



# Red Hat Virtualization

THE NEXT GENERATION OF IT OPTIMIZATION

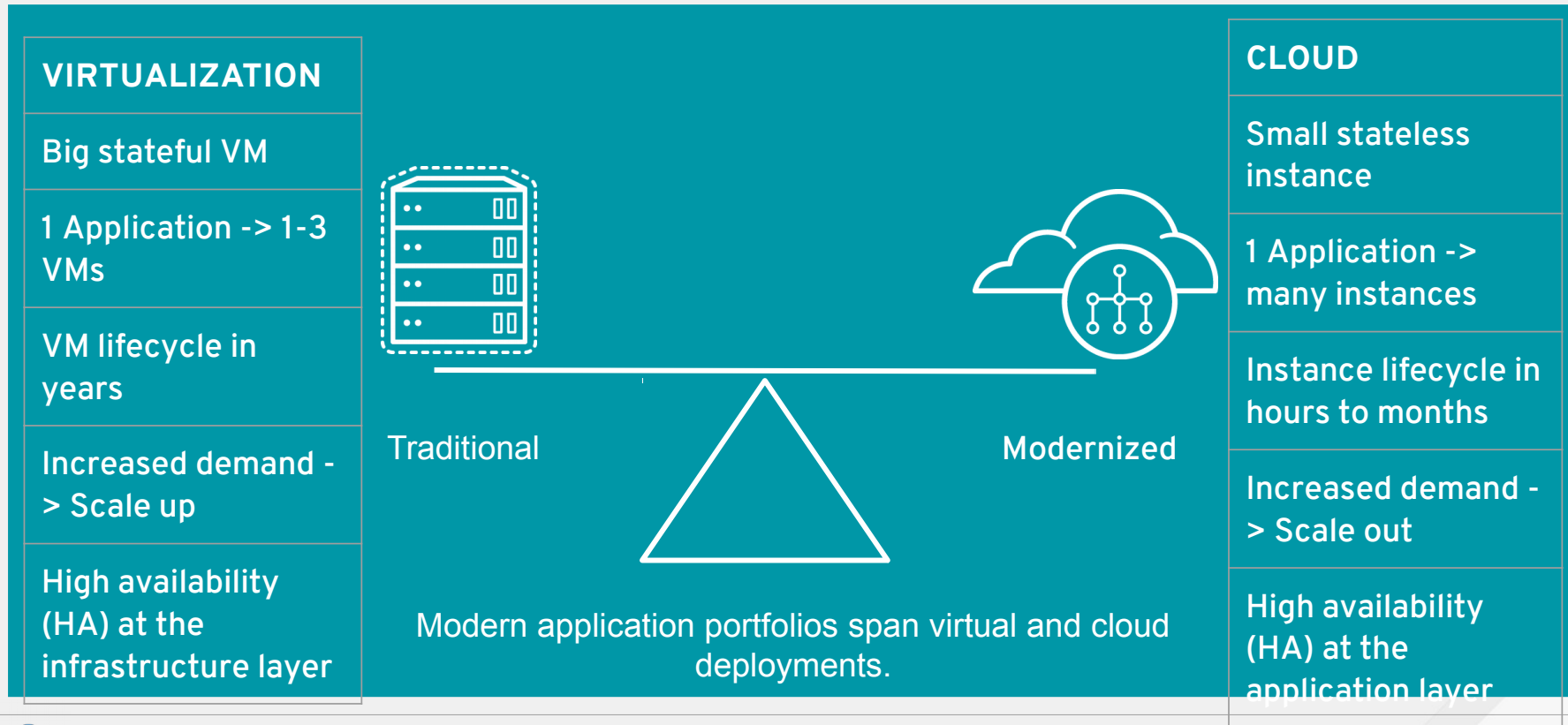
PIER LUIGI QUIDACCIOLU  
Solution Architect  
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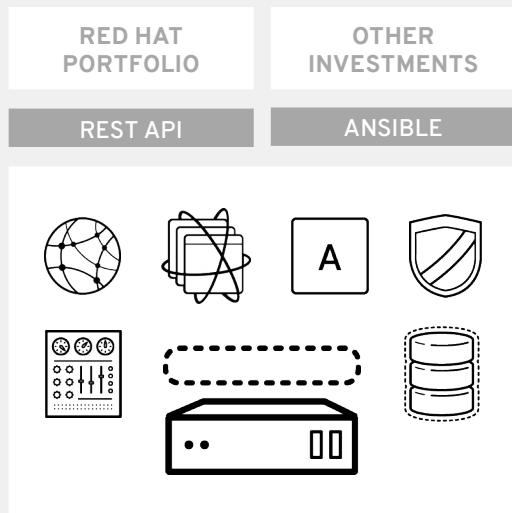
#RedHatOSD

# BALANCING INNOVATION, IT OPTIMIZATION

## MOST CUSTOMERS NEED VIRTUALIZATION AND CLOUD



# RED HAT VIRTUALIZATION OVERVIEW



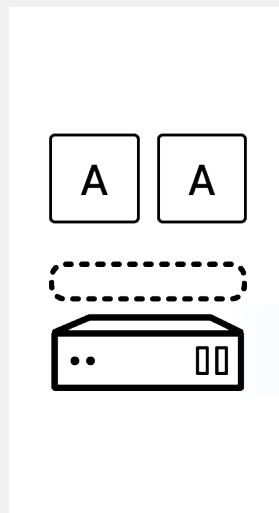
## RED HAT VIRTUALIZATION

Centralized management for the KVM hypervisor, as well as compute, network, and storage resources

Enterprise features to support business-critical applications

Cross-portfolio integration, APIs, and software development kits (SDKs) to enable automation

**Red Hat Virtualization is built on Red Hat Enterprise Linux + KVM**



## RED HAT ENTERPRISE LINUX + KVM

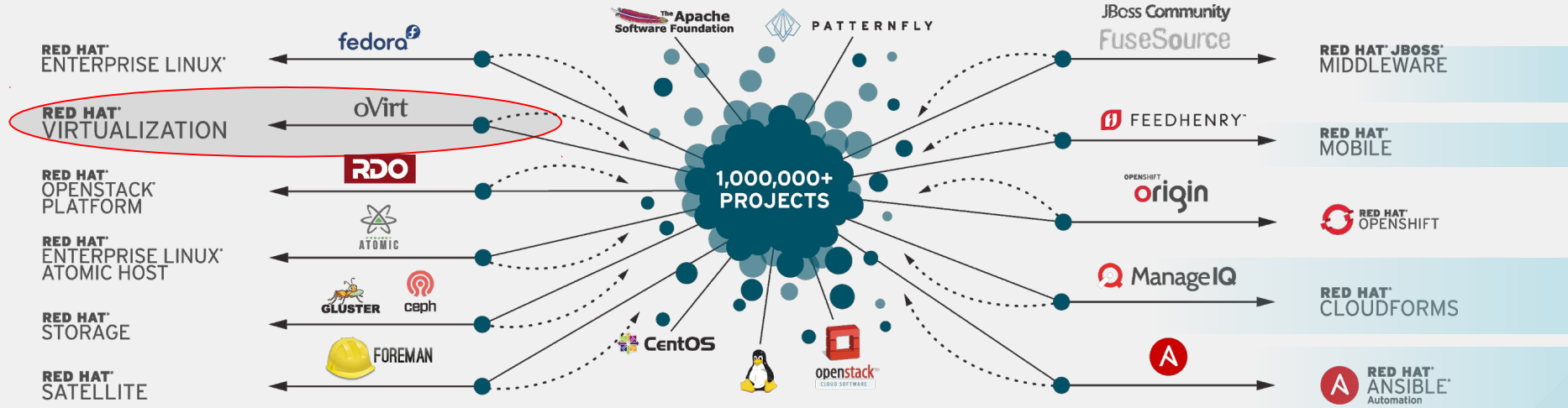
Basic virtualization

No enterprise virtualization management features or APIs

Limited number of VMs allowed



# OPEN SOURCE PROJECT TO SUPPORTABLE PRODUCT



# MAJOR THEMES



- Ease of use
- Ease of automation
- Tighter integration with Red Hat Portfolio



# RED HAT VIRTUALIZATION MATURITY

**RED HAT ENTERPRISE VIRTUALIZATION BEATS VMWARE**  
on the SPECvirt\_sc2010 benchmark on both speed and scale

**2010**

**RED HAT ENTERPRISE VIRTUALIZATION 3.1, 3.2**  
Windows guests NUMA collaboration with HP

**2013**

**RED HAT ENTERPRISE VIRTUALIZATION 3.6**  
V-2-V migration tool

**2015**

**RED HAT VIRTUALIZATION 4.1**  
Ansible integration  
Native SDN

**2017**

**2009**

**QUMRANET ACQUISITION**

**2012**

**RED HAT ENTERPRISE VIRTUALIZATION 3.0**  
More solution partners  
RESTful API  
Memory overcommit

**2014**

**RED HAT ENTERPRISE VIRTUALIZATION 3.3, 3.4**  
OpenStack Neutron integration  
Hot Plug CPU Affinity management  
IBM Power support

**2016**

**RED HAT VIRTUALIZATION 4.0**  
10th product release

**2018**

**RED HAT VIRTUALIZATION 4.2**  
Native DR  
New metrics  
Updated UI  
Cisco ACI



# BY THE NUMBERS



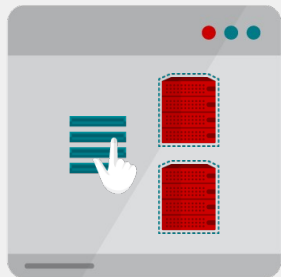
Hundreds of new features across Red Hat Enterprise Linux, KVM, oVIRT.

Bug Fixes and Feature Requests since 4.1.0:

- 1,850 BZs closed
- 350 features (RFEs) delivered



# MANAGEMENT INTERFACES



## RED HAT VIRTUALIZATION MANAGER

- Designed for large scale (500+ hosts and 5,000+ VMs)
- REST API to integrate with Red Hat portfolio, third-party applications, backup and recovery software
- Can be integrated with existing infrastructure—active directory, Red Hat CloudForms®, OpenStack, etc.



## COCKPIT

- Included as part of Red Hat Virtualization Host image
- Used to configure networking, storage, tuning, subscriptions, and other aspects of the virtualization host
- Can be used to deploy Red Hat Virtualization in high availability







PATTERNFLY

# NEW USER INTERFACE

Get to important information faster, learn fewer tools, streamline operations



- Same PatternFly library as Red Hat portfolio
- At-a-glance, drill downs of the entire environment
- Easy, intuitive navigation
- Reduces learning curve
- Faster

WHICH USE CASES?



#RedHatOSD



Dashboard

Compute >

Network >

Storage >

Administration >

Events

Last Updated 4/30/2018, 9:13:24 PM GMT+3

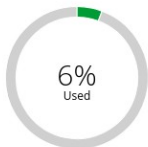


Global Utilization

CPU

94% Available of 100%

Virtual resources - Committed: 348%, Allocated: 766%



Memory

3.6 Available of 5.7 TiB

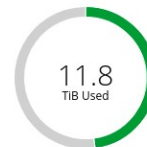
Virtual resources - Committed: 34%, Allocated: 80%



Storage

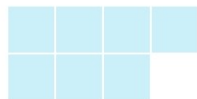
12.9 Available of 24.8 TiB

Virtual resources - Committed: 63%, Allocated: 156%



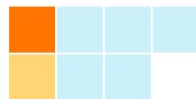
Cluster Utilization

CPU



■ > 90% 
 ■ 75-90% 
 ■ 65-75% 
 ■ < 65%

Memory



Storage Utilization

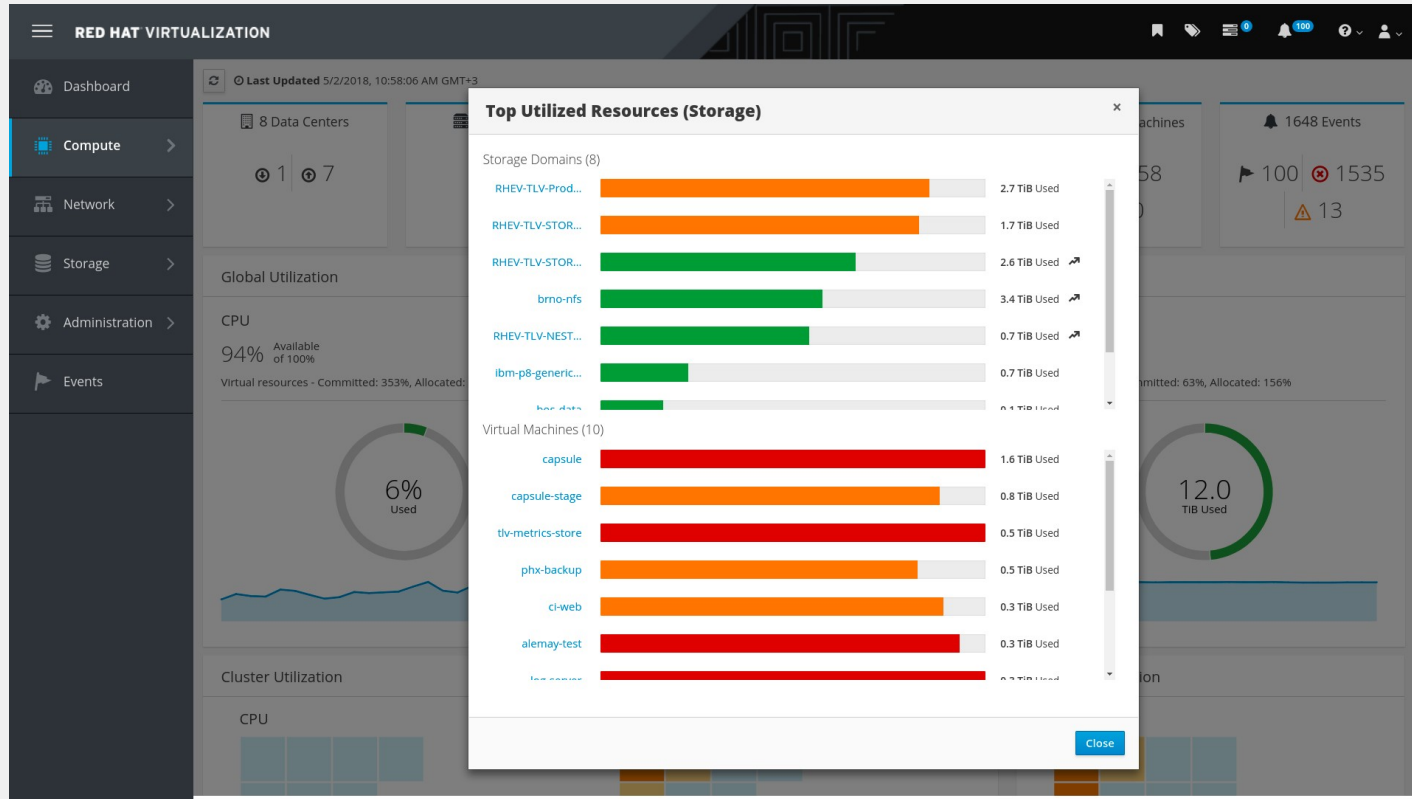
Storage



■ > 90% 
 ■ 75-90% 
 ■ 65-75% 
 ■ < 65%



# NEW USER INTERFACE



# Save your location as bookmark

The screenshot shows the Red Hat Virtualization web interface. The browser address bar contains the URL: `https://rhev.m.eng.lab.tlv.redhat.com/ovirt-engine/webadmin/?locale=en...S#vms;search=status+%25C2+up+and+ip+%25C2+10.35.19*`. A search filter is applied to the VMs table: `Vms: status = up and ip = 10.35.19*`. The table below lists various virtual machines with columns for Name, Comment, Host, IP Addresses, FQDN, Cluster, Data Center, Memory, CPU, Network, Graphics, Status, Uptime, and Description.

|   | Name                | Comment       | Host   | IP Addresses         | FQDN                   | Cluster    | Data Center | Memory | CPU | Network | Graphics | Status | Uptime | Description                             |
|---|---------------------|---------------|--------|----------------------|------------------------|------------|-------------|--------|-----|---------|----------|--------|--------|---|
| ▲ | ci-host1            |               | buri05 | 10.35.19.240 fe80... | ci-host1.eng.lab.tl... | NESTED-CL  | NESTED-DC   | 20%    | 0%  | 0%      | 0%       | SPICE  | Up     | 34 days<br>PNT0188065                   |
| ▲ | ci-host2            |               | buri05 | 10.35.19.241 fe80... | ci-host2.eng.lab.tl... | NESTED-CL  | NESTED-DC   | 20%    | 0%  | 0%      | 0%       | SPICE  | Up     | 34 days<br>PNT0188065                   |
| ▲ | ci-host3            |               | buri05 | 10.35.19.242 fe80... | ci-host3.eng.lab.tl... | NESTED-CL  | NESTED-DC   | 22%    | 0%  | 0%      | 0%       | SPICE  | Up     | 34 days<br>PNT0188065                   |
| ▲ | puppet-ci           | new fore...   | hera04 | 10.35.19.243 fe80... | foreman-ci.eng.la...   | Production | PRODUCTION  | 22%    | 0%  | 0%      | 0%       | SPICE  | Up     | 38 days<br>owned by dron   no Fo...     |
| ▲ | rhev-trlv-ipa       |               | hera04 | 10.35.19.64 fe80:... |                        | Production | PRODUCTION  | 50%    | 0%  | 0%      | 0%       | SPICE  | Up     | 38 days                                 |
| ▲ | cfme-eng            | PNT0043...    | hera05 | 10.35.19.127 fe80... | cfme-eng.eng.lab...    | Production | PRODUCTION  | 15%    | 1%  | 0%      | 0%       | SPICE  | Up     | 39 days                                 |
| ▲ | cfme-worker01       | PNT0043...    | hera05 | 10.35.19.128 fe80... | cfme-worker01.e...     | Production | PRODUCTION  | 12%    | 0%  | 0%      | 0%       | SPICE  | Up     | 39 days                                 |
| ▲ | cfme-worker02       | PNT0043...    | hera05 | 10.35.19.129 fe80... | cfme-worker02.e...     | Production | PRODUCTION  | 43%    | 4%  | 0%      | 0%       | SPICE  | Up     | 39 days                                 |
| ▲ | ci-apps             |               | hera05 | 10.35.19.121 fe80... |                        | Production | PRODUCTION  | 34%    | 0%  | 0%      | 0%       | SPICE  | Up     | 38 days                                 |
| ▲ | integration-engine4 |               | hera05 | 10.35.19.220 192...  | integration-engin...   | Production | PRODUCTION  | 72%    | 28% | 0%      | 0%       | SPICE  | Up     | 39 days<br>RT #411941                   |
| ▲ | log-server          | eedry / bk... | hera05 | 10.35.19.33 fe80:... |                        | Production | PRODUCTION  | 22%    | 0%  | 0%      | 0%       | SPICE  | Up     | 38 days<br>log-server.eng.lab.tlv.re... |
| ▲ | abregman-rhos-ci    |               | hera09 | 10.35.19.1 fe80:2... | rhos-ci.eng.lab.tlv... | RHEV-TLV   | RHEV-TLV    | 64%    | 0%  | 0%      | 0%       | SPICE  | Up     | 38 days<br>PNT0092345                   |
| ▲ | nagios              |               | hera09 | 10.35.19.55 fe80:... |                        | RHEV-TLV   | RHEV-TLV    | 37%    | 1%  | 0%      | 0%       | SPICE  | Up     | 38 days<br>nagios-ci                    |
| ▲ | emesika-kube_node   |               | modi04 | 10.35.19.157 fe80... | vm-19-157.eng.la...    | RHEV-TLV   | RHEV-TLV    | 32%    | 5%  | 0%      | 0%       | SPICE  | Up     | 15 days<br>PNT0211074                   |
| ▲ | dpinhas-irc         |               | modi05 | 10.35.19.100 262...  | dpinhas-irc.eng.la...  | RHEV-TLV   | RHEV-TLV    | 67%    | 1%  | 0%      | 0%       | SPICE  | Up     | 39 days                                 |
| ▲ | hspell              | The purp...   | modi05 | 10.35.19.6 fe80:2... | hspell.eng.lab.tlv...  | RHEV-TLV   | RHEV-TLV    | 12%    | 0%  | 0%      | 0%       | SPICE  | Up     | 35 days<br>Hebrew spell checker         |
| ▲ | sradco-metrics-1    |               | modi05 | 10.35.19.9 fe80:2... | sradco-metrics-1....   | RHEV-TLV   | RHEV-TLV    | 4%     | 0%  | 0%      | 0%       | SPICE  | Up     | 7 h                                     |
| ▲ | bpelled-ansible1    |               | modi08 | 10.35.19.49 fe80:... | bpelled-ansible.e...   | RHEV-TLV   | RHEV-TLV    | 18%    | 1%  | 0%      | 0%       | SPICE  | Up     | 12 h                                    |

Hyperlinks everywhere



RED HAT VIRTUALIZATION

Dashboard

Compute **Hosts** » dell-r420-02

Edit Remove Management Installation Host Console

General Virtual Machines Network Interfaces Host Devices Host Hooks Permissions Affinity Labels Errata Events Red Hat Documentation

Run Suspend Shutdown Power Off Console Migrate Cancel Migration

VMs: All Running on host Pinned to host

| Name                                       | Cluster | IP Addresses                        | FQDN                              | Memory | CPU | Network | Status | Uptime  |
|--|---------|-------------------------------------|-----------------------------------|--------|-----|---------|--------|---------|
| <a href="#">ipa-int-171-190-180430-135</a> | BRNO    | 10.37.170.71 2620:52:0:25aa:21...   | vm-071.abc.idm.lab.eng.brq.red... | 12%    | 25% | 0%      | Up     | 6 h     |
| <a href="#">ipa-int-171-190-180430-135</a> | BRNO    |                                     | vm-171-136.abc.idm.lab.eng.brq... | 0%     | 24% | 0%      | Up     | 44 days |
| <a href="#">ipa-int-171-147-180430-195</a> | BRNO    | 10.37.170.247 2620:52:0:25aa:2...   | vm-247.abc.idm.lab.eng.brq.red... | 0%     | 22% | 0%      | Up     | 17 min  |
| <a href="#">ppicka-rhel-ui</a>             | BRNO    | 10.37.170.168 192.168.122.1 fe8...  | vm-168.abc.idm.lab.eng.brq.red... | 83%    | 9%  | 0%      | Up     | 41 days |
| <a href="#">ipa-CLC03-rhelS11</a>          | BRNO    | 10.37.170.92 fe80::21a:4aff:fe23... | vm-092.abc.idm.lab.eng.brq.red... | 7%     | 5%  | 0%      | Up     | 25 days |
| <a href="#">sbose-ad-dom1</a>              | BRNO    |                                     | vm-226.abc.idm.lab.eng.brq.red... | 0%     | 2%  | 0%      | Up     | 89 days |
| <a href="#">ppicka-ui</a>                  | BRNO    | 10.37.170.226 2620:52:0:25aa:2...   | vm-226.abc.idm.lab.eng.brq.red... | 54%    | 2%  | 0%      | Up     | 42 days |
| <a href="#">ipa-int-171-147-180430-195</a> | BRNO    | 10.37.170.65 2620:52:0:25aa:21...   | vm-065.abc.idm.lab.eng.brq.red... | 0%     | 2%  | 0%      | Up     | 17 min  |

RED HAT VIRTUALIZATION

Dashboard

Compute » Virtual Machines » ipa-int-171-190-180430-135440-d0-h2-replica-50912d4d

Edit Remove Run Suspend Shutdown Reboot Console Migrate Create Snapshot

General Network Interfaces Disks Snapshots Applications Containers Host Devices Vm Devices Affinity Groups Affinity Labels Guest Info Permissions Errata Events Red Hat Documentation

|                           |   |  |                      |                                       |                                       |
|---------------------------|---|--|----------------------|---------------------------------------|---------------------------------------|
| <b>Name:</b>              | ipa-int-171-190-180430-135440-d0-h2-replica-50912d4d  | <b>Defined Memory:</b>                       | 4096 MB              | <b>Origin:</b>                        | RHV                                   |
| <b>Description:</b>       |   | <b>Physical Memory Guaranteed:</b>           | 1024 MB              | <b>Run On:</b>                        | Any Host in Cluster                   |
| <b>Template:</b>          | ipa-Fedora-27-x86_64-integration-brq (Thin/Dependent) | <b>Guest OS Memory Free/Cached/Buffered:</b> | 3793 / 110 / 1709 MB | <b>Custom Properties:</b>             | Not Configured                        |
| <b>Operating System:</b>  | Linux   | <b>Number of CPU Cores:</b>                  | 4 (1:4:1)            | <b>Cluster Compatibility Version:</b> | 4.1                                   |
| <b>Graphics protocol:</b> | SPICE   | <b>Guest CPU Count:</b>                      | 4                    | <b>VM ID:</b>                         | f4e37ccc-59f8-4f3b-9a79-7294d4d6bec0  |
| <b>Video Type:</b>        | QXL   | <b>Guest CPU Type:</b>                       | SandyBridge          | <b>FQDN:</b>                          | vm-071.abc.idm.lab.eng.brq.redhat.com |
| <b>Priority:</b>          | Low   | <b>Highly Available:</b>                     | No                   | <b>Hardware Clock Time Offset:</b>    | Etc/GMT                               |
| <b>Optimized for:</b>     | Desktop   | <b>Number of Monitors:</b>                   | 1                    |                                       |                                       |
|                           |   | <b>USB Policy:</b>                           | Disabled             |                                       |                                       |
|                           |   | <b>Created By:</b>                           | IDM user             |                                       |                                       |

# COCKPIT

RED HAT VIRTUALIZATION HOST 4.2.5 (EL7.5)

Dashboard

Hosted Engine

Hosted Engine is up!

**Status of this host (rhv01.quida.it)**

rhv01.quida.it

Put this host into local maintenance Remove this host from maintenance

**Hosts in this cluster**

|                          |           |
|--------------------------|-----------|
| rhv01.quida.it           | VM Status |
| Agent stopped: false     | State: up |
| Local Maintenance: false |           |

- RED HAT VIRTUALIZATION HOST 4.2.5 (EL7.5)
- rhv01.quida.it
- System
  - Logs
  - Storage
  - Networking
  - oVirt Machines
  - Accounts
  - Services
  - Diagnostic Reports
  - Kernel Dump
  - SELinux
  - Subscriptions
  - Terminal



#RedHatOSD



# IMPROVED EASE OF USE

Spend less time on tasks and more time for initiatives



## Self-hosted engine

- Simplified installation wizard



### WHICH USE CASES?





VM Settings

Engine VM FQDN

MAC Address

Network Configuration

Bridge Interface

Root Password

Root SSH Access

Number of Virtual CPUs

Memory Size (MiB)  7,214MB available

> Advanced

Cancel < Back Next



Engine Credentials

Admin Portal Password

Notification Settings

Server Name

Server Port Number

Sender E-Mail Address

Recipient E-Mail Addresses

Please provide the name of the SMTP server through which we will send notifications.

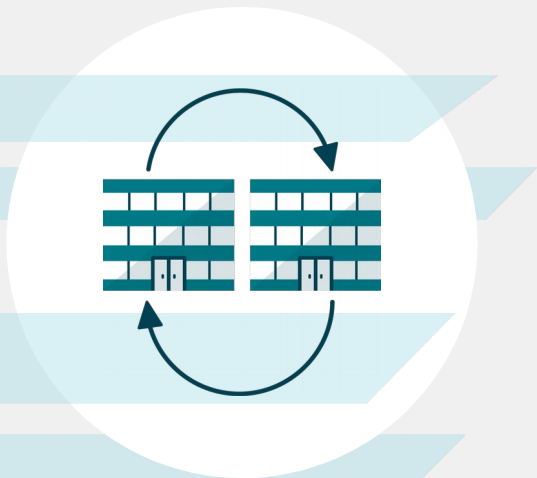
Cancel < Back Next >





# NATIVE DISASTER RECOVERY

Business continuity without vendor lock-in



- Active/active cluster allows virtual machines to migrate to secondary site if primary site is unavailable.
- Integration with a specific storage vendor is not required.
- Failover and failback is automated with **Red Hat Ansible Automation**.
- Supports Block and file based storage

## WHICH USE CASES?



# NATIVE SOFTWARE DEFINED NETWORK (SDN)

PROVIDES NATIVE, ISOLATED NETWORKING FOR VIRTUALIZED WORKLOADS



- Neutron compatible API for OVN
- Mix and match host networking connectivity and isolated networks
- Full control of network, subnets, ports and routing
- Integrated with CloudForms, Cloud network management and OpenStack

## WHICH USE CASES?

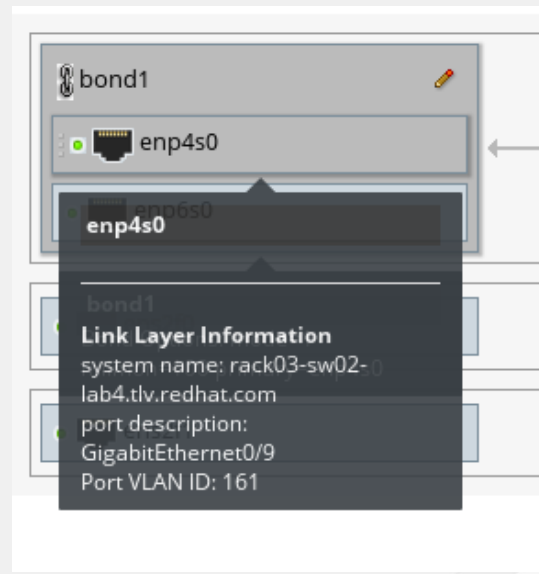




# CISCO ACI INTEGRATION

Integrated and automated SDN and distributed security policies

- Scalable network virtualization
- Distributed security policies
- Micro-segmentation
- Ability to automate Cisco ACI with Red Hat Virtualization using Red Hat Ansible Automation



*Hear more about it @ "Running RHV Integrated w/ Cisco ACI SDN" - Room 2020 on Thursday 5/10 , 2:00 - 2:20 PM*

WHICH USE CASES?

PERFORMANCE SENSITIVE    DEV AND TEST ENVIRONMENTS    HYBRID AND MULTHYPERVISOR    TECH WORKSTATIONS    SERVER CONSOLIDATION

# METRICS AND LOGGING

Real-time reporting and visualization for improved business efficiency



## INTEGRATION W/OPENSIFT METRICS STORE

- **Elasticsearch** – a search and analytics engine with a REST/http interface
- **Fluentd** – Data collector and shipper that unifies the metrics and logs data
- **Kibana** – Visualize trends in real time, slice and dice the data from Elasticsearch dynamically
- **Collectd** – Simple and powerful daemon that gathers metrics from various sources

### WHICH USE CASES?



Engine and Clusters

| Engine Name                 | Cluster Name | Count |
|-----------------------------|--------------|-------|
| rhev.eng.lab.tlv.redhat.com | NESTED-CL    | 538   |
| rhev.eng.lab.tlv.redhat.com | RHEV-TLV     | 537   |
| rhev.eng.lab.tlv.redhat.com | RDU-CLUSTER  | 429   |
| rhev.eng.lab.tlv.redhat.com | Production   | 90    |

Running Hosts

18

Running VMs

130

Logins To Admin Portal

4

Top 5 busiest hosts - Memory

| Host Name                       | Avg. Mem. Usage % |
|---------------------------------|-------------------|
| vulcan03.eng.lab.tlv.redhat.com | 84.073            |
| vulcan02.eng.lab.tlv.redhat.com | 59.531            |
| hera04.eng.lab.tlv.redhat.com   | 58.378            |
| modi05.eng.lab.tlv.redhat.com   | 57.877            |
| modi04.eng.lab.tlv.redhat.com   | 48.207            |

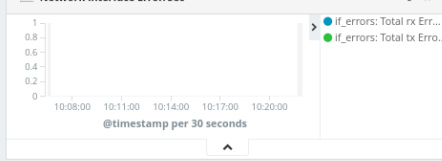
Top 5 busiest hosts - CPU

| Host Name                       | User / System CPU | Avg. CPU Usage % |
|---------------------------------|-------------------|------------------|
| huri05.eng.lab.tlv.redhat.com   | system            | 24.908           |
| huri05.eng.lab.tlv.redhat.com   | user              | 16.818           |
| hera09.eng.lab.tlv.redhat.com   | user              | 11.319           |
| hera09.eng.lab.tlv.redhat.com   | system            | 5.006            |
| vulcan04.eng.lab.tlv.redhat.com | user              | 8.351            |
| vulcan04.eng.lab.tlv.redhat.com | system            | 4.89             |
| vulcan03.eng.lab.tlv.redhat.com | system            | 4.565            |
| vulcan03.eng.lab.tlv.redhat.com | user              | 0.691            |
| modi04.eng.lab.tlv.redhat.com   | user              | 3.497            |

Top 5 busiest hosts - Volumes

| Volume Name  | Avg. Usage % |
|--|--------------|
| rhev-data-center-mnt-spider.eng.lab.tlv.redhat.com:_vol_rhev_production          | 85.377       |
| rhev-data-center-mnt-vsver-spider.eng.lab.tlv.redhat.com:_vol_rhev_tlv_dc        | 66.078       |
| rhev-data-center-mnt-vsver-spider.eng.lab.tlv.redhat.com:_vol_rhev_tlv_nested_dc | 54.023       |
| rhev-data-center-mnt-vsver-spider.eng.lab.tlv.redhat.com:_vol_rhev_export        | 53.495       |
| root   | 47.295       |

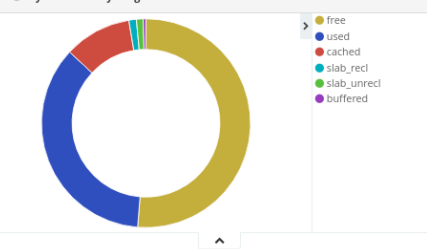
Network Interface Error/Sec



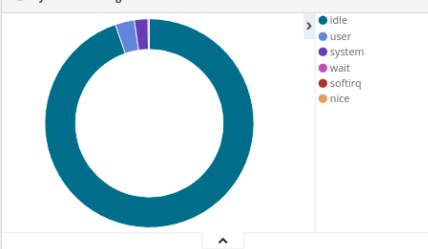
Network Interface Packets/Sec



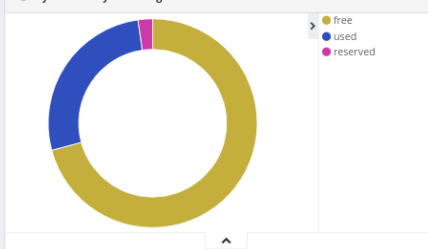
System Memory Usage



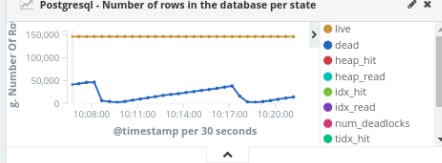
System CPU Usage



System File System Usage



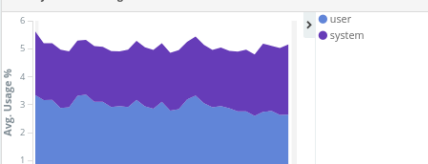
Postgresql - Number of rows in the database per state



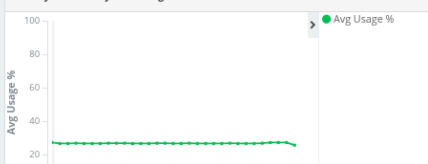
System Memory Usage over time



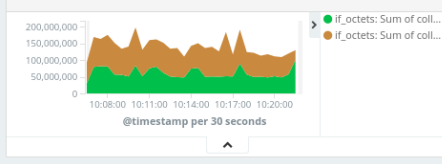
System CPU Usage over time



System File System Usage over time

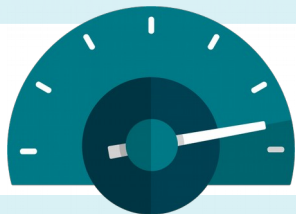


Network Interface Bits/Sec



# HIGH-PERFORMANCE VM TYPE

Streamline consistent tuning process for virtualization administrators



- Enable passthrough of host CPU to the VM
- Enable input/output (I/O) threads, num of I/O threads = 1
- Set the I/O and emulator threads pinning topology
- Disable non-critical devices (sounds, USB, balloon)
- Define as headless (no graphics device)

WHICH USE CASES?



PERFORMANCE SENSITIVE



DEV AND TEST ENVIRONMENTS



HYBRID AND MULTHYPERVISOR



TECH WORKSTATIONS



SERVER CONSOLIDATION

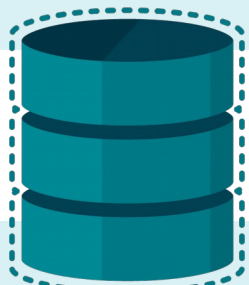


#RedHatOSD



# DISK AND VM UPLOAD/DOWNLOAD IMPROVEMENTS

Storage deployment flexibility for virtualization architects



- Download **snapshots**, not just disks
- **Faster** uploads via direct uploads to hosts
- Efficient upload with **sparse** support
- **VM import and export** as Open Virtualization Appliance (OVA) files
- **Upload ISO disk images to data domain**  
- no need for a dedicated, NFS-based, ISO domain anymore!

WHICH USE CASES?

PERFORMANCE SENSITIVE



DEV AND TEST ENVIRONMENTS



HYBRID AND MULTHYPERVISOR



TECH WORKSTATIONS



SERVER CONSOLIDATION



#RedHatOSD

Choose File

rhel-server-7.5-x86\_64-boot.iso

Format: Raw Content: ISO  
Size: 1 GiB

### Disk Options

Size(GB) 1  Wipe After Delete

Shareable

Alias rhel-server-7.5-x86\_64-boot.iso

Description rhel-server-7.5-x86\_64-boot.iso

Data Center RHEV-TLV

Storage Domain RHEV-TLV-STORAGE-ISCSI (352 GB fre

Disk Profile RHEV-TLV-STORAGE-ISCSI

Use Host hera09

➤ Upload **ISO images** from the Admin portal UI

➤ To any storage domain type, file or block!

➤ See progress report

| Alias | ID                       |  | Attached To | Virtual Size | Status          | Type  | Description |
|-------|--------------------------|---|-------------|--------------|-----------------|-------|-------------|
| cen   | 33d22541-a7c4-42a6-86... |   |             | 8 GiB        | Sent 408 of 815 | Image |             |



# SUPPORT FOR CEPH STORAGE via iSCSI

Storage deployment flexibility for virtualization architects



- Red Hat Ceph® Storage iSCSI target tested and certified
- Use as a storage domain for virtual machines
- Enables consistent hybrid cloud deployments on RHV and Red Hat OpenStack Platform

## WHICH USE CASES?

PERFORMANCE SENSITIVE



DEV AND TEST ENVIRONMENTS



HYBRID AND MULTHYPERVISOR



TECH WORKSTATIONS



SERVER CONSOLIDATION



#RedHatOSD



# RHEL 7.5 SUPPORT



Support the latest RHEL release and its features, inc.:

- Latest CPUs and machine-type support.
- VDO for dedup and compression (integrated in RHHI)
- Kernel address space layout randomization (KASLR)

*Hear more about RHHI and VDO @*

*“Red Hat Hyperconverged Infrastructure: Your open hyperconverged solution”*

*- Room 2003 on Tuesday 5/8 from 4:30 PM*



#RedHatOSD

# VM PORTAL

Self-service access for users and power users, reducing load on administrators



- Replaces previous user portal
- Users and power users can view, create, and manage VMs
- Role must provide permission to edit a VM

## WHICH USE CASES?



Add new VM



LINUX

abokovoy-master.ipalab.dom0



RED HAT ENTERPRISE LINUX 7.X X64

abokovoy-rhel-7.1-for-core dumps



LINUX

abonas\_fedora\_demo



Alissa Bonas

RED HAT ENTERPRISE LINUX

RED HAT ENTERPRISE LINUX 7.X X64

abregman-rhos-ci



PNT0092345



LINUX

ahadas-host-1



Arik Hadas



LINUX

ahadas-host-2



Arik Hadas

RED HAT ENTERPRISE LINUX

RED HAT ENTERPRISE LINUX 7.X X64

akarsaler-rhel7



RT439681



OTHER OS

akasurde-host-01



# VIRTUAL GRAPHICS PROCESSING UNIT

vGPU powered technical workstation support for AI, big data, rich graphics



- NVIDIA (GRID and Quadro vDWS)—maintainer of mediated device framework (mdev)
- Intel (GVT-G)—driver development and reviewer for mdev
- Support for Linux and Windows

## Target markets:

- Oil and gas
- Energy
- Sciences and education
- Manufacturing and engineering
- Animation
- Gaming

## WHICH USE CASES?

PERFORMANCE SENSITIVE



DEV AND TEST ENVIRONMENTS



HYBRID AND MULTHYPERVISOR



TECH WORKSTATIONS



SERVER CONSOLIDATION



#RedHatOSD



# RED HAT ANSIBLE AUTOMATION



For all available objects in RHV exists a Ansible Module.

- Affinity groups
- labels
- clusters
- data centers
- disks
- external providers
- groups
- host networks
- host power mgmt
- host storage
- hosts
- MAC pools
- networks
- NICs
- permissions
- quotas
- tags
- users
- scheduling policies
- snapshots
- storage connections
- storage domains
- templates
- VM pools
- VMs...



...

- **name:** Create a template from qcow

**hosts:** localhost

**vars:**

**engine\_url:** https://rhvm-engine.example.com/ovirt-engine/api

**engine\_user:** admin@internal

**engine\_password:** 123456

**engine\_cafile:** /etc/pki/ovirt-engine/ca.pem

**qcow\_url:** https://images.repo.example.com/images/myvm.qcow2

**template\_cluster:** production

**template\_name:** rhel7\_template

**template\_memory:** 4GiB

**template\_cpu:** 2

**template\_disk\_size:** 10GiB

**template\_disk\_storage:** mydata

**roles:**

- oVirt.image-template

1. Credentials  
(or store in  
Ansible Vault)

2. Template  
definition  
(and URL to  
download from)



# 2 HTTPd + ANTI-AFFINITY + HA DATABASE

```
...  
- name: WebApp VMs  
  hosts: localhost
```

```
...  
vars:
```

```
...
```

```
httpd_vm:  
  cluster: webapp  
  domain: example.com  
  template: rhel7_template  
  memory: 2GiB  
  state: running
```

```
database_vm:  
  cluster: webapp  
  domain: example.com  
  template: rhel7_template  
  memory: 4GiB
```

```
high availability: true  
state: running
```

```
affinity_groups:  
  - name: httpd_affinity_group  
    cluster: webapp  
    vm enforcing: true
```

```
vm_rule: negative
```

```
vms:  
  - apache-vm-1  
  - apache-vm-2
```

```
vms:  
  - name: apache-vm-1  
    tag: httpd  
    profile: "{{ httpd_vm }}"  
  - name: apache-vm-2  
    tag: httpd  
    profile: "{{ httpd_vm }}"  
  - name: postgresql-vm  
    tag: db  
    profile: "{{ database_vm }}"
```

```
roles:  
  - oVirt.vm-infra
```





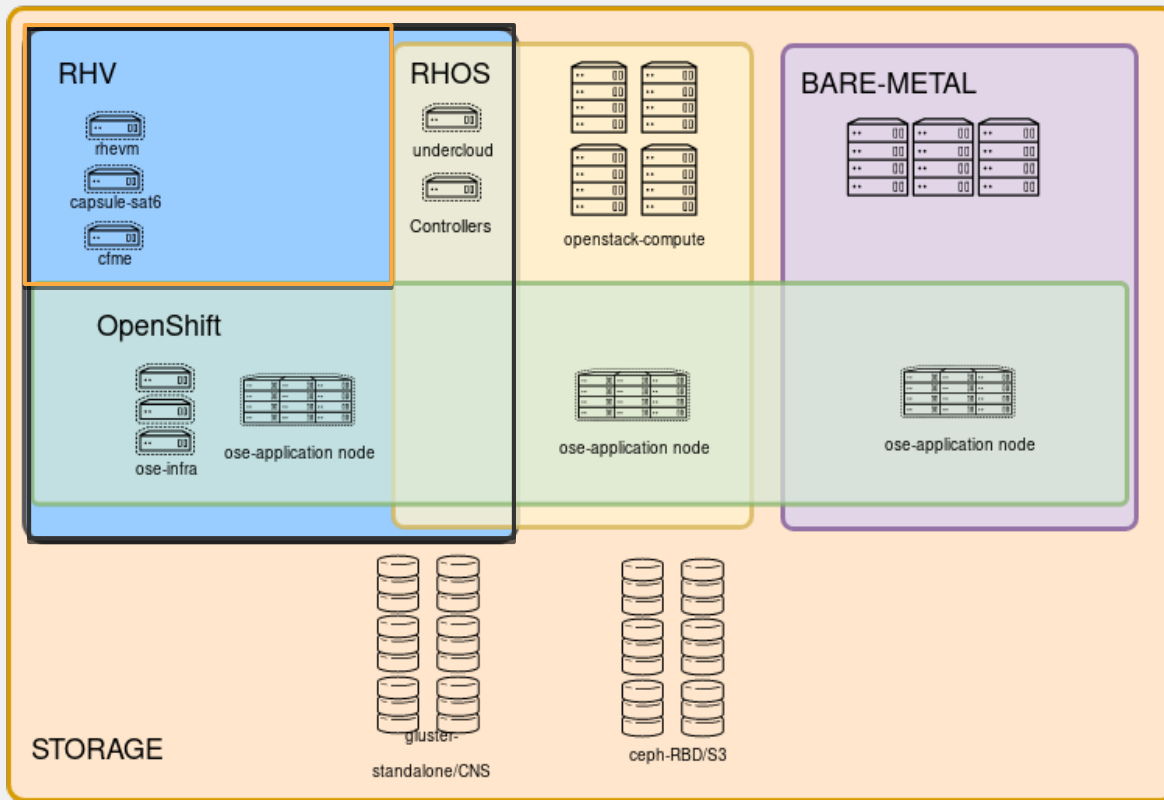
# RHOSP UNDERCLOUD & OPENSIFT ON RHV



PNT DEVOPS TEAM

‘UpShift’ - platform for hosting containerized workloads.

Using **RHV** as IAAS, hosting both **RHOSP Undercloud** and **OpenShift** masters on VMs.



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# HIGHLIGHTS BEYOND RHV 4.2



- Storage and DR
  - Cinder Integration
  - Incremental Backup
- Multi-Arch Support
  - Power 9, z Systems (TBD), ARM
- Infrastructure Migration Support
  - CloudForms / IMS
- Portfolio Enablement
  - OpenStack Control Plane on RHV
- Support for hybrid, cloud-native application deployments and workloads
  - Service-based shared components (networking, storage, Glance...)
  - Kubevirt as part of OpenShift/CNV/RHV.Next

## WHICH USE CASES?





# GRAZIE PER L'ATTENZIONE

PIER LUIGI QUIDACCIOLU  
Solution Architect  
pquidacc@redhat.com



#RedHatOSD



# IMS

## Infrastructure Migration Solution

**Federico Simoncelli**  
CNV Engineering Manager  
fsimonce@redhat.com



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# INFRASTRUCTURE MIGRATION SOLUTION

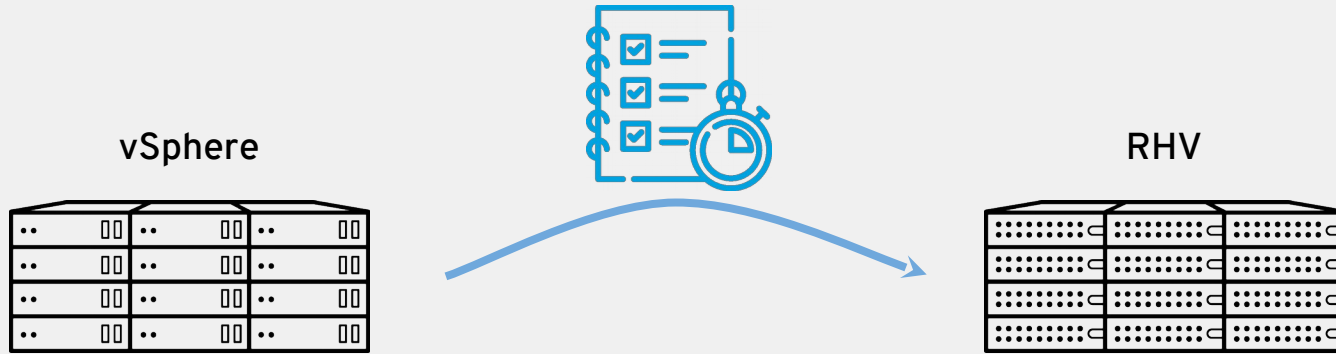
DISCOVERY AND ASSESSMENT OF YOUR MIGRATION

vSphere



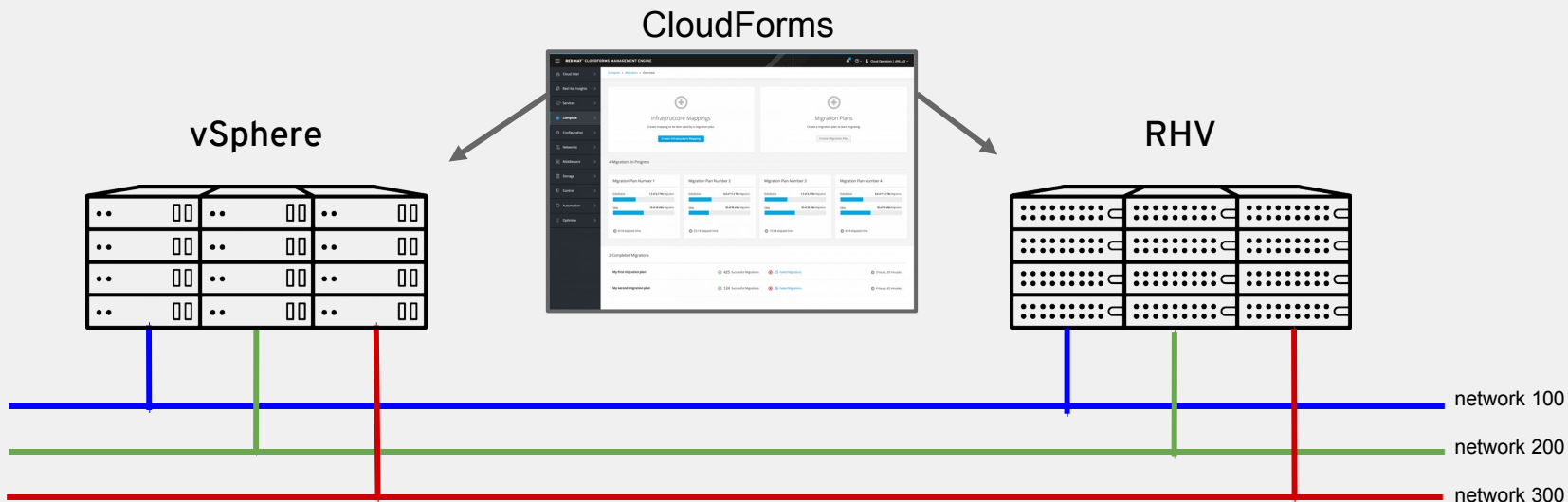
# INFRASTRUCTURE MIGRATION SOLUTION

SETTING UP A RHV ENVIRONMENT SIZED FOR YOUR MIGRATION



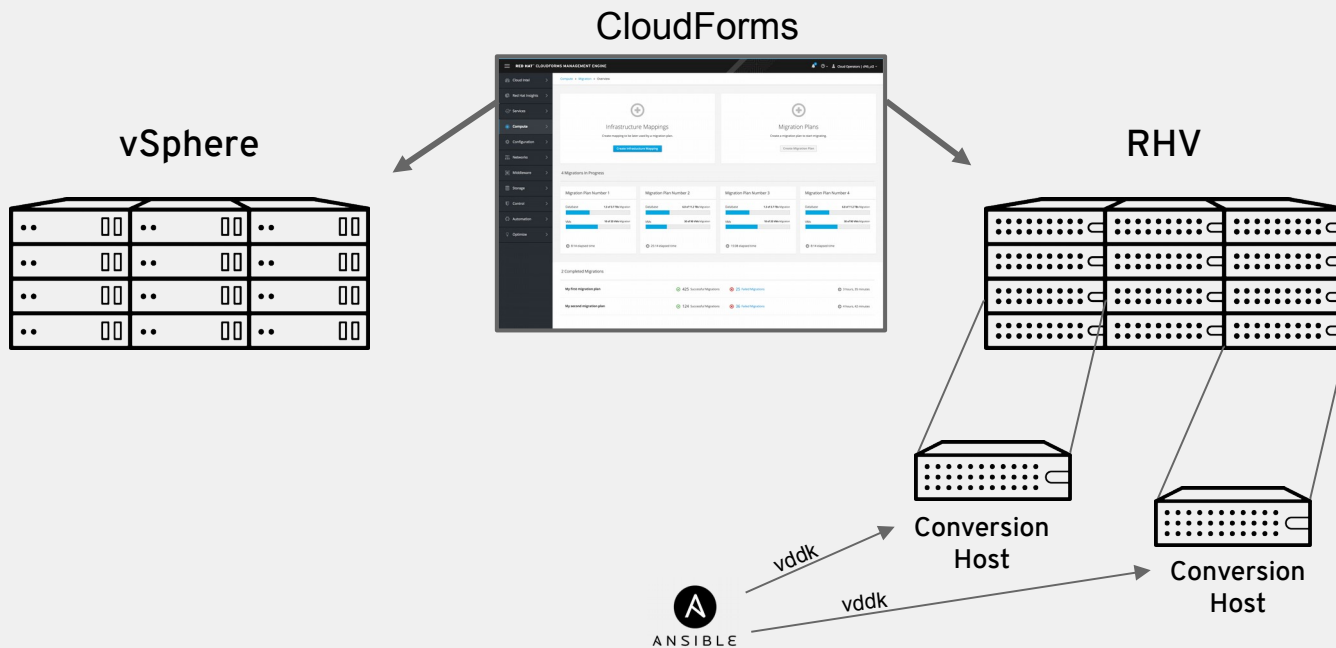
# INFRASTRUCTURE MIGRATION SOLUTION

INSTALL CLOUDFORMS AND CONFIGURE BOTH PROVIDERS



# INFRASTRUCTURE MIGRATION SOLUTION

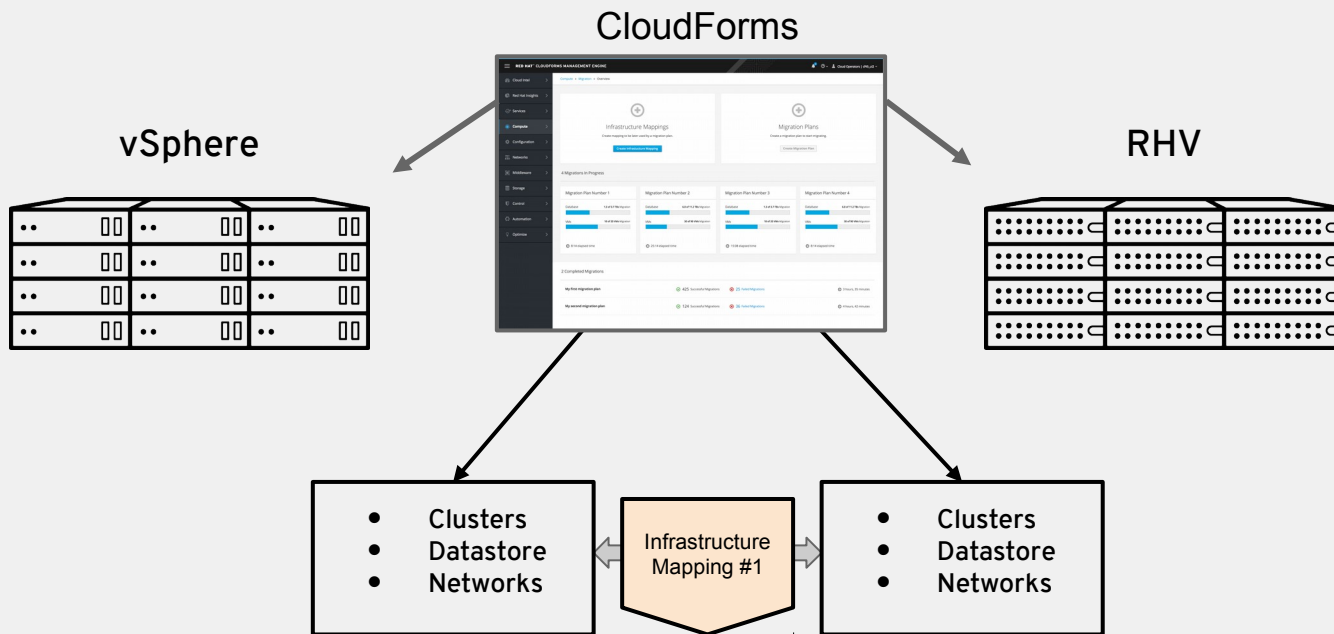
SETUP MULTIPLE CONVERSION HOSTS





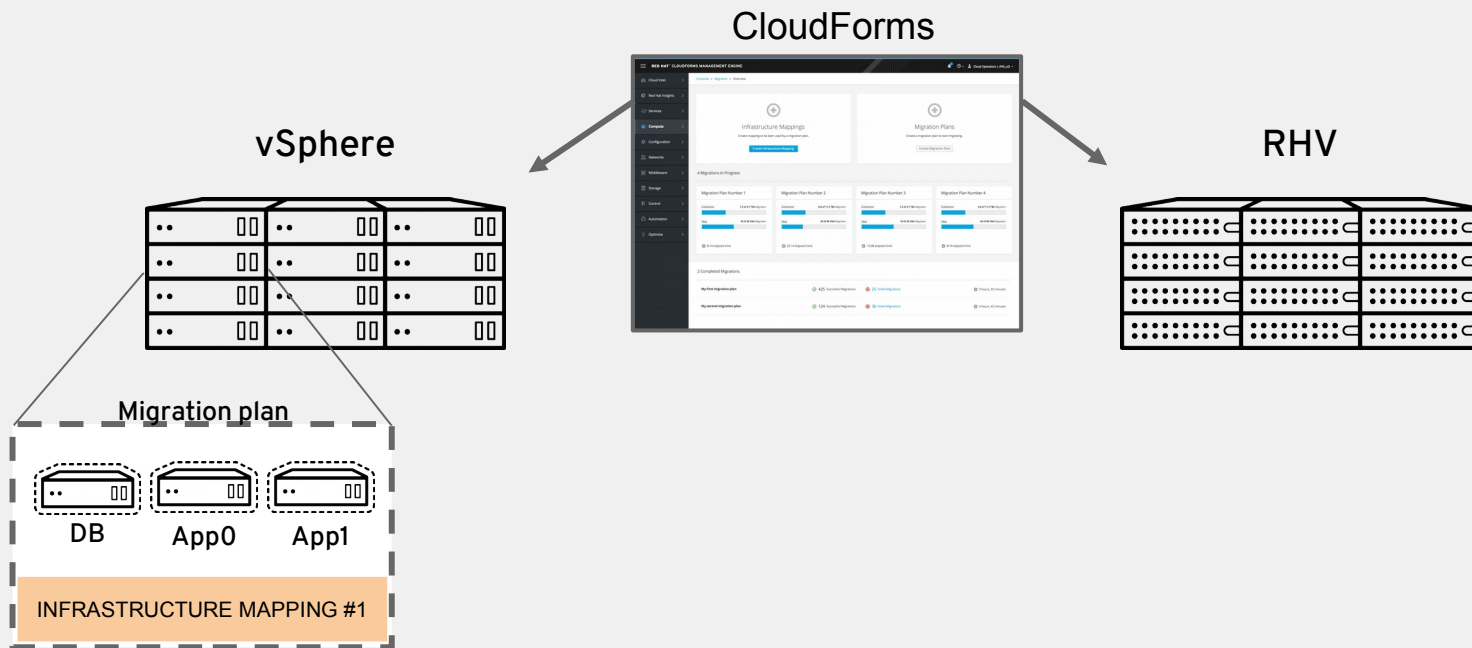
# INFRASTRUCTURE MIGRATION SOLUTION

USE THE INFRASTRUCTURE MAPPING WIZARD TO MAP BOTH SOLUTIONS



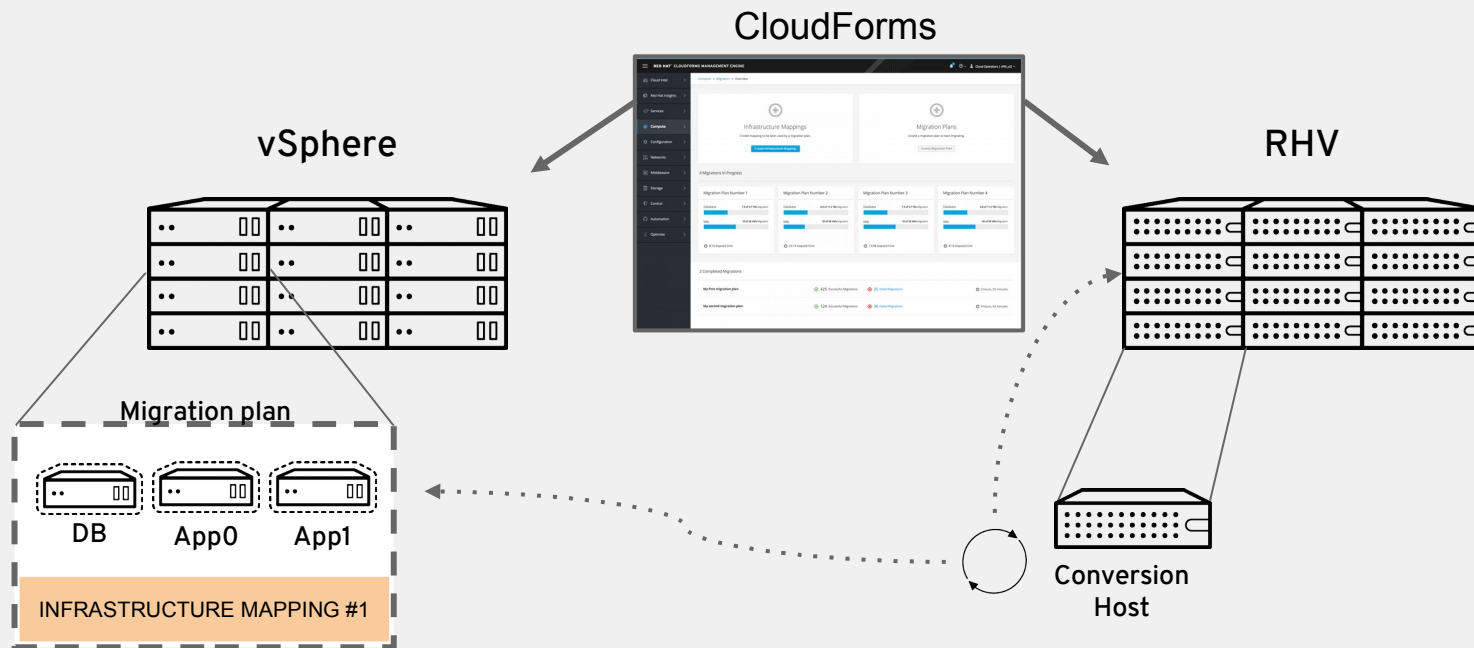
# INFRASTRUCTURE MIGRATION SOLUTION

CREATE YOUR MIGRATION PLAN ATTACHED TO AN INFRASTRUCTURE MAPPING



# INFRASTRUCTURE MIGRATION SOLUTION

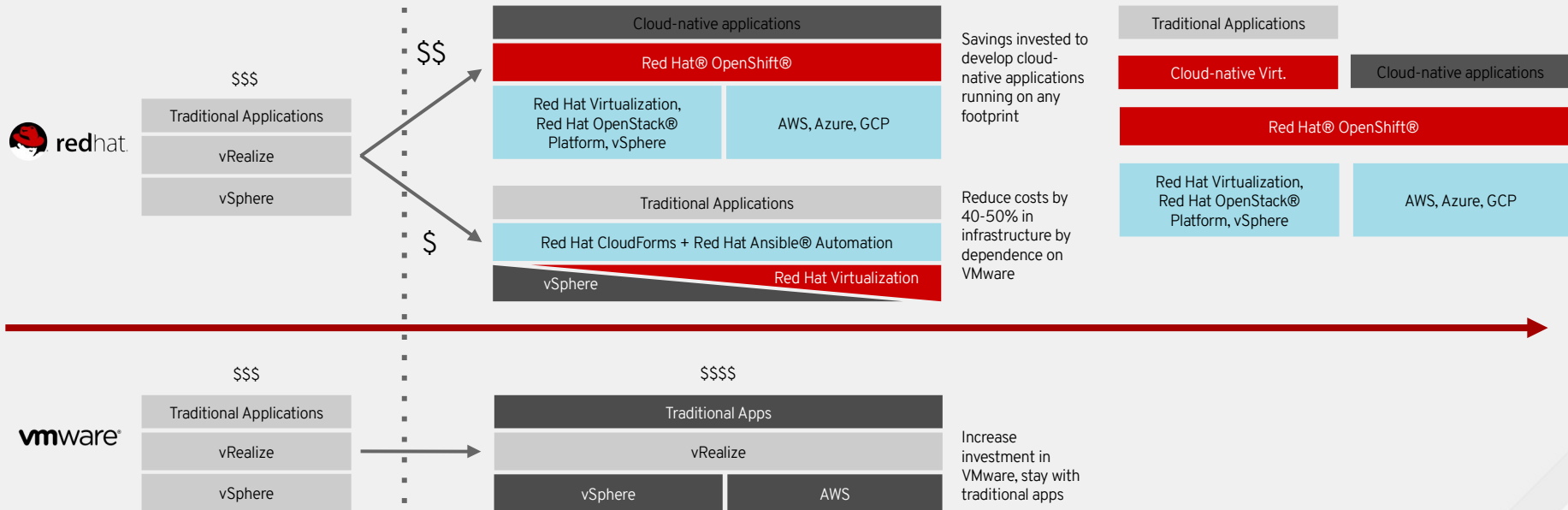
LAUNCH YOUR MIGRATION



## PRESENT STATE

## TRANSFORMATION

## FUTURE OF VIRTUALIZATION





# GRAZIE PER L'ATTENZIONE

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