



OpenShift on Microsoft Azure Workshop

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AGENDA

- 8:30 - 9:00** Breakfast
- 9:00 - 9:15** Introductions
- 9:15 - 9:45** Business Value of DevOps
- 9:45 - 10:15** OpenShift Overview and Architecture Review
- 10:15 - 10:30** Break
- 10:30 - 11:15** OpenShift on Azure Test Drive and Quick Start Overview
- 11:15 - 12:00** OpenShift Demos
- 12:00 - 12:45** Lunch
- 12:45 - 3:45** Hands on OpenShift on Azure Labs
- 3:45 - 4:00** Wrap-up and Q&A

BUSINESS VALUE OF DEVOPS

DevOps Adoption Rate 2017

78%

Source: RightScale 2017 State of the Cloud Report

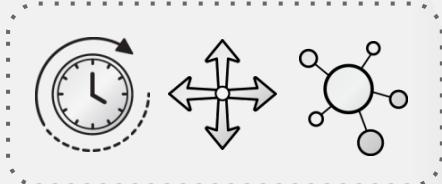
THE PROBLEM

Applications require complicated installation and integration every time they are deployed leading to

- Slow service delivery
- Reduced service quality
- Frequent down times



THE PROBLEM



DEVELOPERS



I.T.
OPERATIONS

GENERAL DISTRIBUTION

THE SOLUTION

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

- Consistent env and tools
- Predictable building blocks
- Faster deployment

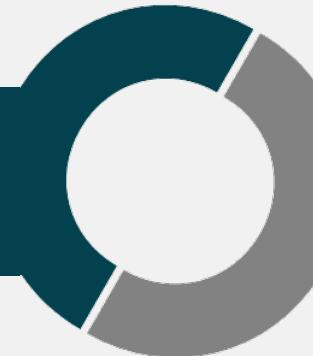


WHAT ARE CONTAINERS?

It Depends Who You Ask

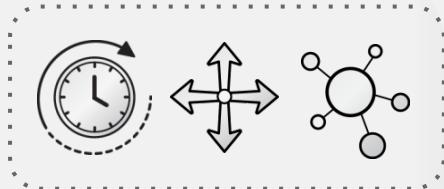
INFRASTRUCTURE

APPLICATIONS

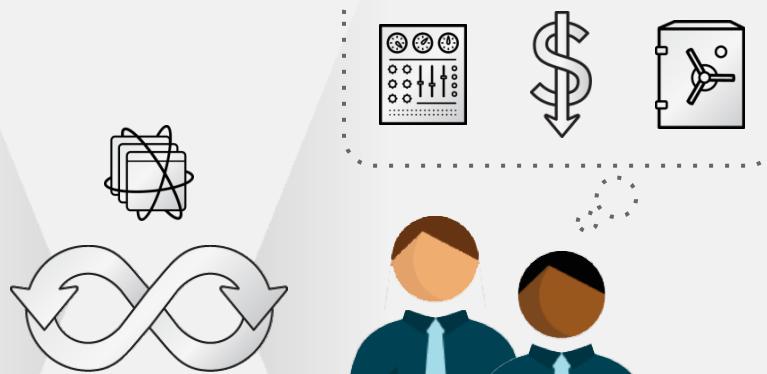


- Sandboxed application processes on a shared Linux OS kernel
- Simpler, lighter, and denser than virtual machines
- Portable across different environments
- Package my application and all of its dependencies
- Deploy to any environment in seconds and enable CI/CD
- Easily access and share containerized components

THE SOLUTION



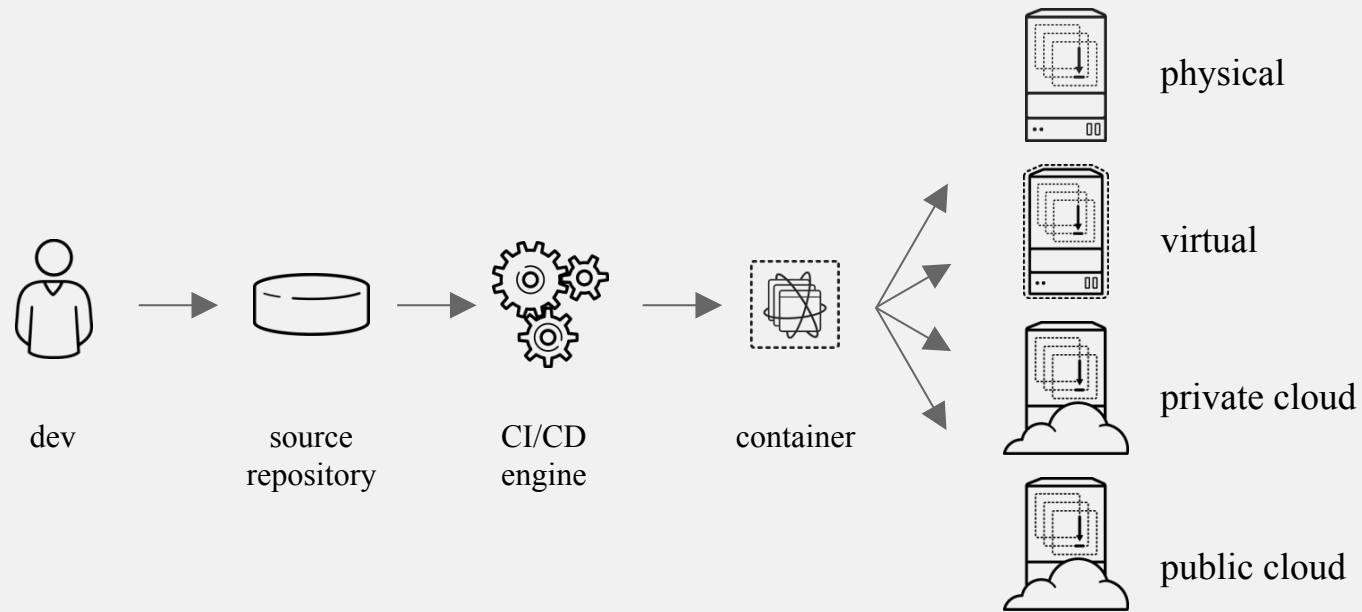
DEVELOPERS



I.T.
OPERATIONS

GENERAL DISTRIBUTION

DEVOPS WITH CONTAINERS





Containerized Apps
on Docker Hub

900K

Image Pulls
on Docker Hub

12B

Source: DockerCon 2017 Keynote

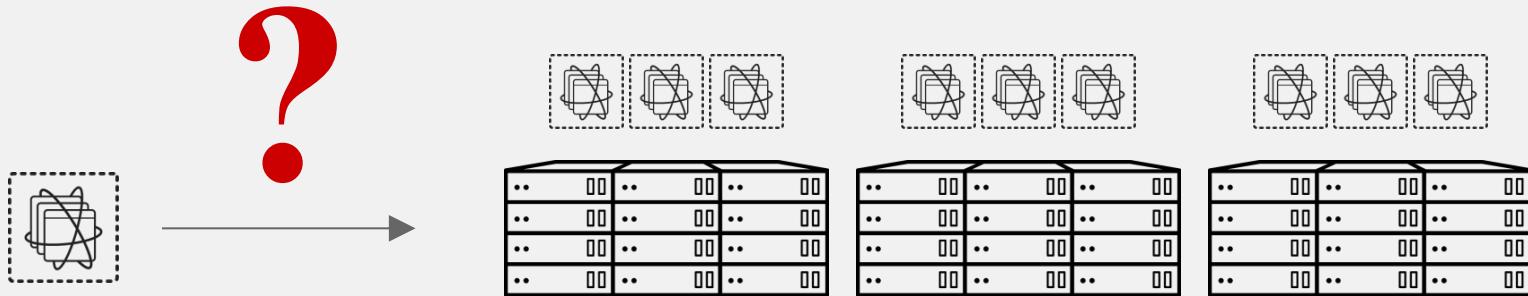
Container Adoption Rate in Production

35%

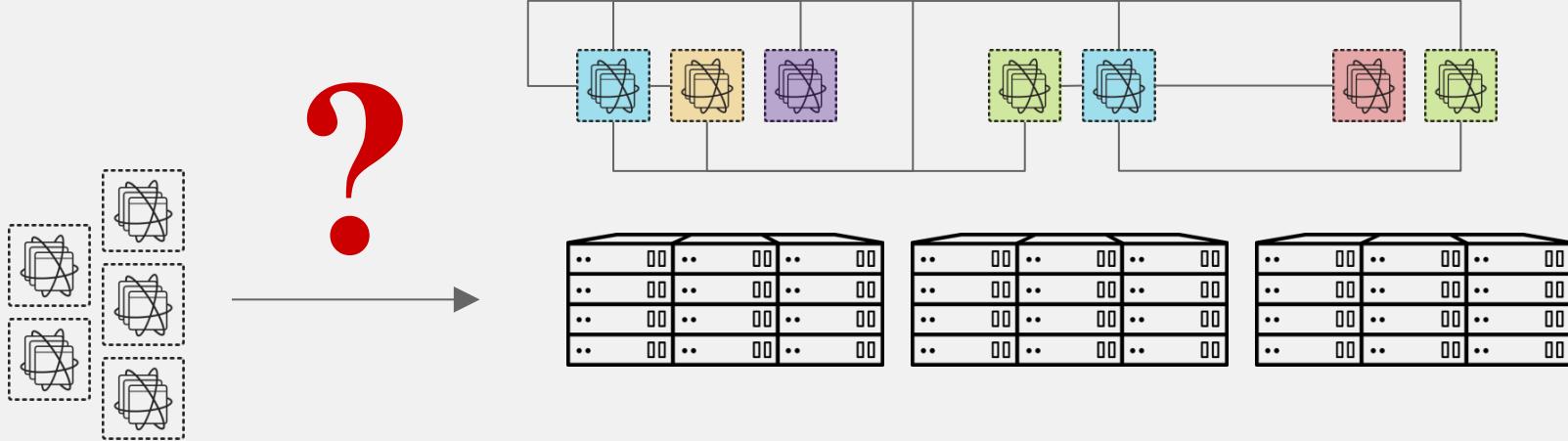
Source: RightScale 2017 State of the Cloud Report

Why the Difference?

DEVOPS WITH CONTAINERS



DEVOPS WITH CONTAINERS



WE NEED MORE THAN JUST CONTAINERS

Scheduling

Decide where to deploy containers

Lifecycle and health

Keep containers running despite failures

Discovery

Find other containers on the network

Monitoring

Visibility into running containers

Security

Control who can do what

Scaling

Scale containers up and down

Persistence

Survive data beyond container lifecycle

Aggregation

Compose apps from multiple containers

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®
ENTERPRISE LINUX®
ATOMIC HOST

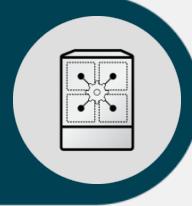


MANAGEMENT

RED HAT®
CLOUDFORMS

PLATFORM

 **RED HAT®**
OPENSIFT



STORAGE

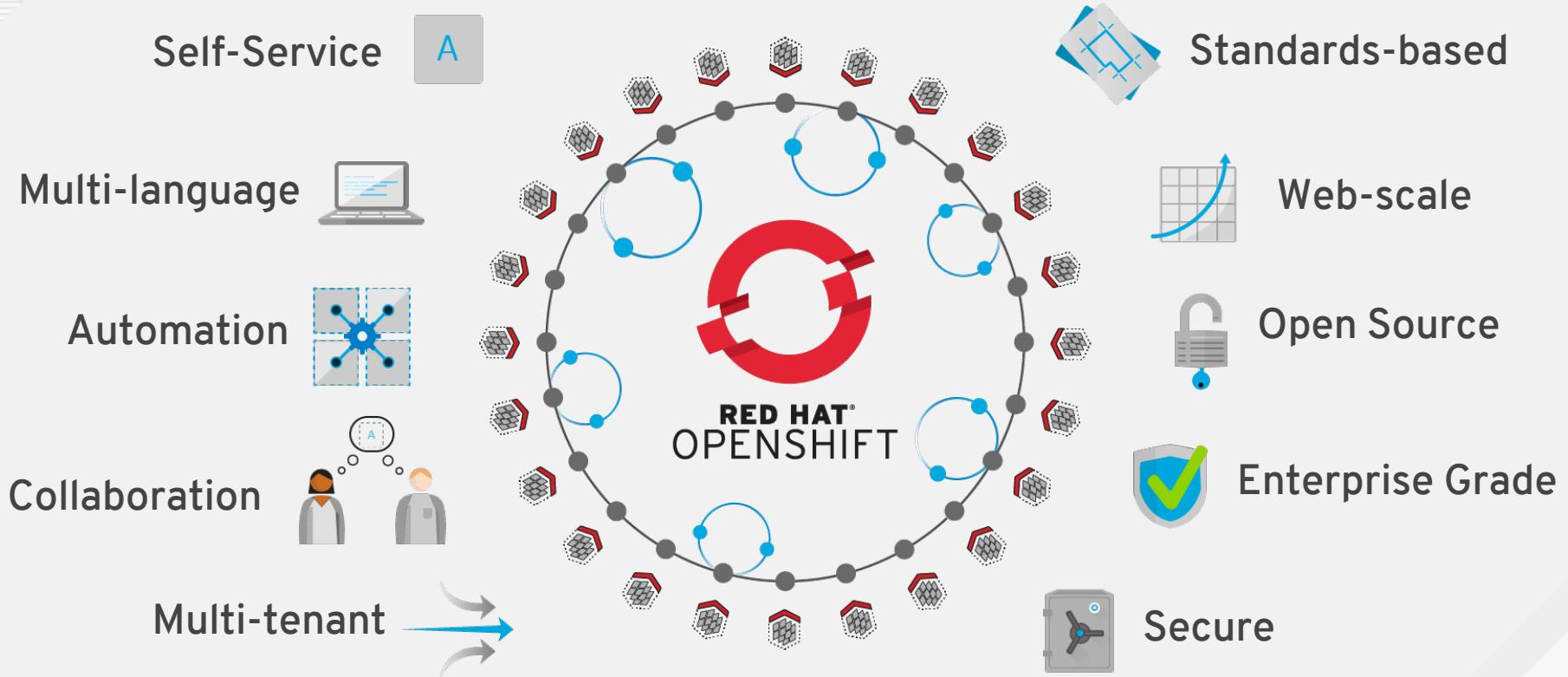
RED HAT®
STORAGE

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

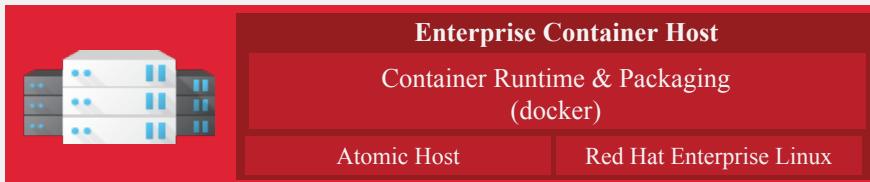




OPENSHIFT OVERVIEW AND ARCHITECTURE REVIEW

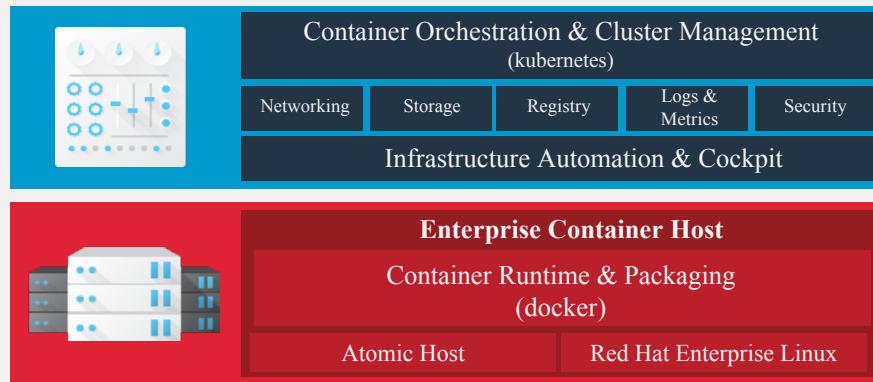


OPENShift CONTAINER PLATFORM



Trusted by Fortune Global 500 companies

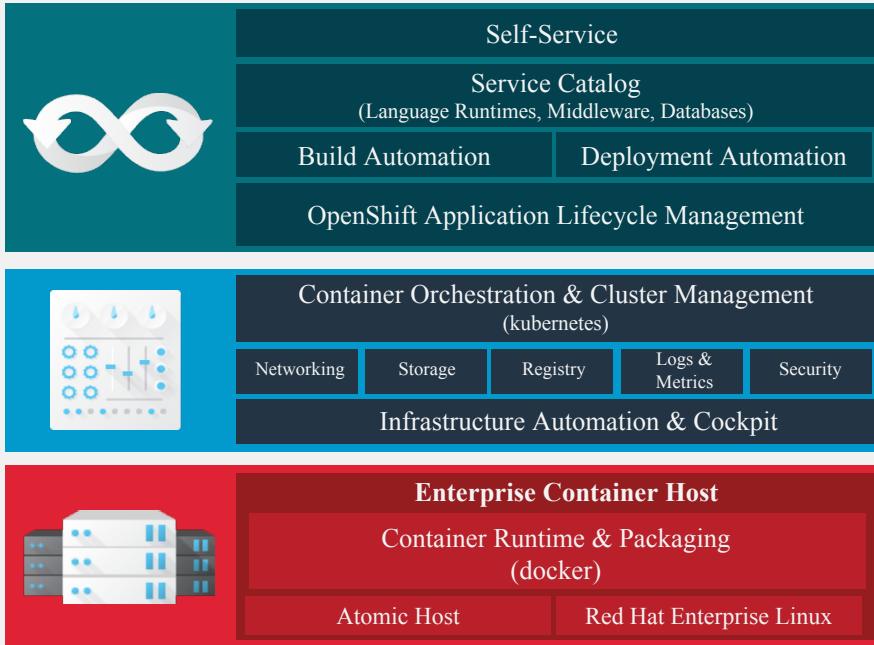
OPENSHIFT CONTAINER PLATFORM



**Enterprise Kubernetes++
container orchestration**

**Trusted by Fortune Global 500
companies**

OPENSHIFT CONTAINER PLATFORM

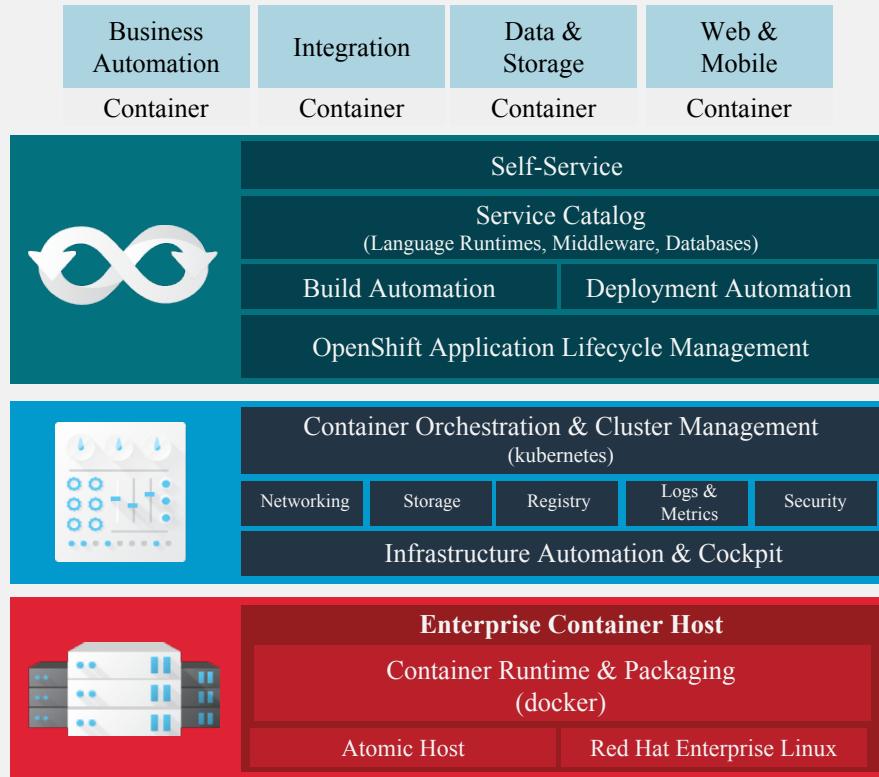


Developer Experience

Enterprise Kubernetes++
container orchestration

Trusted by Fortune Global 500
companies

OPENSHIFT CONTAINER PLATFORM



Traditional, stateful, and cloud-native apps

Developer Experience

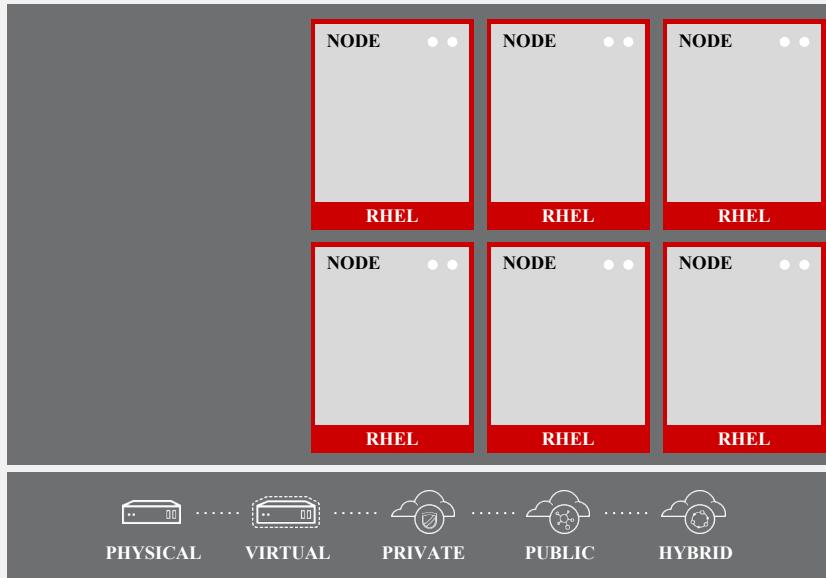
Enterprise Kubernetes++
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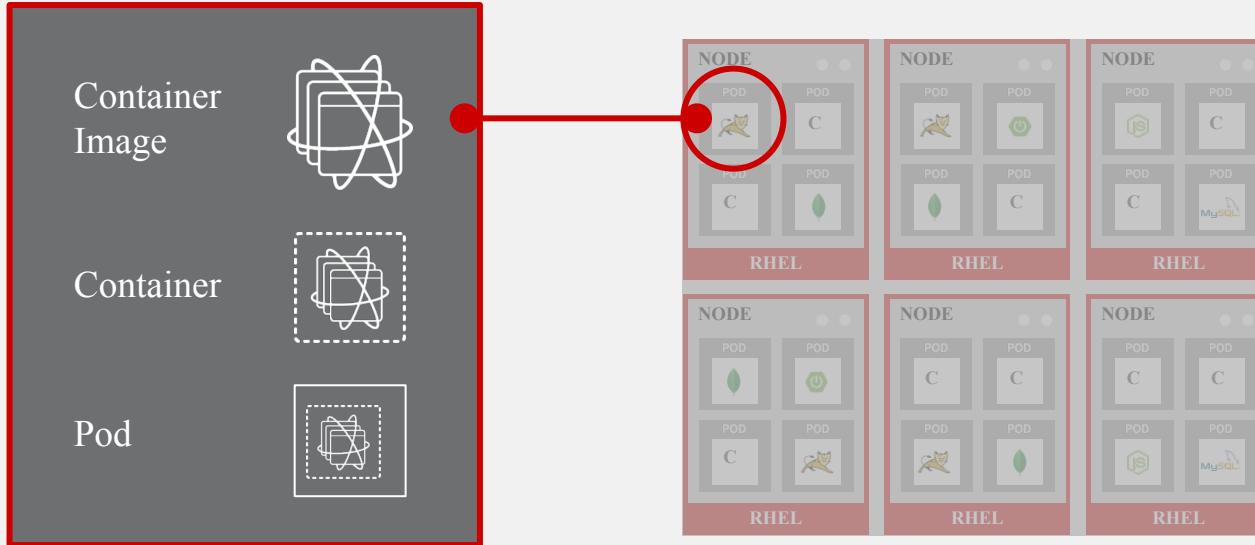
YOUR CHOICE OF INFRASTRUCTURE



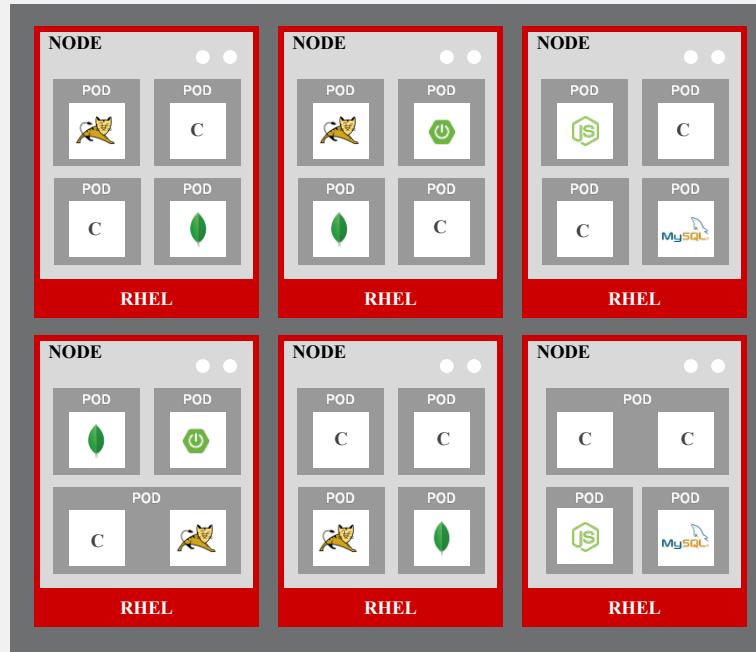
NODES RHEL INSTANCES WHERE APPS RUN



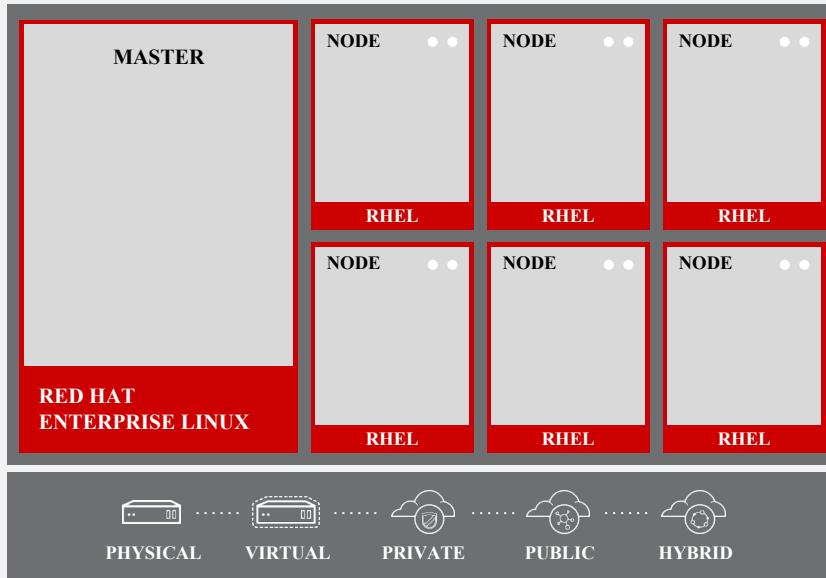
APPS RUN IN CONTAINERS



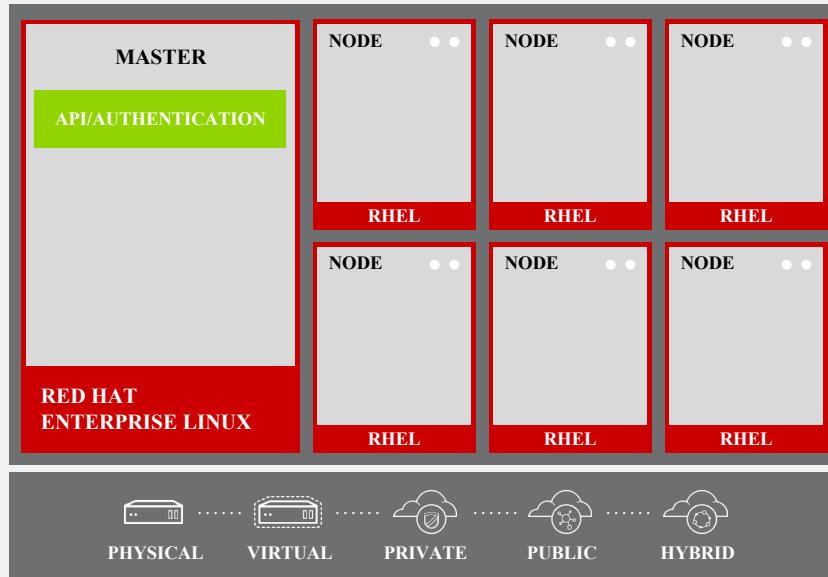
PODS ARE THE UNIT OF ORCHESTRATION



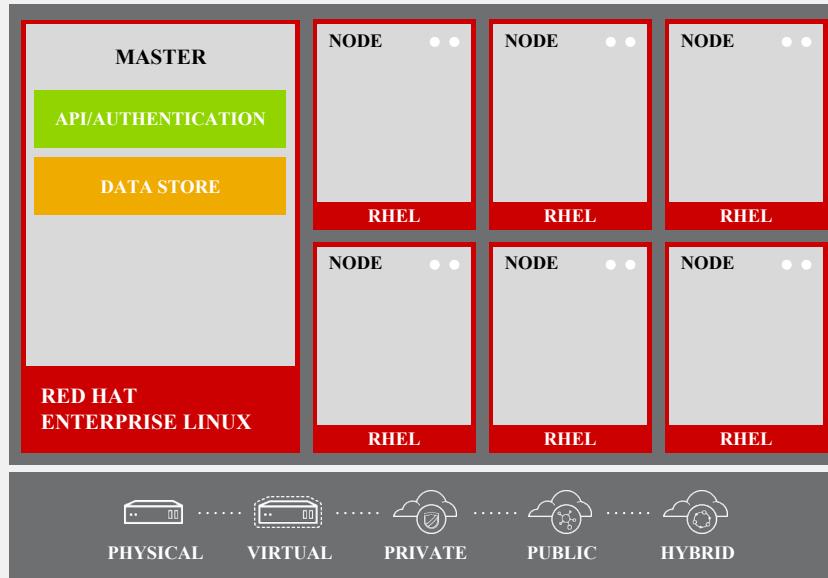
MASTERS ARE THE CONTROL PLANE



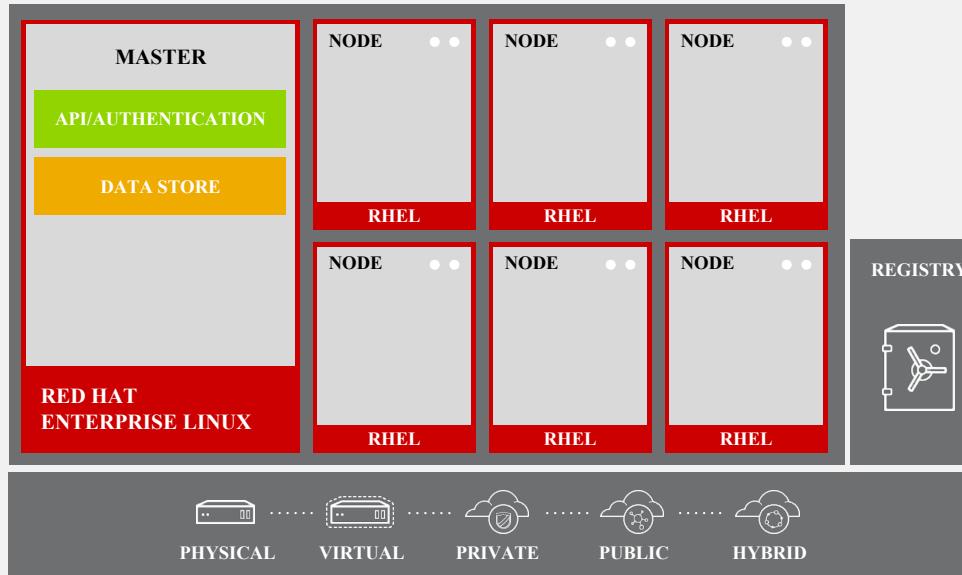
API AND AUTHENTICATION



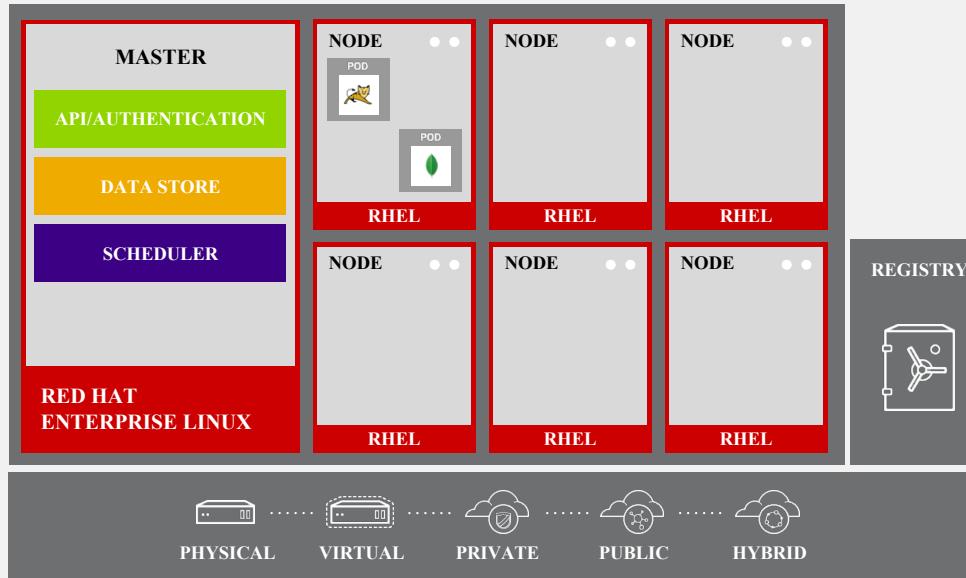
DESIRED AND CURRENT STATE



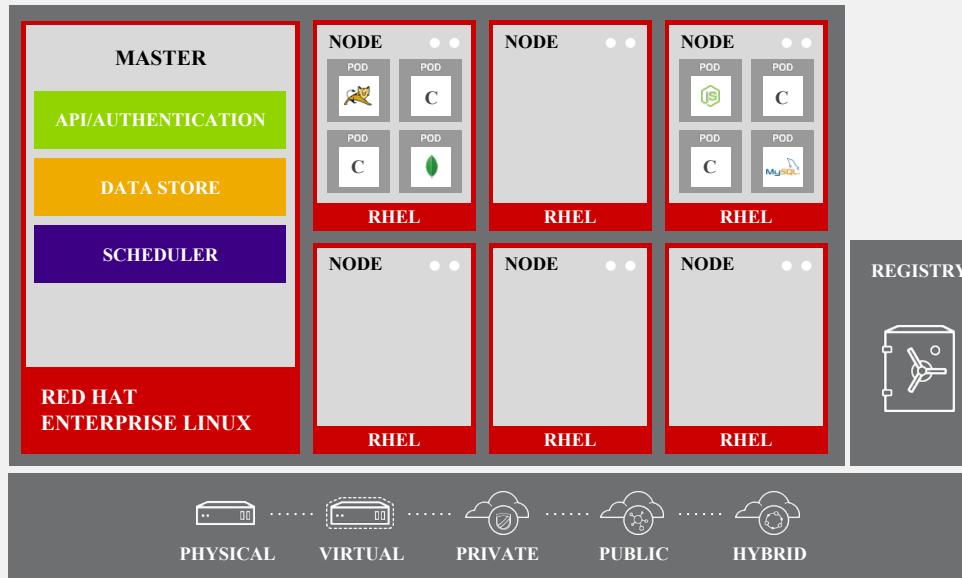
INTEGRATED CONTAINER REGISTRY



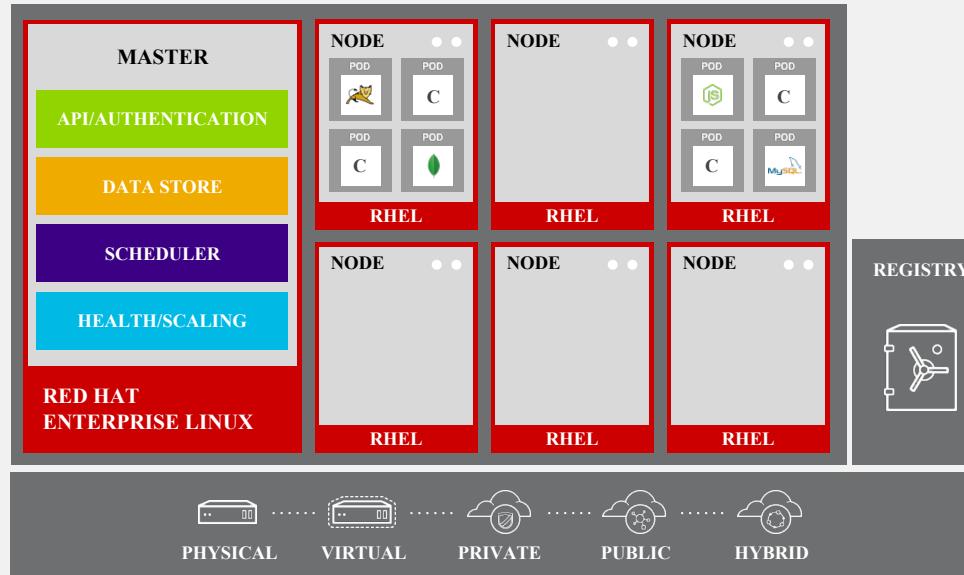
ORCHESTRATION AND SCHEDULING



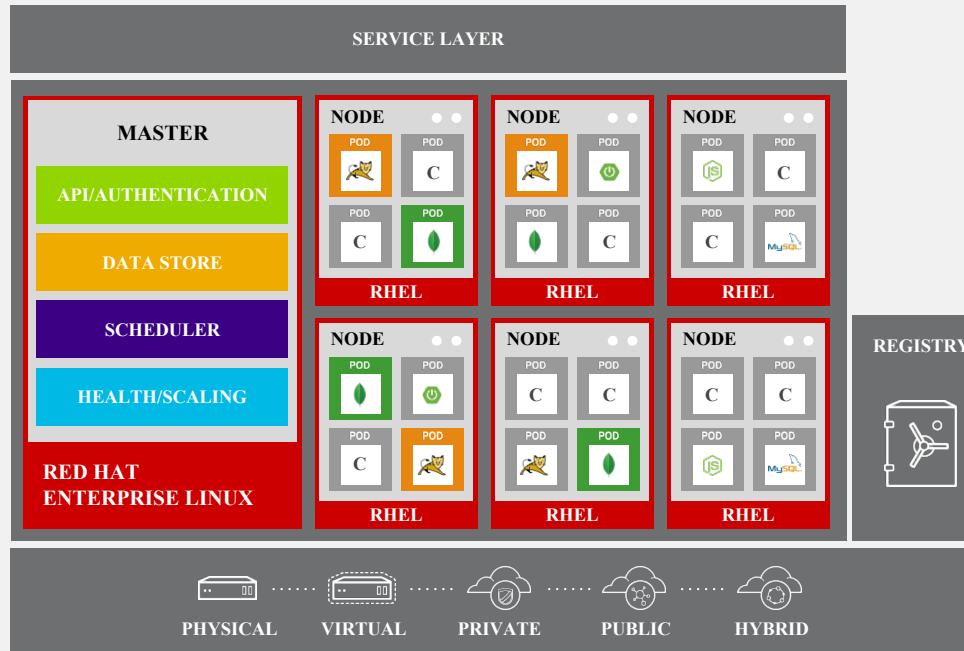
PLACEMENT BY POLICY



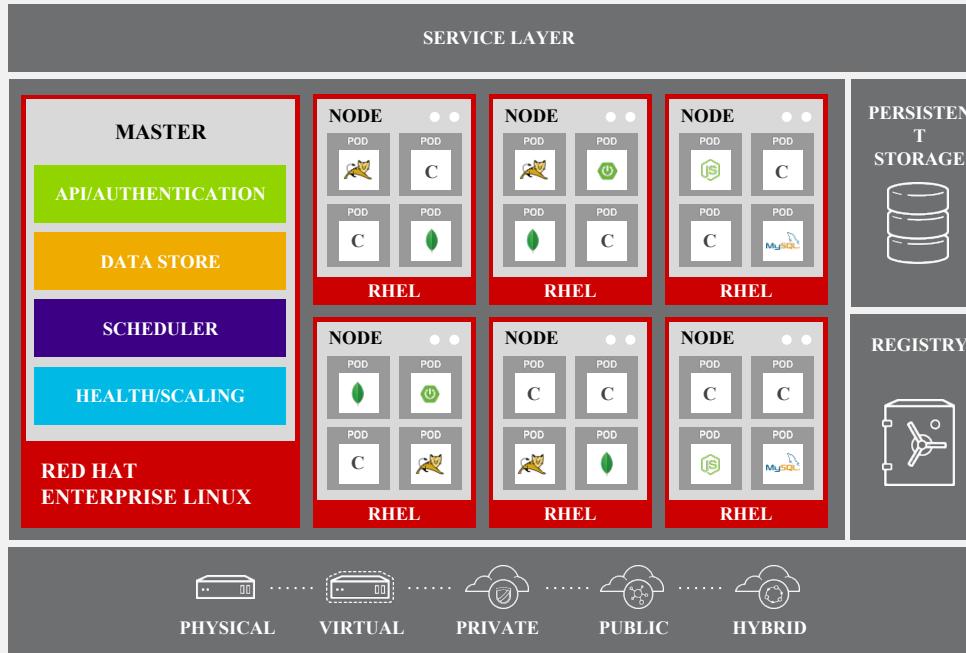
AUTOSCALING PODS



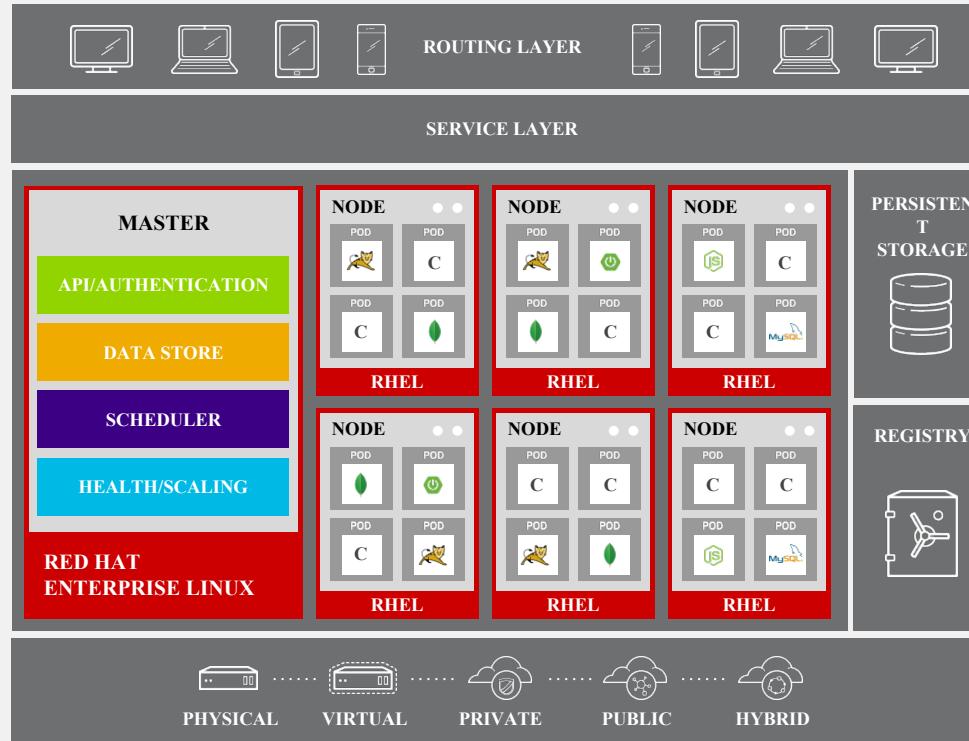
SERVICE DISCOVERY



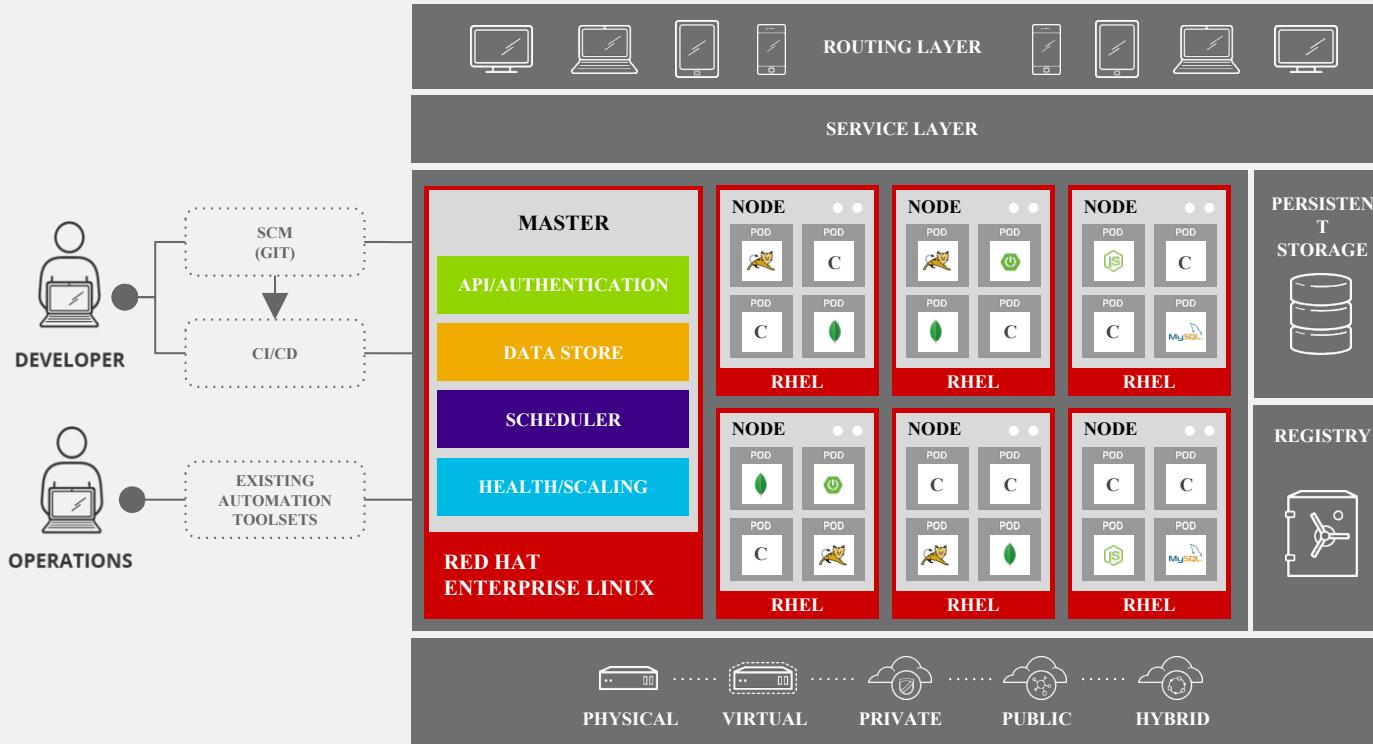
PERSISTENT DATA IN CONTAINERS



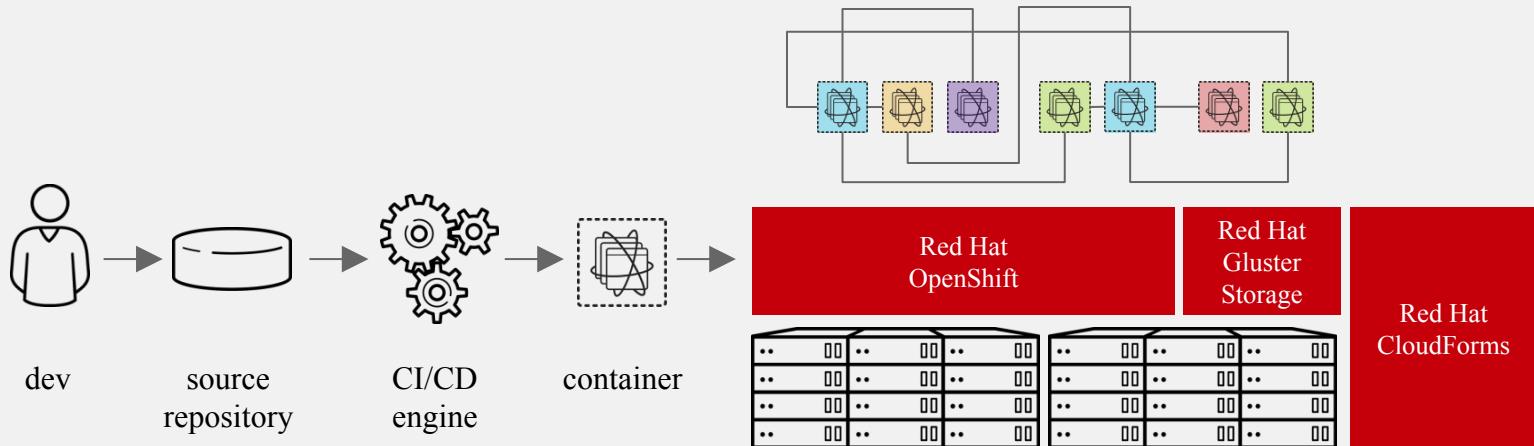
ROUTING AND LOAD-BALANCING



ACCESS VIA WEB, CLI, IDE AND API



DEVOPS WITH CONTAINERS



Let's take a break!



OPENSHIFT ON AZURE QUICK START AND TEST DRIVE OVERVIEW

Deployment Options

- Ansible Tower and OpenShift
 - Test Drive
 - Azure Marketplace
 - Custom Deployment
 - Azure Resource Manager (ARM)
 - Ansible Playbooks
 - OpenShift Dedicated
- .NET Core and SQL Server on Linux
 - RHEL VM
 - OpenShift



OPENSHIFT DEMO



redhat.

THANK YOU



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facebook.com/redhatinc



linkedin.com/company/red-hat



twitter.com/RedHatNews



youtube.com/user/RedHatVideos

TRUE POLYGLOT PLATFORM

PHP	Python	Java	NodeJS	Perl	Ruby	.NET Core	Third-party Language Runtimes
MySQL	PostgreSQL	MongoDB	Redis	...and virtually any docker image out there!			
Apache HTTP Server	nginx	Varnish	Phusion Passenger	Tomcat	...and virtually any docker image out there!		
Spring Boot	Wildfly Swarm	Vert.x	JBoss Web Server	JBoss EAP	JBoss A-MQ	JBoss Fuse	Third-party Middleware
3SCALE API mgmt	JBoss BRMS	JBoss BPMS	JBoss Data Virt	JBoss Data Grid	RH Mobile	RH SSO	Third-party Middleware

THE BUSINESS VALUE OF DEVOPS WITH OPENSHIFT

8mo Payback on investment

66% Faster app delivery

40% Infrastructure savings

20% IT Staff productivity improvement

530% ROI over 5 years

\$1.3M Avg annual business benefits per 100 dev

Source: The Business Value of Red Hat OpenShift, IDC, September 2016
<https://www.openshift.com/sites/default/files/idc-business-value-of-openshift.pdf>

WHO IS DOING THIS?

amadeus

Pioneer

MACQUARIE

BARCLAYS



ca
technologies



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

KeyBank The KeyBank logo consists of the word "KeyBank" in black and a red key icon with a white cross on it.

BBVA

PAYCHEX®

T-Systems

UTS

Wharton
UNIVERSITY of PENNSYLVANIA

read more at openshift.com/customers

AN FSI CUSTOMER REDUCED DEPLOYMENT TIMES FROM WEEKS TO DAYS



FINANCIAL SERVICES

SOFTWARE AND SERVICES

Red Hat Consulting

Red Hat OpenStack

Red Hat OpenShift

Red Hat JBoss Middleware

CHALLENGE

- Decrease time to market for new features and functionality
- Create a homogeneous application platform
- Remove barriers to rapid, iterative development

SOLUTION

- Built a push-button developer stack based on a PaaS architecture and fully integrated to maximize continuous delivery
- Established common templates for application and MW creation
- Established DevOps and streamline delivery workflow

BENEFITS

- Reduced deployment times from weeks to days
- Improved developer efficiency and removed lead-time via self-service
- Facilitated more robust production deployments

A LEADING HEALTH INSURANCE PROVIDER RE-INVENTS ITSELF WITH DEVOPS



INSURANCE SERVICES

SOFTWARE AND SERVICES

Red Hat Consulting
Red Hat OpenShift
Red Hat Fuse

CHALLENGE

- At risk of missing ACA-mandated deadlines due long delivery cycles
- Seeking new revenue streams by selling data on a subscription basis

SOLUTION

- Delivered architecture for building, testing, and delivering microservices
- Built out a DevOps methodology for application delivery
- Circuit breakers and switches for zero-downtime deployments
- Automatic scale-up and scale-down of services via OpenShift

BENEFITS

- Reduce production delivery cycle from 9+ months to 3 weeks
- Reduced time-to-market from idea to delivery, which leads to greater experimentation with new ideas
- On-demand infrastructure utilization increases efficiency and reduces cost

RED HAT OPEN INNOVATION LABS

MODERNIZE TRADITIONAL APPS

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



COLLABORATION

Space to work,
innovate, and discuss

INNOVATION ACCELERATED



RESIDENCY

An eight-week accelerated teaming
engagement

DEVELOP CONTEMPORARY APPS

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



COMMUNITY INCUBATION

Communities
supporting innovation