



# Making your on-prem infrastructure look and feel like the cloud

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Solution Architect

# IT Operation Today

# AGENDA

Red Hat Forum - 09/10/18

IT operations today

Why do I need a management platform?

How can Cloudforms help?

Infrastructure Migration

# OPS HAS CHANGED.

I.T. is never static.

Collaboration is now a requirement.

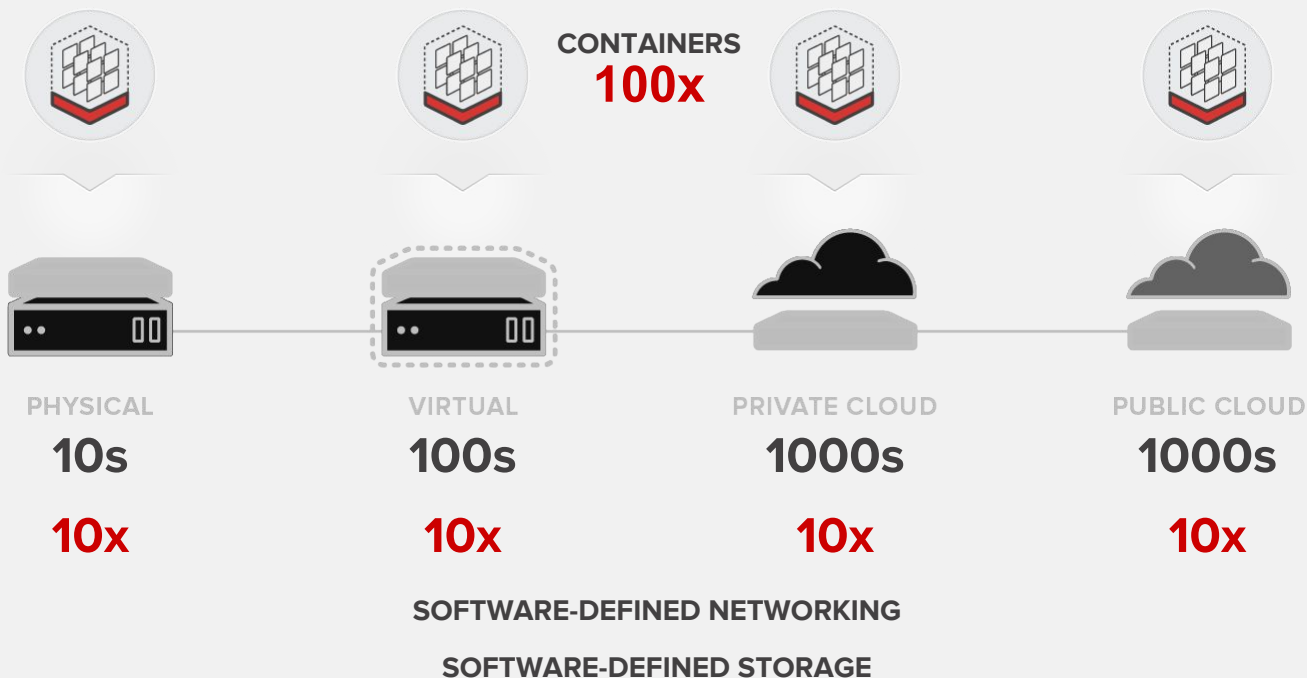
Security is non-negotiable.

The platform is hybrid.

Digital innovation is the goal.

## HOW YOU MANAGE OPS HAS TO CHANGE, TOO.

# Complexity is going through the roof

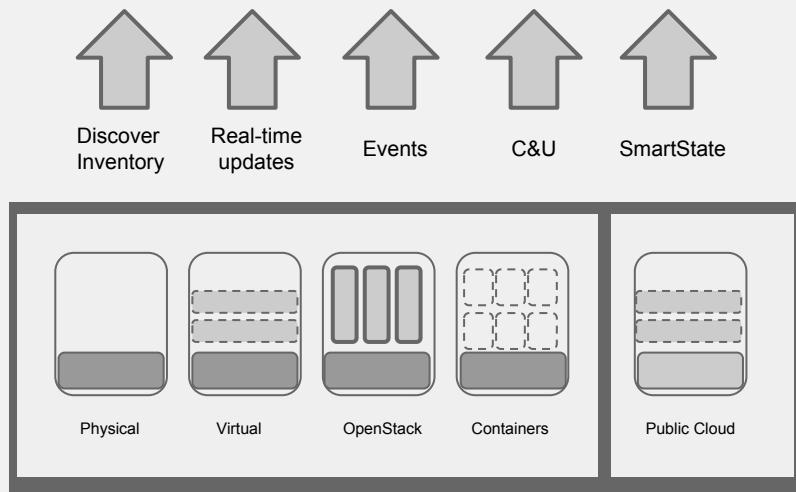


# Why do I need a Management Platform?

# Automation

The power of Ansible Automation

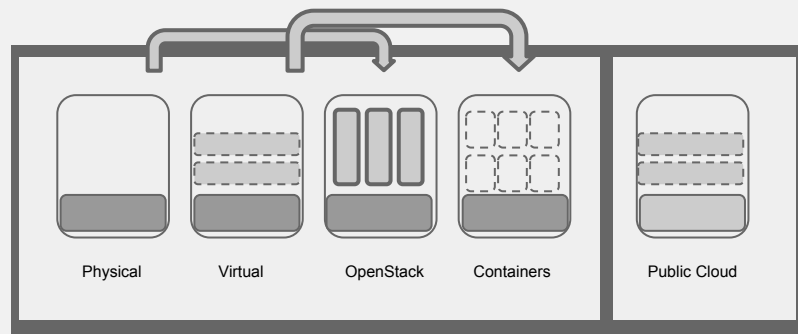
- Integration with Ansible Tower or use embedded Ansible feature
- Use Ansible Playbooks for Service Catalogs, Automate, Buttons, Compliance, Alerts
- Git repositories to store Ansible Playbooks for version control, CI/CD pipelines and auditing
- Leverage existing Ansible roles and modules for third party integration



# I.T. Modernization

Management across source and target technologies offers an incremental migration path

- V2V Migration
- From Legacy to Modern Hypervisor
- Right Sizing

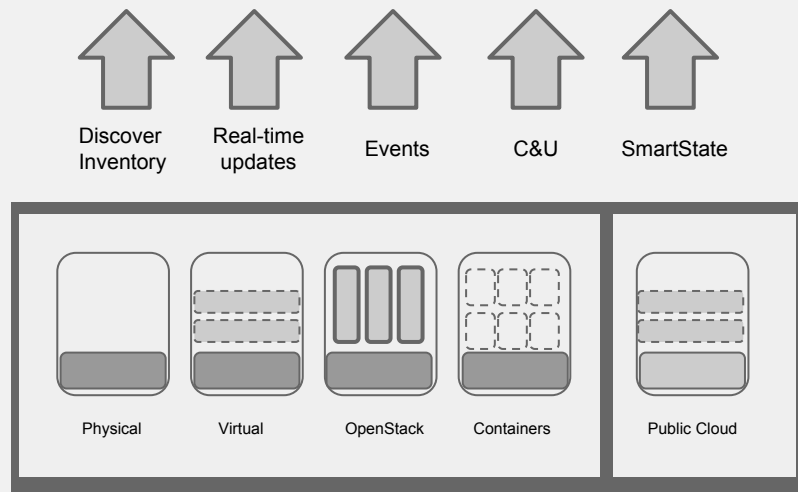




# Governance and Compliance

Normalize Compliance Checks across different Technologies

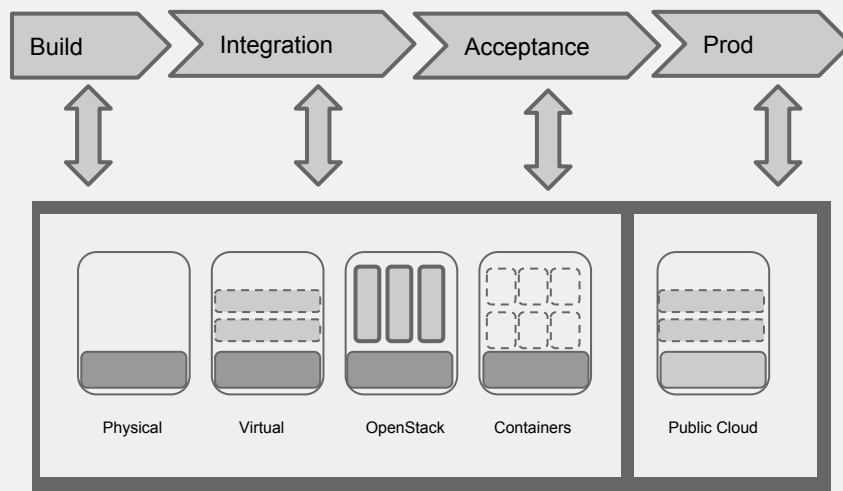
- Define Compliance checks for Hosts, Virtual Machines, Cloud Instances and Containers Images
- Enforce Compliance by triggering Alerts and Actions
- Drift Analysis allows comparison with previous states



# DevOps and Agile I.T.

Use Continuous Integration Tools to Deploy Workloads and Services

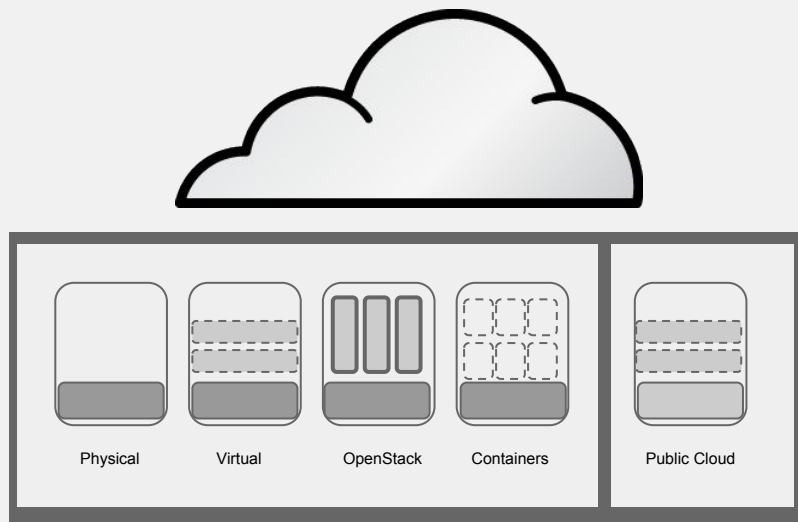
- Provision and retire test setups
- Drive consistency between different lifecycle stages
- Automated tests ensure Compliance and Governance



# Build Private IaaS

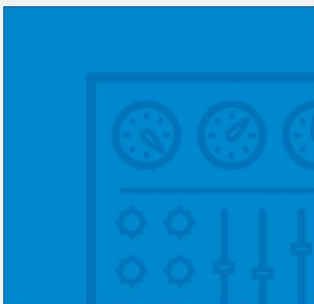
Deliver IT resources as Infrastructure as a Service

- Self Service Portal
- Use VMware, OpenStack, Hyper-V, RHV where appropriate and public cloud, but hide complexity
- Multi-Tenancy, Chargeback, Reporting
- Remove cause for Shadow IT



How can Cloudforms help?

# CLOUDFORMS DELIVERS SERVICES ACROSS HYBRID ENVIRONMENTS



## **SERVICE AUTOMATION**

Streamline complex service delivery processes, saving time and money.



## **POLICY & COMPLIANCE**

Draws on continuous monitoring and deep insights to raise alerts or remediate issues.



## **OPERATIONAL VISIBILITY**

Complete lifecycle and operational management that allows IT to remain in control.



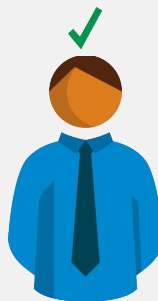
## **UNIFIED HYBRID MANAGEMENT**

Deploy across virtualization, private cloud, public cloud and container-based environments.

# SERVICE AUTOMATION WITH CLOUDFORMS



I use the self-service portal to request IT resources!  
I can get systems configured exactly like I need them.



IP addresses are gathered automatically.  
CloudForms checks quotas and available resources.  
There's an emergency, I can't work on your request today.  
CloudForms takes care of authorization and approvals.

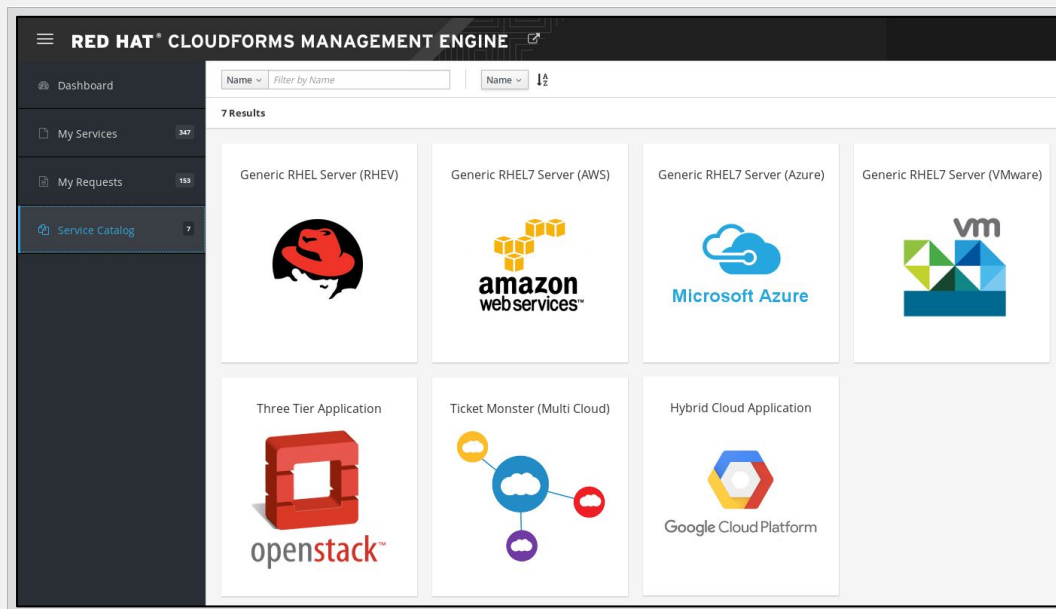
## ACTIVITIES REQUIRED

- + **Self-service** catalog
- + **Automated** approval workflow
  - + provisioning
  - + configuration
  - + policy enforcement
- + **No down time** for weekends, emergencies, etc.

= **MINUTES**

# SELF-SERVICE DELIVERY

- Create service delivery catalogs for users to choose the services the services that they need to deploy.
- Shopping cart functionality allows multiple services to be requested at one time.
- Service requests can be routed for approval.



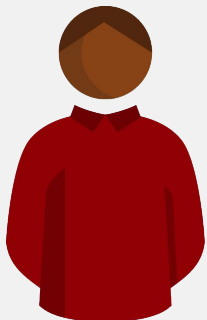
# AUTOMATED PROVISIONING

- Automatically deploys and configures requested services on any infrastructure platform.
- Automation steps can be codified in Ansible playbooks or natively in CloudForms.
- Integration to external IT systems allows CloudForms to automate all process steps.

The screenshot displays the CloudForms Service Catalog interface. On the left, a tree view shows 'Service Catalogs' > 'Catalog Items' > 'All Catalog Items' > 'Hybrid Cloud Automation Items' > 'JBoss Deployment (Ansible)'. The right pane shows the details for 'Service Catalog Item "JBoss Deployment (Ansible)"'. Under 'Basic Information', it lists: Name / Description: 'JBoss Deployment (Ansible) / JBoss Deployment' with a 'Display in Catalog' checkbox; Dialog: 'No Dialog'; Ansible Tower Job Template: 'JBoss Deployment'; Provisioning Entry Point: '/ConfigurationManagement/AnsibleTower/Service/Provisioning/StateMachine (NS/Cls/Inst)'. Below this, a 'Custom Image' section features a diagram showing a sequence: a 'VM' icon, followed by a plus sign, an Ansible logo, another plus sign, another 'VM' icon, another plus sign, and a final Ansible logo. The word 'SERVICE' is written in red above this sequence.



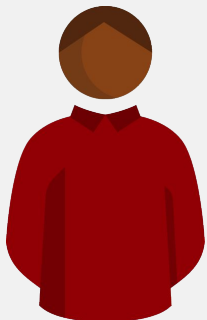
# OPERATIONAL VISIBILITY CHALLENGES



- Systems that are not being utilized should be retired to reclaim resources.
- Budgets are tight. We have to make sure that we are utilizing our systems efficiently.
- Tracking problems across infrastructure layers can be a challenge.
- I've got to project infrastructure usage out into the future for planning purposes.



# OPERATIONAL VISIBILITY WITH CLOUDFORMS

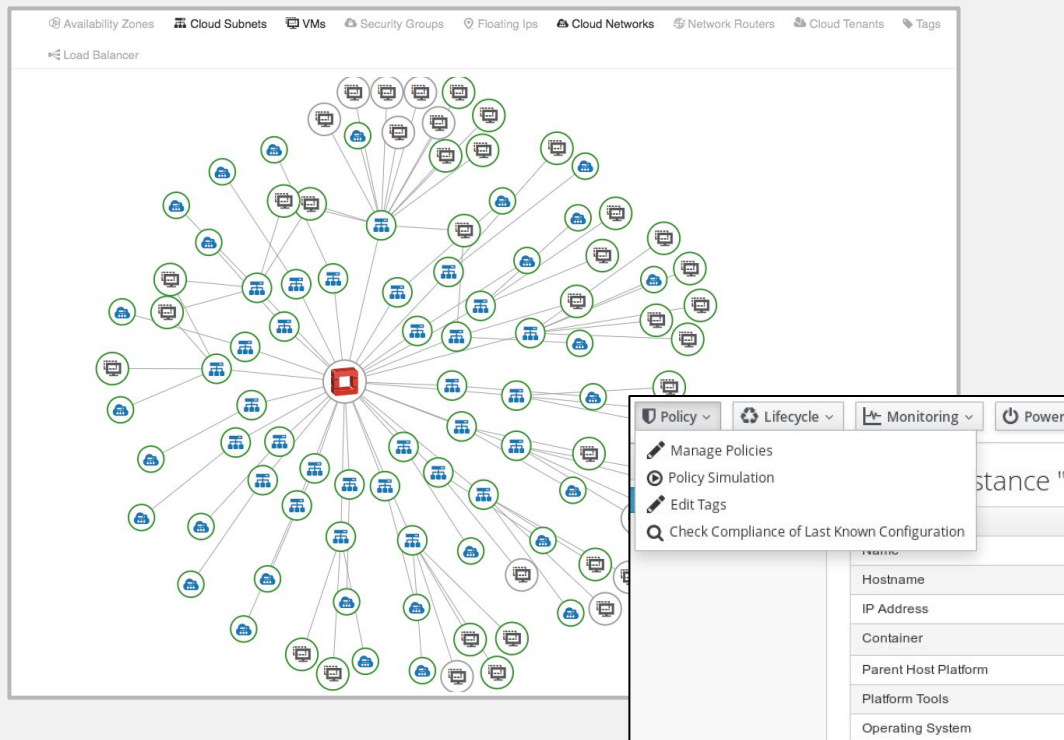


- We now have complete lifecycle management: provisioning, reconfiguration, deprovisioning, and retirement.
- Automatic resource optimization intelligently places VMs and offers right-sizing recommendations.
- I can drill-down through infrastructure layers to determine the root cause.
- Resource tracking and trending aids in capacity and what-if scenario planning.



# ROOT CAUSE ANALYSIS

- View instance performance and resource usage over time to pinpoint problem initiation.
- Quickly compare system state against known good state or other systems.
- Navigate across relationships and drill down infrastructure layers to identify underlying causes.



# QUOTAS AND CHARGEBACK

- Rate schedules per platform and per tenant with multi-tiered and multi-currency support.
- Quota set by user, role and tenant and apply to compute, memory and storage resources.
- Monitor resource usage and report based on workload or tenant.

Currencies

Select currency: \$ [United States Dollars]

Rate Details

\* Caution: The value Range end will not be included in the tier.

Group	Description	Per Time	Per Unit	Range Start
CPU	Allocated CPU Count	Hourly		
CPU	Used CPU	Hourly	MHz	
Cpu Cores	Used CPU Cores	Hourly		
Disk I/O	Used Disk I/O	Hourly	KBps	
Fixed	Fixed Compute Cost 1	Hourly		
Fixed	Fixed Compute Cost 2	Hourly		
Memory	Allocated Memory	Hourly	MB	

Rate Details

Group	Description	Range		Rate	
		Start	Finish	Fixed	Variable
CPU	Allocated CPU Count	0.0	Infinity	1.0	0.0
CPU	Used CPU	0.0	Infinity	0.0	0.02
Cpu Cores	Used CPU Cores	0.0	Infinity	1.0	0.02
Disk I/O	Used Disk I/O	0.0	Infinity	0.0	0.005
Fixed	Fixed Compute Cost 1	0.0	Infinity	0.0	0.0
Fixed	Fixed Compute Cost 2	0.0	Infinity	0.0	0.0
Memory	Allocated Memory	0.0	Infinity	0.0	0.0
Memory	Used Memory	0.0	Infinity	0.0	0.02
Network I/O	Used Network I/O	0.0	100.0	0.5	0.0
		100.0	Infinity	0.5	0.005

Manage quotas for Tenant "Red Hat"

Enforced	Description	Value
<input checked="" type="checkbox"/>	Allocated Virtual CPUs	64
<input checked="" type="checkbox"/>	Allocated Memory in GB	32
<input checked="" type="checkbox"/>	Allocated Storage in GB	10240
<input checked="" type="checkbox"/>	Allocated Number of Virtual Machines	32
<input checked="" type="checkbox"/>	Allocated Number of Templates	12

Count

Save Reset Cancel

# VIRTUALIZATION MANAGEMENT

- Provision from clone of existing VM instance or template.
- View VM genealogy and track VM drift from established configurations.
- Execute VM power operations and retire VM instances.



Top CPU Consumers (weekly)

Asset Name	Cluster Name	CPU - Usage Rate (%) (Avg)
ose32master1	Raleigh	65.3%
ose32etcd	Raleigh	56.8%
ose32master2	Raleigh	38.4%
cf41_vmware1	Production	19.5%
cf41_openshift1	Production	19.1%
cf41_openshift	Production	19.0%
40DemoMaster	Production	17.2%
CFME 5.6.0.6	QA	15.7%
cf4.1b5_openshift	Production	12.5%
cf41_openshift2	QA	12.5%

Guest OS Information

Updated 06/26/16 18:00 | Next 06/27/16 18:00

EVM: Recently Discovered VMs

demo-summit-17-20160624-193235 - location unknown	Date : 2016-06-24 19:34:50 -0600
demo-summit-16-20160624-192734 - location unknown	Date : 2016-06-24 19:29:17 -0600
demo-summit-17-20160624-191651 - location unknown	Date : 2016-06-24 19:23:27 -0600
demo-summit-16-20160624-191620 - location unknown	Date : 2016-06-24 19:18:14 -0600
demo-summit-15-20160624-185320 - location unknown	

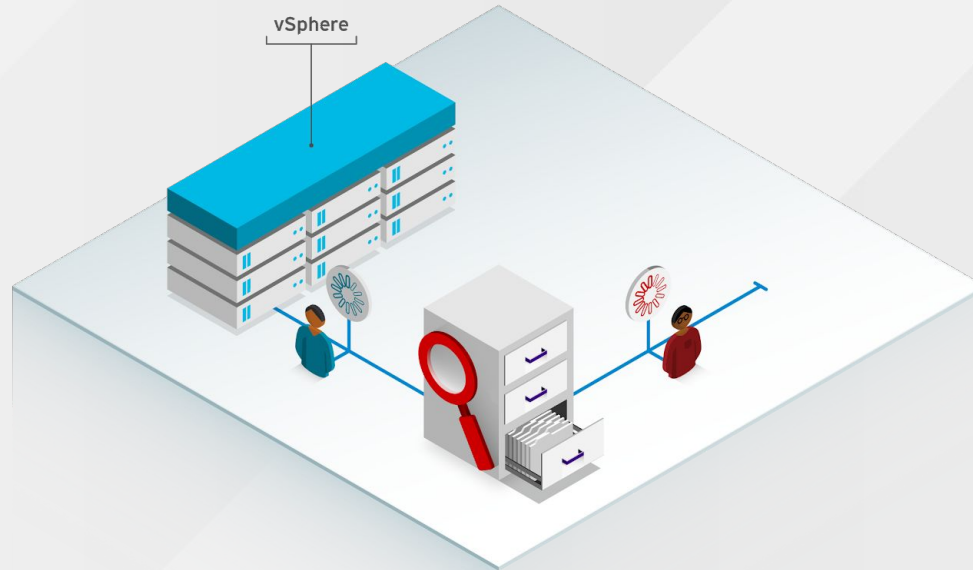
Top Memory Consumers (weekly)

Asset Name	Cluster Name	Memory - Used for Collected Intervals (MB) (Avg)
cf4.1b5_coud1	Raleigh	7.5 GB
cf41b6_rhev	Raleigh	7.3 GB
cf4.1b5_master	Raleigh	6.1 GB
40DemoMaster	Production	6.1 GB
CFME 5.6.0.6	QA	5.1 GB
cf4.1b5_openshift	Production	4.7 GB

# Infrastructure Migration

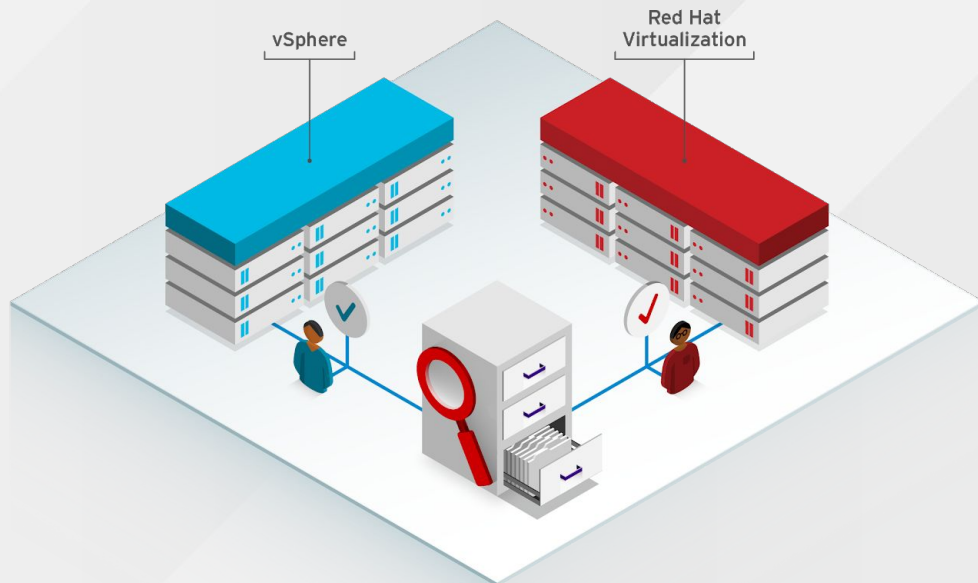
# INFRASTRUCTURE MIGRATION SOLUTION

Discovery and assessment of your migration



# INFRASTRUCTURE MIGRATION SOLUTION

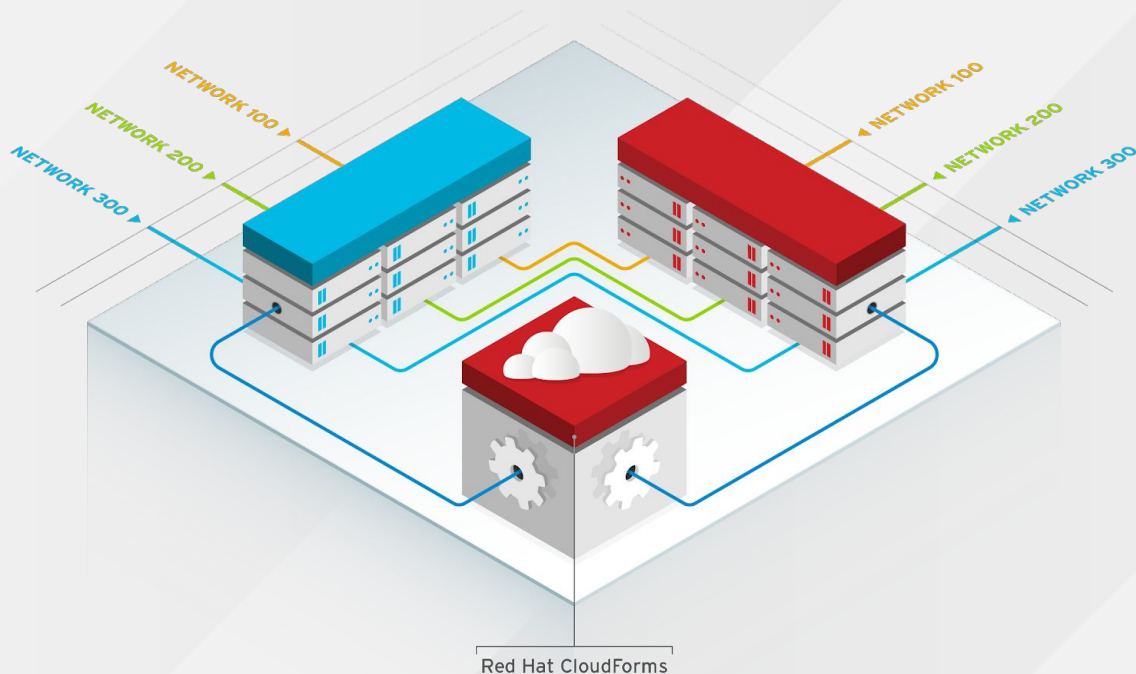
Setting up a Red Hat® Virtualization environment sized for your migration





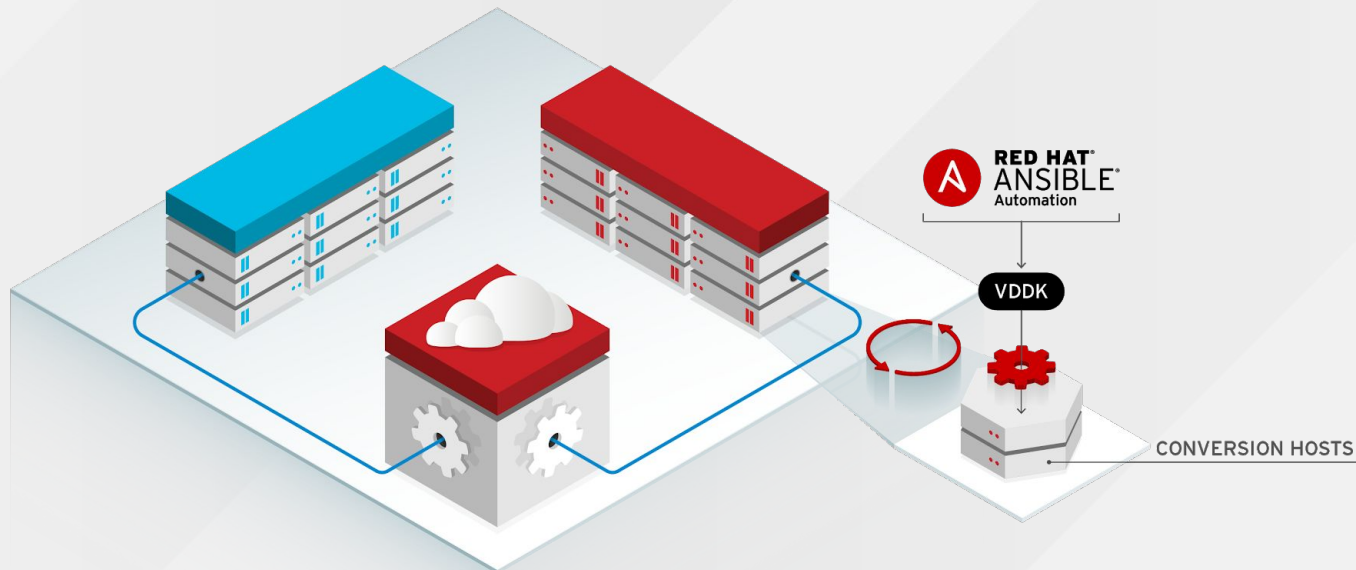
# INFRASTRUCTURE MIGRATION SOLUTION

Install Red Hat CloudForms® and configure both providers



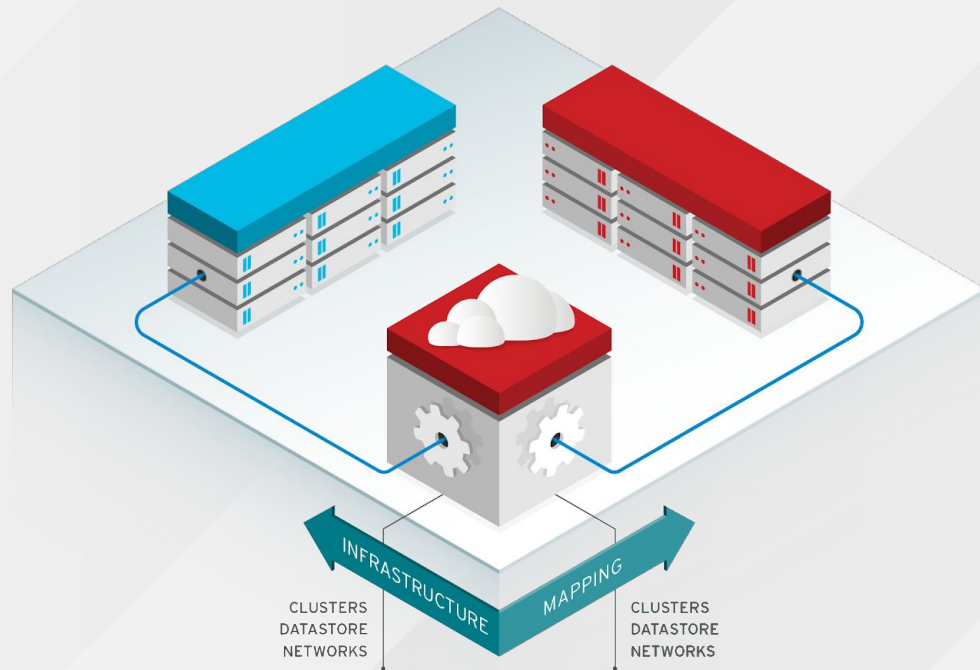
# INFRASTRUCTURE MIGRATION SOLUTION

Setup multiple conversion hosts



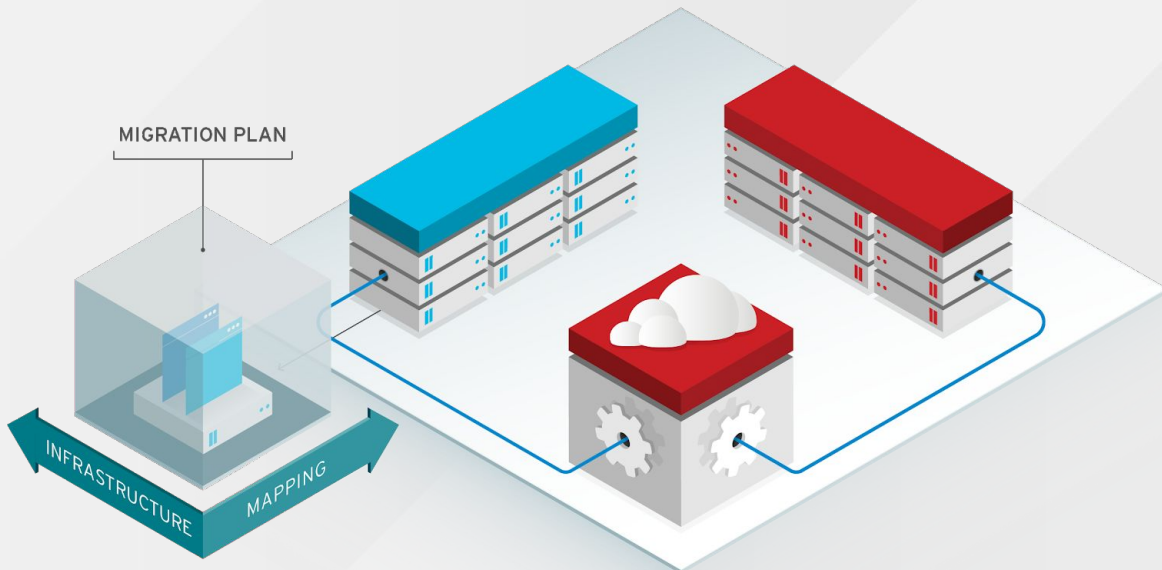
# INFRASTRUCTURE MIGRATION SOLUTION

Use the infrastructure mapping wizard to map both solutions



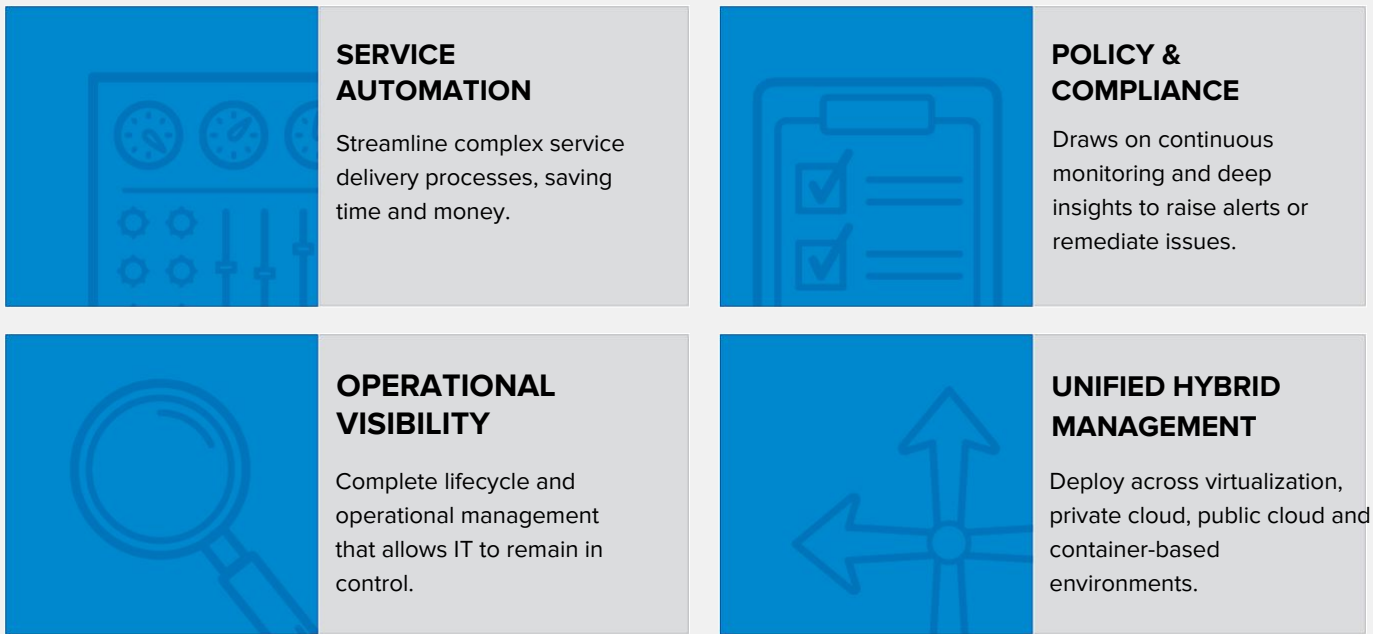
# INFRASTRUCTURE MIGRATION SOLUTION

Create your migration plan attached to an infrastructure mapping



# Summary

# CLOUDFORMS DELIVERS SERVICES ACROSS HYBRID ENVIRONMENTS





# THANK YOU



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