

# DevOps Enterprise Ready - Docker-Container, Kubernetes OpenShift

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JBUG OWL, 9 March 2017



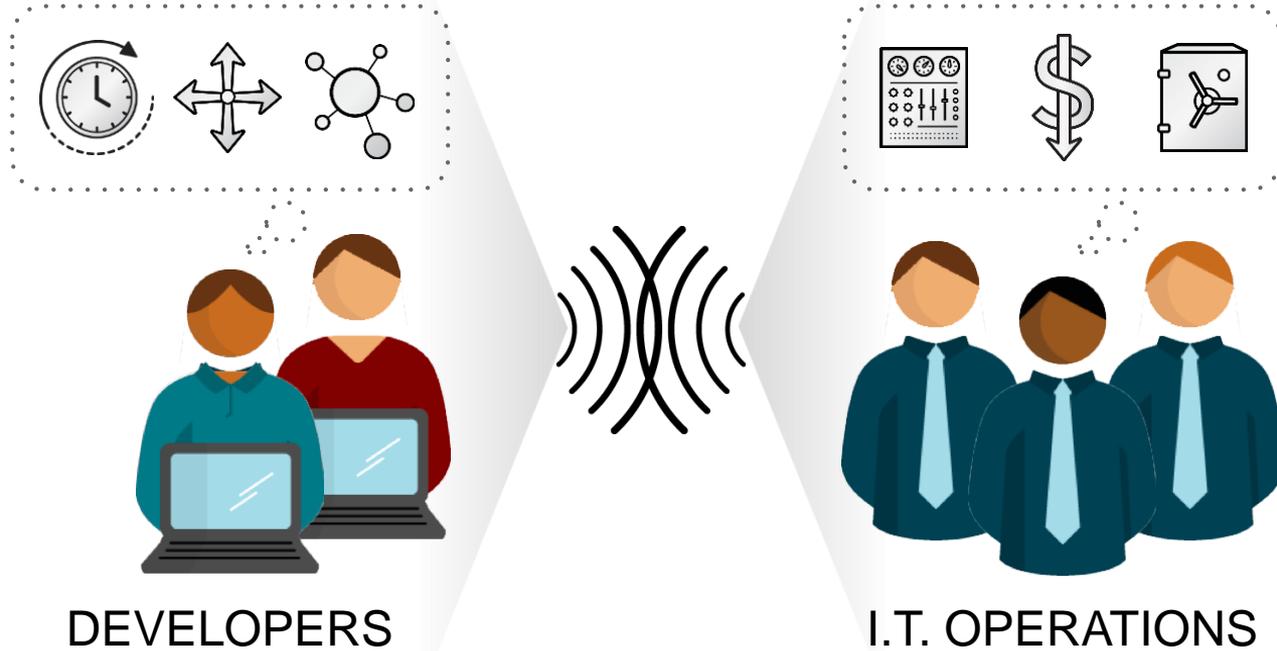
# Containers / OpenShift

# The Problem

Applications require complicated installation and integration every time they are deployed



# THE PROBLEM



# DEVOPS AT A HIGH LEVEL

Everything as code

Automate everything

Continuous Integration/Delivery

Application is always “releaseable”

Application monitoring

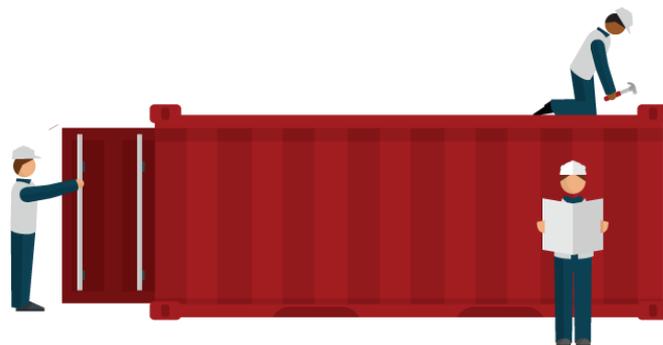
Rapid feedback

Rebuild vs. Repair

Delivery pipeline

# The Solution

Adopting a container strategy will allow applications to be easily shared and deployed.



# WHAT ARE CONTAINERS?

It Depends Who You Ask

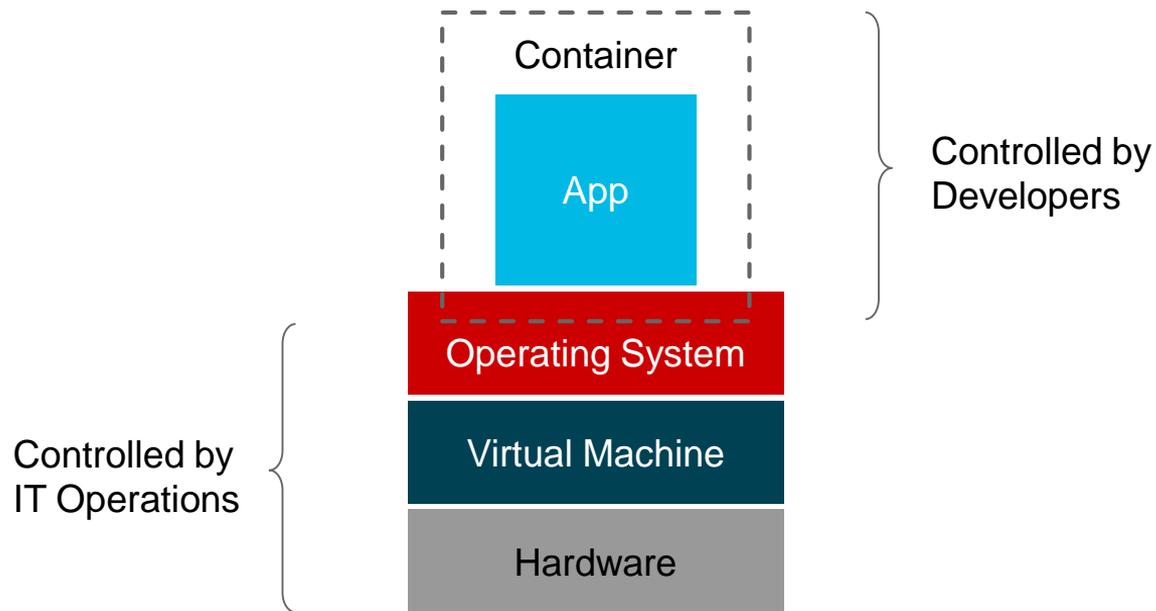
## INFRASTRUCTURE

- Sandboxed application processes on a shared Linux OS kernel
- Simpler, lighter, and denser than virtual machines
- Portable across different environments

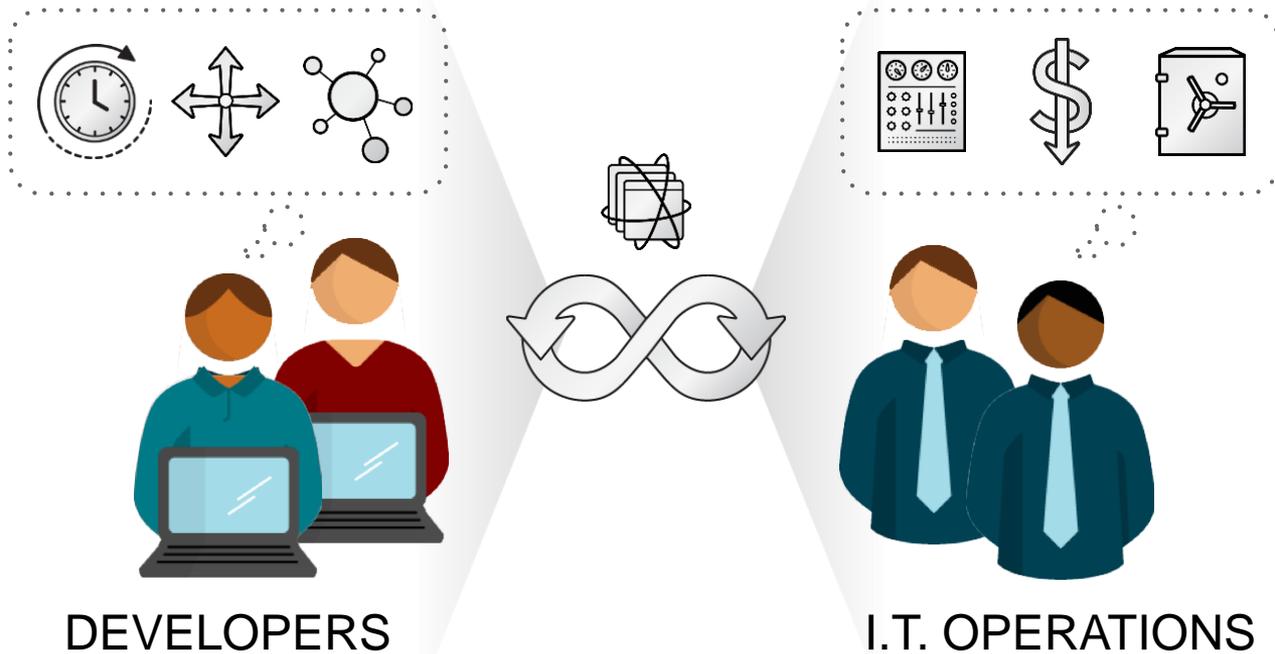
## APPLICATIONS

- Package my application and all of its dependencies
- Deploy to any environment in seconds and enable CI/CD
- Easily access and share containerized components

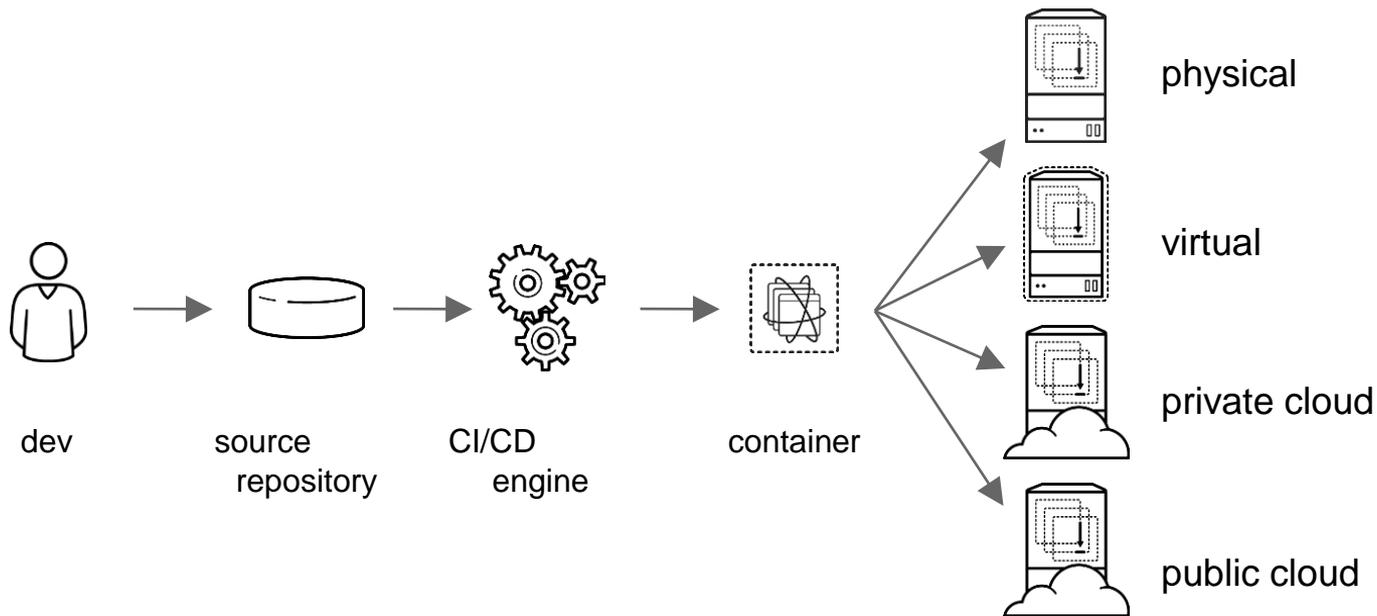
# THE SOLUTION



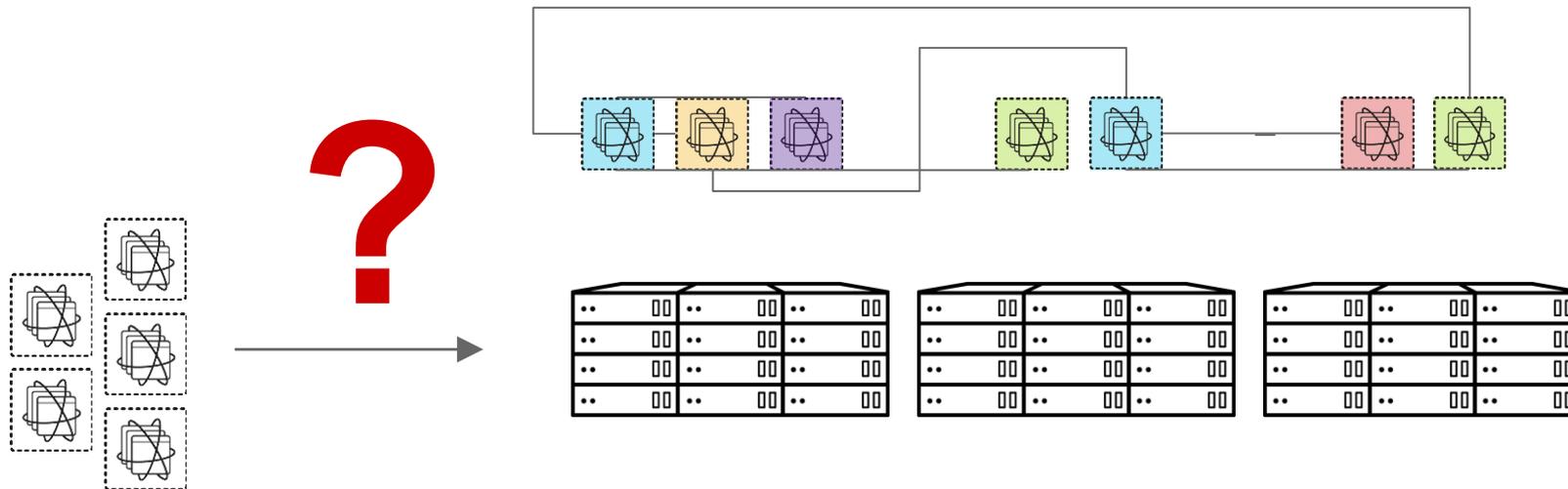
# THE SOLUTION



# DEVOPS WITH CONTAINERS



# EASY WITH A SINGLE CONTAINER, BUT ...



# WE NEED MORE THAN JUST CONTAINERS

## Scheduling

Decide where to deploy containers

## Security

Control who can do what

## Lifecycle and health

Keep containers running despite failures

## Scaling

Scale containers up and down

## Discovery

Find other containers on the network

## Persistence

Survive data beyond container lifecycle

## Monitoring

Visibility into running containers

## Aggregation

Compose apps from multiple containers

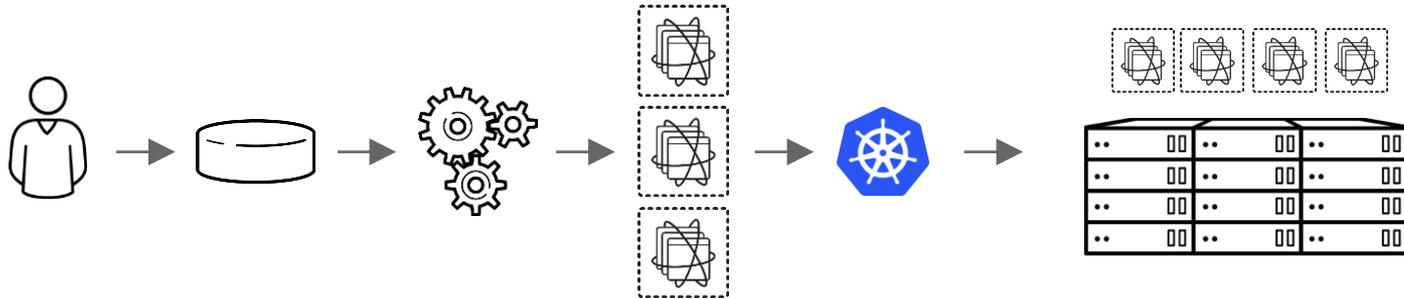
# KUBERNETES TO THE RESCUE!

Kubernetes is an open-source system for automating deployment, operations, and scaling of containerized applications across multiple hosts

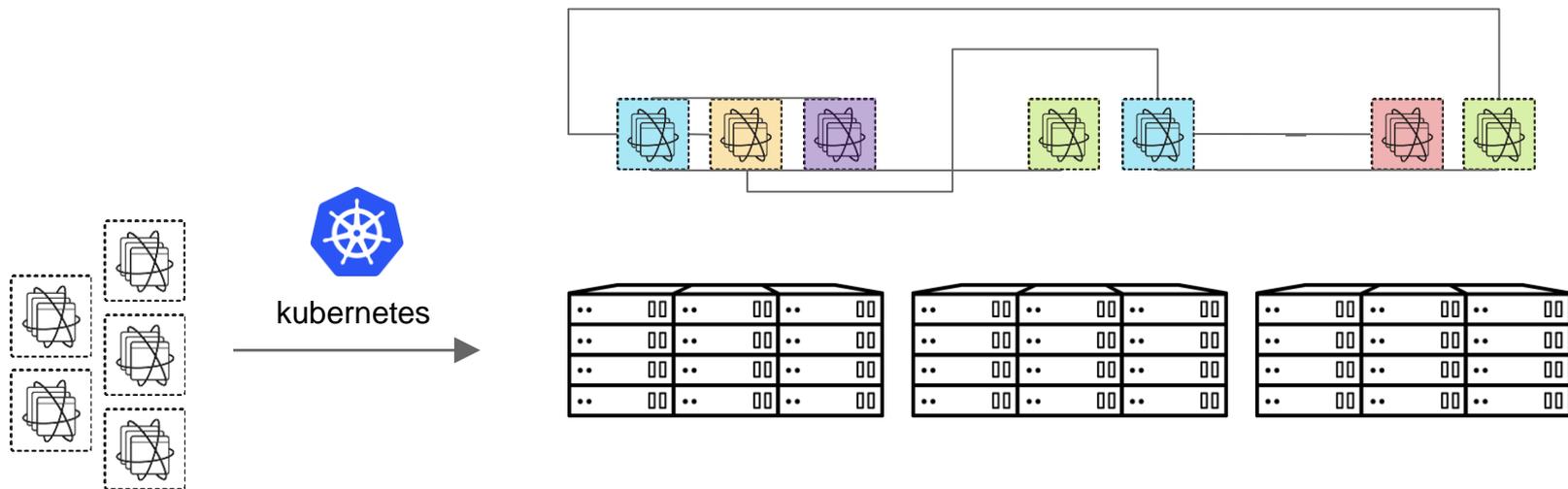


**kubernetes**

# DEVOPS WITH CONTAINERS AND KUBERNETES

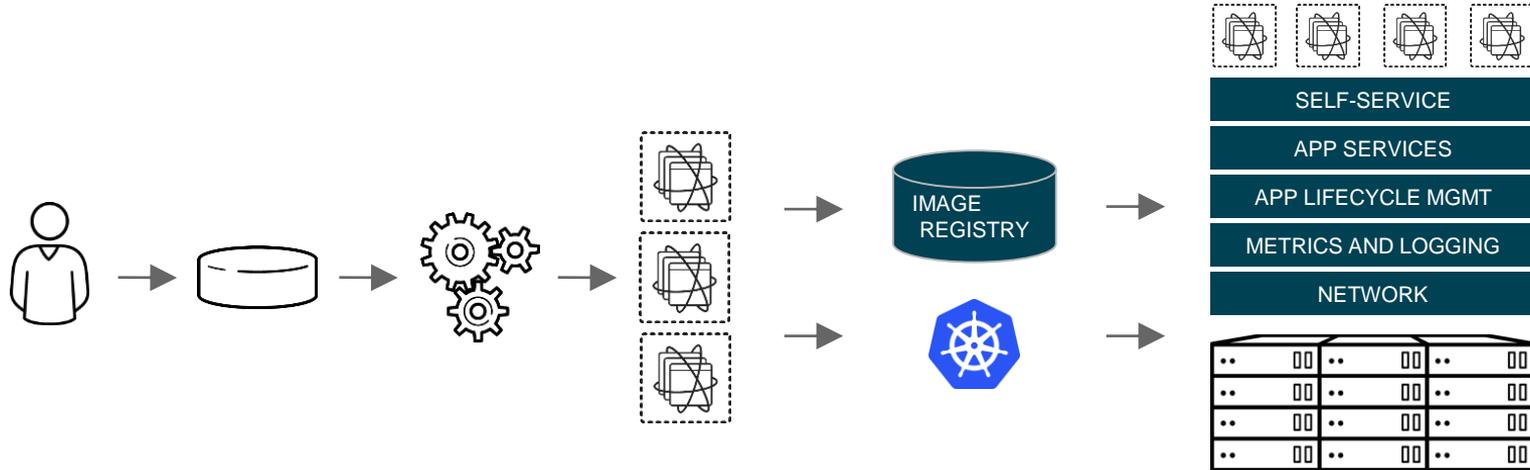


# NOW IT IS A BIT EASIER,



## BUT ...

# KUBERNETES IS NOT ENOUGH!



# NOT ENOUGH, THERE IS MORE!

Multi-tenancy	Teams and Collaboration
Routing & Load Balancing	Quota Management
CI/CD Pipelines	Image Build Automation
Role-based Authorization	Container Isolation
Capacity Management	Vulnerability Scanning
Infrastructure Visibility	Chargeback

# A CONTAINER PLATFORM IS NEEDED!

Container application platform based on Docker and Kubernetes for building, distributing and running containers at scale



# BUILT ON OPEN CONTAINER STANDARDS

Red Hat Driving These in the Community

## **docker**



Red Hat is top contributor  
along with Docker, Inc.

## **kubernetes**



Red Hat is top contributor  
along with Google

# BUILD ON A ROCK SOLID FOUNDATION

Red Hat Enterprise  
Linux & Atomic Host

IaaS



# PROVIDING ALL SERVICES FOR RUNNING CONTAINERS AT PRODUCTION SCALE

Red Hat OpenShift  
Container Platform

CaaS

LIFECYCLE AUTOMATION  
(Self-service, CI/CD, Image Stream)

CONTAINER MANAGEMENT  
(Monitoring, Capacity, Policies)

CONTAINER INFRASTRUCTURE SERVICES  
(Orchestration & Scheduling, Storage, Registry, Security, Networking)

Red Hat Enterprise  
Linux & Atomic Host

IaaS

ENTERPRISE-GRADE CONTAINER OS



Physical



Virtual

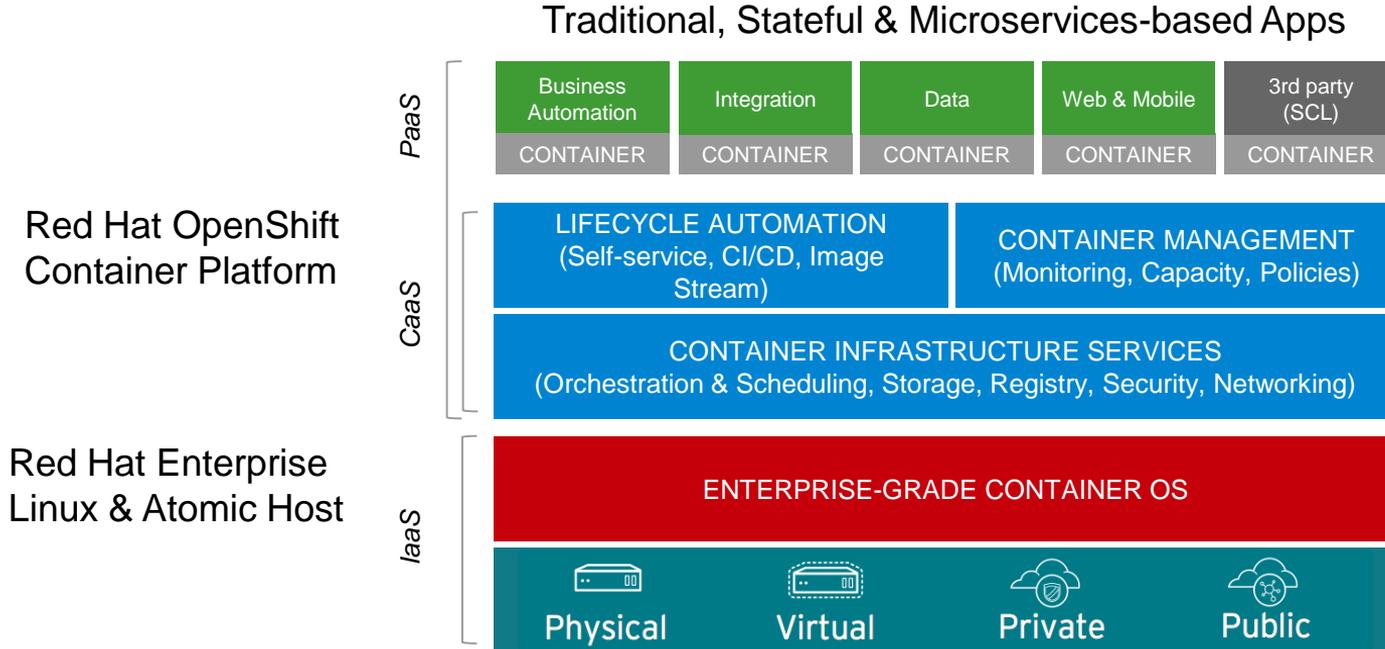


Private

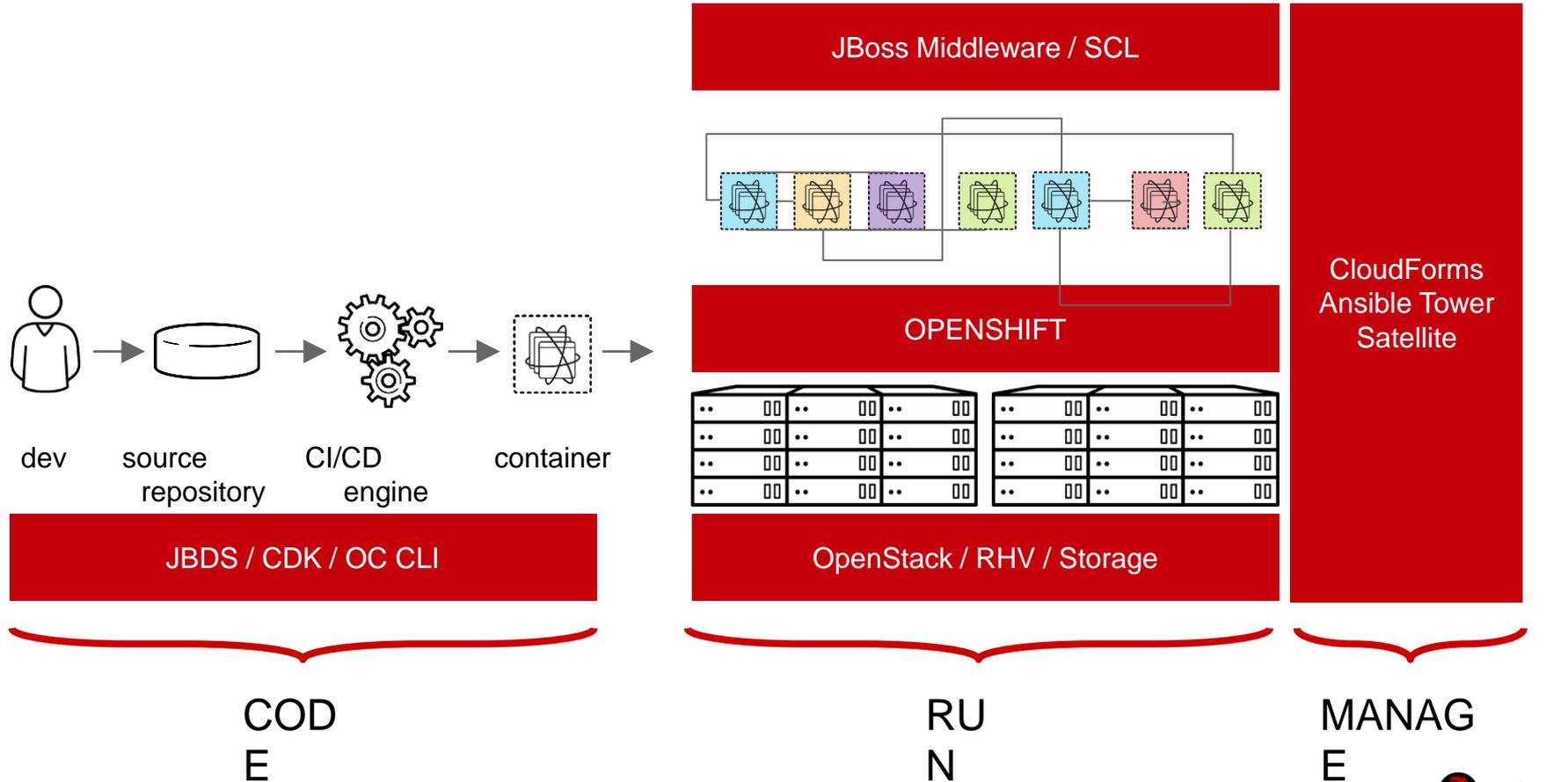


Public

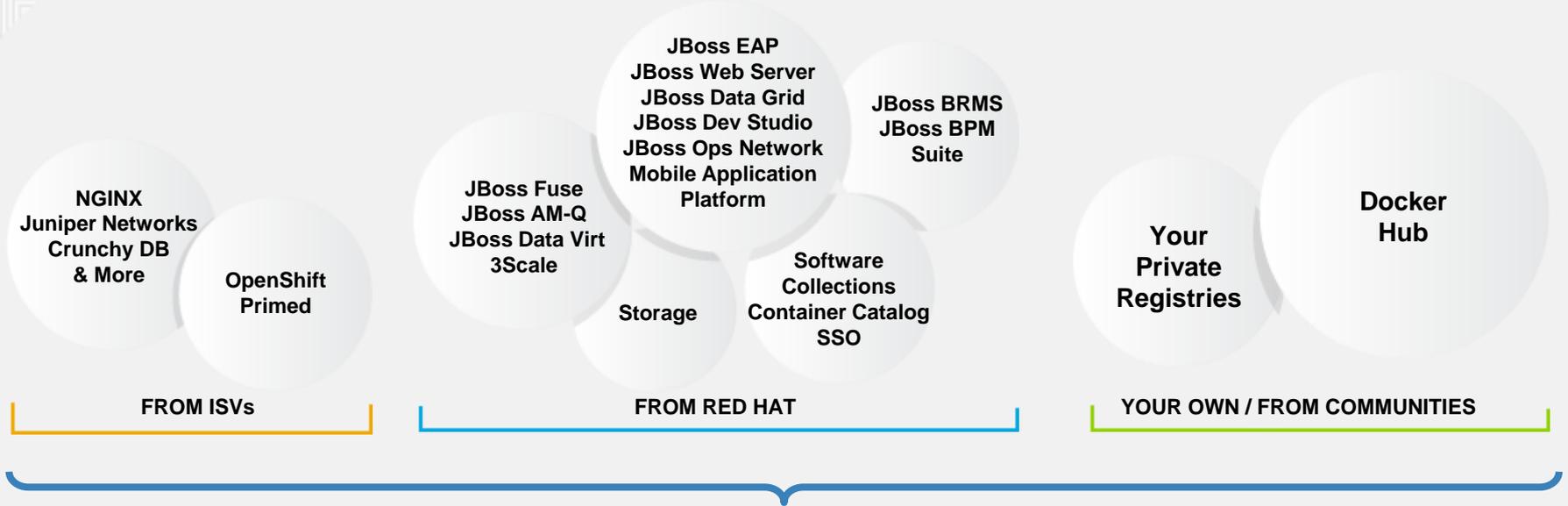
# PROVIDING ALL RED HAT MIDDLEWARE AS READY-TO-RUN CONTAINERS



# DEVOPS WITH RED HAT



# Application Services



**RED HAT®**  
**OPENSSHIFT**

# CONTAINER SOLUTIONS

## HOST

Enterprise grade lean operating system for running containers



## MANAGEMENT

Operational management of containers and infrastructure at scale



## PLATFORM

Automation of building, distributing, running and managing containers across hybrid infra



## STORAGE

Persistent storage for stateful containerized applications



# RED HAT CONTAINER SOLUTIONS

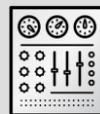
HOST

**RED HAT®**  
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ATOMIC HOST



MANAGEMENT

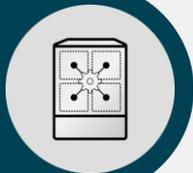
**RED HAT®**  
CLOUDFORMS



PLATFORM



**RED HAT®**  
OPENSHIFT



STORAGE

**RED HAT®**  
STORAGE



# WHO IS DOING THIS?

amadeus

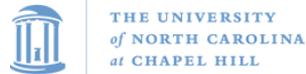
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Read more at [openshift.com/customers](https://openshift.com/customers)

# RED HAT OPEN INNOVATION LABS

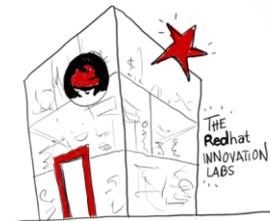
## MODERNIZE TRADITIONAL APPS

- Extend applications
- Optimize applications
- Scale applications
- Expose to orchestration

## INNOVATION ACCELERATED

## DEVELOP CONTEMPORARY APPS

- Develop on PaaS environment
- Transform how you design and develop apps
- Adopt lean and agile principles
- Master DevOps practices



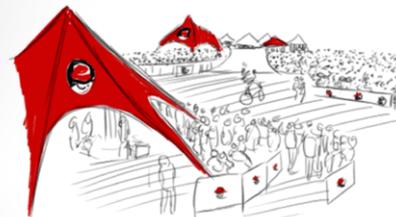
### COLLABORATION

Space to work,  
innovate, and discuss



### RESIDENCY

An eight-week accelerated  
teaming engagement



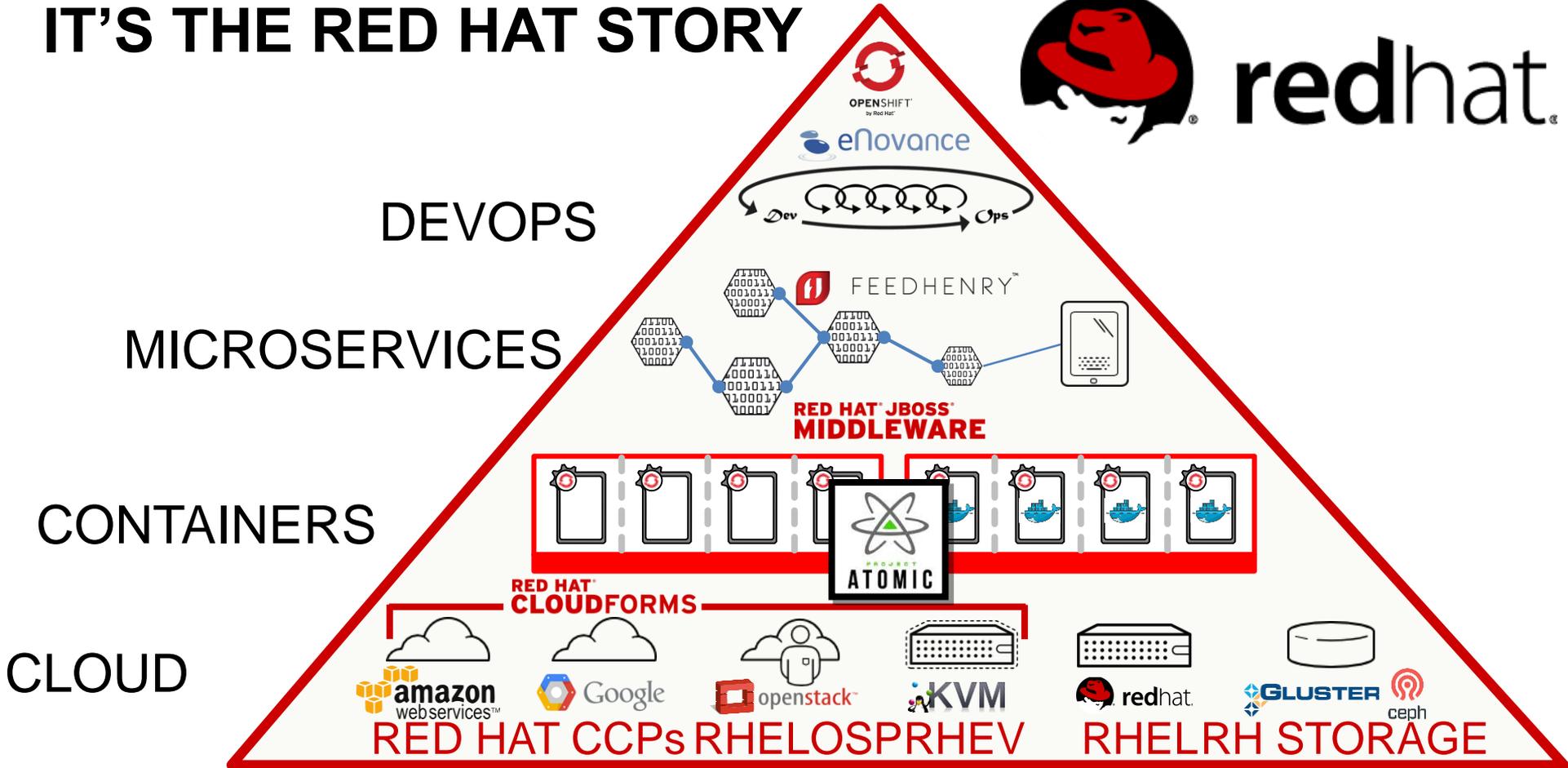
### COMMUNITY INCUBATION

Communities  
supporting innovation

# IT'S THE RED HAT STORY



redhat





**RED HAT**  
OPENSIFT

OPENSIFT  
COMMONS  
GATHERING

Berlin, Germany | March 28, 2017

Co-located with Cloud Native Computing Foundation's KubeCon EU and CloudNativeCon  
Berlin Congress Centre



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