



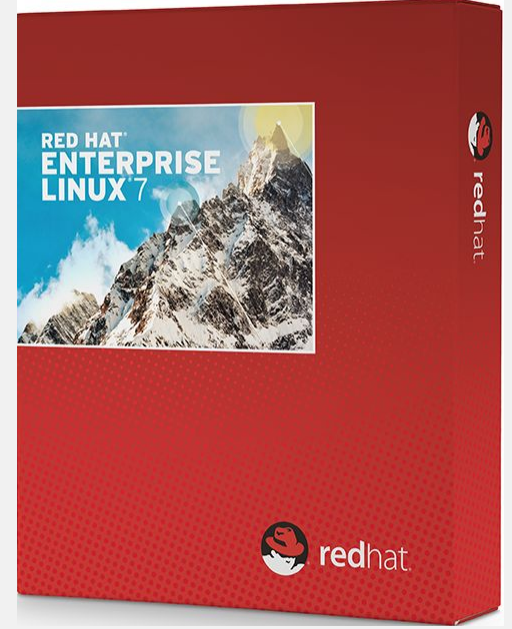
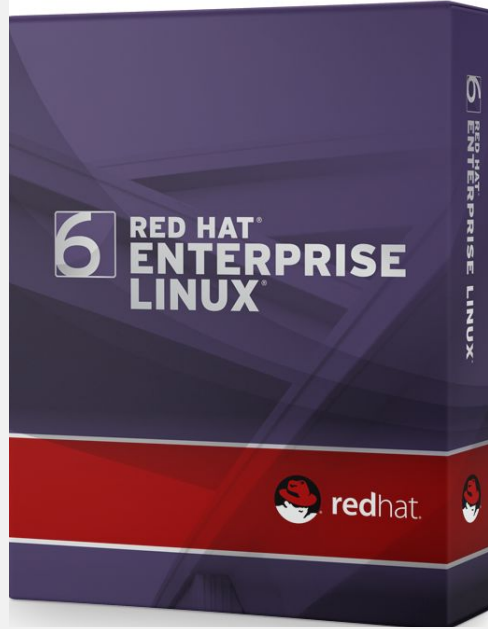
RED HAT CLOUD SUITE ROADMAP

Building a New Digital Future

Nick Barcet - OpenStack
Joe Fernandes - OpenShift
Xavier Lecauchois - Management

Jesse Wu - Integrated Solutions
Rob Young - Virtualization

WHO IS RED HAT?



DEFINITION OF AN OPERATING SYSTEM - 70's

“The software that supports a computer's basic functions, such as scheduling tasks, executing applications, and controlling peripherals.”

“A system software that manages computer hardware and software resources and provides common services for computer programs”

“A collection of software that directs a computer's operations, controlling and scheduling the execution of other programs, and managing storage, input/output, and communication resources”

DEFINITION OF AN OPERATING SYSTEM - 2017

“The software that supports a ~~computer's~~ data center's basic functions, such as scheduling tasks, executing applications, and controlling peripherals.”

“A system software that manages ~~computer hardware and software~~ data center resources and provides common services for computer programs (n.k.a - applications)”

“A collection of software that directs a ~~computer's~~ data center's operations, controlling and scheduling the execution of other programs (n.k.a - applications), and managing storage, input/output, and communication resources”

DEFINITION OF AN OS - SIMPLIFIED

“OS ABSTRACTS APPLICATIONS FROM HARDWARE”

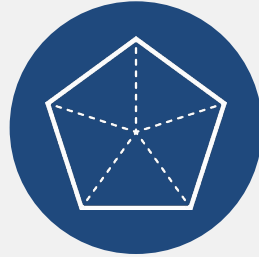
CHALLENGES ALSO REMAIN THE SAME



STABILITY



MANAGEABILITY



RELIABILITY



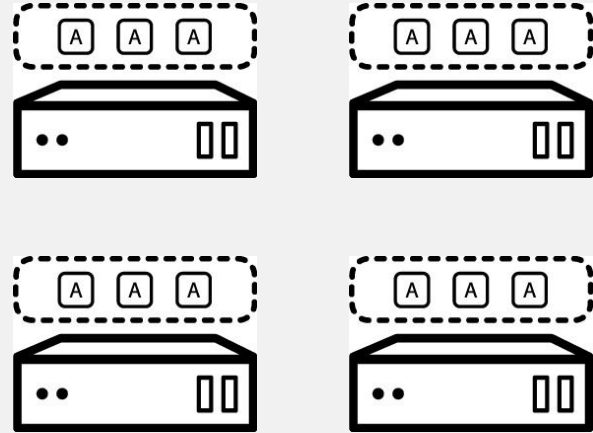
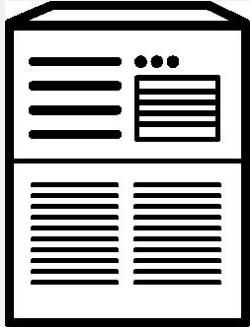
SCALABILITY



ADAPTABILITY

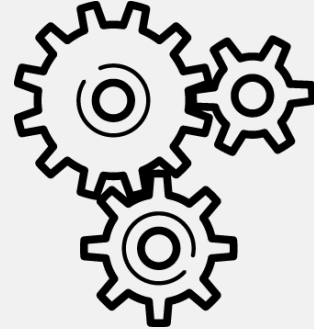
STABILITY CHALLENGE

FROM SINGLE SERVER TO HYBRID CLOUD PLATFORM



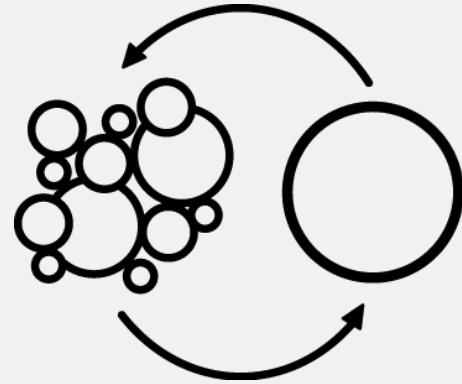
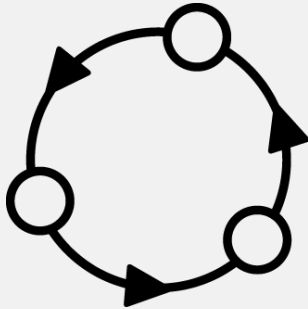
MANAGEABILITY CHALLENGE

FROM AWARENESS TO AUTOMATION



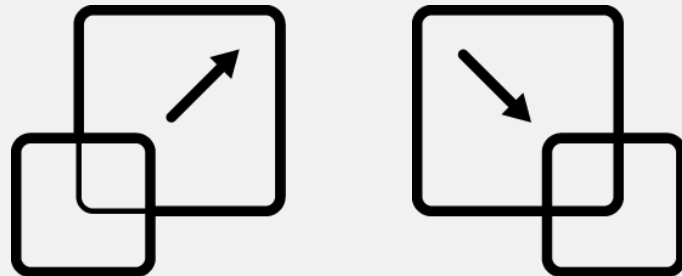
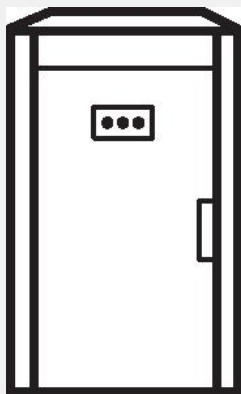
RELIABILITY CHALLENGE

FROM SINGLE LIFECYCLE TO ECOSYSTEM INTEROPERABILITY



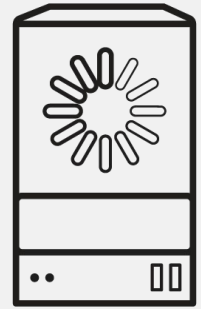
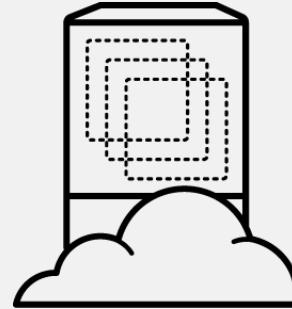
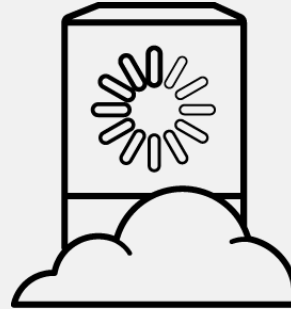
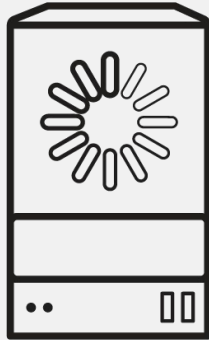
SCALABILITY CHALLENGE

FROM DISCRETE TO INTEGRATED



ADAPTABILITY CHALLENGE

FROM MONOLITH TO SYMBIOT



IT STARTS WITH APPLICATIONS

APPLICATION

APPLICATIONS NEEDS CAPACITY

APPLICATION

HARDWARE

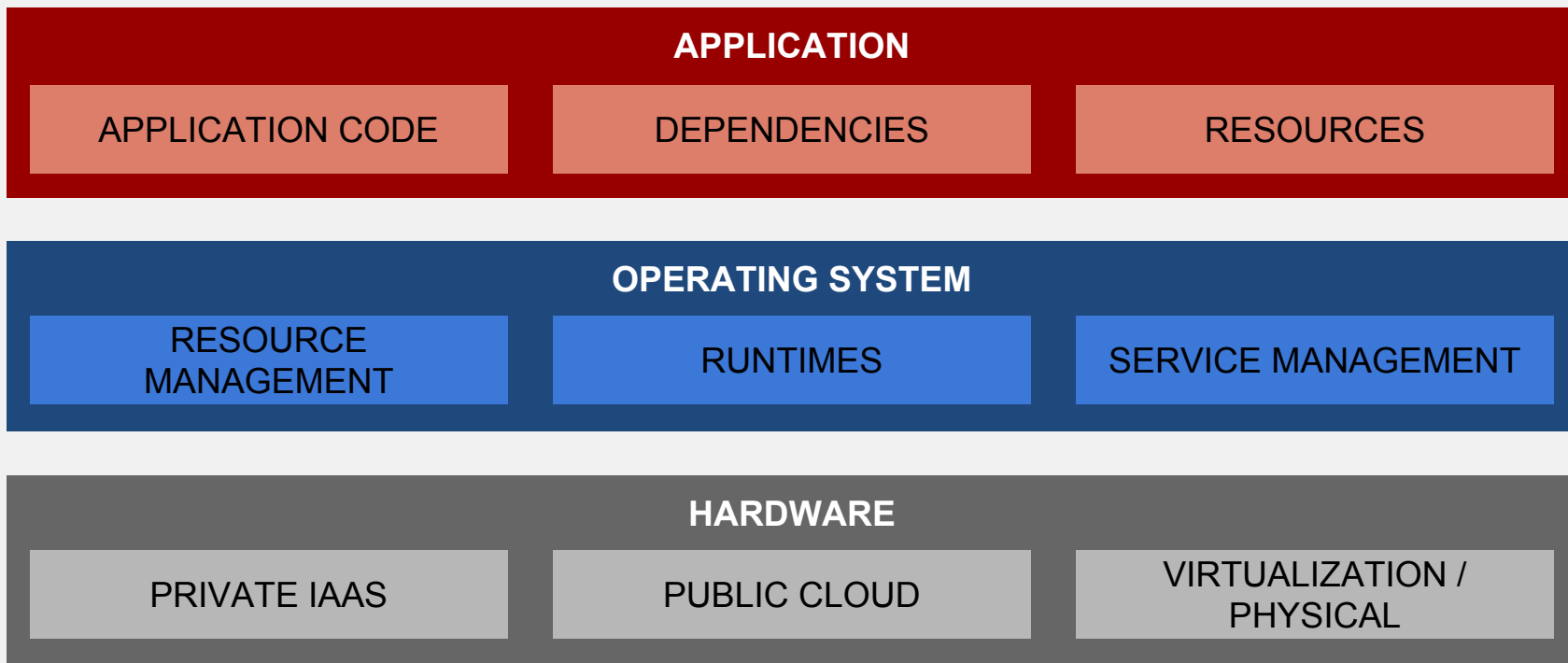
AND AN OS TO PUT THEM TOGETHER

APPLICATION

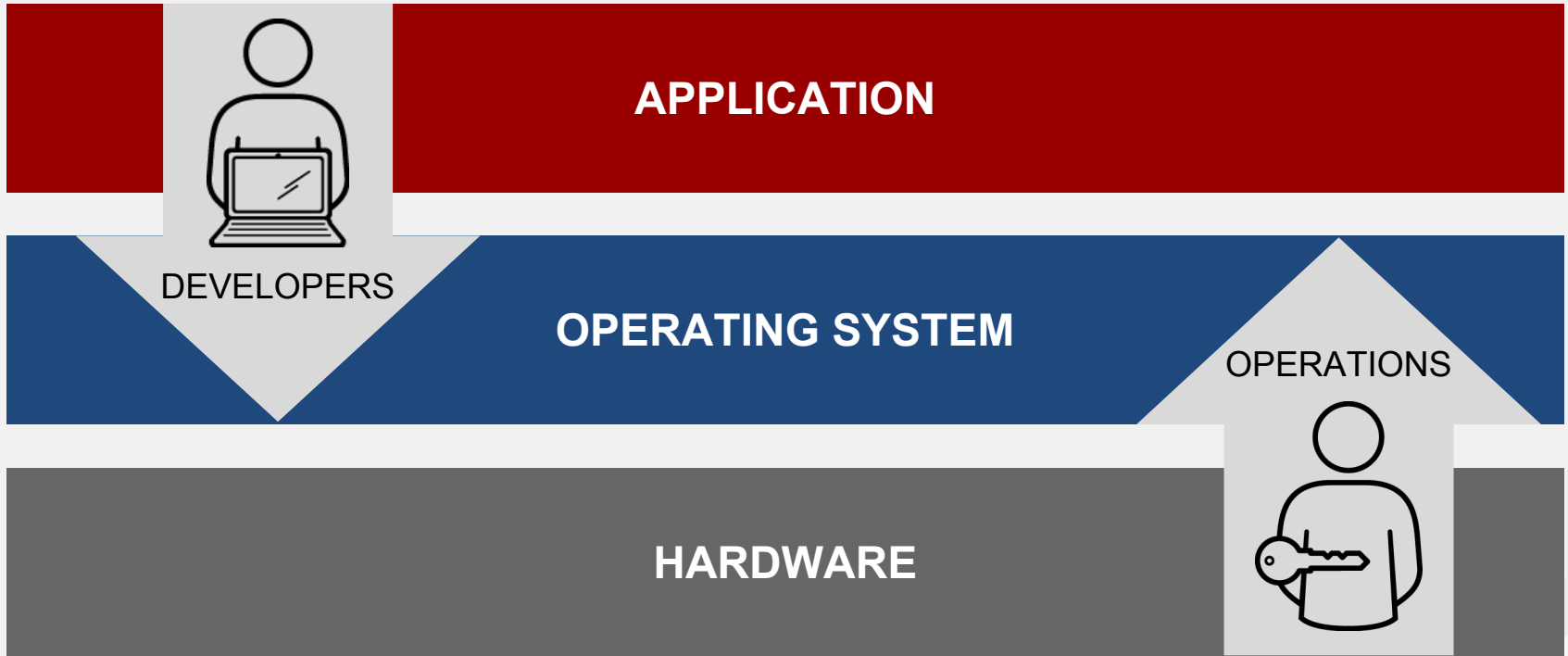
OPERATING SYSTEM

HARDWARE

CLOUD AS OPERATING SYSTEM



PERSPECTIVES MATTER

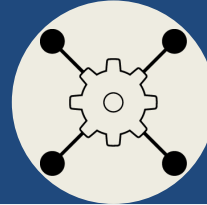


CONTAINERS TO THE RESCUE



APPLICATION

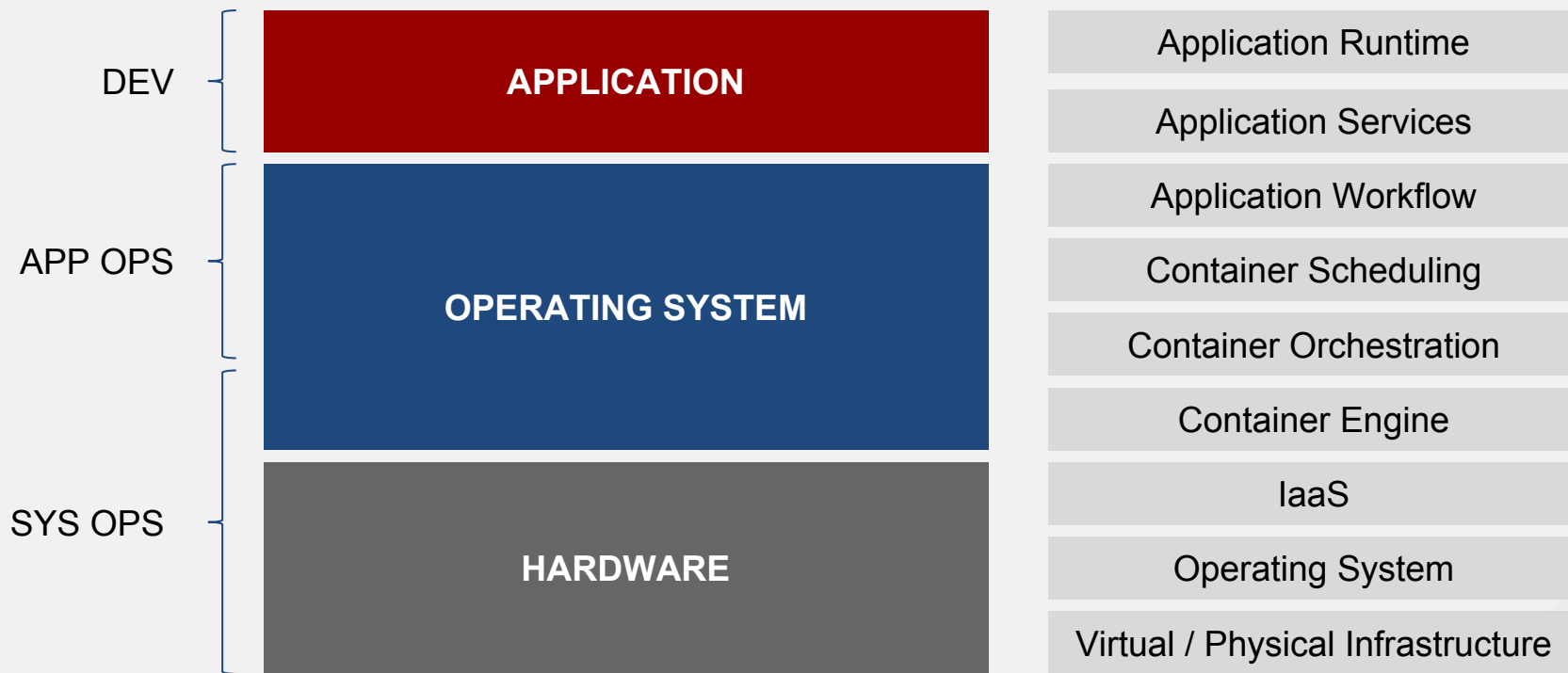
OPERATING SYSTEM



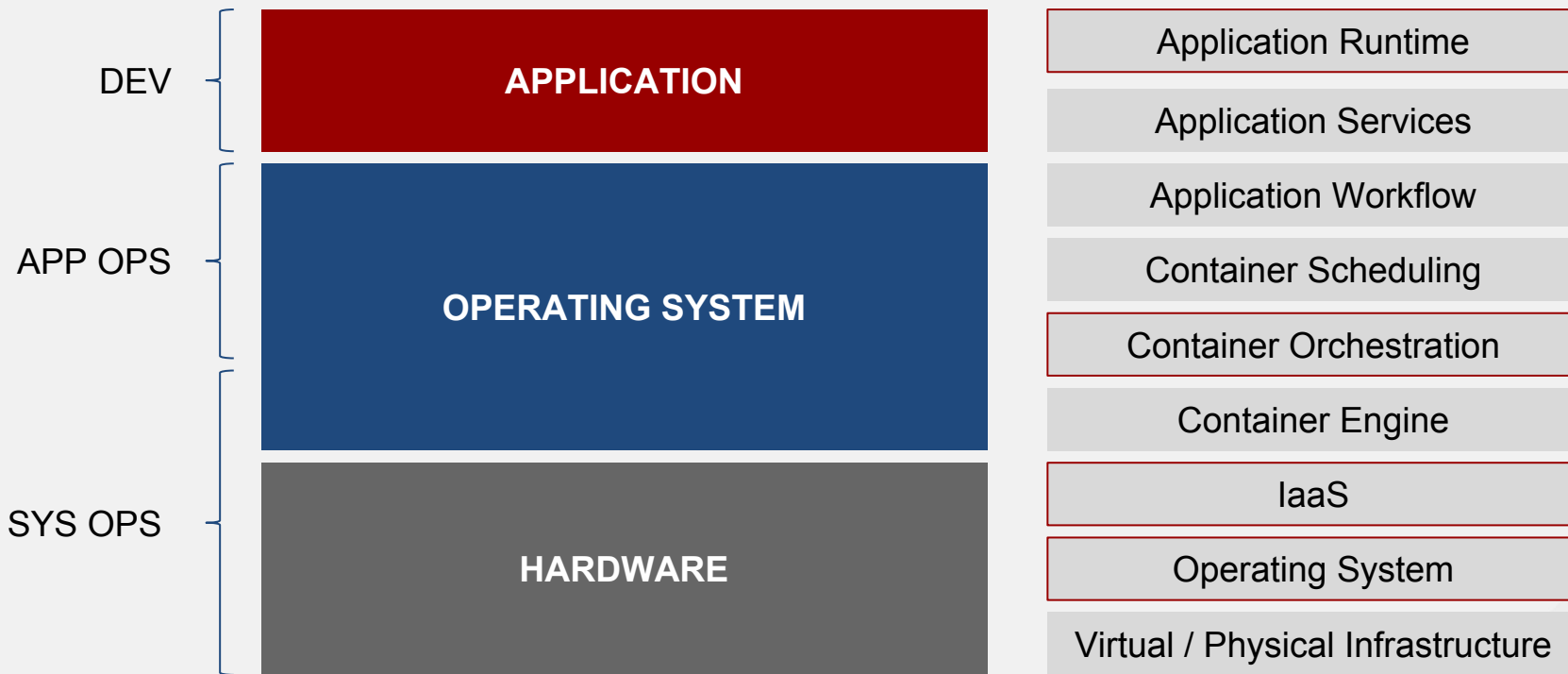
**RED HAT[®]
OPENSTACK[®]
PLATFORM**

HARDWARE

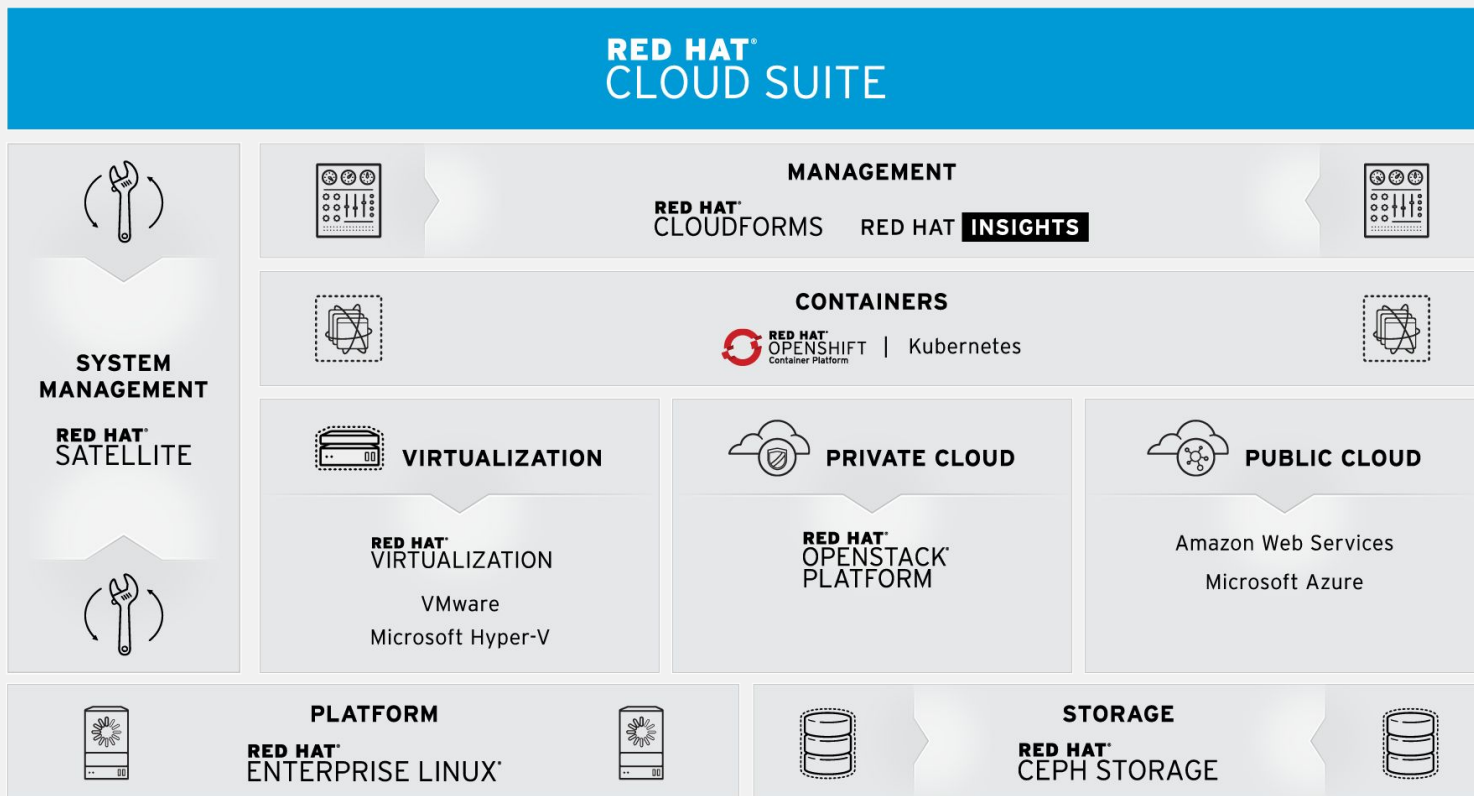
INFRASTRUCTURE SPECIALIZATION



INFRASTRUCTURE SPECIALIZATION



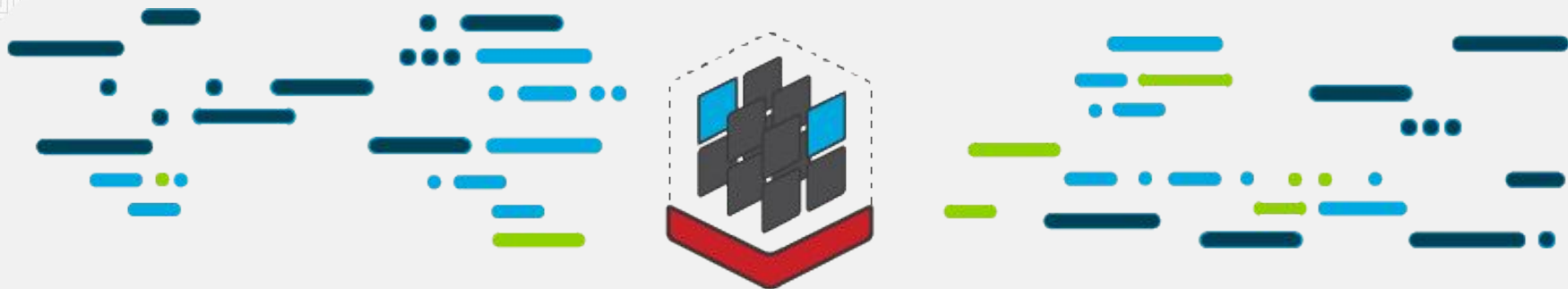
RED HAT CLOUD SUITE





CONTAINERS AND ABSTRACTIONS

What Are Containers?



It Depends on Who You Ask

Sys-Admins / Ops

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

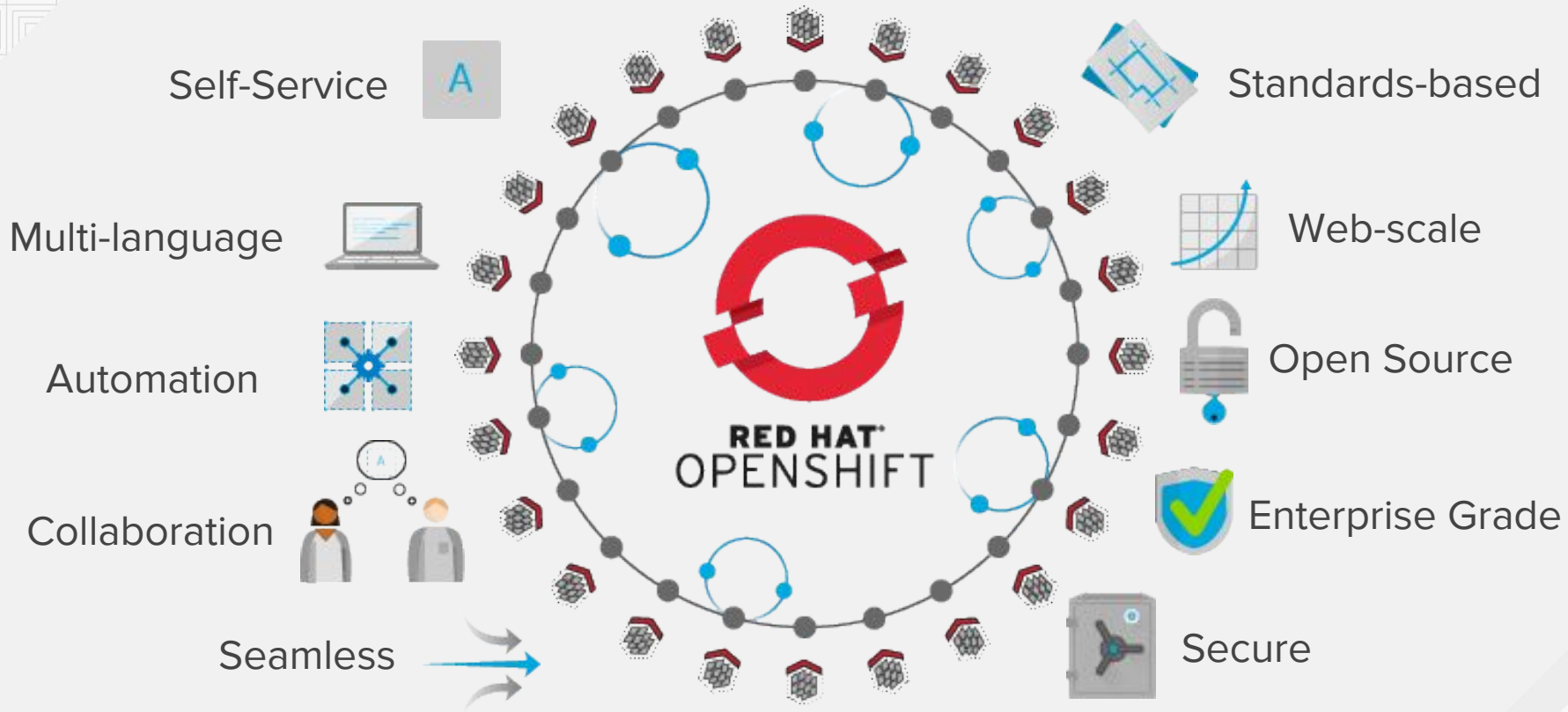
Developers

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



CONTAINERS IN ACTION

Critical features for both Dev and Ops



Application Architecture

- Shift from monolithic applications to microservices
- Independently deployable and updatable, limited dependencies
- Optimized for agility & accelerated time to market



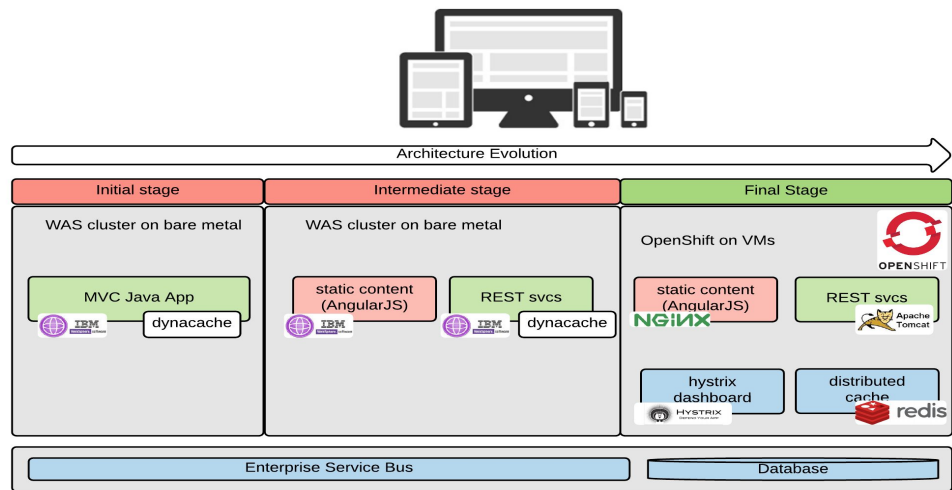
Monolith



N-Tier



Microservices



amadeus



Datacenter



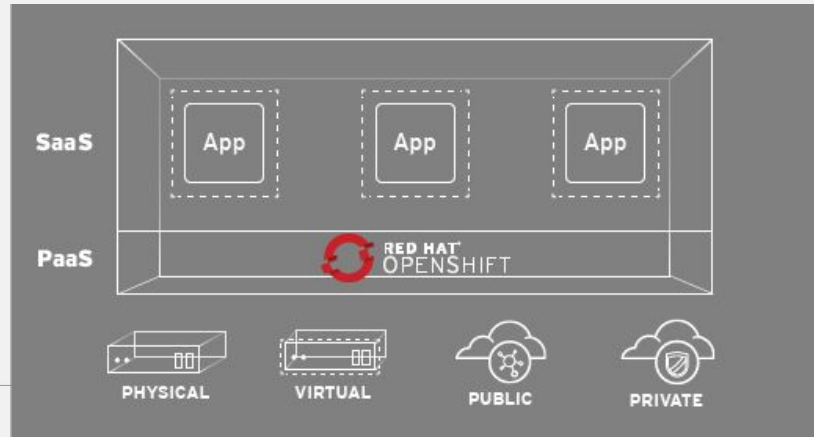
Hosted



Hybrid

Platform Infrastructure

- Shift from virtualization to scale-out cloud infrastructure
- Rapid growth in public cloud usage for enterprises
- Hybrid cloud deployments span private & multiple public clouds



Development Process

- Shift to more agile development and deployment processes
- Increased collaboration between Development & Operations
- Move from Continuous Integration to Continuous Deployment



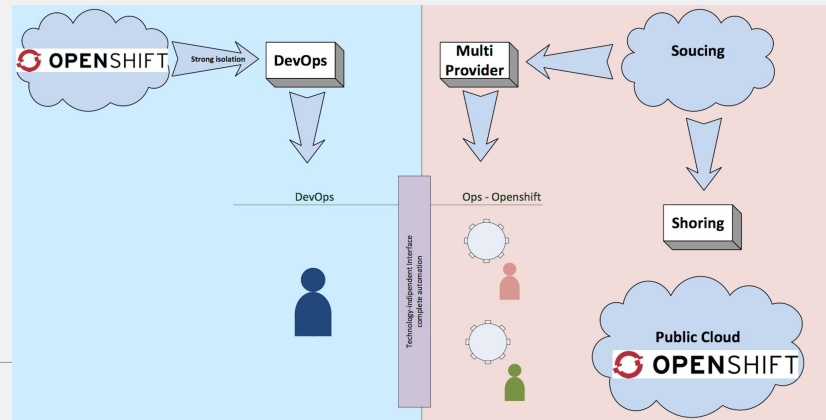
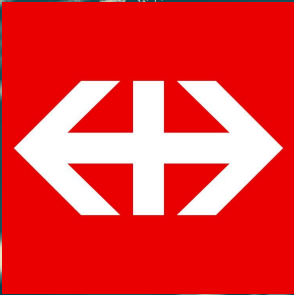
Waterfall



Agile



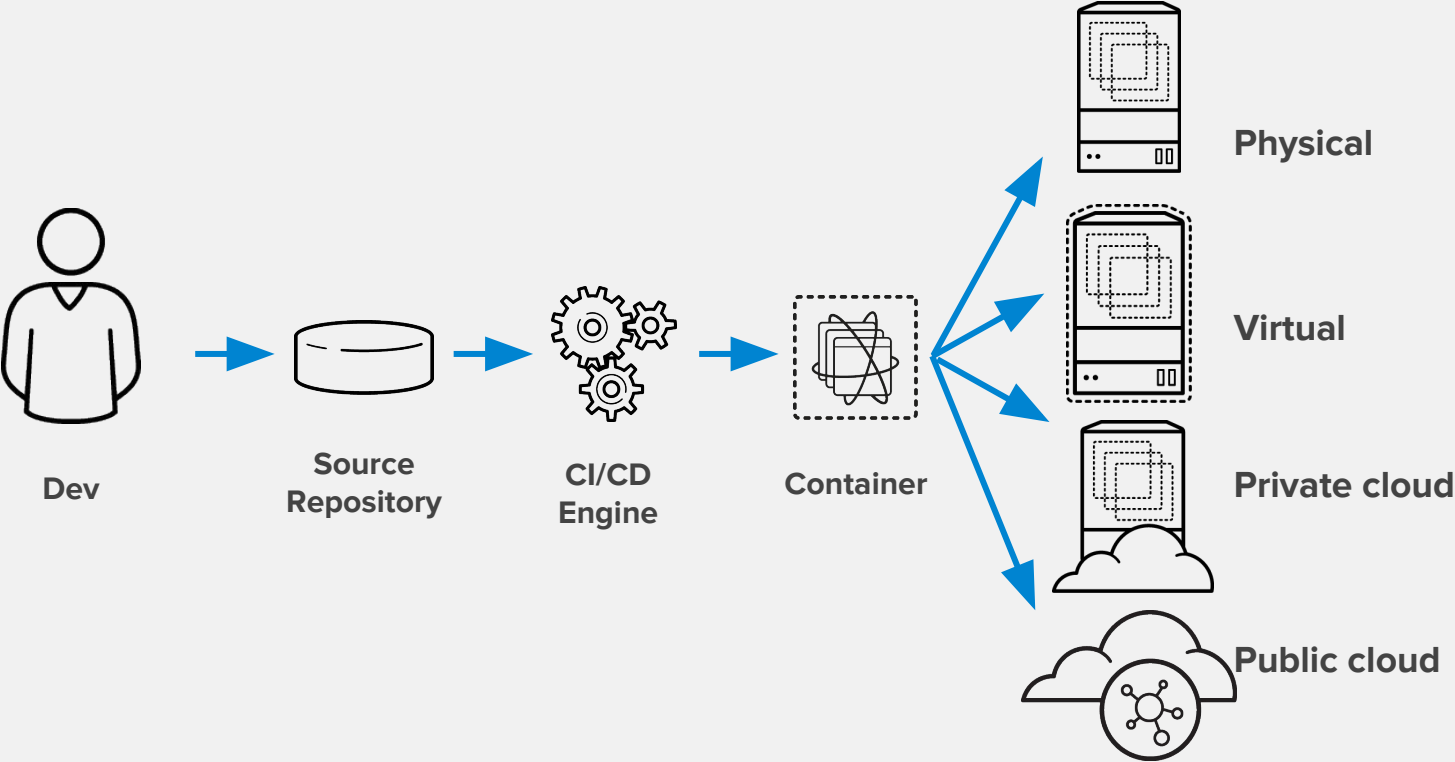
DevOps





CONTAINER DEPLOYMENT FOOTPRINTS

DevOps With Containers Across the Hybrid Cloud?





MODERNIZING WORKLOADS

THE DATA CENTER IS MOVING FORWARD

PRESSURES FROM CUSTOMERS & COMPETITORS TO MODERNIZE



NEXT-GENERATION ARCHITECTURE

New ways of developing,
delivering, and integrating
applications



CLOUD-NATIVE PLATFORMS

Modernize existing and
build new cloud-based
infrastructure



DEVOPS & CULTURAL CHANGES

More agile process
across both IT and
the business

BALANCING INNOVATION AND OPTIMIZATION

MOST CUSTOMERS CAN'T GO ALL ONE WAY OR THE OTHER



BALANCING INNOVATION AND OPTIMIZATION

RED HAT VIRTUALIZATION FOCUS ON OPTIMIZATION & INTEGRATION



Optimize the IT you have



Integrate apps, data, and processes



Add and manage cloud infrastructure



Build more modern applications

Leverage and integrate existing investments in order to enable future technology

INTEGRATE APPS, DATA, & PROCESSES



Red Hat Enterprise Linux 7.3

- Hot CPU unplug support
- Virt-sparsify



Software Defined Networking (SDN) capabilities by offering native support for Open Virtual Network (OVN) for Open vSwitch.

TECH PREVIEW
IN RHV 4.1

INTEGRATION & AUTOMATION

ANSIBLE

by Red Hat®

Red Hat Virtualization and Ansible 2.3 are integrated in order to provide streamlined configuration for:

- Virtual machines
- Virtual networks
- Virtual storage
- Configuration
- Updates



INTEGRATION & MANAGEMENT

RED HAT® CLOUDFORMS

Red Hat Virtualization is a first class infrastructure provider for CloudForms. The RHV provider now includes support for features such as:

- VM live migrate
- VM reconfiguration (hot add CPU & RAM, hot remove of previously added CPUs)
- VM Live Snapshot



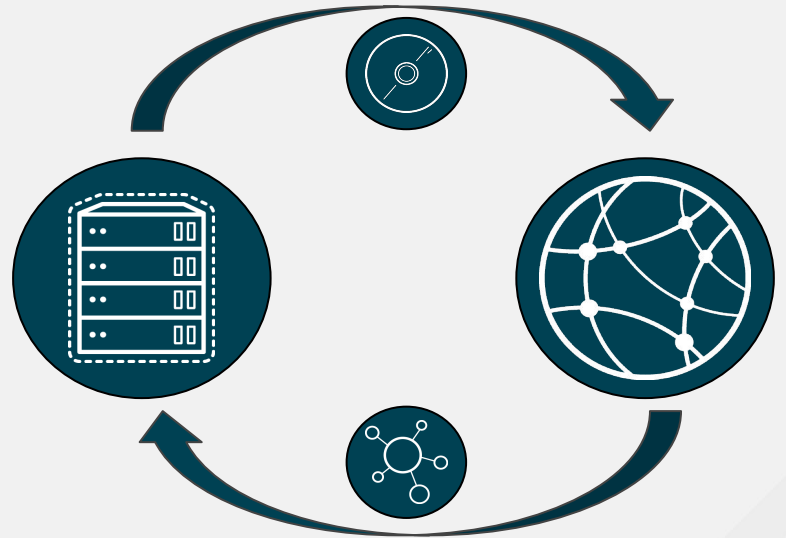
INTEGRATION & CLOUD READINESS

RED HAT® OPENSTACK® PLATFORM

Red Hat Virtualization continues to integrate with Red Hat OpenStack Platform to enable “Cloud Transition” use cases.

This includes continued and planned integration with:

- Compute
- Networking
- Storage
- Security
- High Availability
- TripleO

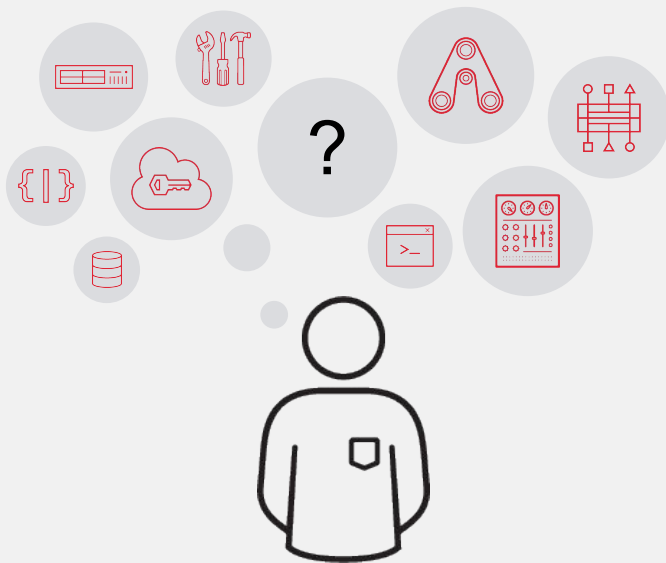




PRIVATE OPTIONS

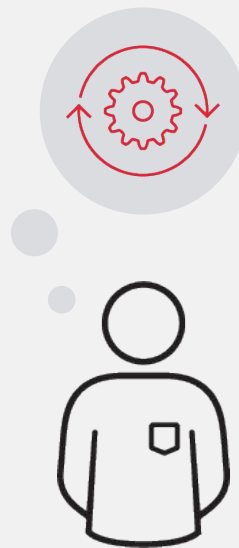
RUNNING WORKLOADS PRIVATELY

THE DO-IT-YOURSELF APPROACH



VS

THE MANAGED APPROACH



RUNNING WORKLOADS PRIVATELY

THE SELF MANAGED APPROACH

- Can be on or off-premises
- Red Hat simplifies experience:
 - in place automated upgrades
 - ops tools enablement
 - handle configuration as code
- But still require investment:
 - steep learning curve for ops
 - organization adaptation

VS

THE MANAGED APPROACH

- Can be on or off-premises
- Still benefits from Red Hat's
 - Tooling
 - QA & Support
 - Life cycle
 - Ecosystem
- API is used freely and cost to maintain is fully bundled

RED HAT OPENSTACK PLATFORM

Bridges the gap between your physical choices and your cloud deployments



STABILITY IN RAPID RELEASE CYCLES

OPENSTACK PRODUCT STRATEGY

Stable, production-ready release co-engineered with RHEL

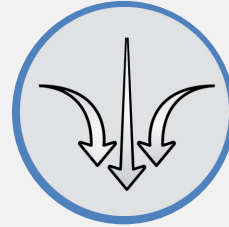
Enterprise Ready



NFV Ready



Optimized Portfolio



Certified Partner
Ecosystem



RED HAT[®]
OPENSTACK[®]
PLATFORM

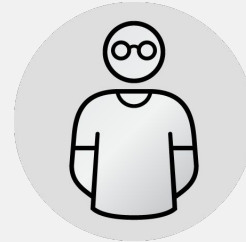
TRENDS: CONSUMPTION

Emerging consumption patterns



Some want long life versions

- Reluctant to change what's in production
- Upgrades are a disruption
- Cannot handle downtime involved
- Do not need new features
- Manually validating environment
- Constrained by complex regulations



Others want the latest features

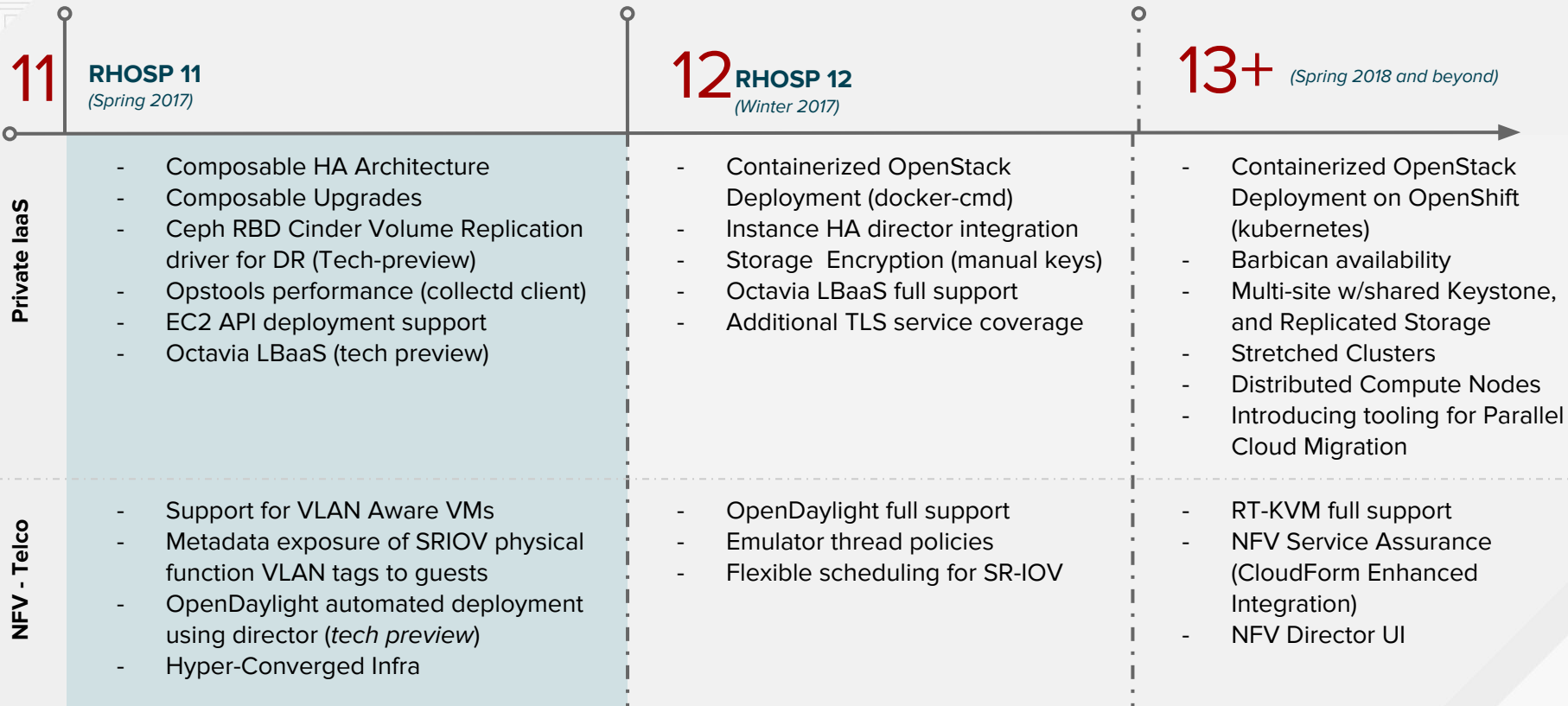
- Want new features ASAP
- Often working on fast apps themselves
- Understand continuous delivery concepts
- Automated validation procedures
- Continuously scale infrastructure with newer hardware

RED HAT OPENSTACK PLATFORM LIFE-CYCLE

		Long life			Long life		
RHOSP 8 Liberty	RHOSP 9 Mitaka	RHOSP 10 Newton	RHOSP 11 Ocata	RHOSP 12 Pike	RHOSP 13 Queens	RHOSP 14 R....	RHOSP 15 S....
3 years	3 years	3 years (+2 years)	1 year	1 year	3 years (+2 years)	1 year	1 year

- Every **6 month** release of RHOSP is supported for 1 year
 - No feature backports (Production Phase 2 from the start)
 - In-place/online upgrades supported during this timeframe from n to n+1
- Every **18 months**, we elect an extended life support version (Long Life releases)
 - Selected Backports available to Long Life releases
 - In-place upgrades from N → N+1 from this release supported if done within year 1 (with a 6 month buffer window)
 - Upgrades from **Long Life → Long Life** will be done via automated* migration to latest RHOSP available with tooling provided.
 - Extension from 3 to 5 years at additional cost (ELS add-on)

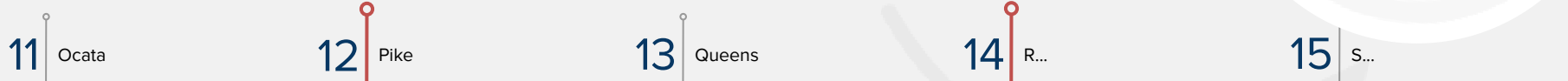
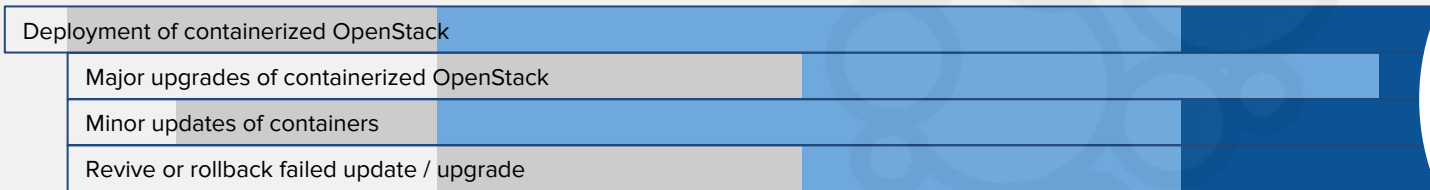
Red Hat OpenStack Platform - 10k Foot View



Containerized RHOSP deployment & management

“Thai Flute” High Level View

Epic maturity legend:



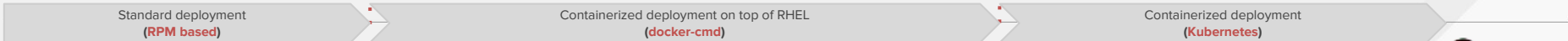
GA: Containerized Compute Role in TP1
End of Feb: Framework for containerized deployment
M-1: Fmwk for containers minor updates
Post M-3: Major upgrades to containerized deployment ready for testing

GA: Containerized OpenStack Deployment based on **docker-cmd**
GA: **Minor updates** to containers via Heat & Ansible
GA: Major upgrades to container. depl.
GA: Revive failed update/upgrade
GA: Rollback of updates (containers)

GA: **Major upgrades** of containers via Heat & Ansible
GA: **Rollback of upgrades** in containers

GA: **Deployment** of containerized OpenStack via **Kubernetes** as an underlying technology
GA: **Minor updates** of containers via **Kubernetes**
GA: **Major upgrades** to Kubernetes based deployments

GA: **Ansible** based deploy (via RHOSP director)

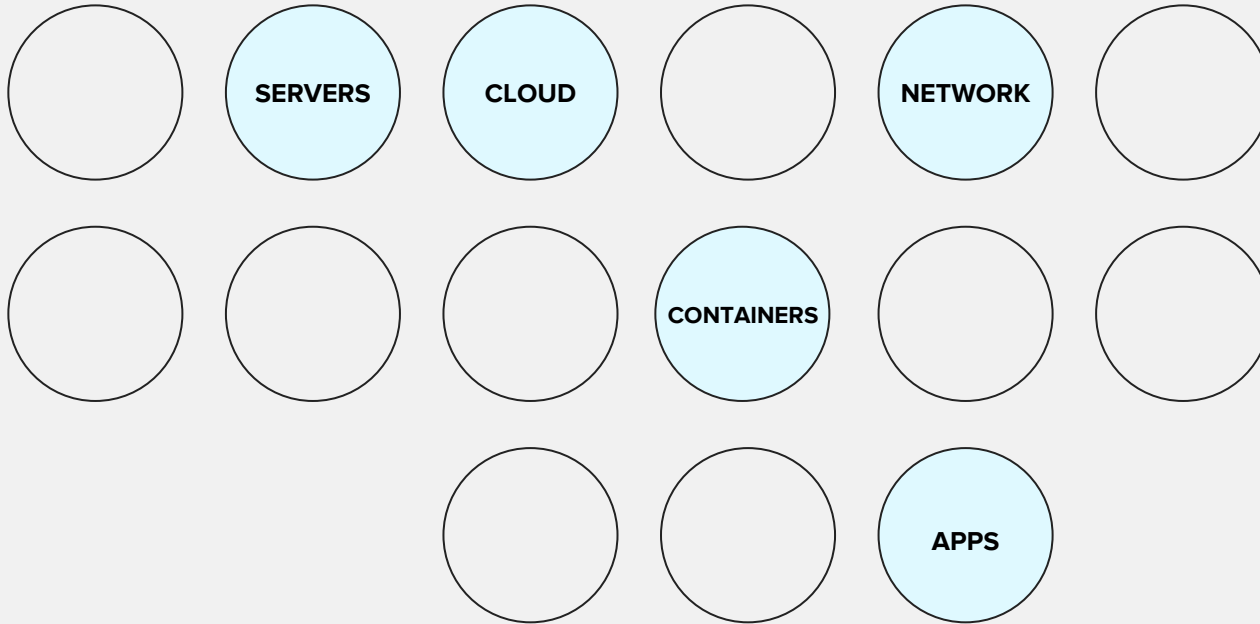




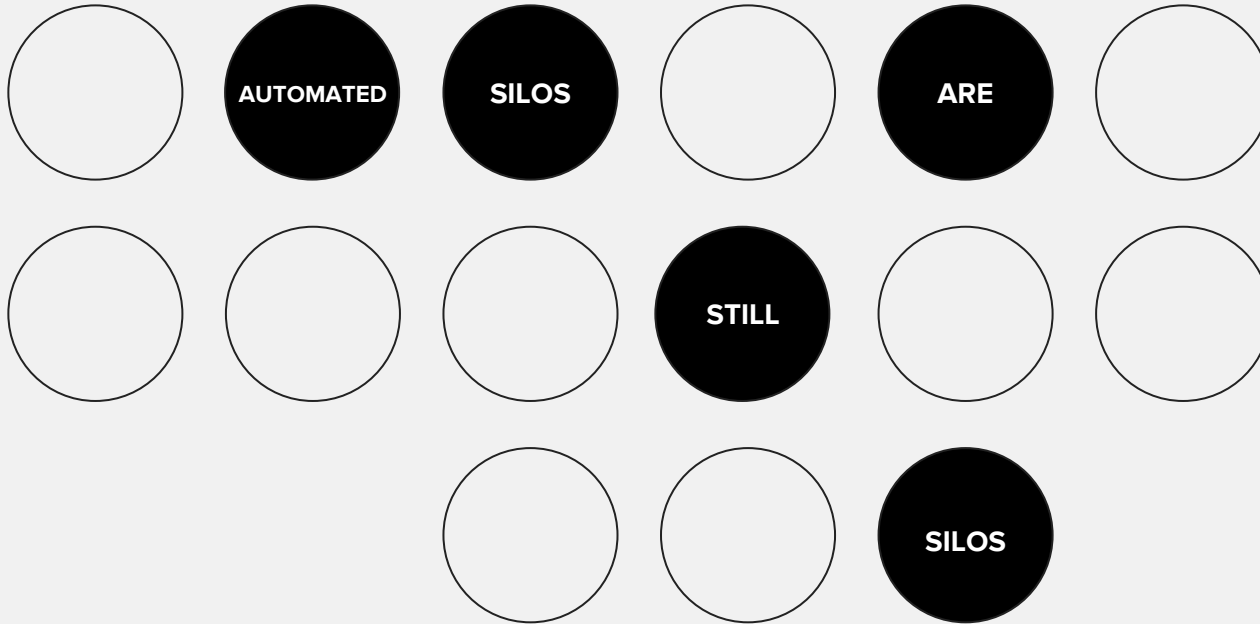
MANAGING A COMPLEX ENVIRONMENT

Everyone is talking about **automation**.

AUTOMATION IN ENTERPRISE IT TODAY



AUTOMATION IN ENTERPRISE IT TODAY



Ansible solves these problems
where no other technology has
been able to do so.

SIMPLE AGENTLESS EXTENSIBLE

ANSIBLE AUTOMATION

is at the core of our management strategy

RED HAT MANAGEMENT AND AUTOMATION FOR IT OPERATIONS



CENTRALIZE
AUTOMATION GOVERNANCE

RED HAT®
CLOUDFORMS

DELIVER SERVICES ACROSS
YOUR HYBRID CLOUD

RED HAT®
INSIGHTS

PREVENT CRITICAL ISSUES
BEFORE THEY OCCUR

RED HAT®
SATELLITE

BUILD A TRUSTED & SECURE
RED HAT ENVIRONMENT

ANSIBLE

AUTOMATE YOUR
I.T. PROCESSES & DEPLOYMENTS



ANSIBLE AND CLOUD SUITE

RED HAT MANAGEMENT AND AUTOMATION FOR IT OPERATIONS

RED HAT® CLOUDFORMS

DELIVER SERVICES ACROSS
YOUR HYBRID CLOUD

RED HAT® INSIGHTS

PREVENT CRITICAL ISSUES
BEFORE THEY OCCUR

RED HAT® SATELLITE

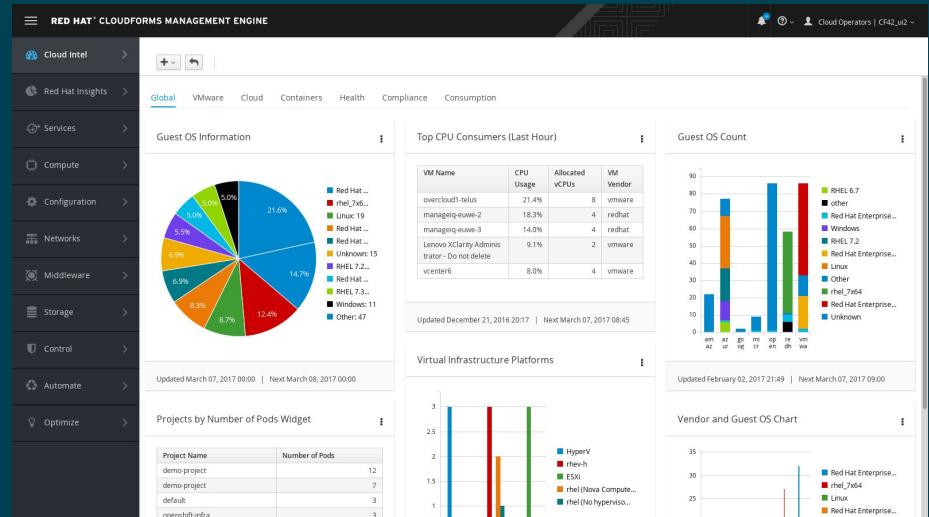
BUILD A TRUSTED & SECURE
RED HAT ENVIRONMENT

A N S I B L E

AUTOMATE YOUR
I.T. PROCESSES & DEPLOYMENTS

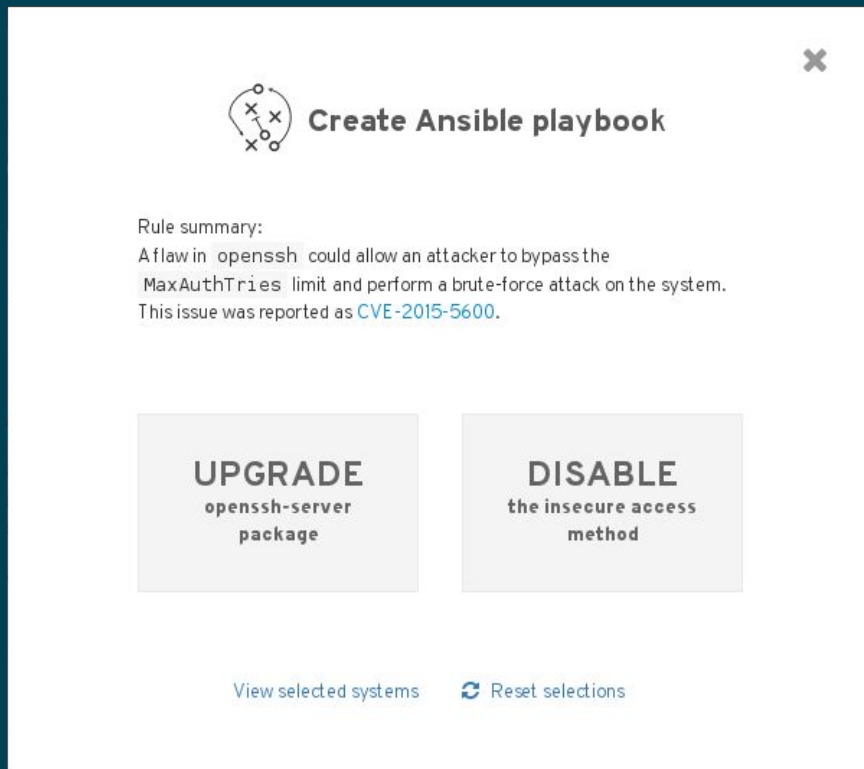
RED HAT® CLOUDFORMS



- Single Management Platform across Openstack, RHEV and Openshift
- Ansible is becoming the default automation language of CloudForms
- No more sysadmins writing and maintaining Ruby
- Ansible removes the biggest barrier to entry for new CloudForms deployments



RED HAT® INSIGHTS

- Insights now creates Ansible Playbooks to fix issues it identifies
- Insights generates tailored Playbooks customized to the user's specific environment
- Integrate Insights remediations into stand-alone or CloudForms based workflows




  **Create Ansible playbook**

Rule summary:
A flaw in `openssh` could allow an attacker to bypass the `MaxAuthTries` limit and perform a brute-force attack on the system. This issue was reported as [CVE-2015-5600](#).

UPGRADE
openssh-server
package

DISABLE
the insecure access
method









[View selected systems](#)  [Reset selections](#)

RED HAT® SATELLITE






- The best way to manage your entire Red Hat infrastructure
- Ansible already work with Satellite - inventory sharing, Satellite as a content provider, Tower as a post-deployment call-out
- Future versions of Satellite will default to Ansible automation provider while continuing to support existing Puppet deployments
- Not just Ansible - tighter integrations with Insights & CloudForms

MANAGEMENT EMBEDDED IN THE RED HAT PORTFOLIO

Today

 RED HAT OPENSIFT	 openstack.	RED HAT CLOUD INFRASTRUCTURE	RED HAT STORAGE	RED HAT CERTIFIED ARCHITECT
 				

Coming

RED HAT JBOSS [®] MIDDLEWARE	RED HAT ENTERPRISE LINUX [®]	RED HAT CLOUDFORMS	RED HAT INSIGHTS	???
 				

Comprehensive Cloud Suite

RED HAT® CLOUD SUITE



SYSTEM MANAGEMENT

RED HAT®
SATELLITE



MANAGEMENT

RED HAT®
CLOUDFORMS RED HAT **INSIGHTS**



CONTAINERS

RED HAT®
OPENSIFT | Kubernetes
Container Platform



VIRTUALIZATION

RED HAT®
VIRTUALIZATION

VMware
Microsoft Hyper-V



PRIVATE CLOUD

RED HAT®
OPENSTACK®
PLATFORM



PUBLIC CLOUD

Amazon Web Services
Microsoft Azure



PLATFORM

RED HAT®
ENTERPRISE LINUX®



STORAGE

RED HAT®
CEPH STORAGE



CL0074-01



THANK YOU



plus.google.com/+RedHat



facebook.com/redhatinc



linkedin.com/company/red-hat



twitter.com/RedHatNews



youtube.com/user/RedHatVideos