Red Hat
Enterprise Linux

Red Hat Enterprise Linux Roadmap

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AGENDA:

Red Hat Enterprise Linux Overview

Red Hat Enterprise Linux Highlights

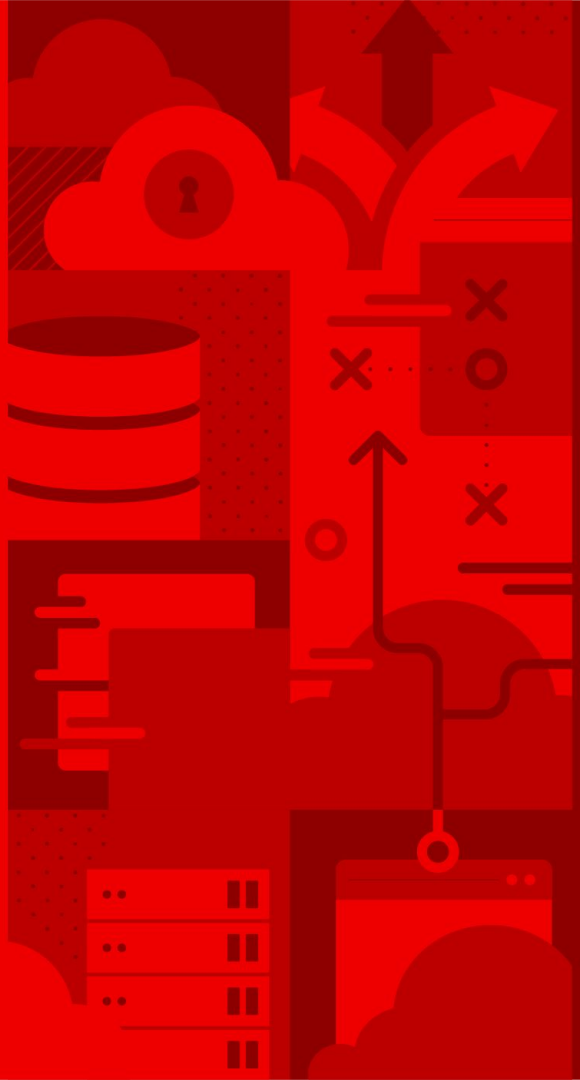
Red Hat Enterprise Linux Lifecycle

Red Hat Enterprise Linux Detailed Roadmap

Linux is the foundation

The innovation engine for hybrid cloud is Linux.

Red Hat Enterprise Linux provides an intelligent OS that is the consistent foundation for the enterprise hybrid cloud. It allows you to deliver any application on any footprint at any time, giving you control, confidence, and freedom.



RED HAT ENTERPRISE LINUX HIGHLIGHTS

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QUICK FACTS

Name	Details
Kernel version	4.18x
System compiler	gcc 8.2, llvm 6.0
Hardware architecture	Intel/AMD 64-bit, IBM Power LE, IBM z Systems, ARM 64-bit
Default file system	XFS
Package management	Yum4 (based on DNF)
Init System	Systemd v239

SIMPLIFIED DELIVERY OF CONTENT

Consuming RHEL content is now easier!

Red Hat Enterprise Linux =

BASE OS

1. Provides the foundation of our operating system
2. Completely self contained operating system
3. Guaranteed 10 years of enterprise support

+

APPLICATION STREAMS

1. Provides flexible lifecycle options
2. Fully enterprise supported
3. Common Red Hat Enterprise Linux languages supported at launch
4. Defaults to 10 years of enterprise support

Note:
RHEL subscriptions also provide access to additional content for Developer use. More details available at the developer.redhat.com

MIGRATING TO RHEL 8

Best practices and tooling greatly improved to cover additional use cases

PRE-UPGRADE

Doing a risk assessment before making any changes is critical to understanding what is about to happen

UPGRADE

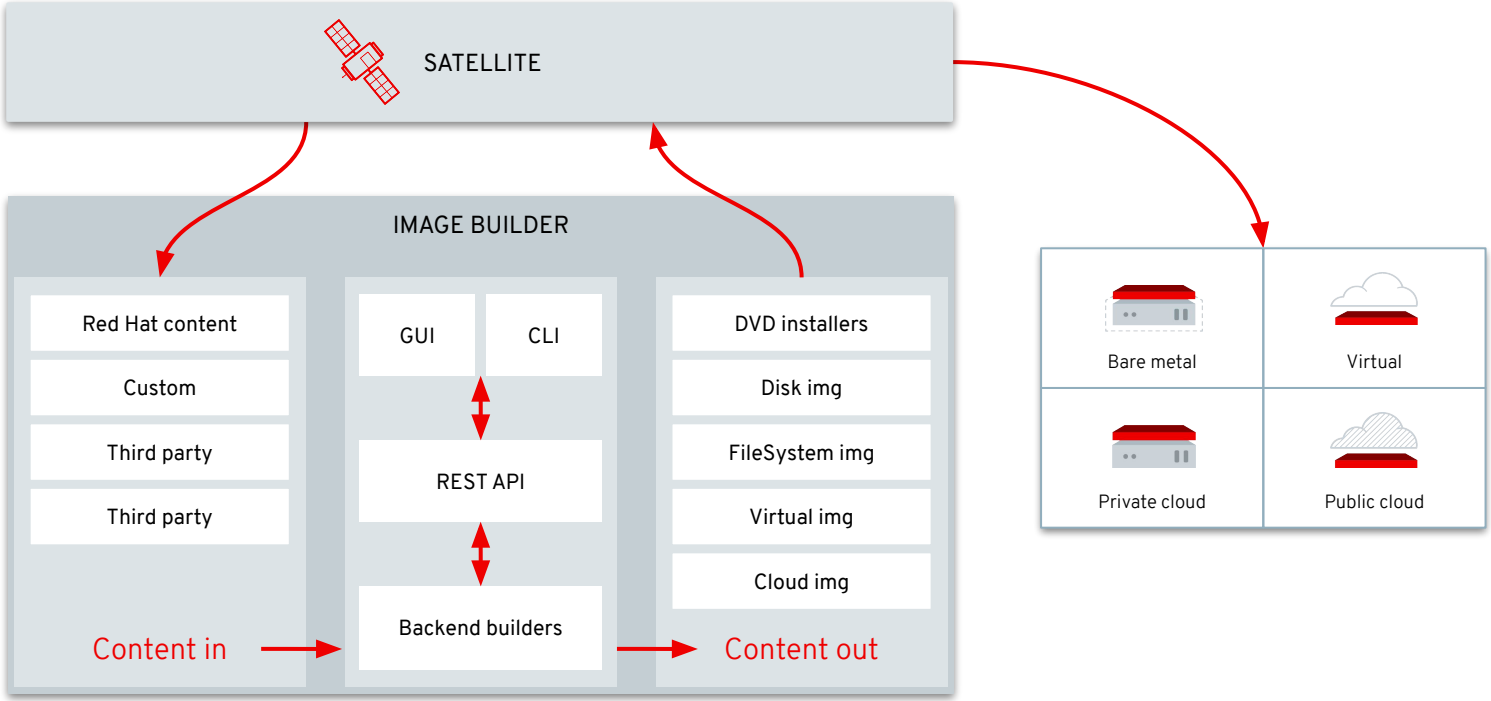
Fully plugable and fully supported upgrade framework makes moving to new major releases of RHEL easy

ROLLBACK

If anything goes wrong, BOOM will let you rollback to the previous snapshot - this is not a downgrade but instead a full byte-level rollback

IMAGE BUILDER

Tooling to enable automated creation of customized Red Hat® Enterprise Linux® OS images



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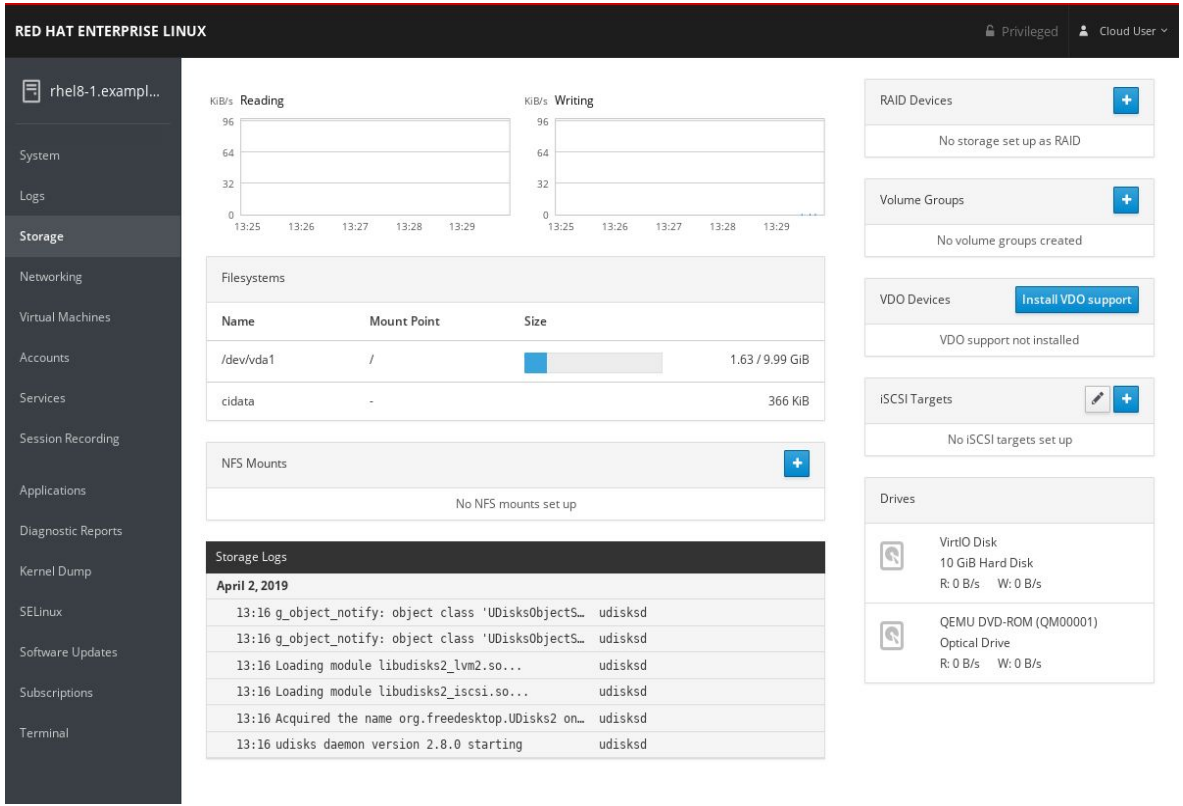
MANAGING A RHEL SYSTEM USING THE WEB CONSOLE



Browser based interface
Remotely accessible user interface using host security mechanisms

Consolidated view
Single view of tasks speeds understanding and completion

Standard management tools
Uses system tools to change state, not a separate workflow

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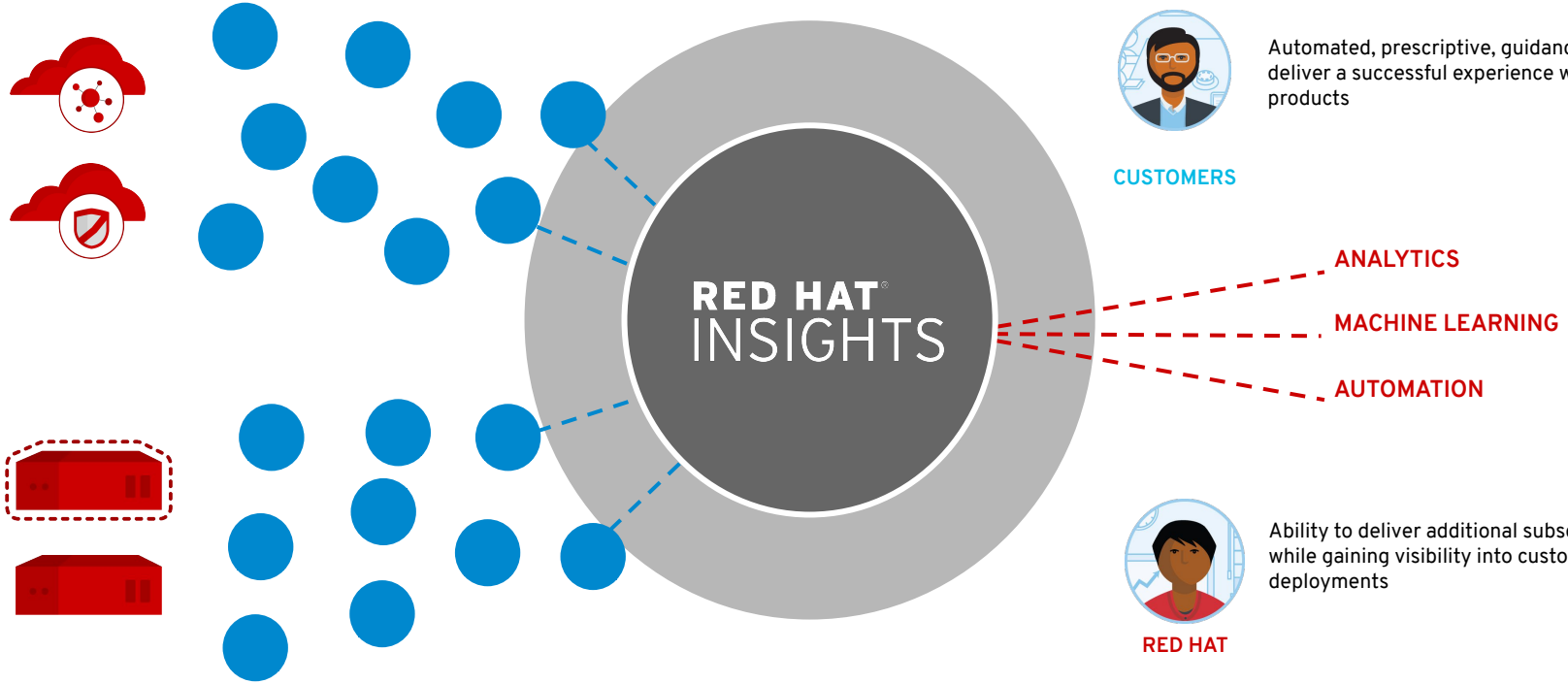
RED HAT INSIGHTS

Automated, experience driven, proactive guidance for customer success with our products

NOW INCLUDED with all RHEL subscriptions.



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Built-in Defaults

Starting with 8, Red Hat is fully supporting a library of configurations to match complex enterprise grade workloads

TUNED PROFILES

Supported tunables for MS SQL, SAP HANA, Oracle Database, NFV hosts and more!

SYSTEM ROLES

Supported Ansible roles and modules providing a common configuration interface

Starting with networking, SELinux, time sync, and kdump

CRYPTO POLICIES

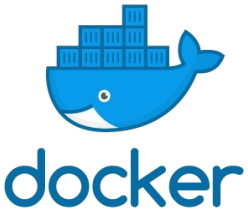
Supported crypto policies to match your encryption needs

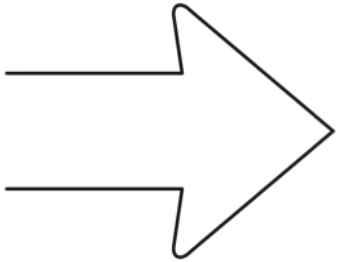
First Enterprise Linux with TLS 1.3 for secure, fast over-the-wire encryption

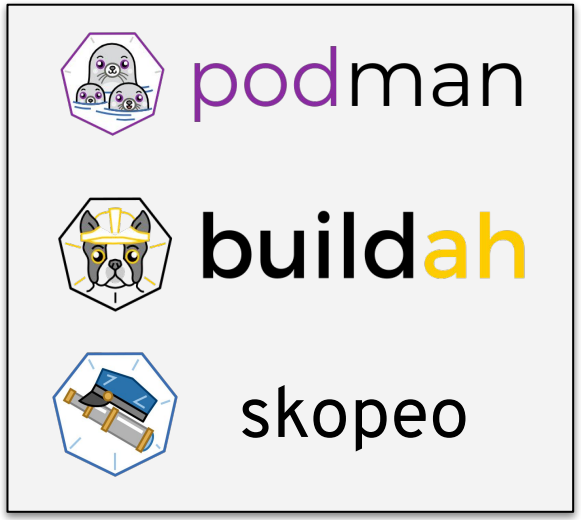
Current policies include Legacy, Default (PCI-DSS), FIPS, and Future

RHEL : A MODERN OS

Containers and cloud







OPEN CONTAINER INITIATIVE

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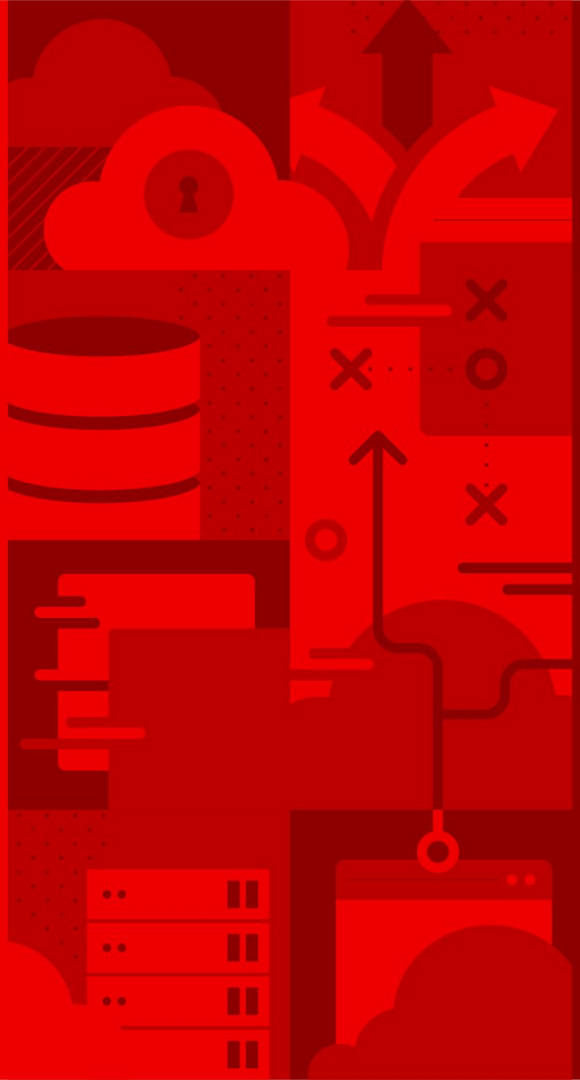

RED HAT ENTERPRISE LINUX LIFECYCLE

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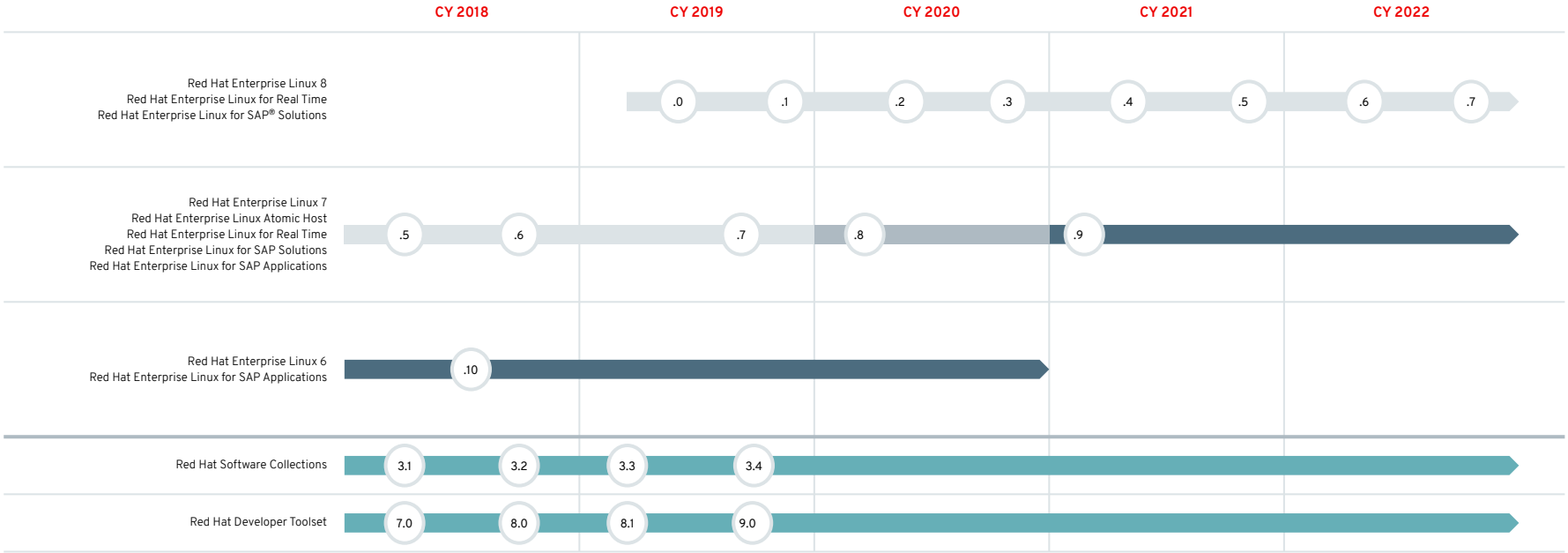
RED HAT ENTERPRISE LINUX ROADMAP



RED HAT ENTERPRISE LINUX LIFE-CYCLE PAGE »

FULL SUPPORT
production phase 1

MAINTENANCE SUPPORT 1
production phase 2

MAINTENANCE SUPPORT 2
production phase 3

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Simplified 10 Year Life Cycle

Red Hat Enterprise Linux 8

10 Year support + 2 year ELS

Full Support for 5 years
As we have today; new features, new hardware enablement

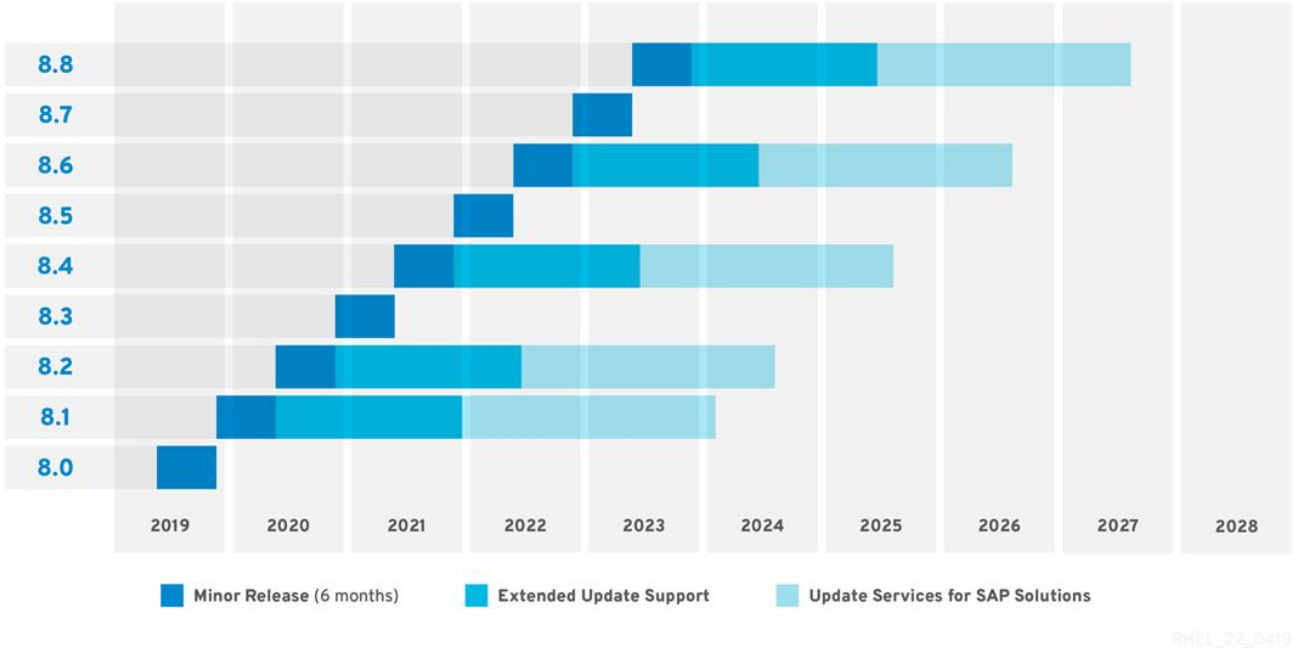
Maintenance Support for 5 years
No new features or hardware enablement
Security and bug fixes only

All predicated on a 3 year major release cycle

Links
https://access.redhat.com/support/policy/updates/errata

Planned RHEL 8 Life Cycle

Red Hat Enterprise Linux 8



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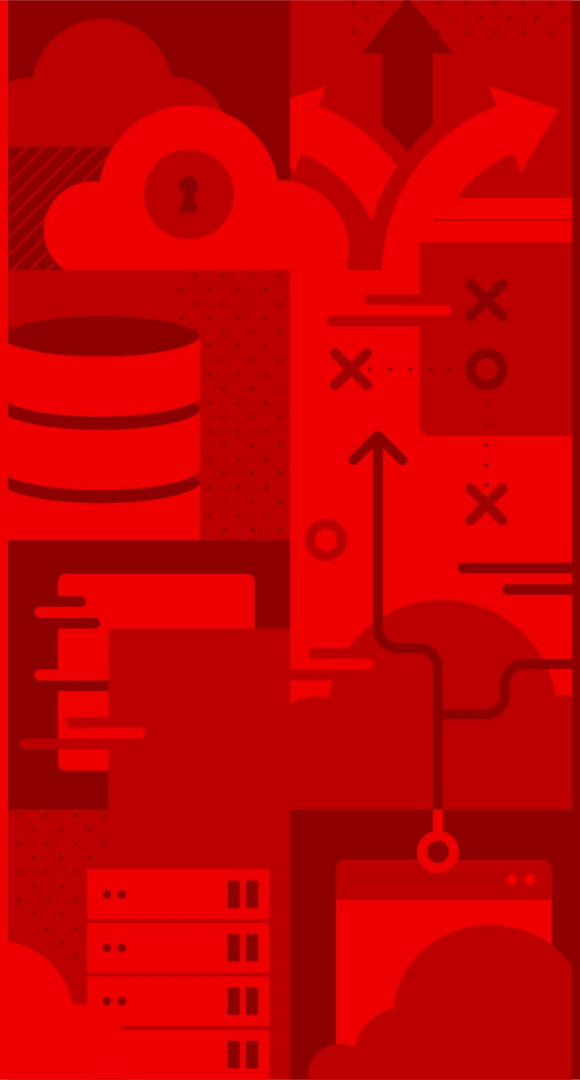

RED HAT ENTERPRISE LINUX DETAILED ROADMAP

INCLUDING USE CASES AND FEATURE SPECIFIC INFORMATION

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SECURITY AND COMPLIANCE

Red Hat Enterprise Linux

Common Criteria and FIPS 140-2*

AUTOMATE regulatory compliance and security configuration remediation.

GAIN peace of mind with the Red Hat open source secure supply chain and SSO.

RECEIVE continuous vulnerability security updates.

ENABLE hybrid cloud deployments, working in a heterogeneous environment.

Focus on **FORTIFYING CUSTOMER DEPLOYMENTS**

* First distribution with Linux Containers Framework Support to be Common Criteria-certified, NIST-certified scanner includes National Checklist content for PCI-DSS, DISA STIG, etc.

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AUTOMATED SECURITY COMPLIANCE

BOB

System admin

SWS, a cloud service provider offering storage and application services to its clients

Setting security policies in Red Hat Enterprise Linux »

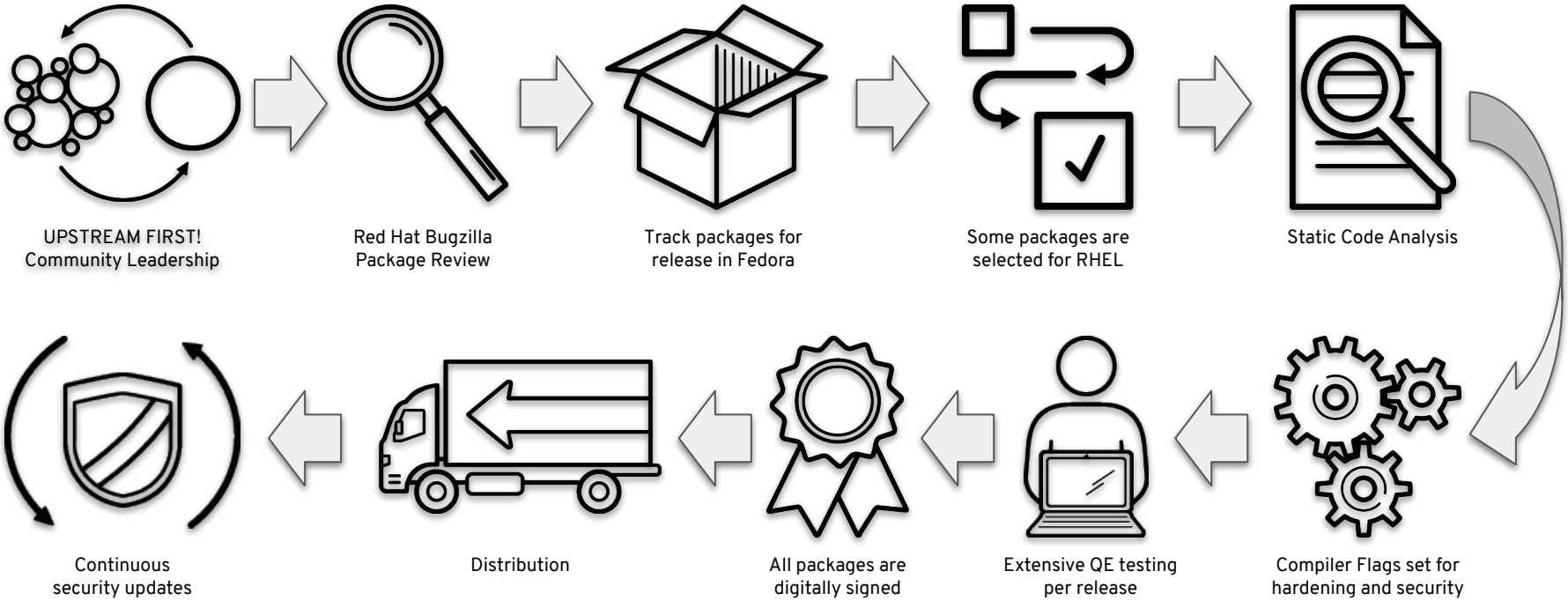
USER STORY

"I want to automatically enforce security compliance standards across the hybrid cloud in order to satisfy my auditing and legal requirements."

SOLUTION

7.7	8.0	Future
SELinux system roles for Ansible	OpenSCAP remediation automation with Ansible and latest security profiles	Common criteria and FIPS secure defaults
FIPS validation	Systemwide crypto policies	OpenControl compliance reporting
OpenSCAP remediation automation with Ansible		Trusted execution environments
Live kernel patching to limit service disruption		

SUPPLY CHAIN SECURITY



CORE KERNEL ROADMAP

8.1

Increase security with dynamic memory layout

- Full support for KASLR
- Memory protection keys (Intel)
- Secure memory protection (AMD)

Intelligently determine source of system pressure

- Pressure gauge (PSI) implemented for memory, cpu, and i/o

Include Pre-Built Tools to enable easy kernel tracing

- eBPF: bcc-tools (Full Support)

High-level kernel tracing language similar to DTrace

- eBPF: bpftrace (Tech Preview)

Live Patching

- Dramatically reduces reboots for Critical CVE fixes

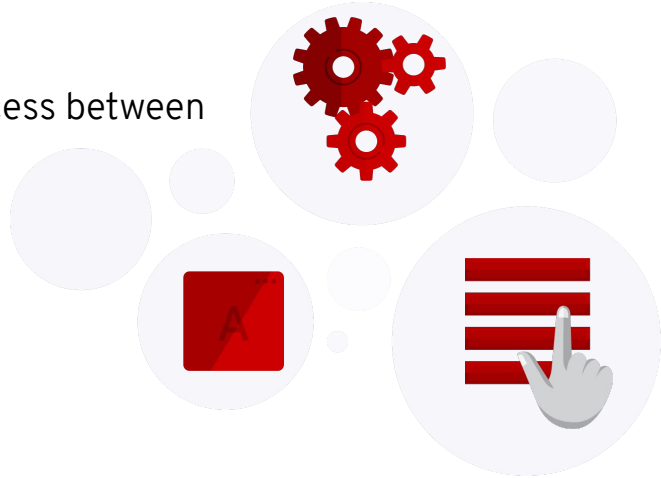
KERNEL LIVE PATCHING

Minimizes reboots for security patches

- Cumulative, critical and important CVEs only
- One year “lookback”
- Supported on EUS releases only (but everyone has access between minor releases)

Growing feature set over time

- User space patching of glibc/openssl
- Multi-arch support (x64 and Power only currently)
- Enhanced Satellite integration
  - Live/conventional patch alignment
- Insights integration and reporting
- Web console integration



CONTAINERS ROADMAP

7.7

Workstation
- Expanded podman, buildah and skopeo to Workstation for use with Red Hat Universal Base Image and ISV delivered images (no RHEL Server images/rpms)

Rootless Containers Tech Preview
- Run containers more securely as regular users

Expanded Developer Use Cases
- Golang images/RPMS released under Red Hat Universal Base Image

8.1

Rootless Containers Generally Available
- Run containers more securely as regular users

Toolbox
- Administrator tools you can bring with you

Unified support tools
- Simplified troubleshooting and support engagement

Expanded Developer Use Cases
- Golang images/RPMS released under Red Hat Universal Base Image

SUPPORT FOR MULTIPLE ARCHITECTURE

Through matching service levels and life-cycle alignment for all architectures, Red Hat aims, wherever possible, to provide parity across the range of architectures.

AMD64 and Intel 64
The platform we all know and love

POWER
Fast, efficient, reliable throughput built on open standards delivering high performance for workloads such as SAP HANA, HPC, and AI/ML

ARM
Low power consumption with high-density scale, supported by a growing number of system vendors offering "Server-Ready" compliant servers

s390x
Highest security with time tested dependability and performance

IoT ENABLEMENT

HATTER CHEMICALS

Manufacturing

A chemical manufacturing company based in Florida

IoT in Red Hat Enterprise Linux »

USER STORY

A system that is easy to use and supports seamless communication

A strong secure system that protects IoT gateways from attacks

SOLUTION

7.6	8.0	Future
IoT core enablement • Device communications: Bluetooth LE, CAN bus, RS-485 serial • Cellular modem • eMMC 5.0 embedded storage	**Multiplatform support** **Full TPM 2.0 environment** **Encrypted boot**	**5G WAN** **Smaller footprint** **Hardware root of trust:** • Storage encryption • System identity • Crypto key protection

ARTIFICIAL INTELLIGENCE ROADMAP

7.6

Nvidia GPU (third-party driver and runtime)

GPU virtualization

8.0

Red Hat/Nvidia coordination of software releases

Support for GPU in containers

Future

Production AI/ML workflows

Availability of major AI/ML frameworks in containers

Orchestration of GPU in container

Improved experience using GPUs

Improved experience using FPGAs

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