



Red Hat Enterprise Linux 8.2

What's new - Technical Overview

June 24, 2020

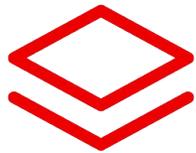
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Principle Technical Contributor

Red Hat Enterprise Linux

Red Hat Enterprise Linux 8.2

General availability April 28, 2020



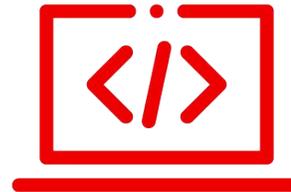
Consistent Platform

- 6 month release cadence facilitates upgrade planning
- Ease of upgrade from earlier releases
- Simplified installation and configuration
- Monitor and manage at scale with Insights



Hybrid Cloud

- Build and deploy on bare metal, VM or public clouds
- Simplify workload mobility
- CoreOS and Universal Base Images are RHEL based for consistency across the Red Hat Portfolio
- Container Tools: improved deployment experience



For Developers

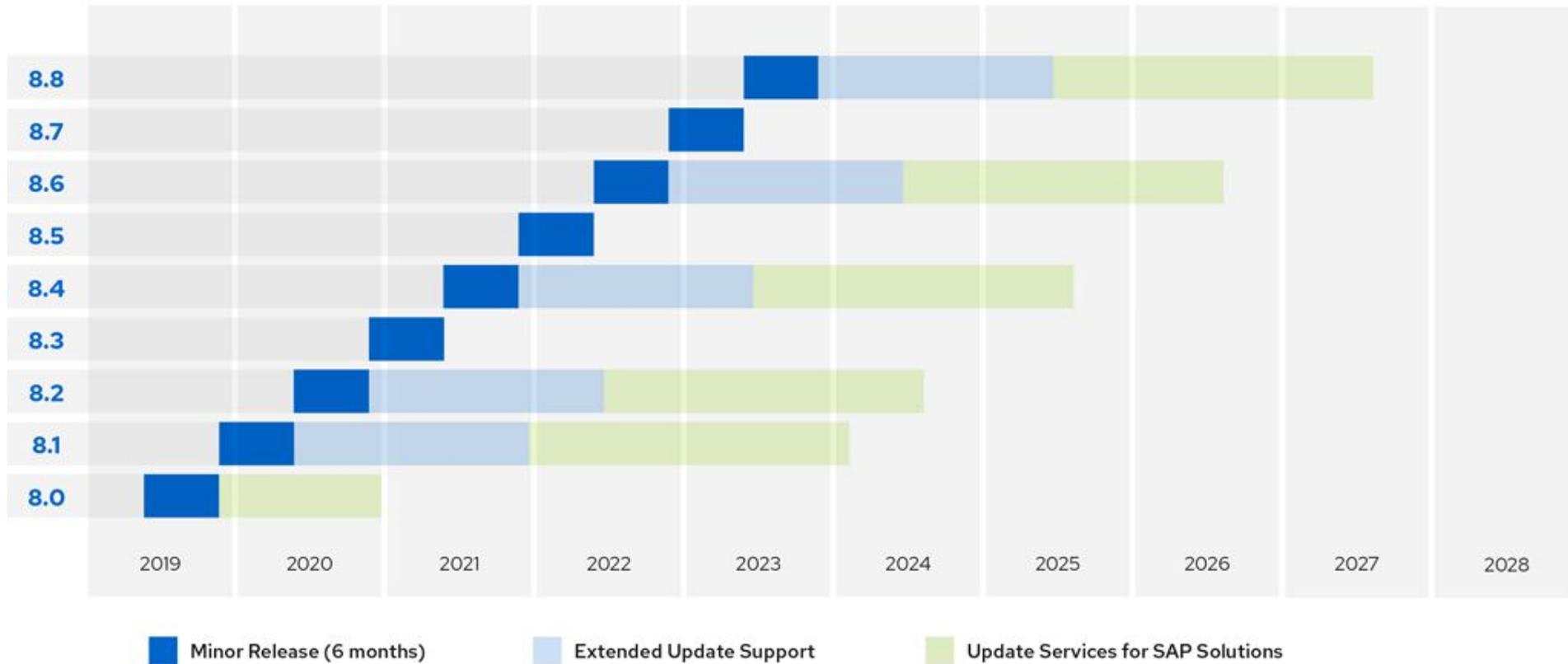
- Latest developer tools and languages delivered in application streams
- Freedom to share UBI based containers
- Certification programs for partners expands ecosystem of supported solutions



Performance

- Selection of tuning profiles
- Tracing and monitoring tools help identify bottlenecks across complex deployments
- Monitor throughput of Microsoft SQL Server databases on RHEL

RHEL 8 - Published Life Cycle



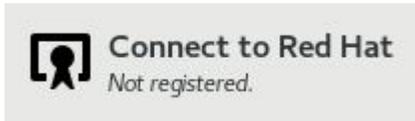
RHEL_8_0320

On ramp non-Linux users
more quickly without the fear
of the command line.



RHEL 8 lowers the barrier of entry to Linux for Windows and Linux beginners with enhanced usability and familiar, intuitive deployment and management interfaces.

Insights & subscription registration from the beginning



Authentication Account Activation Key

User name

Password

Purpose Set System Purpose

Role

SLA

Usage

Insights Connect to Red Hat Insights

► Options

Not registered.

The Red Hat Enterprise Linux installer, now includes the ability for customers to register their system with Subscription Manager and Red Hat Insights services.

Also integrated into Web Console to configure later or update if needed.

New and improved Red Hat Insights

Still included with Red Hat Enterprise Linux subscription, now with more value

New and expanded services provide additional security and operational efficiency.

*Active RHEL subscriptions versions 6.4 & higher



Dashboard

Advisor >

Vulnerability

Compliance >

Patch

Drift >

Policies

Inventory

Remediations

Subscription Watch

Documentation

Overview

Insights system inventory

100000 0% of total systems

Systems running insights-client

- stale systems
- systems to be removed

Subscription watch utilization summary

Red Hat Enterprise Linux 75%

Red Hat OpenShift 15%

Patch

354 systems affected



Advisor recommendations

5 incidents detected



1 Critical 30 Important 86 Moderate 28 Low

145 recommendations impacting 288 systems

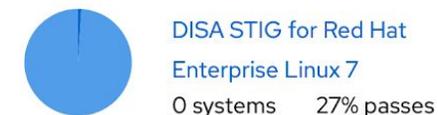
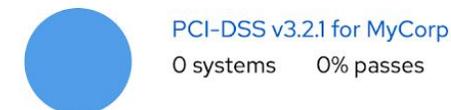
Vulnerabilities

2707 CVEs impacting your systems



230 CVSS 8.0 - 10 2055 CVSS 4.0 - 7.9 422 CVSS 0.0 - 3.9

Compliance [Report](#)



9 more compliance policies

Overview of expanded Red Hat Insights services



Advisor
Availability, performance, and stability risk analysis



Vulnerability
Assess, remediate and report on Red Hat Enterprise Linux Common Vulnerability and Exposures (CVEs)



Compliance
Assess and monitor regulatory compliance, built on OpenSCAP



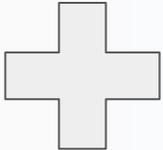
Drift
Create baselines and compare system profiles



Policies
Define and monitor against your own policies to identify misalignment



Patch
Analyze for Red Hat product advisory applicability to stay up to date



Subscription Watch
Track progress of your Red Hat subscription usage efficiently and confidently.

Faster and more consistent delivery in any footprint...



...with full coverage native automation. RHEL 8 provides a path to an API-driven control plane with enhanced system design and automation capabilities and integrations.

tuned rebased



Now version 2.13

- architecture-dependent tuning framework
- Multiple include directives



Updated **latency-performance** profile:

- Increased opportunity for context switching means less wasted CPU time
- Benefits workloads like Online Transaction Processing



Updated **sap-hana** profile:

- More consistent scheduling for shorter running processes
- Smaller read-ahead for I/O requests resulting in less time spent on I/O operations

cgroup v2

Advanced Memory Controller

Hard and soft memory registrations

Adjust or disable swap

Unified Hierarchy

Controllers now align to groups rather than groups being subjugated to controllers

systemd Integration

systemd can now utilize all controllers when defining a cgroup for a service

More details and examples from Marc Richter's blog:
[World domination with cgroups in RHEL 8: welcome cgroups v2!](#)

Red Hat Content Delivery Network (CDN) now usable as an installation source



Register at installation

As part of the installation, register with Subscription Manager and Red Hat Insights.



Always begin up to date

Systems installed from the CDN have the most up to date packages applied to them as part of the installation



Automate registrations

Updating kickstart with an `rhsm` command will allow for systems to be automatically entitled and registered with Insights when installed

Delivers a highly secure platform in cloud infrastructures and for emerging workloads like machine learning.



RHEL 8 lowers the barrier of adoption to new technologies like GPUs while minimizing the attack surface by only deploying the packages you need to support your workload.

Update for Security Certifications

Release	Extended Update Support (EUS)	Common Criteria	FIPS
8.0	No	No	No
8.1	Yes	Submission to National Information Assurance Partnership (NIAP) paused due to COVID-19 shutdown	Modules in Process
8.2	Yes	Intended to submit shortly after GA	Intended to submit shortly after GA

New OpenSCAP profiles



Australian Cyber Security Center (ACSC)
Essential 8

[OpenSCAP profile details](#)



DISA STIG (Draft) for Red Hat Enterprise Linux 8

[OpenSCAP profile details](#)

Customizable System-wide Crypto Policies



Customize existing policies

Exempt applications from using
System-wide Crypto Policies



Create your own custom policy

Administrator defined System-wide
Crypto Policies are also now supported

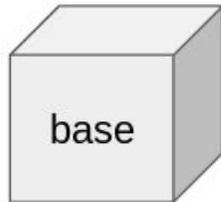


Try System-wide Crypto Policies now

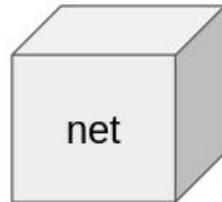
<https://lab.redhat.com>

udica: A new container tool for security

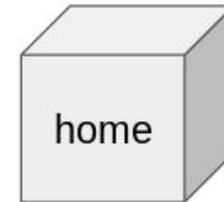
- Craft an SELinux Policy for specific containers
- Manage access to host system resources (logs, network components, files, etc.)
- Reduce risk from processes 'breaking out' of a container



Required for every container



+ Allowing bind on ftp_port_t (21)



+ Add only read/write perms

A seamless, non-disruptive migration process for existing RHEL deployments.



RHEL 8 enhances the application migration process from earlier RHEL 7 versions to RHEL 8 so you can take advantages of the latest innovations.

In-Place Upgrades

Making the move from RHEL7 to RHEL8 easier

In-Place Upgrade Report

Title	Risk Factor	Description	Tags
Packages will not be installed	High		repository
Packages will not be installed	High		repository
Difference in Python versions and support in RHEL 8	High	Remediation hint Links	python
Possible problems with remote login using root account	High	Inhibitor Remediation hint	authentication
chrony using default configuration	Medium		services tim
PowerTOP compatibility options removed in the next major version	Low	Remediation hint	tools monit
Grep has incompatible changes in the next major version	Low	Remediation hint	tools
Postfix has incompatible changes in the next major version	Low		services em
SELinux will be set to permissive mode	Low		selinux secu
Brltty has incompatible changes in the next major version	Low	Remediation hint	accessibility
Dosfstools incompatible changes in the next major version	Low	Remediation hint	filesystem t
SELinux relabeling has been scheduled			selinux secu

30 per page

High

Summary

In RHEL 8, there is no 'python' command. Python 3 (backward incompatible) is the primary Python version and Python 2 is available with limited support and limited set of packages. Read more here: https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/8/html-single/configuring_basic_system_settings/#using-python3

Links

- [Difference in Python versions and support in RHEL 8](#)

Remediations

Please run "alternatives --set python /usr/bin/python3" after upgrade

Step-by-Step remediation guidance

- Instructions to apply remediations to resolve the issues provided with the report
- Detailed information about the system resources involved in the detected issue
- Includes knowledge base articles and official Red Hat documentation¹
- Provides supplementary information to help customers make educated decisions around potential migration risks affecting their own applications

1) Whenever possible

Fastest time to “Hello World”...



...with streamlined access to high quality open source development tools. RHEL 8 delivers more versions and more updates of supported, popular open source language frameworks and databases.



Delivering new language and software choices with application streams

- GCC Toolkit 9.1
- Python 3.8
- Maven 3.6
- Postgres 12
- Container Tools 2.0



Red Hat Universal Base Image (UBI) 8.2

Open, Redistributable, Standardized

New language support:

- OpenJDK
- .Net 3.1

Source Containers: making source code easily available

- Uses native container tooling to access/manage
- Resolves a legal hurdle on how to redistribute this container image and still comply with the GNU Public License (GPL)

CRIU: A new container tool for portability

Checkpoint

a container, including its current state

Restore

that container to the same or different host

In Userspace

userspace tools are used to perform these operations

Why?

- ❑ Migrate containers, complete with preserve state, to different hosts
- ❑ Drastically reduce container start time
- ❑ Supported in RHEL 8.2 (Tech Preview in previous releases)



Containerized Container Tools [Tech Preview]

Available with 8.2:

- buildah
- skopeo

On the roadmap:

- podman

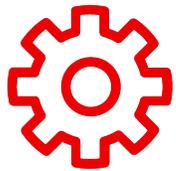
Helping the non-Red Hat container tool developer work with Red Hat native containers

A trusted partner for SAP HANA, Microsoft SQL Server, Postgres, and machine learning workloads.



RHEL 8 is optimized to support your critical database workloads as well as support for leading ISV applications and workloads.

Microsoft SQL Server performance tools



New MS SQL Server collection agents included
in Performance Co-Pilot (PCP)



Try the mssql tuned profile:

<https://lab.redhat.com>

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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 twitter.com/RedHat

Appendix

New experiences: lab.redhat.com



New: Reducing unplanned maintenance with Kernel Live Patching

Resolve Critical Vulnerabilities and Exposures (CVEs) by applying Kernel Live Patches to your systems without needing to take a system downtime for maintenance

<https://lab.redhat.com/kpatch-apply>



New: Red Hat Enterprise Linux with SQL Server Columnstores

Improve SQL Server performance by using Red Hat Enterprise Linux performance tools and SQL Server Columnstores

<https://lab.redhat.com/sql-server-cstore>



Significant revision: Performance observability in practice with bcc-tools

Collect data on various system activities, such as disk performance, latency, and more using the bcc-tools. This data can help identify issues with application performance.

<https://lab.redhat.com/ebpf-tracing>