

# APPLICATION MIGRATION AND MODERNIZATION ON / TECHLAB



# Containers and OpenShift Recap

# Nothing new!



...except



Tools

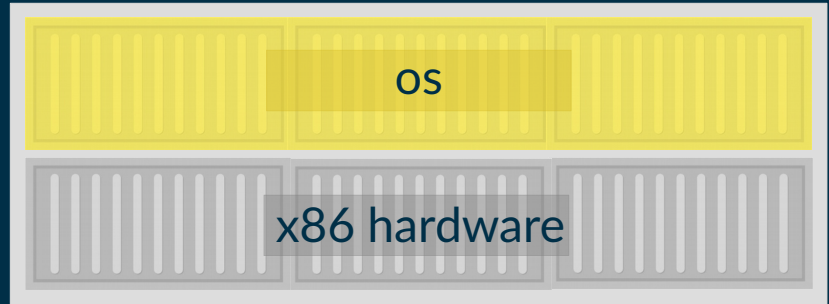
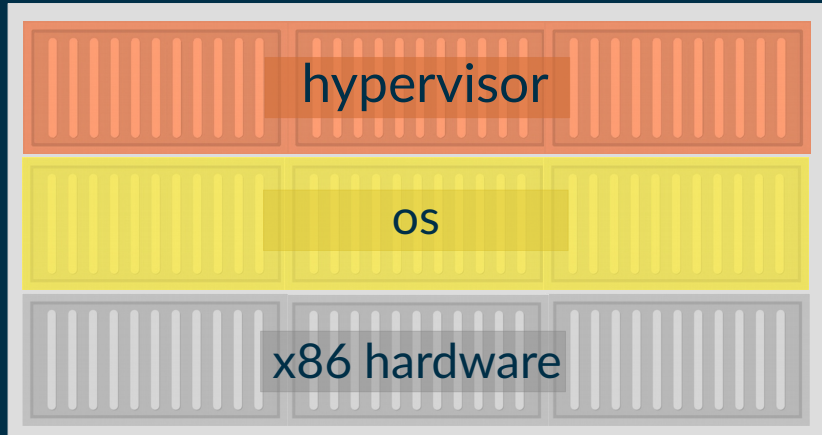
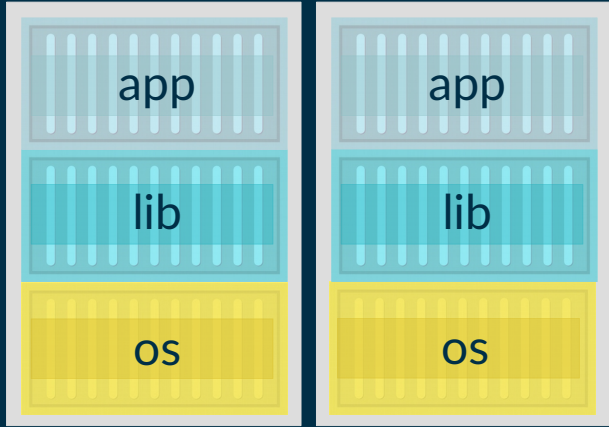


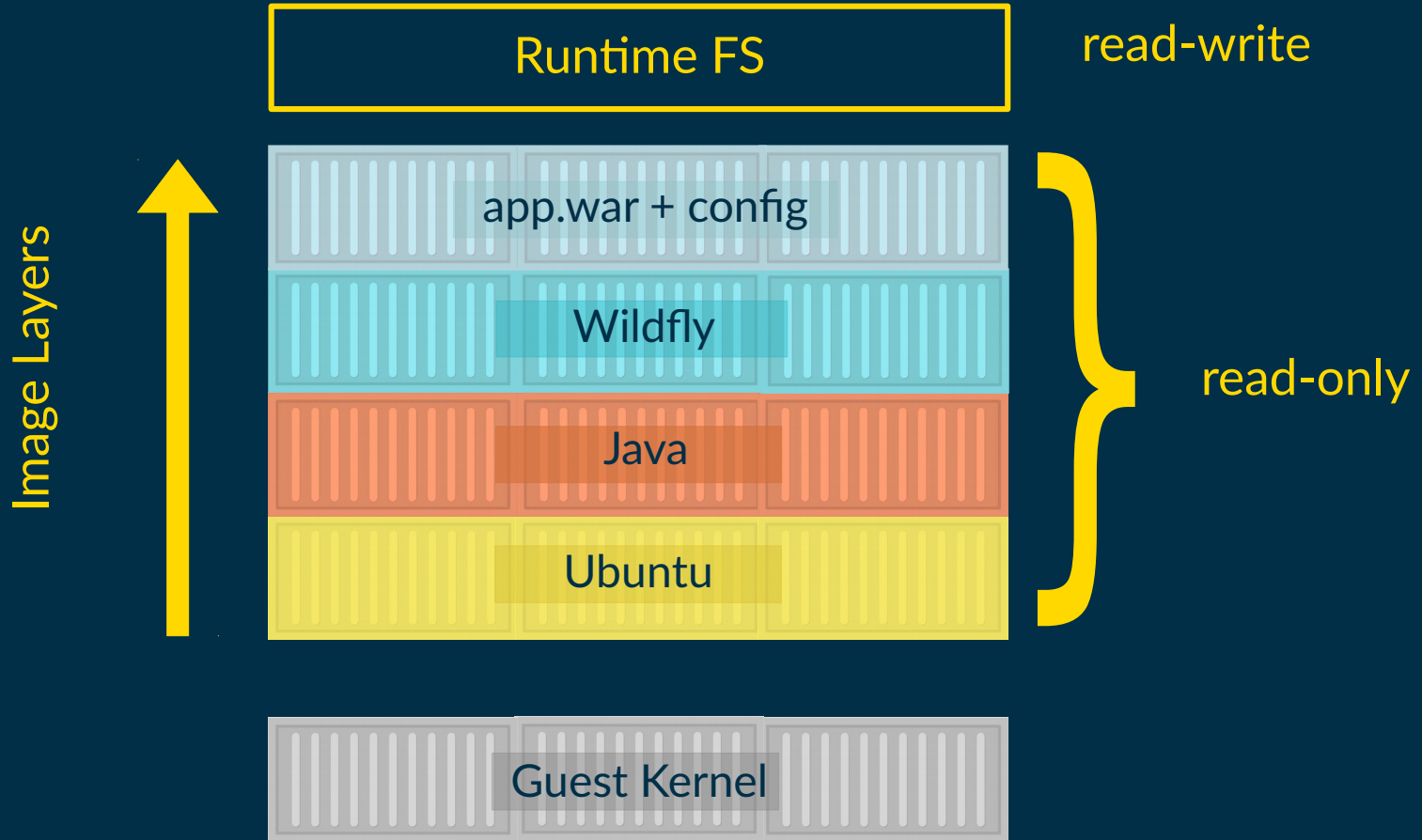
Ökosystem













```
package main

import (
    "fmt"
    "net/http"
)

func main() {
    http.HandleFunc("/", HelloServer)
    http.ListenAndServe(":8080", nil)
}

func HelloServer(w http.ResponseWriter, r *http.Request) {
    fmt.Fprintf(w, "Hello, %s!", r.URL.Path[1:])
}
```

```
FROM registry.access.redhat.com/ubi8/go-toolset:1.13.4
COPY main.go /opt/app-root/src
RUN env CGO_ENABLED=0 GOOS=linux GOARCH=amd64 go build -a -o go-hello-world-app .

FROM registry.access.redhat.com/ubi8/ubi:8.2
RUN useradd -ms /bin/bash golang
RUN chgrp -R 0 /home/golang && \
    chmod -R g+rwX /home/golang
USER golang
COPY --from=0 /opt/app-root/src/go-hello-world-app /home/golang/
EXPOSE 8080
CMD /home/golang/go-hello-world-app
```

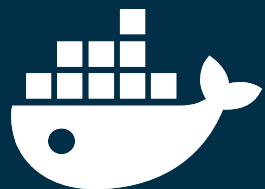
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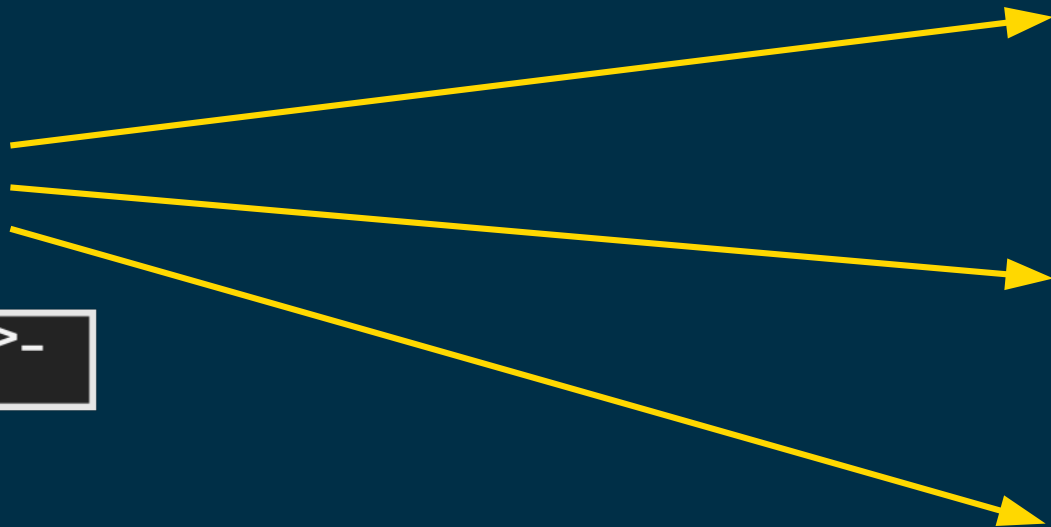
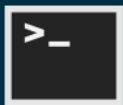
OPENSIFT



docker



kubernetes





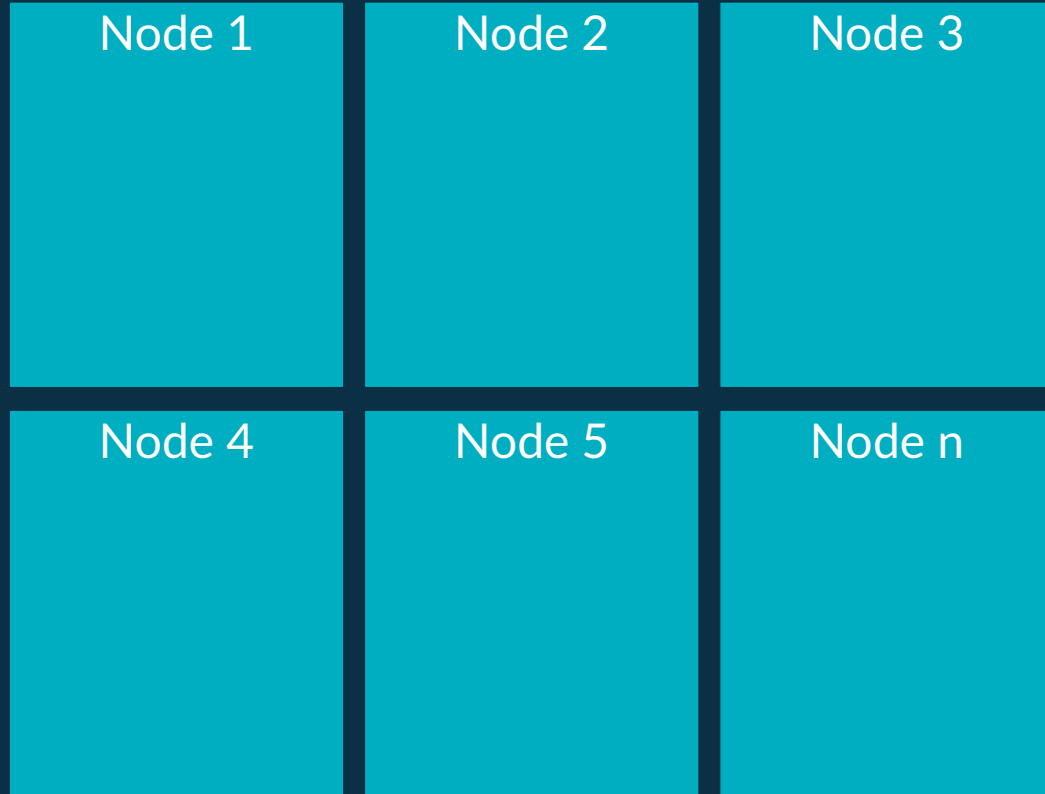
- Scheduling
- Scaling
- Health Checking
- Secret Management



Architecture



# Compute nodes



Red Hat Enterprise Linux 7

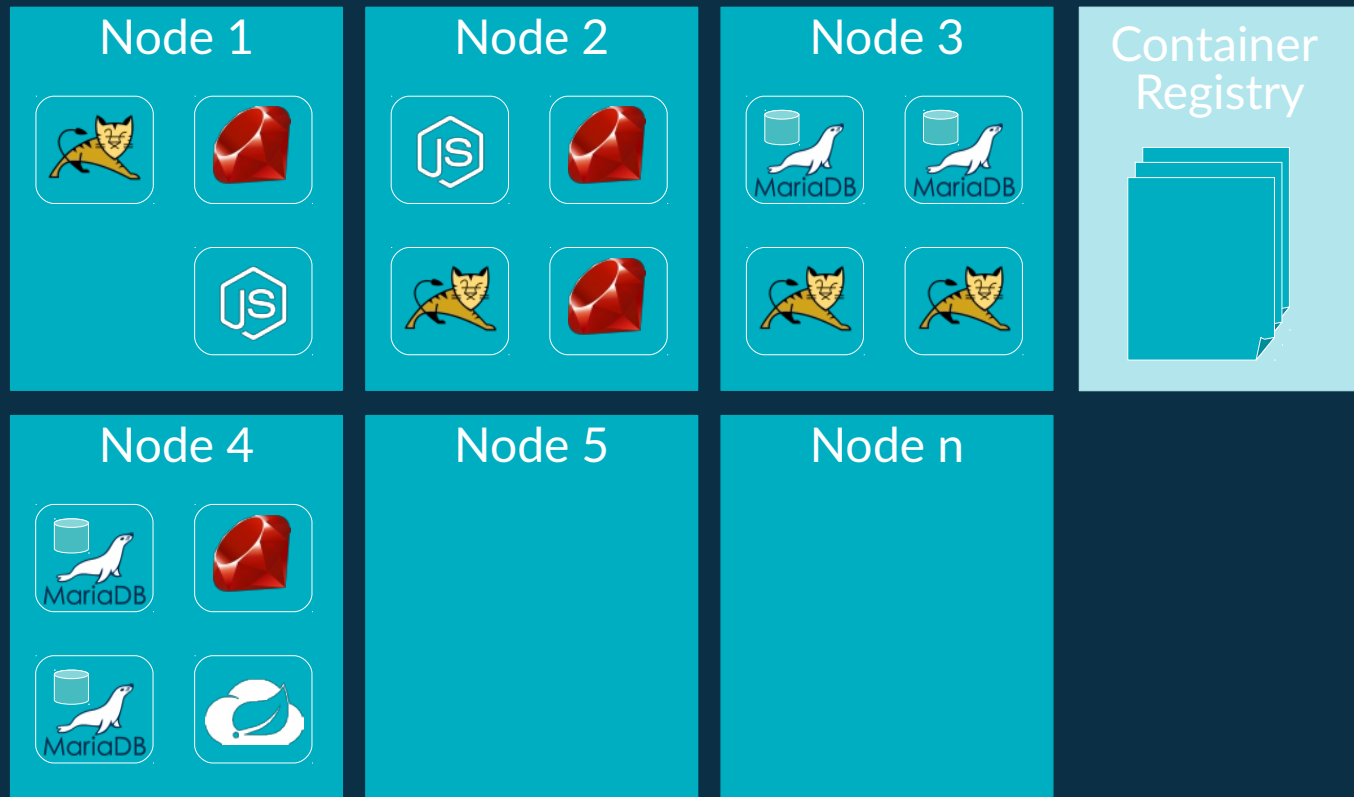
Virtual

Physical

Private Cloud

Public Cloud

# Pods



Red Hat Enterprise Linux 7

Virtual

Physical

Private Cloud

Public Cloud

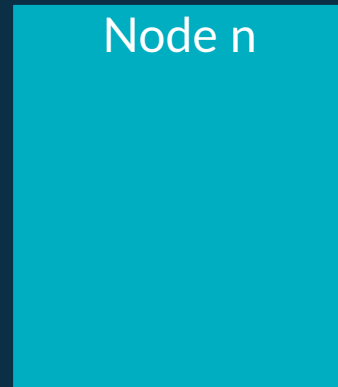
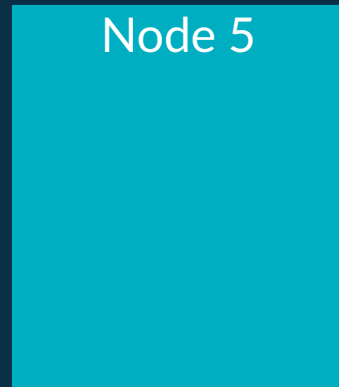
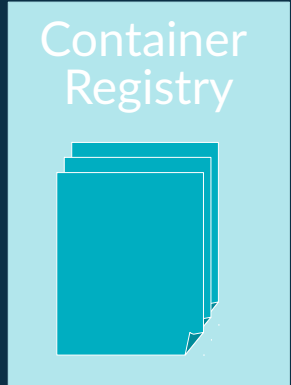
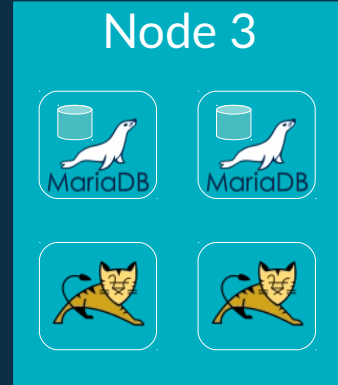
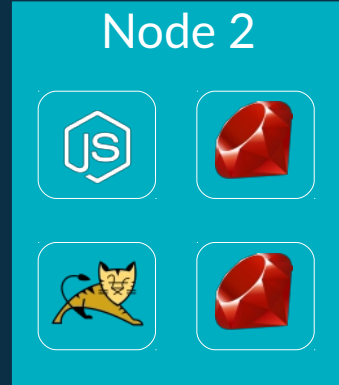
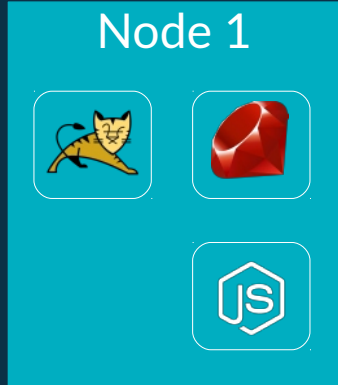
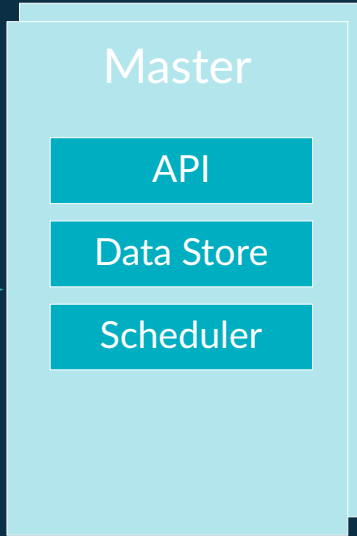
# Master

DEV

SCM  
(git / svn)

Jenkins

OPS



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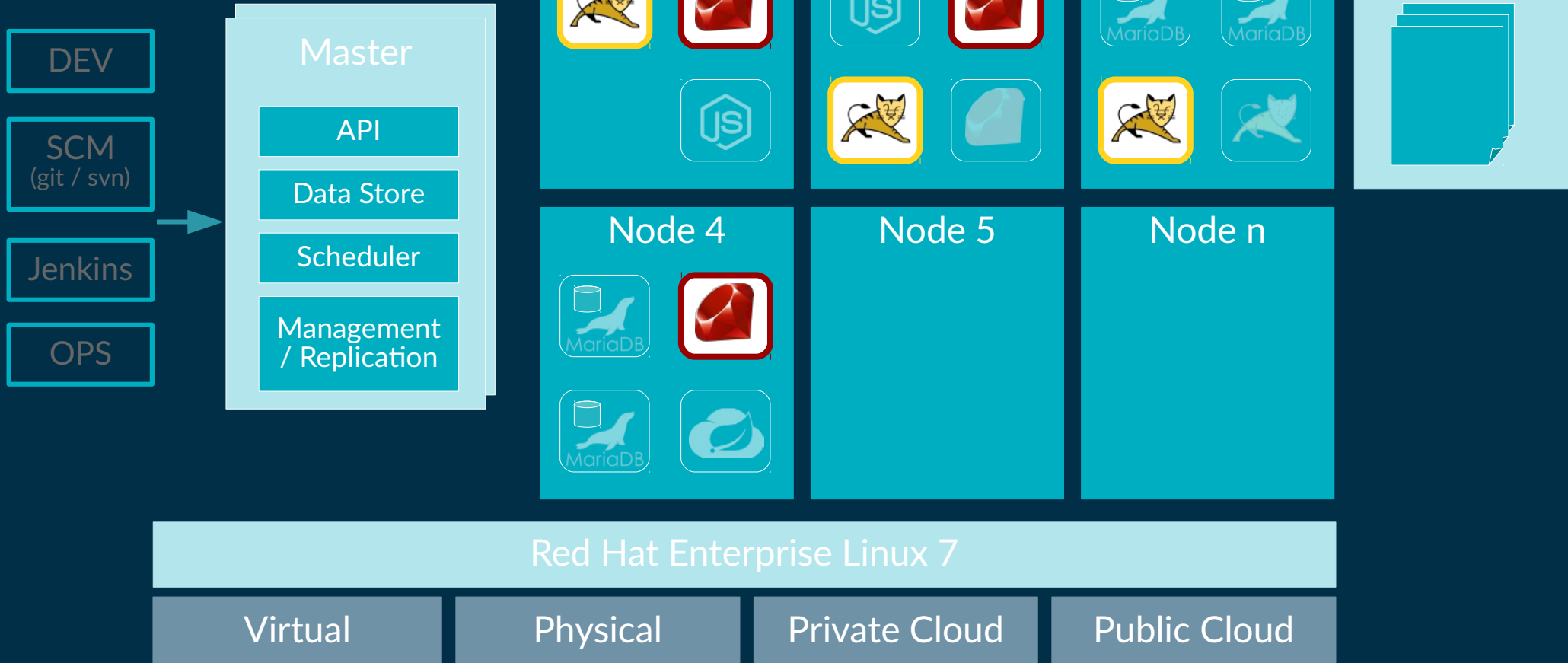
Virtual

Physical

Private Cloud

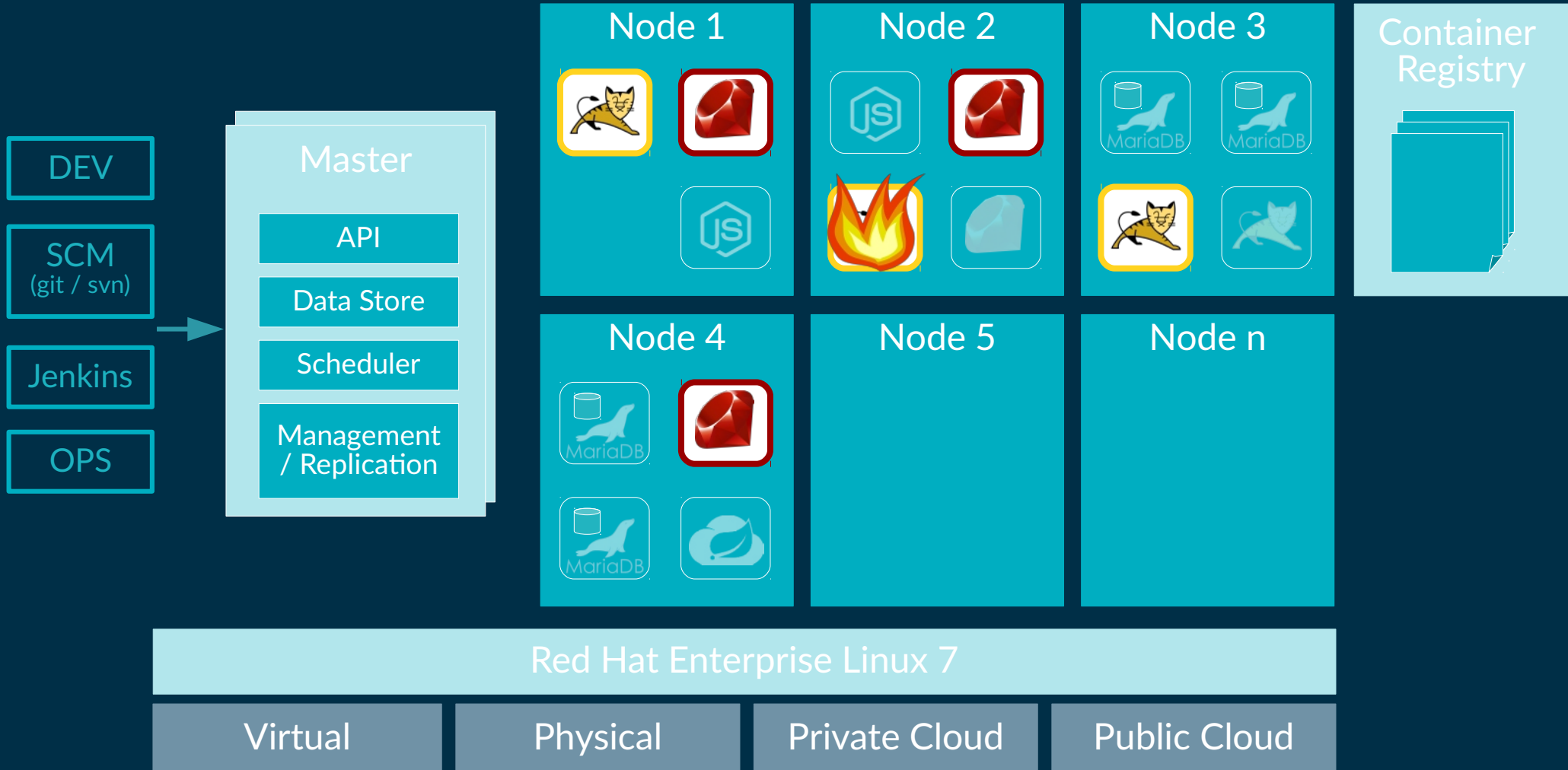
Public Cloud

# Replication controller





# Pod crashes...



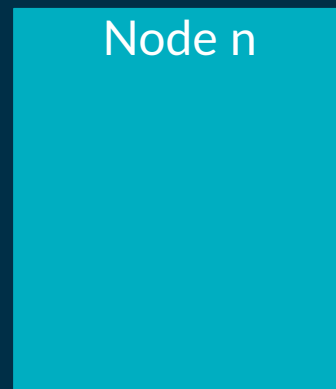
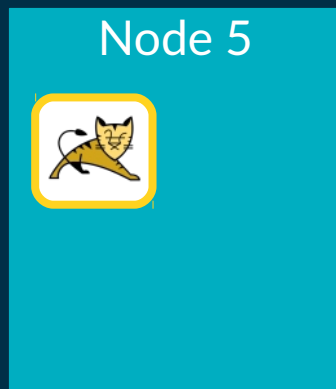
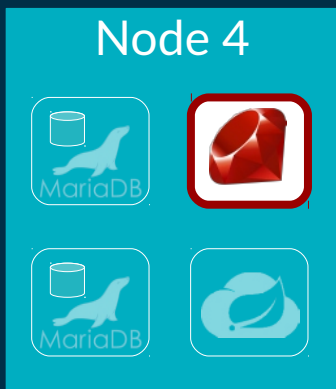
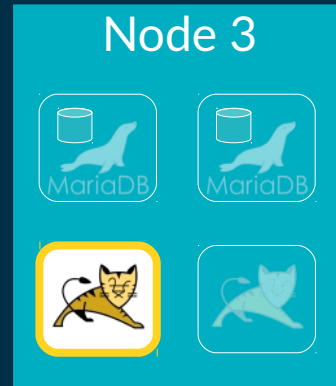
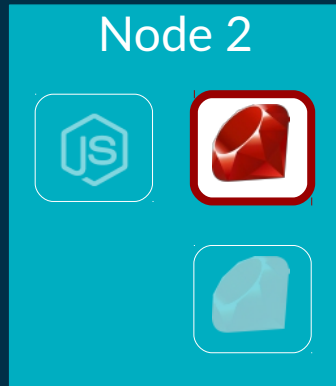
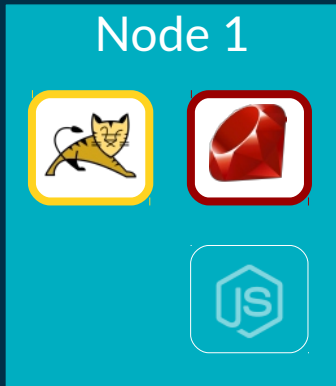
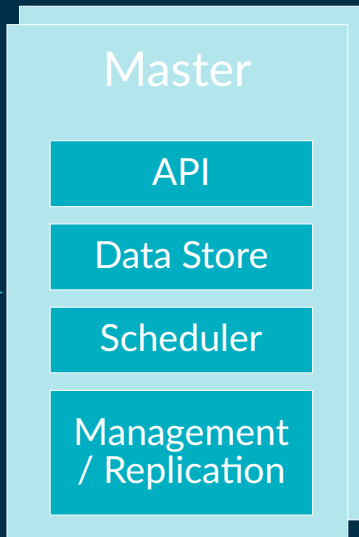
... Kubernetes restarts it

DEV

SCM  
(git / svn)

Jenkins

OPS



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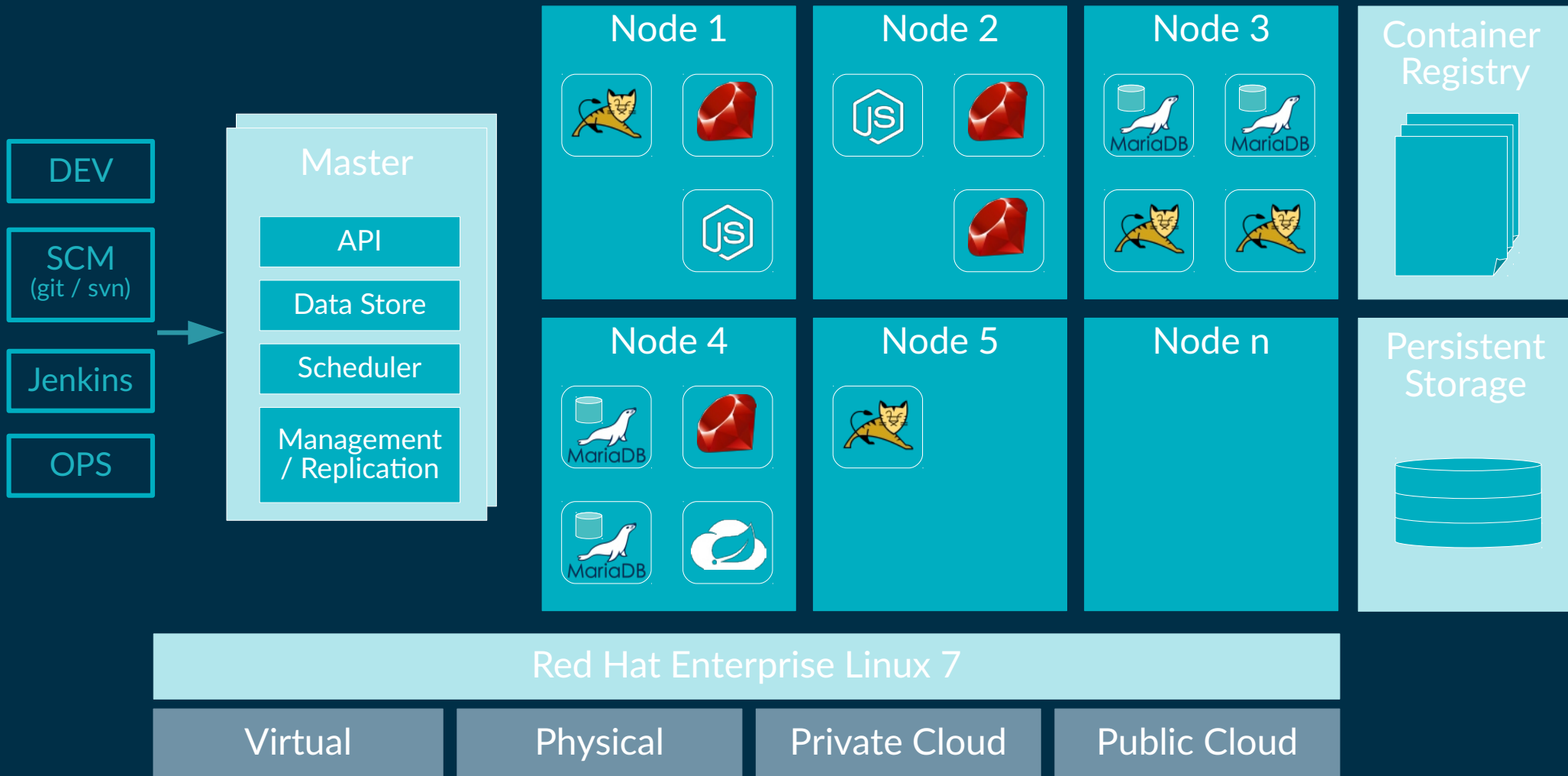
Virtual

Physical

Private Cloud

Public Cloud

# Persistent storage



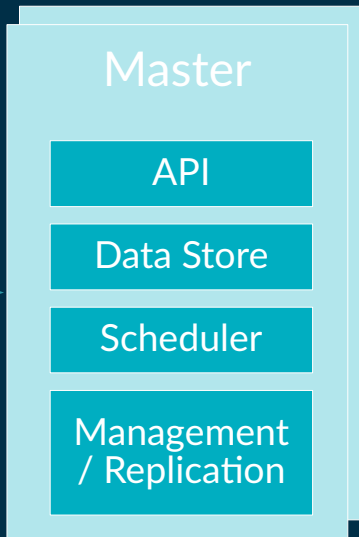
# Routing

DEV

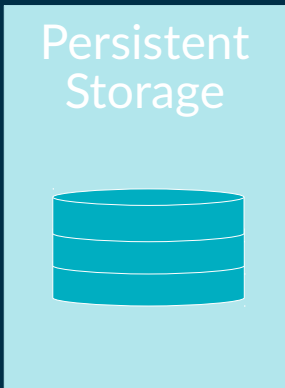
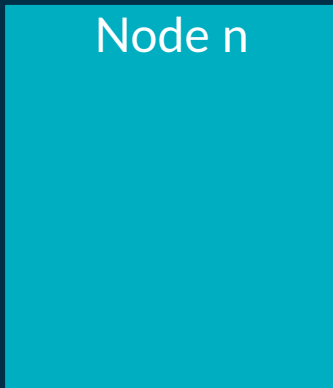
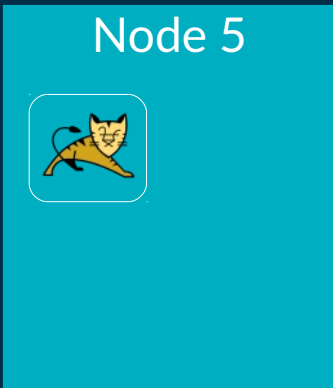
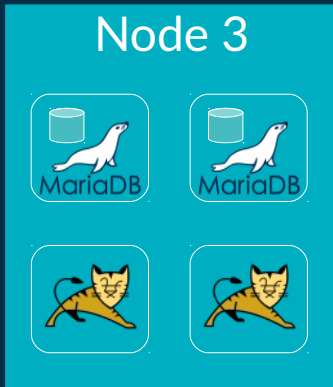
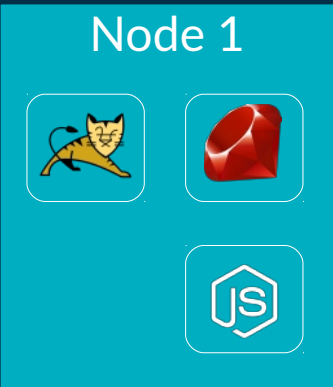
SCM  
(git / svn)

Jenkins

OPS



Routing Layer (http / https) HA Proxy



Red Hat Enterprise Linux 7

Virtual

Physical

Private Cloud

Public Cloud





# Techlab – Hands-on 2

# Techlab Inhalte

Containerisierung einer Applikation, Bestpractices  
Schritt für Schritt Deployment einer Applikation

- 2 Microservices REST
- 2 Microservices Eventdriven mit Kafka

Tekton Pipeline, ArgoCD Gitops

Application Monitoring mit Prometheus

Tracing mit Jaeger

## Lab resources:

- siehe Chat



Fragen?