OpenShift Enterprise:
Meeting Tomorrow's Expectations Today

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Product Management: OpenShift
@gadfly_io

DEFINING PLATFORM AS A SERVICE

- ## Catalyst:
  - What caused the Shift?

- ## Design Principles
  - How are we solving those problems?

- ## Innovation Leader
  - Leader in Next Generation PaaS Design

RED HAT
OPEN HYBRID
CLOUD

Catalyst

INSANE INFORMATION; INSANE SPEED
(last 60 secs)

204M emails sent   1.4M Skype Connections   347 Wordpress Blog Posts
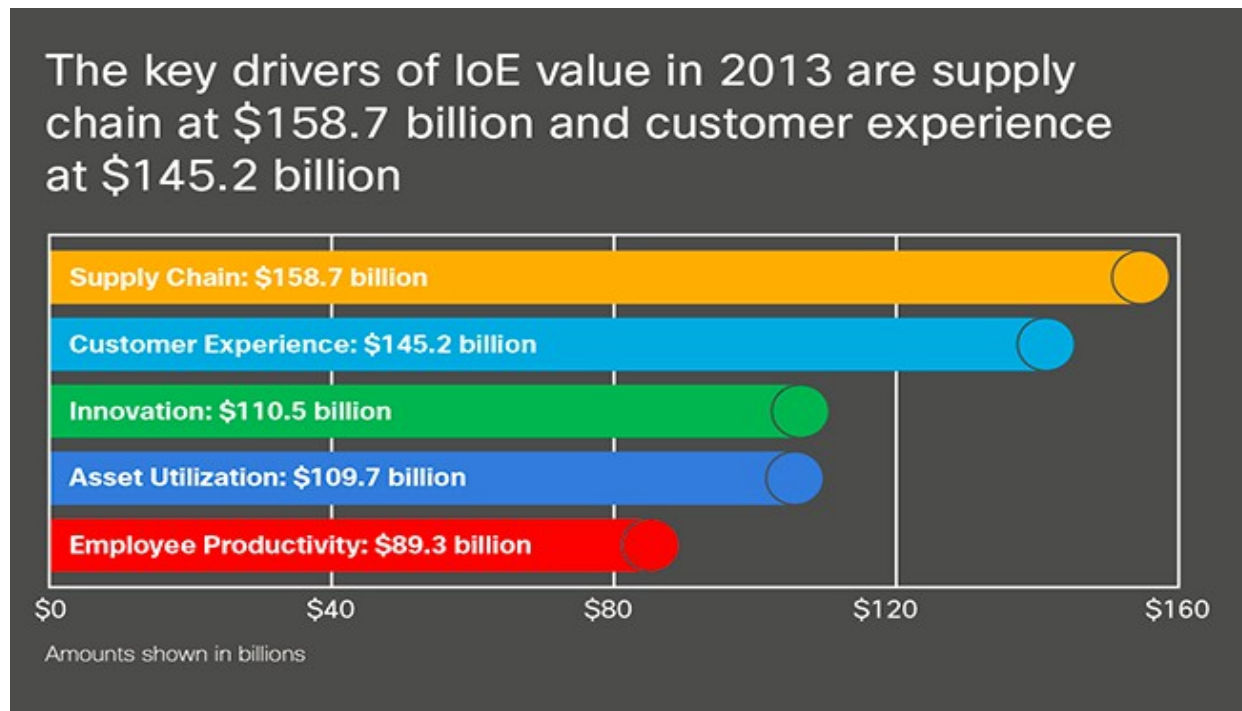
11K Pinterest Users on Line   2M Google searches   72 Hours of Youtube uploaded

278K Tweets   104K Photos over snapchat   571 New Websites over 70 New domains

The key drivers of IoE value in 2013 are supply chain at $158.7 billion and customer experience at $145.2 billion

Supply Chain: $158.7 billion
Customer Experience: $145.2 billion
Innovation: $110.5 billion
Asset Utilization: $109.7 billion
Employee Productivity: $89.3 billion

$0 $40 $80 $120 $160

Amounts shown in billions

Who are you (Identity)?
Where are you (GEO/spatial)?
What time is it (Measured)?
Services consumed (Societal and Technological)?
How Long did it take (SLA)?
What was your Health Telemetry (Raw Data)?
How many others are like you (Modeling)?
Suggested trends (Predictive Analysis)?

http://blog.qmee.com/wp-content/uploads/2013/07/Qmee-Online-In-60-Seconds2.png

http://newsroom.cisco.com/image/image_gallery?uuid=a900d5e9-12cb-4c9d-a31b-86045d1614f9&groupId=10157

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# TECHNOLOGY CHANGES

PaaS

|			
Enterprise Management Systems	Provisioning Automation	Infrastructure as Code	DevOps
Data Collection	Data Warehousing	Unstructured Data	Big Data
Logical/Virtual Networks	Device Virtualization	Fat Pipes	SDN
Shared Resources	HW Domains	Hypervisor	Containers
High Sockets	High Clock speeds	HyperThreading	Code on Silicon
Datacenters	Managed Services	Provider	Hybrid
Static Web Content	Dynamic Appservers	Statefull	Stateless
3 Tier Architecture	SOA	Integrated Services	Composite
Vertical	Horizontal	Engineered Systems	Cloud

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DRAMATIC CHANGE IN RELATIONSHIPS

OPEX
- PolyGlot (Freedom to Experiment)
- Situation Driven
- Shorter commitments
- Faster Unit Return (business need)
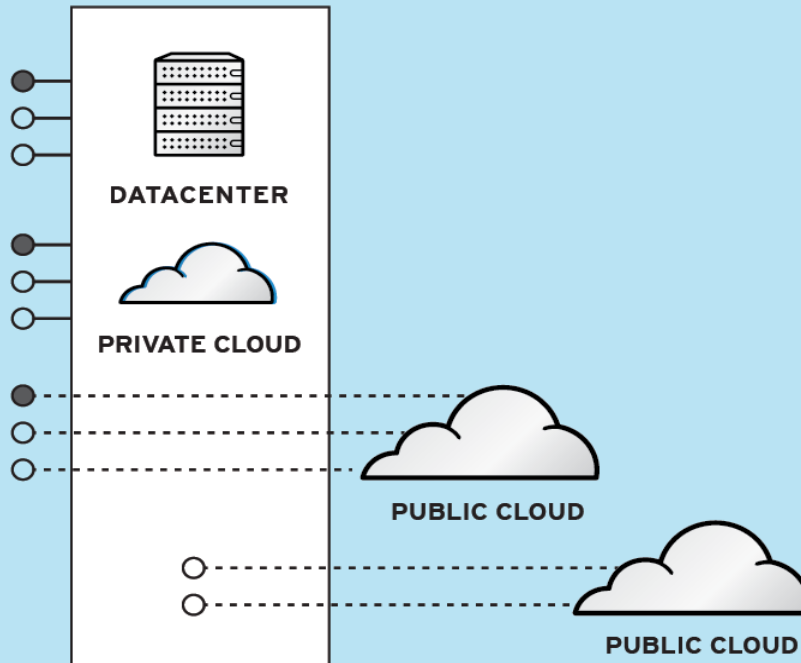- Frequent Code Check-in

Vs.
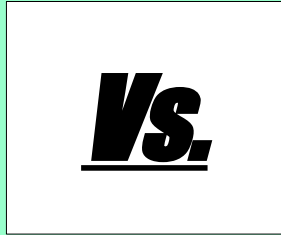
CAPEX
- Forecast Longer in Advance
- Multi-Year Depreciation Schedule
- Historical Reasons
- Long Term Commitments
- Less New Feature Introduction

BUSINESS — **DATACENTER** — **I.T.**
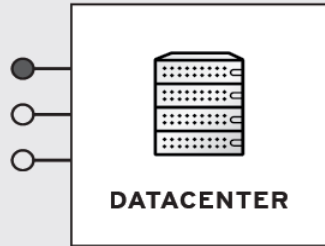
TRADITIONAL I.T.

- Provides services on traditional infrastructure

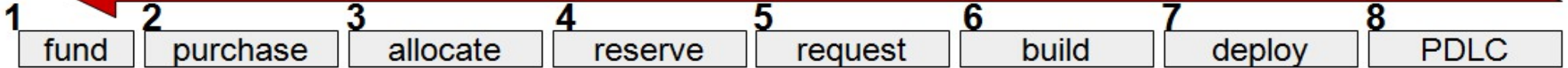**BUSINESS** + **I.T.** — **DATACENTER** / **PRIVATE CLOUD** — **PUBLIC CLOUD** / **PUBLIC CLOUD**
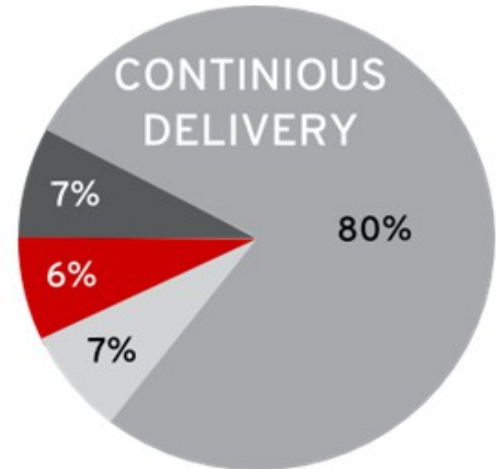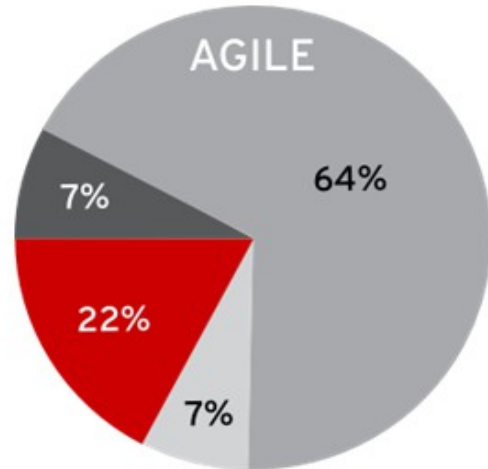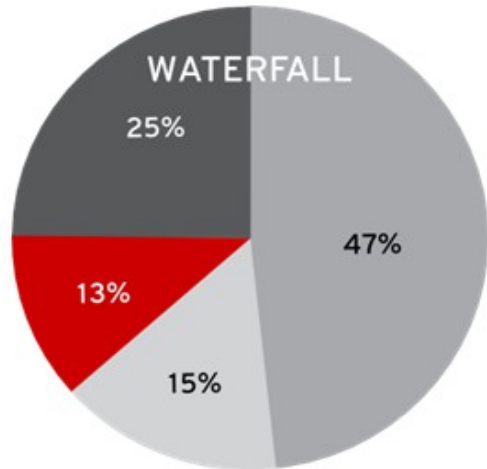
HYBRID I.T.

- Provides services on traditional infrastructure
- Provides services on private cloud
- Brokers services from public clouds
- Consumes services from public clouds

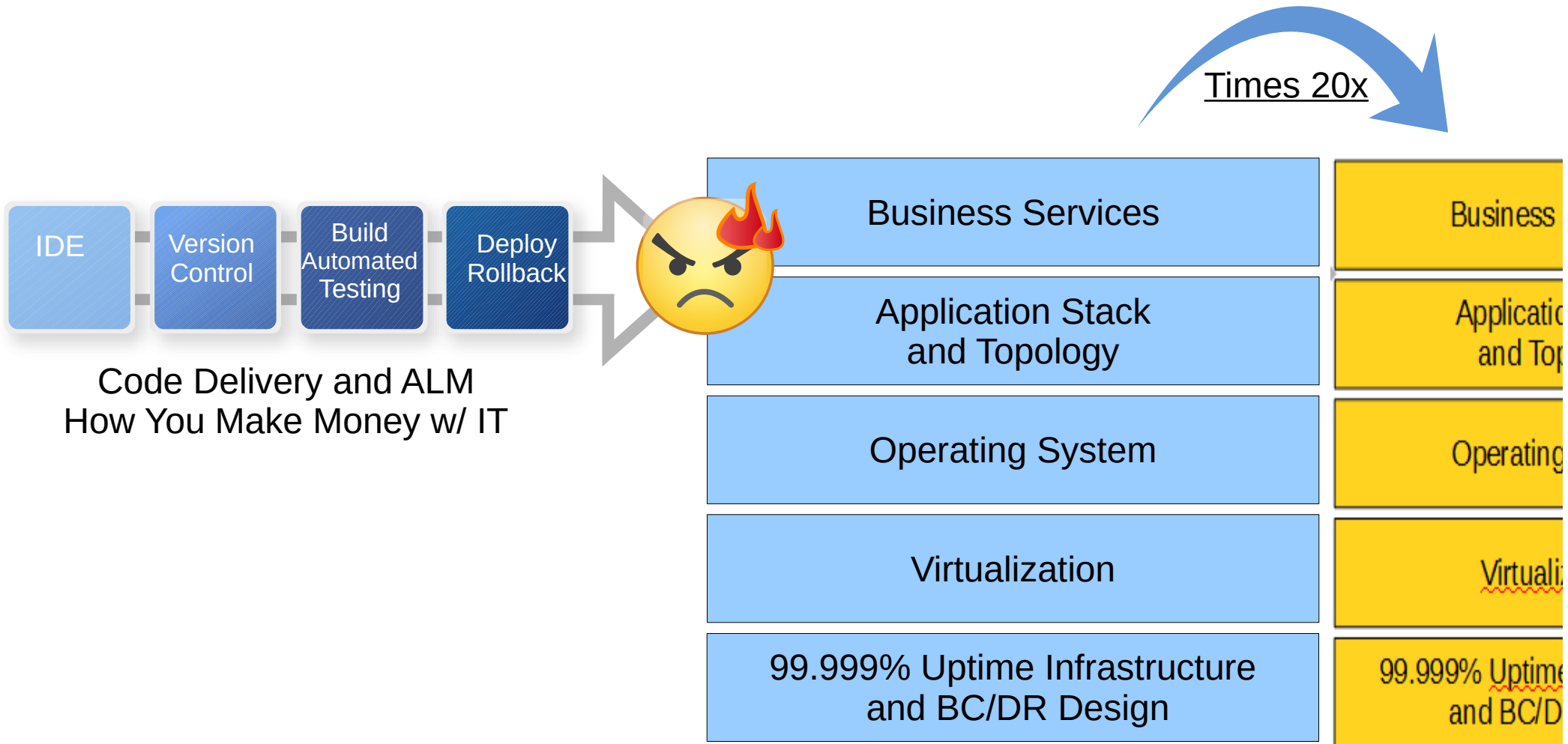redhat.

APPS MOVING TO CONTINIOUS DELIVERY

Accessibility of Data. Need to Monetize on Analytics. Situational Applications.

WATERFALL
- 25%
- 47%
- 13%
- 15%

AGILE
- 7%
- 64%
- 22%
- 7%

CONTINIOUS DELIVERY
- 7%
- 80%
- 6%
- 7%

1	2	3	4	5	6	7	8
fund	purchase	allocate	reserve	request	build	deploy	PDLC

Design
Design and Architecture

Development
Development and Documentation

Test
Automated and Manual Tests

Deployment
Deployment to Test and Production

- Change cost structure in Funding
- Consolidate Steps 3-6 via High Density Multi-Tenant
- Smart Deploy

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TOO EXPENSIVE AS WE STACK BUILD (IaaS+)

Times 20x

IDE — Version Control — Build Automated Testing — Deploy Rollback

Code Delivery and ALM
How You Make Money w/ IT

Business Services	Business
Application Stack and Topology	Applicatio and Top
Operating System	Operating
Virtualization	Virtuali
99.999% Uptime Infrastructure and BC/DR Design	99.999% Uptime and BC/D

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FUNDAMENTAL ARCHITECTURUAL CHANGES REQUIRED

Datacenter are Cracking

Features

- Repeatable Patterns
- Microservices
- Continuous Integration
- Continuous Delivery
- DevOps
- Intelligent Stacks
- Consumption Design
- Cloud Level Horizontal Scale
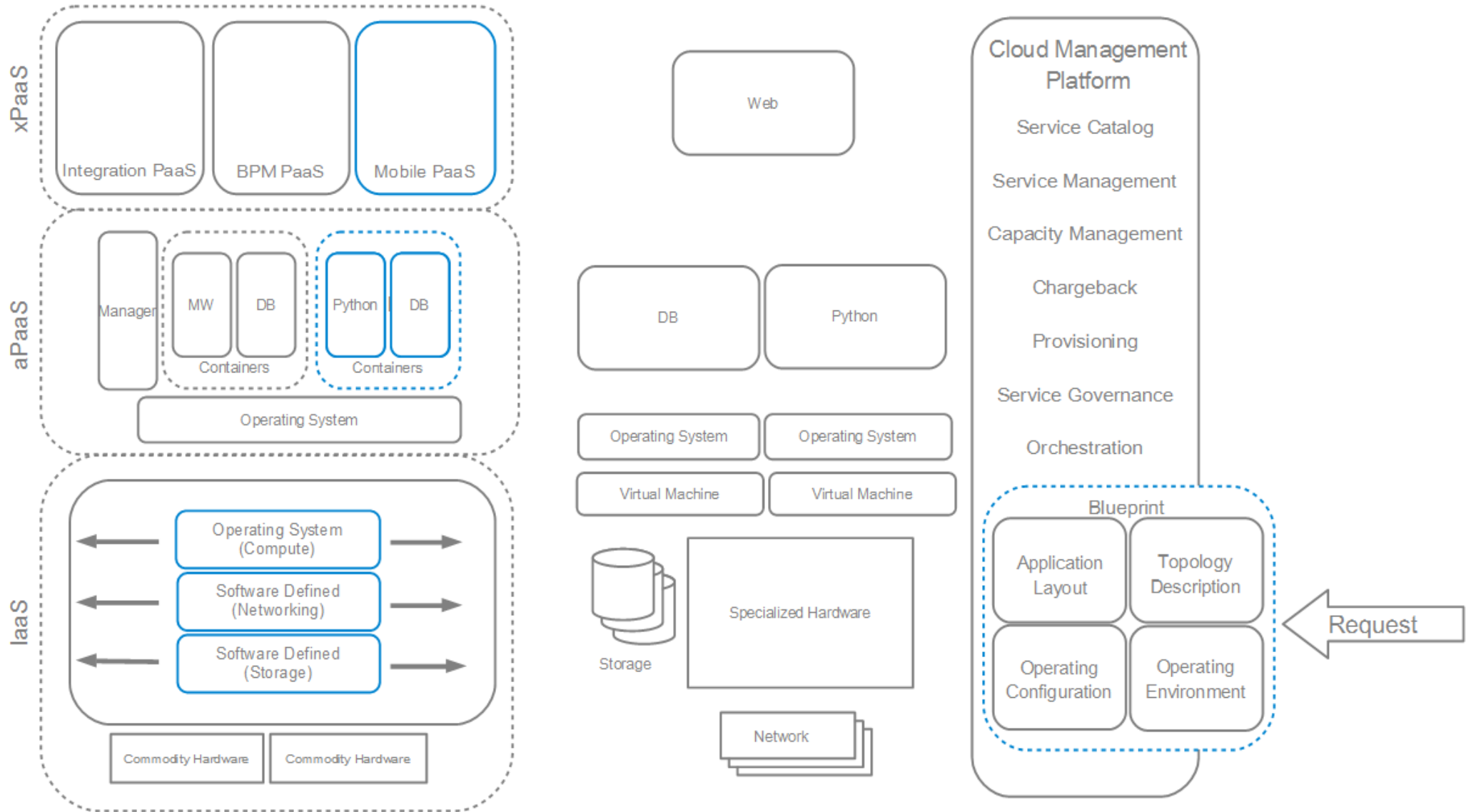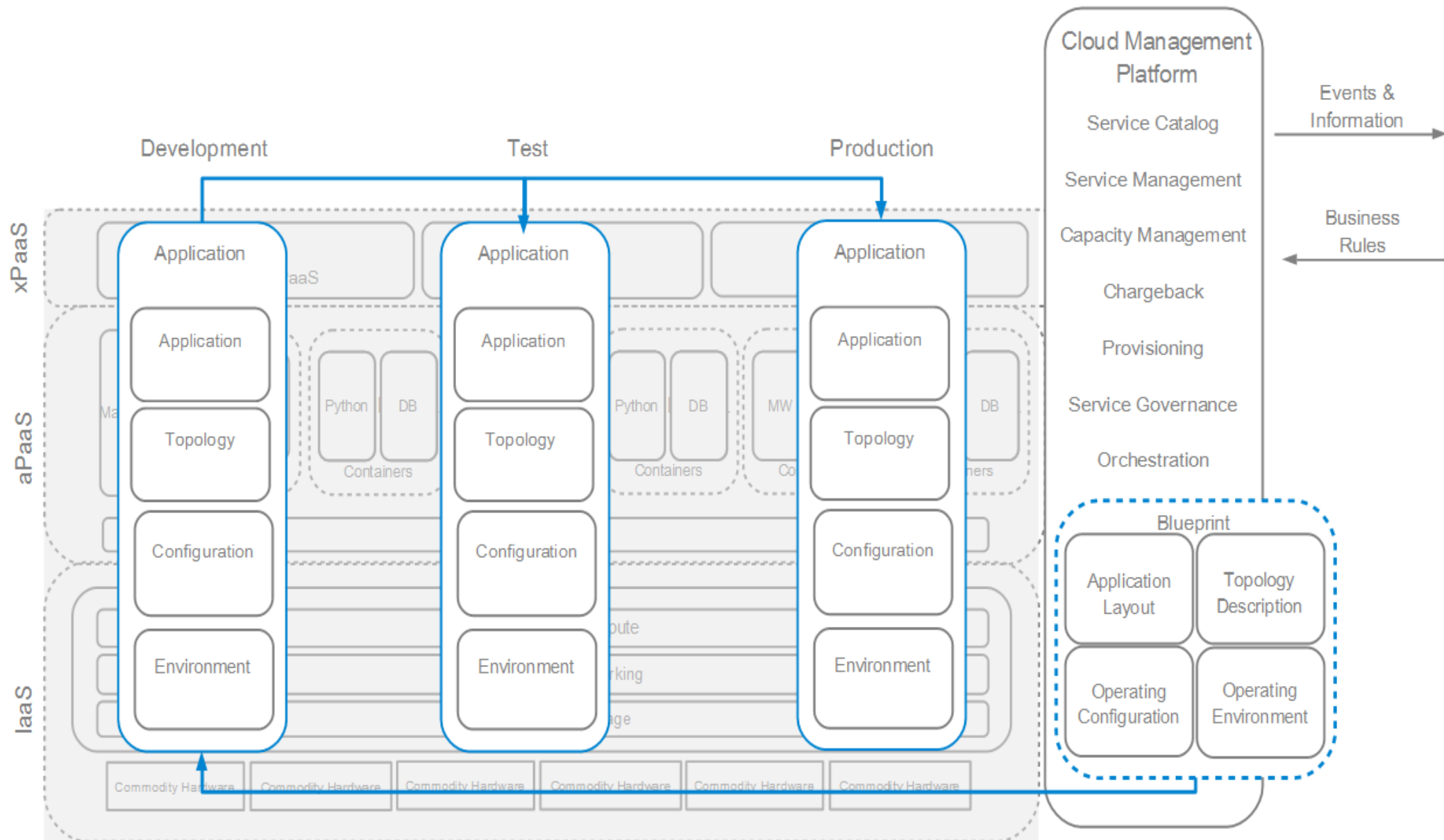- Service AutoBind
- Security
- Data Integration

Requirements

- Social Media
- Business Analytics
- Big Data
- Mobile Compute Power
- Internet of Things
- Situational Applications
- Massive Data Stores
- App Stores
- Mobile Backends
- Unstructured Data
- Stateless
- LOB Polyglot

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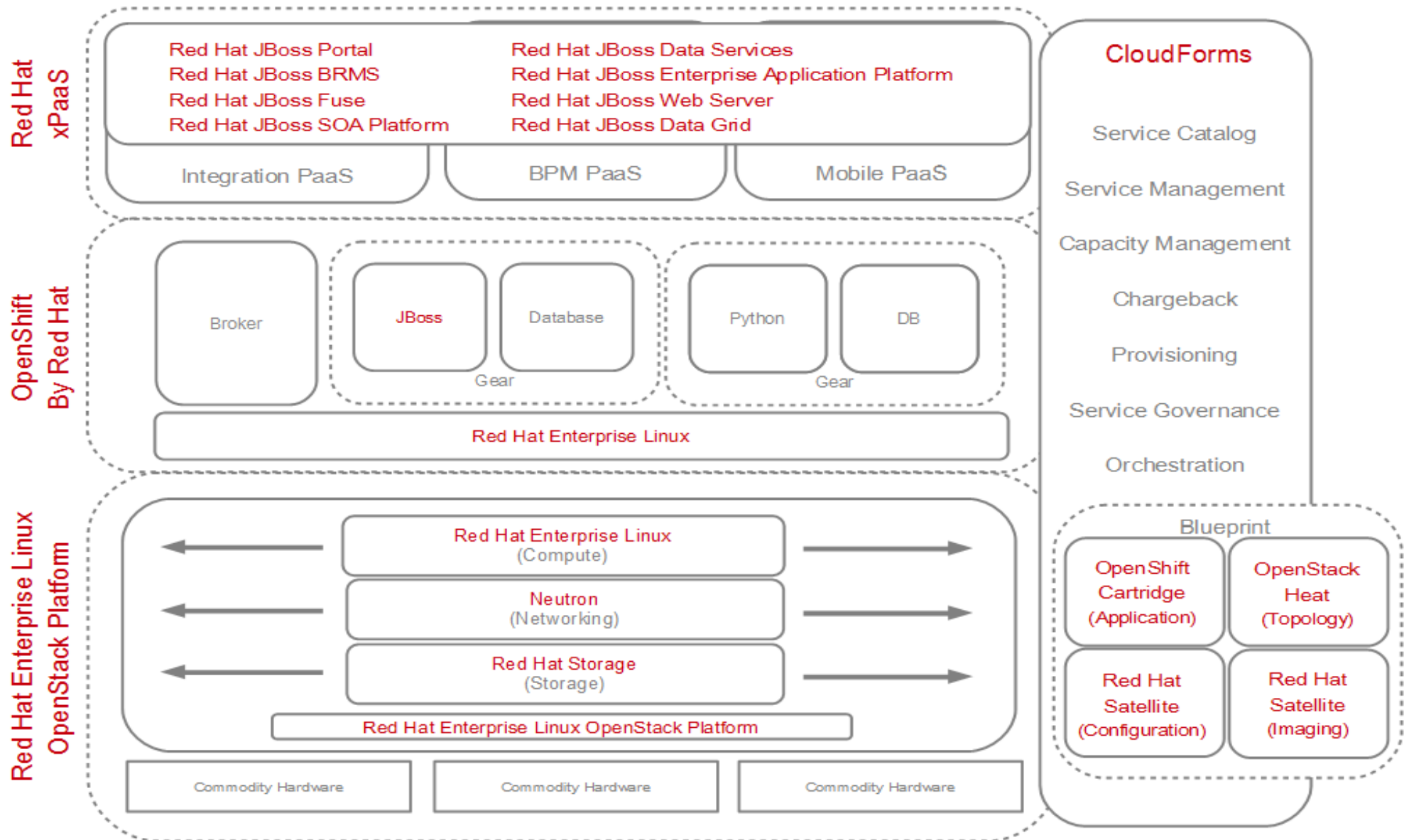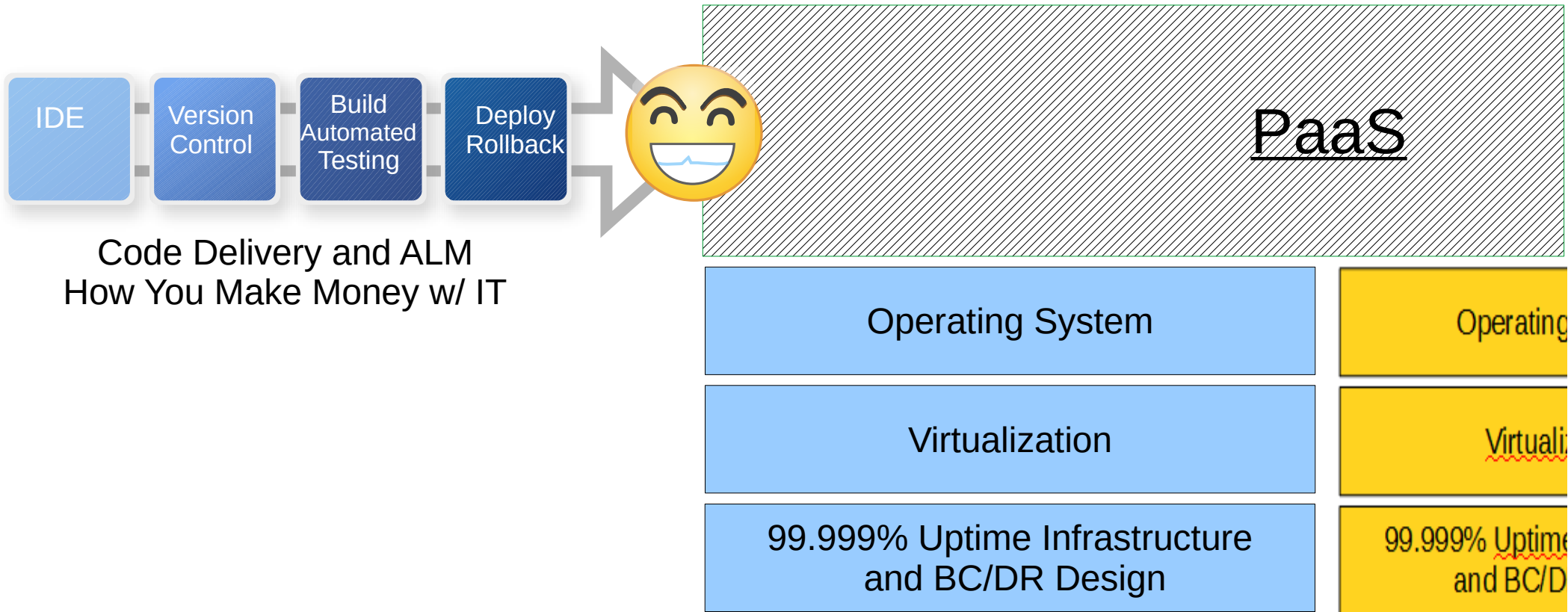# Design Principles

APPLICATIONS ACROSS THE INFRASTRUCTURE

APPLICATION LIFE CYCLE AND SERVICE SLAs
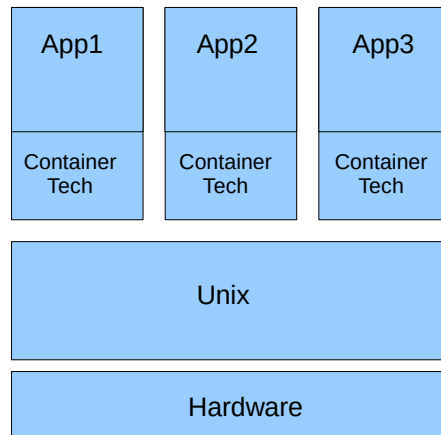
RED HAT SOLUTION FOR SERVICE DELIVERY

Red Hat xPaaS

Red Hat JBoss Portal
Red Hat JBoss BRMS
Red Hat JBoss Fuse
Red Hat JBoss SOA Platform

Red Hat JBoss Data Services
Red Hat JBoss Enterprise Application Platform
Red Hat JBoss Web Server
Red Hat JBoss Data Grid

Integration PaaS | BPM PaaS | Mobile PaaS

CloudForms

Service Catalog

Service Management

Capacity Management

Chargeback

Provisioning

Service Governance

Orchestration

OpenShift By Red Hat

Broker

JBoss | Database
Gear

Python | DB
Gear

Red Hat Enterprise Linux

Red Hat Enterprise Linux OpenStack Platform

Red Hat Enterprise Linux
(Compute)

Neutron
(Networking)

Red Hat Storage
(Storage)

Red Hat Enterprise Linux OpenStack Platform

Commodity Hardware | Commodity Hardware | Commodity Hardware

Blueprint

OpenShift Cartridge (Application) | OpenStack Heat (Topology)

Red Hat Satellite (Configuration) | Red Hat Satellite (Imaging)

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OPENSHIFT OFFERS A COMMON POLYGLOT EXPERIENCE

| IDE | Version Control | Build Automated Testing | Deploy Rollback |

Code Delivery and ALM
How You Make Money w/ IT

PaaS

Operating System

Virtualization

99.999% Uptime Infrastructure and BC/DR Design

Operating

Virtuali

99.999% Uptime
and BC/D

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WHAT IS DIFFERENT THIS TIME ABOUT CONTAINERS?

OLD

App1	App2	App3
Container Tech	Container Tech	Container Tech

Unix

Hardware

•Ops tools Did Not Understand Containers
•No Mobility
•Difficult to patch
•Difficult to teach the applications about the container
•Harder to control Spraw
•Difficult to Monitor
•Not Many PolyGlot Options

NEW

App1	App2	App3
Container Tech	Container Tech	Container Tech

Linux

Hardware

OpenShift
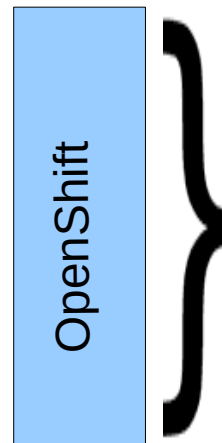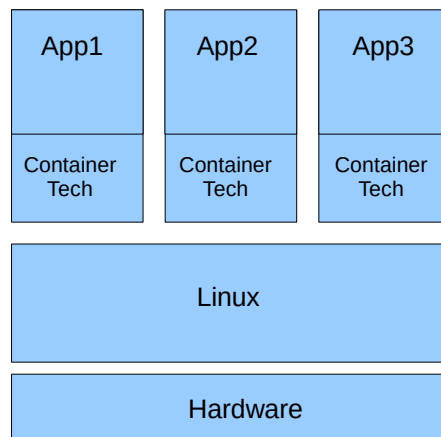
•OS and Application Patching
•Container Placement Intelligence
•Container Mobility
•Understands Stateless and Stateful Requirements
•Application Framework Sizing Automation
•Developer Relationship to Application/Runtime Defined
•Ability to Idle and Bring Back
•High Level of Secure Isolation
•Leverages File System Namespacing for App Directories

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RED HAT'S PAAS STRATEGY

Open Source PaaS Project

OPENSHIFT
origin

Public PaaS Service

On-premise or Private PaaS Software

OPENSHIFT
ONLINE
by Red Hat*

OPENSHIFT
ENTERPRISE
by Red Hat*

OPENSHIFT SERVICE ECO-SYSTEM
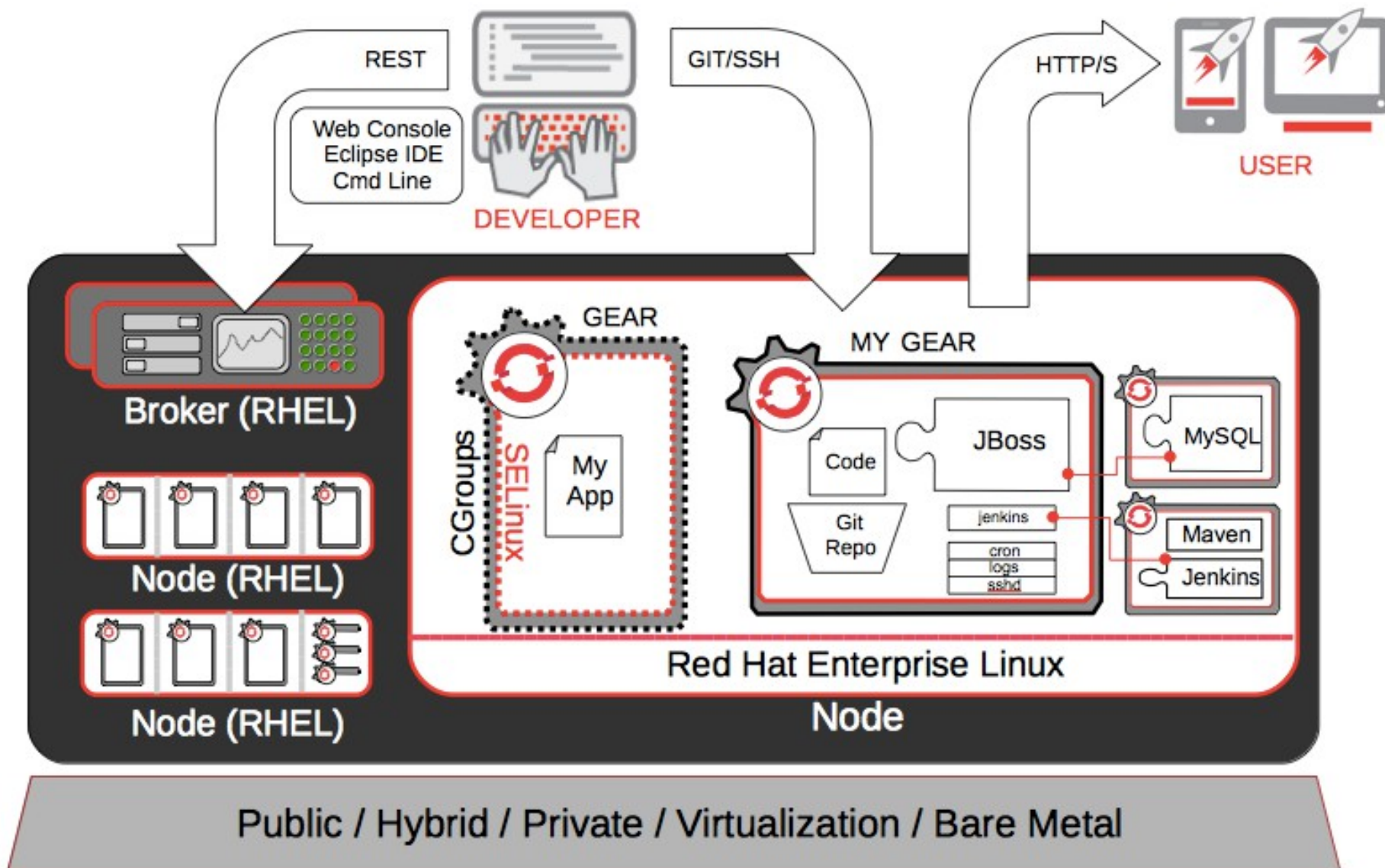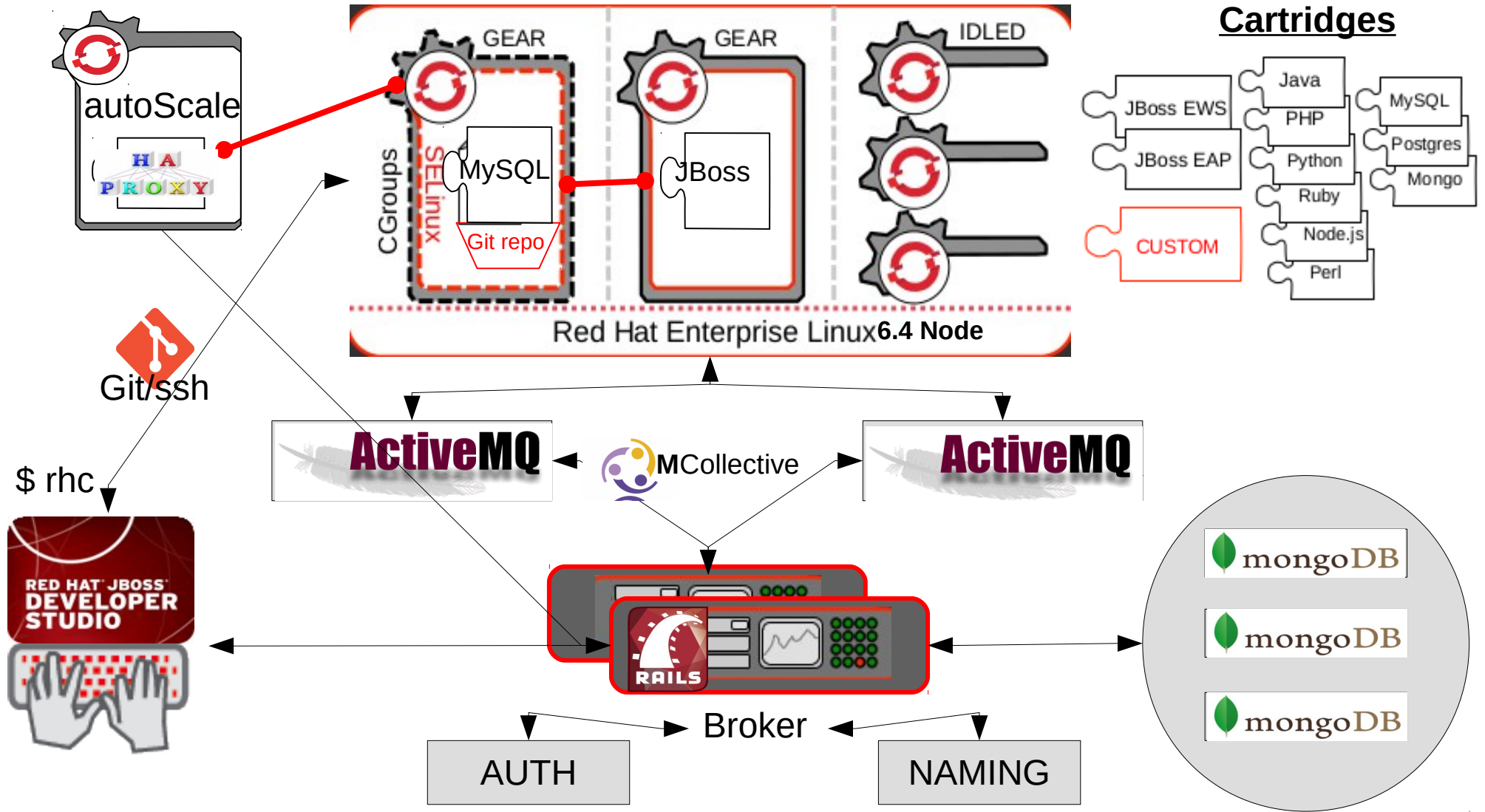
Open Source → Open Clouds
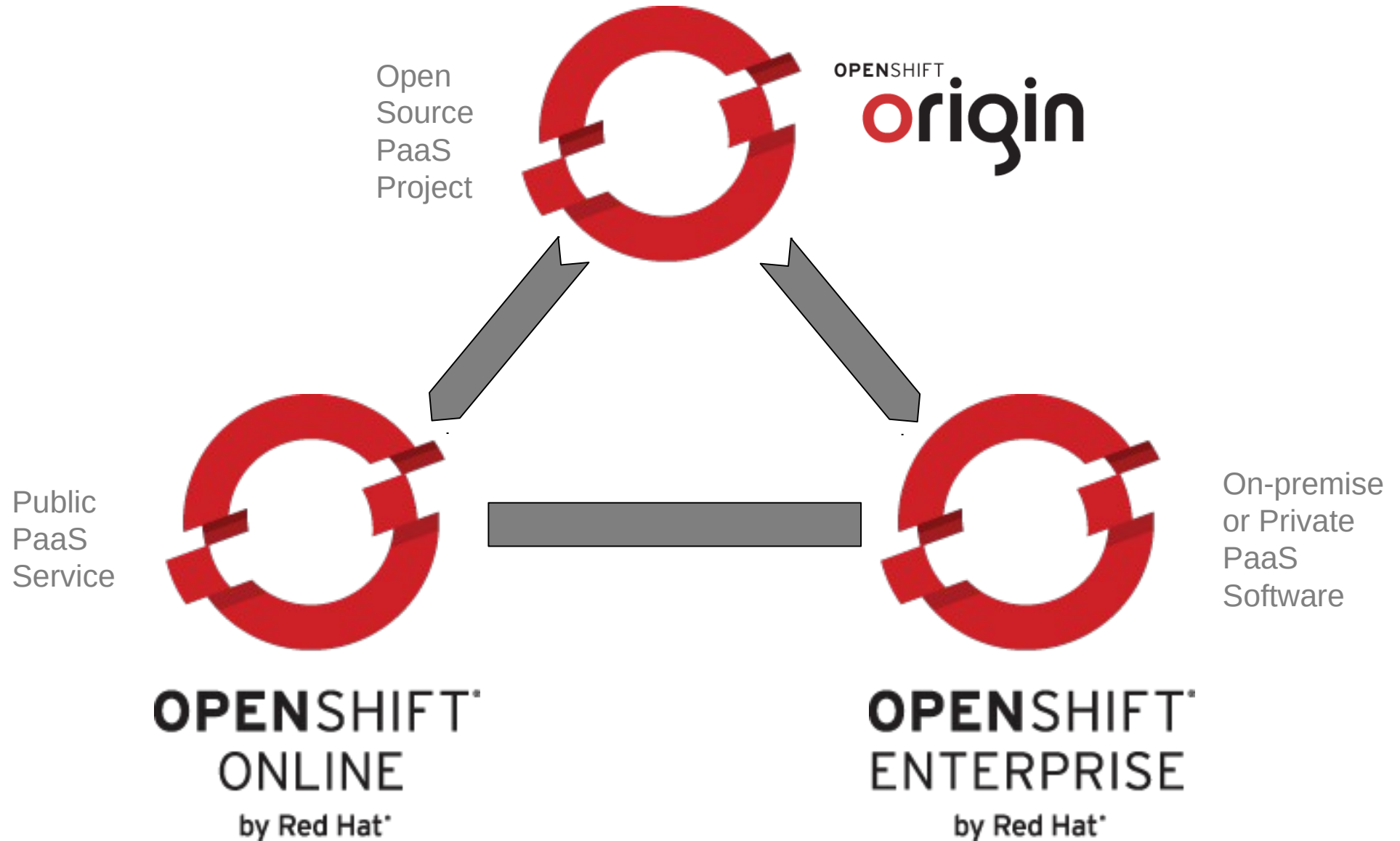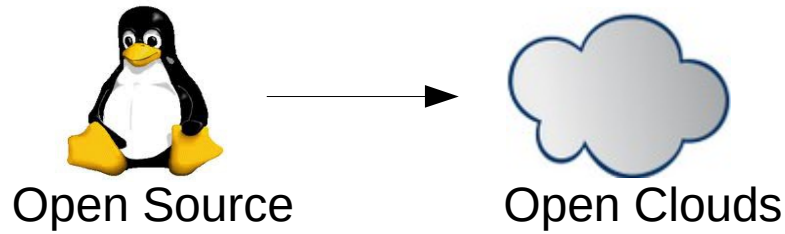
Best of Breed:

OPENSHIFT DESIGN GOAL

- Enable Self Service Rapid Prototyping

- Deliver Continuous Integration and Delivery

- Force a DevOps Relationship

- Offer Automated Provisioning of Standard Environments

- Drive Situational Applications

- Survive High Velocity Change Introduction

- Obey Enterprise Regulations and Requirements

- Facilitate Application Life Cycle Management

- Allow for IaaS to be Abstracted and App be the Main POV/King

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OPENSHIFT ZOOM IN

OPENSHIFT ZOOM OUT

Cartridges

autoScale

Git/ssh

$ rhc

GEAR   GEAR   IDLED

CGroups   SELinux   MySQL   Git repo   JBoss

Red Hat Enterprise Linux **6.4 Node**

JBoss EWS   Java   MySQL
JBoss EAP   PHP   Postgres
CUSTOM   Python   Mongo
Ruby
Node.js
Perl

ActiveMQ   MCollective   **ActiveMQ**

RED HAT JBOSS DEVELOPER STUDIO

RAILS

Broker

AUTH   NAMING

mongoDB
mongoDB
mongoDB

redhat.

DESIGN GOALS ACCOMPLISHED

Innovation

MEET CUSTOMER DEMANDS

- Dramatically broaden the ISV Cartridge ecosystem
- Create a certified ISV partner marketplace
- Leverage new advances in Linux containerization
- Allow for immutable, image-based update models
- Enable Continuous Integration & Continuous Delivery
- Continue enhancing the Developer experience

RHEL ATOMIC
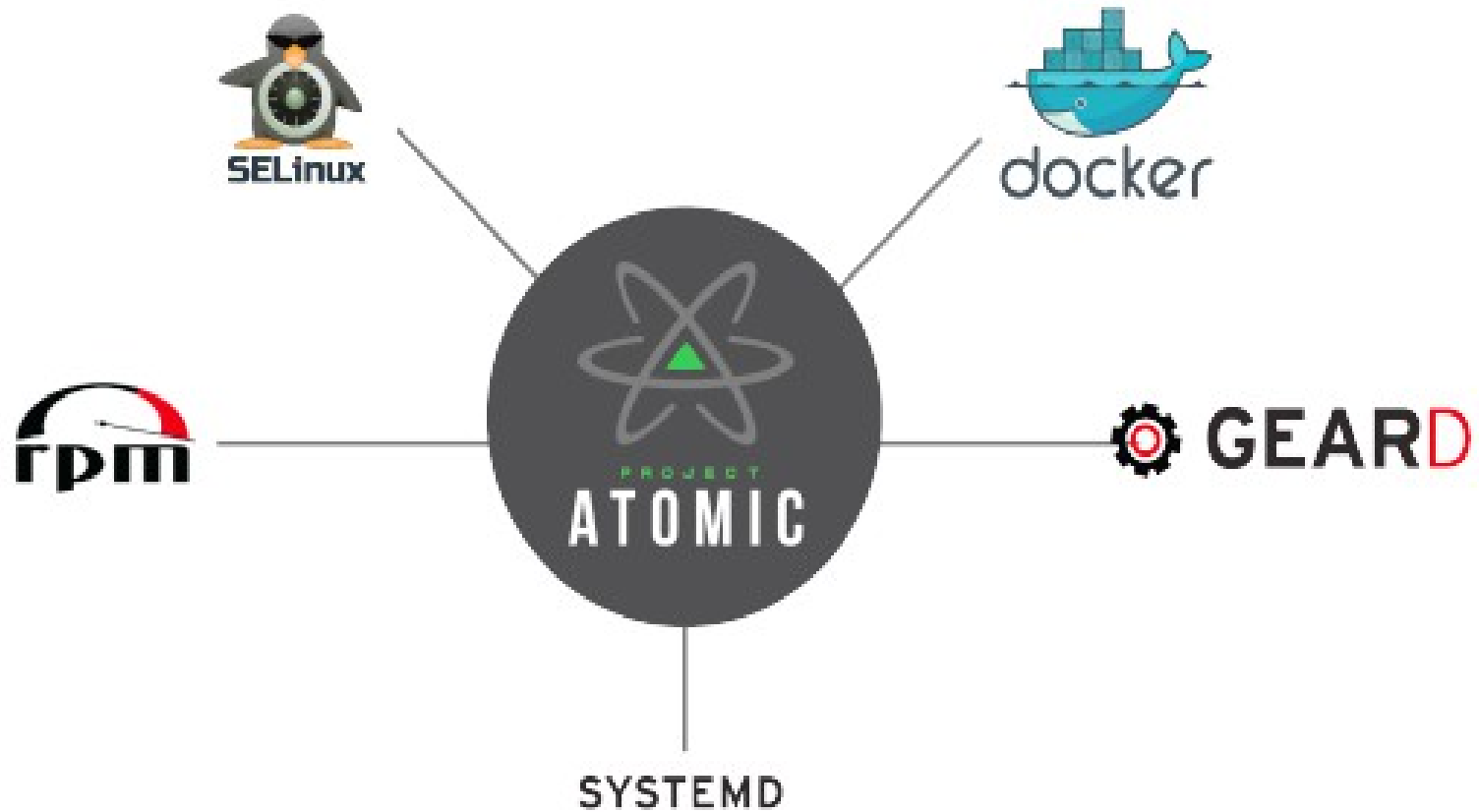
OPENSHIFT ORIGIN GEARD
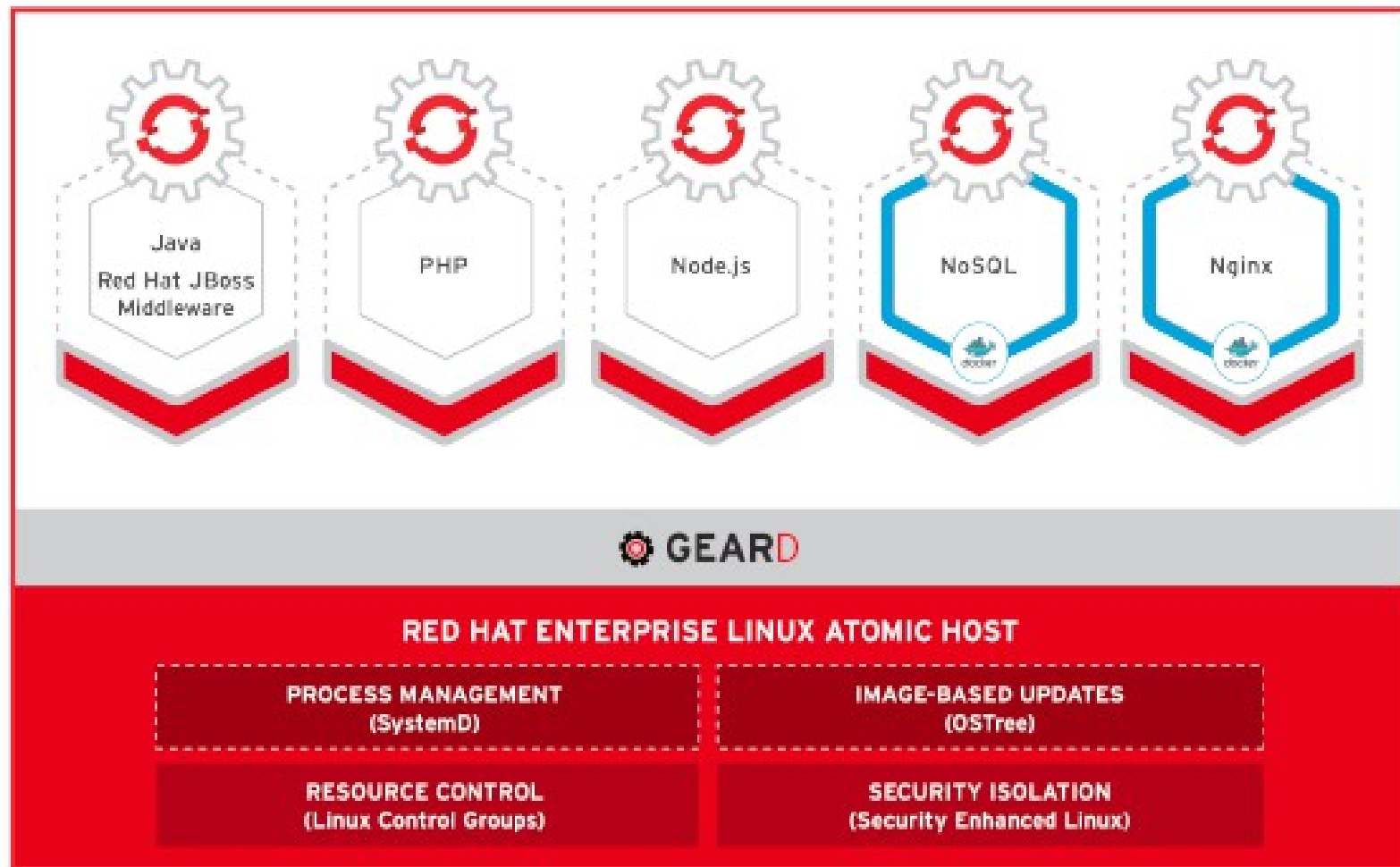
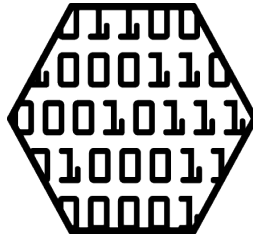# LARGEST CONTAINER ECO-SYSTEM: CERTIFIED

SOURCE TO IMAGE

Developer **Codes** **Then Builds** **Binary** **Creates a Docker Layer** **Running App**
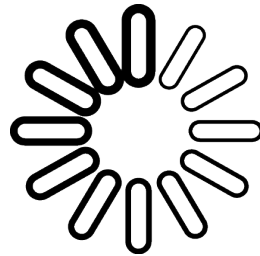
- Cleaner Dependencies at the Docker Layer Level

- Faster Rollback

- Automated Down to 2 Commands

  - **$ sti build source imagename appname**

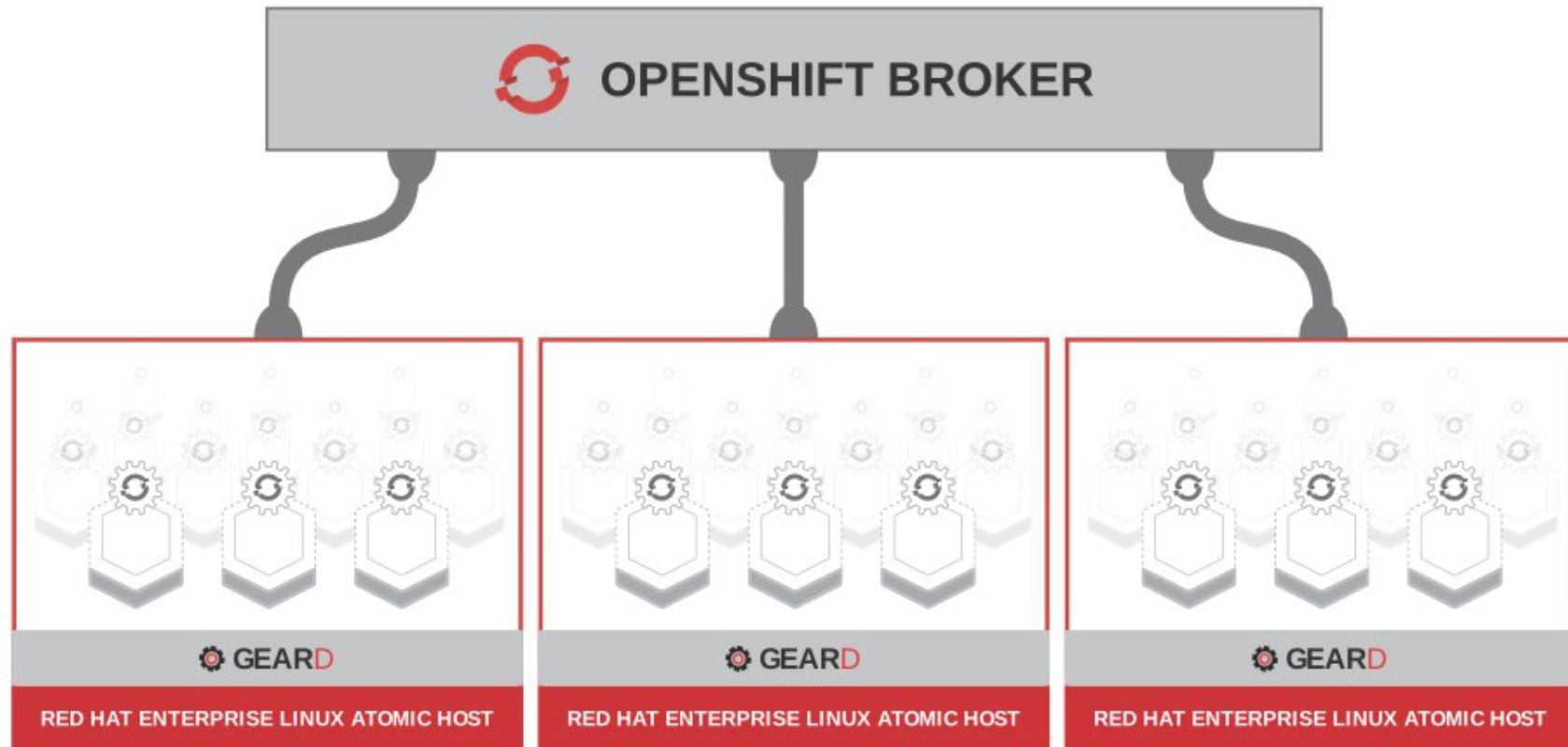 - **$ docker run appname**

ELASTIC DOCKER LINKING
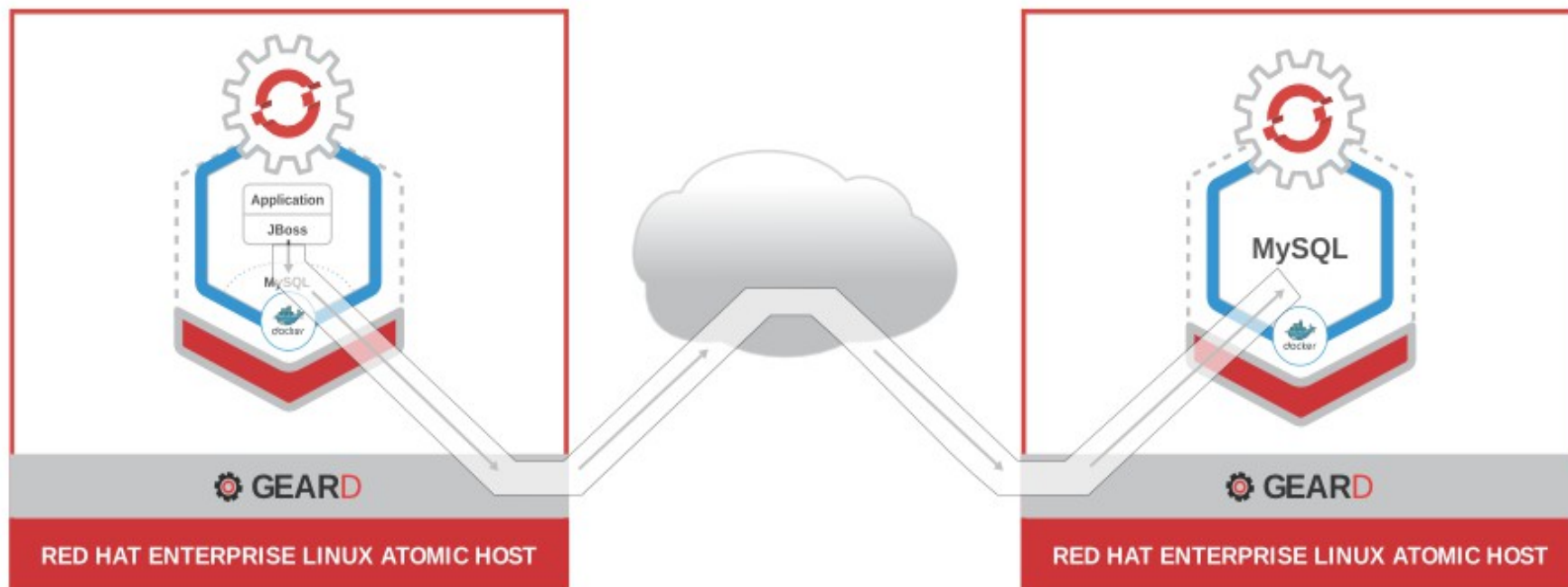
Integrate multiple containers, spanning multiple hosts to build complex, composite applications using an IP-based container linking framework.

OPENSHIFT RECOGNIZED AT DOCKERCON

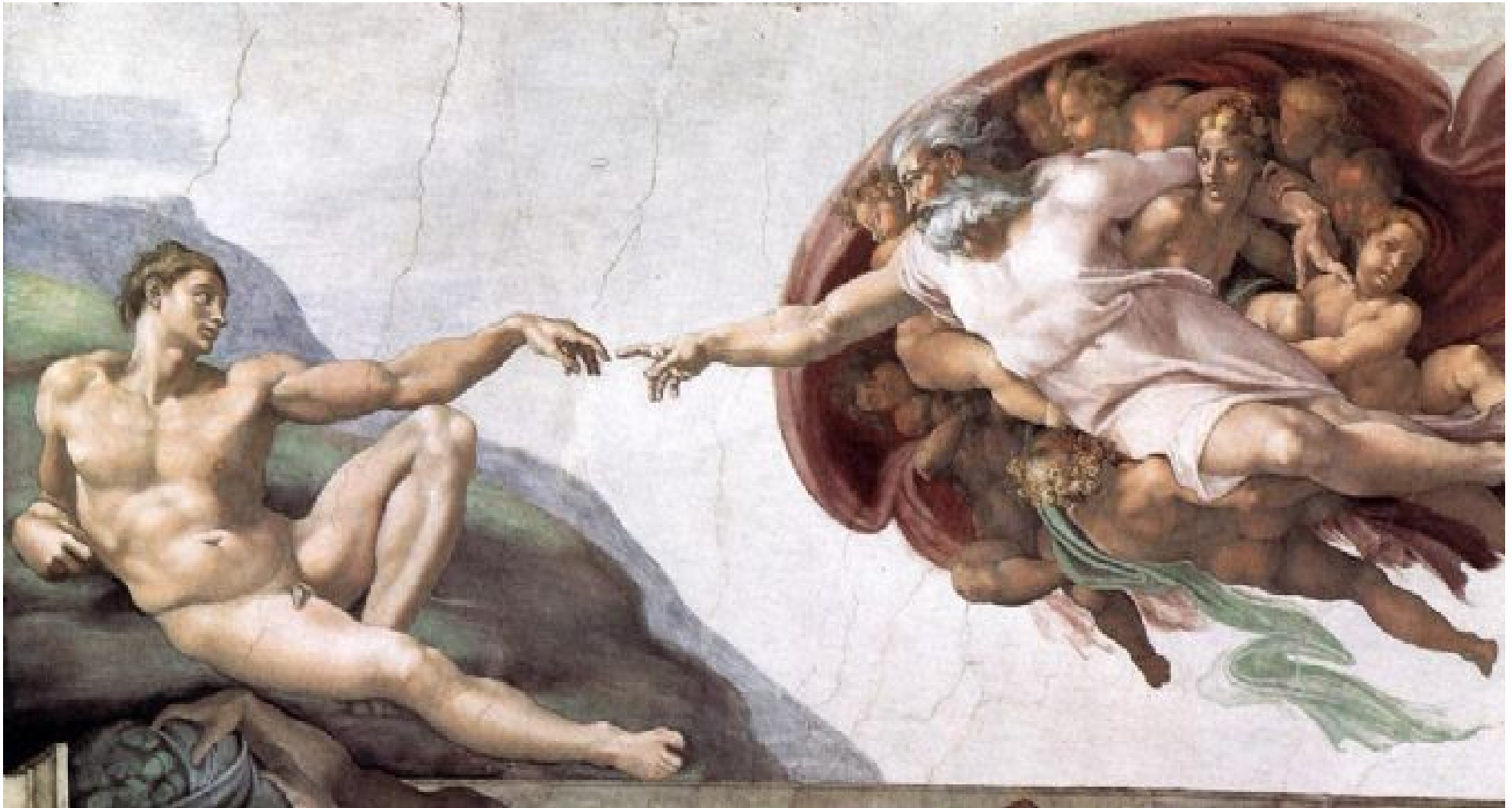http://www.slideshare.net/shykes/docker-the-road-ahead
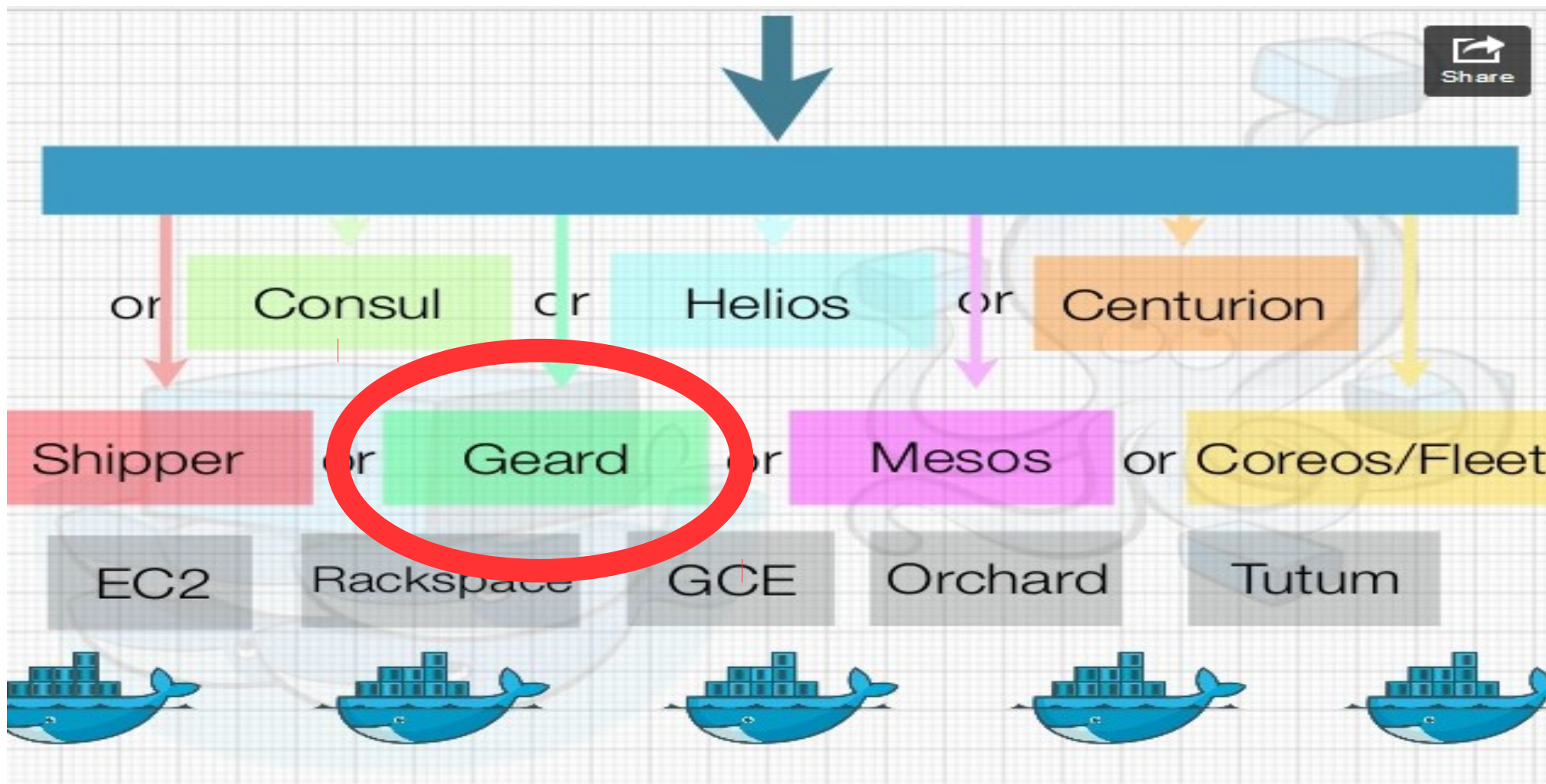
OPENSHIFT INTEGRATION

Integrate OpenShift GearD and RHEL Atomic Host Nodes with Broker as part of OpenShift Enterprise 3.0 to leverage full OpenShift capabilities.

But Is It Working?

When given the right tools, we accomplish amazing things....

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Michelangelo

Rembrandt

Vincent Van Gogh

Claude Monet

Salvador Dali

Jackson Pollock

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We gave OpenShift to the World to see what would happen...

1.85M	87M	151%	201%
Applications deployed	Requests per day	User growth	App growth

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The ONE Knowledge Base

Search the email archives for answers

Enter keywords

🔍 Search

Multiword Search

Search by multiple keywords to discover the related posts and answers.

Highlighted Results

View the search results on a different page with your keywords highlighted.

Extensive Archive

Archive of emails spanning about eight years discussing problems and solutions.

POWERED BY
django

redhat.

Sign In ▾

Notes App Share your notes to the world

✏ Add Note

View all shared notes »

How To Delete All .Svn Folders Or .Pyc Files Recursively Using Terminal?

rajiv.m1991   tech tips   nov 21, 2013

How To Install Multiple Django Version Using Virtualenv And Virtualenvwrapper In Ubuntu?

rajiv.m1991   tech tips   nov 21, 2013

The Seven Swaras

rajiv.m1991   music theory   nov 21, 2013

Behaviour Of And & Or Keyword In Python

rajiv.m1991   tech note   may 17, 2014
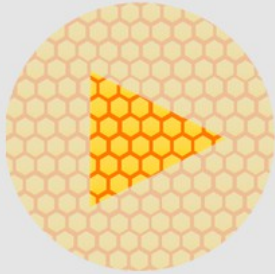
How To Disable Guest Login In Ubuntu?

rajiv.m1991   tech tips   nov 21, 2013

Music Apps music reference & tools

Chords & Scales Reference »

Classical to Western Converter »

▶ © **rajiv** 2014

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Apps

My apps
Shop

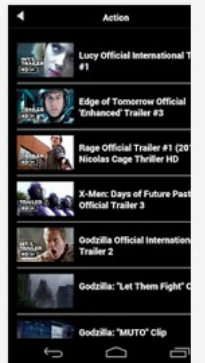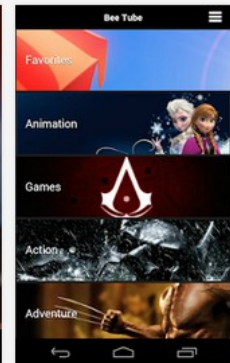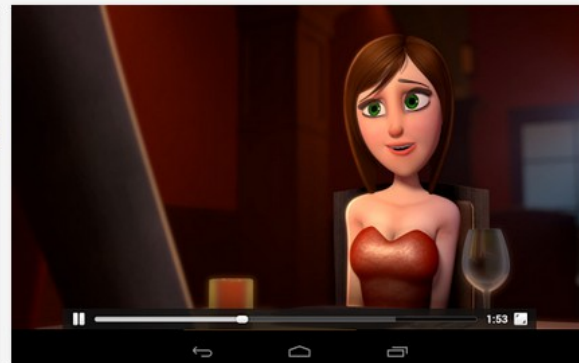Games
Editors' Choice

Bee Tube

Kamesh Tagore - June 3, 2014
Entertainment

Install   ⊞ Add to Wishlist

⚠ You don't have any devices

★★★★☆ (👤 10)   g+1 +15 Recommend this on Google

redhat.

Description

{ KidyKode ACADEMY }

Teaching computational thinking and programming concepts to kids

Home   **Classes**   **Curriculum**   **Our Projects**

KidyKode Academy is a non for profit organisation (volunteer parents) located in Ottawa, Canada, it is about teaching kids computational thinking concepts using the popular visual programming language **Scratch**. Scratch is a programming language designed and maintained by the Lifelong Kindergarten group at the MIT Media Lab. As stated in their web site, Scratch helps young people learn to think creatively, reason systematically, and work collaboratively which are essential skills for life in the 21st century! In the Scratch development environment, students create projects, animations and games by simply connecting puzzle pieces together which makes the learning experience fun and pleasant for children.

When teaching programming concepts to our students, we follow the curriculum developed and suggested by the ScratchEd community. At the KidyKode Academy, we focus on teaching computational thinking concepts first before introducing any programming language, because our **main objective is to teach methodology and design thinking** in order to :

✓Prepare young people to be creators rather than passive technology consumers.
✓Encourage students to discover and learn about computing.
✓Emphasize design and visual based learning

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1 HOSPITAL ›

2 BELLAIRE ›

3 LANGLEY / W. GRAY ›

4 BEECHNUT ›

5 SOUTHMORE / KASHMERE ›

6 JENSEN / TANGLEWOOD ›

8 SOUTH MAIN ›

9 N. MAIN / GULFTON ›

10 WILLOWBEND ›

11 NANCE / ALMEDA ›

14 HIRAM CLARKE ›

Balanced Diet Nutrient Calculator

g+1 +8 Recommend this on Google

Comment and report problems with this site at the Nutrika Testers Community. News are available at Nutrika Page

This is a Computer Aided Diet application. The purpose of this site is to provide an easy to use tool to estimate nutrient contents and prices of various diets. The nutrient values are from the USDA National Nutrient Database for Standard Reference Release 26. These values are also displayed relative to the IOM Dietary Reference Intakes for each life stage groups of every age and weight. This information may be used to change the composition of a diet to a more balanced and healthier one. Furthermore, calculating price/value ratios helps to choose more economic products and save money.

Preferences

Help

Change this setting to hide the help or display the tutorial.

○ No help, thanks. I know what I am doing.
◉ Display brief descriptions.
○ Show me the tutorial.

DRI Settings

The recommended value percentages (EAR, RDA, AI, UL) will appear in the contents sections according to the following settings:

Life Stage Group Females (9+ years) ▾

45

🔴 redhat.

JTAF
Track and Field

HOME   MY SPACES   ABOUT

Track and Field Administration

Erlacher Jugendmeisterschaft 2014 🔓 Ranking

35. Jugendmeisterschaft 🔓   2014-09-02   Athletes 0/0   Ranking

CIS 2014 🔒 Ranking

CIS 2 Twann 🔒   2014-05-23   Athletes 79/89   Ranking

CIS 1 Erlach 🔒   2014-05-03   Athletes 79/89   Ranking

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Cisco Chef

Pick a restaurant already!

The map below highlights a slew of zesty places around San Jose.
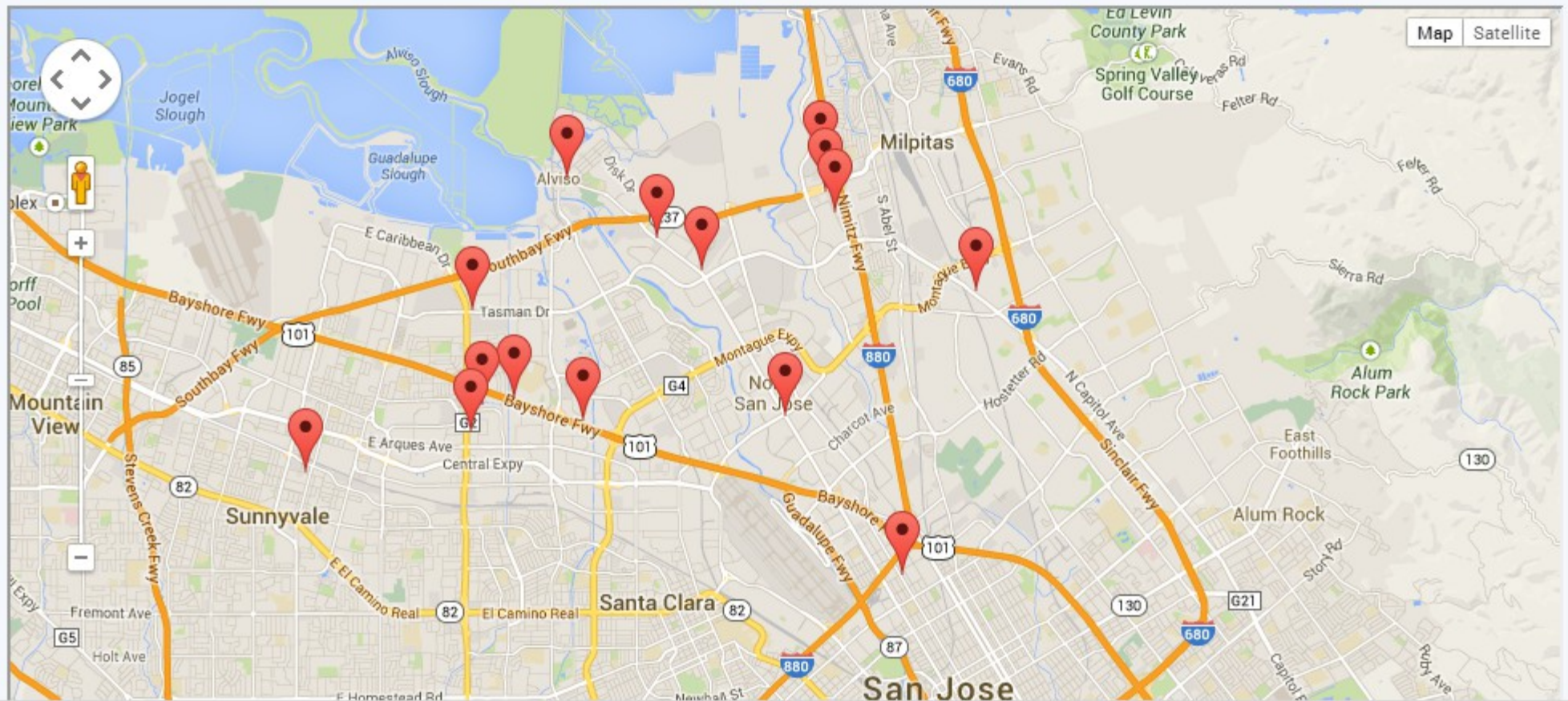
One Dash

Welcome to One Dash Beta!

Try moving the cards below

What is it?

One Dash allows you to view content from your numerous online accounts in one place!
The latest Tweets from people you follow, new Facebook messages, upcoming Google calendar events, your Reddit frontpage and more, all in one place, cleanly laid out for your viewing pleasure.

Social and Productive

While One Dash offers support for your social media accounts, it also allows you to view Google Analytics graphs, calendar events for the current month and upcoming tasks on Trello.

Portable and Secure

One Dash uses OAuth to link to your online accounts. This means One Dash doesn't know or store your account password and you can revoke access at anytime either through One Dash, or the app itself.

One Dash is also portable, which means you can login to onedash.me on any device and view all of your content without having to be logged into any of the apps!

Mobile Friendly

Sound Good?

Click the 'Sign In' button on the right side of the screen then select 'need an account?' to get started.

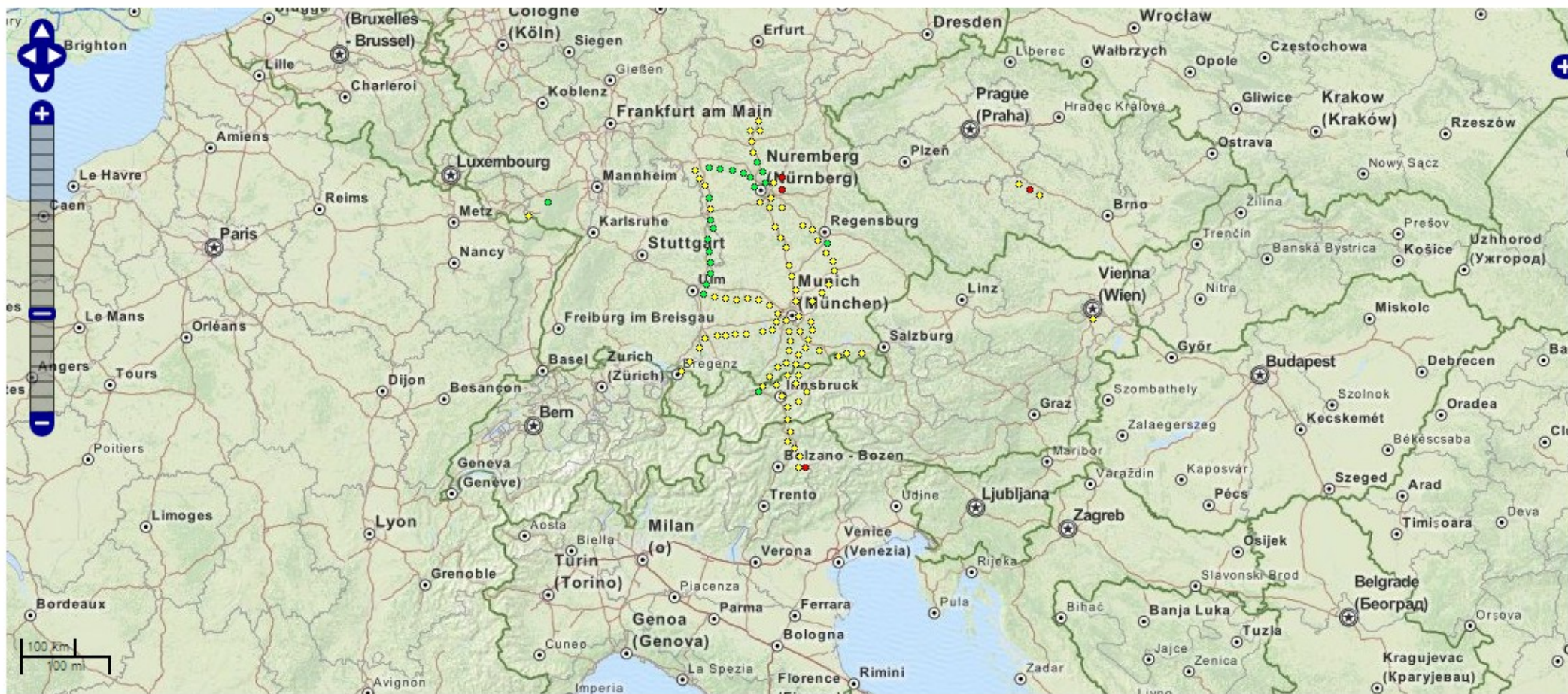## In Action

What People Are Saying

#onedashweb

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Signal Coverage

GET IT ON Google play

Dead Zone Detection in Mobile Networks

Dude, where's my signal?

Currently we have 161475 Measures and 11896 Dead Zones

Full Screen Map

redhat.

OpenShift

redhat.