WHAT WE’RE TALKING ABOUT TODAY

Five Factors Disrupting IT Ops Today

Impacts on IT Ops Roles, Skills and Tools

Hybrid Mgmt Strategies for Hybrid Clouds

Red Hat’s Management & Automation Vision
THE FIVE FACTORS DISRUPTING I.T. OPS TODAY

DEVELOPER DRIVEN DIGITAL BUSINESS

HYBRID CLOUD

ADVANCED AUTOMATION

NEXT GEN INFRASTRUCTURE

AIOPS
DIGITAL BUSINESS IS DRIVING CHANGE ACROSS I.T.

- 85% of leaders in the G2000 will try to leverage DX
- $2.1 TRILLION worldwide spending on (DX) technologies will grow to nearly in 2019
- 2/3 of CIOs in the G2000 will put DX at the heart of their corporate strategy

HYBRID CLOUD INFRASTRUCTURE DOMINATES

HYBRID CLOUD IS THE GOAL:

58%

of enterprise are moving to hybrid IT environments that integrate on premises systems and off premises cloud and hosted environments

SAAS GROWTH EXPECTED:

32%

of businesses expect SaaS to be the largest area of growth in IT spending in 2018

Source: 451 Research Voice of the Enterprise Cloud, Hosting and Managed Services Budgets and Outlooks 2017
APPLICATION PROFILES

Most enterprises expect to support a mix of traditional & cloud apps

Percentage of your application instances that are on traditional vs. cloud infrastructure \textit{today}:

- Traditional: 53%
- Cloud: 47%

Percentage of your application instances that will run on traditional vs. cloud infrastructure \textit{by 2020}:

- Traditional: 59%
- Cloud: 41%

\textbf{Source:} IDC InfoBrief sponsored by Red Hat, \textit{Enterprises Look to Open Source to Navigate the IT Modernization Journey.} Jan 2018 (n=1,171 IT operations decision makers)
HYBRID IS THE NORM

Development Process
- Waterfall
- Agile
- DevOps

Application Architecture
- Monolithic
- N-Tier
- Microservices

Deployment & Packaging
- Physical Servers
- Virtual Servers
- Containers

Application Infrastructure
- Datacenter
- Hosted
- Cloud

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Next generation infrastructure ops have to face these challenges

- Containers and immutable infrastructure require new approach to patching and updates
- Trusted content and source validation
- Event driven serverless computing
- Programmable software defined architectures
- IT Ops increasingly focuses on source code control, programmability and analytics
- API enabled operations
- Large scale IT ops data federation
SECURE & AUTOMATE THE CONTENT LIFECYCLE

Trust is temporal; rebuild and redeploy as needed

TRUSTED CONTENT

UNKNOWN CONTENT

EXTERNAL IMAGES

PRIVATE REGISTRY

CONTENT METADATA

IMAGESTREAM EVENTS

Git

CI

CD

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INTELLIGENT AUTOMATION IS CRITICAL

86%
Automation is either mission critical or very important to their future Cloud strategy

79%
Of IT organizations will need to deploy new management and automation software between now and 2020

Source: IDC Infobrief sponsored by Red Hat, Automation, DevOps and the Demands of a Multicloud World, March 2018
N= 1171 Worldwide IT Operations Decision Makers
Effective automation in the container era requires IT Operations to be as agile as software developers.

**I.T. AUTOMATION**

- Programmatic, reusable, open
- Human readable
- Consistent across technologies and multiple clouds
- Self-documenting
TOP AUTOMATION IMPLEMENTATION CHALLENGES

Q: What is your organization’s foremost challenge around realizing IT operations management automation?

- People: 35%
- Process: 29%
- Operational Silos: 18%
- Reliance On Legacy Tools: 18%

*Only one selection permitted

Red Hat Customer Automation Survey January 2018 n=238 IT Decision makers

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Q: Are any of the following items top IT priorities for your organization in 2018? Please select up to 3 (n = 857)

- Business Intelligence/Analytics: 45%
- Machine Learning/AI: 29%
- Big Data: 28%
- Software-defined networking: 25%
- Containers/container mgt: 23%

Source: 451 Research, Voice of the Enterprise: Digital Pulse, Budgets and Outlook
FUTURE IS PROGRAMMABLE, PREDICTIVE AND AUTOMATED

Monitor and alert

AI takes issue and talks to Business Rules

Business Rules tells AI what rules are in place

Automation
**EFFECTIVE MANAGEMENT & AUTOMATION:**
spans cloud, containers and traditional IT

<table>
<thead>
<tr>
<th>Traditional code development &amp; deployment tooling</th>
<th>CI/CD Pipelines &amp; Code Repositories</th>
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<tbody>
<tr>
<td>Databases</td>
<td>Kubernetes Container Orchestration Platforms</td>
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<tr>
<td>Middleware</td>
<td>Container packaging platforms</td>
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<tr>
<td>Bare metal</td>
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<tr>
<td>OS</td>
<td>Network and storage infrastructure</td>
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<tr>
<td>X-cloud Portability &amp; Integrations</td>
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- Service catalogs & governance
- Full stack monitoring
- Root cause Analytics
- Capacity Optimization
- Cloud Financial Mgt
- Security & Compliance
- Config & Provision
- Patch & Remediate Hosts
- ITSM & CMDB Integration

SaaS/PaaS | Private Clouds | AWS | Azure | Google
I.T. OPS AT ENTERPRISE SCALE

what our customers deal with every day

**HYBRID CLOUD MANAGEMENT CHALLENGES**

Workload portability & multi-cloud operations are critical to digital strategies.

**IMPROVE INFRASTRUCTURE AGILITY**

Adopt new roles, processes and tools to take full advantage of IT automation.

**AUTOMATION & AIOPs FOR MODERN APP OPERATIONS**

Accelerate application time-to-value using automation and analytics to reduce friction and improve developer productivity.


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# CRITICAL IT OPS TRANSFORMATIONS

## FROM THIS

<table>
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<tr>
<th>Issue</th>
<th>Solution</th>
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<td>Slow, manual, ad-hoc process silos</td>
<td>Collaboration &amp; agility across IT ops &amp; dev</td>
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<tr>
<td>Brittle, hard to update management tools</td>
<td>API-driven integration &amp; cloud-based delivery</td>
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<td>Reactive response to threats</td>
<td>Proactive, predictive identification &amp; remediation</td>
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<tr>
<td>Restrictive, multi-year development cycles</td>
<td>Rapid, iterative application refreshes</td>
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<td>Attrition and skill mismatch</td>
<td>Training and innovative career paths</td>
</tr>
<tr>
<td>Proprietary technologies and licenses</td>
<td>Open source solutions with flexible sourcing</td>
</tr>
<tr>
<td>Embedded, implied business rules</td>
<td>Programmable and predictive IT for business</td>
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## TO THIS
THE FUTURE:
HYBRID MANAGEMENT FOR A HYBRID WORLD

Data intensive and real time
Frictionless updates and utilization
Rapid innovation and delivery
Tools and logic optimized for specific personas
RECOGNIZE I.T. OPS NEEDS VARY BY PERSONA

THE WAY IT USED TO BE ———— THE WAY IT IS NOW

SYS/CLOUD ADMIN

OPERATIONS  BUSINESS  ARCHITECT

DEVELOPER  SYS/CLOUD ADMIN  NETWORK ADMIN
HYBRID I.T. MANAGEMENT CHALLENGES

Cloud Providers
- Have high rate of change - continuously offering new services

On Premise/Private Cloud
- Monitoring, Event, Inventory Data

Public Cloud Providers
- Cloud providers have high rate of change - continuously offering new services
- Public CLOUD MANAGEMENT
  - AWS, Windows, Google

On Premise Management
- On Premise/Private Cloud
  - Hybrid Infrastructure
  - Monitoring, Event, Inventory Data

Infrastructure Providers
- Have low rate of change - offering new services in once year releases

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CLOUD MANAGEMENT EVOLUTION

OPERATIONS

- IAAS & VM self service provisioning
- Extending private clouds to public cloud services
- Monolithic solutions

DEVELOPERS

- Frictionless dev consumption of hybrid resources driven by business rules
- Portability/cloud agnostic - lock in avoidance
- Modular, persona based suite of services using APIs

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DIGITAL BUSINESS TRANSFORMATION

Agile Service Delivery
- Business Rules
- Automation
- Analytics

Advanced IT Ops
- Hybrid Cloud
- Brokering
- Governance
B USINESS A GILITY & V ISIONIBILITY REQUIRED

Overcome Complexity  -  Optimize Cost  -  Accelerate Agility  -  Automate business rules
UNIFIED SERVICE DELIVERY

Open - Extensible - Business Driven

HYBRID SERVICE CATALOG & BUSINESS RULES ENGINE

DEMO IN BOOTH

## PUBLIC CLOUD SERVICES

- CONTAINERS
- RHOSP

## NATIVE CLOUD SERVICES

- AWS
- Windows
- Google

## PRIVATE CLOUD

- PHYSICAL AND VIRTUAL

## ON-PREMISE MANAGEMENT

- CLOUDFORMS + SATELLITE

## PLAYBOOKS

- ANSIBLE
ADVANCED I.T. OPS AND AUTOMATION FOR HYBRID CLOUD

Monitor and alert → AI Ops → Business rules → Automation

SaaS ENABLED
MANAGEMENT & AUTOMATION GOALS

- **Eliminate** Silos and expand APIs
- **Accelerate** pace of innovation
- **Further** modular architecture
- **Increase** level of data analytics
- **Extend** automation
- **Optimize** for hybrid delivery
EXPANDING RED HAT’S ANALYTICS & SAAS PLATFORM

View results and alerts from Insights in either the customer portal or through the Satellite user interface.
Hybrid Cloud Management as-a Service

SERVICE BROKER & GOVERNANCE ACROSS ALL CLOUDS

Cloud Management as-a-Svc

- Hybrid Cost Management
- Hybrid Ops Management
- Governance
- Event Mgmt
- Service Catalog
- Discovery

On Premise Management

- Bare Metal RHEL
- Virtualized RHEV VMW AzureStack
- Private Cloud Red Hat OpenStack

CUSTOMER ON-PREM INFRASTRUCTURE

CUSTOMER CLOUD INFRASTRUCTURE

aws
Microsoft Azure
Google
Platform Management as-a-Service

- Configuration Assessment
- Vulnerability Management
- Discovery
- Compliance
- Subscription Management
- SOE Management

Platforms supported:
- BARE METAL: RHEL
- VIRTUALIZED: RHEV, VMW, AZURESTACK
- PRIVATE CLOUD: RED HAT OPENSTACK

Cloud providers:
- RHT ON CLOUD
- CUSTOMER INFRASTRUCTURE

Supported operating systems:
- RHEL
- Microsoft Azure
- Google
THANK YOU

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