HYBRID IS THE NEW CLOUD STANDARD

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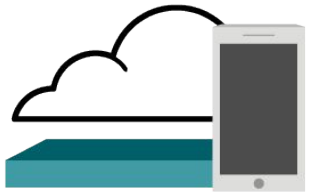
@asheshbadani

MARKET LANDSCAPE FOR HYBRID CLOUD

CHANGE IN THE CLOUD IS HAPPENING EVERYWHERE

PRIVATE CLOUD

PUBLIC CLOUD



TELCO CLOUD

EDGE CLOUD

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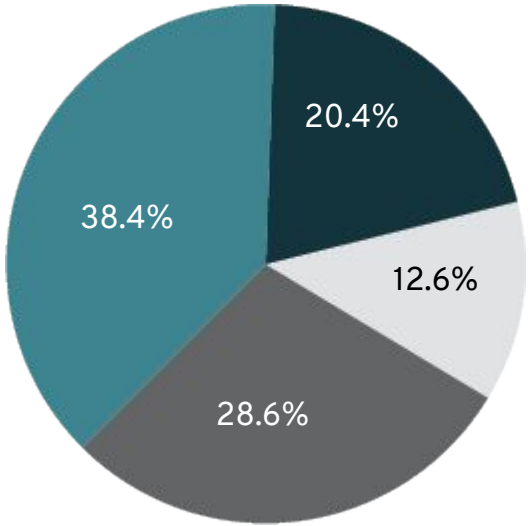
HYBRID CLOUD IS REAL AND GROWING

Nearly 62% have or will have multiple cloud environments



How will organizations use different cloud environments in the next 2 years?

- Will focus primarily on a single cloud environment
- Will have **multiple 'different" cloud environments**, but little-to-**no interoperability** between the environments
- Will have multiple cloud environments to **migrate workloads or data between cloud environments**
- Will have **multiple cloud environments** where the **delivery of a single business function** across the different cloud environments is seamless

Source: *451 Research Voice of the Enterprise, Cloud Transformation Q1 2017*

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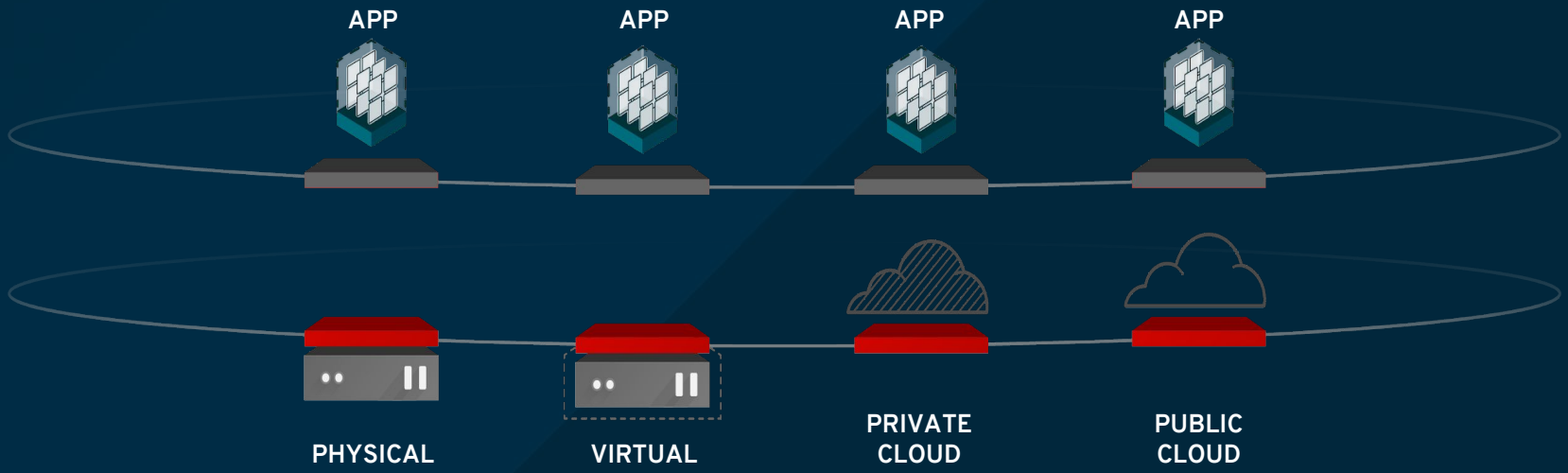
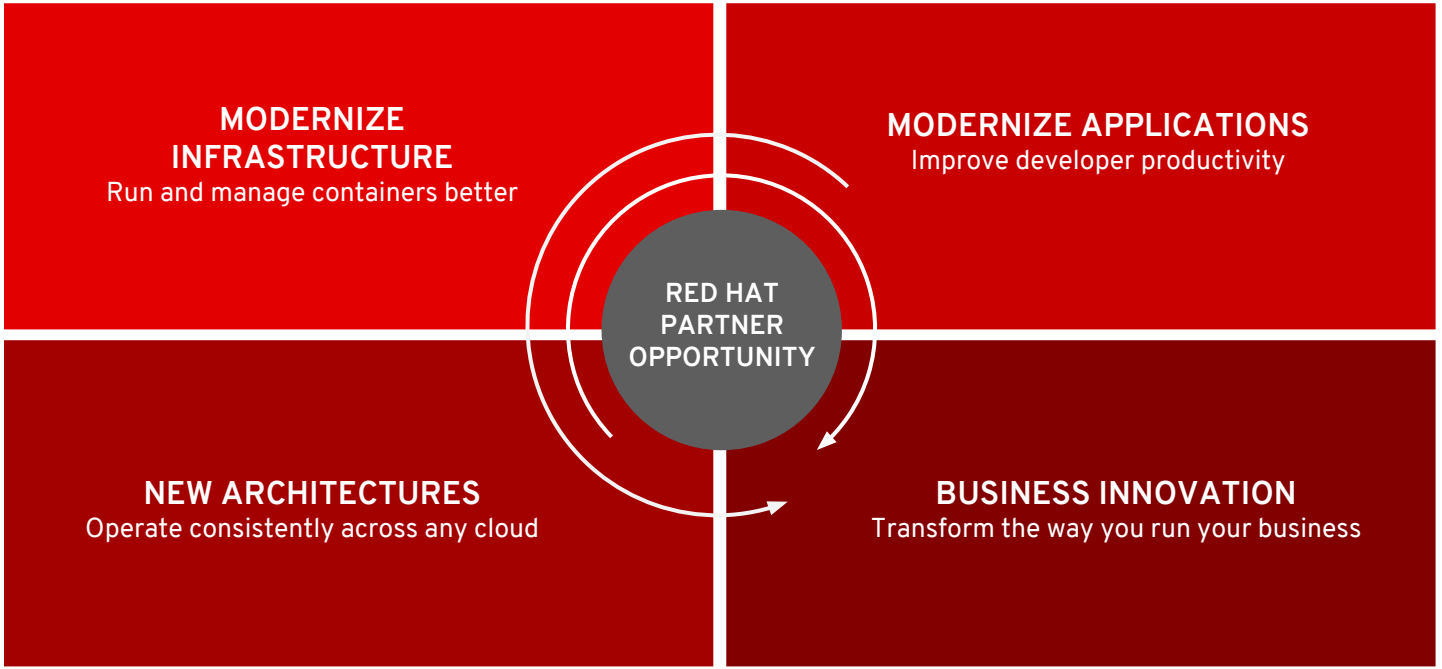
HYBRID CLOUD CHALLENGES



LEGACY APPLICATIONS | APPLICATION PORTABILITY | LACK OF AUTOMATION
INCONSISTENT OPERATIONS | INCONSISTENT SECURITY | INCONSISTENT DEV-UX

HYBRID CLOUD IMPACTS EVERY DECISION MAKER



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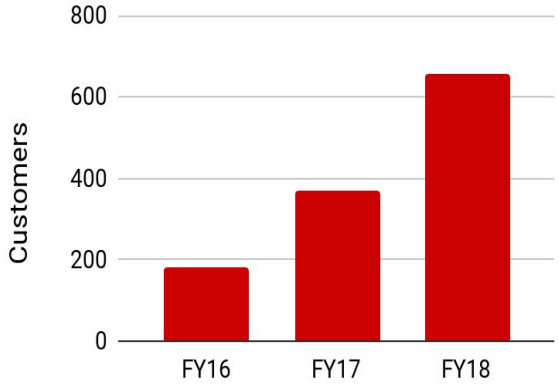
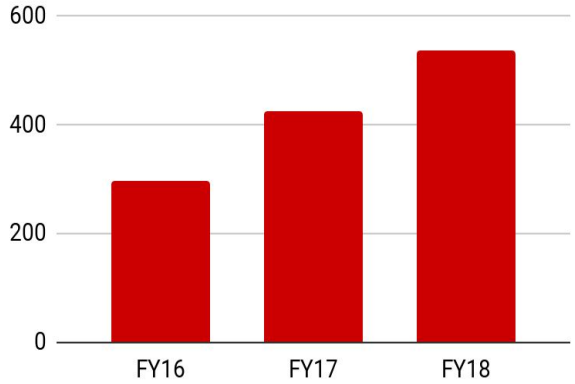
CUSTOMER ADOPTION OF EMERGING TECHNOLOGIES

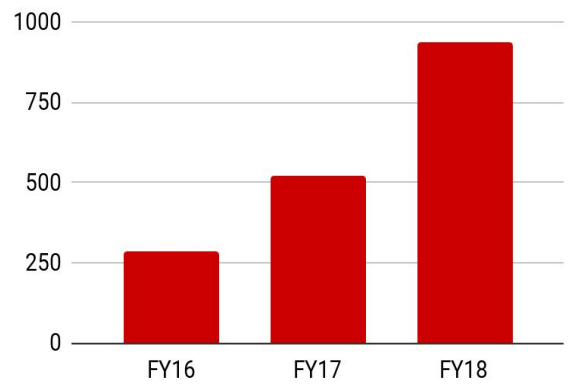
RED HAT® OPENSHIFT



RED HAT® OPENSTACK® PLATFORM



RED HAT® ANSIBLE® Tower



Source: Company subscription data. CAGR is from FY16 to FY18

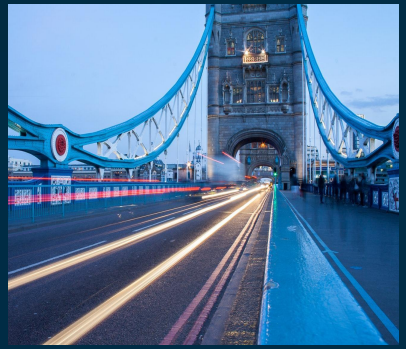
A DAY IN THE LIFE

REALIZING OPPORTUNITIES IN HYBRID CLOUD

From virtualization to containers	Hybrid cloud multicloud	App modernization and developer productivity	Managed cloud services

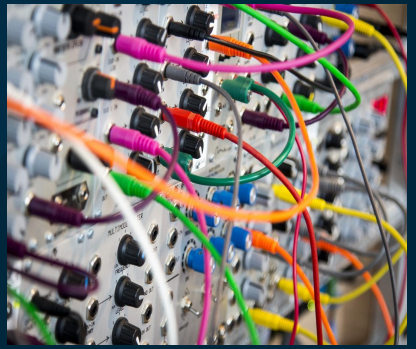
ENABLING THE HYBRID CLOUD PORTFOLIO

THE CHALLENGES OF KUBERNETES PLATFORMS



VELOCITY OF CHANGE (OPS)

DELIVER STABLE OPERATIONS (OPS)



MANAGE COMPLEX TASKS (DEV)

REMAIN FLEXIBLE (DEV)

RED HAT, LINUX, CONTAINERS AND KUBERNETES

2010
Containers in RHEL (cgroups)

2014
Docker containers in RHEL

2015
OpenShift ships Kubernetes 1.0

2017
OpenShift certified Kubernetes (CNCF)

2nd

largest Kubernetes contributor

11

releases of Kubernetes via OpenShift

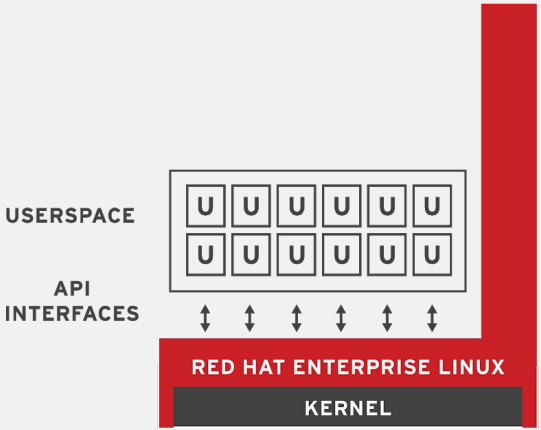
15

Lead or co-lead 15 Kubernetes SIG groups

450+

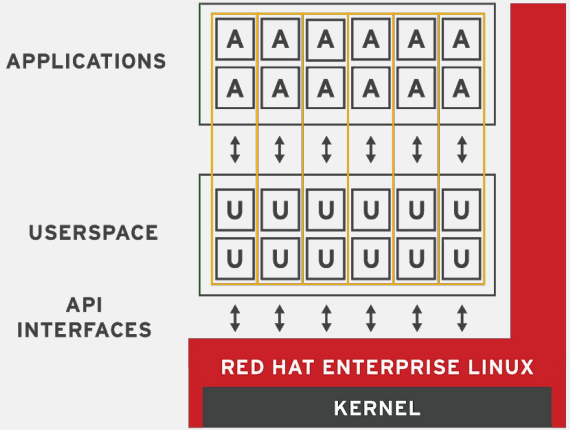
members of OpenShift Commons Community

PRESERVING STABILITY FOR RED HAT CUSTOMERS



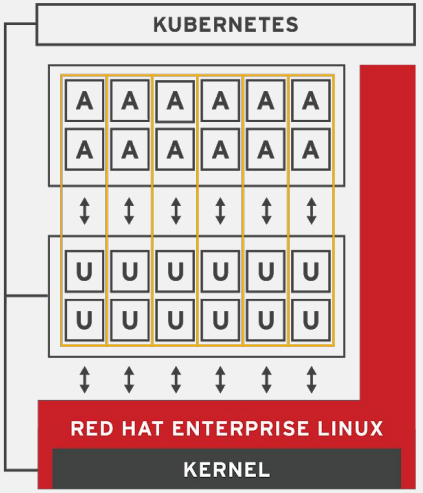
~300 SYSTEM CALLS

And associated data structures creating direct dependency on the kernel



~2400 SYMBOL DEPENDENCIES

On core system libraries and in Linux



~7700 SYSTEM CALLS

Called by kubernetes to create and start a single container

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OPENSHIFT DEDICATED UPGRADE

257
BUGS FIXED

between
Kube 1.9 and
OpenShift 3.9

194
BUGS FIXED

between
OpenShift 3.9
and 3.9.33

29
BUGS FIXED

since
3.9.33

Source: Matthew Barnes, *OSD 3.9 upgrade summary*. internal blog post, Mojo. August 2018.

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OPENSHIFT DEDICATED UPGRADE

4
ISSUES

- M5 instance type kernel bug
- Amazon losing IPs
- 2 Kubernetes issues

30
MINUTES

(on average) for us to resolve issues for the customer

?

How long would it take a customer to fix & patch Kube 1.9?

Source: Matthew Barnes, *OSD 3.9 upgrade summary*. internal blog post, Mojo. August 2018.

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ENABLING SUCCESS IN HYBRID CLOUD

CRITICAL AREAS OF HYBRID CLOUD SUCCESS

Simplify the cloud experience everywhere	Enable cloud consistency everywhere	Balance innovation and cost reduction	Empower access to new cloud services

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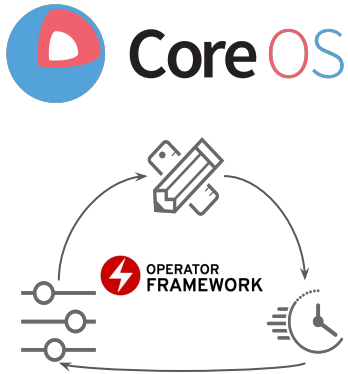
SIMPLIFY THE CLOUD EXPERIENCE EVERYWHERE

Making hybrid cloud as simple as public cloud



- Over-the-air software updates
- Day 1 and Day 2 automated operations
- Operator framework for ISVs
- Red Hat® Container Catalog and operator marketplace

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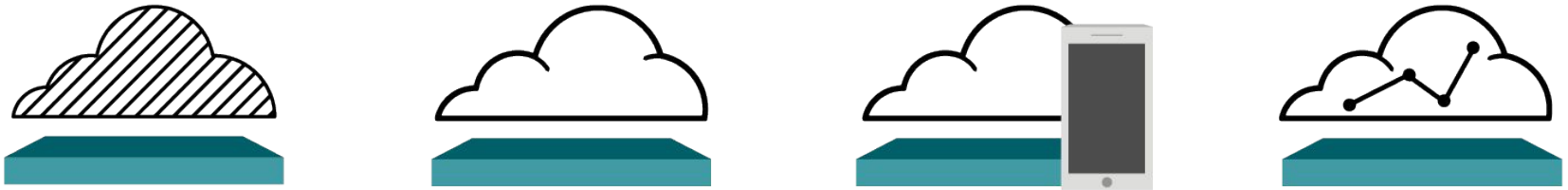
ENABLE CLOUD CONSISTENCY EVERYWHERE



RED HAT® OPENSHIFT®

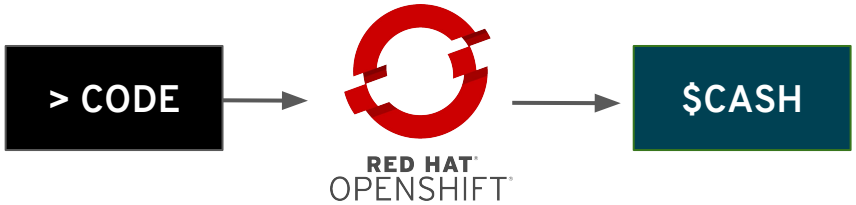
RED HAT OPENSTACK® PLATFORM	CLOUD IaaS	RED HAT OPENSTACK PLATFORM	EDGE METAL

RED HAT ENTERPRISE LINUX®

PRIVATE CLOUD	PRIVATE CLOUD	TELCO CLOUD	EDGE CLOUD

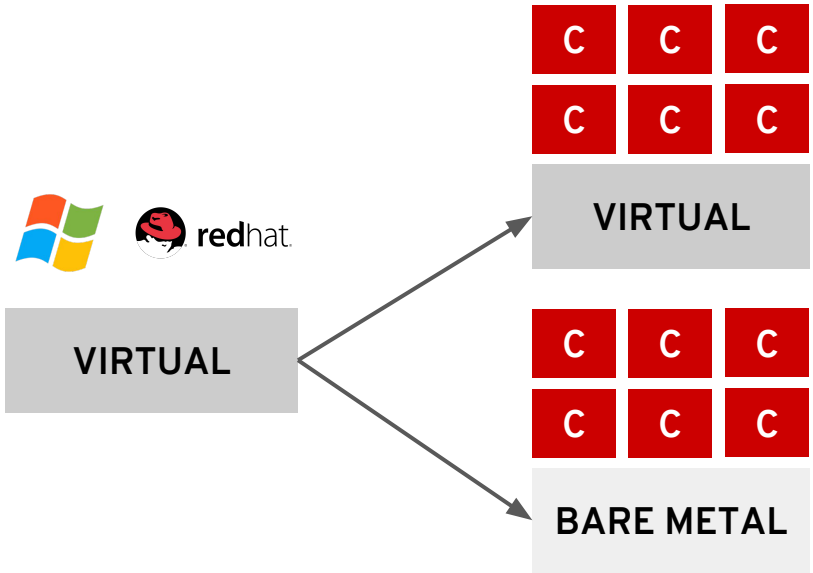
redhat.

BALANCE INNOVATION AND COST REDUCTION



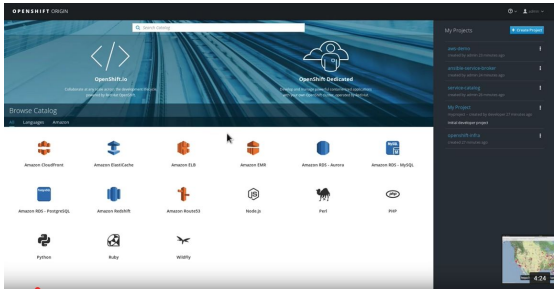
NEW CLOUD-NATIVE APPLICATIONS

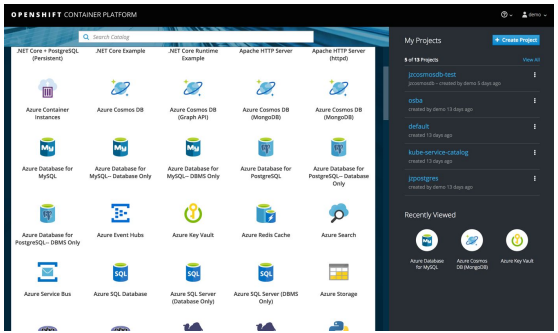
MONOLITHS TO MICROSERVICES



PROPRIETARY > CONTAINERS > BARE METAL

EMPOWER ACCESS TO NEW CLOUD SERVICES





- AWS services in Red Hat® OpenShift® service catalog
- Azure services in Red Hat OpenShift service catalog
- Red Hat and Azure delivering managed OpenShift services

ENABLING SUCCESS IN THE HYBRID CLOUD

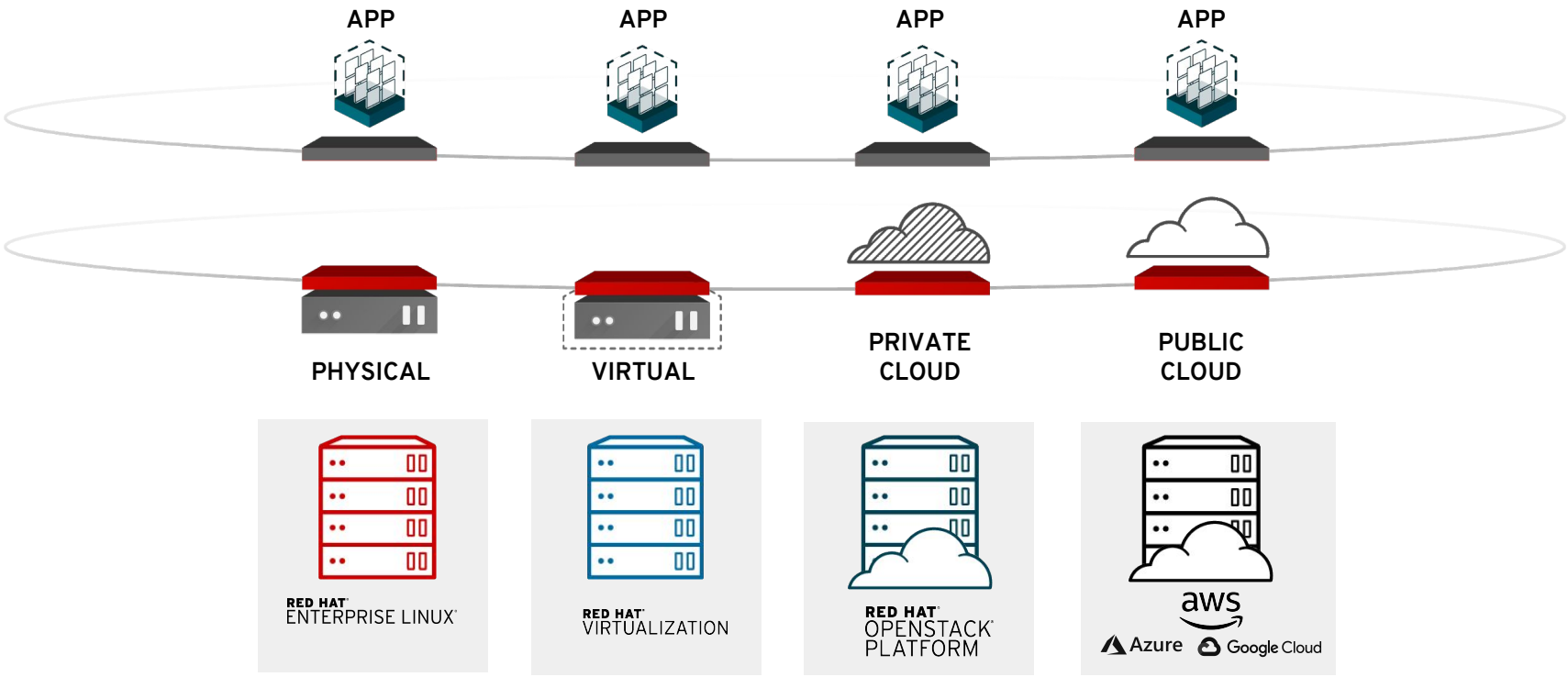
MOVING INTO THE THIRD ERA OF KUBERNETES

1st generation
2015-2016

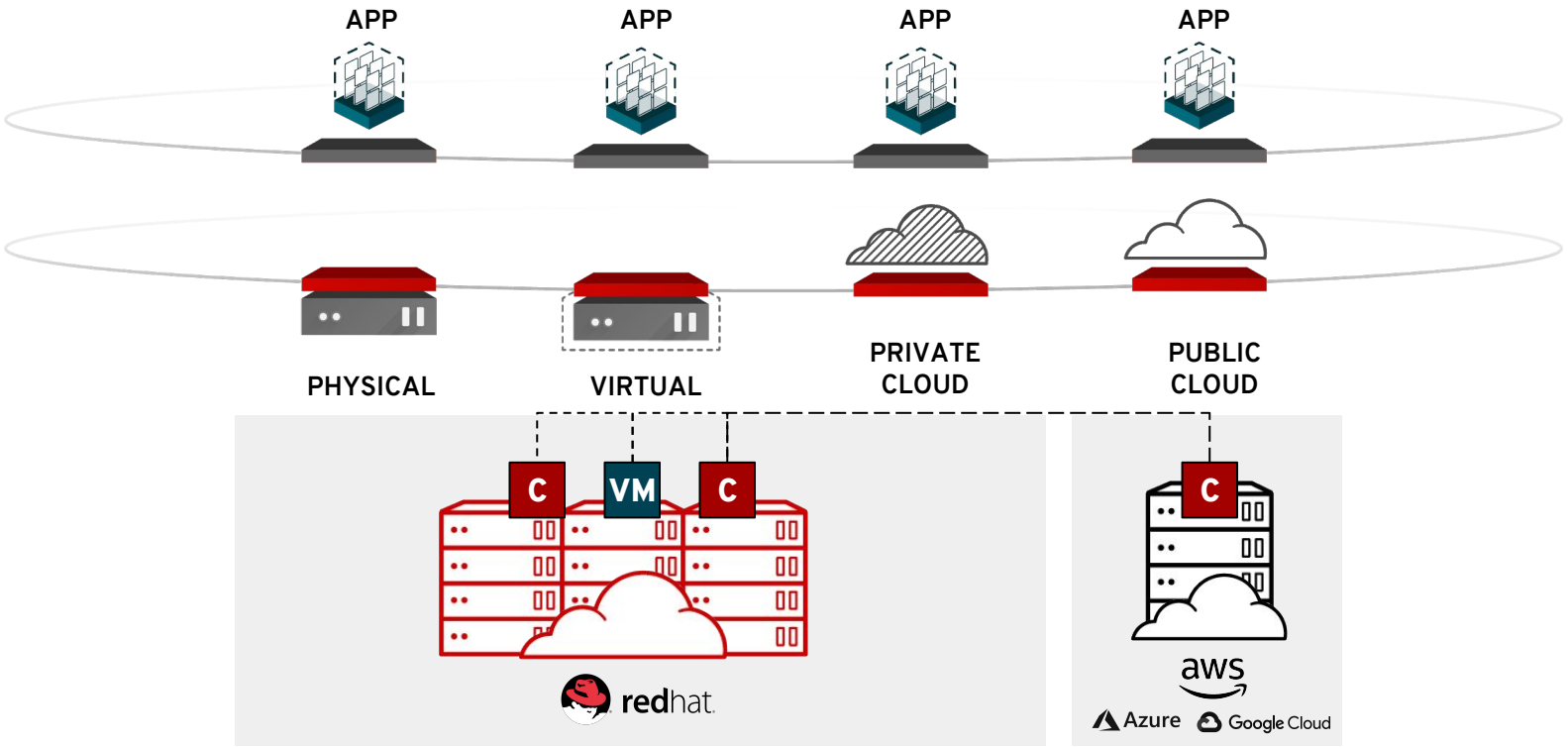
2nd generation
2016-2017

3rd generation
2018-2020

FROM ISOLATED CLOUD INFRASTRUCTURE



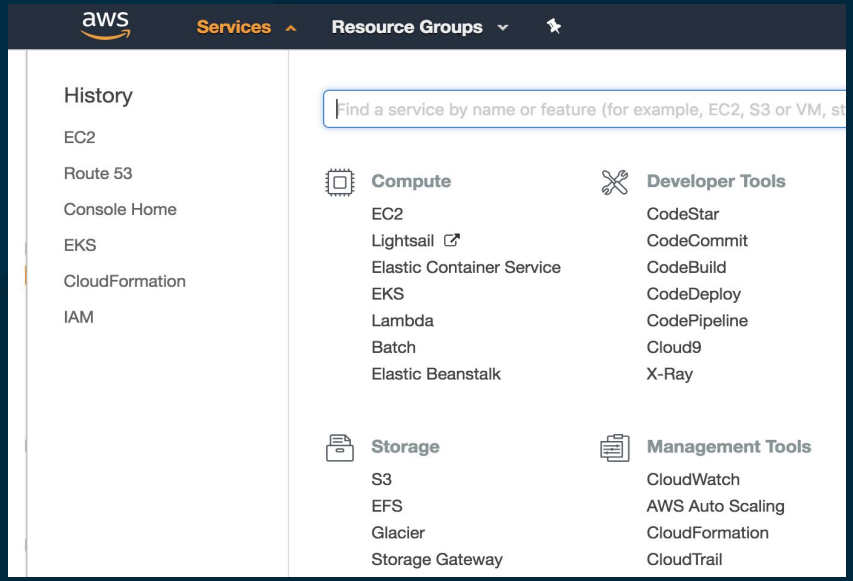
TO CONVERGED CLOUD PLATFORM



OPERATORS - APPS AUTOMATED LIKE CLOUD SERVICES

YOUR APPLICATIONS

AUTOMATED LIKE PUBLIC CLOUD SERVICES



BUT RUNS ON OPENSHIFT ON EVERY CLOUD

OPENSHIFT

Google Cloud Platform

Microsoft Azure

amazon web services

openstack.

vmware

redhat.

HYBRID CLOUD ALLOWS SOFTWARE TO RESHAPE EVERY INDUSTRY

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