

OpenSource Days
8/6/2016
Zagreb, Croatia

Red Hat Cloud Ecosystem

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BUSINESS UNDER PRESSURE

INCREASING EXPECTATIONS AND COMPETITION



LINE OF BUSINESS

Leverage applications to do
business more efficiently

**Deliver faster with low
incremental cost**

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INCREASING EXPECTATIONS AND COMPETITION



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Leverage applications to do
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**Deliver faster with low
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DEVELOPERS

Deliver applications faster

**Speed up coding and react
on business
requirements/changes
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BUSINESS UNDER PRESSURE

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LINE OF BUSINESS

Leverage applications to do business more efficiently

Deliver faster with low incremental cost



DEVELOPERS

Deliver applications faster

Speed up coding and react on business requirements/changes quickly



OPERATIONS

Provide reliable infrastructure
?! and platform

Beat public cloud providers in scalability, reliability, and cost

IT Must Evolve to Stay Ahead of Demands

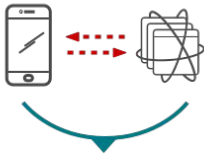
Development Process

Waterfall



Application Architecture

Monolithic



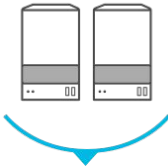
Deployment & Packaging

Physical Servers



Application Infrastructure

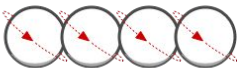
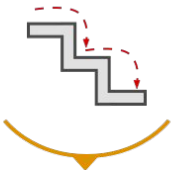
Datacenter



IT Must Evolve to Stay Ahead of Demands

Development Process

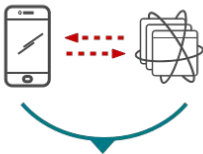
Waterfall



Agile

Application Architecture

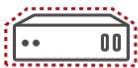
Monolithic



N-Tier

Deployment & Packaging

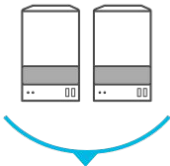
Physical Servers



Virtual Servers

Application Infrastructure

Datacenter

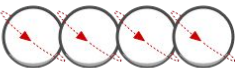


Hosted

IT Must Evolve to Stay Ahead of Demands

Development Process

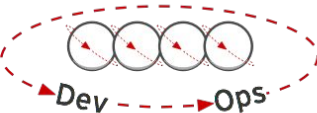
Waterfall



Agile

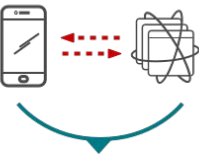


DevOps



Application Architecture

Monolithic



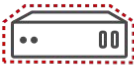
N-Tier

Microservices



Deployment & Packaging

Physical Servers



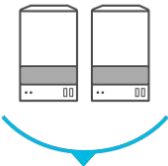
Virtual Servers

Containers



Application Infrastructure

Datacenter



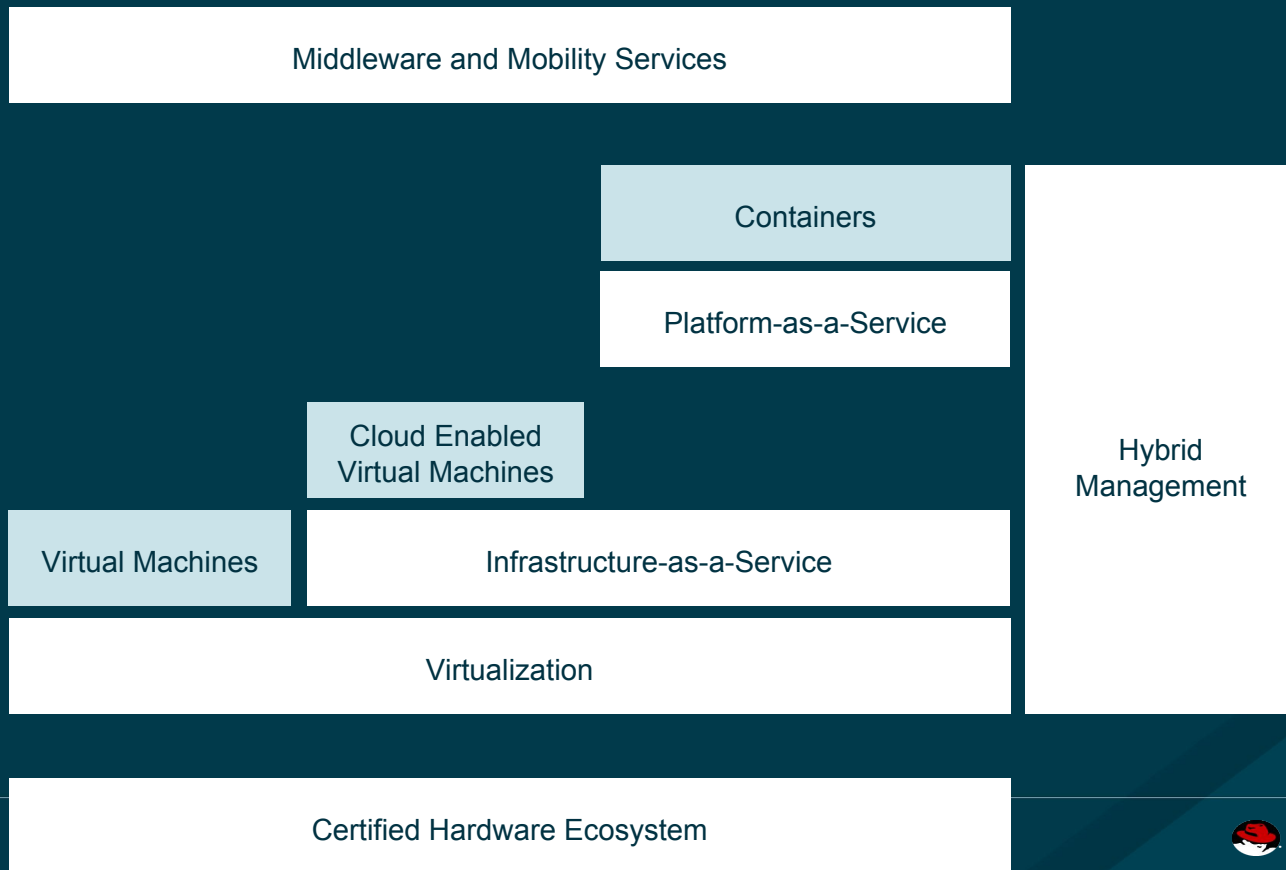
Hosted

Cloud

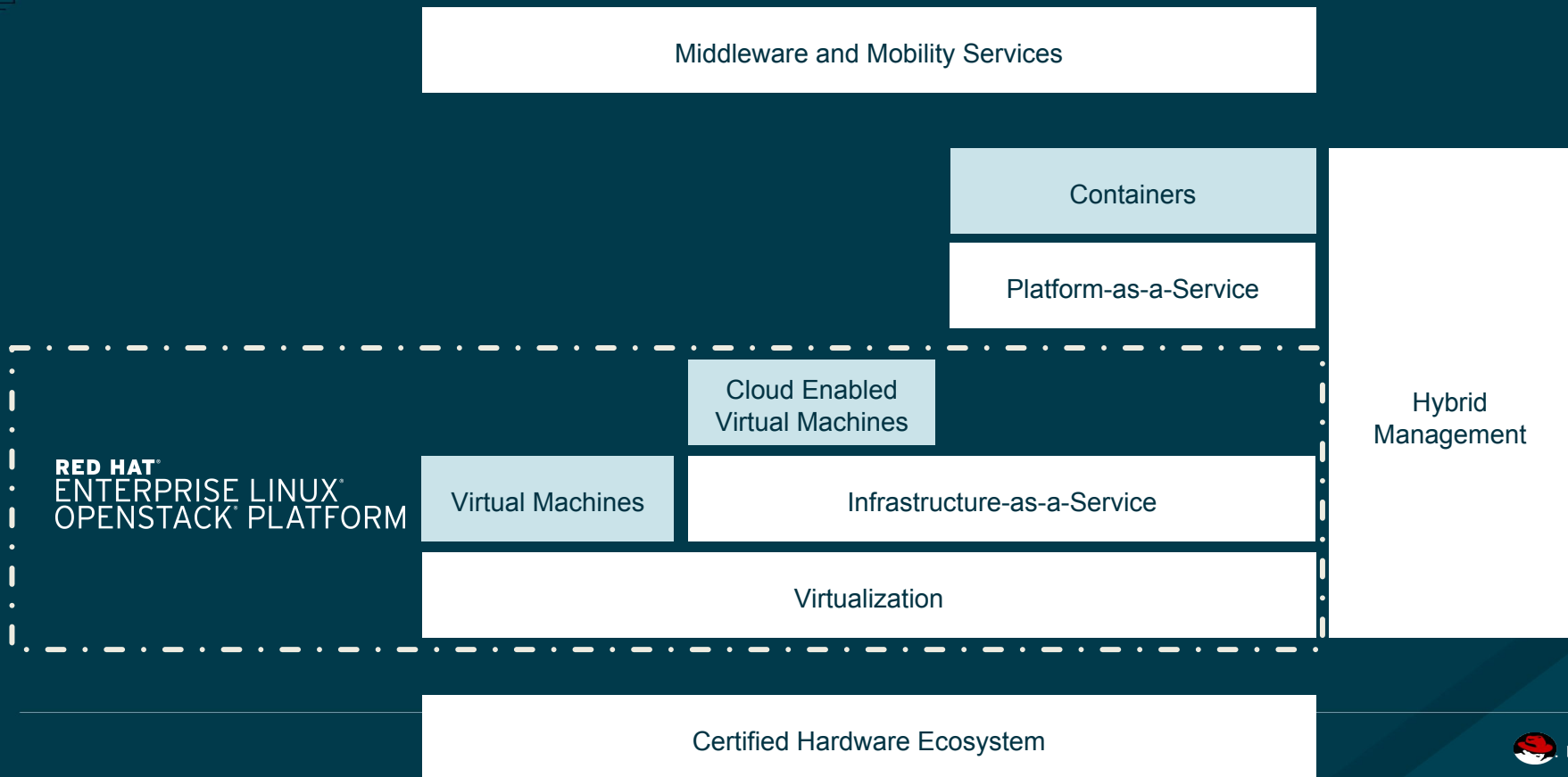




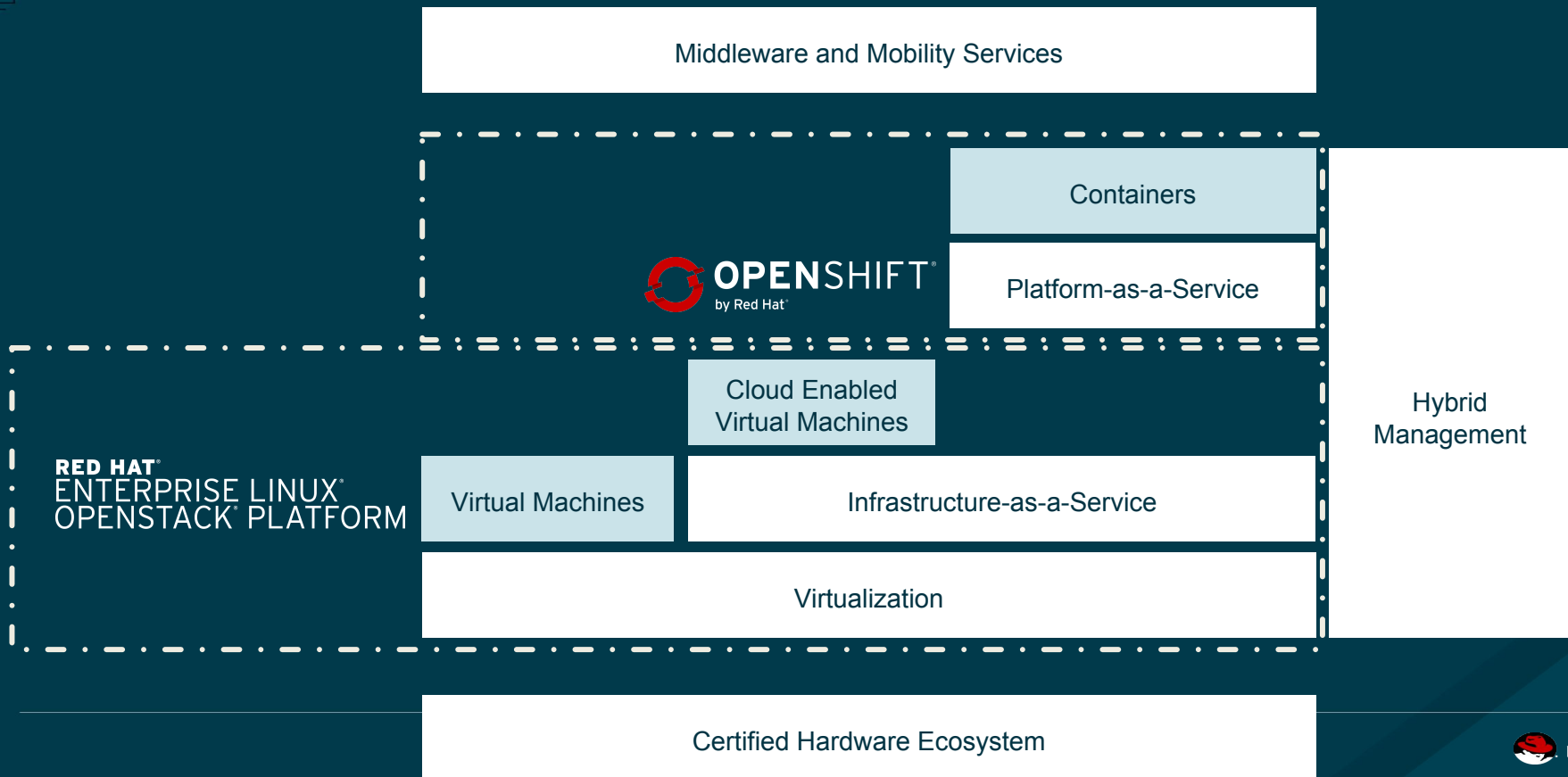
RED HAT CLOUD ECOSYSTEM



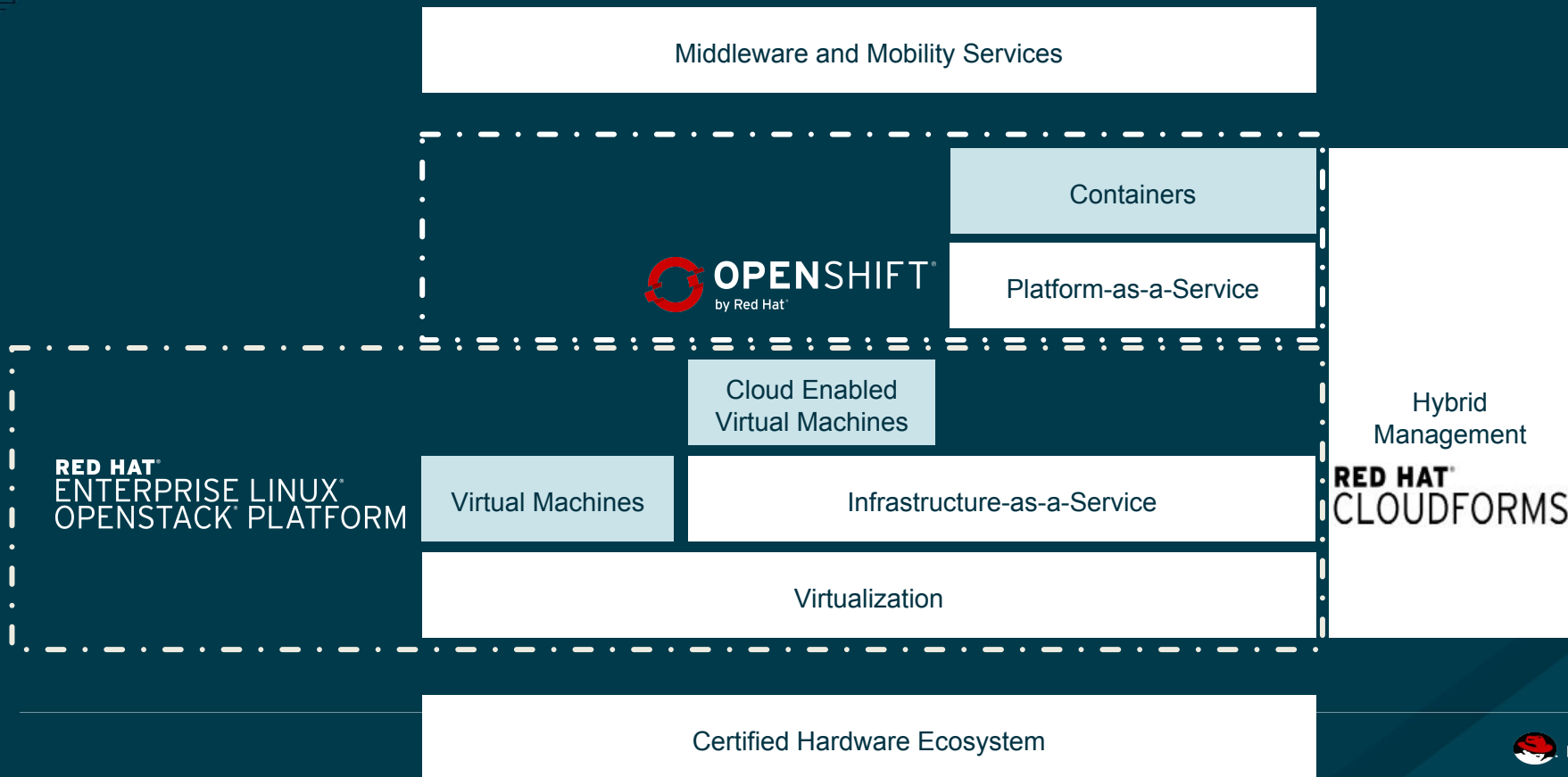
RED HAT CLOUD ECOSYSTEM



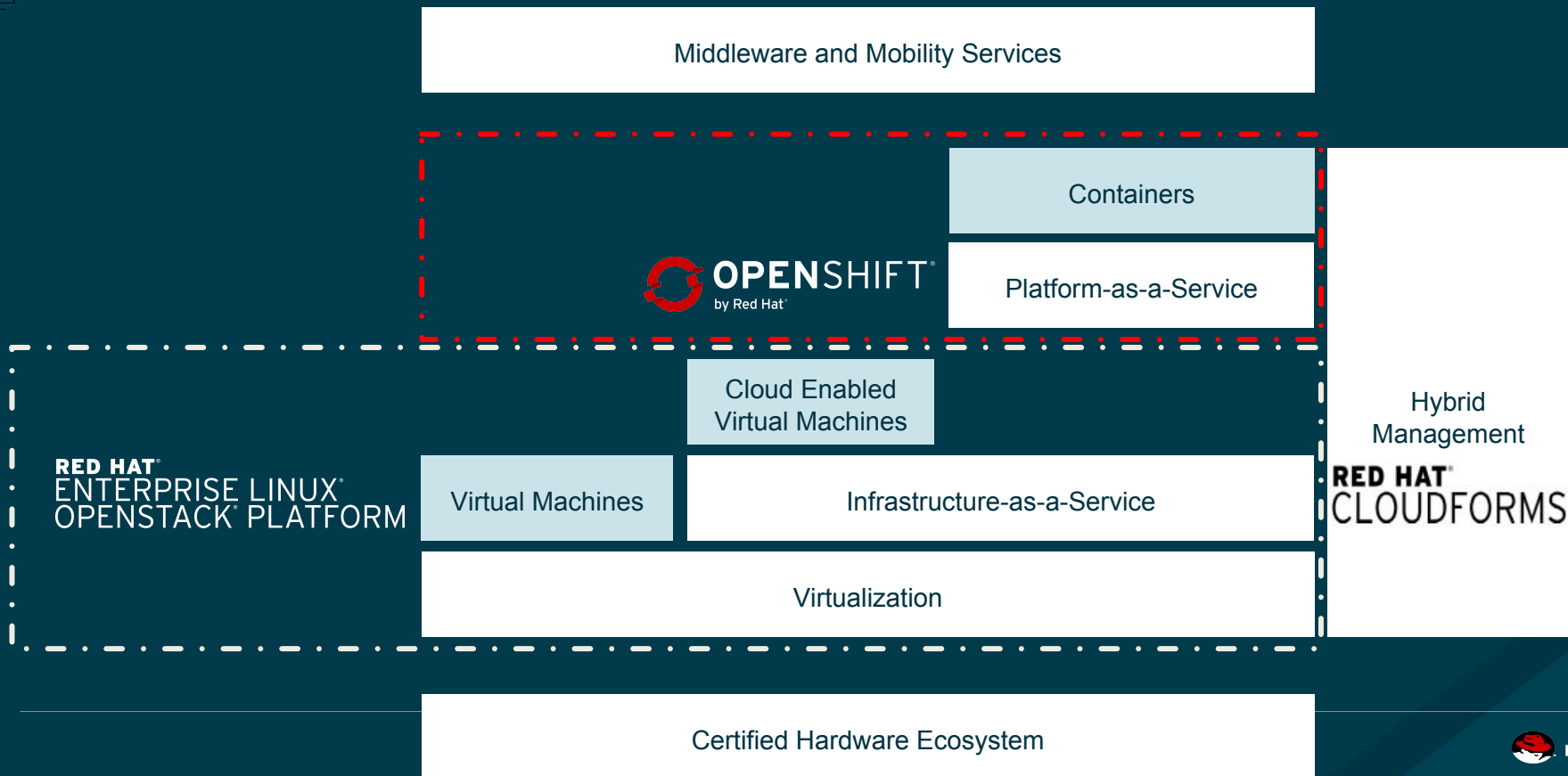
RED HAT CLOUD ECOSYSTEM



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RED HAT CLOUD ECOSYSTEM





redhat

Red Hat OpenShift

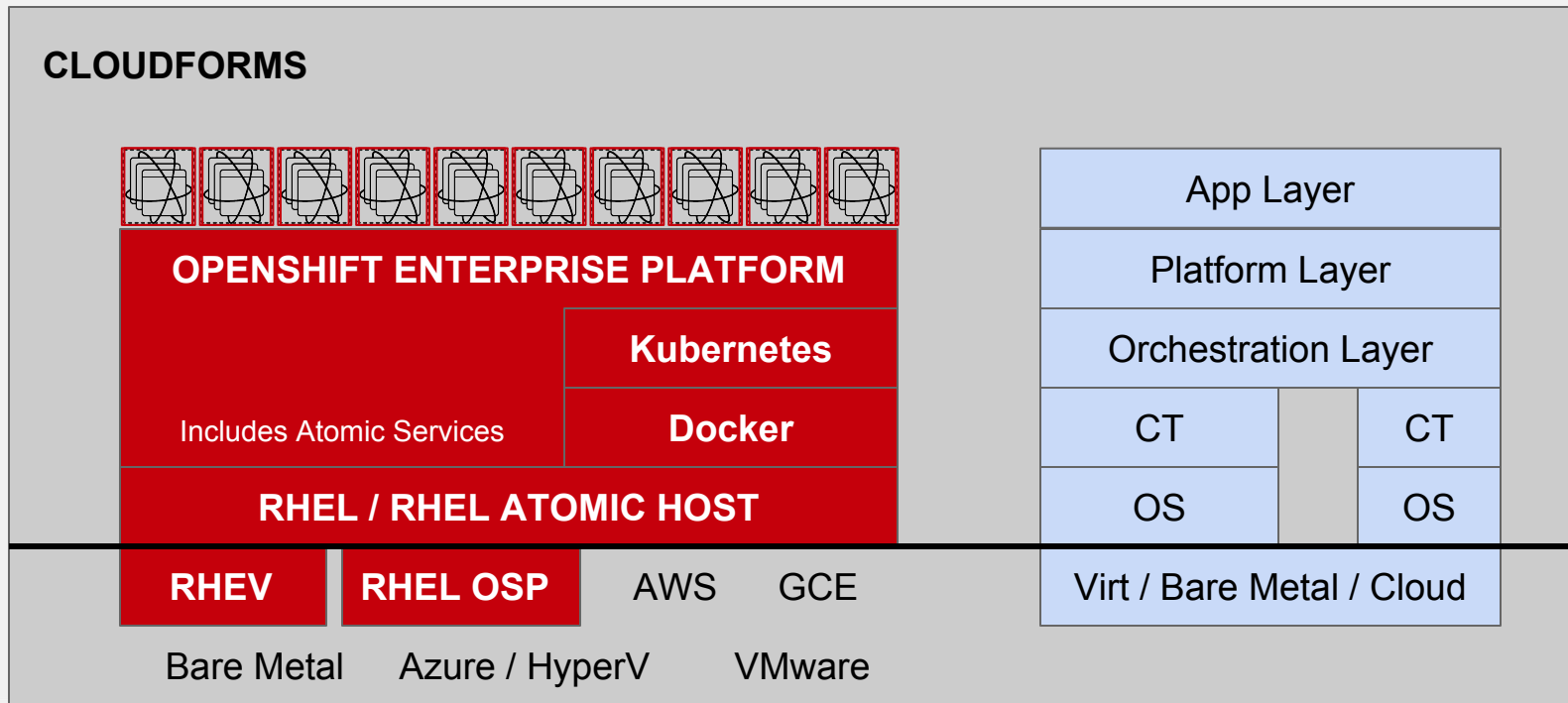
PaaS

Red Hat OpenShift, Two perspectives: DevOps tool & Container Platform



Red Hat Container Stack

Functional Layers, Container Technology and Red Hat Products



Building Blocks

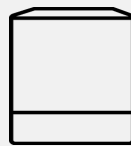
Terms and Functions in the Container World - Let's be specific



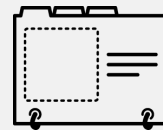
**CONTAINER
PROCESS**



**CONTAINER
IMAGE**

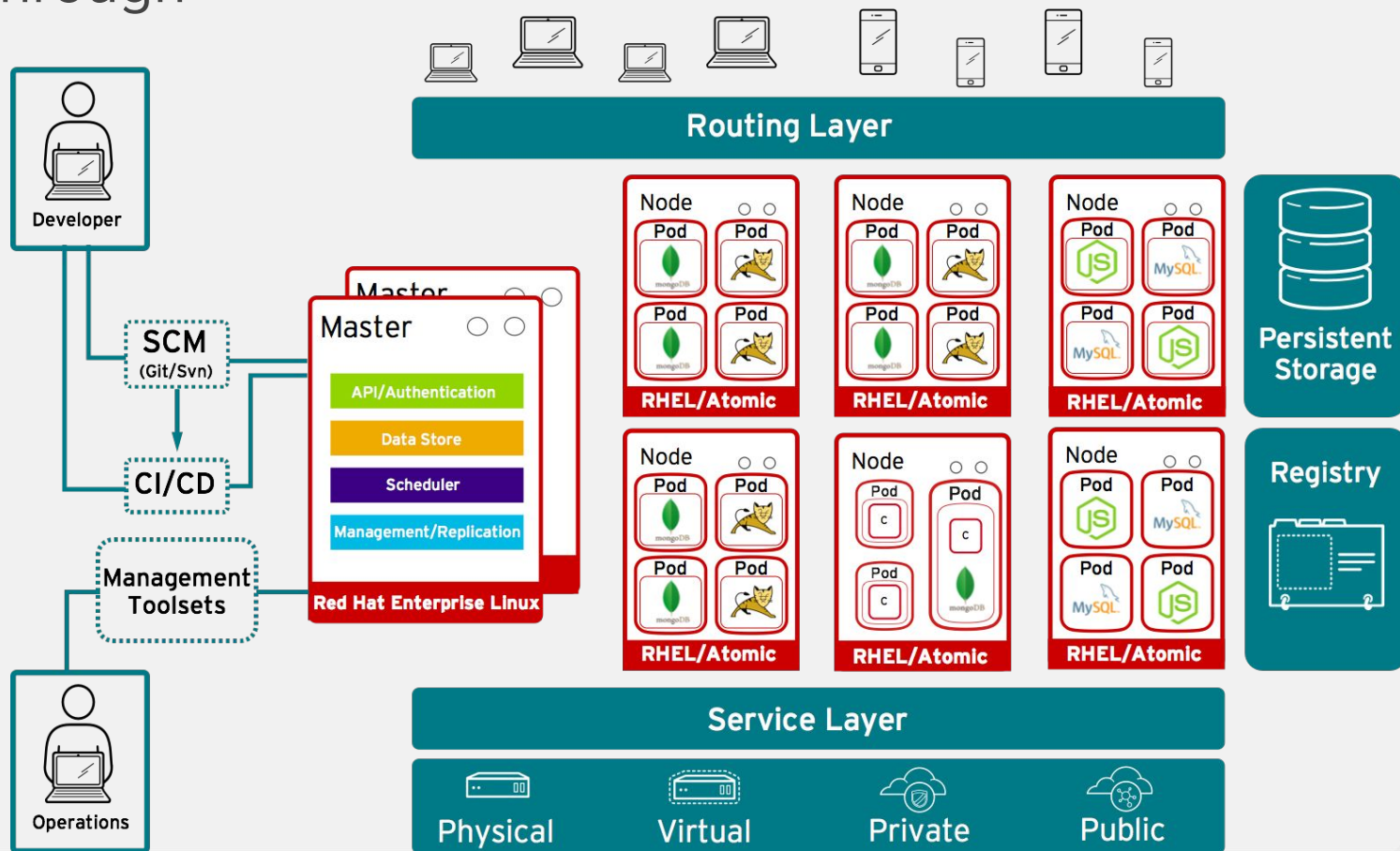


**CONTAINER
HOST**



REGISTRY

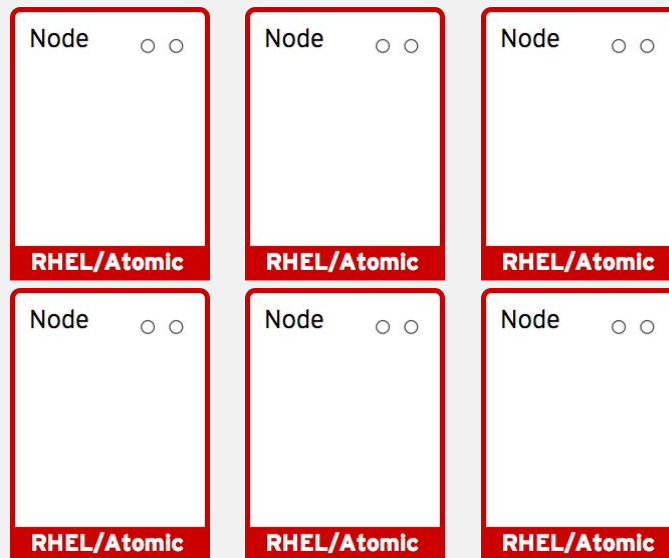
Walkthrough



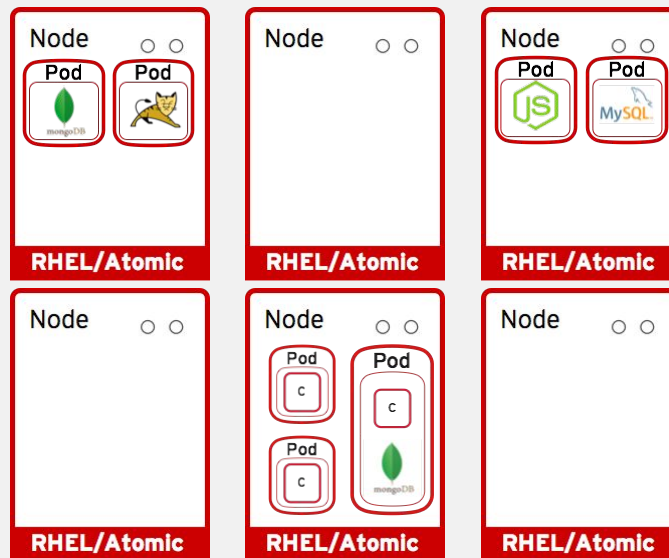
OpenShift runs on your choice of infrastructure



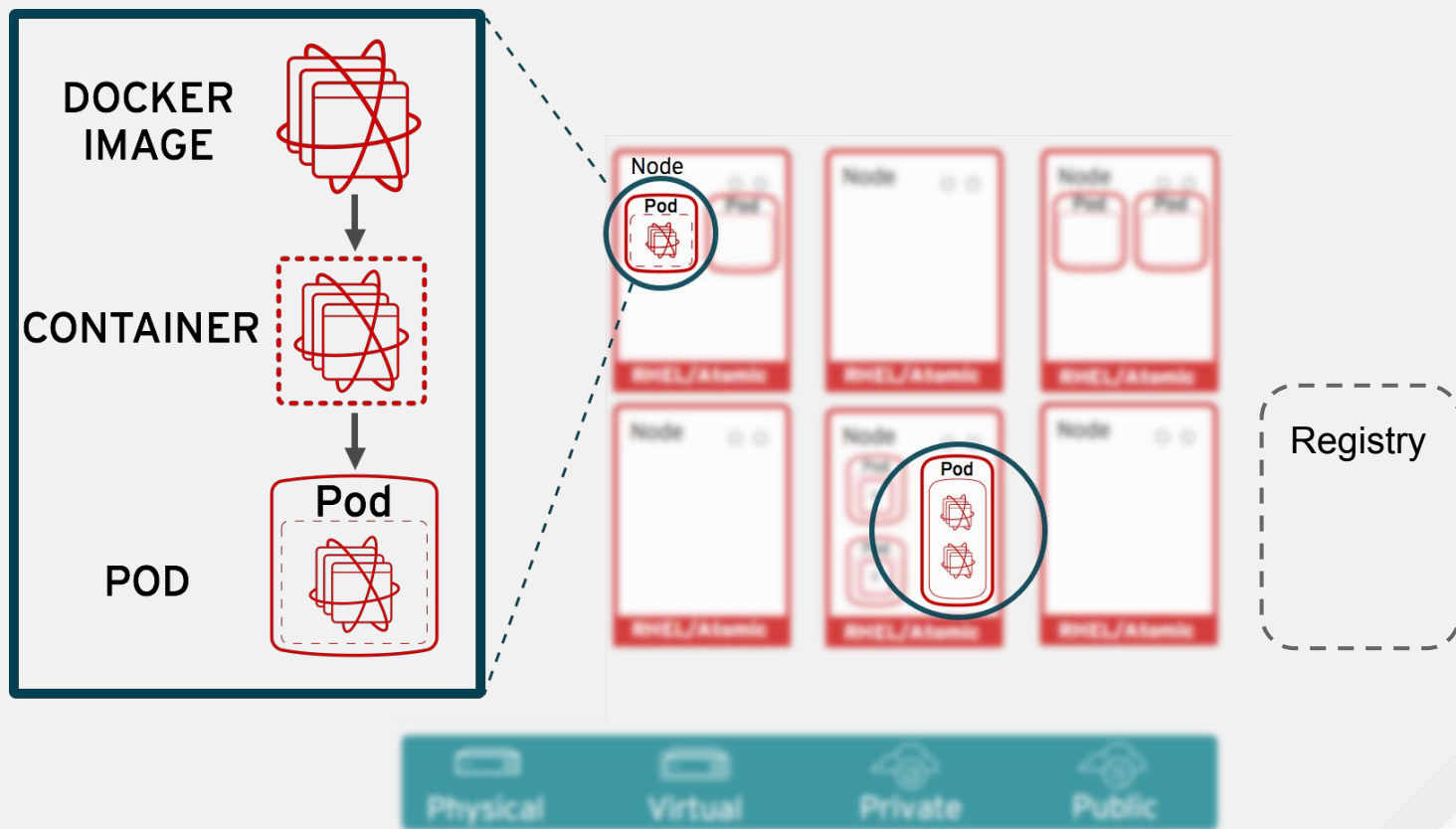
Nodes are instances of RHEL where apps will run



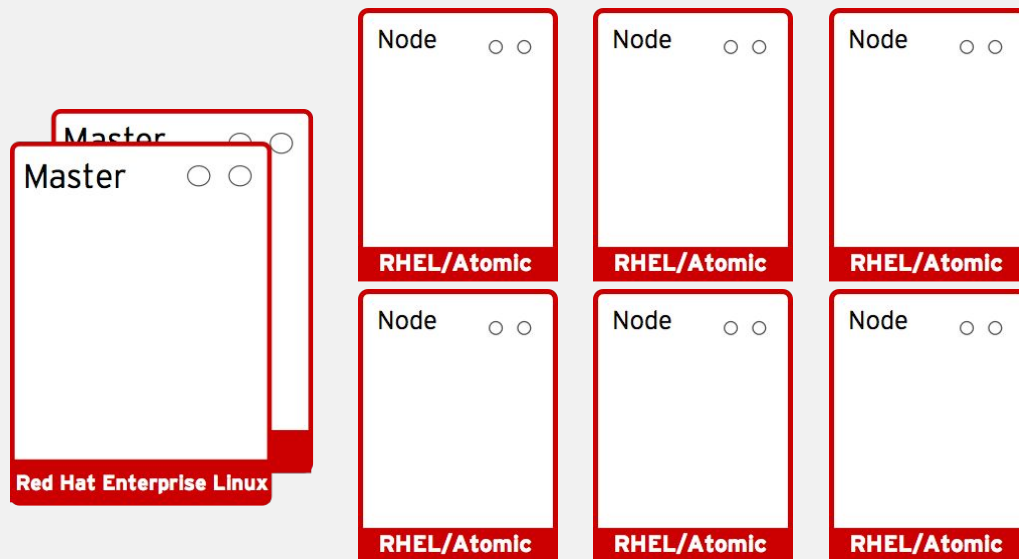
App services run in docker containers on each node



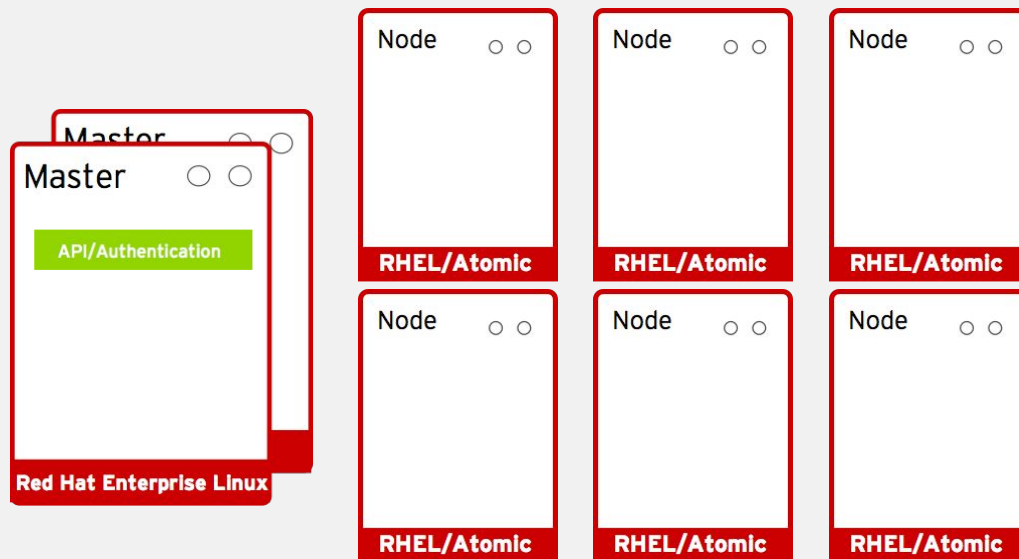
Pods run one or more docker containers as a unit



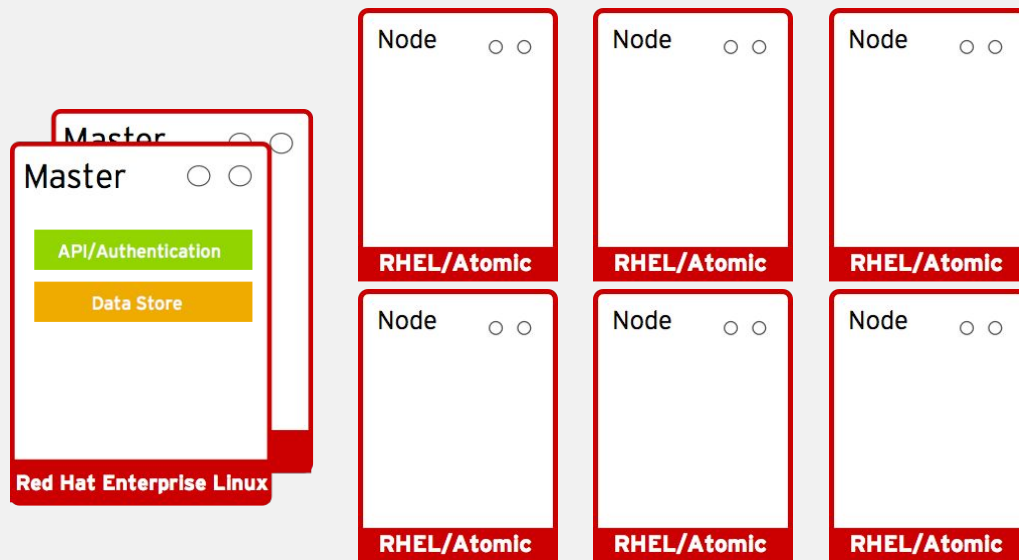
Masters leverage kubernetes to orchestrate nodes / apps



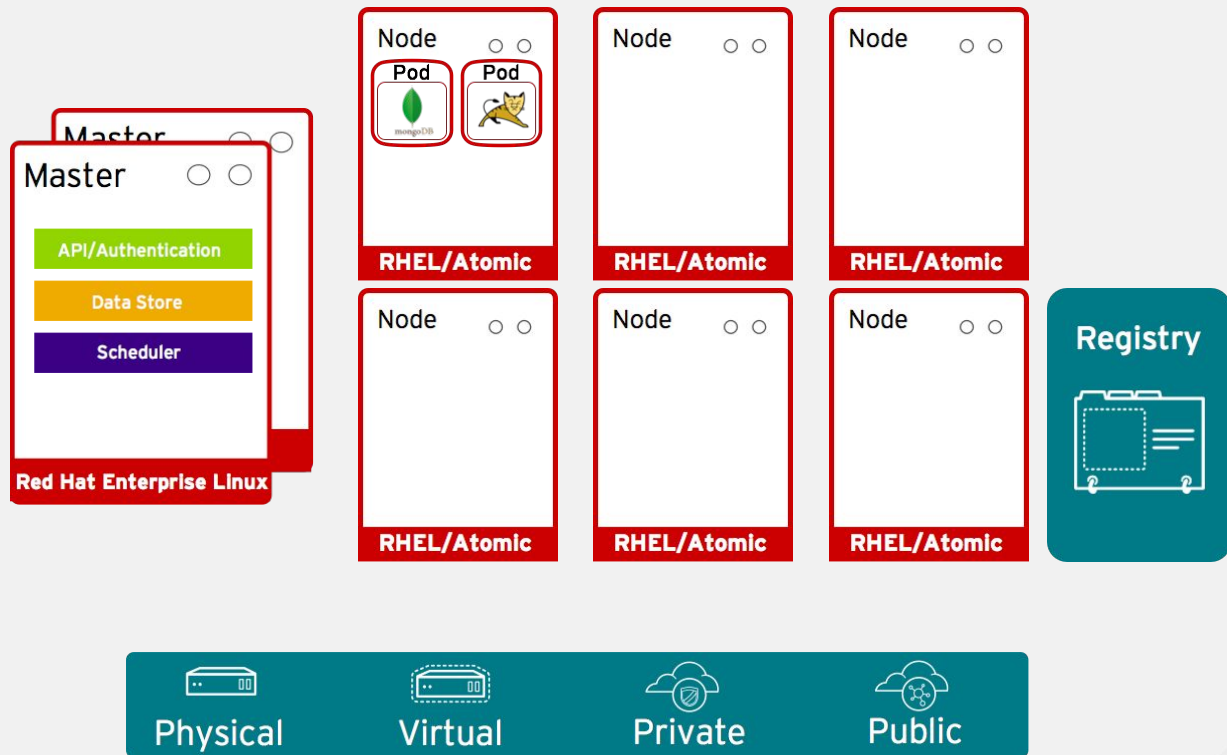
Master provides authenticated API for users & clients



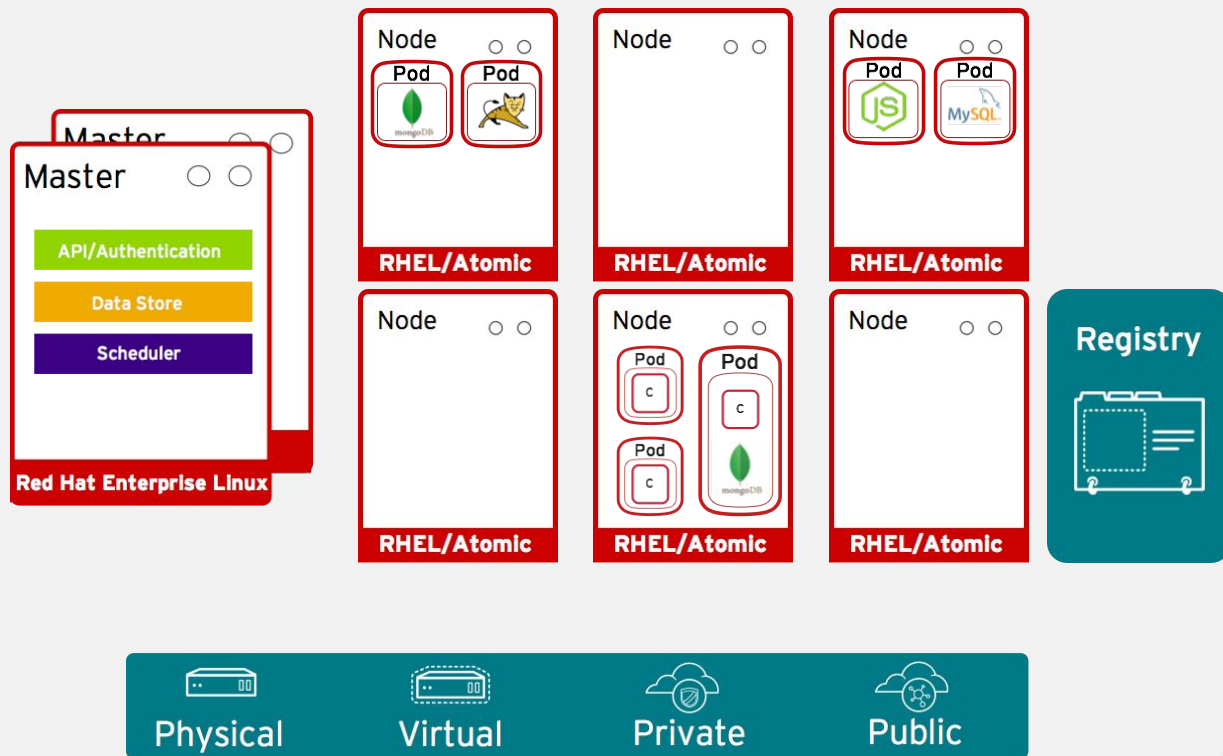
Master uses etcd key-value data store for persistence



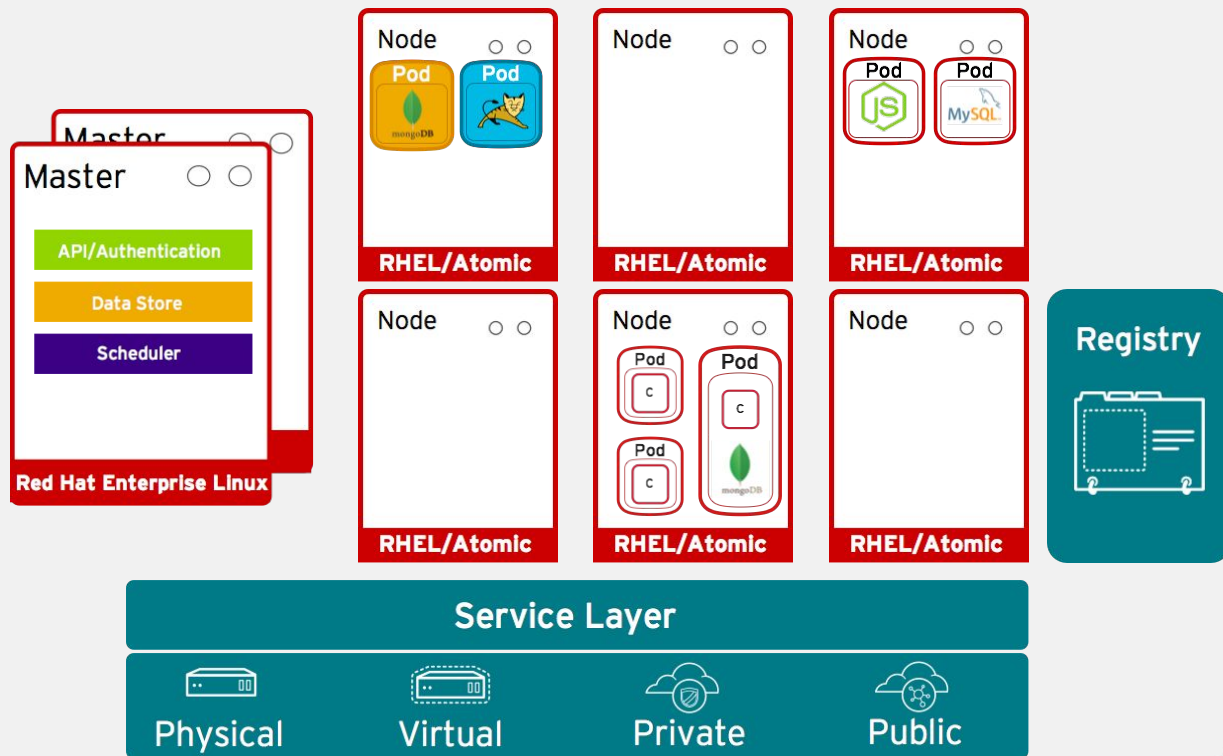
Master provides scheduler for pod placement on nodes



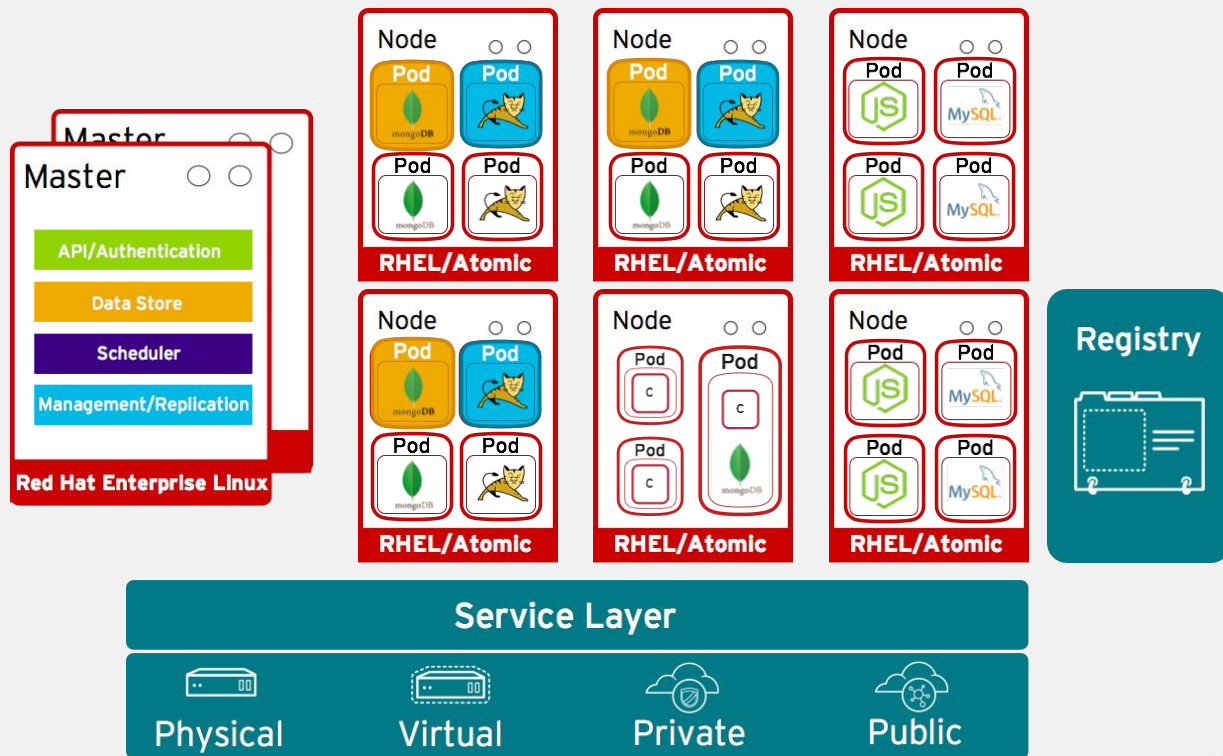
Pod placement is determined based on defined policy



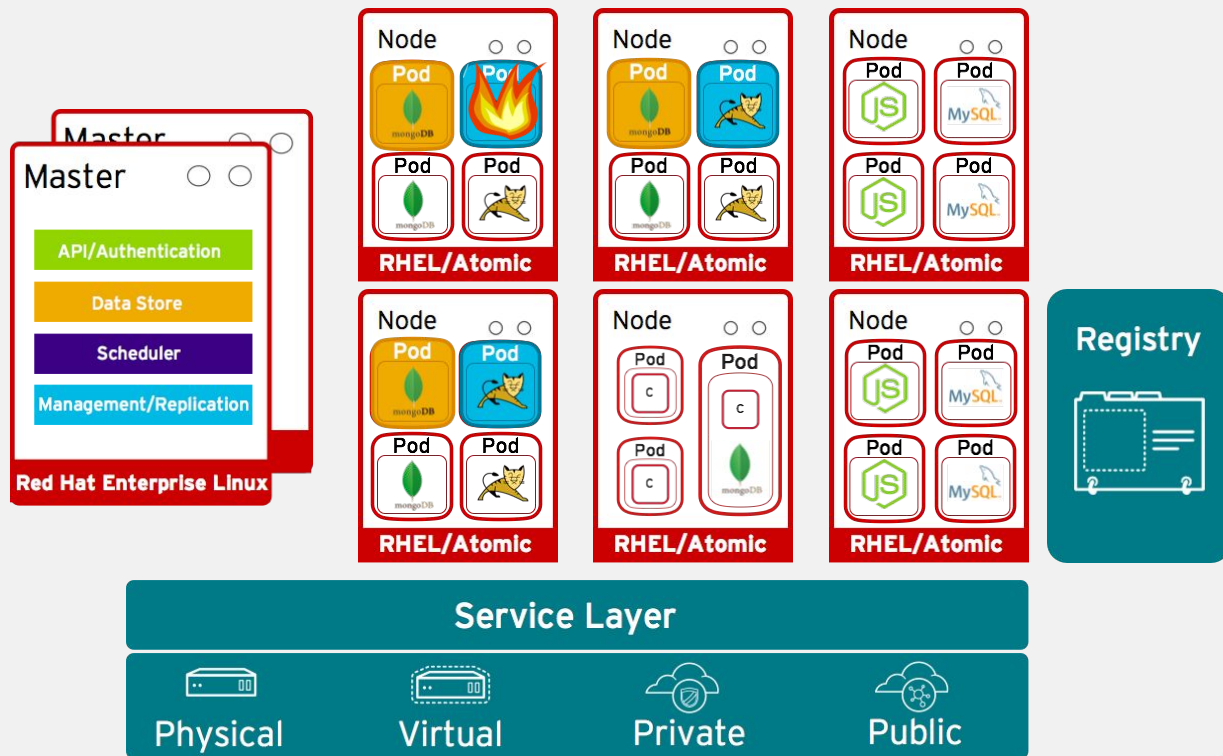
Services allow related pods to connect to each other



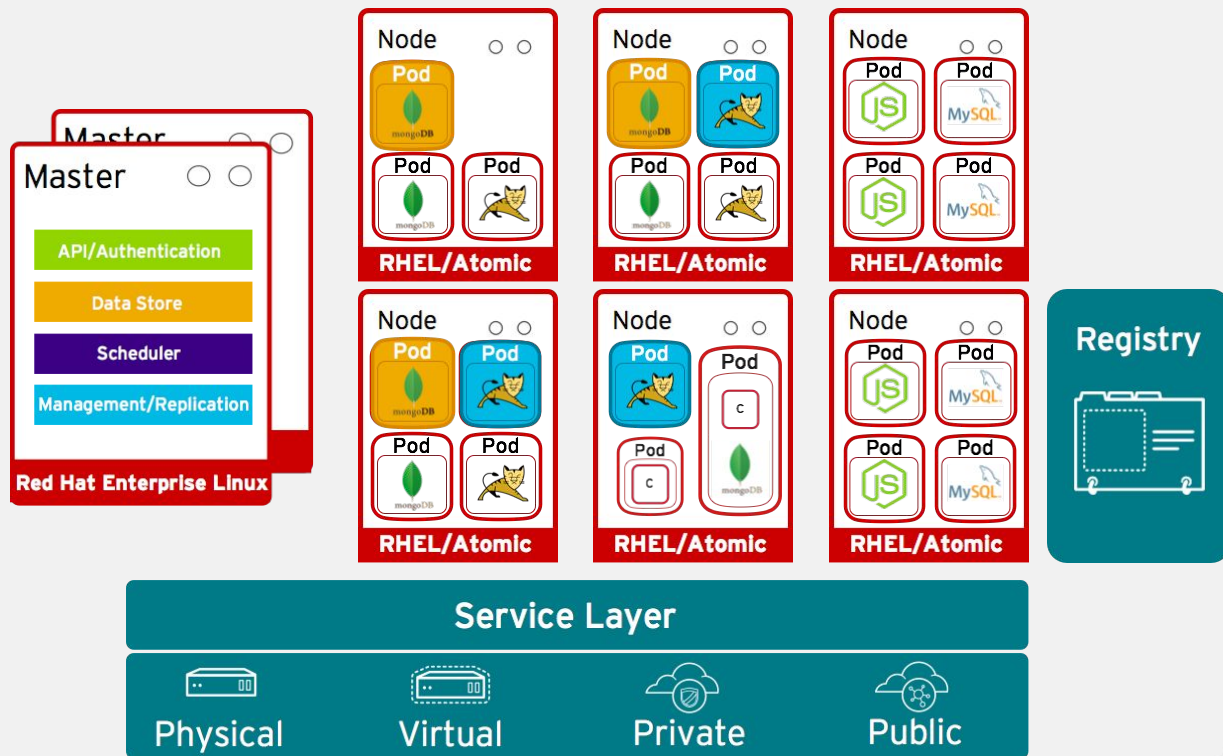
Management/Replication controller manages the pod lifecycle



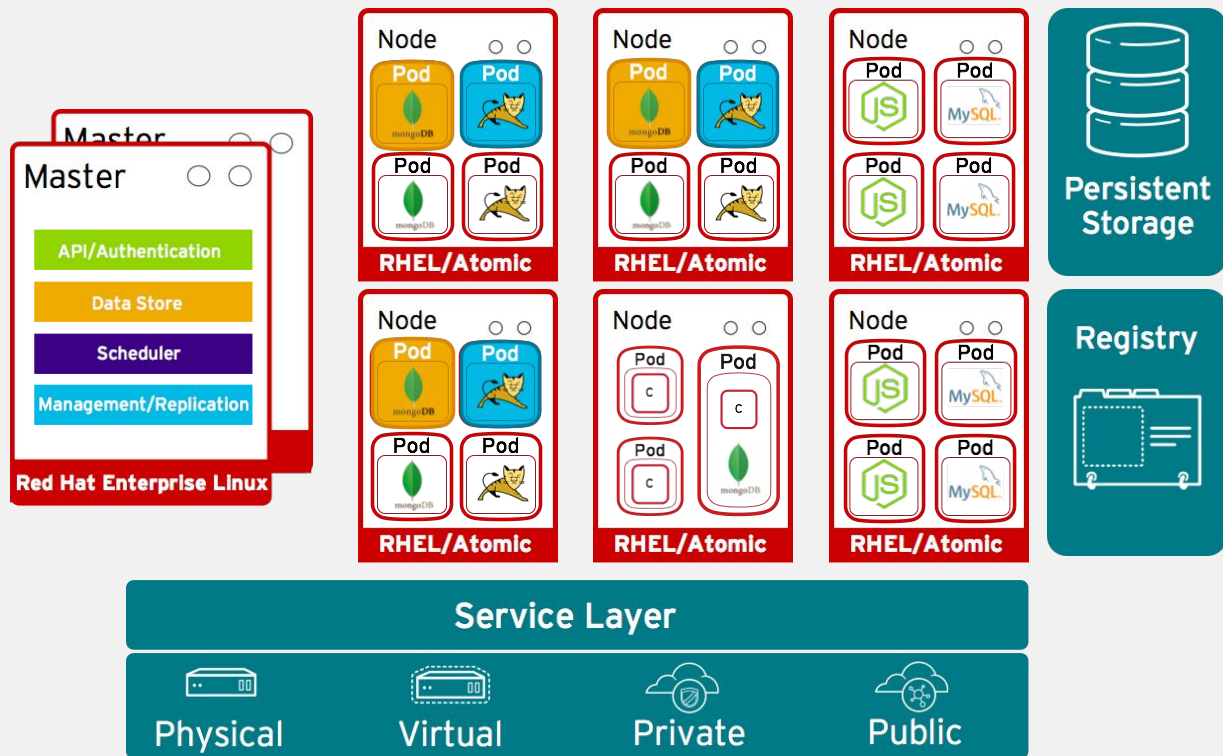
“Burn down”/replace affected deployments



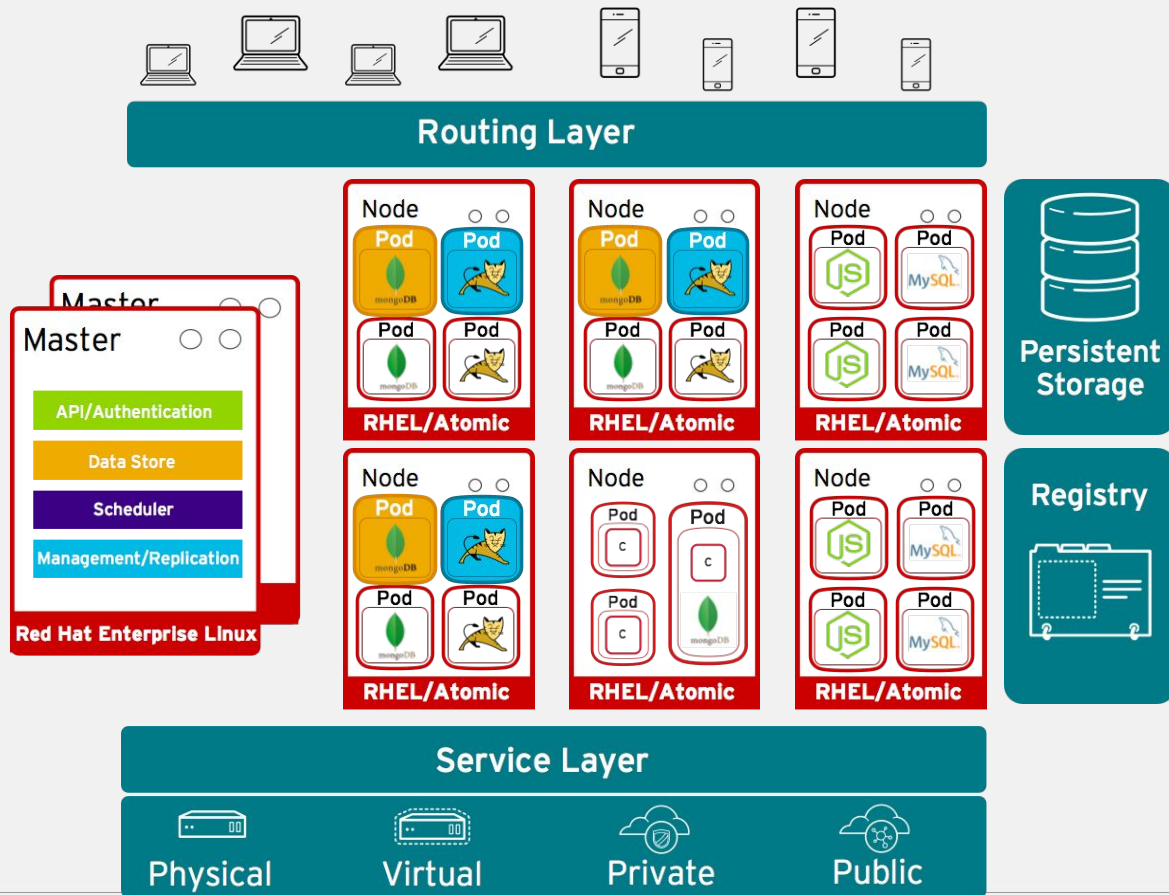
OpenShift automatically recovers and deploys a new Pod



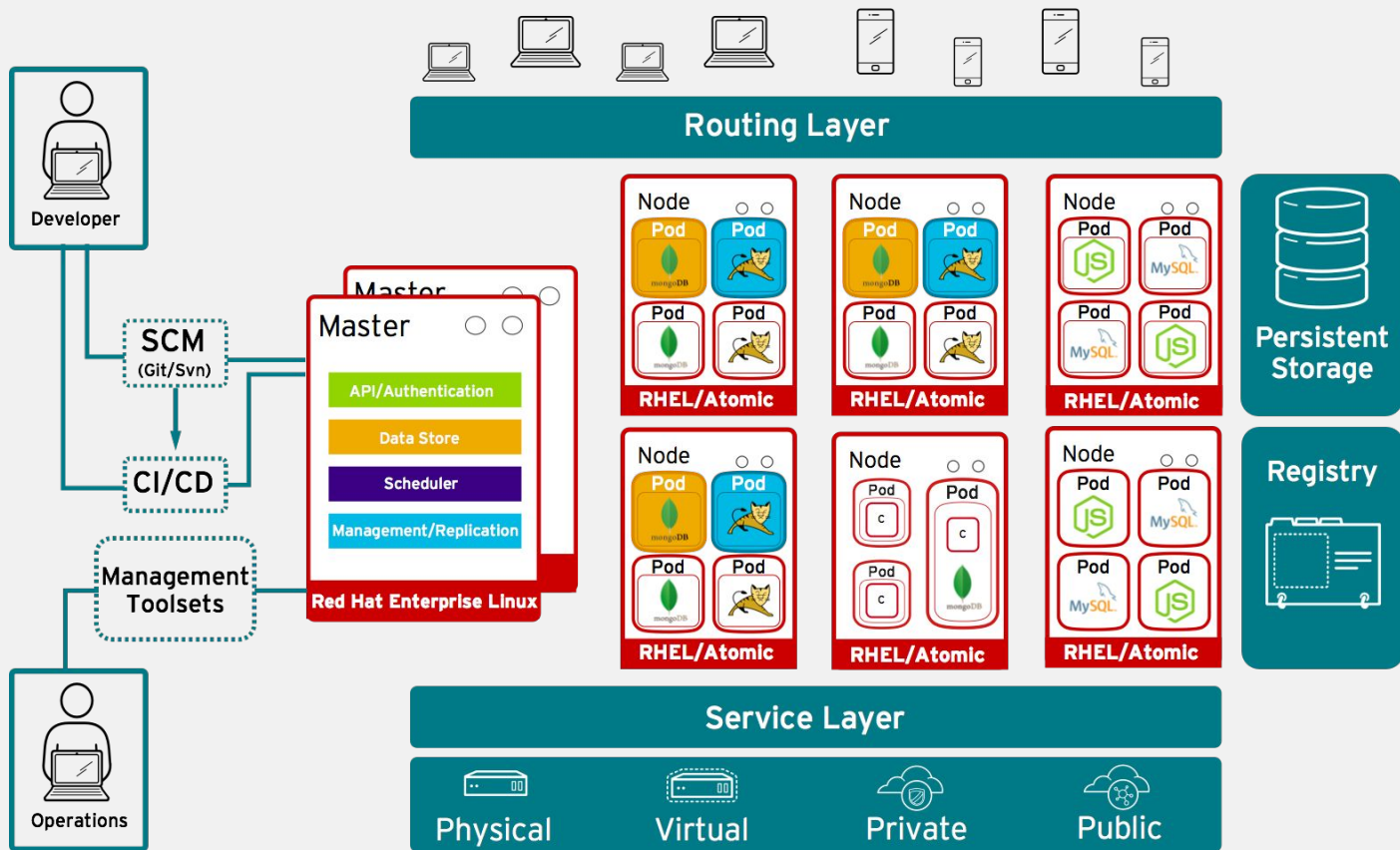
Pods can attach to shared storage for stateful services



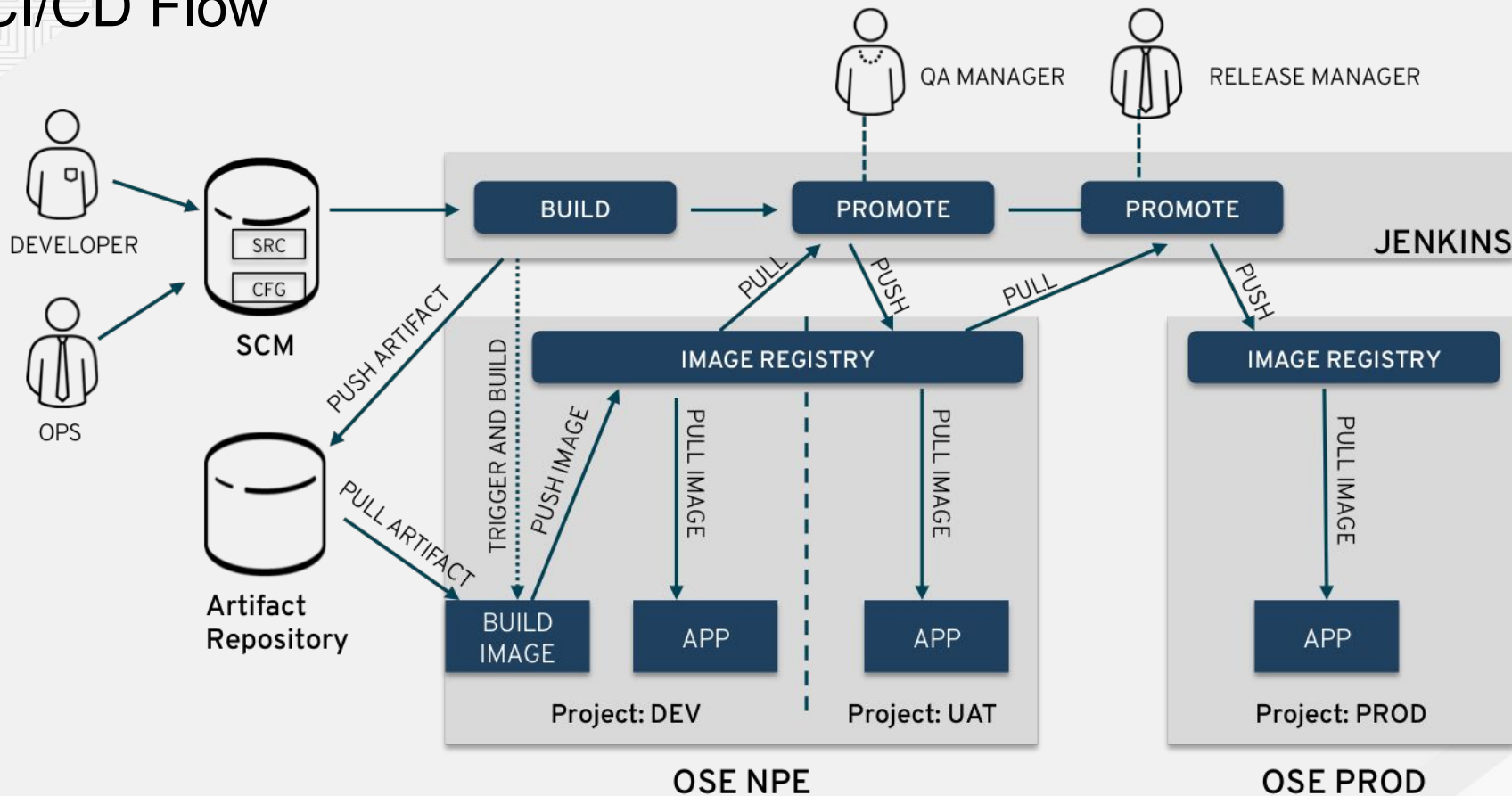
Routing layer routes external app requests to pods



Developers access openShift via web, CLI or IDE



CI/CD Flow



SECURITY for HOSTS, CONTAINERS & IMAGES

Aspects of Container Security

What you should care about:

- What base Image are you building on?
- Who built that? How quickly is that updated? Any SLA on patches?

Red Hat provides Container Image Scanning Technology

- Is my container Host secure enough?

Strength of RHEL : Certifications, SLAs, Red Hat Experience, SELinux active!

- How do I make sure my images are up-to date?

OpenShift automate Builds and Deployments

New Base image triggers a rebuild of top layers

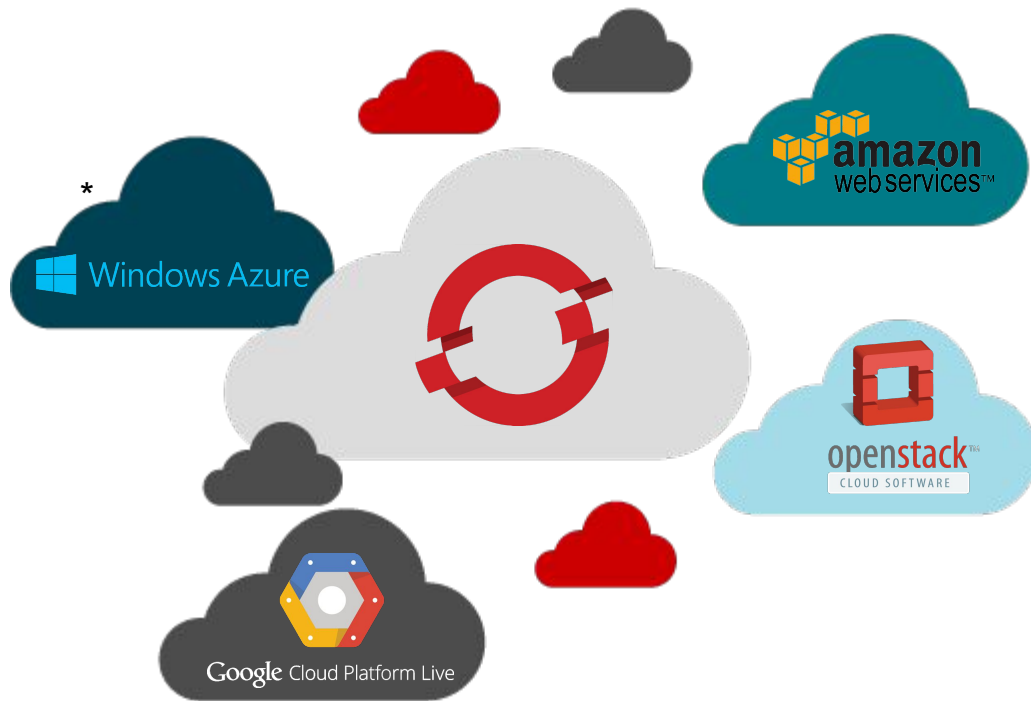
Community Powered Innovation



Cloud Infrastructures

Choose your IaaS

OpenShift will run anywhere
RHEL can run giving you
the ultimate portability for
your mission critical
workloads.



* = Coming Soon

HOW DO I GET OPENSIFT?

“I want to test how my app is running in OpenShift”

- Openshift online - v2 (no docker), v3 avail this summer

“I am Red Hat Partner/Customer” and

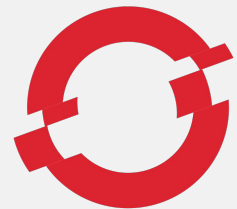
“I want to install my own OpenShift”

“I want to test my containers in OpenShift”

- Buy OpenShift Enterprise / Dedicated / Ask for eval
- CDK - container development kit (create 3 VMs, full cluster)

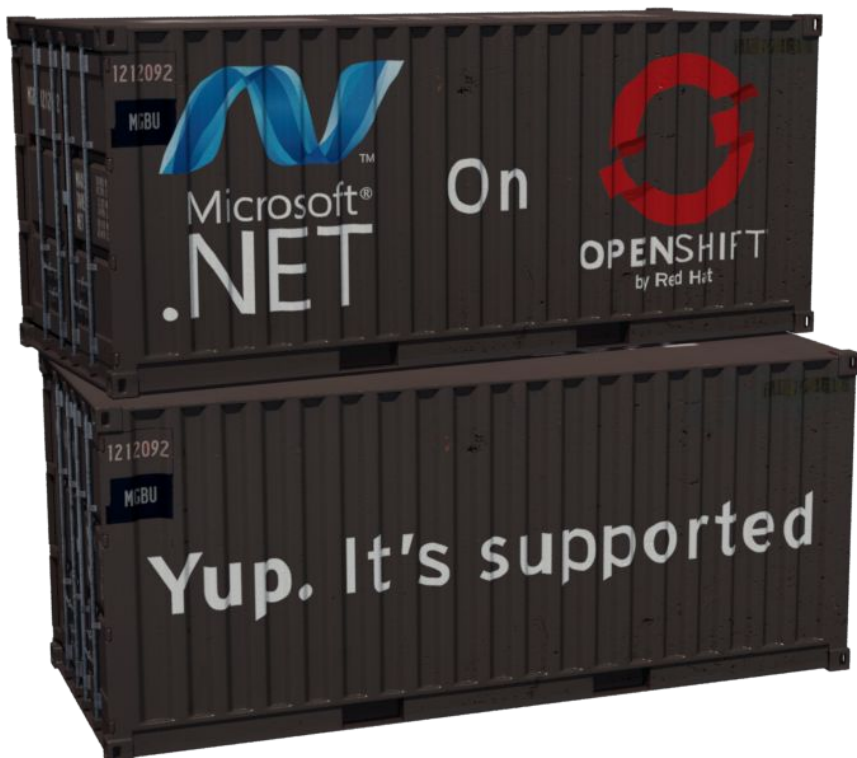
“I am not yet Red Hat Partner/Customer”

- Install OpenShift Origin - <https://www.openshift.org/>
or
- All-in-1 VM - <https://www.openshift.org/vm/>



OPENSIFT

OpenShift , Microsoft Azure and native .Net



- Red Hat and Microsoft partnership announced in Nov 2015
- Red Hat solutions are now **fully certified and supported on Microsoft Azure**, including **RHEL, JBoss and OpenShift**
- RHEL will be the primary development and reference operating system for .NET Core on Linux
- OpenShift will be providing a .NET runtime container image distributed and supported by Red Hat and Microsoft
- Build, deploy and run .NET applications on OpenShift
- Based on .NET Core 5
- Coming soon!

SUMMARY

PaaS enables:

- Efficient agile development and satisfaction of business needs
- Automation and standardization of development process (Factory vs. Workshop)

Red Hat OpenShift is:

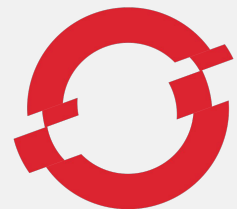
- Multi-platform **PaaS** with strong orientation on development cycle (**DevOps**)
- **Container Platform** for **Runtime** and **Development** of Container Workloads

Red Hat OpenShift provides:

- Container/host Security
- Automate building images and the whole container lifecycle
- Management
- Out-of-the-box Microservices architecture

OpenShift can run:

- **On premise** (Enterprise)
- In **major public Clouds** - Azure, Amazon, Google.. (Dedicated, Online)



OPENSIFT

THANK YOU!

QUESTIONS?

