

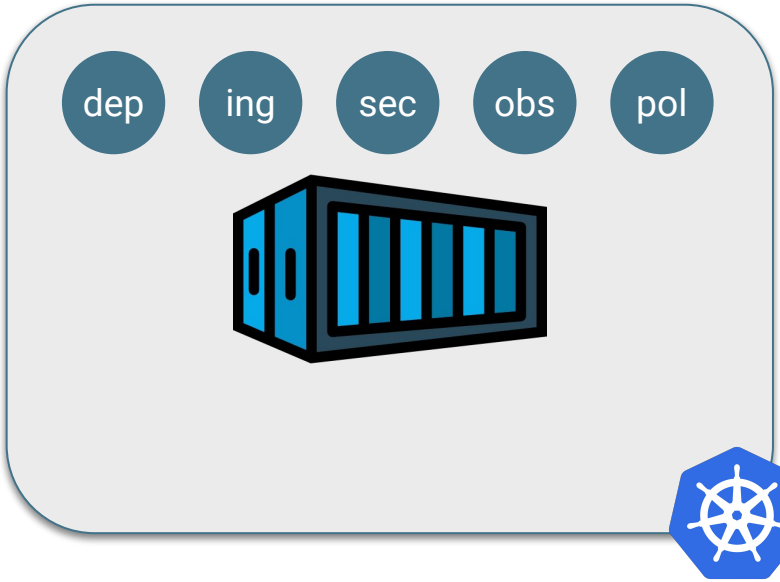


Observability.

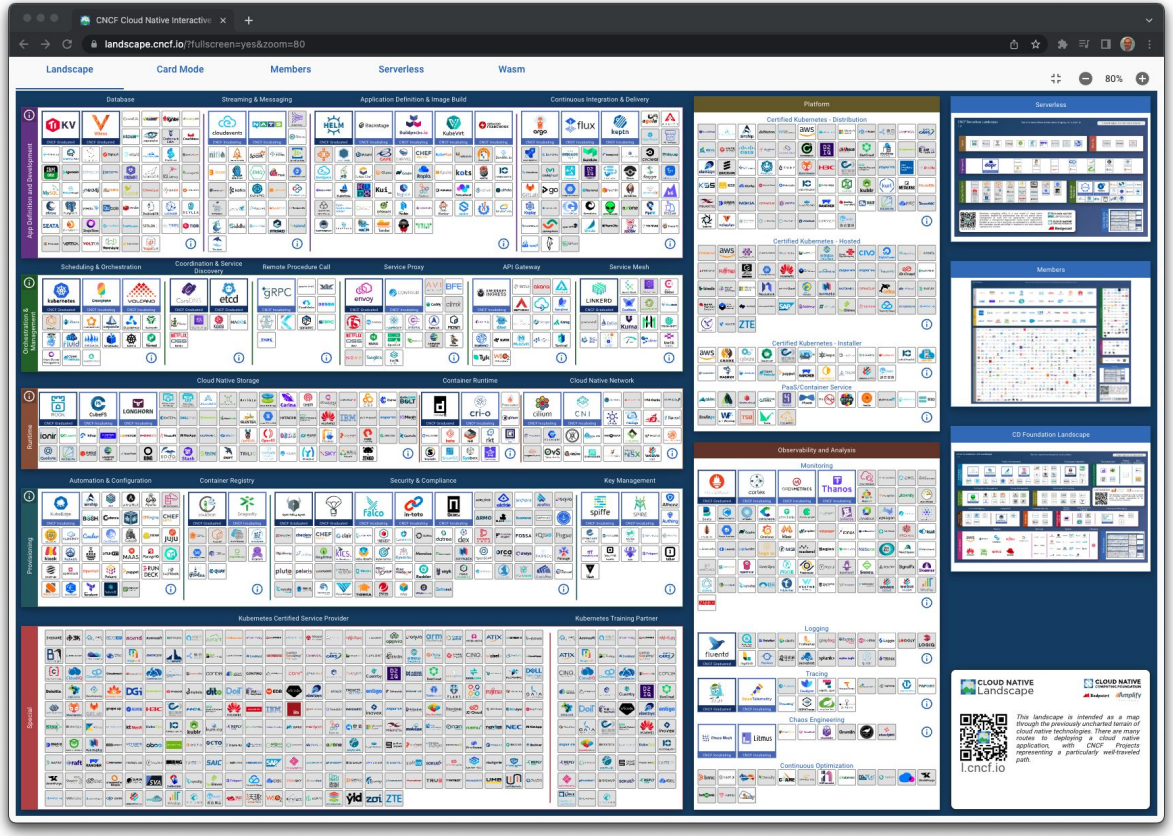


Policies.





Cloud Native Landscape



2 DEMO

Show, don’t tell…

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Cloud Stack.

Security & Compliance

Traffic Management

Continuous Deployment

Observability & Analysis

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Microsoft Azure

Google Cloud

amazon web services™

DEMO

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))
}
```

DEMO

Creating new Namespace.

- Setting up new gitops repository
- Setting up quotas
- Setting up network policies

```yaml
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
 metadata: {}
```

DEMO

Deployment.

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

DEMO

Adjust Deployment.

- Security context
- Resource requests/limits
- Health checks

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

DEMO

Ingress.

```yaml
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.

DEMO

Observability.

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

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

3 Wrap Up

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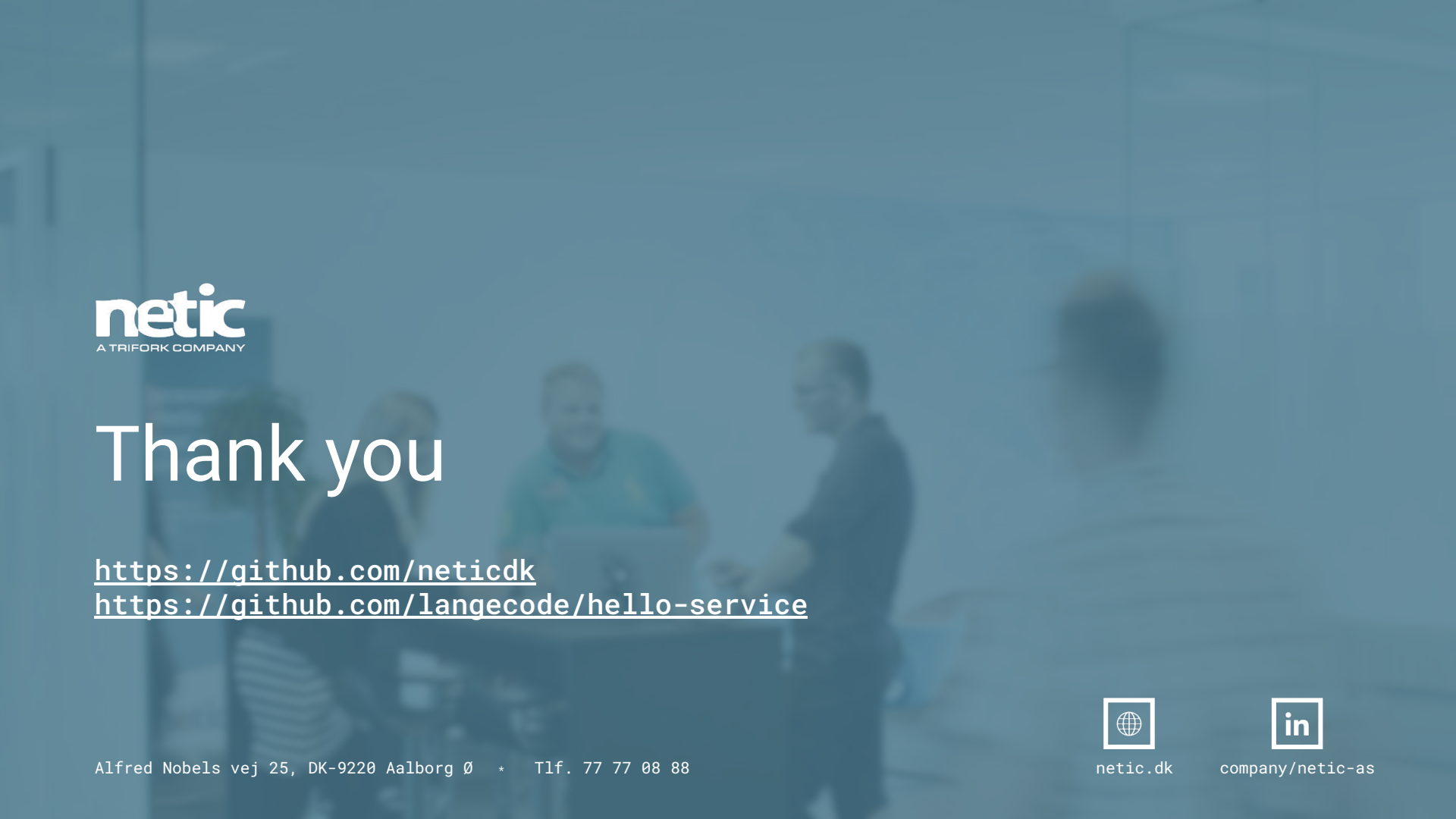
Wrap Up

- There is more to production Kubernetes than “kubectl apply”
- Building, operating, and managing a platform costs: Focus the effort where it counts
- Make sure the platform fits the 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/langecode/hello-service

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