



DA LINUX AI CONTAINER, DALLA VIRTUALIZZAZIONE AL CLOUD: TRASFORMA IL TUO I.T.

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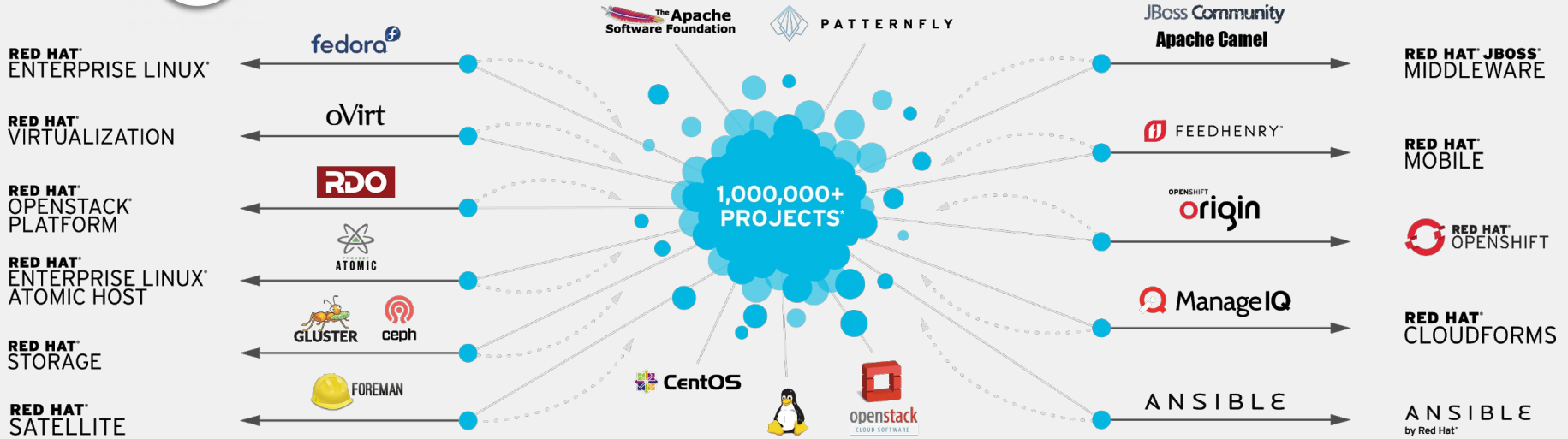


#RedHatOSD

**WE HAVE BEEN
BUILDING
THE FUTURE**



25 YEARS: FROM COMMUNITIES TO ENTERPRISE



PARTICIPATE

We participate in and create community-powered upstream projects.

INTEGRATE

We integrate upstream projects, fostering open community platforms.

STABILIZE

We commercialize these platforms together with a rich ecosystem of services and certifications.

RH0064-3



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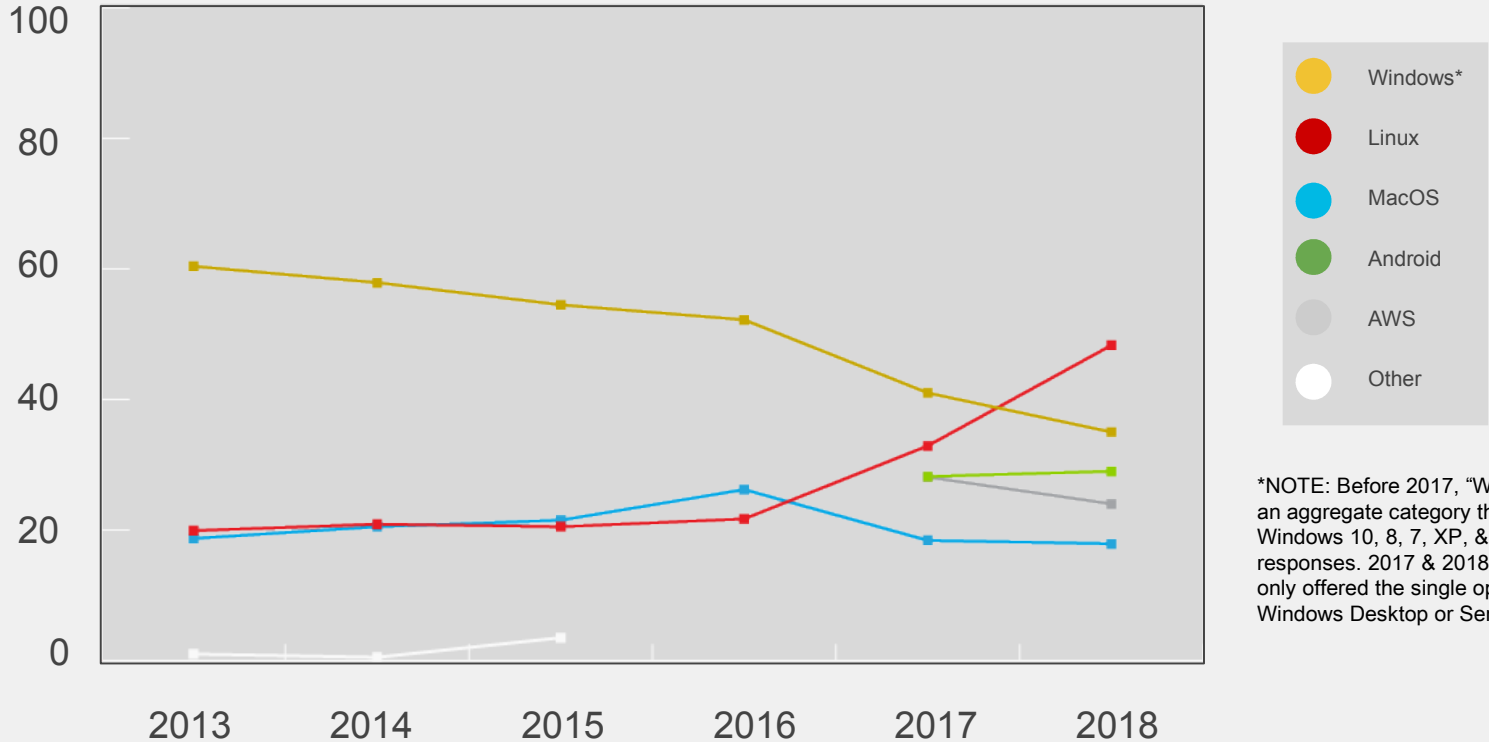
THE FOUNDATION IS LINUX



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LINUX IS THE MOST-USED PLATFORM

FOR DEVELOPMENT TODAY



*NOTE: Before 2017, "Windows" is an aggregate category that includes Windows 10, 8, 7, XP, & Vista responses. 2017 & 2018 surveys only offered the single option: Windows Desktop or Server.



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Sources: Most popular technology platforms, Stack Overflow, [Developer Survey Results 2018](#) & [Developer Survey Results 2017](#).
Most popular desktop OS, Stack Overflow, [Developer Survey Results 2013-2016](#).



LINUX IS THE MOST-USED PLATFORM

FOR VMs IN THE PUBLIC CLOUD



of all applications running in public cloud infrastructure are running on Linux VMs.



LINUX IS THE FOUNDATION

LINUX IS THE FOUNDATION FOR MODERN IoT, CONTAINERS, SERVICES, & MORE



RED HAT ENTERPRISE LINUX

Operating system (OS)
foundation for
infrastructure and apps

PHYSICAL



RED HAT VIRTUALIZATION

Flexible virtualization
built on Linux

VIRTUAL



RED HAT OPENSTACK® PLATFORM

Datacenter software for
building private cloud

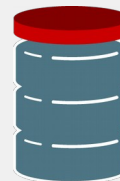
PRIVATE
CLOUD



RED HAT OPENSIFT

Container platform for
developing, hosting
cloud-native apps

HYBRID
CLOUD



RED HAT STORAGE

Scale-out, software-
defined
storage spanning the
hybrid cloud

STORAGE

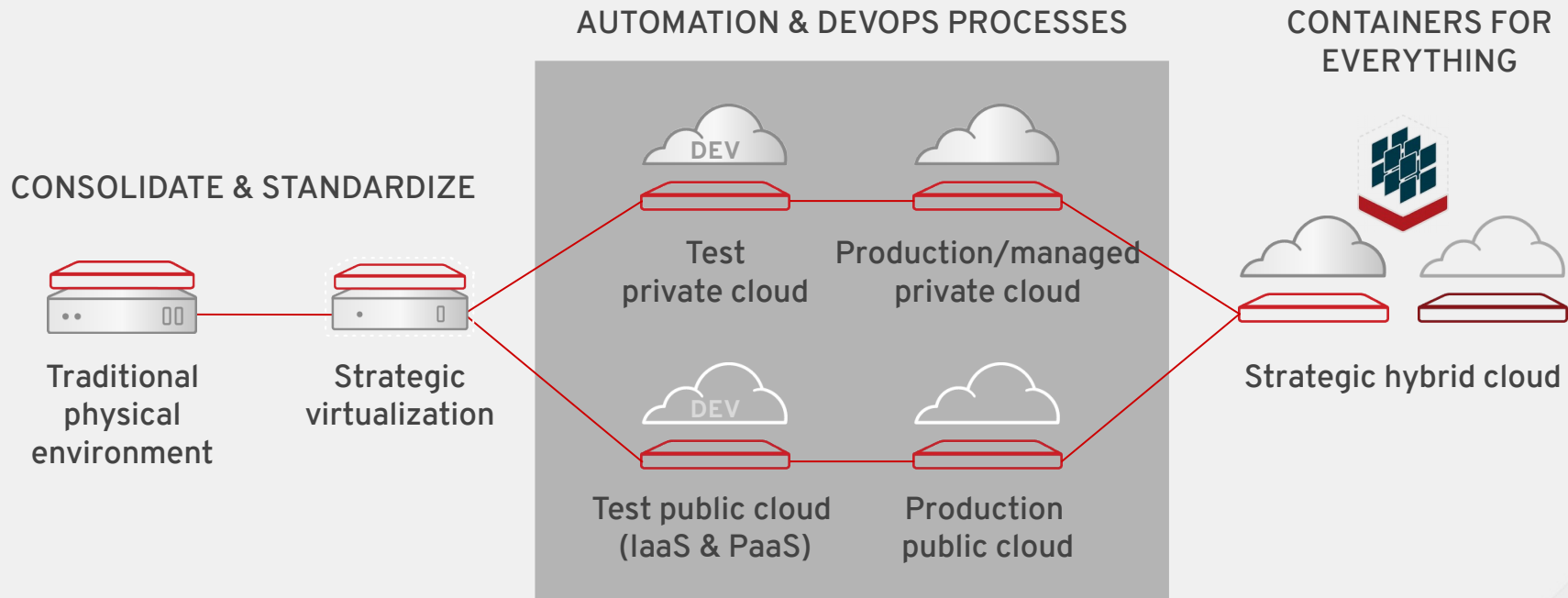
RED HAT ENTERPRISE LINUX



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IT IS A DIFFERENT JOURNEY FOR EVERYONE



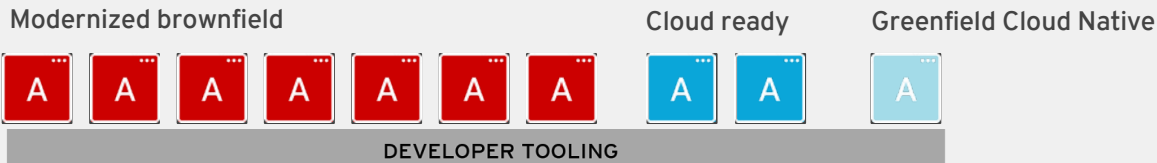
OPEN HYBRID CLOUD



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RED HAT OPEN HYBRID CLOUD

ALL KINDS OF APPS AND ENVIRONMENTS, INCLUDING CONTAINERS



APPLICATION PLATFORMS



BARE METAL



VIRTUALIZED

INFRASTRUCTURE PLATFORMS



PRIVATE CLOUD



PUBLIC CLOUD

SOFTWARE DEFINED STORAGE

MANAGEMENT & AUTOMATION



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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



NEXT GENERATION IT INFRASTRUCTURE &
MANAGEMENT SURVEY DEC 2017

N= 1171 Worldwide IT Operations Decision Makers



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AUTOMATION EVOLUTION WITH **ANSIBLE**

fully automate your business

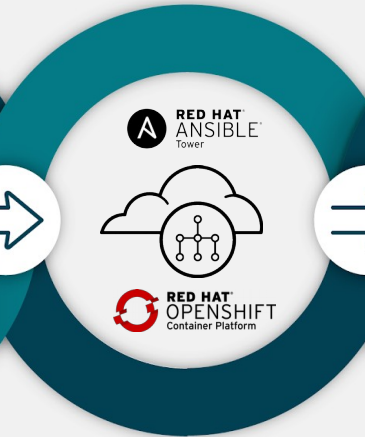


IT automation



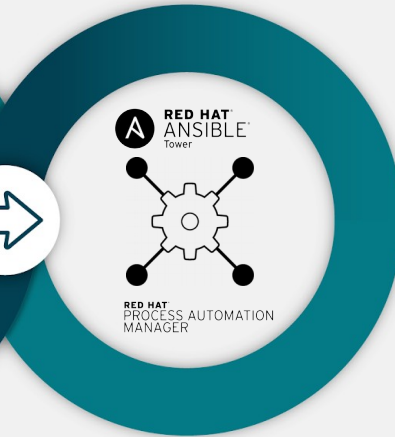
Fully I.T. Automation
(compute/storage,
network, security...)

Hybrid Cloud
Automation



Automation to
enable Cloud
Journey

Business Automation



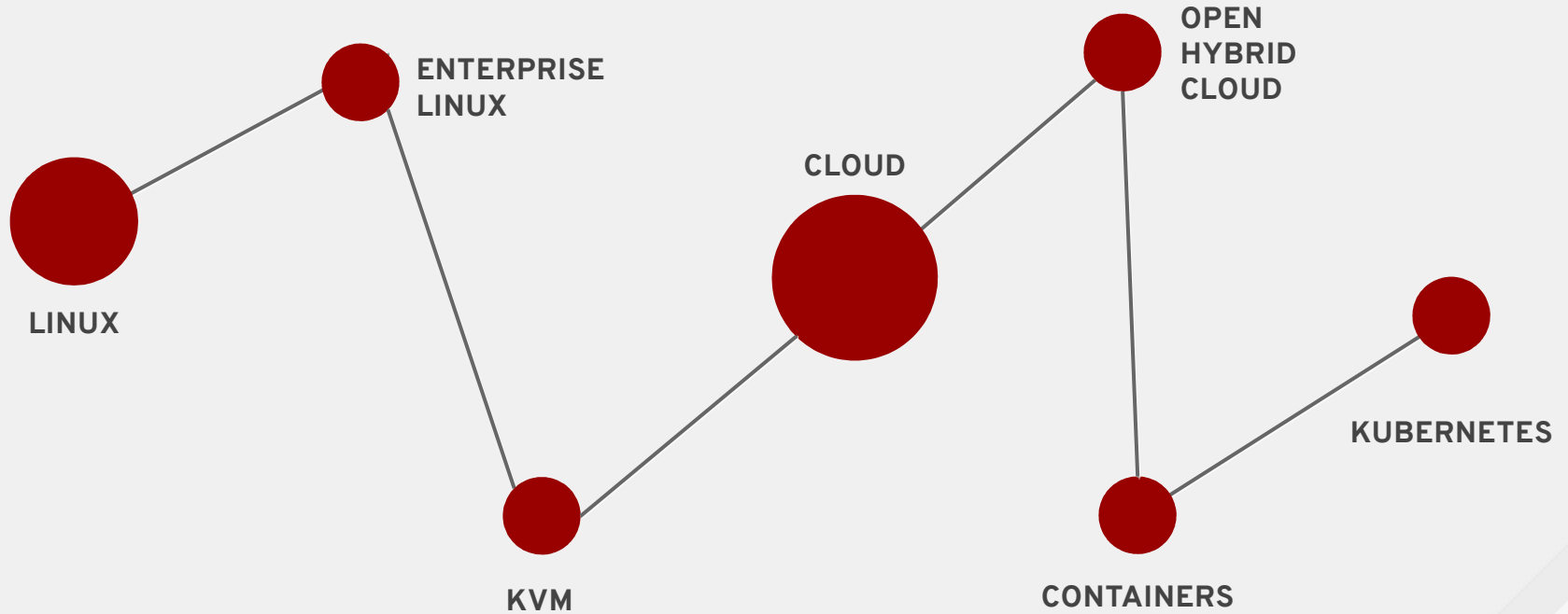
Integrate Ansible
Workflows
Fully Automation

RED HAT for HYBRID CLOUD



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EVERYTHING IS CONNECTED



OPEN HYBRID CLOUD

infrastructure - application - management



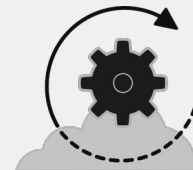
HYBRID CLOUD INFRASTRUCTURE

Infrastructure software
RHEL at the core.



TRADITIONAL & CLOUD- NATIVE APP PLATFORMS

Rapidly & efficiently develop &
deploy apps across hybrid cloud
(container platform)

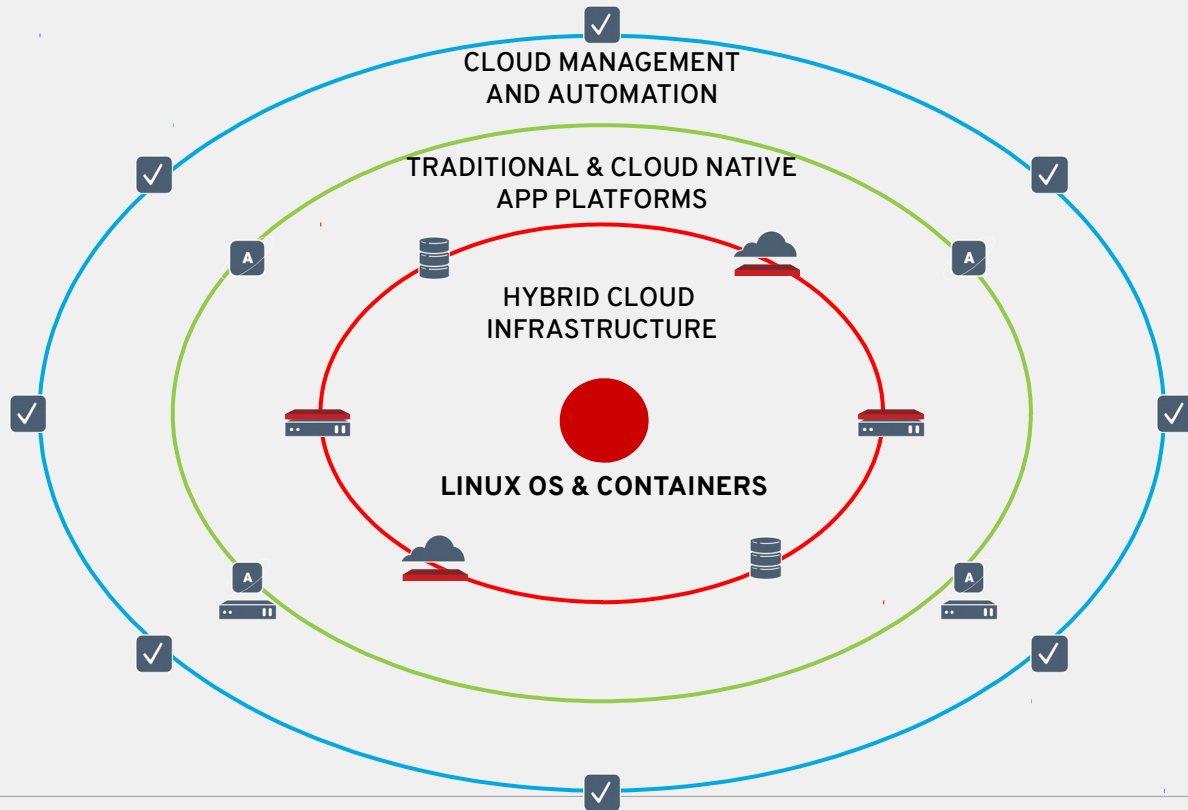


MANAGEMENT & AUTOMATION

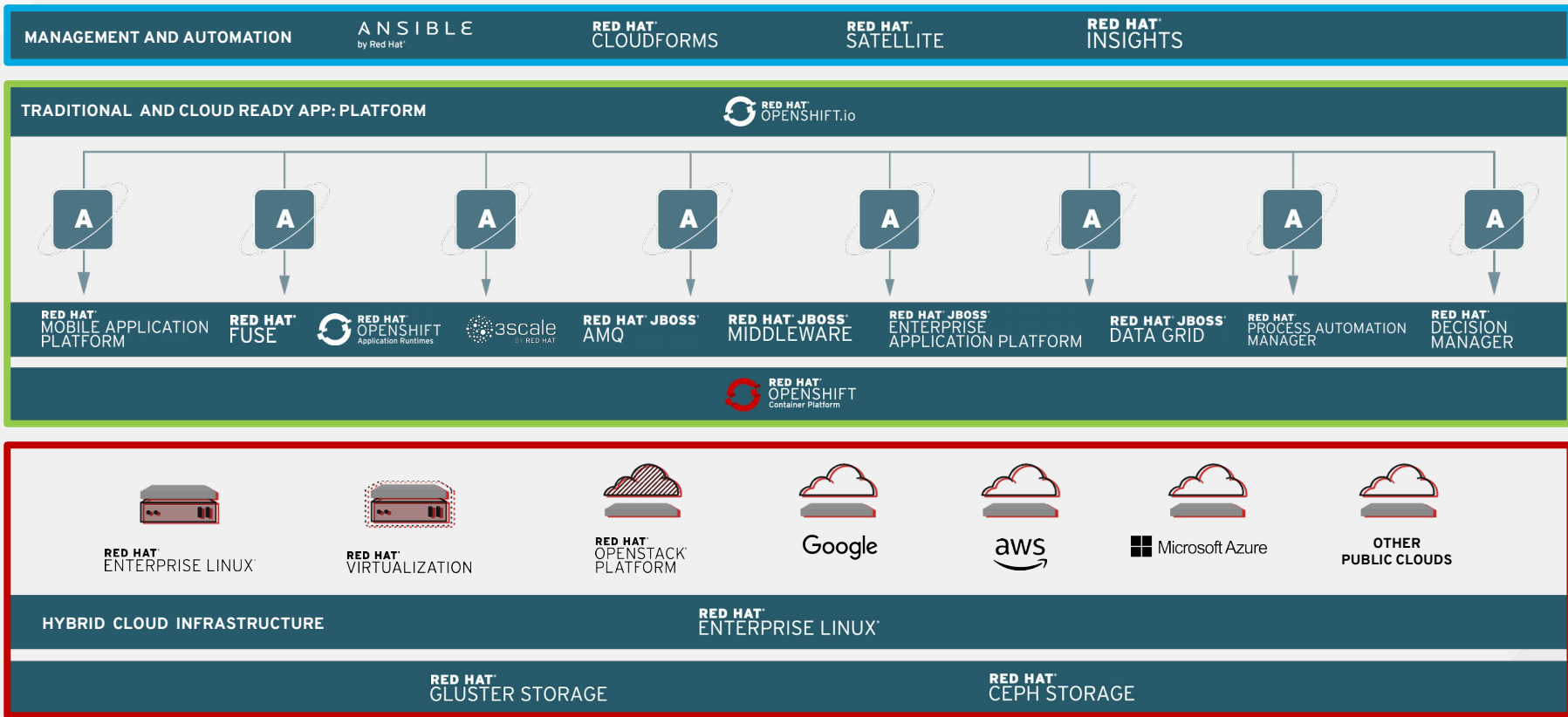
Simplify management &
automation of hybrid cloud
environments.

ALL INTERCONNECTED

infrastructure - application - management



IT'S ALL HERE



THE PORTFOLIO IS OPTIMIZED TO WORK TOGETHER

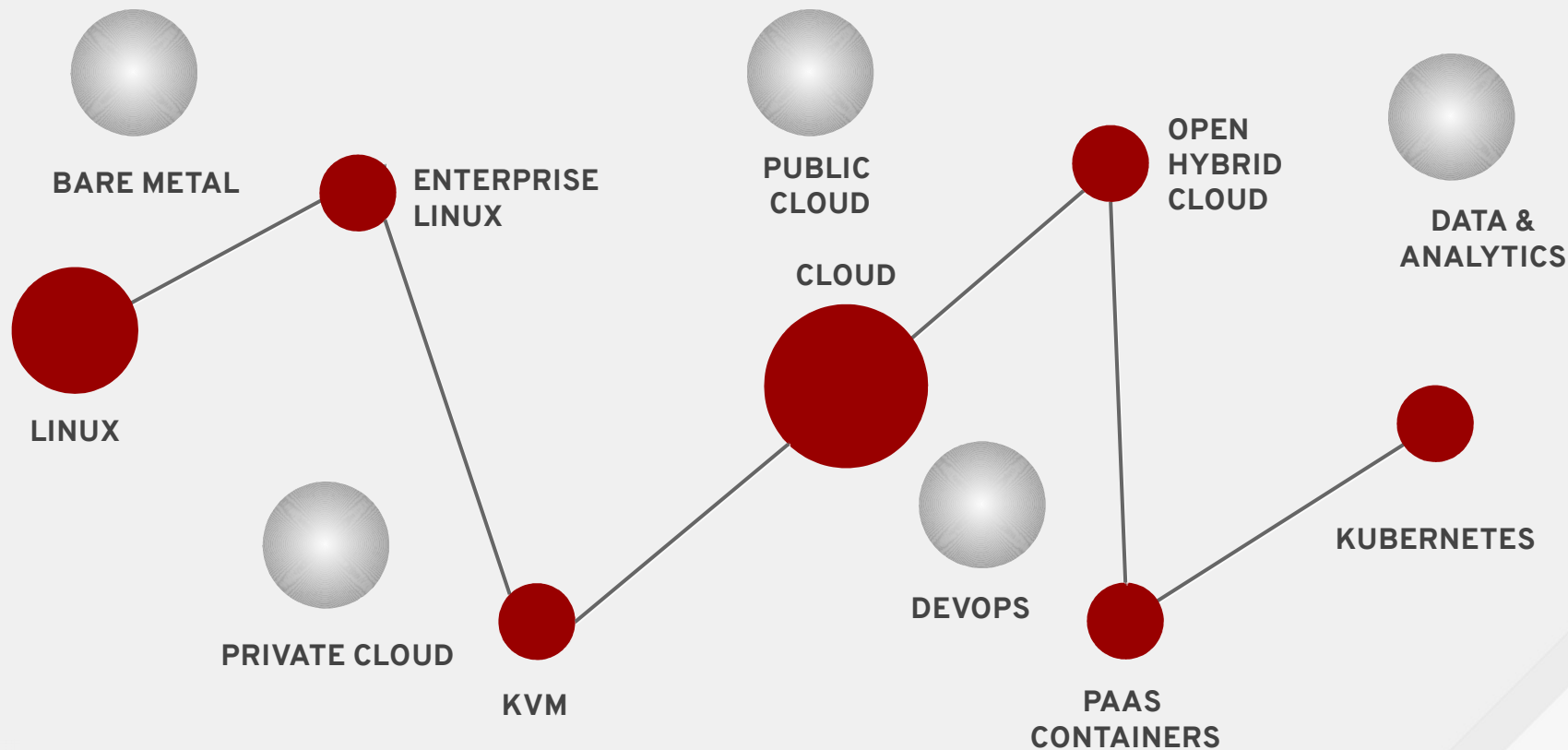


RED HAT DRIVES INNOVATION



#RedHatOSD

COLLABORATE WITH US



RED HAT CONSULTING & TRAINING



Hybrid cloud
infrastructure



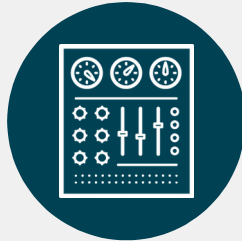
Cloud
migration



PaaS &
Containers
on cloud



NFV adoption



Virtualization
management



Cloud
storage





GRAZIE PER L'ATTENZIONE

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Red Hat Enterprise Linux

NOVITÀ DEL SISTEMA OPERATIVO
CUORE DELLE SOLUZIONI RED HAT

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Solution Architect
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SPEND MORE TIME DRIVING BUSINESS GROWTH



CONTROL

“It should” – be secure.



CONFIDENCE

“It should” – just work.



FREEDOM

“It shouldn’t” – get in the way.

RED HAT® ENTERPRISE LINUX®

Implement **WHAT YOU WANT**, when it makes sense for you



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THE CONSISTENT FOUNDATION FOR THE ENTERPRISE HYBRID CLOUD

Red Hat Enterprise Linux



CONTROL



Security and compliance



Platform manageability



Security
automation



Native
controls



Management
at scale



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DISK DECRYPTION AT BOOT POSES SECURITY CHALLENGES

MANUAL UNLOCKING

- Drives removed will still decrypt
- Requires human intervention
- Managing master keys

KEYFILE UNLOCKING

- TPM2.0 PIN fully supported
- Can be chained with other PINs

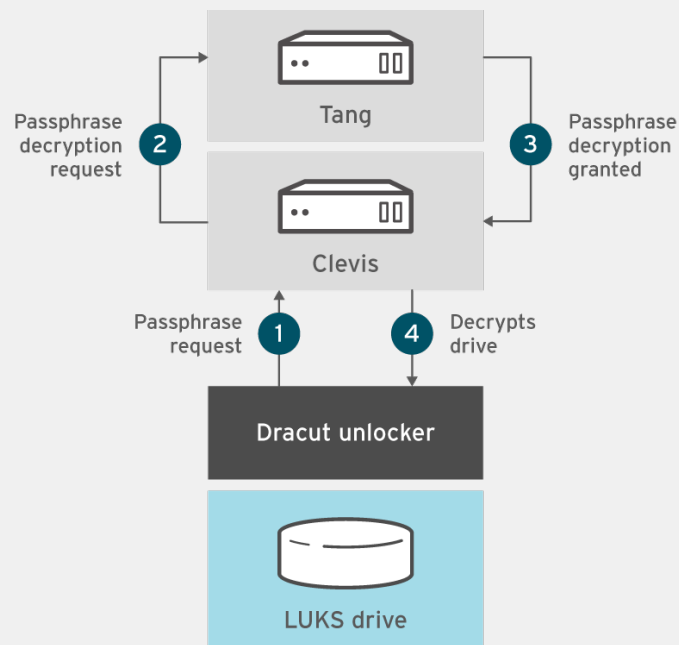


SECURELY AUTOMATE DISK DECRYPTION

NETWORK BOUND DISK ENCRYPTION UPDATES IN RED HAT ENTERPRISE LINUX 7.5

Network Bound Disk Encryption enables encryption and decryption of disks only on a trusted network, making data unusable if removed from the network.

- Network key service (TANG)
- Automated decryption client framework (CLEVIS)
- Dracut unlocker
- SystemD unlocker
- Udisks2 unlocker



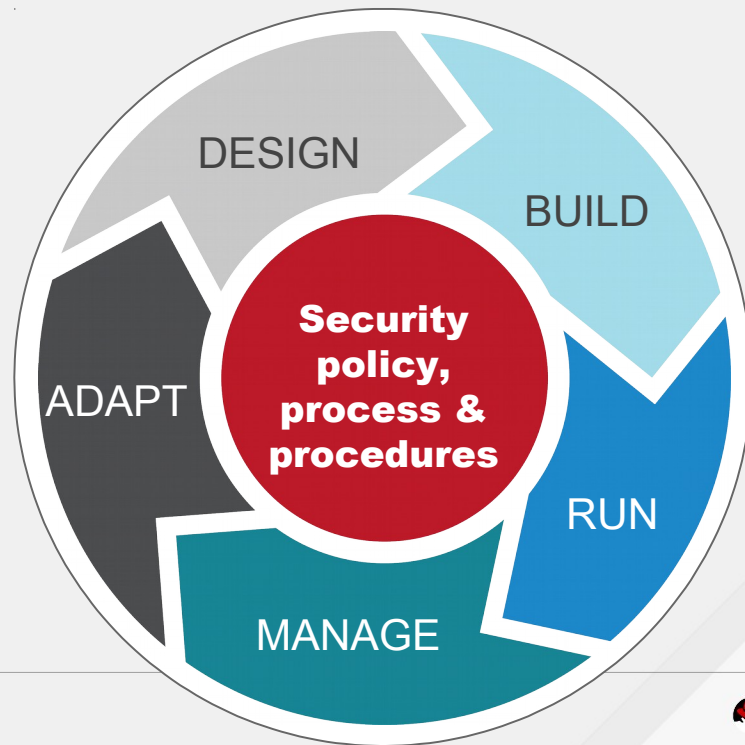
AN EVOLVING THREAT LANDSCAPE IS CHANGING OUR APPROACH TO SECURITY

Traditional network-based defenses are no longer enough in the face of:

- Dissolving perimeters
- changing infrastructures
- evolving threats

A new approach requires:

- Established security controls
- Standards based policies
- Ongoing security and compliance auditing



AUTOMATE SECURITY CONFIGS AT SCALE

OPENS CAP INTEGRATION WITH ANSIBLE AUTOMATION IN RED HAT ENTERPRISE LINUX 7.5

Define and tailor security policies via profiles

Scan and apply security policies via Ansible Automation or bash

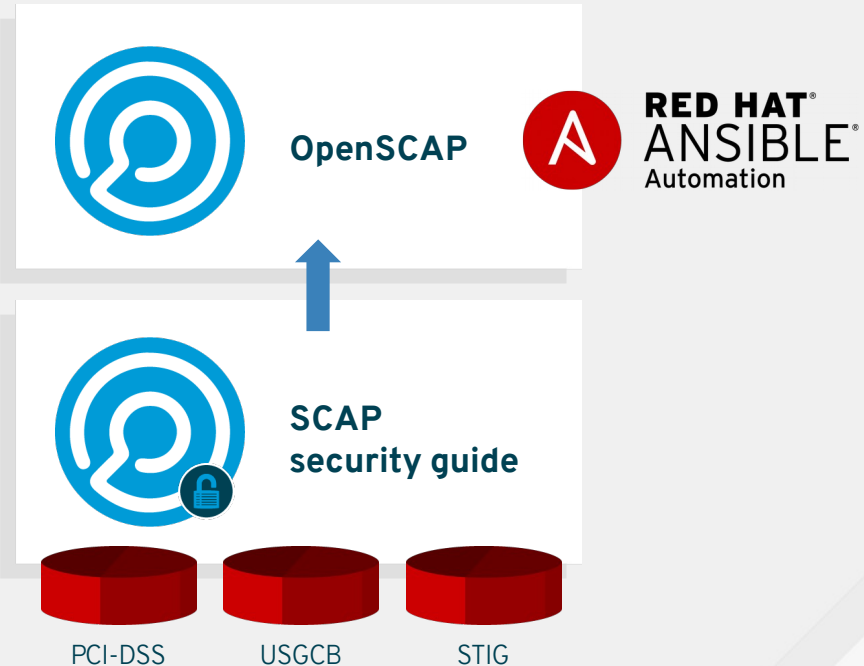
Assert security policy at build with Ansible Automation or Anaconda

Shipped National Checklist profiles include:

DISA STIG

PCI - DSS

NIST USGCB





The SCAP Security Guide Project

<http://www.open-scap.org/security-ssc/scap-security-guide>

This guide presents a catalog of security-relevant configuration settings for Red Hat Enterprise Linux 7. It is a rendering of content structured in the extensible Configuration Checklist Description Format (XCCDF) in order to support security automation. The SCAP content is available in the `scap-security-guide` package which is developed at <http://www.open-scap.org/security-ssc/scap-security-guide>.

Providing system administrators with such guidance helps them find or identify configurations that meet a variety of network needs. Policy makers and baseline creators can use this catalog of settings, with its associated content, to create or update them in security baseline creation. This guide is a catalog, not a checklist, and satisfaction of every item is not likely to be possible or sensible in many operational scenarios. However, the XCCDF format enables granular selection and adjustment of settings, and their association with OVAL and OCAL content provides an automated checking capability. Transformations of this document, and its associated automated checking content, are capable of producing baselines that meet a diverse set of policy objectives. Some example XCCDF Profiles, which are selections of items that form checklists and can be used as baselines, are available with this guide. They can be processed, in an automated fashion, with tools that support the Security Content Automation Protocol (SCAP). The DISA STIG, which provides required settings for US Department of Defense systems, is one example of a baseline created from this guidance.

1

Do not attempt to implement any of the settings in this guide without first testing them in a non-operational environment. The creators of this guidance assume no responsibility whatsoever for its use by other parties, and makes no guarantees, expressed in implied, about its quality, reliability, or any other characteristics.

Evaluation Characteristics

Evaluation target	workstation.example.com
Benchmark URL	https://www.open-scap.org/scap-content/benchmark_RHEL7
Benchmark ID	scap_org.open-scap.content.benchmark_RHEL7
Profile ID	scap_org.open-scap.content.profile_standard
Started at	2018-10-24T15:36:58
Finished at	2018-10-24T16:01:57

CPE Platforms

- [Red Hat Enterprise Linux Server \(x86_64\)](#)
- [Red Hat Enterprise Linux Server \(x86_64\)](#)
- [Red Hat Enterprise Linux Server \(x86_64\)](#)

Addresses

- [127.0.0.1](#)
- [10.0.0.10](#)
- [192.168.122.1](#)
- [0.0.0.0/0.0.0.1](#)
- [192.0.0.0/24cd:90ff:fe1a:64](#)
- [00:00:00:00:00:00](#)
- [20:02:00:18:00:10](#)
- [50:54:00:10:00:00](#)

ADDITIONAL MANAGEABILITY FEATURES

Boot to snapshot

Provides the ability for administrators to create and manage bootable LVM snapshots.
Allows for easier "A/B" testing of changes and recovery of a system.

PCP Rebase

Performance Metric Domain Agents (PMDAs) have been updated: perfevent, containers and CGroups, MySQL slave metrics, Linux per-process metrics, and Linux kernel metrics for entropy, slabinfo, IPv6 sockets, and NFS worker threads.
New PMDAs are now available: Prometheus endpoint and HAProxy.

THE CONSISTENT FOUNDATION FOR THE ENTERPRISE HYBRID CLOUD

Red Hat Enterprise Linux



CONFIDENCE



Stability and reliability



Performance and efficiency



Improved
availability



10+ year
lifecycle



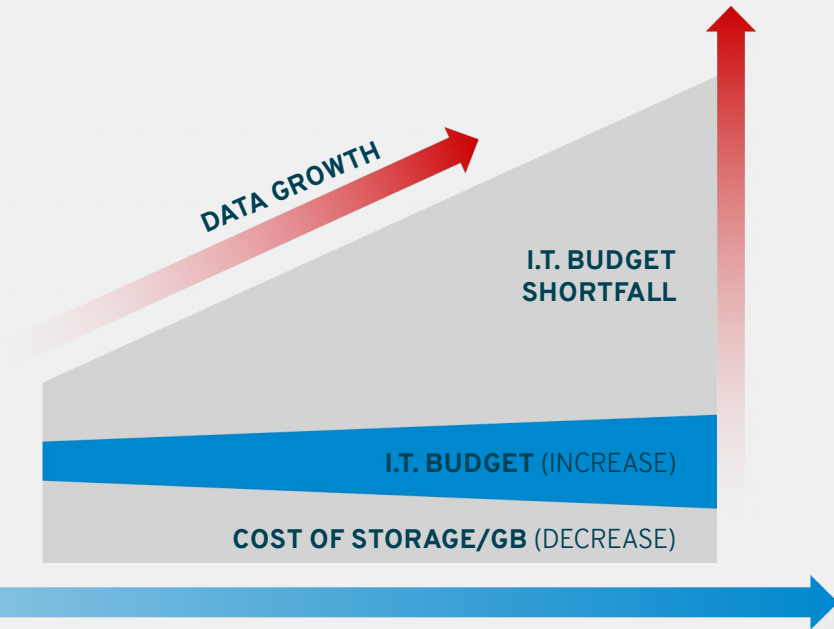
Benchmark-breaking
performance



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DATA GROWTH DRIVES UP COSTS

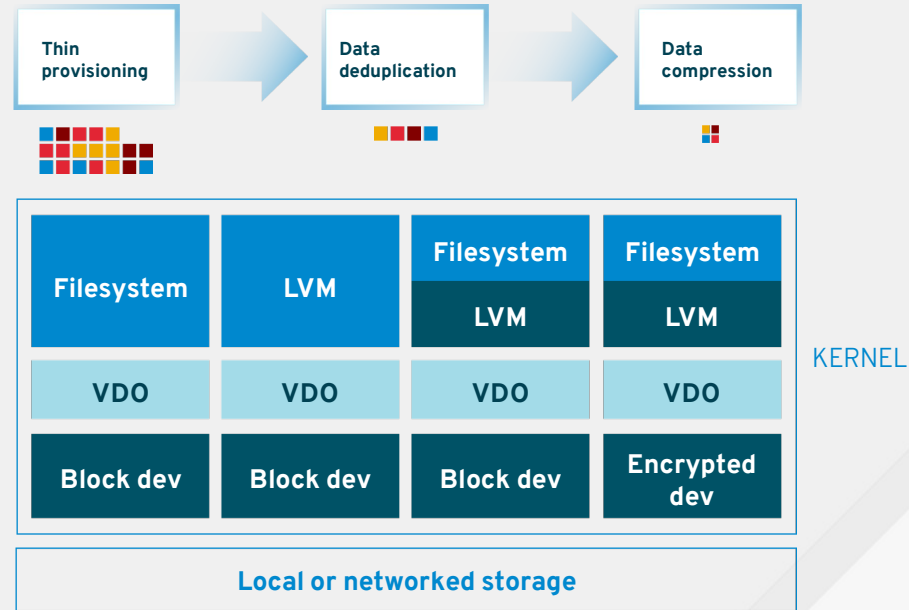
- Existing storage solutions can't accommodate projected growth
- Replication between storage systems, remote sites, and clouds takes too long
- Cloud instance storage can quickly eat up I.T. budget



REDUCE THE COST OF DATA STORAGE

INTRODUCING VIRTUAL DATA OPTIMIZER (VDO) IN RED HAT ENTERPRISE LINUX 7.5

- Block level data reduction that works directly with block devices and filesystems to provide:
 - Inline, on-the-fly deduplication
 - Performance-optimized data compression
 - Thin provisioning and zero block elimination
- Addresses most common storage deployment models
- Works with any file system, local or remote



DEMO TIME

VDO DEDUPLICATION AT WORK



```
[root@workstation-exercise4]# ls -lh
```

```
total 4,46
```

```
-rw-r--r-- 1 root root 4,46 23 d
```

```
[root@workstation-exercise4]# for i in $(seq 1 100); do touch $i; done
```

```
sp51 : done
```

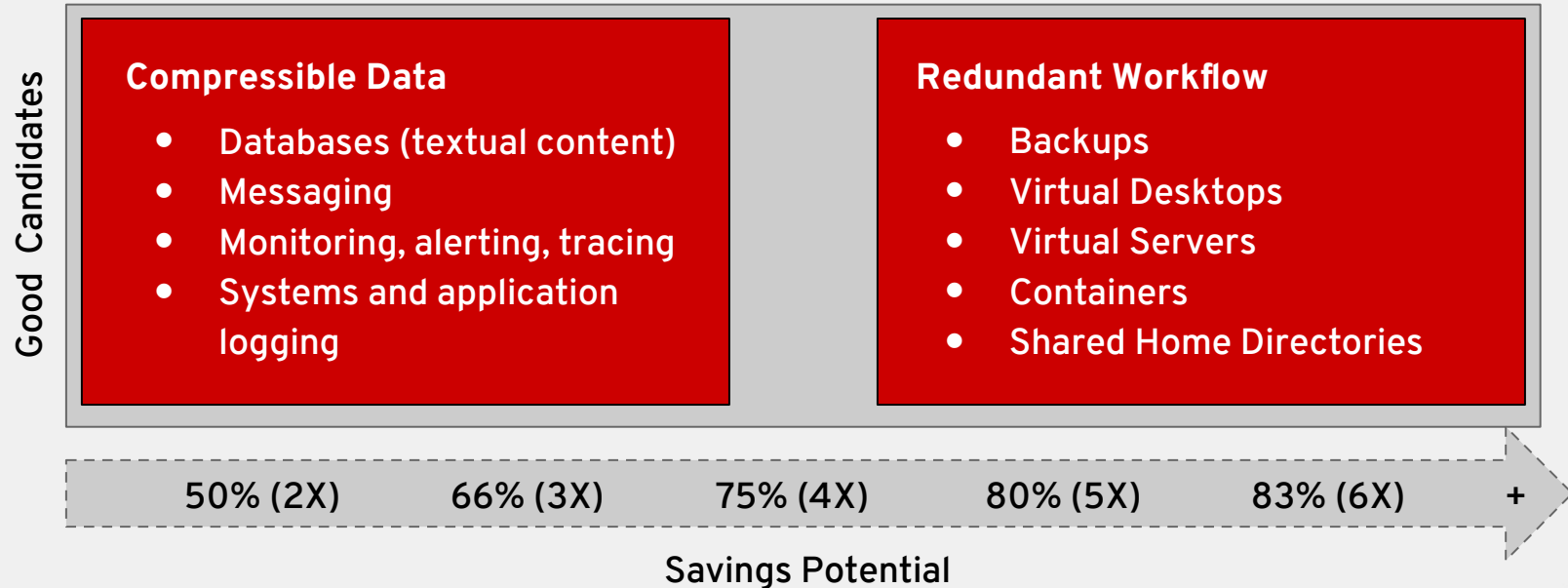
```
[]
```

```
root@workstation: ~
```

https://youtu.be/7OV4p7YK_hI

How much can VDO save?

It depends... on your data and your workflow

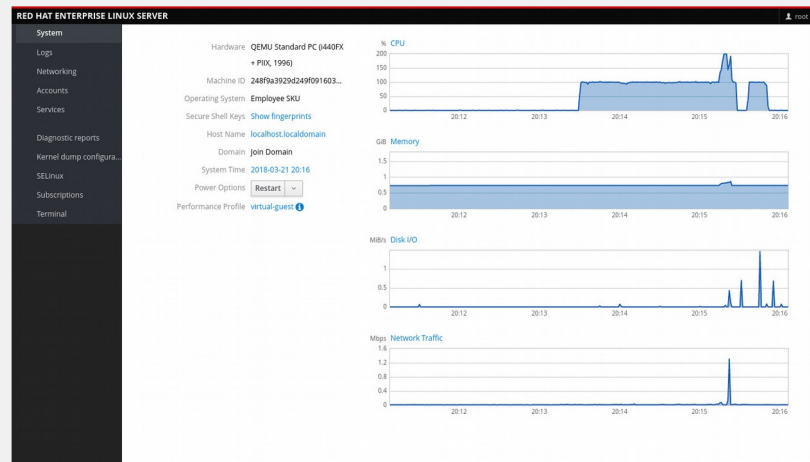


SIMPLIFY ADVANCED TROUBLESHOOTING

COCKPIT ADMIN CONSOLE ENHANCEMENTS IN RED HAT ENTERPRISE LINUX 7.5 & 7.6

Cockpit provides an easy to use interactive admin interface with minimal footprint

- No state separate from the server
- Simple management for subsystems like network or storage via system APIs
- Access to multiple tools like diagnostic reports, logs, and SELinux
- NEW IN 7.5: additions to network and storage (VDO) capabilities
- NEW IN 7.6: Firewall Management, improved System Summary page
Single Sign-on config for IPA users



DEMO TIME
STORAGE MANAGEMENT
WITH COCKPIT



workstation@redhat

- Home
- App
- Storage
- Networking
- Virtual Machines
- Processes
- Services
- Dependencies (Network)
- System Diagnostics
- Settings
- Software Updates
- System Profiles
- Firewall



<https://youtu.be/Ojt7b1OaHws>

Diskspace

Name	Mount Point	Size
workstation@redhat	/	4.91 TB (50 GB)
workstation@redhat		500 MB
workstation@redhat		500 MB
workstation@redhat	/boot	240 MB (50 MB)
workstation@redhat		500 MB

Networks

No active networks are up.

```
Storage Log:
[14:42 g. @workstation@redhat ~]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
/dev/mapper/vg-workstation-lv-root 4.91T 50GB 4.86T 1% /
/dev/mapper/vg-workstation-lv-boot 240M 50M 190M 21% /boot
/dev/mapper/vg-workstation-lv-usr 500M 0 500M 0% /usr
/dev/mapper/vg-workstation-lv-var 500M 0 500M 0% /var
```

RAID Devices

No storage are up as RAID.

Volumes Groups

- workstation@redhat
- workstation@redhat
- workstation@redhat
- workstation@redhat

YUM Devices

- workstation@redhat

Drives

- workstation@redhat
- workstation@redhat

THE CONSISTENT FOUNDATION FOR THE ENTERPRISE HYBRID CLOUD

Red Hat Enterprise Linux



FREEDOM



Application experience



Multi-platform support



Ecosystem



Cloud/hardware
independent



Thousands of
certified solutions



Containers &
development tools



#RedHatOSD



STANDARDS BASED CONTAINER TOOLS

CREATE, DEPLOY, MANAGE WITH PODMAN



cri-o



buildah



podman



skopeo



OPEN CONTAINER
INITIATIVE



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