redhat.

DON'T LET YOUR HYBRID CLOUD TURN INTO A MONSTER

MARTIN PERCIVAL
Principal Solutions Architect

BALANCING INNOVATION AND OPTIMIZATION

HOW DO YOU ADD CLOUD RESOURCES WHILE MAINTAINING EXISTING ONES?

Optimize the IT you have

GAIN EFFICIENCY

Integrate apps, data, & processes

IMPROVE PRODUCTIVITY

Add & manage cloud infrastructure

INCREASE AGILITY

Build more modern applications

MOVE FASTER


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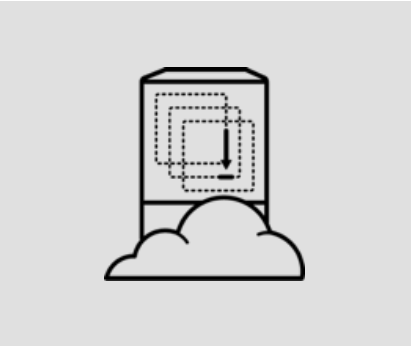
CLOUD 101

PUBLIC CLOUD

PRIVATE CLOUD

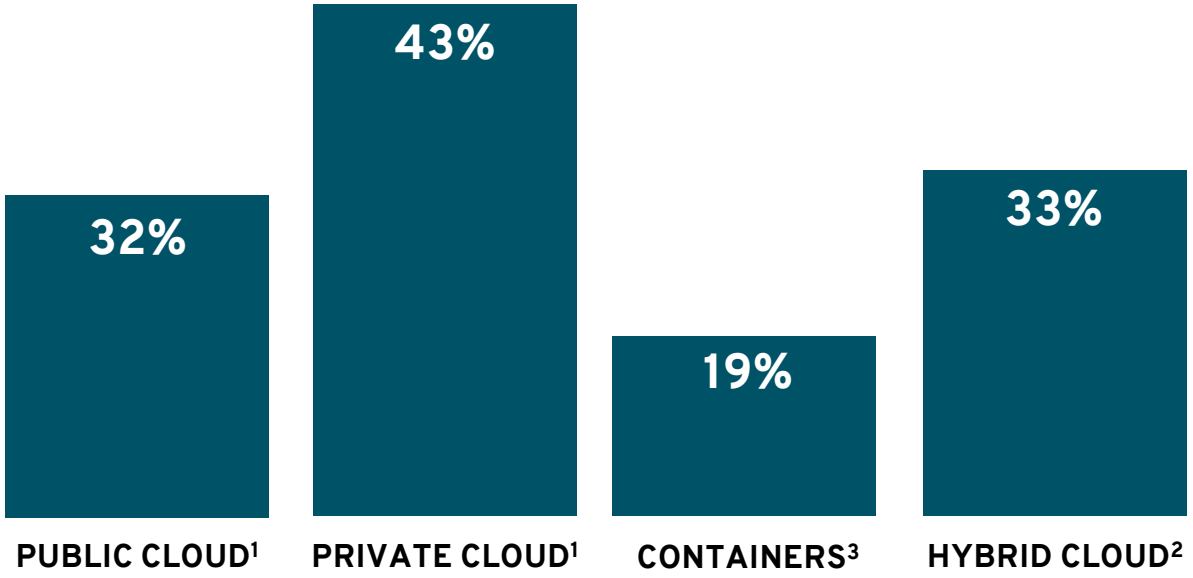


CONTAINERS

HYBRID CLOUD

WHAT ARE CUSTOMERS DEPLOYING?

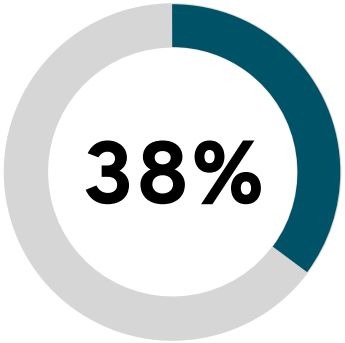
REAL-WORLD DATA HIGHLIGHT OPPORTUNITIES



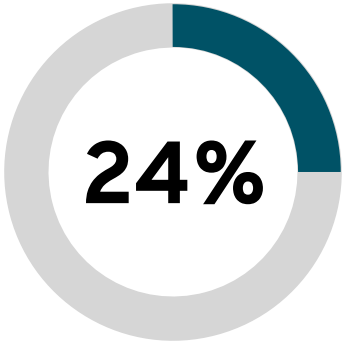
Sources: **[1]** RightScale: *State of the Cloud Report 2017* **[2]** 451 Research *Voice of the Enterprise: Cloud Transformation*, Q1 2017
[3] Datadog, *8 surprising facts about real Docker adoption*, April 2017

INFRASTRUCTURE PRIORITIES

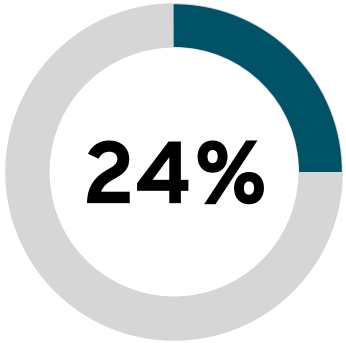
WHEN BUILDING OR DELIVERING NEW (CLOUD) ENVIRONMENTS



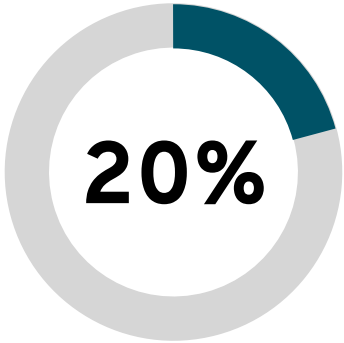
OVERALL SECURITY POSTURE



DATACENTER PERFORMANCE



TOTAL COST OF OWNERSHIP



IMPROVING I.T. SERVICES & SUPPORT TO THE BUSINESS

Source: (n=600), Red Hat and Illuminas, *Global Customer Challenge Research*, April 2016.

WHAT KEEPS US FROM MOVING FORWARD?

HOW CAN THE ORGANIZATION OVERCOME THESE CHALLENGES?

DEFINED CLOUD STRATEGY

A new approach can be daunting. Do you have a solid plan in place to move forward?

INSTITUTIONAL KNOWLEDGE GAP

You have to update more than systems. Is your staff ready?

SECURITY & POLICY CONSTRAINTS

Cloud (especially public cloud) can seem riskier than traditional IT. But is it?

Source: (n=600), Red Hat and Illuminas, *Global Customer Challenge Research*, April 2016.

CLOUD INFRASTRUCTURE IN ACTION

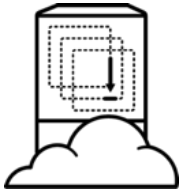
WHERE COULD WE START?

FOCUSED OPPORTUNITIES

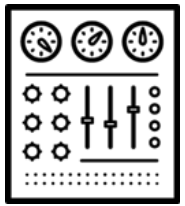
CLOUD STRATEGY

PUBLIC CLOUD

PRIVATE CLOUD



CONTAINERS ON CLOUD



HYBRID CLOUD MANAGEMENT

DEVELOP A CLOUD STRATEGY

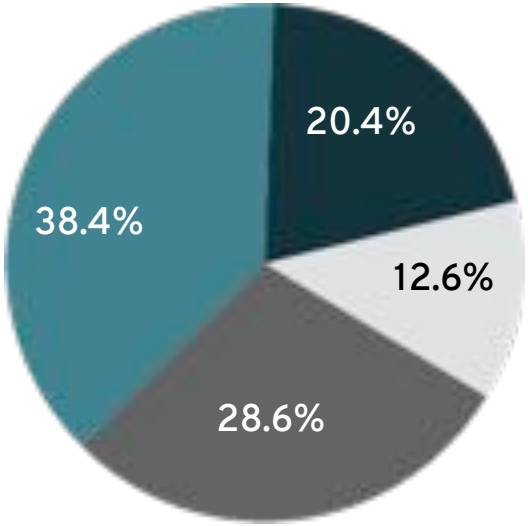
WHAT IS AN OPEN HYBRID CLOUD PLATFORM?

A MODERN PLATFORM THAT TAKES BEST ADVANTAGE OF ALL ENVIRONMENTS

- Uses both on-premise and public cloud infrastructure
- Unifies management across all environments
- Shares resources (storage, networking, etc.) across infrastructure platforms
- Provides a container environment with orchestration
- Adheres to open, common industry standards and APIs

HYBRID CLOUD IS GROWING

NEARLY 62% ARE 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*

CLOUD MIGRATION

IN 3 PHASES

DISCOVER

Review and capture:

- Infrastructure requirements
- Processes
- Workload
- Environment details

These critical details help you develop a cloud migration strategy that is right for your business.

DESIGN

Determine your target architecture.

- What level of effort can you undertake at this time?
- What timelines must you meet?
- What do you need for organizational adoption?

Build your implementation roadmap.

DEPLOY

Deploy the target architecture to your environment(s).

Develop, test, & deploy automated workload migration.

This phase includes implementing cloud management tools & practices, as well as training & mentoring for IT staff.

USE PUBLIC CLOUD WHERE APPROPRIATE

USE PUBLIC CLOUD TO YOUR ADVANTAGE

GET GREATER RETURNS ON EXISTING RESOURCES

- Use the investments you've already made in software, people, & tools
- Scale as needed to meet business and user demand
- Accelerate innovation—bring applications to market fast
- Increase workload portability using containers to optimize choice of environment—on- or off-premises
- Repurpose IT resources for new projects and business growth

PLANNING FOR PUBLIC CLOUD

IDENTIFY THE VALUE WHEN CHOOSING PUBLIC CLOUD PROVIDERS

- Make sure there is certified support for your standard operating environment (SOE) & application platforms (public & on-prem)
- Consider data storage, backup, and recovery options, as well as on-premises infrastructure
- Ensure applications and data can be moved off-premises, based on company security policies and regulations
- Find or create a unified management solution that includes your preferred cloud vendors, as well as on-premises technologies

Schiphol
Amsterdam Airport

PRODUCTS & SERVICES

- Red Hat OpenShift Container Platform
- Red Hat CloudForms
- Red Hat Gluster Storage
- Red Hat JBoss Fuse
- Red Hat 3scale API Management

CHALLENGE

CUT DEVELOPMENT TIME FOR NEW TRAVELER SERVICES

SOLUTION

Created a self-service, multicloud platform for its internal IT team and business partners

RESULTS

- **Established a hybrid, multicloud development platform** based on Red Hat OpenShift Container Platform deployed across Microsoft Azure, AWS, and an on-premise virtualized environment
- **Meets high availability and scalability** challenges even during the the busiest times, including holidays
- **Gained application portability**, with greater flexibility
- **Avoided lock-in** to a single cloud platform

Source: Red Hat case study, *Amsterdam Airport Schiphol builds agile cloud with Red Hat*, Aug 2017. https://www.redhat.com/en/resources/amsterdam-airport-schiphol-case-study

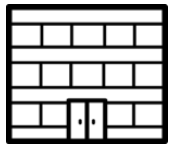
RED HAT CERTIFIED CLOUD & SERVICE PROVIDERS

400+ PROVIDERS AROUND THE WORLD

- Provides global platform for your Red Hat technologies **on public clouds, hosts, and managed service providers**
- Offers zero startup fees and utility-based **pay-as-you-go pricing** model
- Provides **compatibility and certification** with your Red Hat solutions
- Gives you **peace of mind** with Red Hat certified IT staff and options for 24x7 Premium production support
- Offers **subscription portability** through Red Hat Cloud Access

MAINTAIN YOUR RED HAT INVESTMENT

STANDARDIZE IN A FLEXIBLE WAY



Datacenter
(on-premise)

RED HAT SUBSCRIPTIONS

CAN BE MOVED BACK AND FORTH

Red Hat Certified
Cloud Provider
(off-premise)

BUILD A PRIVATE CLOUD

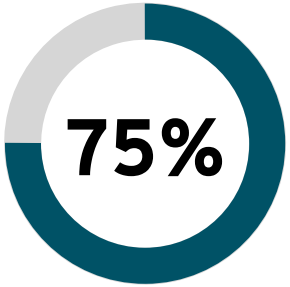
WHAT IS PRIVATE CLOUD?

WHEN YOU WANT IT TO BE YOURS… ALL YOURS

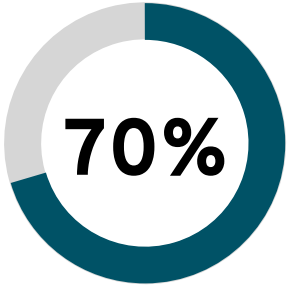
- Provides public cloud-like automation and infrastructure on-premises
- Scales IT resources on demand to meet user demand
- Includes core compute, storage, and networking resources *(and more)*
- Standardizes on a single IT infrastructure among multiple business units
- Provides a foundation for modern, web-scale applications and containers

WHY ENTERPRISES CHOOSE PRIVATE CLOUD

SECURITY, COMPLIANCE, CONTROL, AND FLEXIBILITY ARE TOP BENEFITS



of user organizations surveyed cited **increased security as the top benefit of private cloud**



of these organizations cited **global compliance, enhanced IT control, flexibility, and data management** as further benefits.

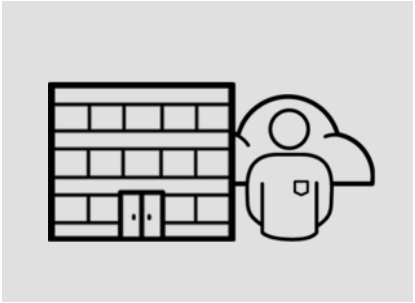
Source: 451 Research for Red Hat, *OpenStack Platform Delivers for Private Cloud Users*, Dec 2016.
https://www.redhat.com/en/resources/openstack-use-case-private-cloud

HOW IS PRIVATE CLOUD USED?

MULTIPLE OPTIONS TO MEET THE NEEDS OF YOUR BUSINESS

SELF-MANAGED

MANAGED: ON-PREM



MANAGED: OFF-PREM

BENEFITS OF PRIVATE CLOUD

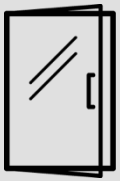
COMPLETE CONTROL OVER DATA, COST, & LOCATION

CONTROL

Create & customize to meet business needs

COST

Reduce infrastructure & operations costs over time



PRIVACY

Secure your info on your servers in your datacenter

CONTINUITY

Avoid concerns about vendor stability or longevity

AVAILABILITY

Services available anywhere, to multiple teams

Source: Corina Marcuti for Luminus, *7 benefits of choosing a private cloud solution*, Jan 2017. http://luminus.tech/2017/01/13/7-benefits-of-choosing-a-private-cloud-solution/

PADDYPOWER. betfair

PRODUCTS & SERVICES

- Red Hat Enterprise Linux
- Red Hat Virtualization
- Red Hat OpenStack Platform
- Red Hat CloudForms
- Red Hat Consulting

CHALLENGE

UPGRADE INFRASTRUCTURE TO DO MORE—FASTER

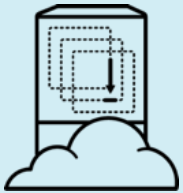
SOLUTION

Established stable, flexible platform to support the company datacenter and help create, deploy, and scale its private cloud

RESULTS

- **Improved scalability and uptime** to meet increased business needs
- **Achieved automation** of its complete development pipeline
- **Improved security and compliance**

Source: Red Hat case study, *Paddy Power Betfair upgrades systems to improve online betting*, June 2016. https://www.redhat.com/en/resources/paddy-power-betfair-improves-infrastructure-case-study



DEPLOY CONTAINERS ON CLOUD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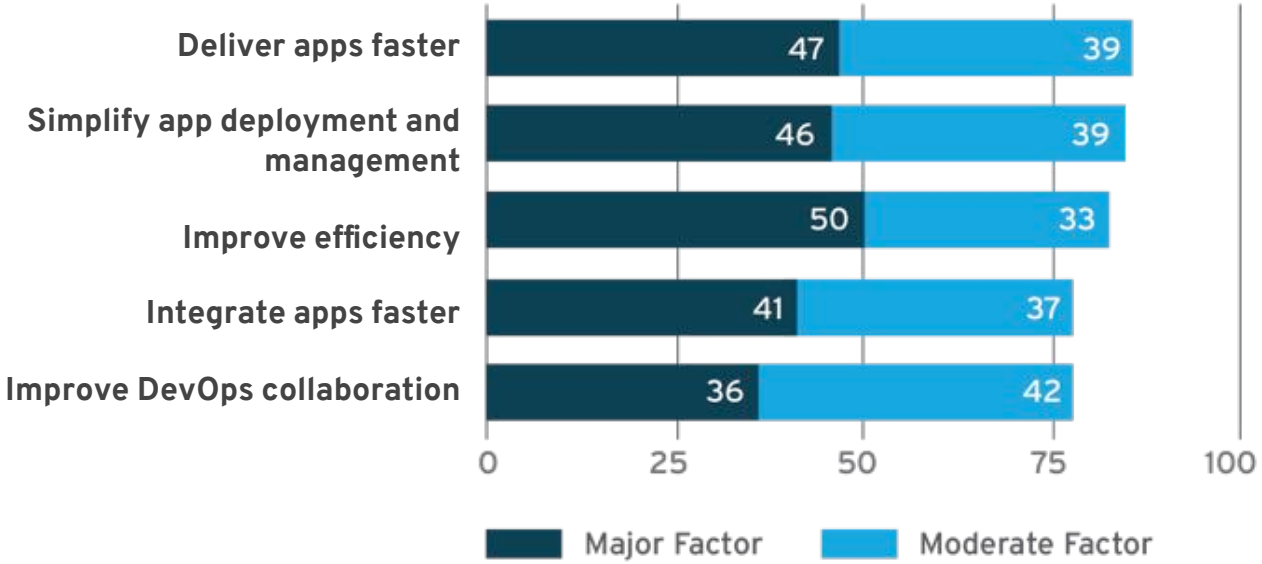
HOW CONTAINERS ARE BEING USED

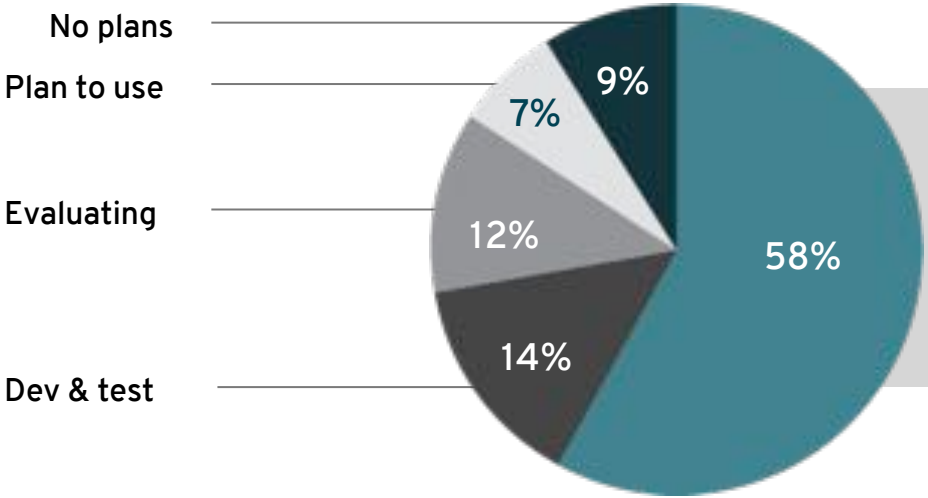
SPEED AND EFFICIENCY—AS WELL AS COLLABORATION



Source: (n=151 IT architecture, software, and operations professionals using or planning to use Linux containers at companies within the US, UK, Germany, China, and India.) *The State of Containerization: How, Where, & Why Are Containers Leveraged in the Software Development Life Cycle?*, a commissioned study conducted by Forrester Consulting on behalf of Red Hat, Jun 2016. https://www.redhat.com/cms/managed-files/forrester-tap-state-of-containerization-analyst-paper-201610-en.pdf

WHERE CONTAINERS ARE BEING USED

MORE THAN HALF REPORT USING THEM IN PRODUCTION



PRODUCTION

21%	14%	23%
Broad: Critical deployments	Broad: Non-critical deployment	Initial deployments

Source: Red Hat-sponsored survey of 1,234 IT professionals with Linux knowledge and experience, September 2016

WHY RUN CONTAINERS ON CLOUD?

WHY YOU NEED A STRATEGY FOR THEM

- To support modern software development approaches like DevOps and microservices
- To support a standard operating environment (SOE)
- To create portability by separating apps from infrastructure

---

Containers are critical for hybrid cloud environments, because they support:

- Portability across multiple cloud environments (public or private).
- Simplified network resource allocation.
- More dynamic storage provisioning.
- Very rapid provisioning and deployment.

amadeus

CHALLENGE

MAXIMIZE EXISTING I.T. ASSETS, IMPROVE PLATFORM PERFORMANCE

PRODUCTS & SERVICES

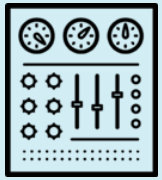
- Red Hat OpenShift Container Platform
- Red Hat JBoss Middleware
- Red Hat OpenStack Platform
- Red Hat Consulting

SOLUTION

Unified existing assets while taking advantage of the Docker container engine and Kubernetes clustering via Red Hat OpenShift Container Platform

RESULTS

- **Increased system performance** and reduced latency to rapidly adapt to peak load increases and new application deployment
- **Automated common system management and administration tasks** to eliminate need for micromanagement of underlying infrastructure
- **Gained ability to deliver new solutions faster**, across all infrastructure

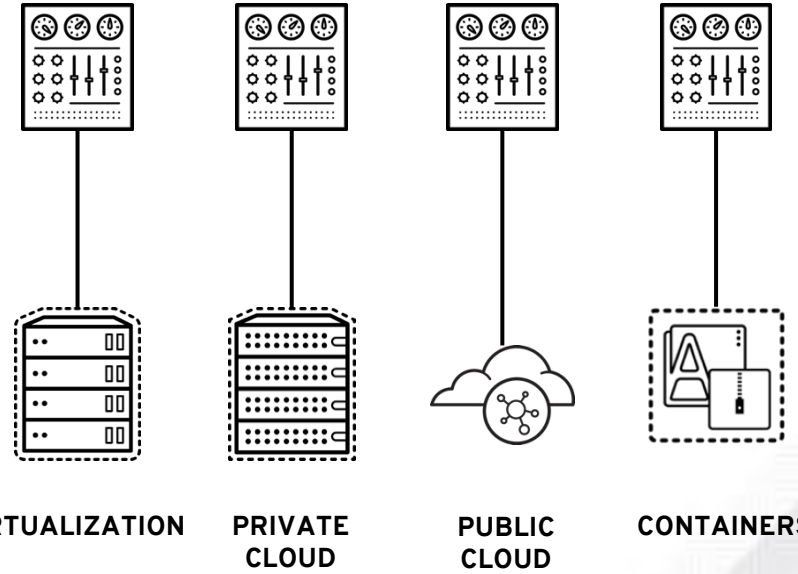


MANAGE HYBRID CLOUD

WHY SHOULD MANAGEMENT BE HYBRID?

TO ELIMINATE DISPARATE SYSTEMS & DUPLICATION OF EFFORT

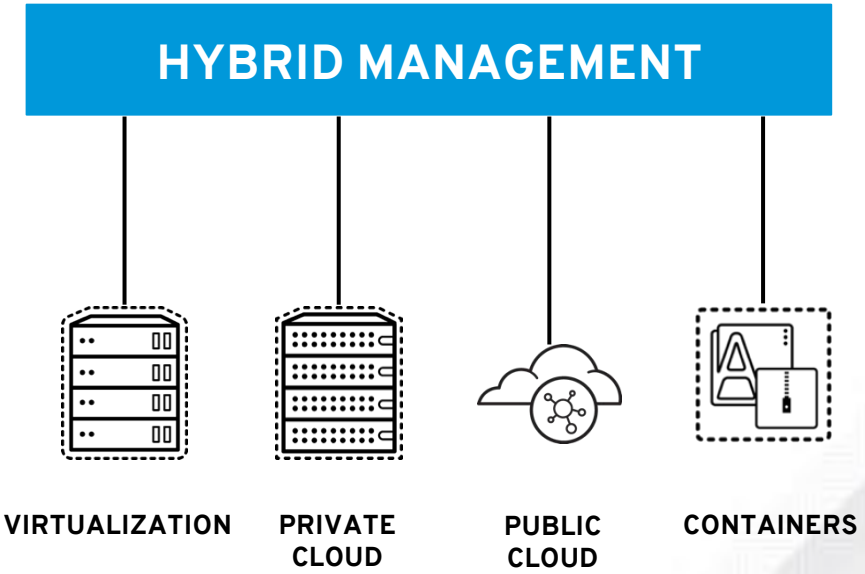
- Different management systems
- Different automation and policies



HYBRID CLOUD MANAGEMENT EFFICIENCY

COMMON SYSTEM ELIMINATES DUPLICATION OF EFFORT

- One management system
- Consistent automation & policies



NEW ARCHITECTURES

REQUIRE NEW MANAGEMENT SOLUTIONS

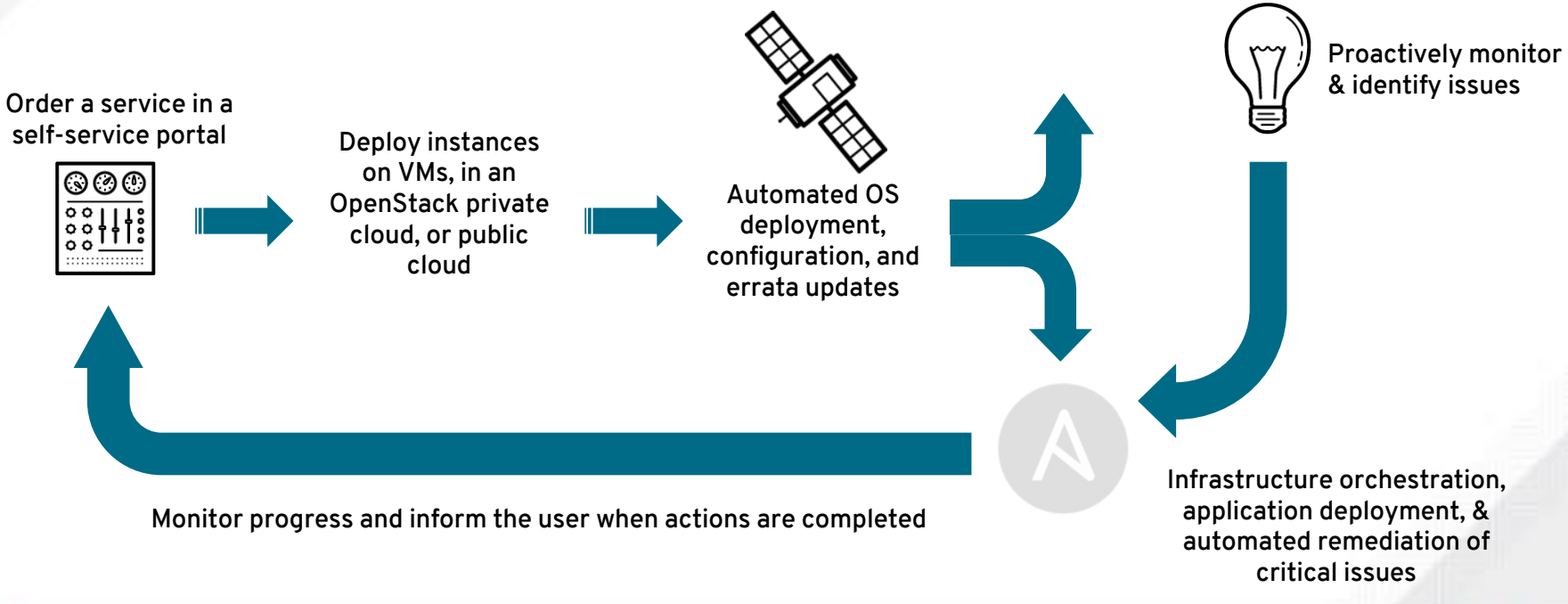
*"**74%** of IT decision makers believe they will need **new management tools** to effectively maintain and optimize **hybrid cloud and software-defined infrastructure** architectures."*

IDC White Paper, sponsored by Red Hat
Frictionless IT Management Disrupts the Status Quo
February 2016

Source: IDC White Paper, sponsored by Red Hat, Frictionless IT Management Disrupts the Status Quo, February 2016.
https://www.redhat.com/en/resources/frictionless-it-management-disrupts-status-quo

HYBRID CLOUD MANAGEMENT

SELF-SERVICE, SYSTEM DEPLOYMENT, CONFIGURATION, & REMEDIATION



BENEFITS OF UNIFIED HYBRID MANAGEMENT

DEFINE AND IMPLEMENT POLICY CONSISTENTLY

- Deliver services faster and reduce operational costs through self-service capabilities and life-cycle management
- Improve operational visibility and control
- Ensure compliance and governance through automated policy control
- Deploy composite applications to your choice of infrastructure in the same way, every time

REAL-WORLD ECONOMIC IMPACT

DELIVERING REAL RESULTS TO HELP MANAGE YOUR INFRASTRUCTURE TECHNOLOGY

20x
more service requests filled with

92%
less staff time per delivery of service requests

55%
less staff time discovering & optimizing IT resources

37%
faster app development life cycle

$11,937
in annual benefits per every 100 users (USD)

436%
5-YEAR ROI

Source: IDC White Paper, sponsored by Red Hat, The Business Value of Red Hat CloudForms, September 2016. https://www.redhat.com/en/resources/the-business-value-of-red-hat-cloudforms (gated)

COX AUTOMOTIVE™

PRODUCTS & SERVICES

- Red Hat CloudForms
- Red Hat Enterprise Linux
- Red Hat Gluster Storage
- Red Hat Virtualization

$5M
in soft savings

CHALLENGE
BUILD A SELF-SERVE STATION FOR I.T. RESOURCES

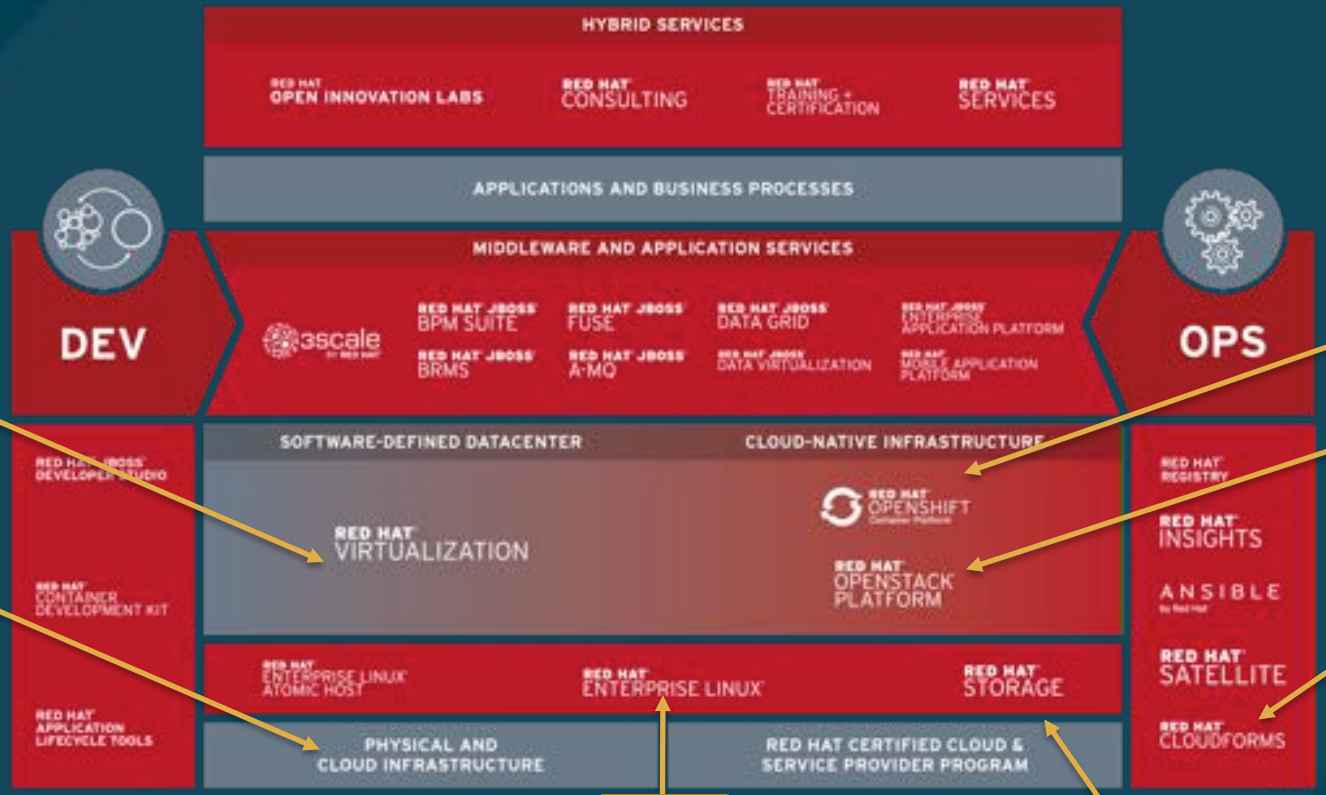
SOLUTION
Updated its infrastructure & big data approach, including building a services portal

RESULTS

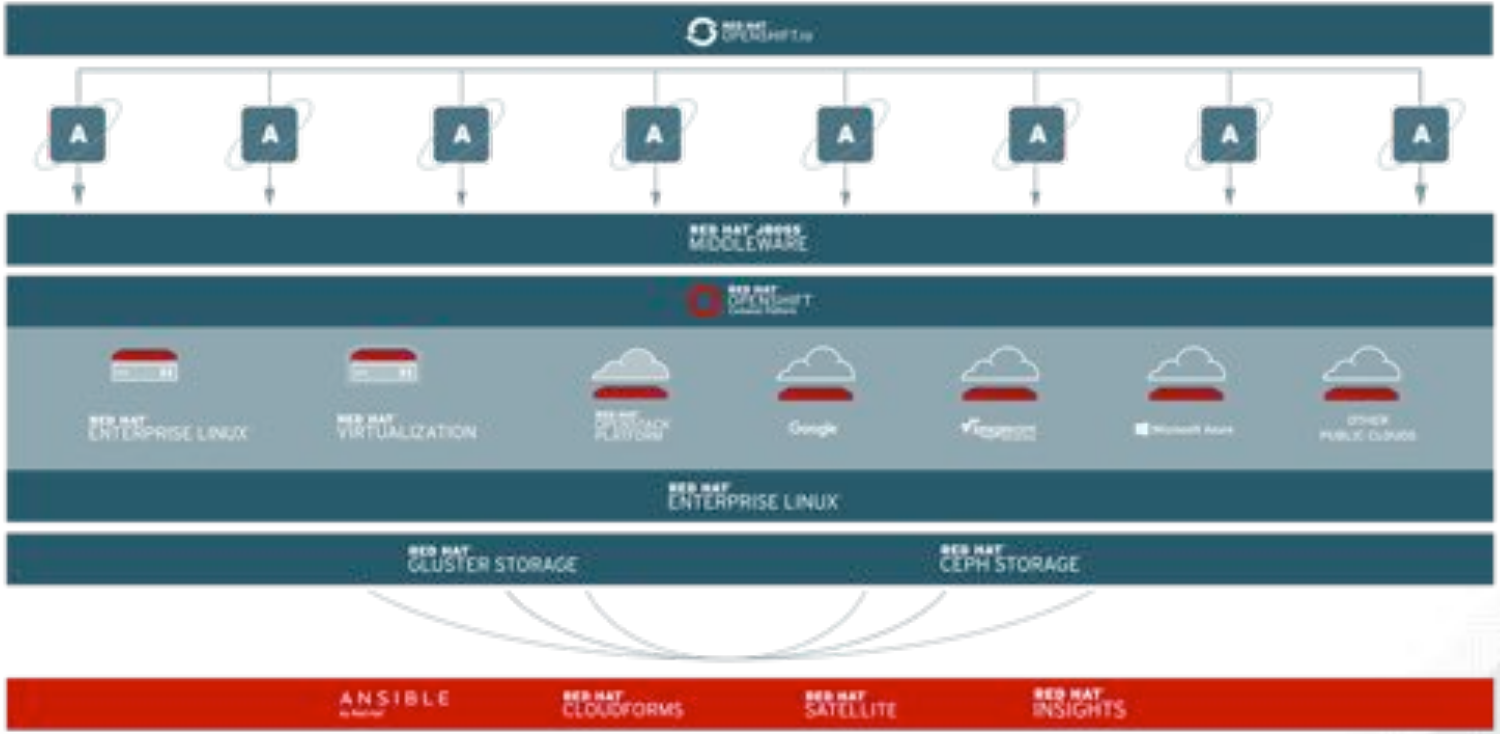
- Built a cloud portal with CloudForms to gain **unified views** & dashboard, as well as on-demand IaaS
- Established **big data infrastructure** to combine data sources, as well as mine data sources not usually visible
- Cut IT resource delivery time for 25+ companies to **15-20 minutes instead of 3 weeks**
- Saved **10 years of wait time**

RED HAT CAN HELP

Hybrid-Cloud Elements



RED HAT PORTFOLIO



Conways Law of Organisational structure

“Any organization that designs a system (defined broadly) will produce a design whose structure is a copy of the organization's communication structure.”

How do committees invent.

Conway. 1968.

OPEN IS A BETTER WAY

Explore the Open Decision Framework on GitHub

OPEN EXCHANGE
Freely sharing ideas and info

PARTICIPATION
Everyone has a voice (not a vote)

MERITOCRACY
Letting the best ideas win

RELEASE EARLY + OFTEN
Continuous shared improvement

COMMUNITY
We can do more together

Are you ready to innovate?

RED HAT FORUM

Europe, Middle East & Africa