

# Red Hat Enterprise Linux 8

What's new?

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# Red Hat Enterprise Linux 8

Build your future on a stable, high-performing platform that can scale to meet the needs of your organization today and tomorrow.

## Quick Overview

KERNEL VERSION	4.18+
SYSTEM COMPILER	GCC 8.2, LLVM 6.0
HARDWARE ARCHITECTURES	Intel/AMD 64-bit, IBM Power LE, IBM z Systems, ARM 64-bit
DEFAULT FILE SYSTEM	XFS
PACKAGE MANAGEMENT	Yum v4
TIME SYNCHRONIZATION	Chrony
NETWORKING	NetworkManager

## Predictable updates

3 years

Major releases

6 months

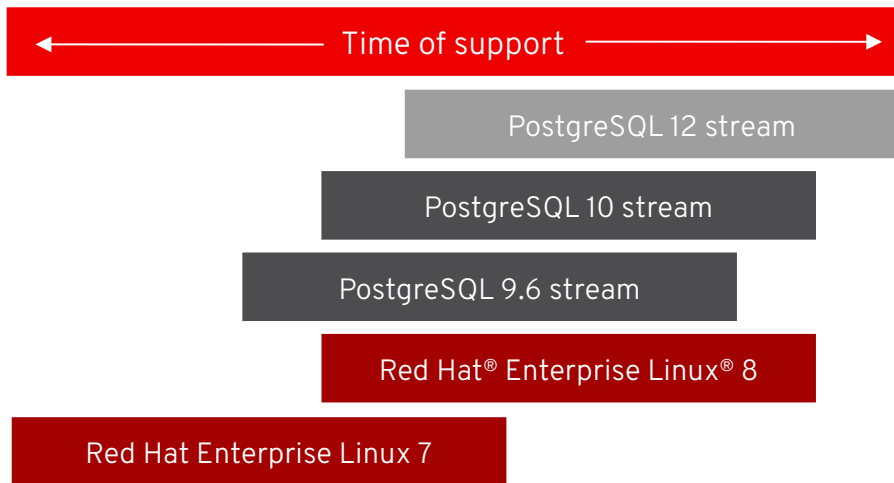
Minor updates

2 phases

Support life cycle



# Application streams



## *More choice*

Offers versions of the open source tools and frameworks developers need

## *Newer versions*

Provides access to newer versions as they stabilize

## *Simpler access*

Maintains standard locations for tools and libraries

# Simplified access to software

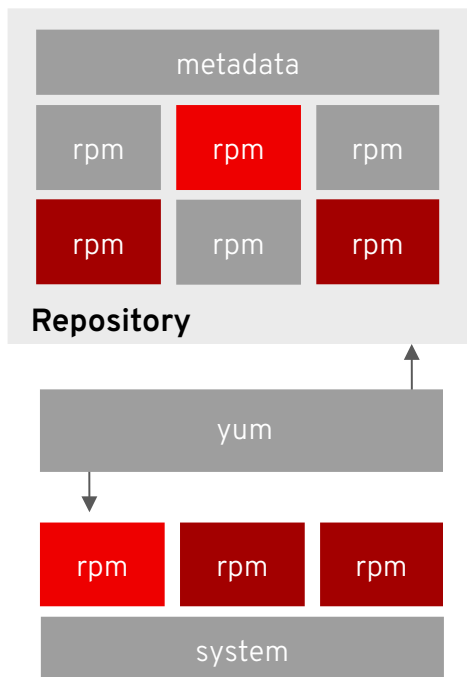
Red Hat Enterprise Linux 7 repositories



Red Hat Enterprise Linux 8 repositories



## The newest yum package manager: version 4



### *New technology*

Maintains the same experience while adding new tools

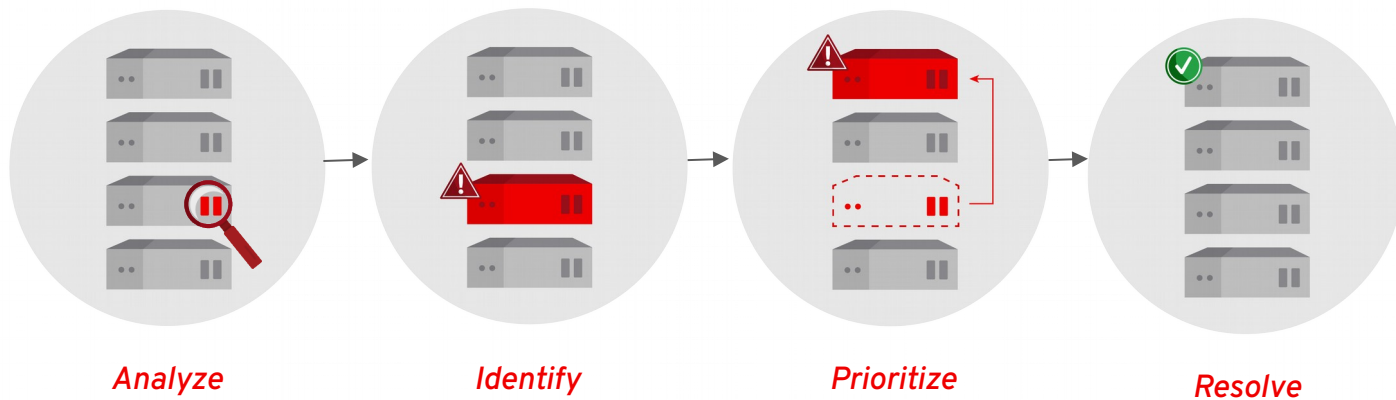
### *Better dependency management*

Offers faster resolution and easier minimization of what's installed

### *Stable API*

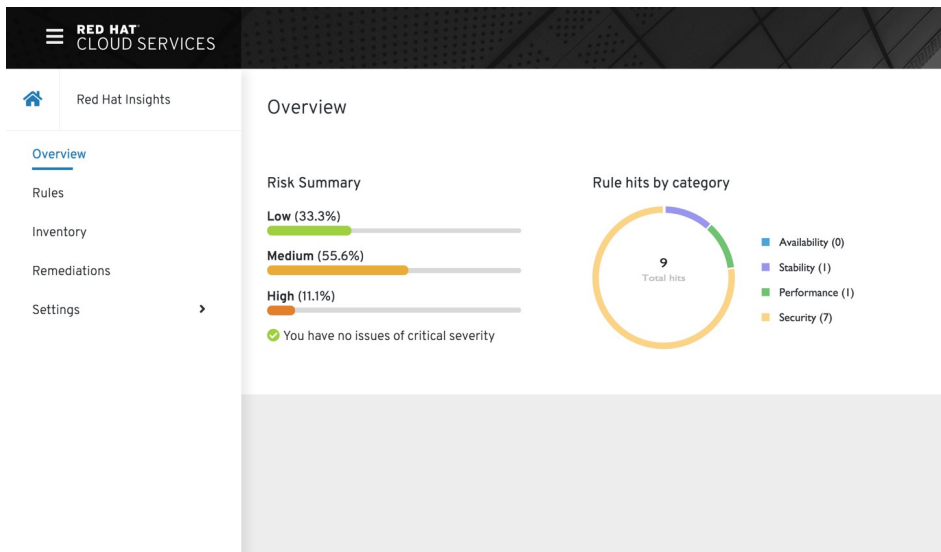
Provides new application programming interface (API) for extending yum that will progress into the future

## Gain operating intelligence





# Detect and fix issues with Red Hat Insights



## *Proactive advice*

Identification of issues before they become problems

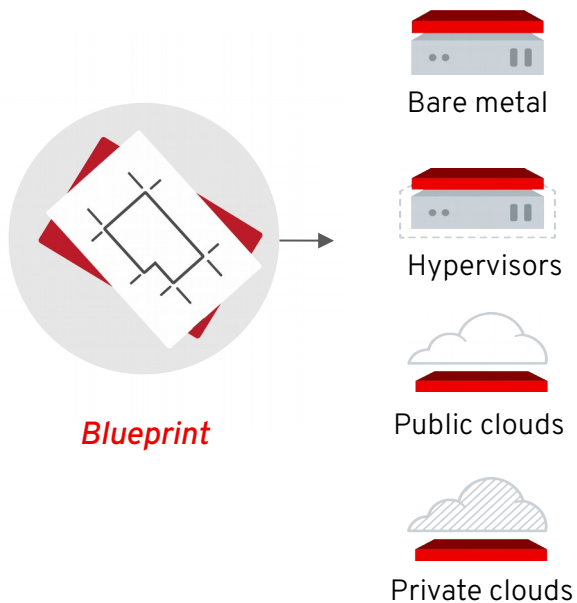
## *Continuous assessment*

Real-world results to help find new risks

## *Simpler remediations*

Tailored results at the host level

# Create images for all your environments with image builder



## **Single source**

Lets you create gold images for any environment from the same blueprint increasing stability and consistency

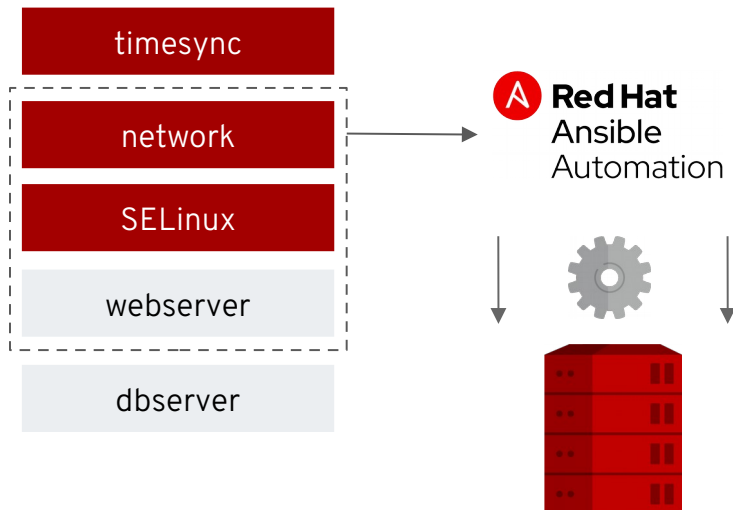
## **Any footprint**

Supports public cloud, private cloud, enterprise hypervisors, and bare metal

## **Simple interface**

Provides web-based view within the web console for selecting packages and creating blueprints

## Speed automation creation with system roles



### *Common automation*

Manage multiple versions of Red Hat Enterprise Linux from a single role

### *Reduced rework*

Import provided roles to eliminate task creation in playbooks

### *Easy switching of providers*

Change between default and optional tools quickly and safely

## Optimized experiences for mission-critical databases

### Microsoft SQL Server

- Red Hat Enterprise Linux is the reference platform for SQL Server on Linux
- Benchmark-breaking performance
- Fast deployment and portability via containers



- Red Hat Enterprise Linux is 1 of only 2 certified Linux distributions
- More than 20 years of Red Hat and SAP joint engineering collaboration
- Exceptional performance and scalability –the largest SAP install in the world runs on Red Hat Enterprise Linux

# Hardware partner ecosystem

SILICON

OEMS

IHVS

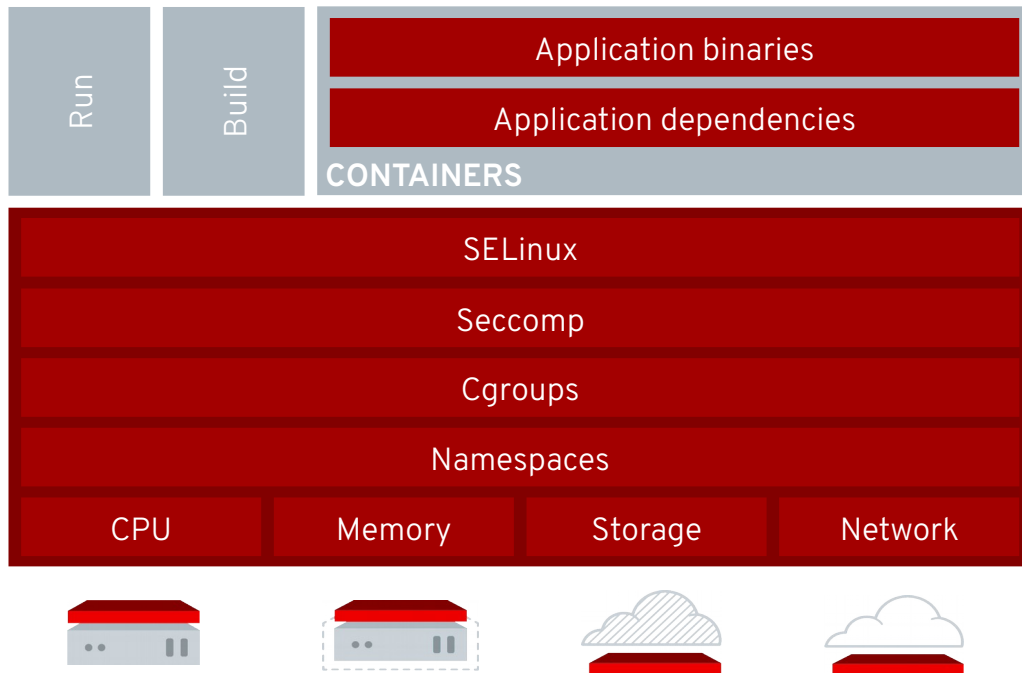


## Red Hat Certified Cloud and Service Providers

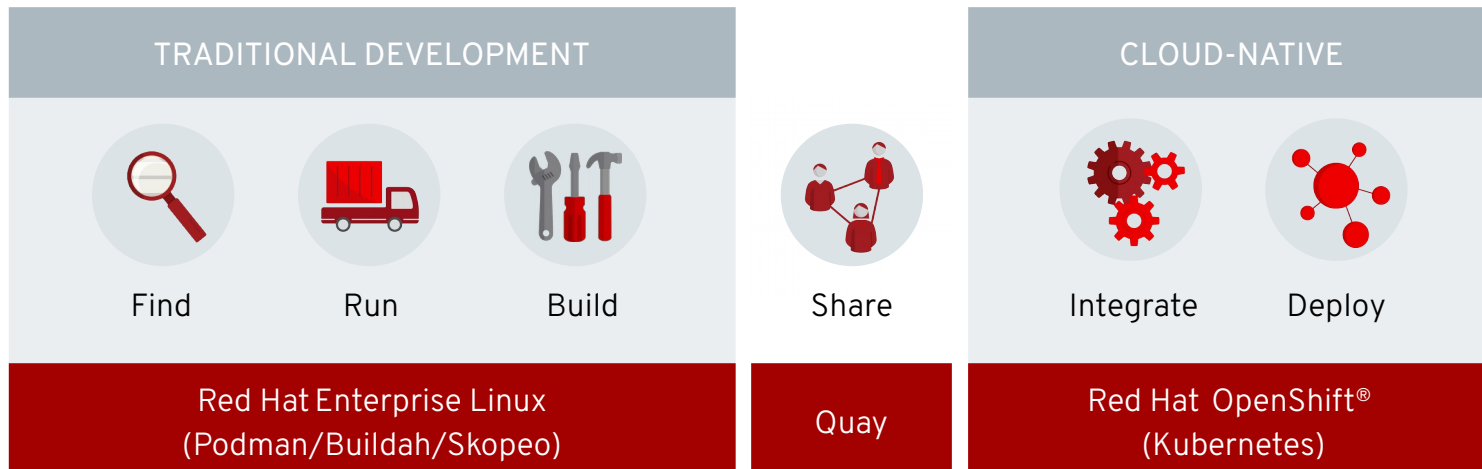
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# Containers are Linux

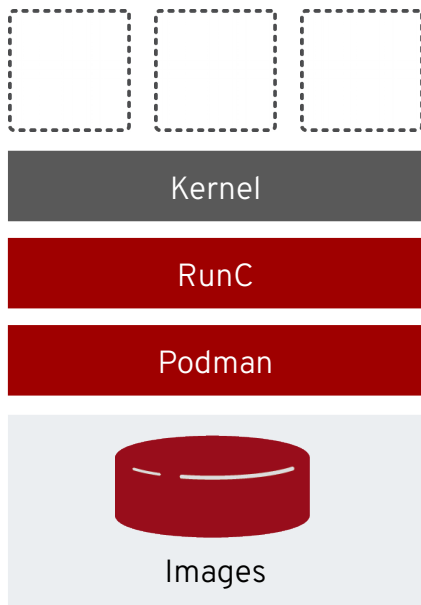


## Powering the adoption of containerized workloads





## Manage containers with Podman



### *Fast and lightweight*

No daemons required

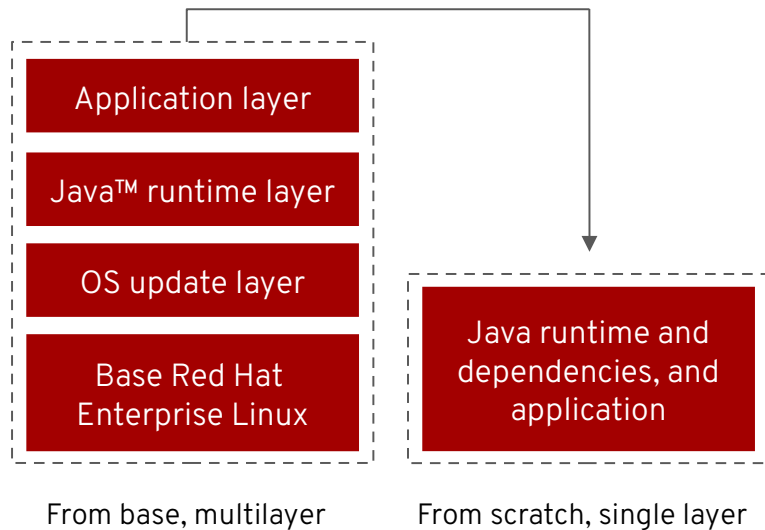
### *Advanced namespace isolation*

Rootless operations for container run and build

### *Open standards compliant*

Creates and maintains any standard Open Containers Initiative (OCI) - compliant containers and pods

## Create images with Buildah



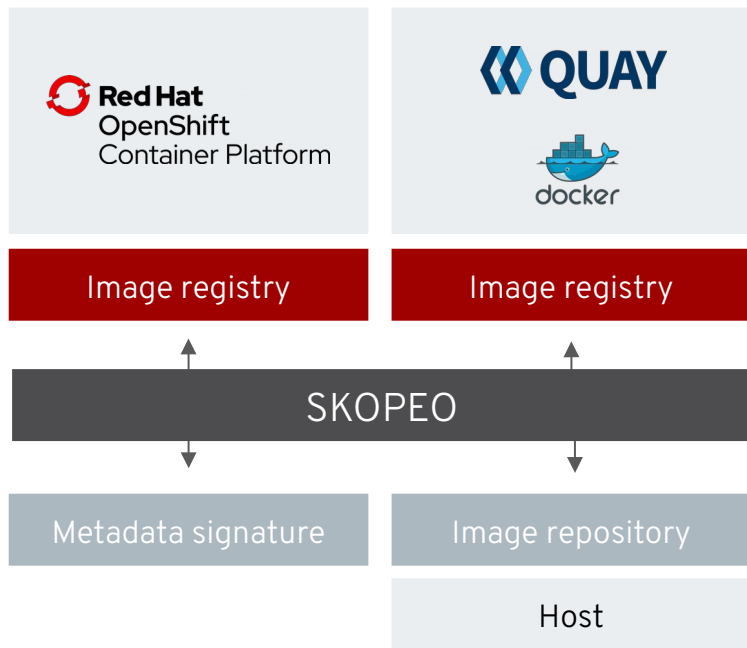
### *More control*

Scriptable tooling for fine-grained image control, and maximum control starting from base or scratch images

### *Minimization of images*

Elimination of unneeded dependencies by using host-based tools

## Inspect and transport images with Skopeo



### *Inspect images remotely*

Examine image metadata without needing to download

### *Publish and transfer images*

Copy images from registries to hosts or directly between registries

### *Sign and verify images*

Supports GPG key signing on publish

## Configuring systemwide cryptographic policies



### *Central configuration*

Set acceptable algorithms from a single tool

### *Improved consistency*

Covers multiple cryptographic providers and consumers like TLS, kerberos, and Java

### *Built-in policies*

Including legacy systems requiring 64-bit security and FIPS allowed or approved algorithms

# Recording user terminal sessions with tlog

The image shows a Red Hat Enterprise Linux 8 configuration window for 'rhe18-1.examp...' with the 'Session Recording' section selected. The configuration includes fields for 'File Path', 'Sylog Facility' (set to 'authpriv'), 'Sylog Priority' (set to 'info'), 'Journal Priority' (set to 'info'), and 'Journal Augment' (checked). A notification at the top says 'ATTENTION! Your session is being recorded!'.

Below the configuration window is a terminal window showing a terminal session recording. The terminal output is as follows:

```
$ ssh cloud-user@rhe18-1.example.com
Activate the web console with: systemctl enable --now cockpit.socket

Last login: Tue Apr 2 13:10:47 2019 from 192.168.122.1

ATTENTION! Your session is being recorded!

[cloud-user@rhe18-1 ~]$ sudo ls /etc/sss/conf.d
sss-session-recording.conf
[cloud-user@rhe18-1 ~]$ sudo cat /etc/sss/conf.d/sss-session-recording.conf
[session_recording]
scope=some
users=cloud-user
groups=
[cloud-user@rhe18-1 ~]$ exit
logout

Connection to rhe18-1.example.com closed.
$
```

Below the terminal window is a 'Session Recording' window showing a playback interface. The interface includes a play button, a progress bar, and a search bar. The recording details are as follows:

```
Recording
ID: 74e30697996042792a9f705c9836674cc08523
Hostname: rhe18-1.example.com
Boot ID: 74e30697996042792a9f705c983667
Session ID: 4
PID: 19661
Start: 2019-04-02 11:51:17
End: 2019-04-02 11:51:40
```

## Audit activities

Create a record of actions taken for review against security policies

## Create visual guides

Build run books and training materials with demonstrations

## Record and play back

Logged via standard channels with multiple playback options

## Improved firewall management with **nftables**



### *Consolidated filtering*

Supports IPv4, IPv6, ARP, and Bridge filtering in a single tool

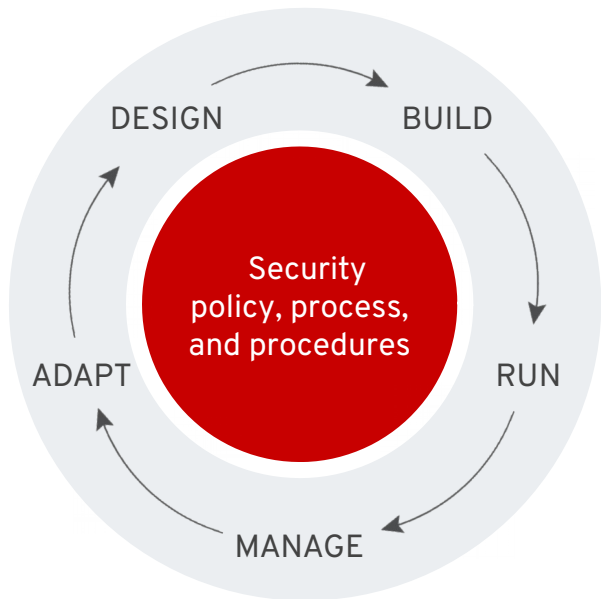
### *Simpler rule creation*

Multiple matches and actions reduce the number of rules required

### *Improved tracing*

Provides easier debugging and verification of actions taken on any packet

## A highly secure platform



### *Latest protocol support*

Including TLS 1.3 via OpenSSL 1.1.1

### *Hardened code*

Including PIE and RELRO binaries and code analysis in our pipelines

### *Integrated identity management*

As a stand-alone provider or trusted member of an Active Directory, with expanded integrations to tools like the web console

### *Updated tools*

Including the LUKS v2 on-disk format for encryption

# Remote single-system views in the with cockpit

The screenshot displays the Cockpit interface for a Red Hat Enterprise Linux 8 system. The interface is divided into several sections:

- System Monitoring:** Two line graphs showing I/O activity. The left graph is labeled 'Reading' and the right is 'Writing', both showing activity over time from 13:25 to 13:29.
- Filesystems:** A table listing mounted filesystems:
 

Name	Mount Point	Size
/dev/vda1	/	1.63 / 9.99 GiB
cidata	-	366 KiB
- NFS Mounts:** A section indicating 'No NFS mounts set up' with a plus icon to add mounts.
- Storage Logs:** A log viewer showing events for 'udisksd' on April 2, 2019:
 

```

13:16 g_object_notify: object class 'UDisksObjectS... udisksd
13:16 g_object_notify: object class 'UDisksObjectS... udisksd
13:16 Loading module libudisks2_lvm2.so... udisksd
13:16 Loading module libudisks2_iscsi.so... udisksd
13:16 Acquired the name org.freedesktop.UDisks2 on... udisksd
13:16 udisks daemon version 2.8.0 starting udisksd
      
```
- RAID Devices:** A section indicating 'No storage set up as RAID' with a plus icon to add RAID devices.
- Volume Groups:** A section indicating 'No volume groups created' with a plus icon to add volume groups.
- VDO Devices:** A section with a button 'Install VDO support' and the text 'VDO support not installed'.
- iSCSI Targets:** A section indicating 'No iSCSI targets set up' with a plus icon to add targets.
- Drives:** A list of storage devices:
  - VirtIO Disk: 10 GiB Hard Disk, R: 0 B/s, W: 0 B/s
  - QEMU DVD-ROM (QM00001): Optical Drive, R: 0 B/s, W: 0 B/s

## *Browser-based interface*

Offers remotely accessible user interface using host security mechanisms

## *Consolidated view*

Provides single view of tasks to speed understanding and completion

## *Standard management tools*

Uses system tools to change state, not a separate workflow



# New in cockpit

RED HAT ENTERPRISE LINUX

Privileged Cloud User

rhel8-1.exempl...

System

Logs

Storage

Networking

Virtual Machines

Accounts

Services

Session Recording

Applications

Diagnostic Reports

Kernel Dump

SELinux

Software Updates

Subscriptions

Terminal

KIB/s Reading

KIB/s Writing

Filesystems

Name	Mount Point	Size
/dev/vda1	/	1.63 / 9.99 GiB
cidata	-	366 KiB

NFS Mounts

No NFS mounts set up

Storage Logs

April 2, 2019

13:16 g_object_notify: object class 'UDisksObjectS...	udisksd
13:16 g_object_notify: object class 'UDisksObjectS...	udisksd
13:16 Loading module libudisks2_lvm2.so...	udisksd
13:16 Loading module libudisks2_iscsi.so...	udisksd
13:16 Acquired the name org.freedesktop.UDisks2 on...	udisksd
13:16 udisks daemon version 2.8.0 starting	udisksd

RAID Devices

No storage set up as RAID

Volume Groups

No volume groups created

VDO Devices

Install VDO support

VDO support not installed

iSCSI Targets

No iSCSI targets set up

Drives

- VirtIO Disk  
10 GiB Hard Disk  
R: 0 B/s W: 0 B/s
- QEMU DVD-ROM (QM00001)  
Optical Drive  
R: 0 B/s W: 0 B/s

## Virtual machines

Create and manage virtual machines

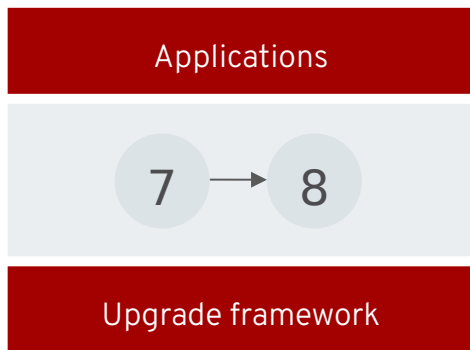
## Network-bound disk encryption

Enroll disks with Tang server and manage LUKS keys

## Single sign-on configuration

Automatically configure when joining a domain

## In-place upgrades for your systems with **leapp**



### *Reduced migrations*

Analyze systems to determine if upgrading in place can avoid a costly migration

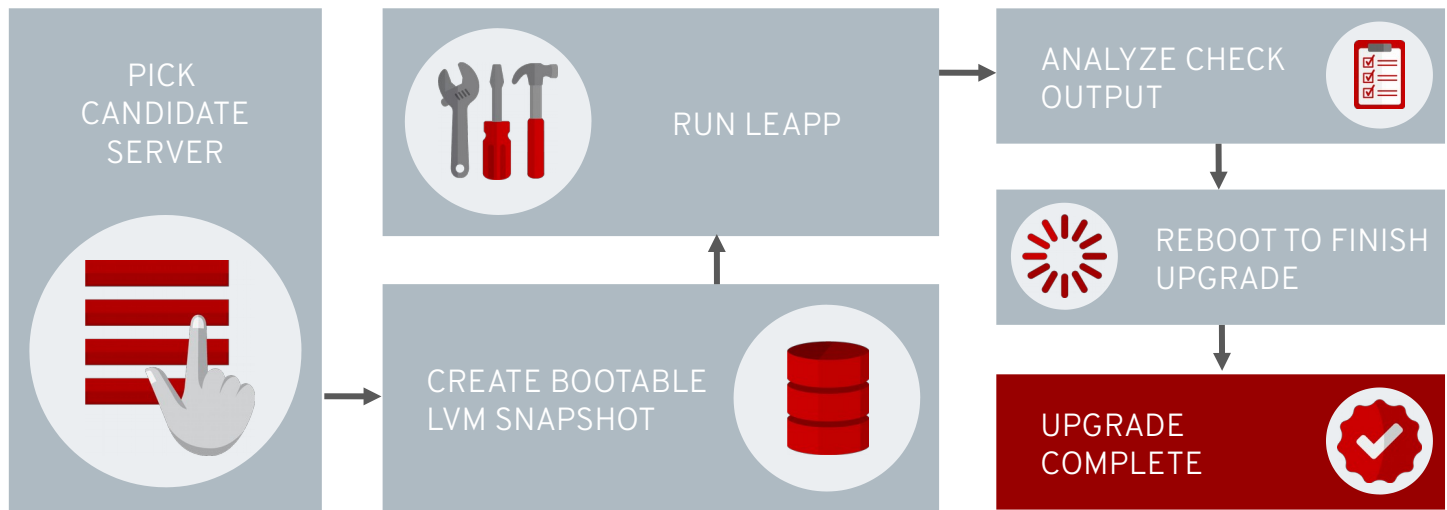
### *Easy rollback options*

Combine with bootable LVM snapshots for safety

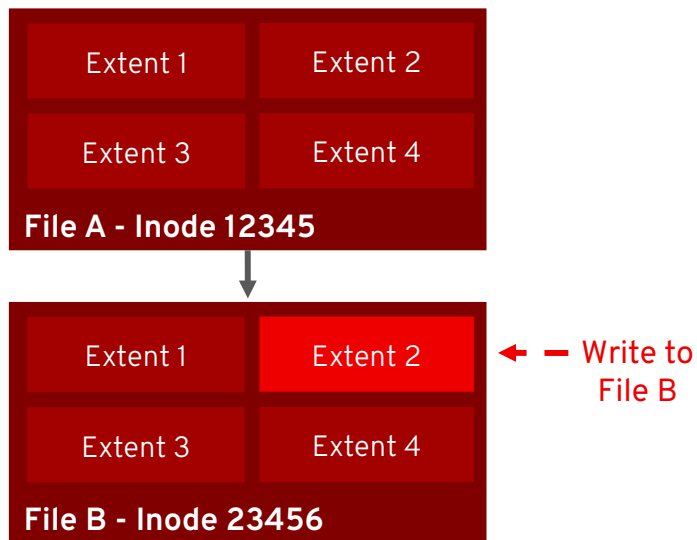
### *Improved framework*

Get better analysis and a simplified process with a more extensible framework

## Can I upgrade this host?



## Fast file copy with XFS shared data extents



### *Filesystem level copy-on-write*

XFS creates new extents when data is changed in a copy without additional application integrations

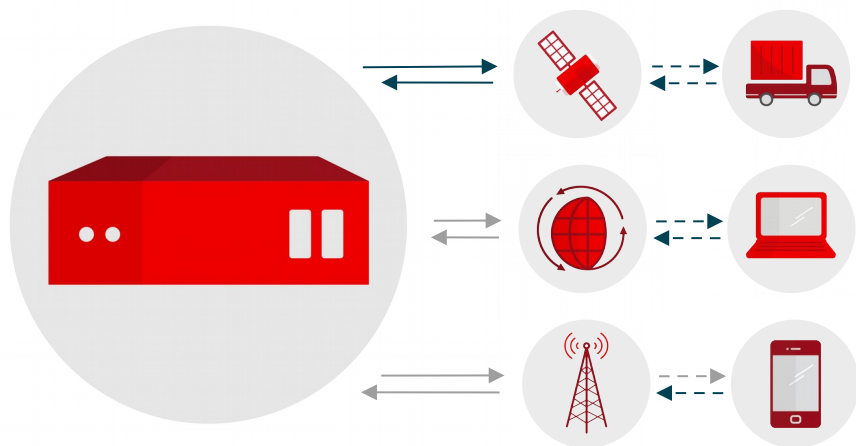
### *Separate metadata*

Copies have unique file system metadata allowing for owner, group, and permission changes

### *Fast operations*

XFS creates new inode and metadata instead of full data copy

## Improve network performance with bandwidth and round-trip propagation time congestion algorithm



### *End-to-end performance*

Link capacity calculation and management at server do not require client end modifications

### *High-latency links*

Improved performance over other algorithms on networks with high latency and congestion

### *More choices*

An improved network stack combined with BBR and other algorithms lets you select the highest performance combinations

# Thank you

Red Hat is the world's leading provider of enterprise open source software solutions. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500.



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