

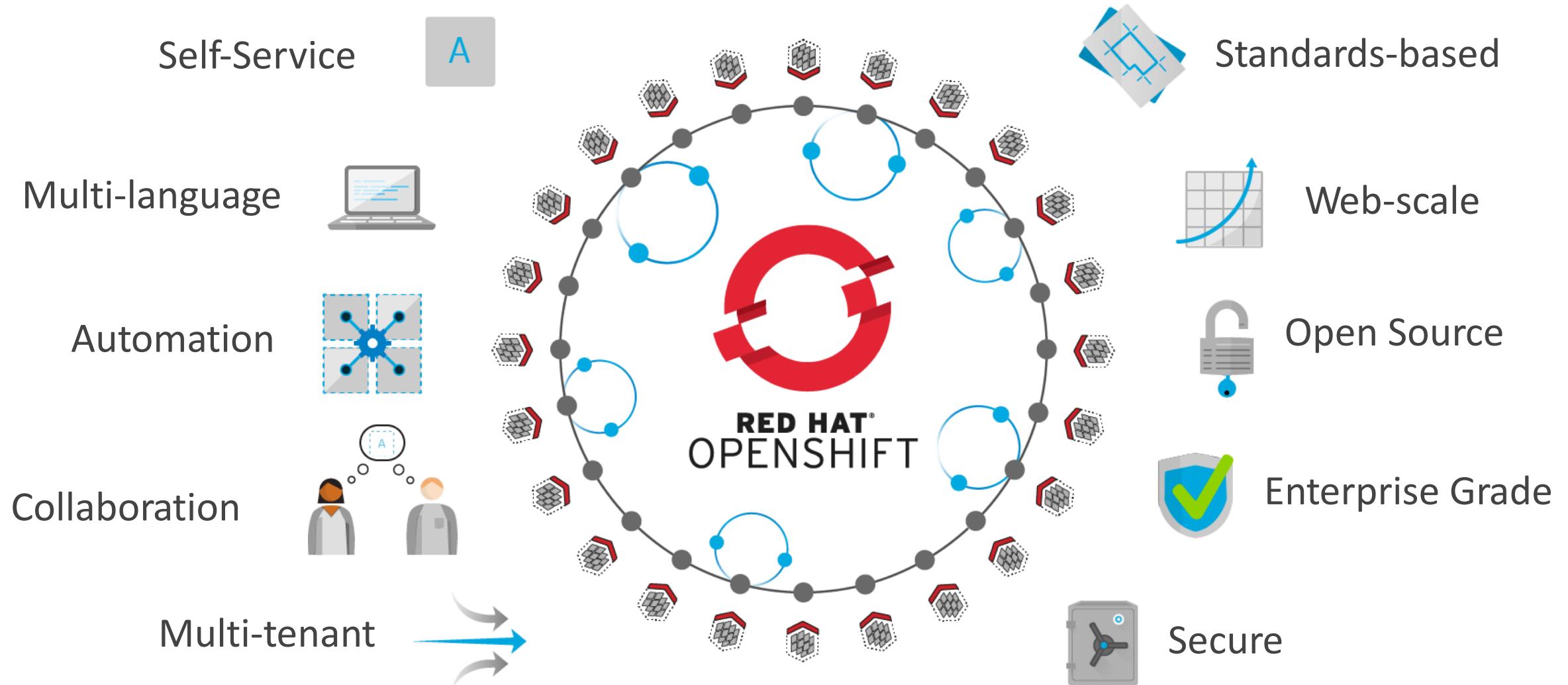
# OpenShift – Overview

Raghavendra Deshpande  
IBM Developer Advocate

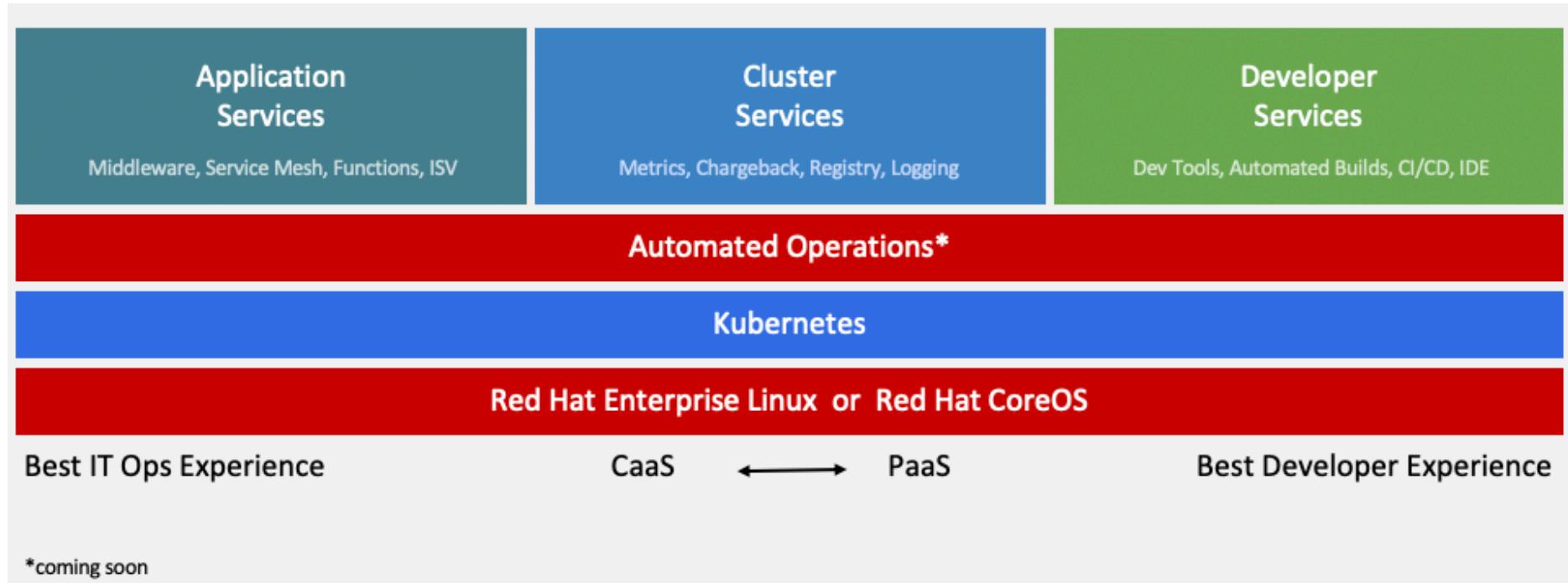
# Contents

- What is RedHat OpenShift?
- OpenShift Overview
- OpenShift Features – Demo





# OPENSHIFT CONTAINER PLATFORM

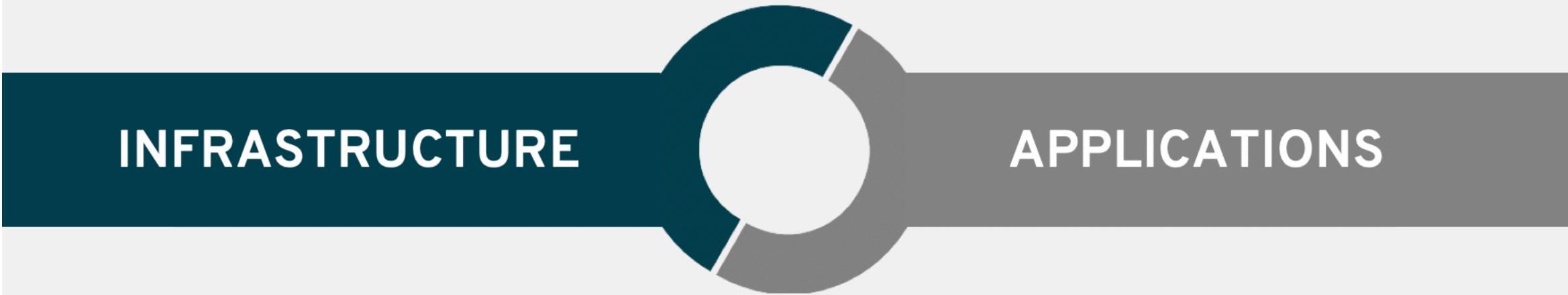


# LINUX CONTAINERS



# WHAT ARE CONTAINERS?

It Depends Who You Ask

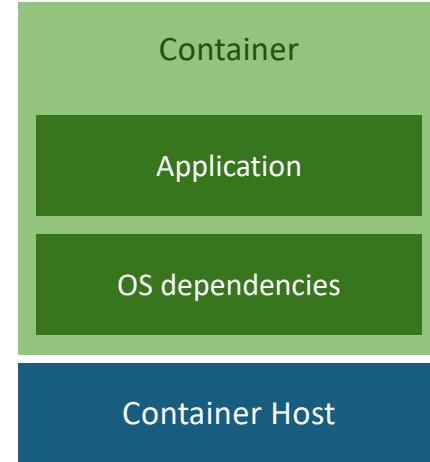
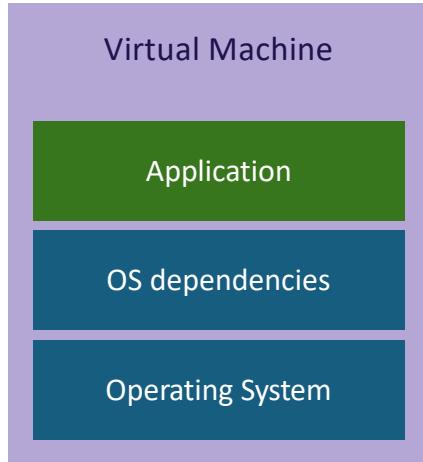


INFRASTRUCTURE

APPLICATIONS

- Application processes on a shared kernel
- Simpler, lighter, and denser than VMs
- Portable across different environments
- Package apps with all dependencies
- Deploy to any environment in seconds
- Easily accessed and shared

# VIRTUAL MACHINES AND CONTAINERS



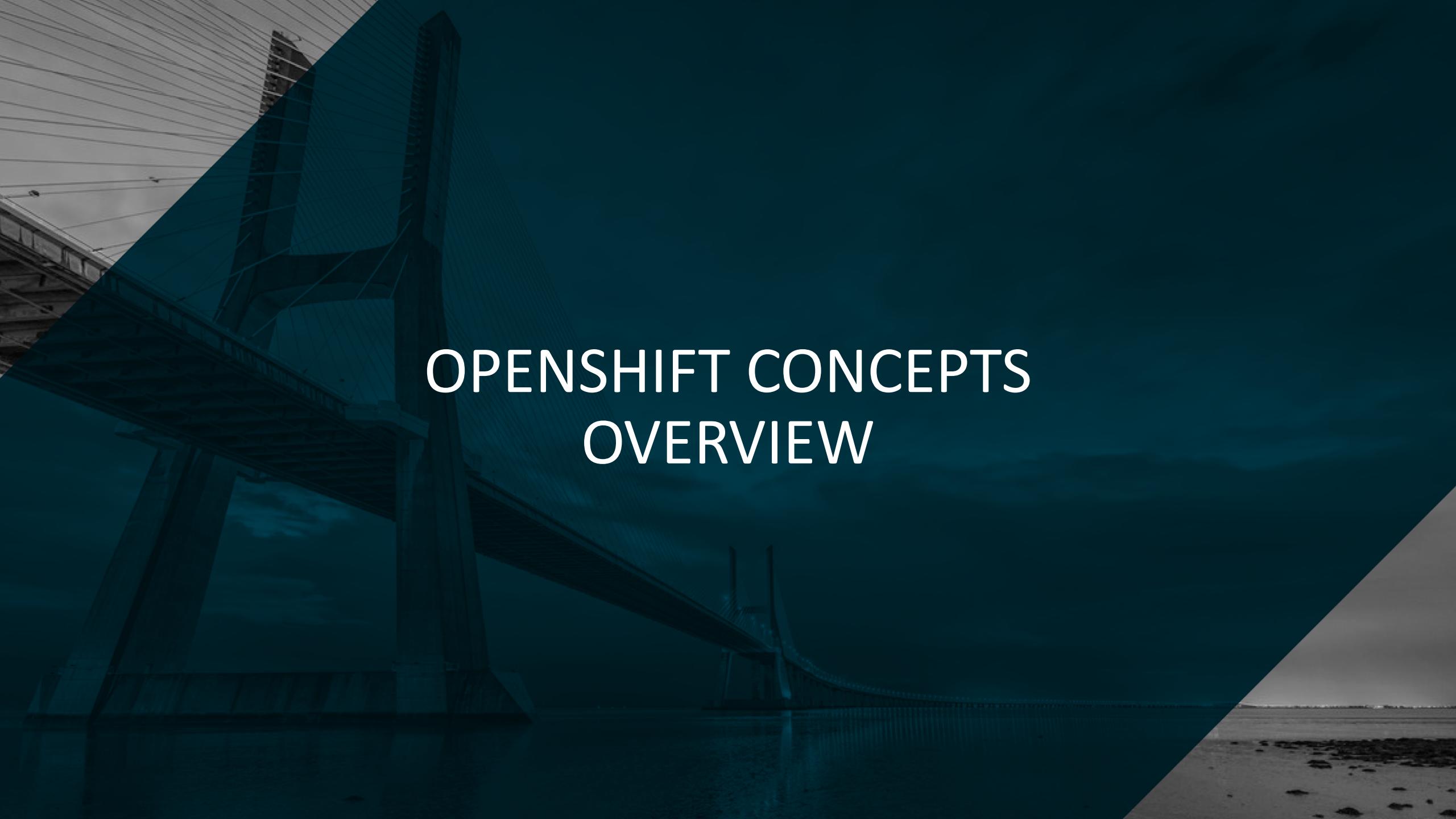
- + VM Isolation
- Complete OS
- Static Compute
- Static Memory
- High Resource Usage

- + Container Isolation
- + Shared Kernel
- + Burstable Compute
- + Burstable Memory
- + Low Resource Usage

# VIRTUAL MACHINES AND CONTAINERS



- Optimized for stability
- Optimized for agility



# OPENSHIFT CONCEPTS OVERVIEW

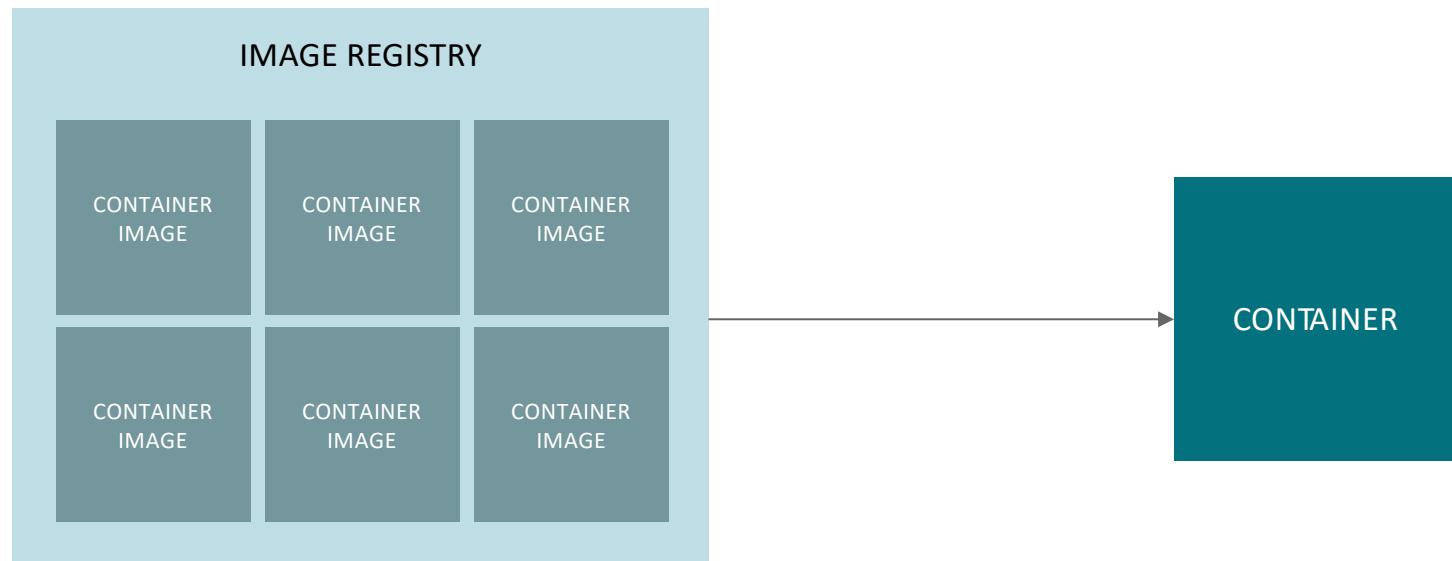
# A container is the smallest compute unit



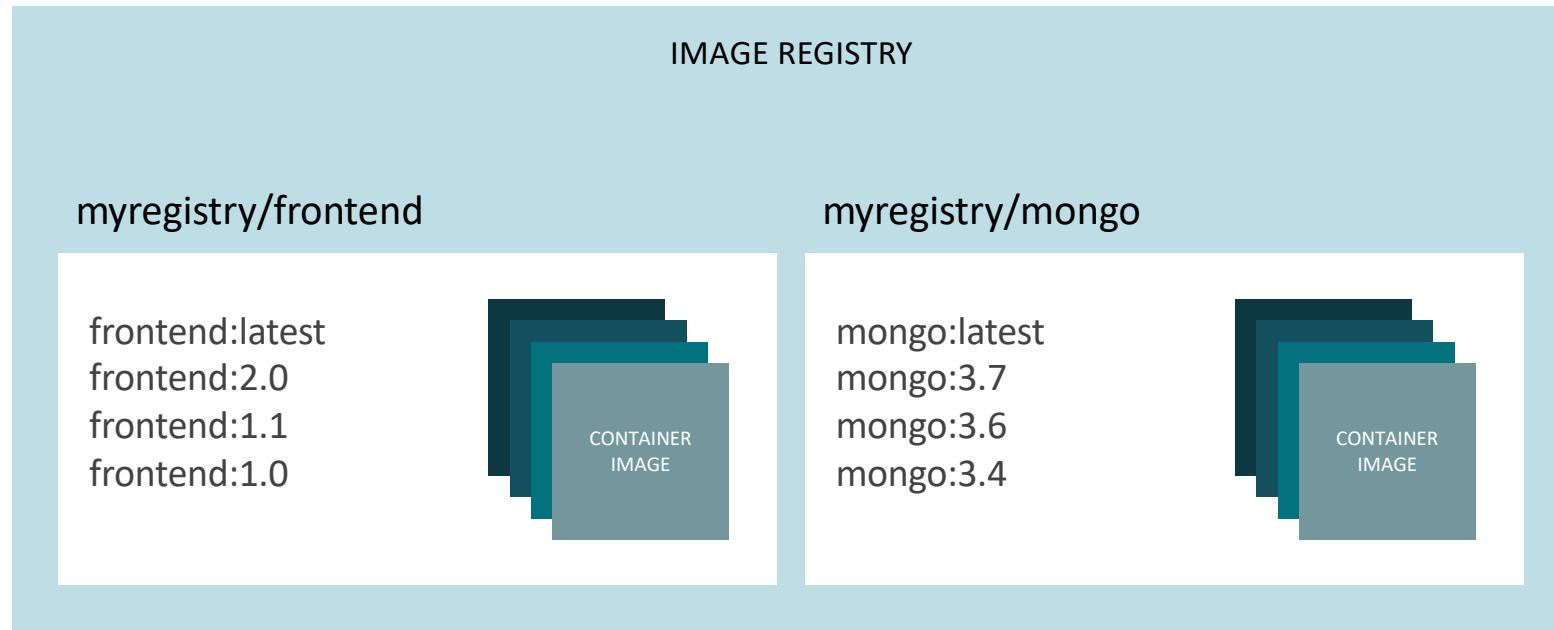
containers are created from  
container images



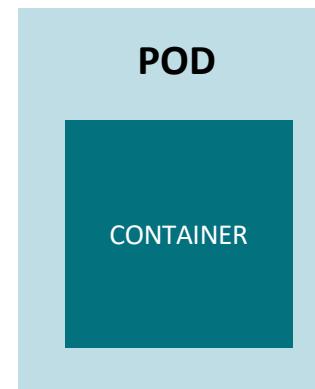
# container images are stored in an image registry



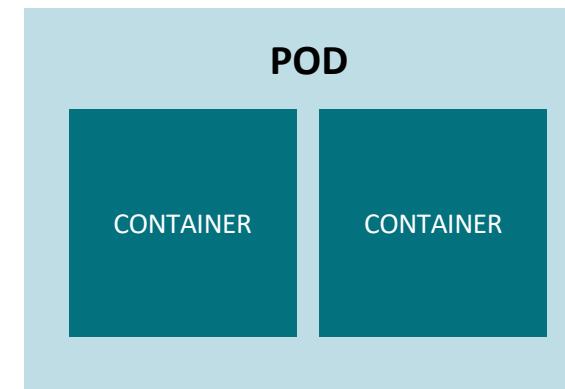
# an image repository contains all versions of an image in the image registry



containers are wrapped in pods which are units of deployment and management

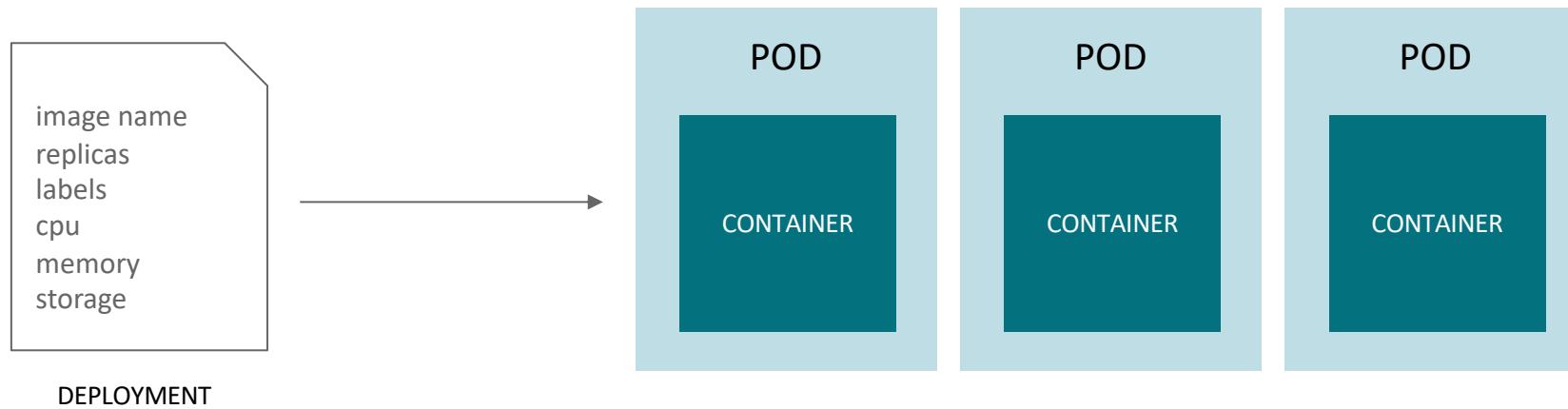


IP:  
10.1.0.11

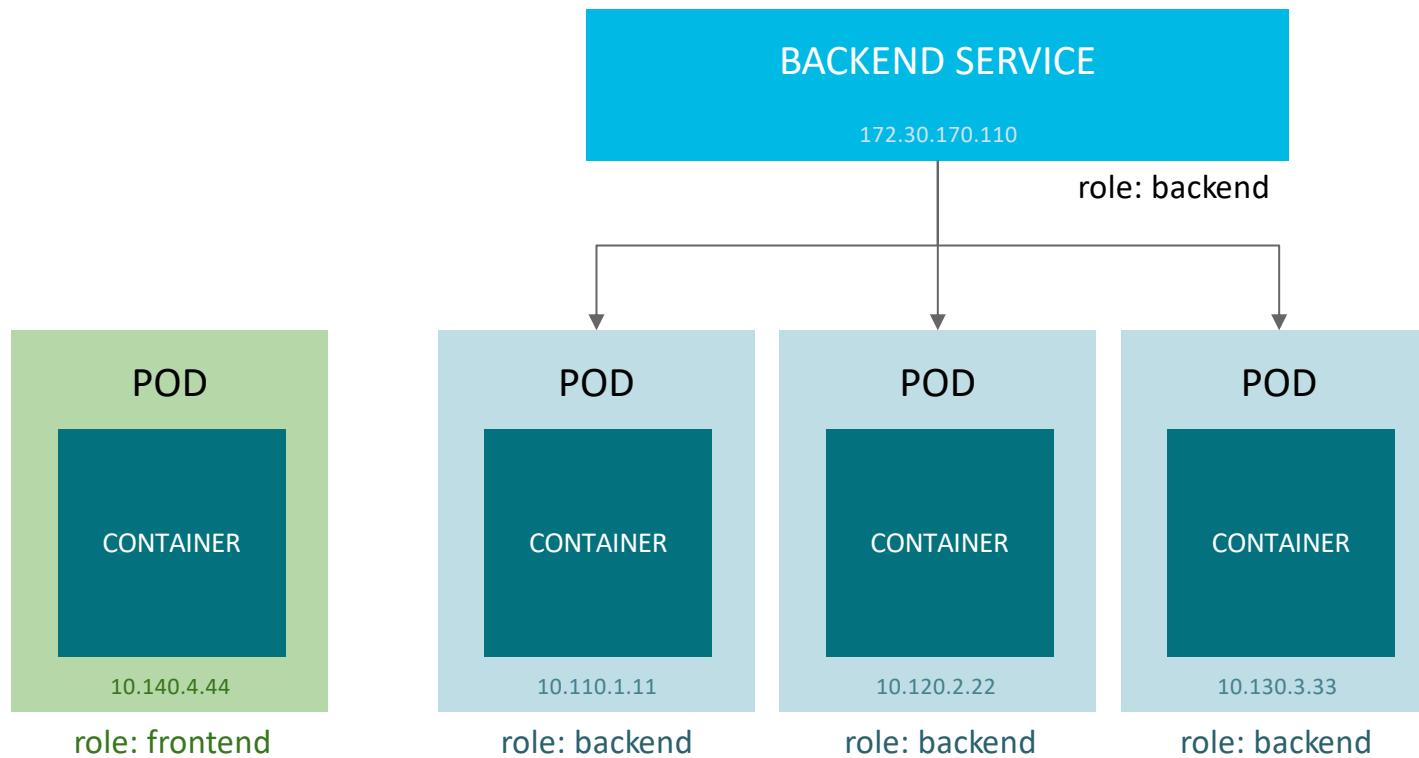


IP:  
10.1.0.55

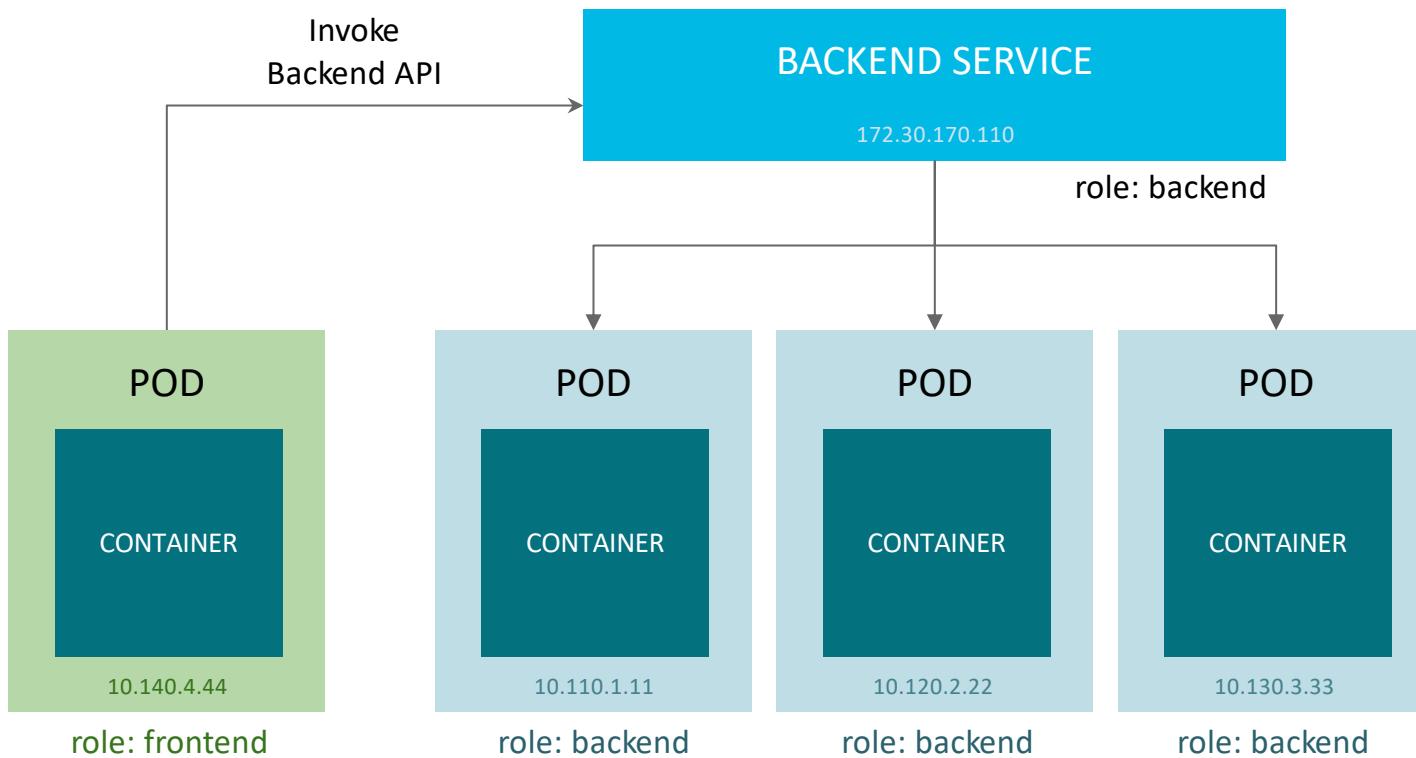
# pods configuration is defined in a deployment



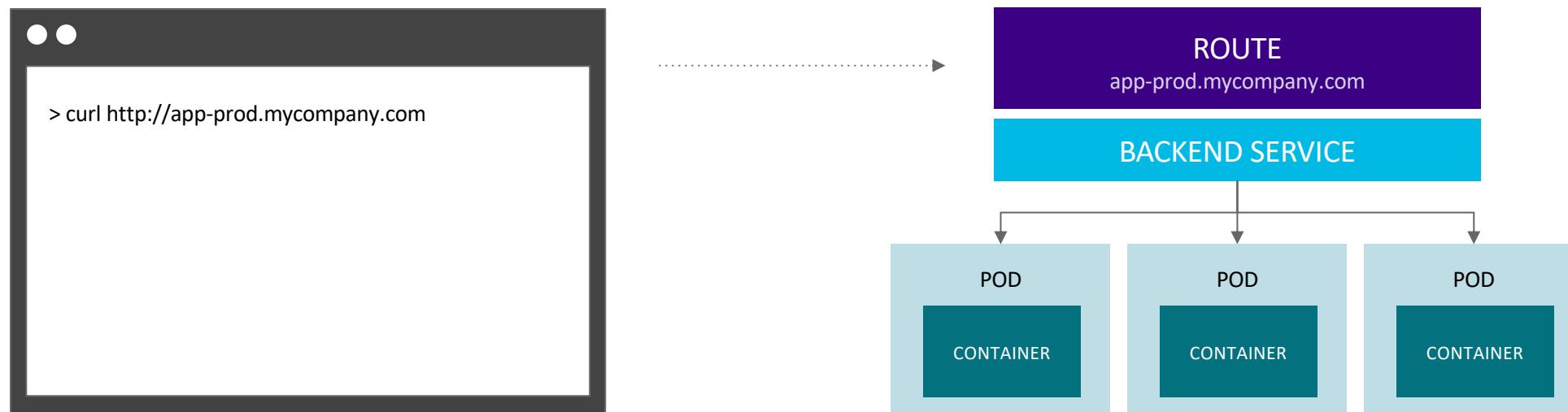
# services provide internal load-balancing and service discovery across pods



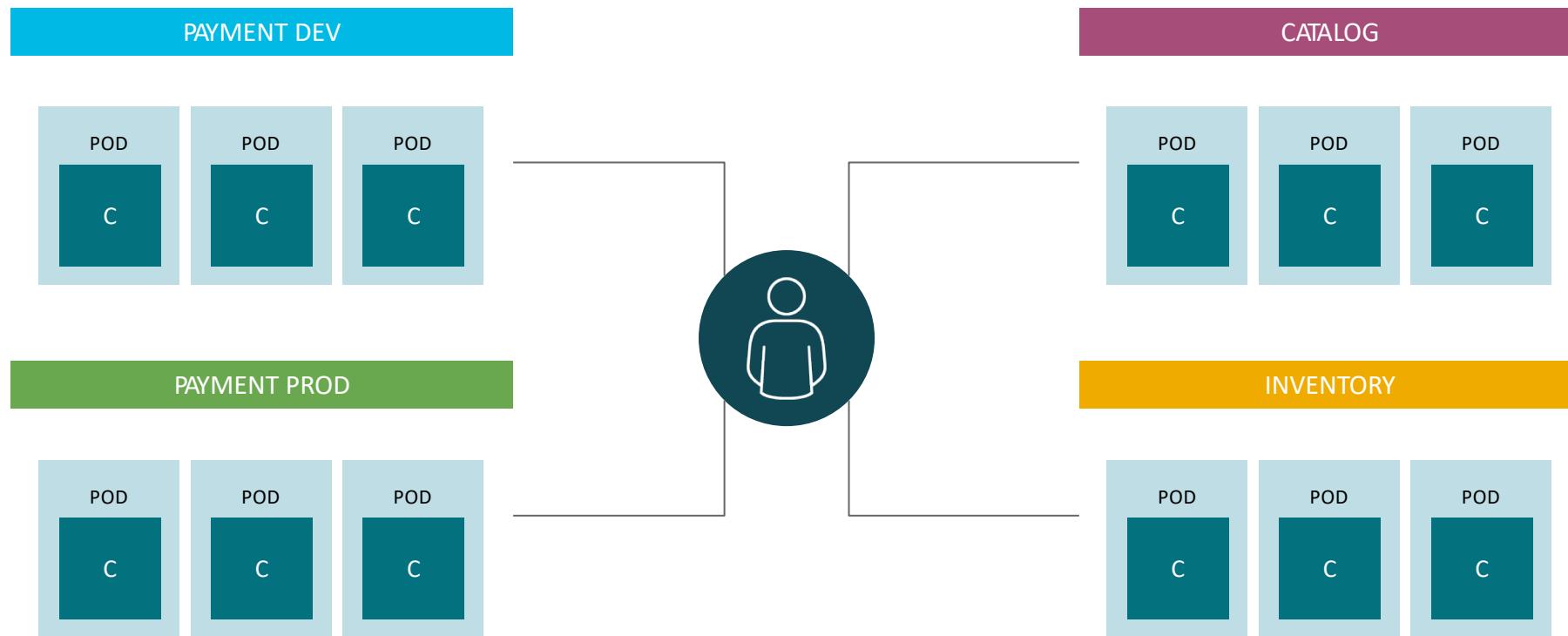
# apps can talk to each other via services

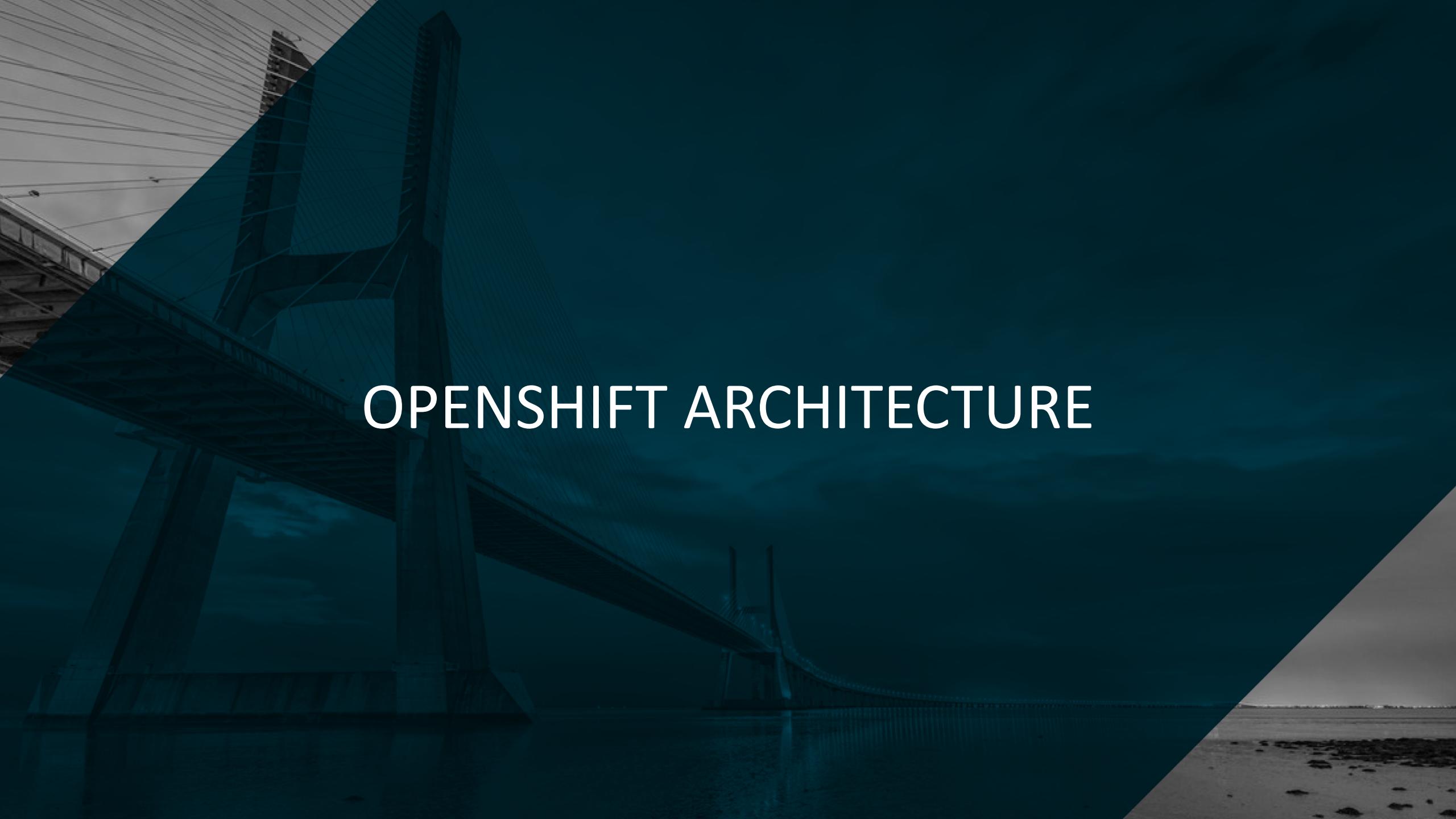


routes add services to the external load-balancer and provide readable urls for the app



# projects isolate apps across environments, teams, groups and departments



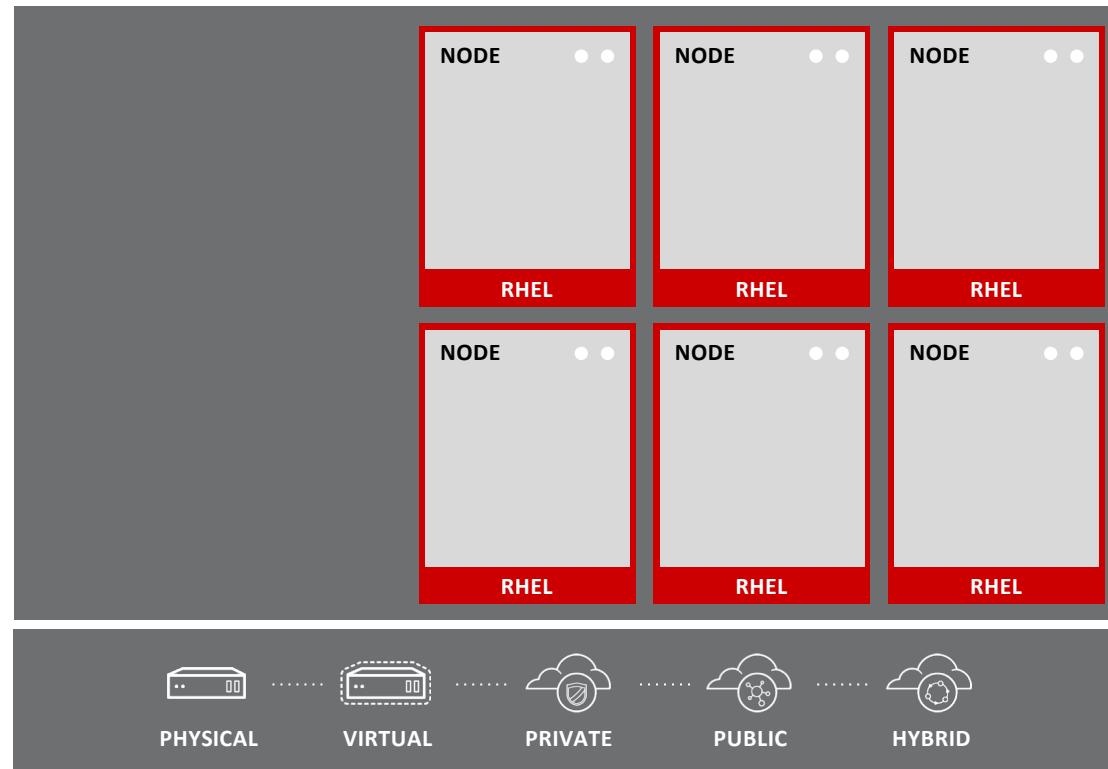
A photograph of a modern cable-stayed bridge at night or in low light conditions. The bridge's towers and cables are illuminated, creating a complex geometric pattern against a dark sky. A large, semi-transparent dark teal diagonal shape covers the upper portion of the image, partially obscuring the bridge. In the center of this teal area, the words "OPENSIFT ARCHITECTURE" are written in a bold, white, sans-serif font.

# OPENSIFT ARCHITECTURE

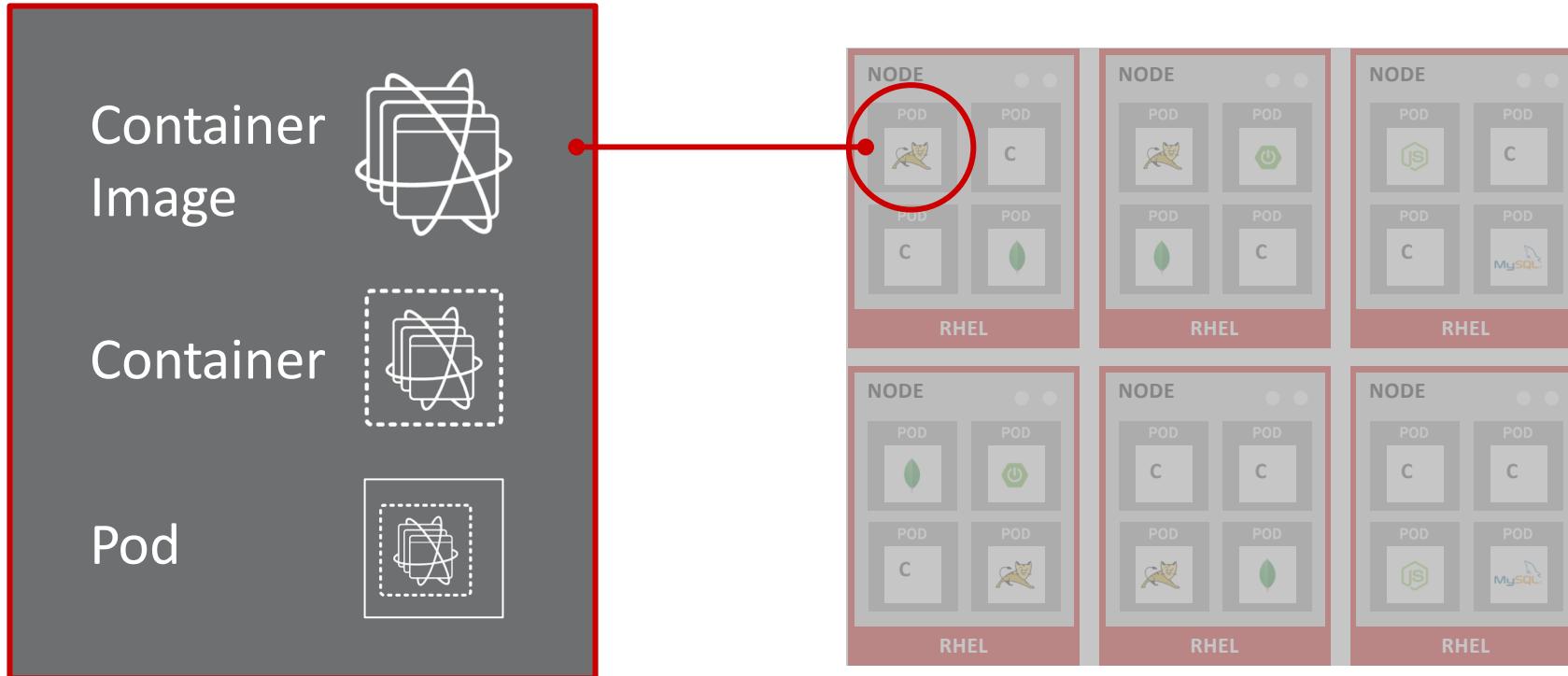
# YOUR CHOICE OF INFRASTRUCTURE



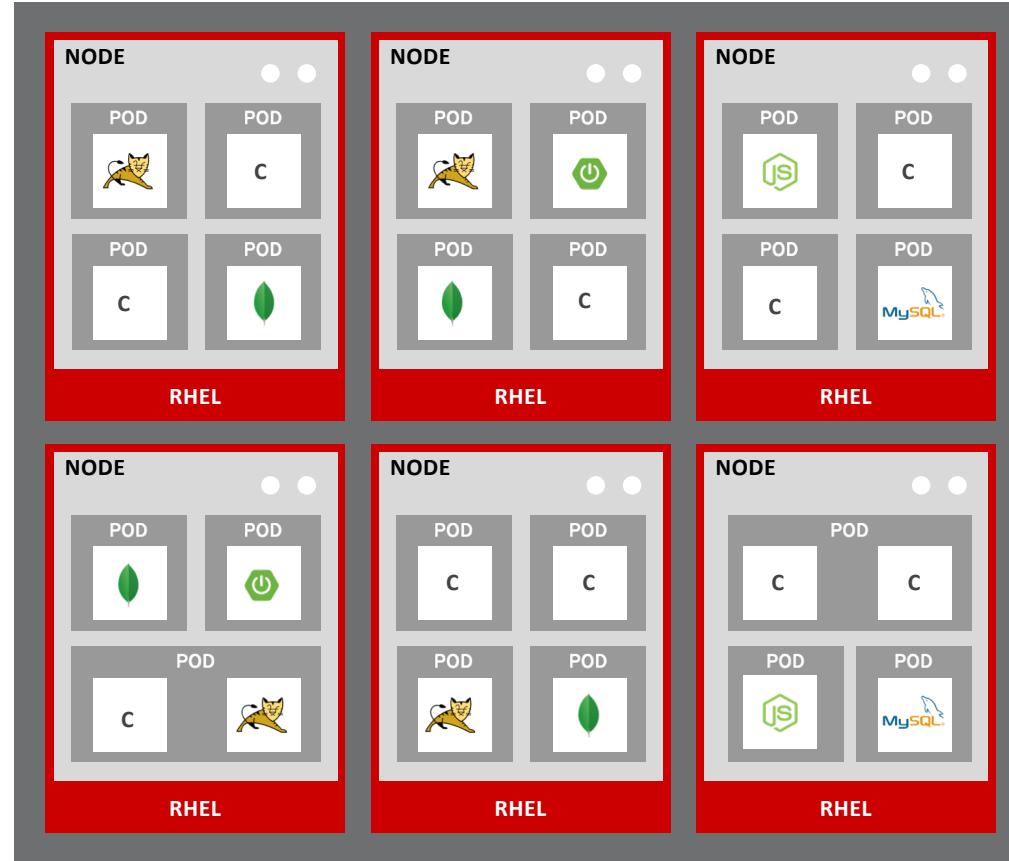
# NODES RHEL INSTANCES WHERE APPS RUN



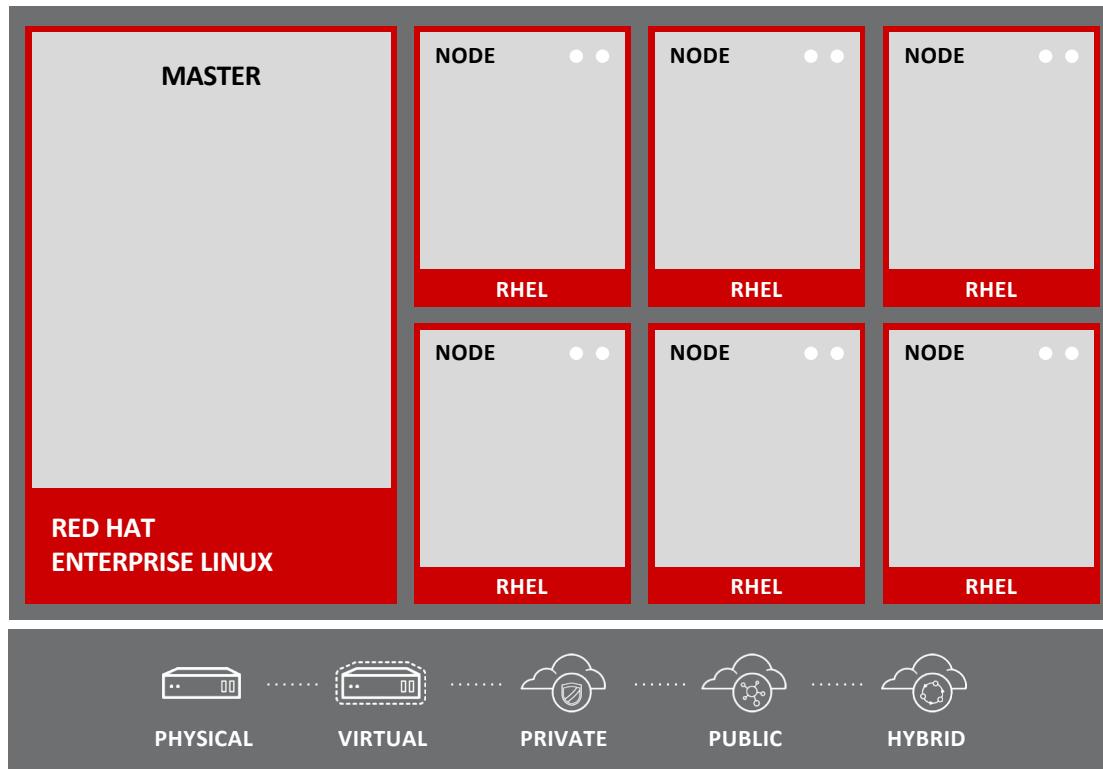
# APPS RUN IN CONTAINERS



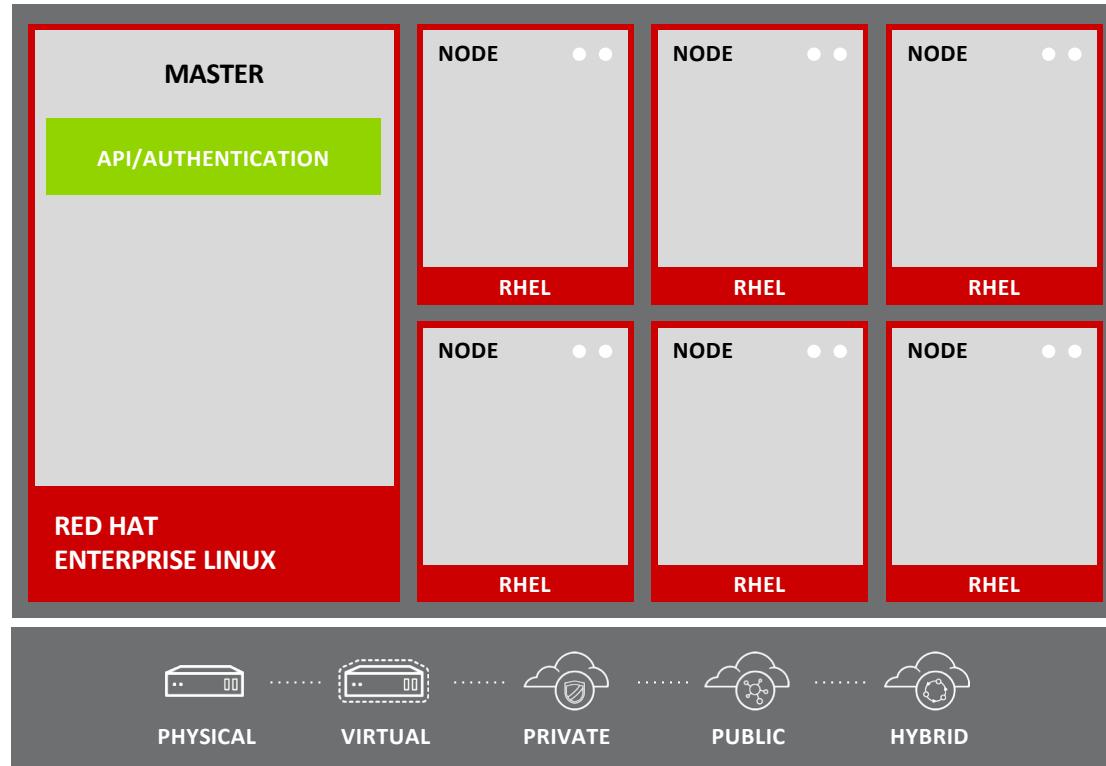
# PODS ARE THE UNIT OF ORCHESTRATION



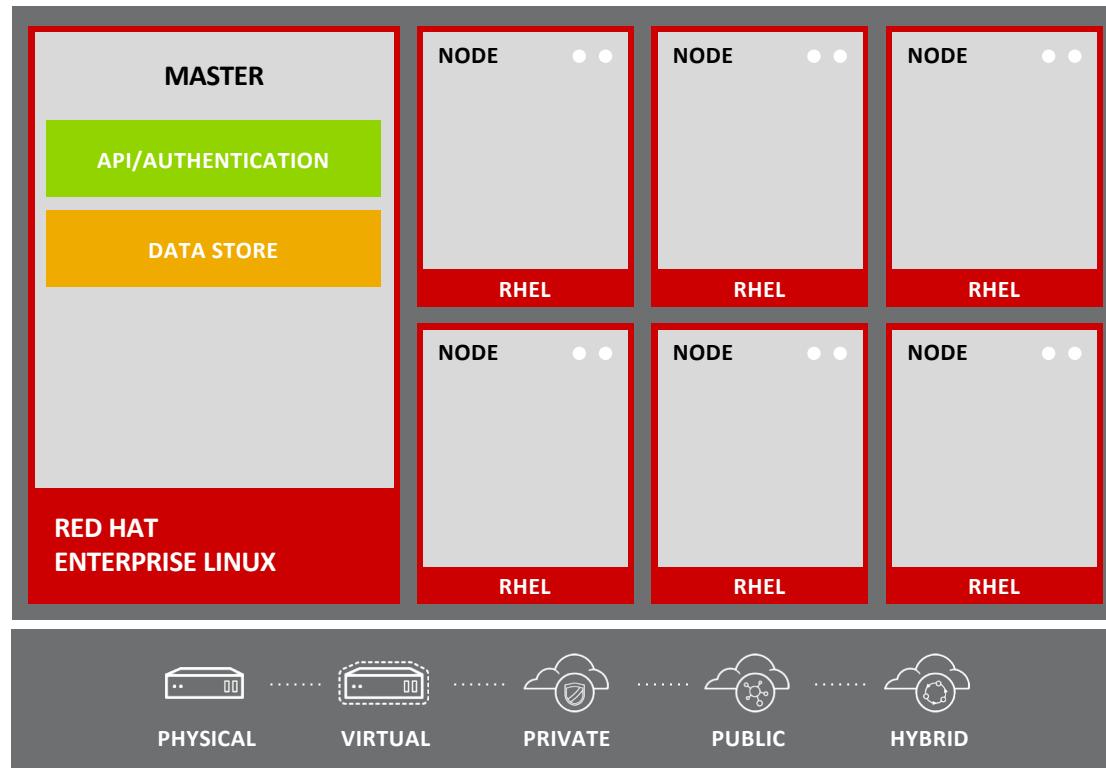
# MASTERS ARE THE CONTROL PLANE



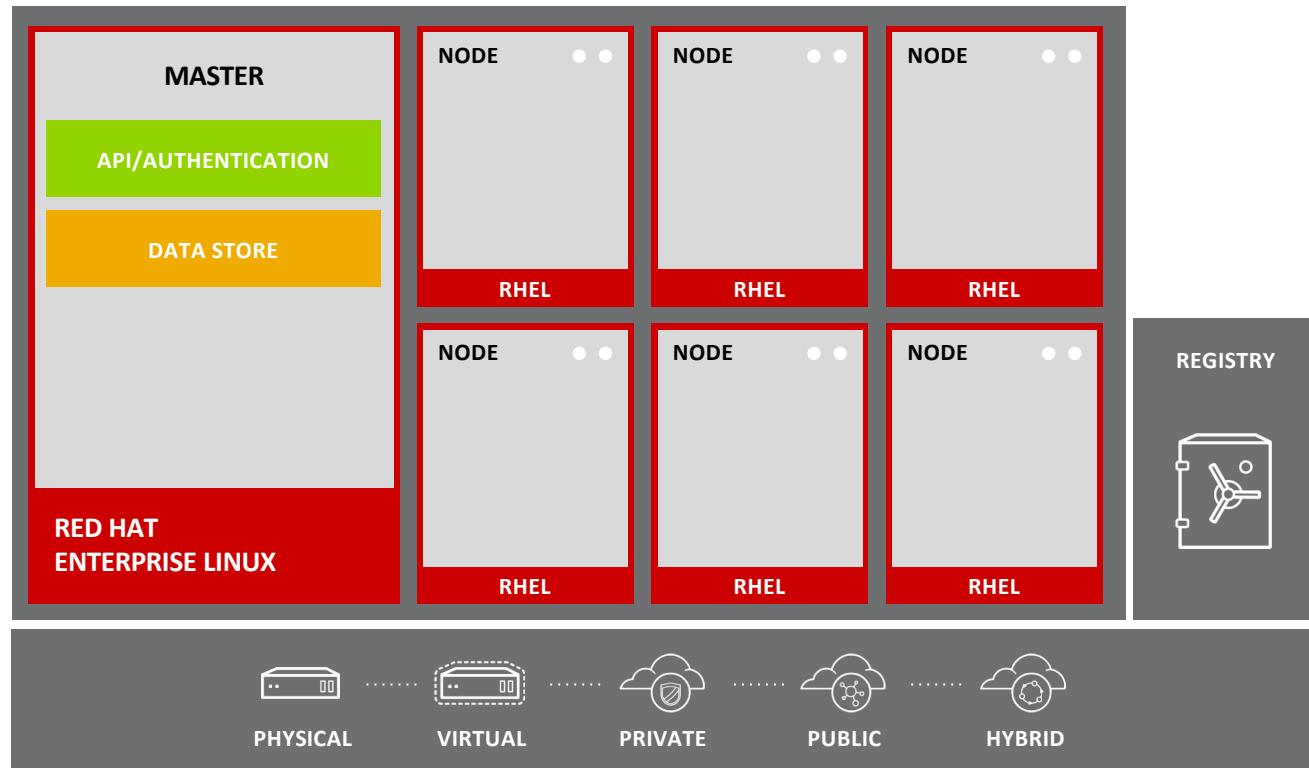
# API AND AUTHENTICATION



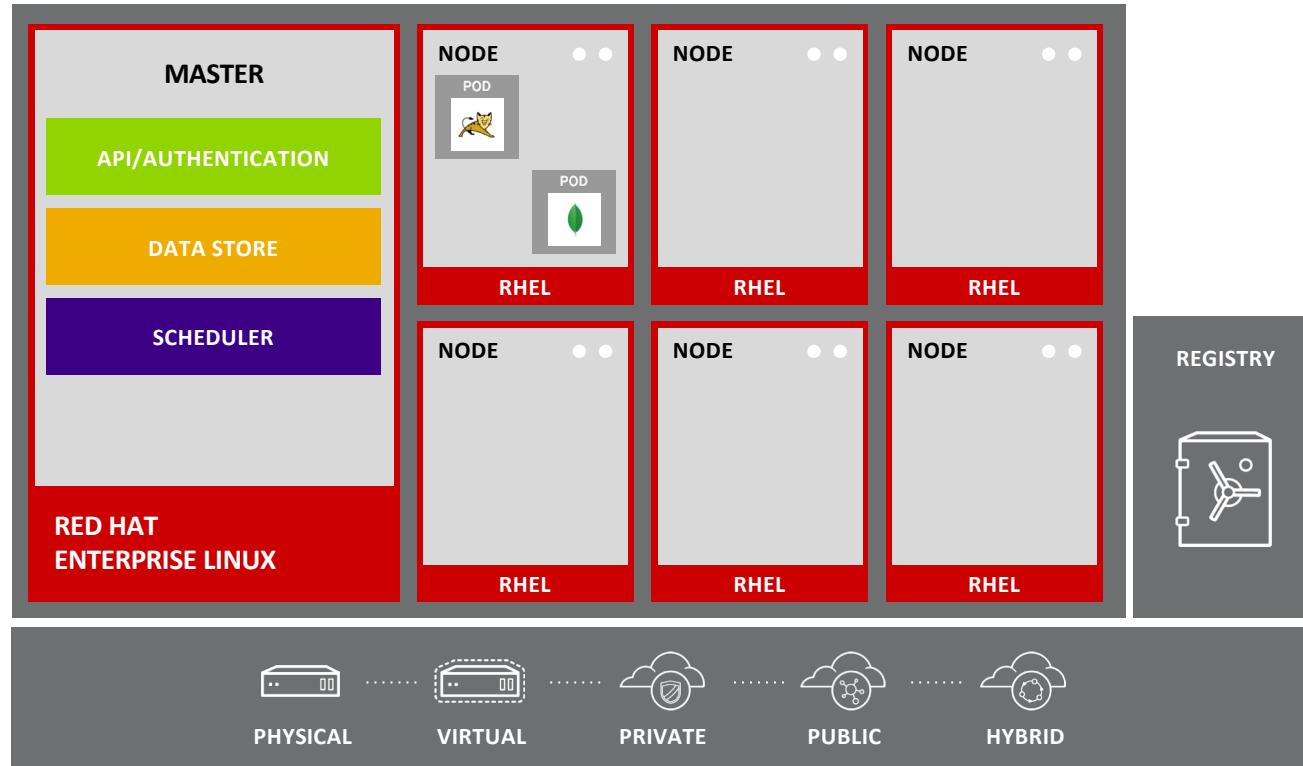
# DESIRED AND CURRENT STATE



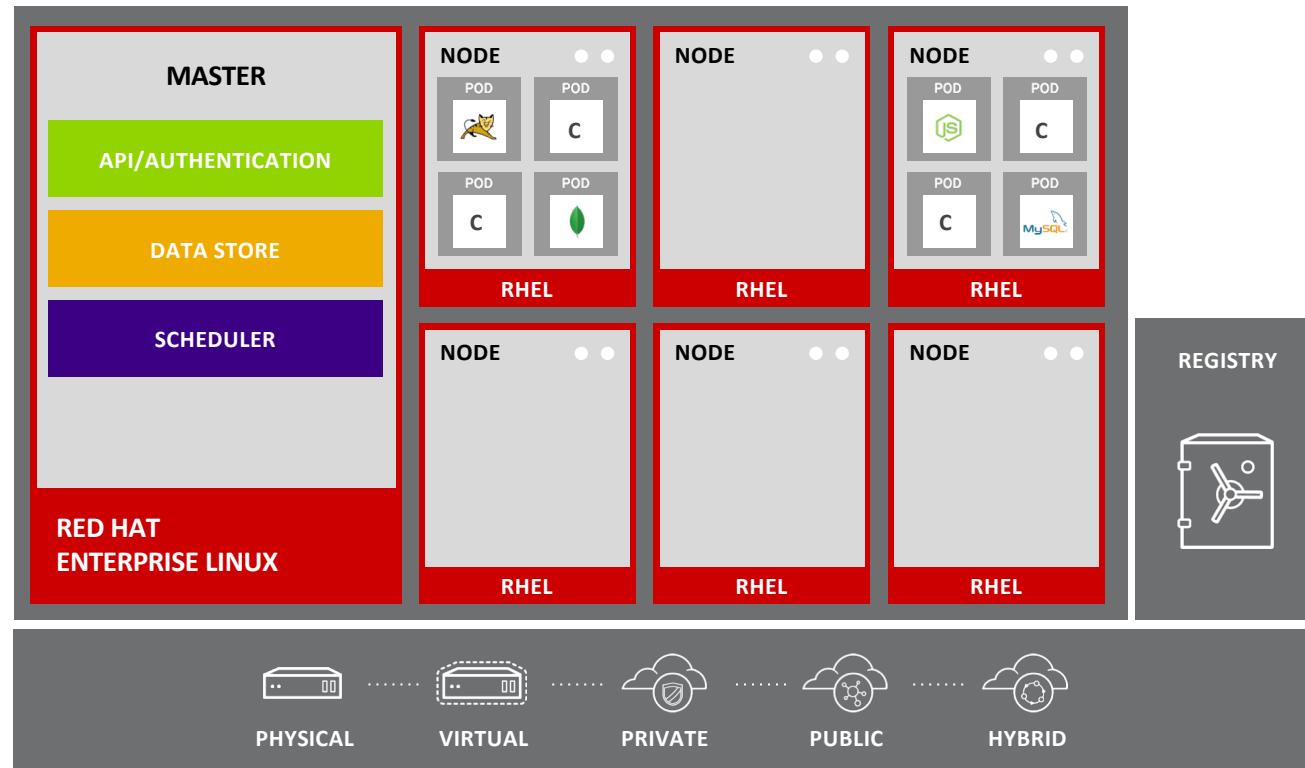
# INTEGRATED CONTAINER REGISTRY



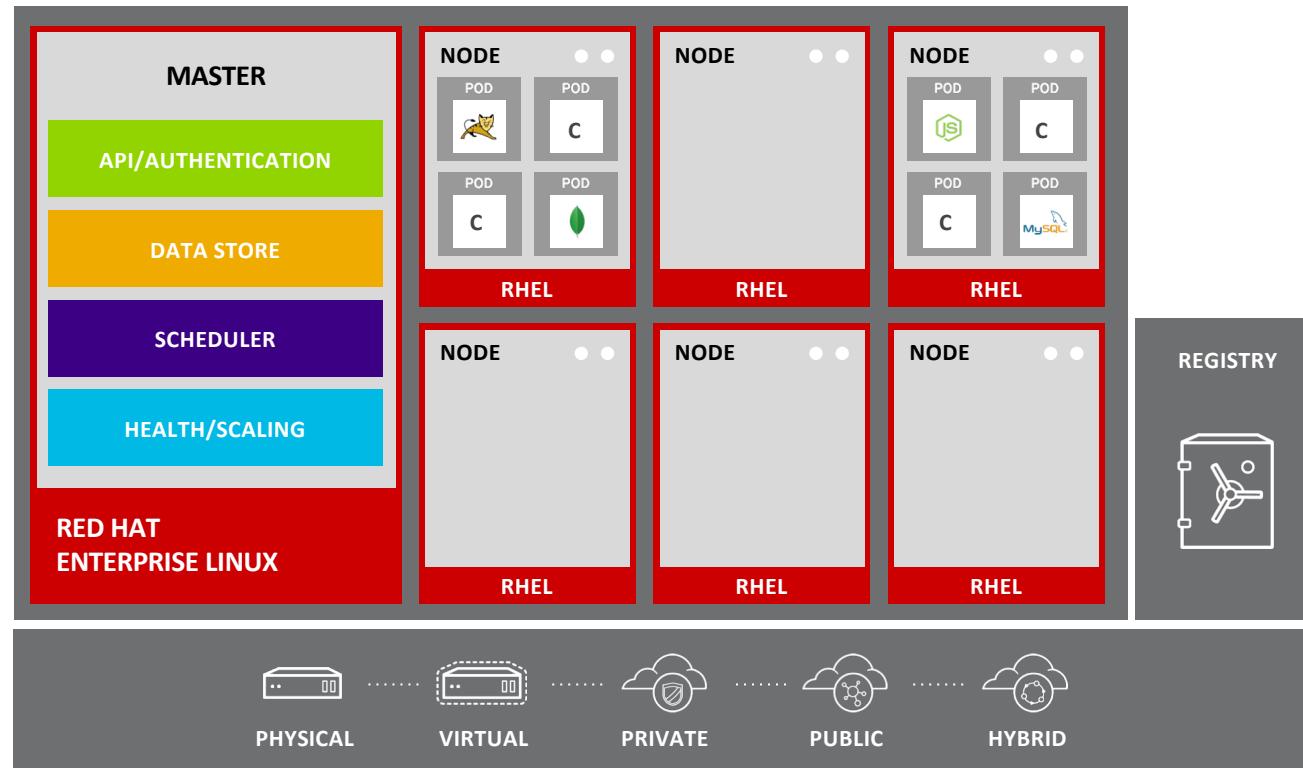
# ORCHESTRATION AND SCHEDULING



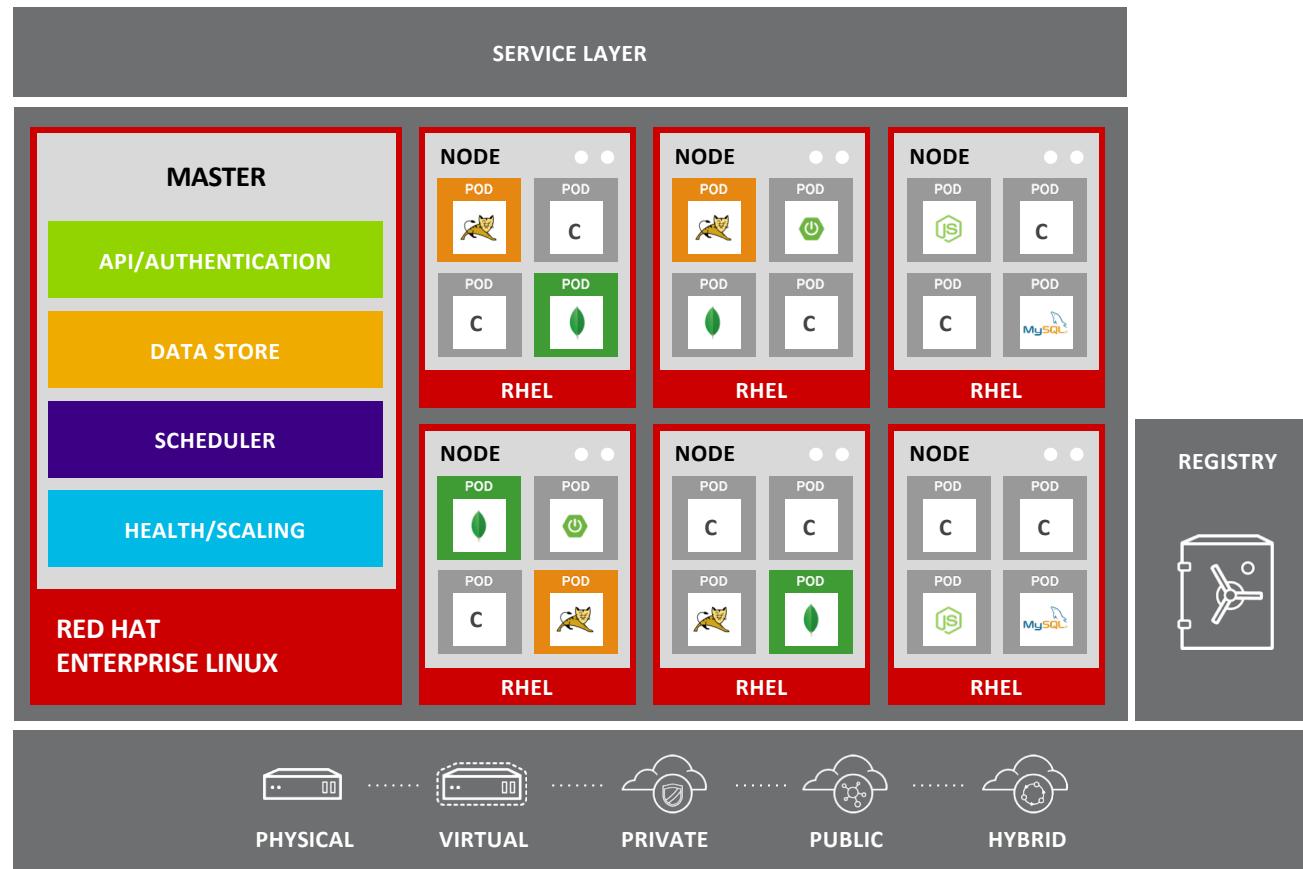
# PLACEMENT BY POLICY



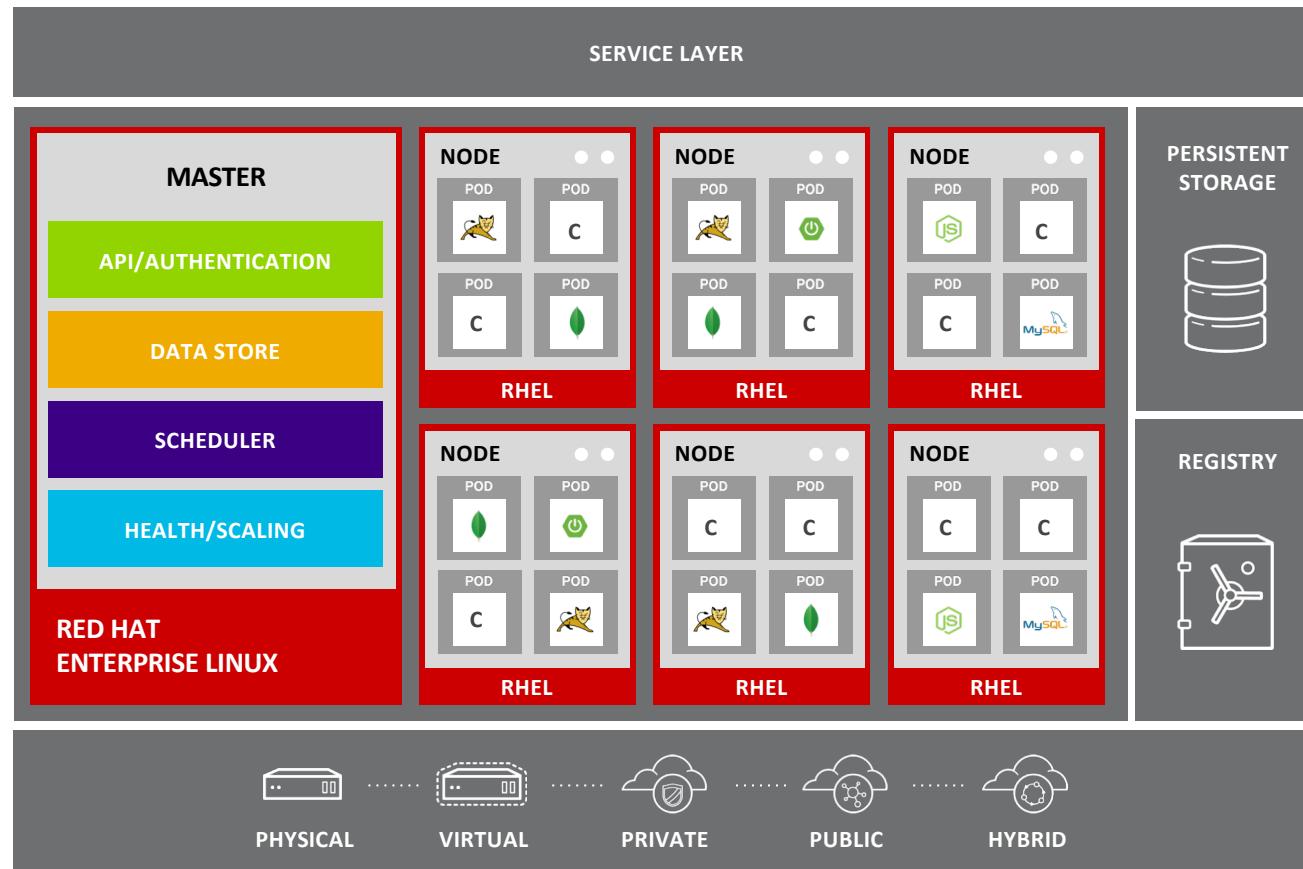
# AUTOSCALING PODS



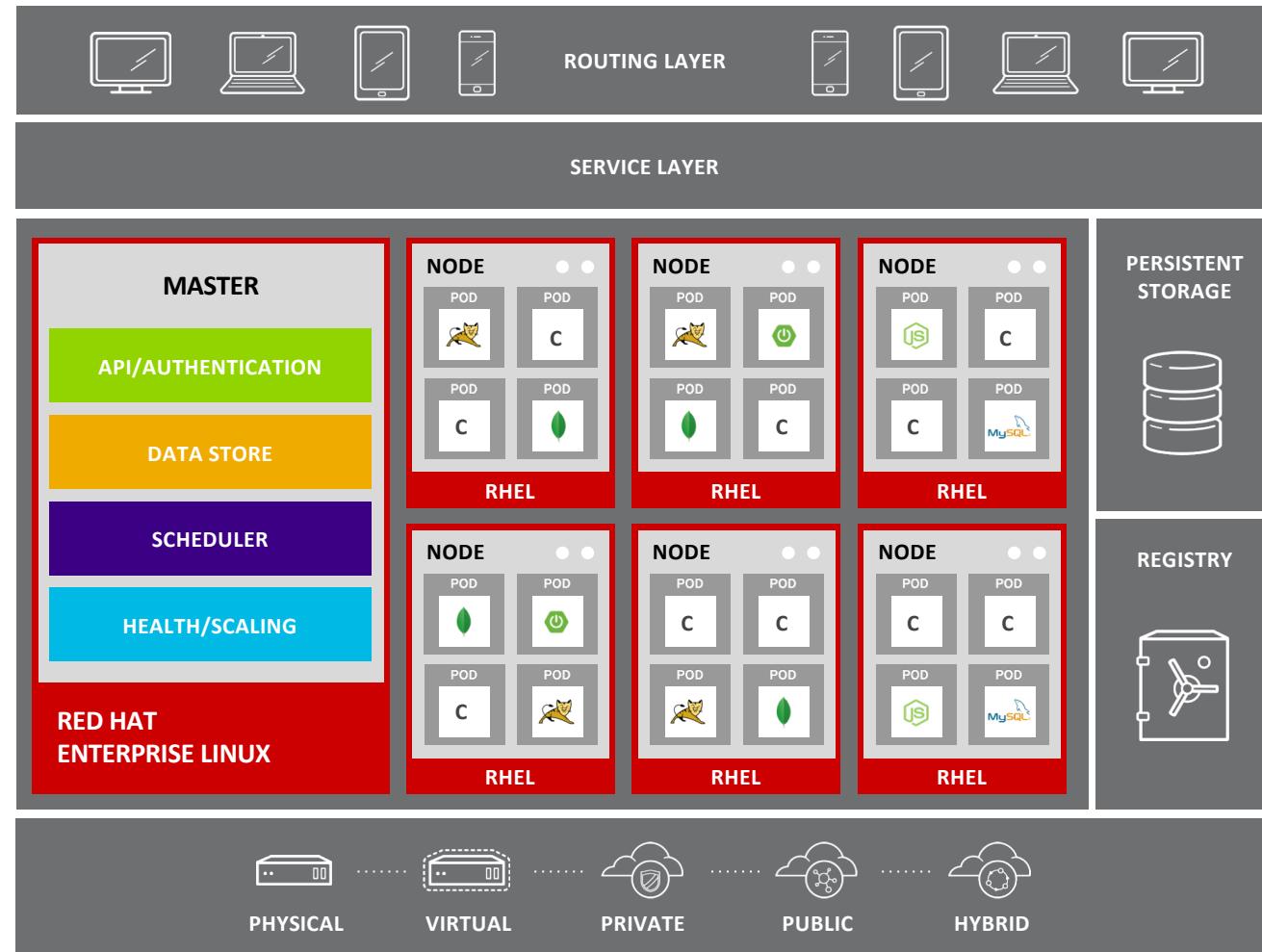
# SERVICE DISCOVERY



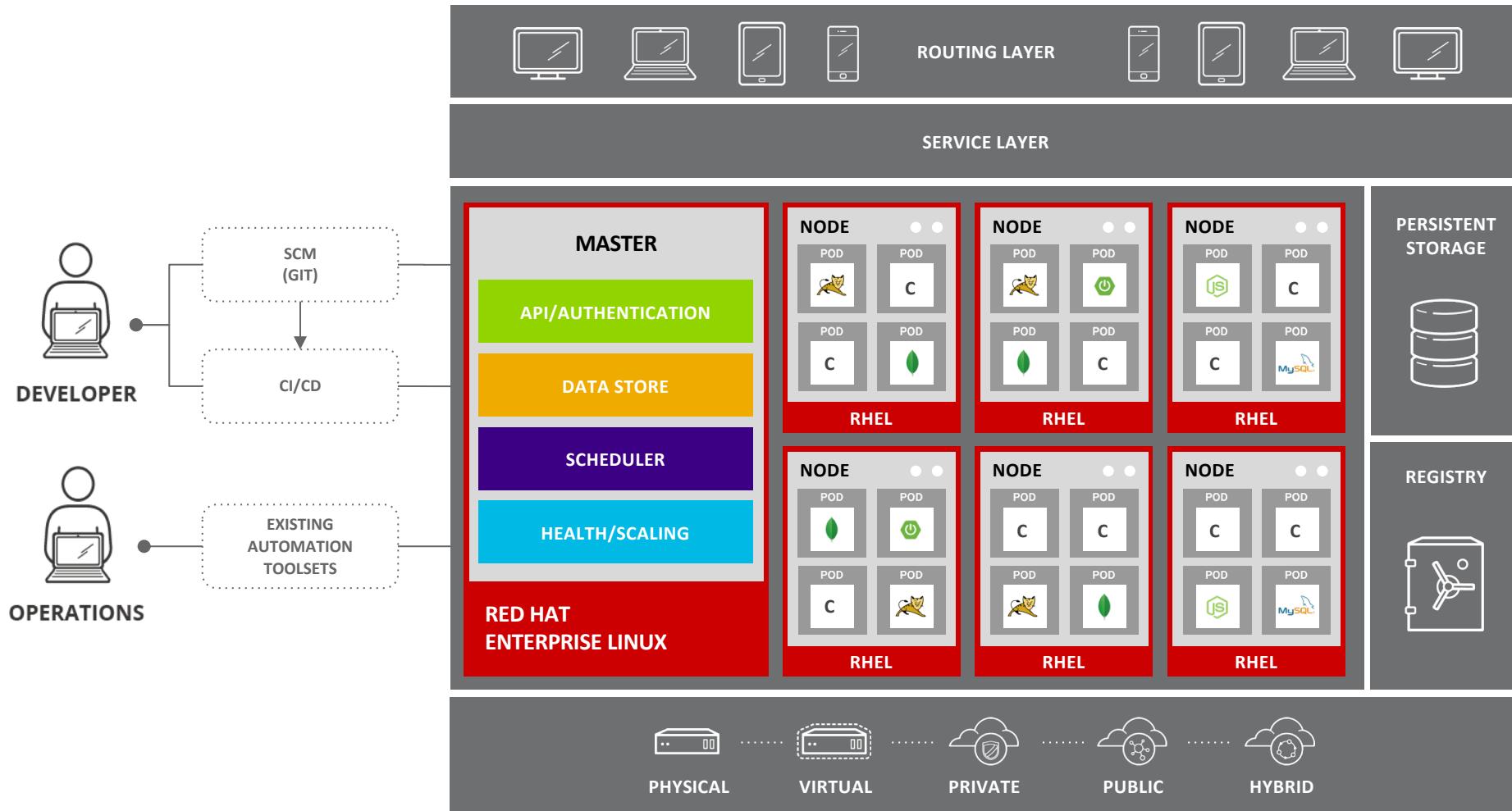
# PERSISTENT DATA IN CONTAINERS



# ROUTING AND LOAD-BALANCING



# ACCESS VIA WEB, CLI, IDE AND API



# OpenShift Container Platform – why enterprise grade



## DevOps Tools and User Experience

Web Console, CLI, REST API, SCM integration

## Containerized Services

Auth, Networking, Image Registry

## Runtimes and xPaaS

Java, Ruby, Node.js and more

## Kubernetes

Container orchestration  
and management

## Etcd

Cluster state and configs

## OpenShift Kubernetes Extensions

## Docker

Container API and packaging format

## RHEL

Container optimized OS

# Demos



1.Registration to IBM Cloud - <https://ibm.biz/Bdq9L7>

2.Red Hat OpenShift on IBM Cloud 4.3 -  
<https://www.ibm.com/cloud/garage/dte/producttour/red-hat-openshift-ibm-cloud-43>

3.Logging in to an OpenShift Cluster -<https://learn.openshift.com/introduction/cluster-access/>

4.Getting Started with OpenShift for Developers -  
<https://developers.redhat.com/courses/openshift/getting-started>

5.Using the CLI to Manage Resource Objects  
<https://learn.openshift.com/introduction/resource-objects/>

# Important Links



Reference Links -

<https://www.ibm.com/cloud/openshift>

<https://www.ibm.com/demos/collection/Compute-options-on-IBM-Cloud>

# Quick Recap

- ✓ What is OpenShift?
- ✓ What are the different technology aspects of OpenShift Container Platform?
- ✓ Demos



# Thank you!

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