



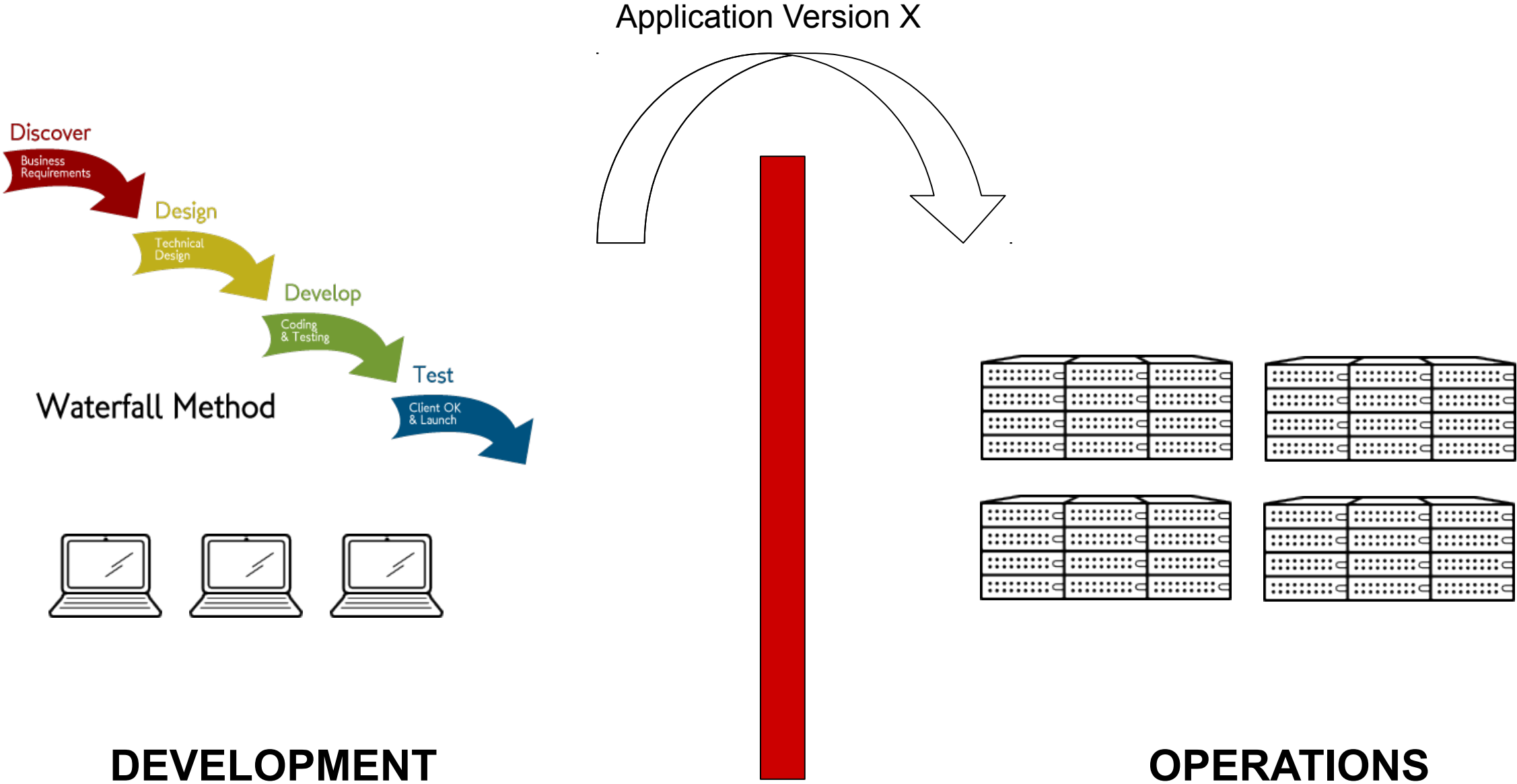
DevOps

Josh Preston
Solutions Architect
Stardate 69094.1

**I keep hearing about DevOps...
What is it?**

**FOR MANY ORGANIZATIONS,
WHAT IS I.T. LIKE TODAY?**

WATERFALL AND SILOS



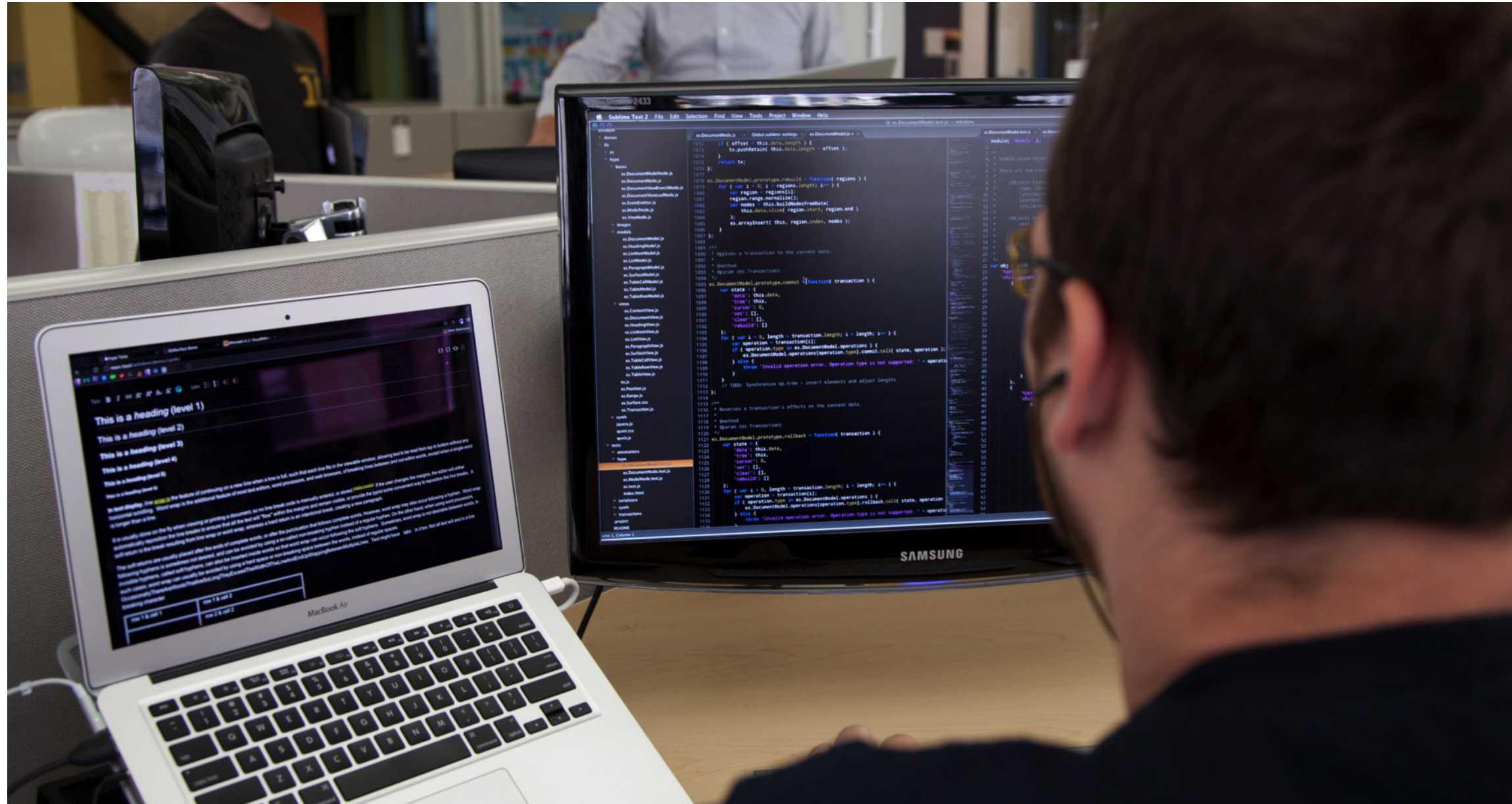
IT OPS IS UNDER PRESSURE



ENVIRONMENT IS OUT OF CONTROL



DEVELOPERS WANT THE LATEST TOOLS



THE BUSINESS IS DEMANDING MORE

AGILITY!

VELOCITY!



WHAT CAN HAPPEN IN THIS ENVIRONMENT?

THE LATEST CRITICAL APP UPGRADE

THE LATEST CRITICAL APP UPGRADE

THE MAINTENANCE WINDOW STRETCHES PAST MIDNIGHT...



THE LATEST CRITICAL APP UPGRADE

THE MAINTENANCE WINDOW STRETCHES PAST MIDNIGHT...



THE PRODUCTION DATABASE BECOMES CORRUPTED DURING UPGRADE



THE LATEST CRITICAL APP UPGRADE

THE MAINTENANCE WINDOW STRETCHES PAST MIDNIGHT...



THE PRODUCTION DATABASE BECOMES CORRUPTED DURING UPGRADE



THE WEBSITE IS DOWN



THE LATEST CRITICAL APP UPGRADE

THE MAINTENANCE WINDOW STRETCHES PAST MIDNIGHT...



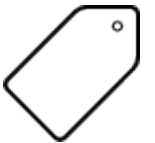
THE PRODUCTION DATABASE BECOMES CORRUPTED DURING UPGRADE



THE WEBSITE IS DOWN



THE IN-STORE POINT-OF-SALE SYSTEMS ARE DOWN



THE LATEST CRITICAL APP UPGRADE

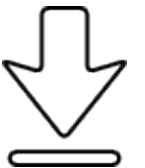
THE MAINTENANCE WINDOW STRETCHES PAST MIDNIGHT...



THE PRODUCTION DATABASE BECOMES CORRUPTED DURING UPGRADE



THE WEBSITE IS DOWN



THE IN-STORE POINT-OF-SALE SYSTEMS ARE DOWN



SALES DON'T HAPPEN



THE LATEST CRITICAL APP UPGRADE

THE MAINTENANCE WINDOW STRETCHES PAST MIDNIGHT...



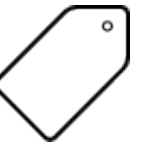
THE PRODUCTION DATABASE BECOMES CORRUPTED DURING UPGRADE



THE WEBSITE IS DOWN



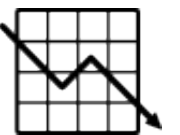
THE IN-STORE POINT-OF-SALE SYSTEMS ARE DOWN



SALES DON'T HAPPEN



QUARTERLY EARNINGS ARE MISSED!

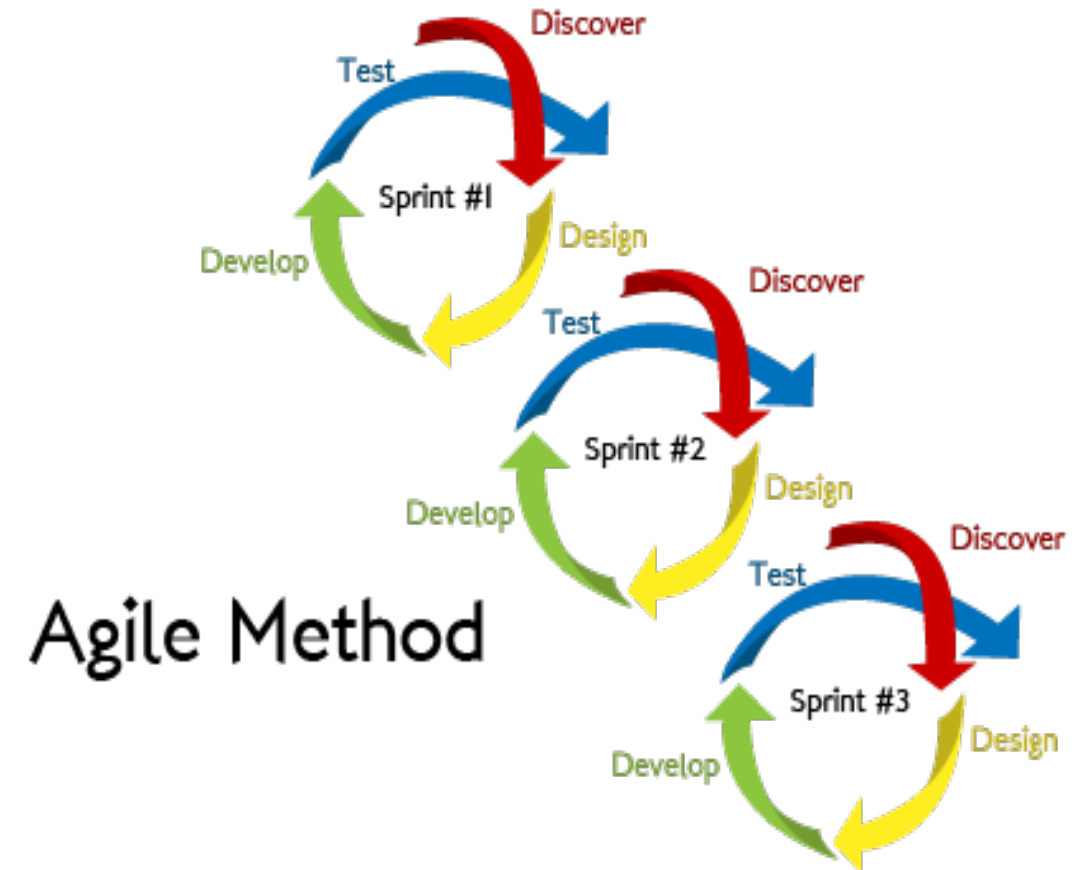
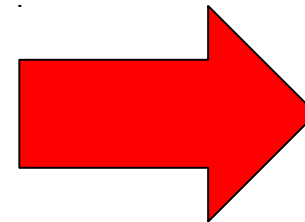
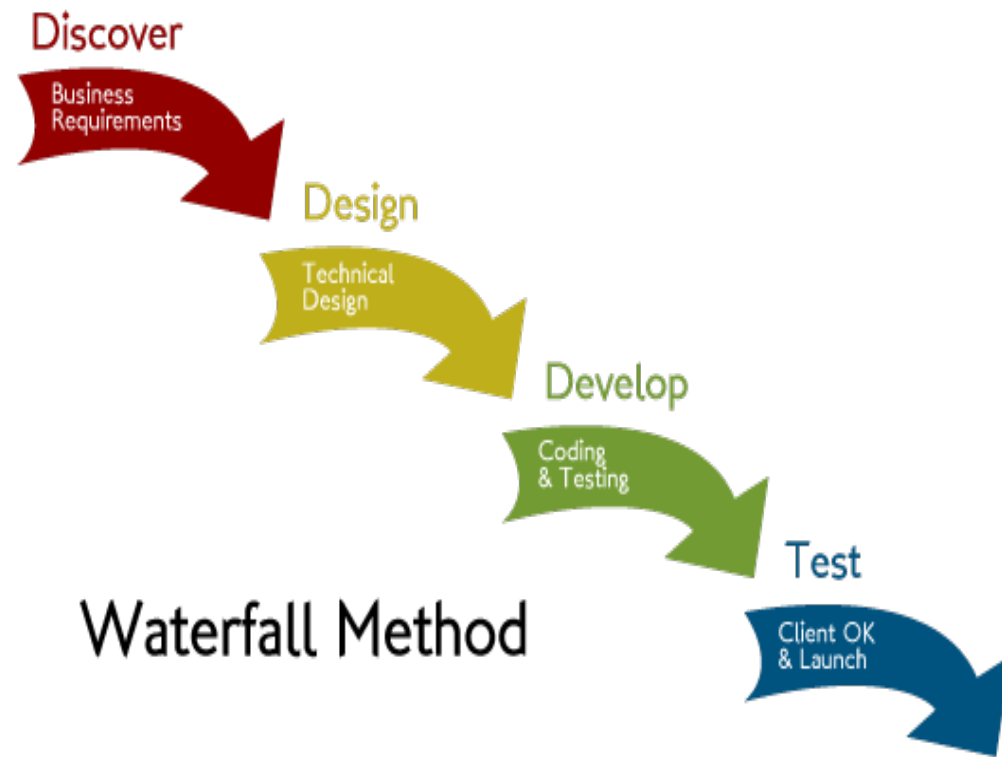




“A Novel about IT, DevOps, and Helping your Business Win”

WHAT CAN I.T. DO?

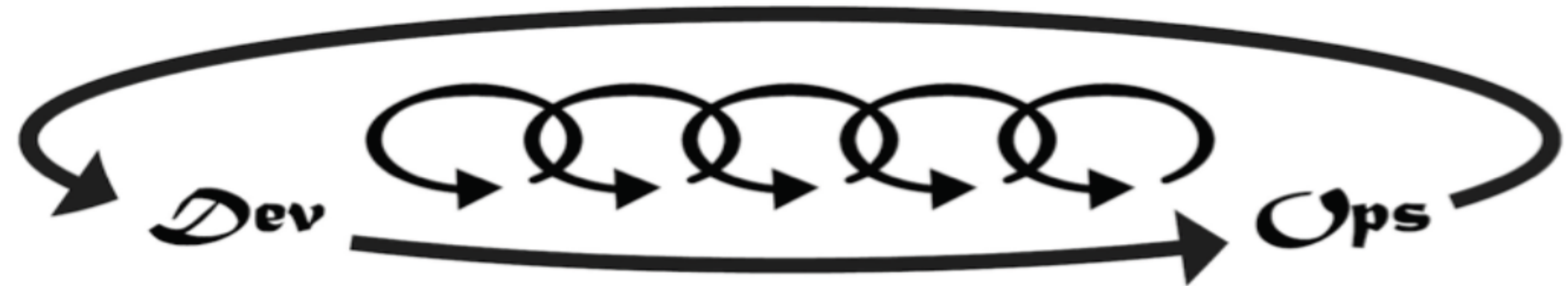
AGILE SOFTWARE DEVELOPMENT



AGILE SOFTWARE DEVELOPMENT



THE DEVOPS MOVEMENT



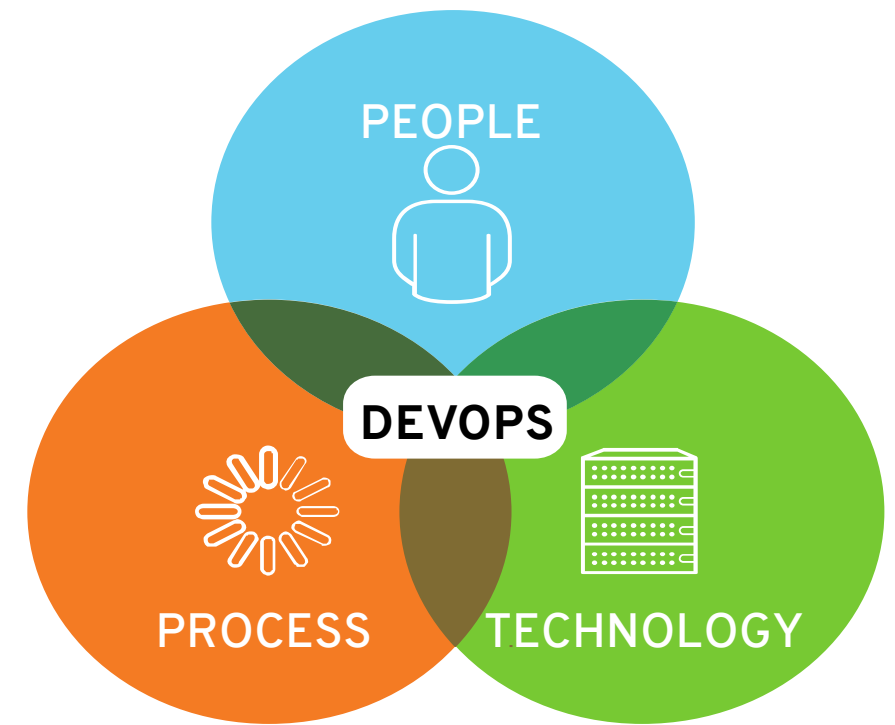
Key concepts:

- Small changes -> Less Risk
- Fail fast and recover vs. Never fail
- Culture change: Acceptance of failure

WHAT CAN I.T. DO?

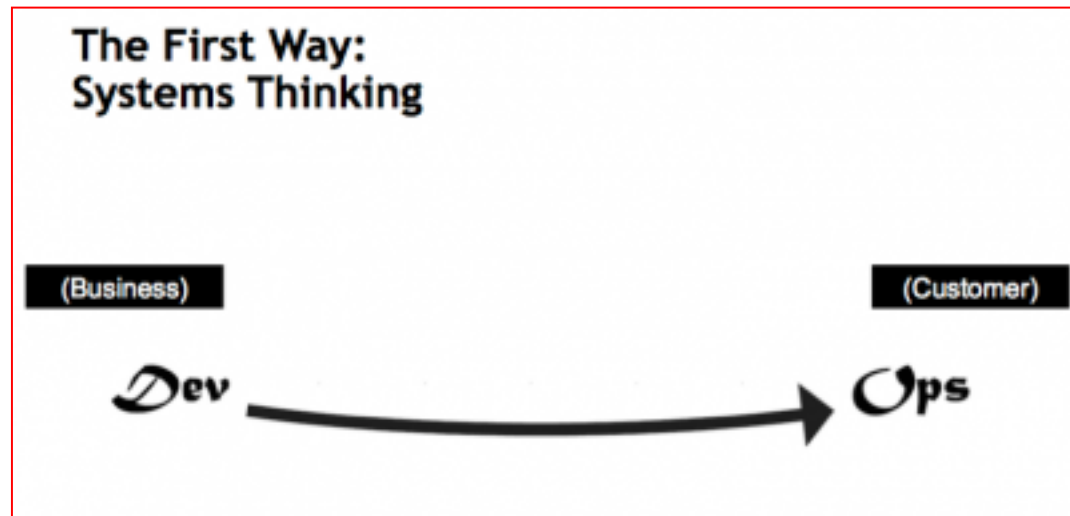
I.T. CAN TURN OPS AND DEV INTO DEVOPS

“DevOps is a software development method that stresses communication, collaboration and integration between software developers and information technology (IT) professionals.” [1]

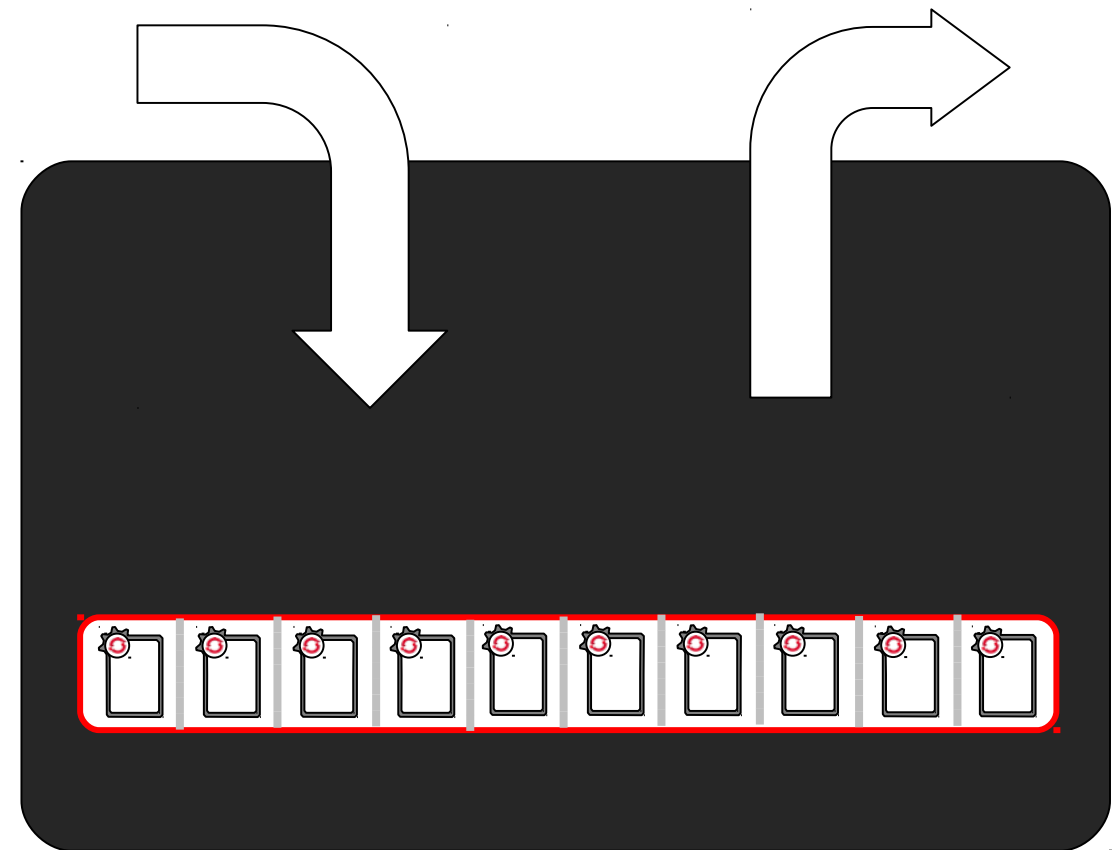


[1] <http://en.wikipedia.org/wiki/DevOps>

WHAT ENABLES DEVOPS?

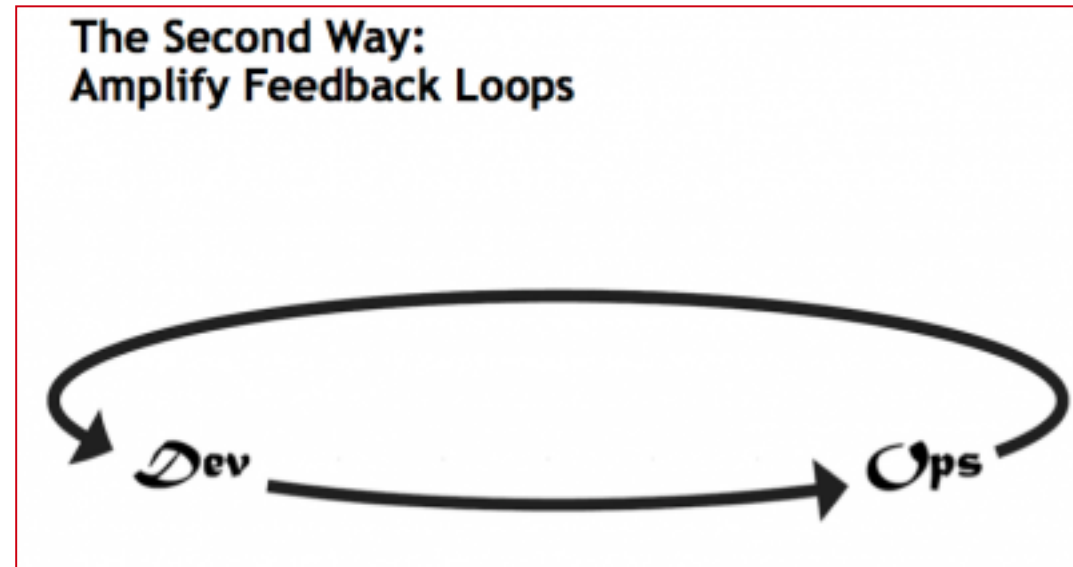


- ✓ **STANDARDIZED ENVIRONMENTS**
- ✓ **AUTOMATED PROVISIONING**

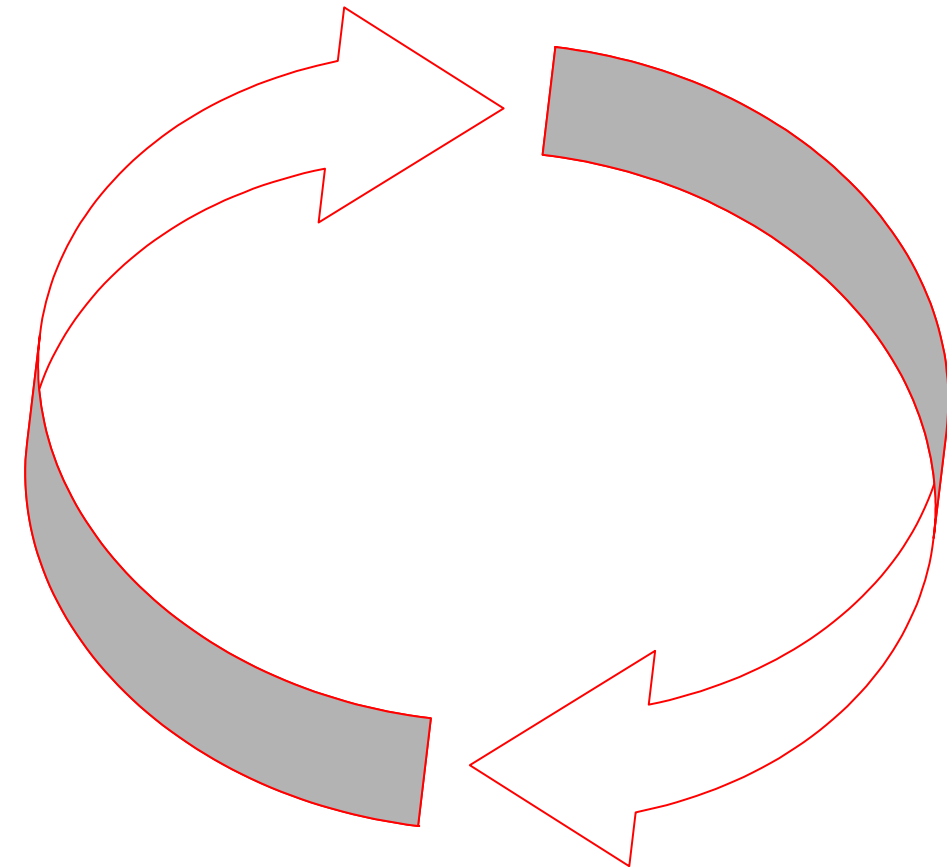


“Configuration in Code”

WHAT ENABLES DEVOPS?

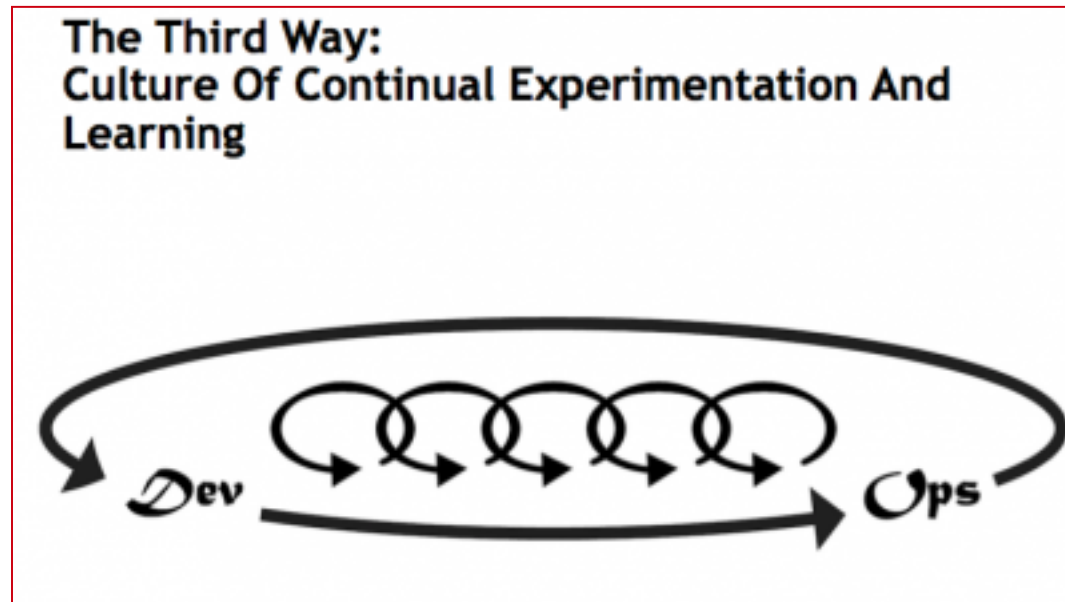


- ✓ **CONTINUOUS INTEGRATION**
- ✓ **CONTINUOUS DELIVERY**



CI/CD: Automated Testing and Deployment

WHAT ENABLES DEVOPS?



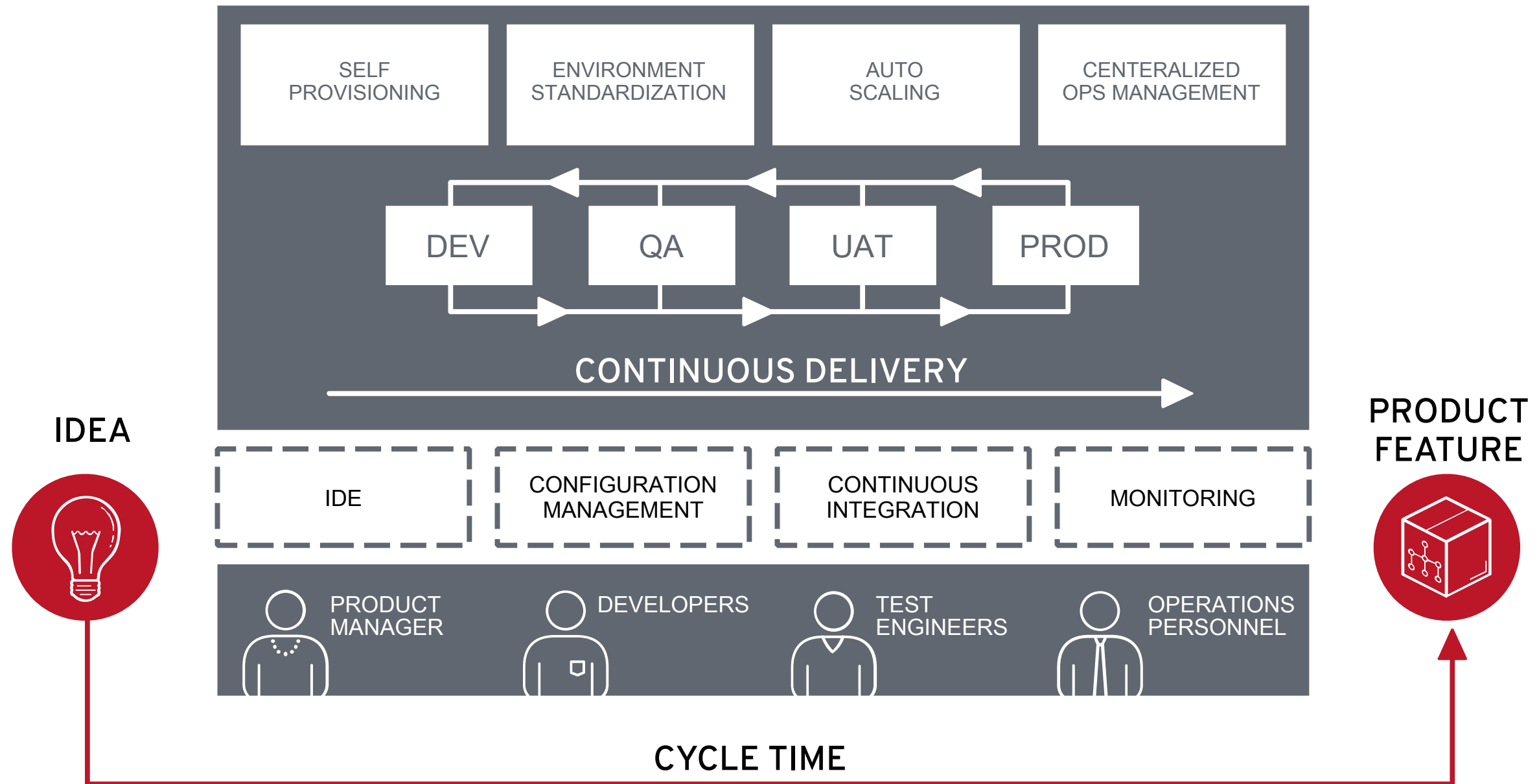
- ✓ DEVELOPER SELF-SERVICE
- ✓ RAPID PROTOTYPING



Continuous Innovation

REDUCE CYCLE TIME FROM IDEA TO FEATURE

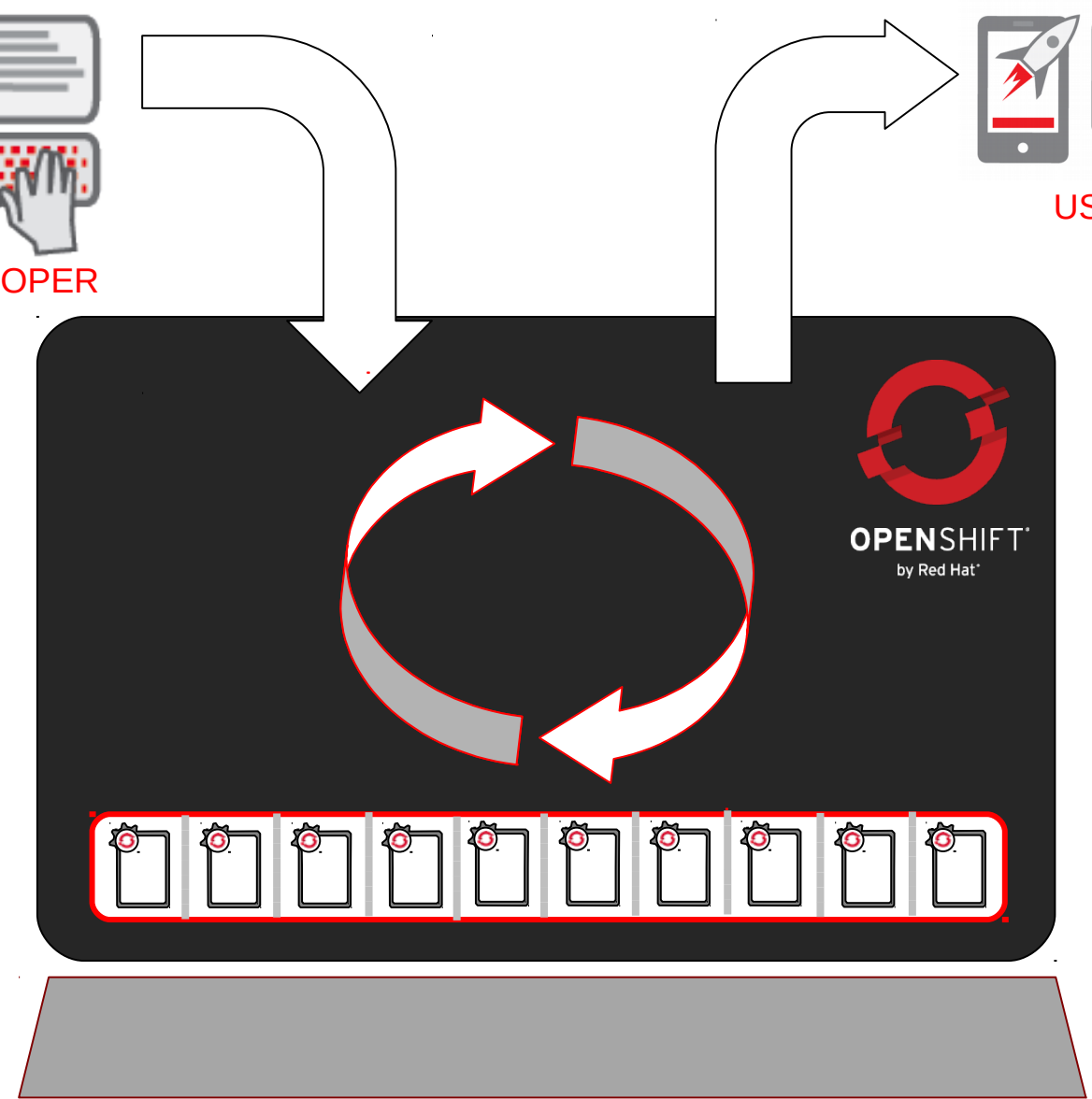
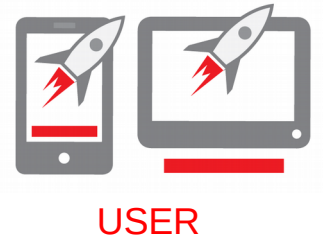
OPENSIFT



OPENSIFT IS PaaS BY RED HAT

AN ELASTIC CLOUD APP PLATFORM

- ✓ SELF-SERVICE
- ✓ AUTOMATED W CI/CD
- ✓ AUTO-SCALING
- ✓ SECURE
- ✓ MULTI-LANGUAGE
- ✓ ENTERPRISE-GRADE
- ✓ BUILT ON RED HAT





EMBRACING DEVOPS TO SURVIVE



A 30 year old on-premise enterprise software company.

Unicenter TNG®

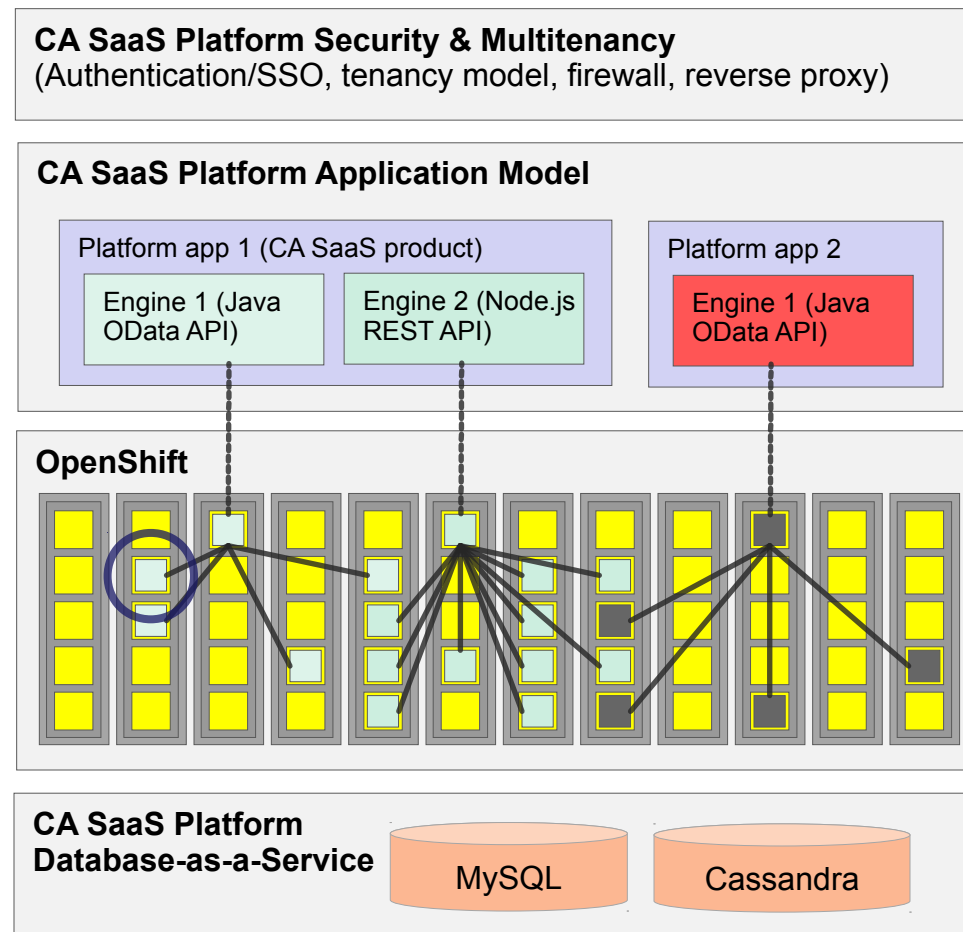




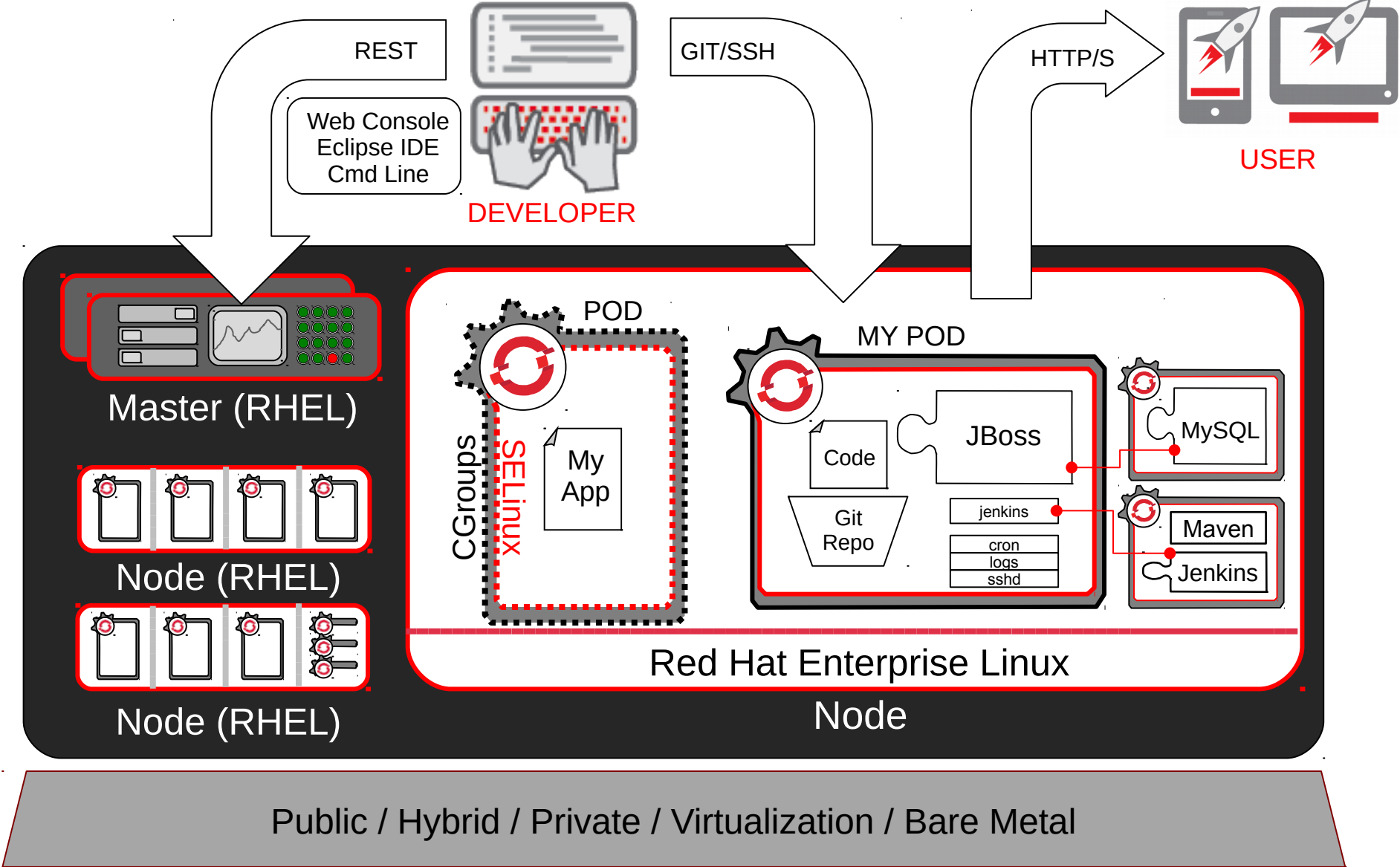
EMBRACING DEVOPS TO SURVIVE



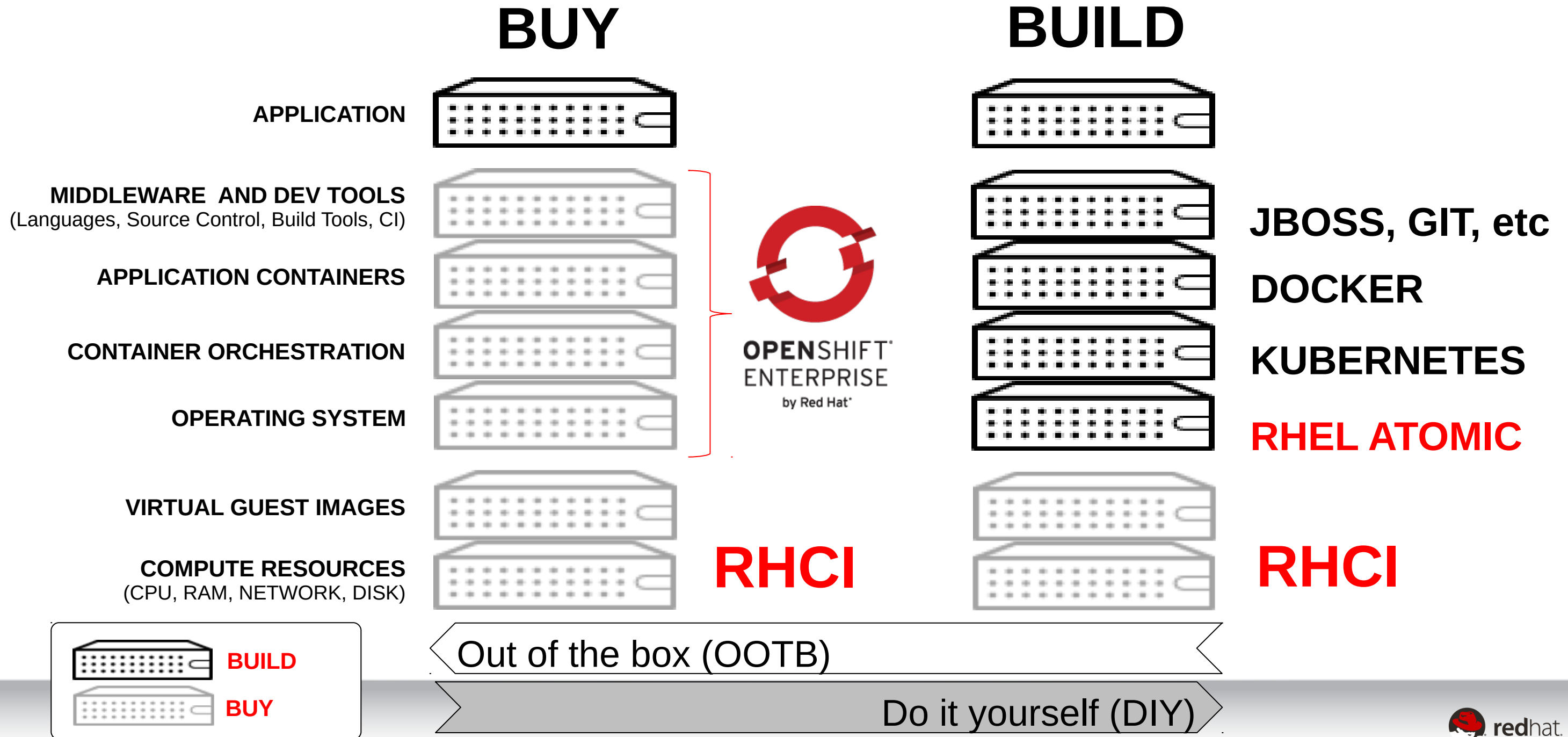
CA adopts DevOps to deliver SaaS offerings built on a foundation of **OpenShift Enterprise**



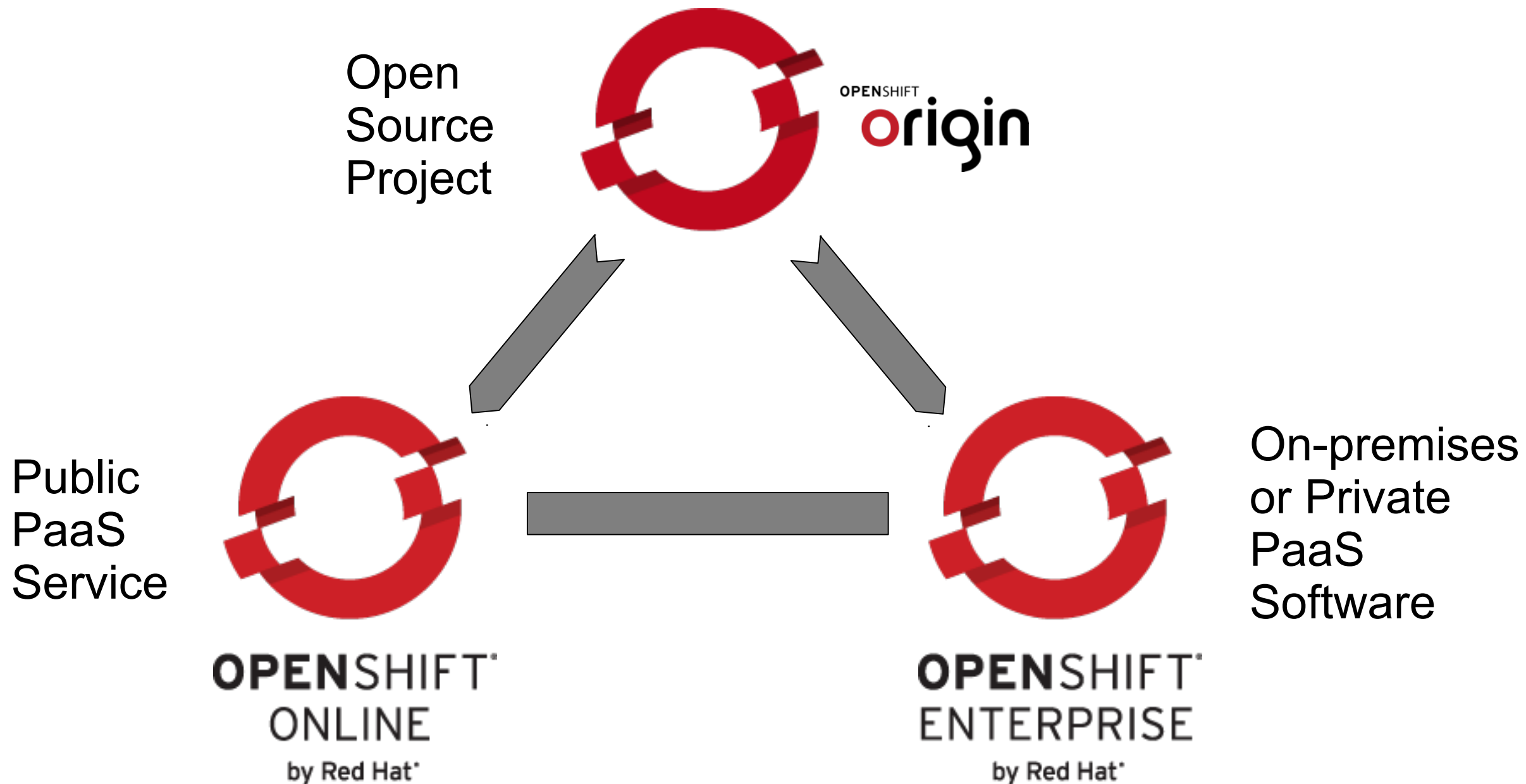
BUILT ON THE RED HAT STACK



DEVOPS ENABLERS FROM REDHAT



OPENSIFT PLATFORM AS A SERVICE



PAAS LETS YOU ACCELERATE APP DELIVERY

Craftwork

Assembly Line

Physical

How to Build an App:

1. Have Idea
2. Get Budget
3. Submit hardware acquisition request
4. Wait
5. Get Hardware
6. Rack and Stack Hardware
7. Install Operating System
8. Install Operating System Patches
9. Create user Accounts
10. Deploy framework/appserver
11. Deploy testing tools
- 12. Code**
13. Test
14. Buy and configure Prod servers
15. Push to Prod
16. Launch
17. Order more servers to meet demand
18. Wait...
19. Deploy new servers
20. Etc.

Virtualized

How to Build an App:

1. Have Idea
2. Get Budget
3. Submit VM Request request
4. Wait
5. Deploy framework/appserver
6. Deploy testing tools
- 7. Code**
8. Test
9. Configure Prod VMs
10. Push to Prod
11. Launch
12. Request VMs to meet demand
13. Wait
14. Deploy app to new VMs
15. Etc.

With PaaS

How to Build an App:

- 1. Have Idea**
- 2. Get Budget**
- 3. Code**
- 4. Test**
- 5. Launch**
- 6. Automatically Scale**



WHY IS PAAS SUCH A GAME-CHANGER?

**BECAUSE ORGANIZATIONS
HAVE CHALLENGES THAT
PAAS CAN HELP SOLVE.**

CHALLENGES FOR TODAY'S ORGANIZATIONS



ACHIEVE AND SURPASS ORGANIZATIONAL GOALS



ENABLE ORGANIZATIONAL AGILITY



DECREASE COSTS



REDUCE RISK



ACHIEVE AND SURPASS ORGANIZATIONAL GOALS

INCREASE
REVENUE

GROW MARKET
SHARE

SERVE
CONSTITUENCY

MEET MISSION
OBJECTIVES

HOW? **NEED NEW APPLICATION SERVICES**



ACHIEVE AND SURPASS ORGANIZATIONAL GOALS

FICO™

FICO targets new markets with **OpenShift Enterprise** based **FICO ANALYTIC CLOUD** to grow revenues and market share.

THE CHALLENGE: Reach new markets

- INNOVATION**
Rapid feature deployment and massive scale
- SECURITY**
Maintain industry compliance and security of data and workflows

THE SOLUTION: Platform-as-a-Service (PaaS)

FICO ANALYTIC CLOUD
made analytics available to new markets

THE RESULTS: Analytics to the masses

- 70%** faster time to value
- 40%** faster app deployment

"I worry about resiliency, reliability, and the ability to deliver value to customers. Red Hat helps us with all those."

Tony McGivern, CIO, FICO

OPENSIFT ENTERPRISE by Red Hat



ENABLE ORGANIZATIONAL AGILITY

COMPETITIVE
THREATS

MARKET DYNAMICS

TECHNOLOGY
TRENDS

HOW?

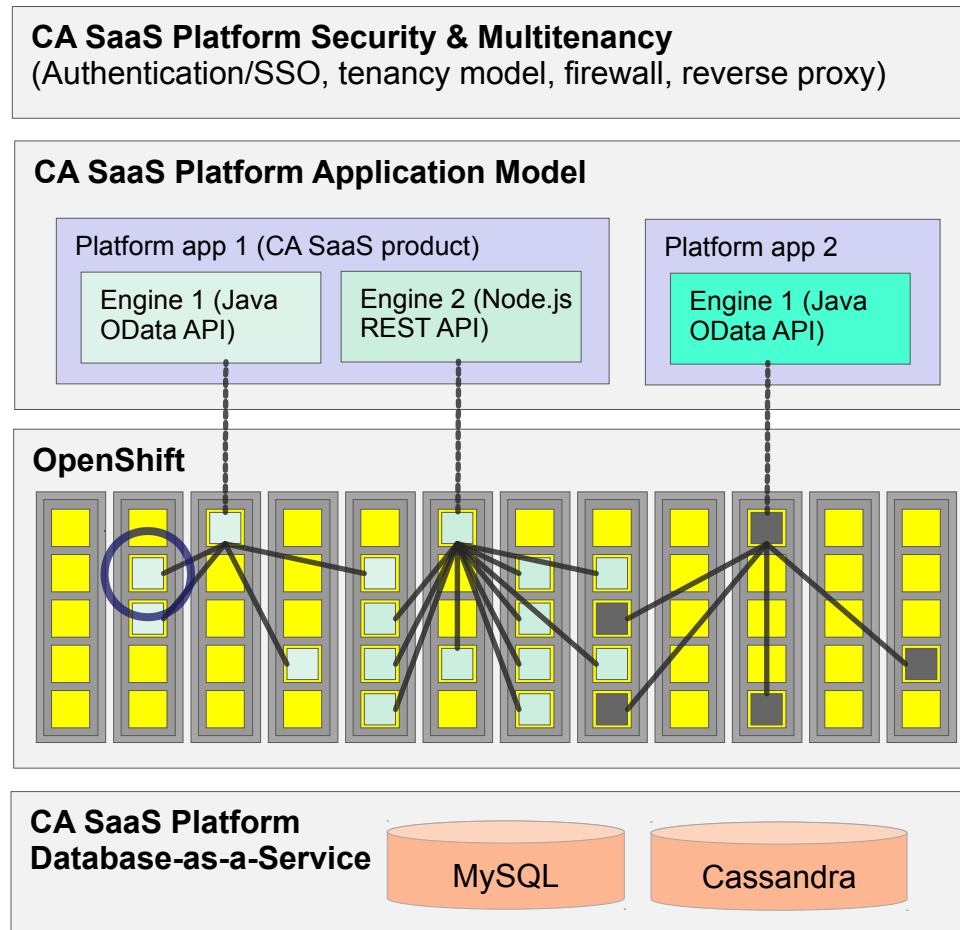
**NEED FLEXIBILITY AND SPEED IN IT
SERVICE DELIVERY**



ENABLE ORGANIZATIONAL AGILITY



CA reboots with SaaS offerings built on a foundation of **OpenShift Enterprise**





DECREASE COSTS

OPEX

CAPEX

ECO

HOW?

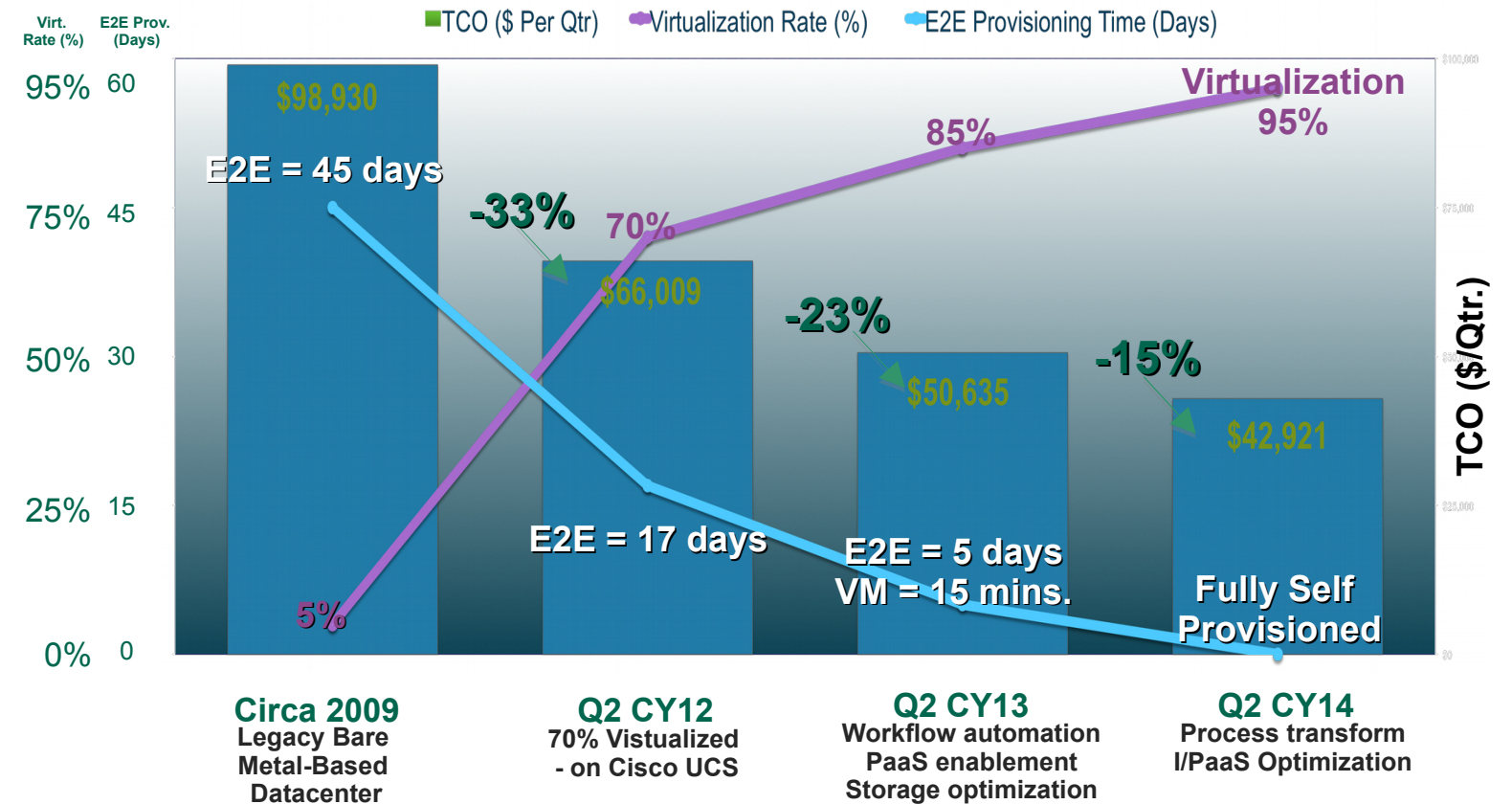
**NEED OPERATIONAL AND
INFRASTRUCTURE EFFICIENCY**



DECREASE COSTS



Cisco moves to **OpenShift Enterprise** across Internal IT for standardization and efficiency.



Source: Cisco IT GIS–August 2013



REDUCE RISK

SECURITY

DATA LOSS

COMPLIANCE

HOW?

**NEED SECURITY, RELIABILITY,
ACCOUNTABILITY**



REDUCE RISK

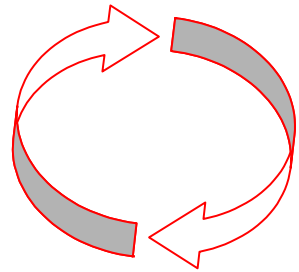


US Gov't Financial Agency
adopts **OpenShift Enterprise**
because of built-in Security
capabilities and OS foundation.



SELinux

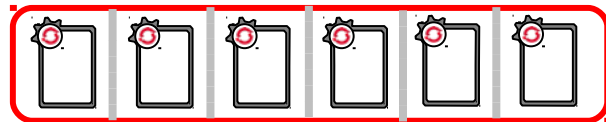
DEVOPS IMPLEMENTED MAKES LIFE BETTER



**ACCELERATED APP DELIVERY
FOR THE BUSINESS**



**SELF-SERVICE ACCESS TO THE
LATEST TOOLS FOR DEVS**

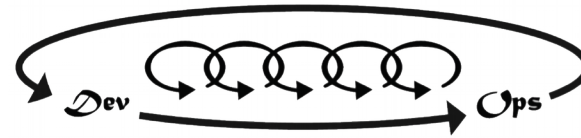


**STANDARDIZED AND
CONTROLLED ENVIRONMENTS
FOR OPS**

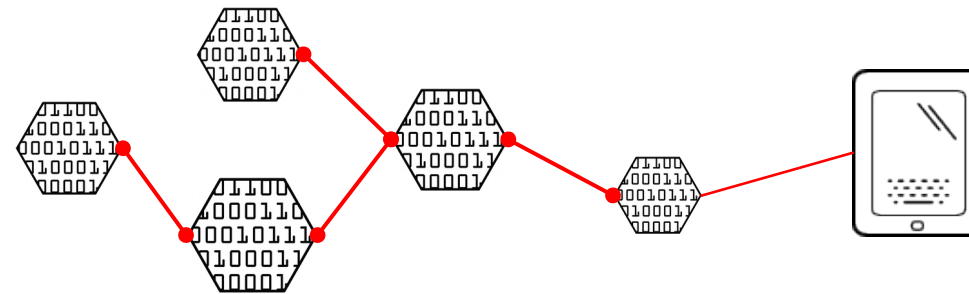


TOP OF MIND FOR CUSTOMERS...

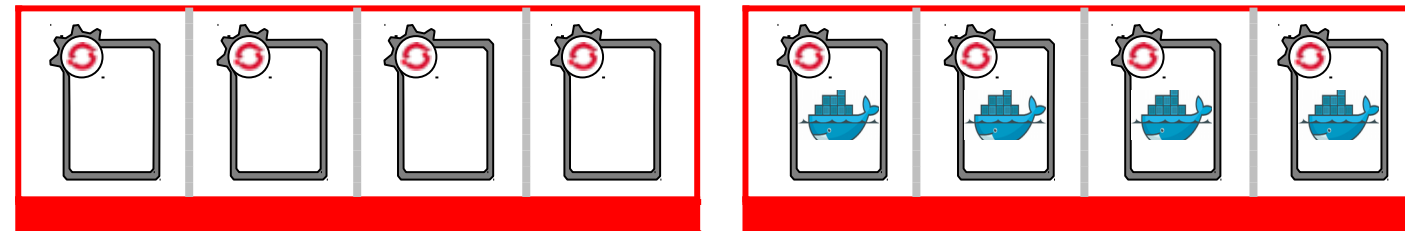
DEVOPS



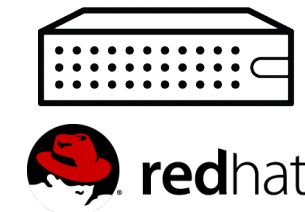
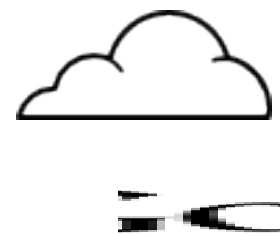
MICROSERVICES



CONTAINERS



CLOUD



Public

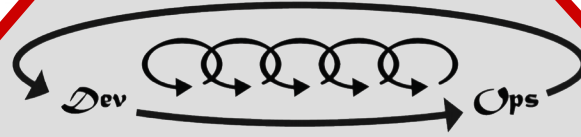
Private

Virtualized

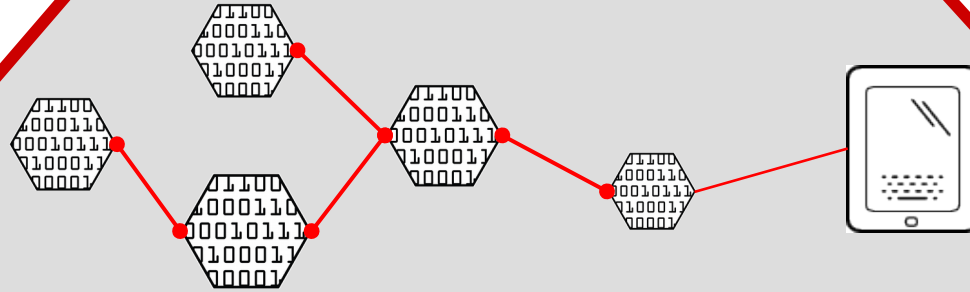
Bare Metal

It's the OpenShift Solution

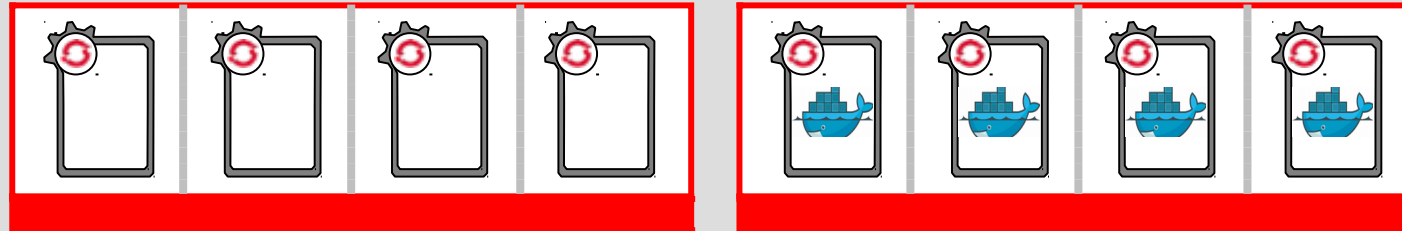
DEVOPS



MICROSERVICES



CONTAINERS



CLOUD



Public

Private

Virtualized

Bare Metal

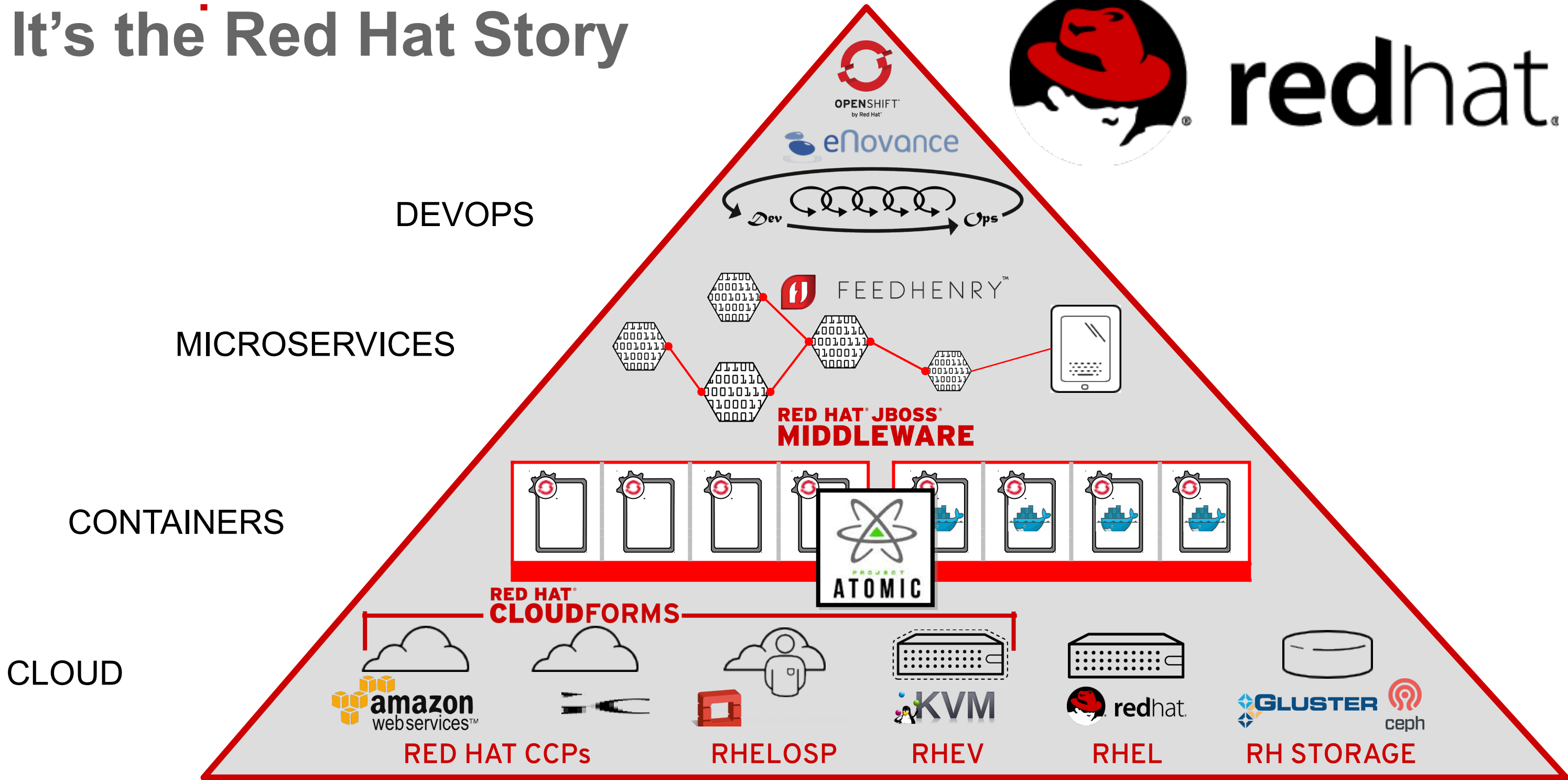


OPENSHIFT
by Red Hat

It's the Red Hat Story



redhat.





SPAWAR



accenture



CISCO™

DELL

FICO™

PAYCHEX®

ca®
technologies



T · · Systems · · ·



redhat.®

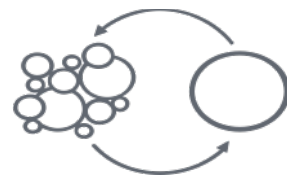
HOW OPENSIFT ACCELERATES DEVOPS



Solves platform automation...

- Standardized operating environments
- Environment configuration as code
- Self-provisioning

...so the DevOps focus can be on application delivery



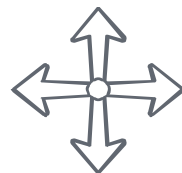
Continuous integration/delivery

- Integration with major DevOps tools
- Just-in-time delivery (and teardown) of single-purpose platforms for resource efficiency



Ready-to-go framework for application configuration as code

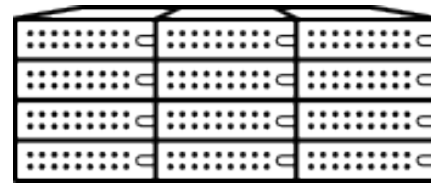
- Action hooks
- Cartridges
- Environment variables



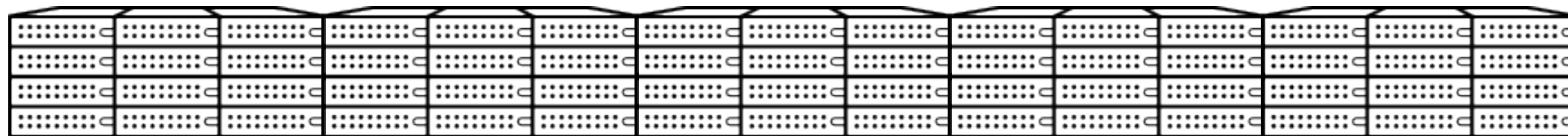
Auto-scaling

SOUNDS GREAT. HOW CAN I GET THAT?

?



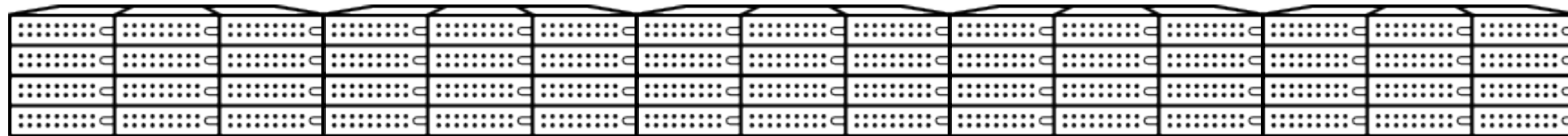
START WITH COMMODITY HARDWARE



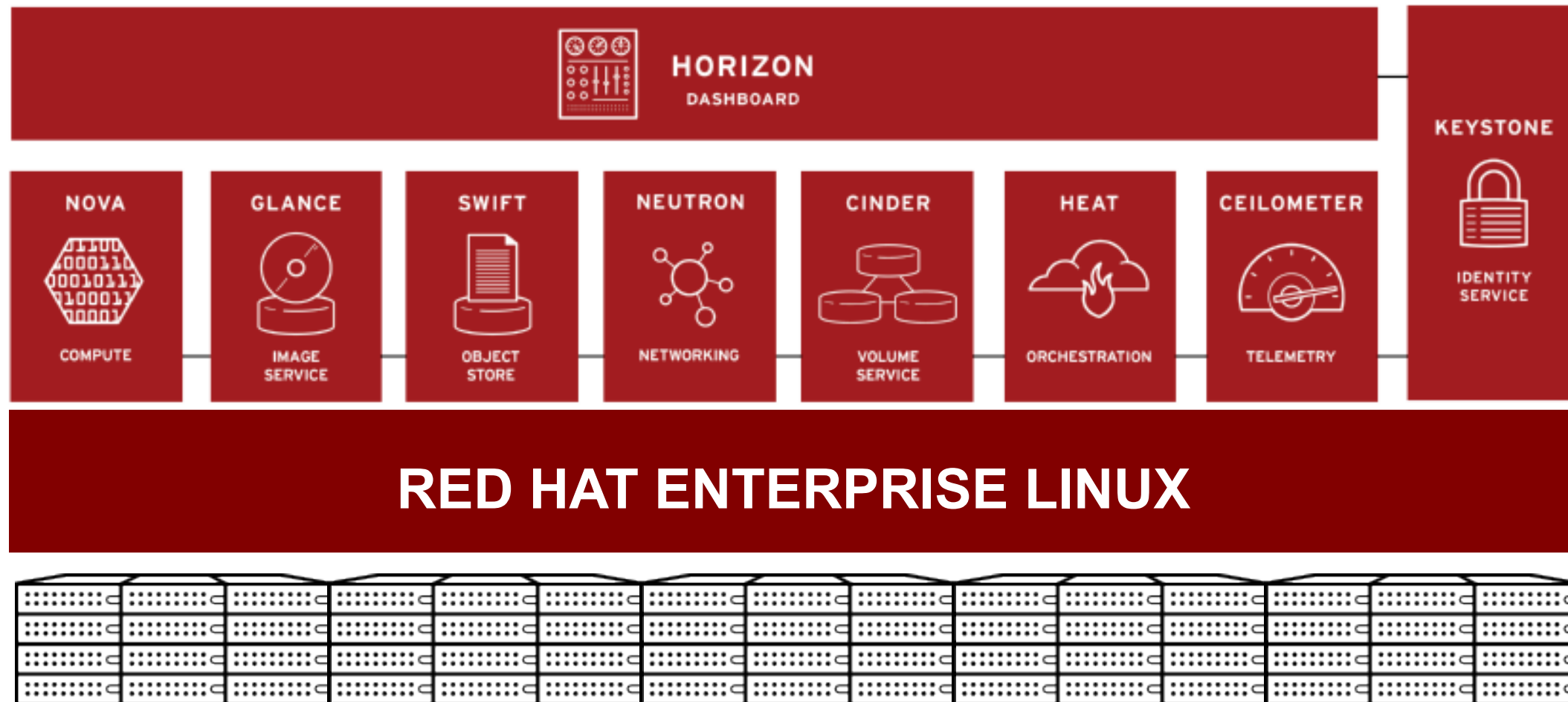
CREATE YOUR OWN PRIVATE INFRASTRUCTURE CLOUD WITH OPENSTACK AND RED HAT ENTERPRISE LINUX

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

RED HAT ENTERPRISE LINUX



CREATE YOUR OWN PRIVATE INFRASTRUCTURE CLOUD WITH OPENSTACK AND RED HAT ENTERPRISE LINUX



- Modular architecture
- Designed to easily scale out
- Based on (growing) set of core services



PRIVATE INFRASTRUCTURE CLOUD ENABLED



RHEL RHEL RHEL RHEL RHEL RHEL RHEL

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

ADD SOME PUBLIC CLOUD



RHEL RHEL RHEL RHEL RHEL RHEL RHEL

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM



RHEL RHEL

PUBLIC CLOUD

ADD A CLOUD MANAGEMENT PLATFORM

RED HAT CLOUD FORMS



RHEL RHEL RHEL RHEL RHEL RHEL RHEL

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM



RHEL RHEL

PUBLIC CLOUD

ADD A CLOUD MANAGEMENT PLATFORM

CMP Capabilities

- Self-Service Automated Provisioning
- Service Catalog
- Chargeback
- Capacity Management
- Performance Management
- Configuration & Change Management
- Life-cycle Management
- Orchestration
- External Cloud Connection

**CLOUD
MANAGEMENT
PLATFORM**



DISCOVERY



CAPACITY
PLANNING



REPORTING



AUDITING
COMPLIANCE



ANALYSIS



MONITORING



ORCHESTRATION



POLICY



CHARGEBACK



RHEL



RHEL



RHEL



RHEL



RHEL



RHEL



RHEL

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM



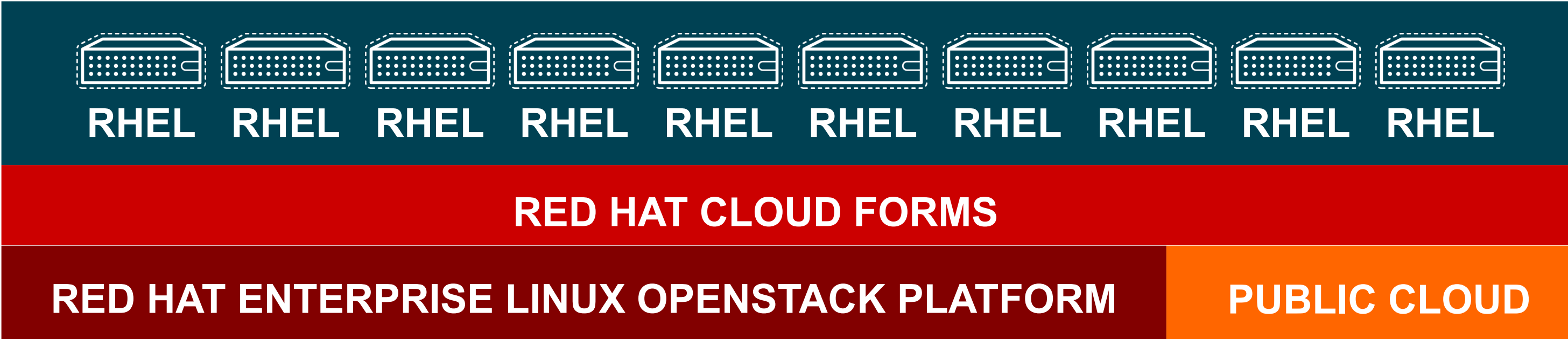
RHEL



RHEL

PUBLIC CLOUD

OPEN HYBRID INFRASTRUCTURE CLOUD ENABLED



RHEL

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RHEL

RED HAT CLOUD FORMS

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

PUBLIC CLOUD

ADD A PAAS APPLICATION PLATFORM LAYER



OPENSIFT
by Red Hat



RHEL

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RED HAT CLOUD FORMS

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

PUBLIC CLOUD

ADD A PAAS APPLICATION PLATFORM LAYER

ELASTIC CLOUD APP PLATFORM

- ✓ SELF-SERVICE FOR DEVELOPERS
- ✓ AUTOMATIC PROVISIONING FOR APP STACKS
- ✓ CONTINUOUS INTEGRATION/DELIVERY

- ✓ APP AUTO-SCALING
- ✓ SECURE WITH SELINUX
- ✓ MULTI-LANGUAGE
- ✓ BUILT ON RHEL W CONTAINERS



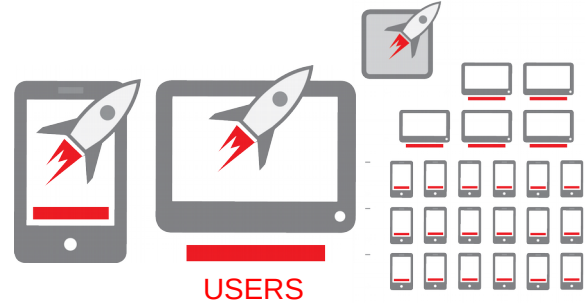
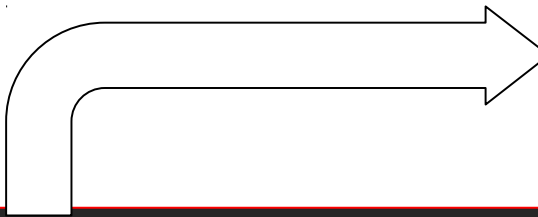
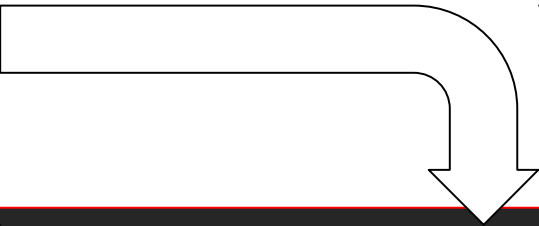
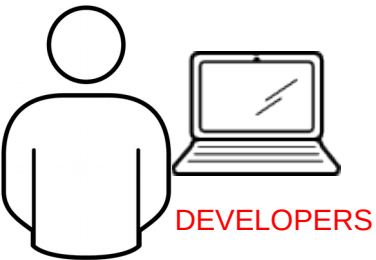
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RED HAT CLOUD FORMS


RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

PUBLIC CLOUD


ENABLE DEVOPS AND IMPROVE TIME TO MARKET



SELF-SERVICE FOR DEVELOPERS



OPENSIFT
by Red Hat



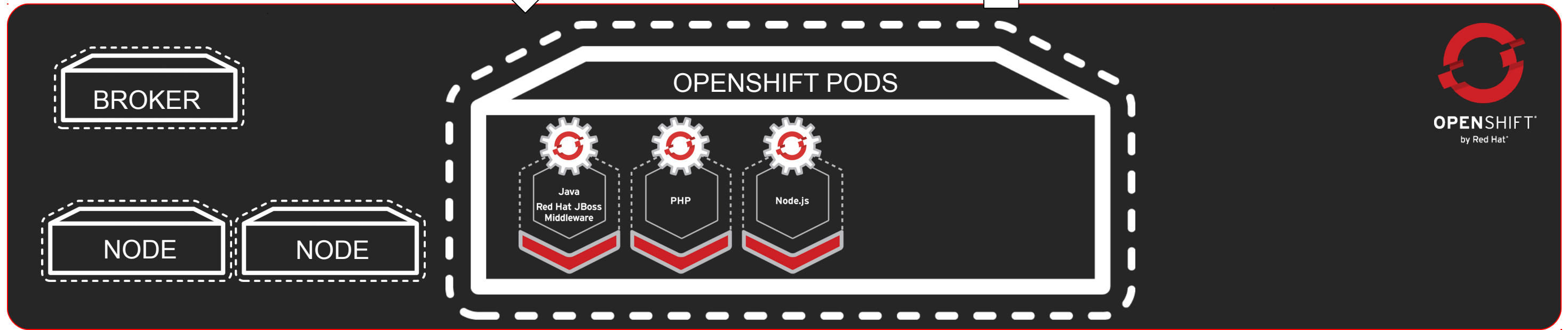
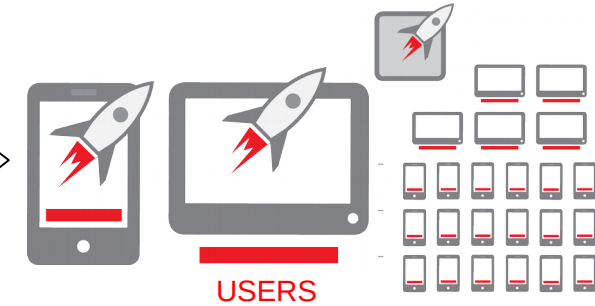
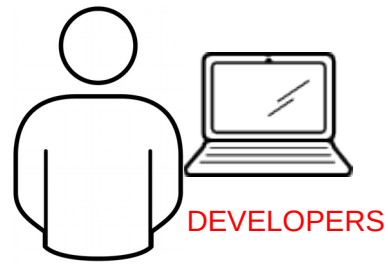
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RED HAT CLOUD FORMS

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

PUBLIC CLOUD

“CONFIGURATION IN CODE” AND AUTO PROVISIONING



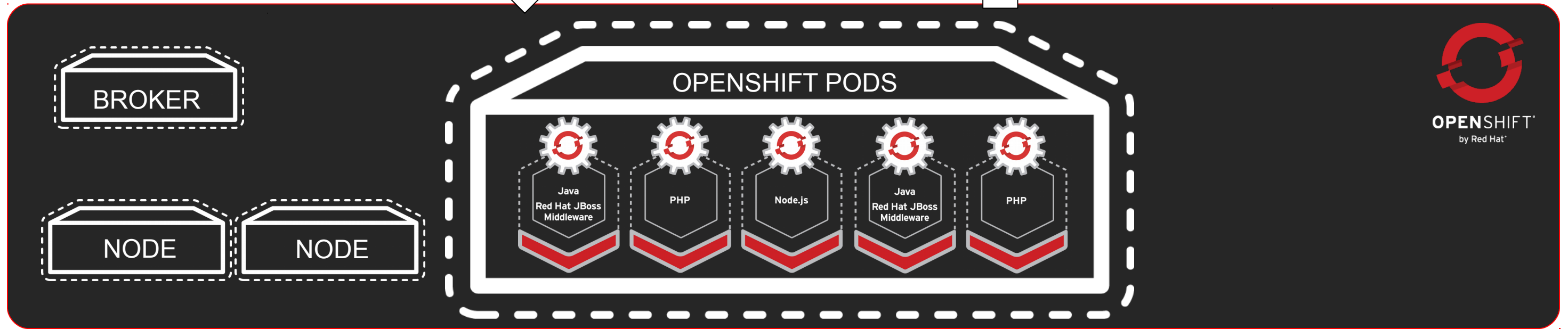
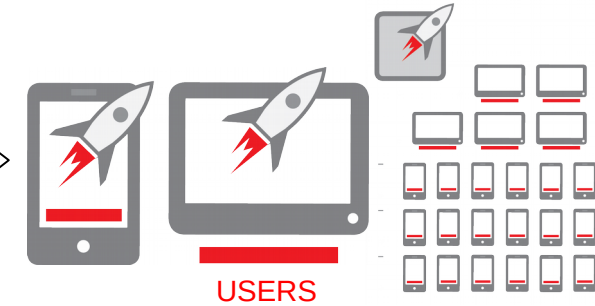
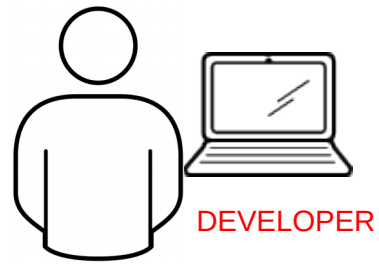
RED HAT ENTERPRISE LINUX

RED HAT CLOUD FORMS

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

PUBLIC CLOUD

HIGH EFFICIENCY WITH CONTAINERS



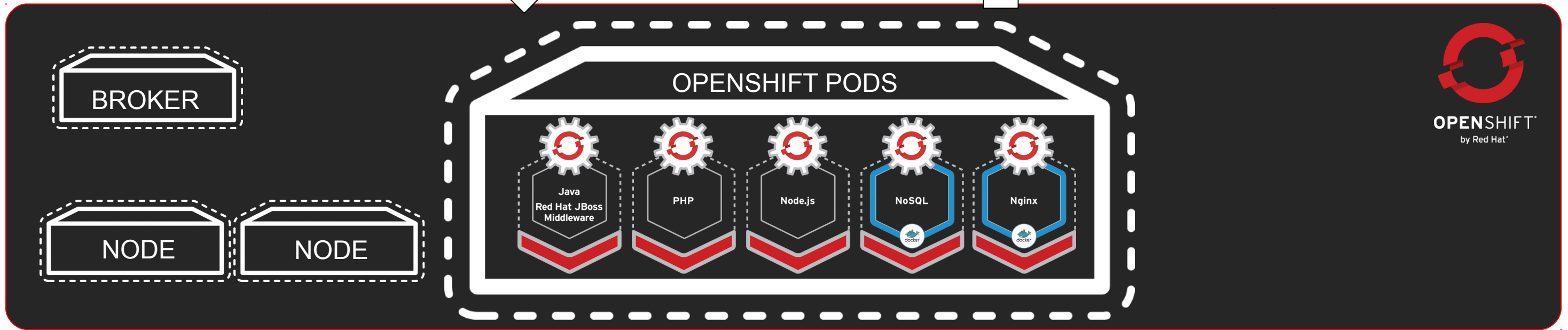
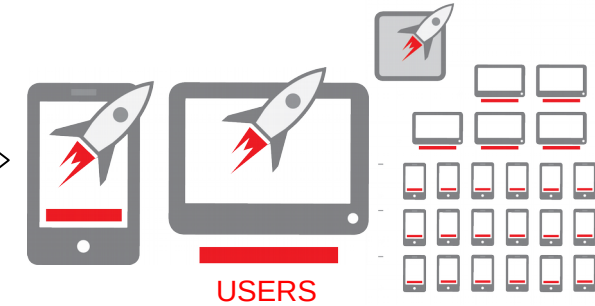
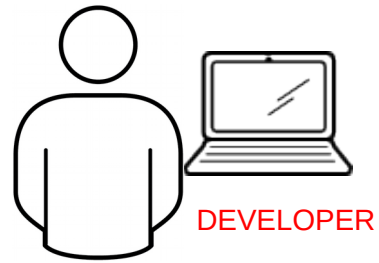
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RED HAT CLOUD FORMS

RED HAT ENTERPRISE LINUX OPENSTACK PLATFORM

PUBLIC CLOUD

ADDING DOCKER SUPPORT



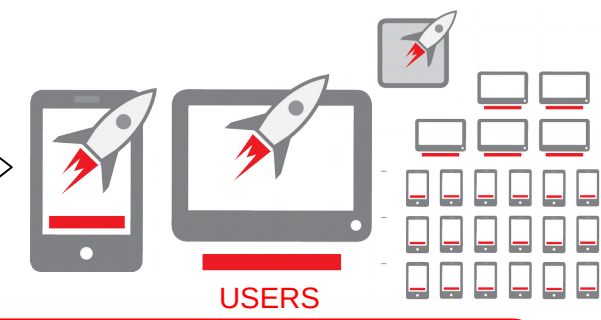
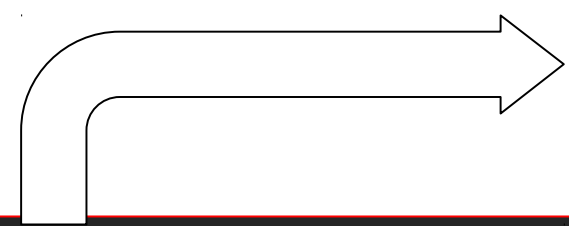
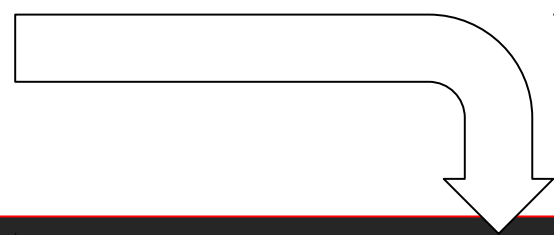
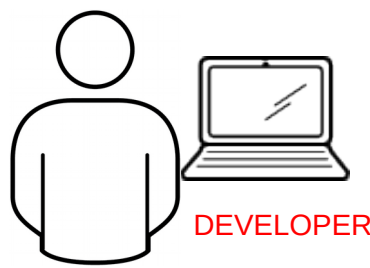
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ADD CLOUD-ENABLED ENTERPRISE MIDDLEWARE WITH XPAAS



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DATA SERVICES**

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XPAAS SERVICES
FOR OPENSIFT

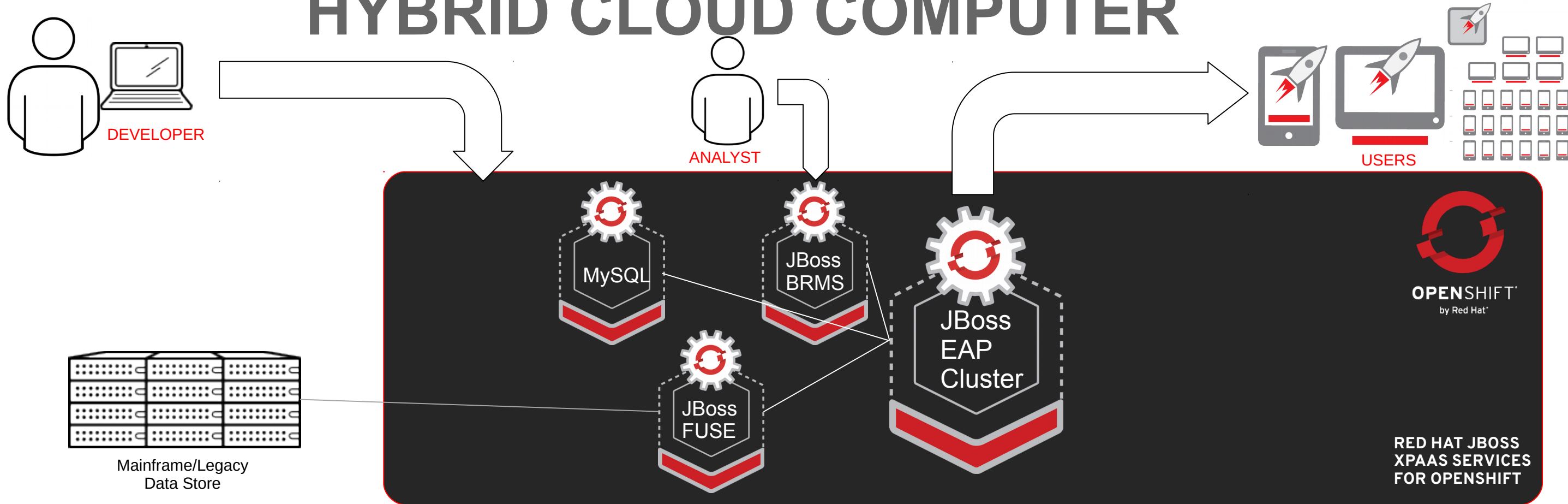
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RESULT: DEVOPS FOR ENTERPRISE APPS IN A HYBRID CLOUD COMPUTER



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