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

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#RedHatOSD
WE HAVE BEEN BUILDING THE FUTURE
We participate in and create community-powered upstream projects.

We integrate upstream projects, fostering open community platforms.

We commercialize these platforms together with a rich ecosystem of services and certifications.
THE FOUNDATION IS LINUX
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.

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

54% 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.
- **RED HAT VIRTUALIZATION**: Flexible virtualization built on Linux.
- **RED HAT OPENSTACK® PLATFORM**: Datacenter software for building private cloud.
- **RED HAT OPENSIFT**: Container platform for developing, hosting cloud-native apps.
- **RED HAT STORAGE**: Scale-out, software-defined storage spanning the hybrid cloud.

**PHYSICAL** | **VIRTUAL** | **PRIVATE CLOUD** | **HYBRID CLOUD** | **STORAGE**

**RED HAT ENTERPRISE LINUX**

#RedHatOSD
IT IS A DIFFERENT JOURNEY FOR EVERYONE

CONSORTIATE & STANDARDIZE

Traditional physical environment

Strategic virtualization

AUTOMATION & DEVOPS PROCESSES

Test private cloud

Production/managed private cloud

Test public cloud (IaaS & PaaS)

Production public cloud

CONTAINERS FOR EVERYTHING

Strategic hybrid cloud

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OPEN HYBRID CLOUD
RED HAT OPEN HYBRID CLOUD
ALL KINDS OF APPS AND ENVIRONMENTS, INCLUDING CONTAINERS
Automation is either mission critical or very important to their future Cloud strategy.

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
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
EVERYTHING IS CONNECTED

- LINUX
- ENTERPRISE LINUX
- KVM
- CLOUD
- OPEN HYBRID CLOUD
- CONTAINERS
- KUBERNETES

#RedHatOSD
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

CLOUD MANAGEMENT AND AUTOMATION

TRADITIONAL & CLOUD NATIVE APP PLATFORMS

HYBRID CLOUD INFRASTRUCTURE

LINUX OS & CONTAINERS
IT’S ALL HERE

MANAGEMENT AND AUTOMATION

- ANSIBLE
- RED HAT CLOUDFORMS
- RED HAT SATELLITE
- RED HAT INSIGHTS

TRADITIONAL AND CLOUD READY APP: PLATFORM

- OPENSHIFT.io

- RED HAT MOBILE APPLICATION PLATFORM
- RED HAT FUSE
- RED HAT OPENSHIFT APPLICATION Runtimes
- casadell
- RED HAT JBOSS AMQ
- RED HAT JBOSS MIDDLEWARE
- RED HAT JBOSS ENTERPRISE APPLICATION PLATFORM
- RED HAT JBOSS DATA GRID
- RED HAT PROCESS AUTOMATION MANAGER
- RED HAT DECISION MANAGER

HYBRID CLOUD INFRASTRUCTURE

- RED HAT ENTERPRISE LINUX
- RED HAT VIRTUALIZATION
- RED HAT OPENSTACK PLATFORM
- Google
- AWS
- Microsoft Azure
- OTHER PUBLIC CLOUDS

GLUSTER STORAGE

CEPH STORAGE

THE PORTFOLIO IS OPTIMIZED TO WORK TOGETHER
RED HAT DRIVES INNOVATION
COLLABORATE WITH US

- BARE METAL
- ENTERPRISE LINUX
- LINUX
- PRIVATE CLOUD
- KVM
- CLOUD
- PUBLIC CLOUD
- DEVOPS
- PAAS CONTAINERS
- OPEN HYBRID CLOUD
- DATA & ANALYTICS
- KUBERNETES

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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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#RedHatOSD
RED HAT ENTERPRISE LINUX
NOVITÀ DEL SISTEMA OPERATIVO
CUORE DELLE SOLUZIONI RED HAT

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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.

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
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
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
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

An evolving threat landscape is changing our approach to security
AUTOMATE SECURITY CONFIGS AT SCALE

OPENSCAP 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

OpenSCAP

SCAP security guide

PCI-DSS
USGCB
STIG
DEMO TIME

SCANNING AND FIXING WITH OPENSCAP
Evaluation Characteristics

<table>
<thead>
<tr>
<th>Evaluation target</th>
<th>workstation.example.com</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benchmark URL</td>
<td><a href="https://www.example.com">https://www.example.com</a></td>
</tr>
<tr>
<td>Benchmark ID</td>
<td>xxooe_rageme-content_benchmark_RHEL</td>
</tr>
<tr>
<td>Profile ID</td>
<td>xxooe_rageme-content_profile_standard</td>
</tr>
<tr>
<td>Started at</td>
<td>2010-10-24T18:00:00Z</td>
</tr>
<tr>
<td>Finished at</td>
<td>2010-10-24T18:00:00Z</td>
</tr>
</tbody>
</table>

CPE Platforms:

- xxooe_rageme-content_benchmark_RHEL
- xxooe_rageme-content_profile_standard

Addresses:

- 127.0.0.1
- 192.168.127.1
- 9.0.0.0-9.255.255.255
- 10.0.0.0-10.255.255.255
- 192.168.127.1
- 0.0.0.0-0.255.255.255
- 192.168.127.1
- 127.0.0.1
- 20.0.0.0-20.255.255.255
- 20.0.0.0-20.255.255.255
- 20.0.0.0-20.255.255.255
- 52.134.20.0-52.134.255.255
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 NFSD 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
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
https://youtu.be/7OV4p7YK_hI
How much can VDO save?

It depends... on your data and your workflow

<table>
<thead>
<tr>
<th>Compressible Data</th>
<th>Redundant Workflow</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Databases (textual content)</td>
<td>• Backups</td>
</tr>
<tr>
<td>• Messaging</td>
<td>• Virtual Desktops</td>
</tr>
<tr>
<td>• Monitoring, alerting, tracing</td>
<td>• Virtual Servers</td>
</tr>
<tr>
<td>• Systems and application logging</td>
<td>• Containers</td>
</tr>
<tr>
<td></td>
<td>• Shared Home Directories</td>
</tr>
</tbody>
</table>

Savings Potential

- 50% (2X)
- 66% (3X)
- 75% (4X)
- 80% (5X)
- 83% (6X)
- +
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
https://youtu.be/Ojt7bIOaHws
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

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STANDARDS BASED CONTAINER TOOLS
CREATE, DEPLOY, MANAGE WITH PODMAN

- cri-o
- buildah
- podman
- skopeo
GRAZIE PER L’ATTENZIONE

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