

RHEL 10 Pre-GA Update

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RHEL 10 Beta Release Notes

https://docs.redhat.com/en/documentation/red_hat_enterprise_linux/10-beta/html/10.0_beta_release_notes/index

<https://www.redhat.com/en/blog/how-red-hat-integrating-post-quantum-cryptography-our-products>



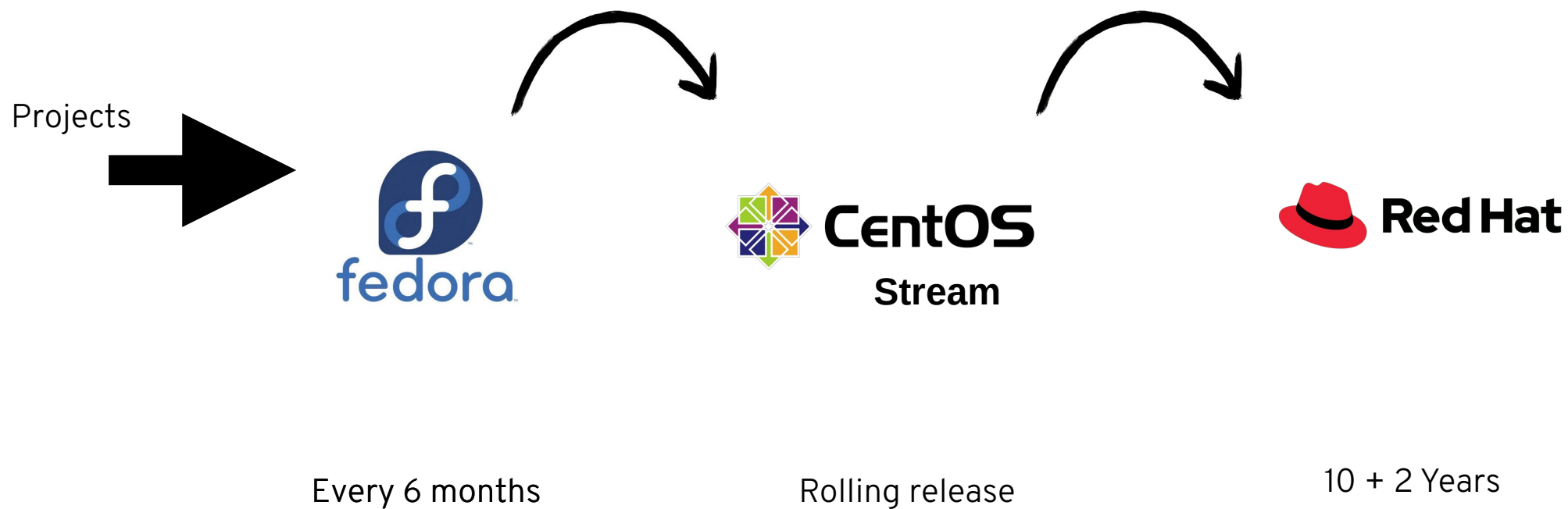
The Route to RHEL 10

We continue to depend on our open source development model from Fedora to CentOS Stream to RHEL.

Upcoming:

- ▶ CentOS Stream 10 (Available Now)
- ▶ RHEL 10 Beta (Released November 13, 2024)
- ▶ RHEL 10 GA (Expected Mid-2025)

New Development Process



Overview

Architecture

- Kernel 6.11

- AMD/Intel (x86-64-v3)
- ARM 64bit (v8.0-A)
- IBM Power Systems (Power9)
- IBM Z/LinuxOne (z14)

- BaseOS

- AppStream

- RPM
- Software Collections
- Flatpaks

Installation

- `net.ifnames=0` removed as kernel argument
- AWS and KVM images no longer have `/boot` as a separate partition
- New users automatically added to “wheel” group for administrative privileges
- NVMe over Fabrics devices available during installation (adding disks)
- RDP replaces VNC for remote graphical access
 - `inst.vnc` → `inst.rdp`
 - `inst.vncpassword` → `inst.rdp.password`
 - `inst.vnconnect` → `inst.rdp.username`

Security

- keylime-agent-rust (TPM, IdevID, IAK)
- libreswan
 - IKEv1 default proposals
 - sha1 → aes-sha1
- openssh v9.8
 - sshd blocks clients that repeat failures
 - ssh-keygen defaults to Ed25519

Security

- openssl v3.2
 - Deprecates “engines” with “providers” for hardware tokens
 - openssl-pkcs11 → pkcs11-provider
 - httpd, libssh and bind now support hardware tokens via providers
- gnutls supports RFC 8879
 - Certificate compression in TLS
- SSH host key files by default are more restrictive with file permissions
 - 0640 → 0600

Security

● NSS v3.101

- DTLS (Datagram Transport Layer Security) 1.3 protocol support
- PBMAC1 (Password-Based Message Authentication Code 1) support
- RSA certificates with keys shorter than 2048 bits stop working in SSL servers

● SELinux v3.7

- audit2allow -C (CLI output mode)
- 14 expanded libvirt service types

Security

- Post-Quantum Capable
- SCAP Security Guide updated to v0.1.74
- OpenSCAP v1.4.0
 - # oscap xccdf generate fix --fix-type kickstart

Software Management

- dnf, librpm and rpm now all use librpmio for processing PGP keys
- dnf no longer downloads repo metadata by default – improving responsiveness
- createrepo_c uses zstd vs gz for faster decompression
 - Only creates compressed version of group.xml

Software Management

- polkit rebased to v125
 - supports syslog-style log levels
 - easy to change log level
 - --log-level option
- ksh rebased to v93u+m/1.0.10
 - alarm command removed
 - ksh shell now scale to 32767 concurrent background jobs

Infrastructure Services

- CUPS broadcast and mDNS no longer enabled by default in cups-browsed
- tuned-ppd tuned profile to replace power-profiles-daemon
- root user description has been changed from “root” to “Super User”
- New package – dnscconfd
 - Supports
 - Local DNS cache
 - Split DNS
 - DNS over TLS

Infrastructure Services

- KEA DHCP server replaces ISC DHCP
 - Supports a full REST API
- New package – intel-lpmd (Intel Low Power Model Daemon)
 - Manages efficiency between P-cores and E-cores
 - Longer battery life

Networking

- NetworkManager supports DAD
(Duplicate Address Detection)

File Systems and Storage

- cryptsetup rebased to v2.7
 - Kdump now supports LUKS encrypted devices

High Availability and Clusters

- pcs now automatically asks resource agent to validate parameters to prevent misconfiguration
- --yes required to confirm potentially destructive actions
 - # pcs status query resource
 - Existence of the resource
 - Type and state of resource
 - Node and members running resource
- pcsd Web-UI now available via cockpit plugin: cockpit-ha-cluster
- Pacemaker rebased to v2.1.8

Dynamic Programming Languages, Web and DB Servers

- python rebased to v3.12
- perl rebased to v5.40
- ruby rebased to v3.3
- php rebased to v8.3
- git rebased to v2.45
- subversion rebased to v1.14
- apache httpd rebased to v2.4.62
- nginx rebased to v1.26
- varnish cache rebased to v7.4
- squid rebased to v6.10
- node.js rebased to v22
- mysql rebased to v8.4
- valkey rebased to v7.2
 - Replaces redis
- postgresql rebased to v16
 - Includes pgvector extension for AI workloads

Compilers and Development Tools

- gcc rebased to v14.2
 - Defaults to x86-64-v3
 - Defaults to IEEE128 for IBM POWER9 Systems
- annobin rebased to v12.55
- binutils rebased to v2.41
- gdb rebased to v14.2
- glibc rebased to v2.39
 - Supports APX (Intel Advanced Performance Extensions) for dynamic linking
 - Optimized for AMD Zen 3 and 4 ERMS (Enhanced Repeat Move String)

Compilers and Development Tools

- elfutils rebased to v0.191
- systemtap rebased to v5.1
- valgrind rebased to v3.23.0
- LLVM toolset rebased to v18.1.8
- Rust toolset rebased to v1.79.0
- Go toolset rebased to v1.22
- pcp rebased to v6.3.0
- grafana rebased to v10.2.6
- openjdk v21 is default java implementation

Identity Management

- `ldap_id_use_start_tls` option is now default
- `certmonger` rebased to v0.79.20
- `389-ds-base` rebased to v3.0.4
 - Fully supports LMDB (Lightning Memory-Mapped Database)
 - New instances create with LMDB by default
- `ansible-freeip` rebased to v1.13.2

SSSD

- authselect is now required by PAM and cannot be uninstalled
- sssd daemon now runs as user sssd vs root
- sss_ssh_knownhosts replaces sss_ssh_knownhostsproxy tool
- Knownhostscommand retrieves following from remote server
 - Host's public keys

Desktop

- Firefox and Thunderbird provided only as flatpaks

Web Console (cockpit)

- New plugin: cockpit-files
 - Fully functional file browser

System Roles

- New sudo system role
 - Manage sudo configurations
- New ha_cluster system role
 - Configure utilization attributes
 - Configure node addresses
 - Configure ACLs
 - Configure pacemaker alerts
 - Easy installation of agents for cloud environments
- Updated system roles (new variables)
 - storage
 - podman
 - journald
 - ssh
 - nbd_client
 - postfix
 - snapshot
 - logging
 - network

RHEL in Cloud Environments

- clout-init now uses NetworkManager by default

Supportability

- sos global options have been converted all to use hyphens instead of underscores
 - namespace_pattern → namespace-pattern

Containers

- Image mode is new!
- Image mode supports FIPS mode
- Building multi-architecture images is fully supported
 - # podman farm build
- podman rebased to v5.2.2
 - containers.conf file is now RO
 - cgroups v2 is used by default
 - pasta is default network used by rootless containers

Technology Preview Features

Maybe next minor release ...

- HSM (Hardware Security Module) support in IDM. Store your key pairs and certs for your IDM CA on an HSM
- IDM-to-IDM migration
 - # ipa-migrate
- AMD EPYC SEV, SEV-ES and SEV-SNP feature support in KVM hypervisor
 - SEV (Secure Encrypted Virtualization)
 - SEV-ES (Secure Encrypted Virtualization-Enhanced State)
 - SEV-SNP (Secure Encrypted Virtualization-Secure Nested Paging)

Removed Features

See you later!

- Application Streams modules removed
- Auth, authconfig and pwpolicy removed from kickstart
- inst.nompath, dmraid, nodmraid boot options removed
- Anaconda support for luks1 removed
- scap-workbench removed : use autotailor
- DSA and SEED algorithms removed from NSS

See you later!

- Subscription-manager modules removed:

- addons and syspurpose addons
- attach and auto-attach
- import
- remove
- redeem
- role
- service-level
- usage

- dnf debug plugin removed

See you later!

- Packages removed:

- Dhcp-client → NetworkManger-internal DHCP client
- sendmail → postfix
- redis → valkey
- dhcp → dhcpd/ISC Kea

- GFS2 file system removed

- mlx4 driver removed
 - Mellanox ConnectX-3 NIC

See you later!

- pcsd standalone web-ui removed
- RHEL Resilient Storage Add-On removed
- **ALL 32-bit packages removed**
- tigervnc has been removed
- pulseaudio removed
- xorg-x11-server removed
- NIS server emulator has been removed from IDM
- pam_console module removed
- virt-v2v XEN and RHV support removed

Deprecated Features

Start finding alternatives ...

- squashfs → erofs
- sgdisk → parted or gdisk
- Kickstart option:
 - inst.gpt → inst.disklabel
- runc → crun
- cockpit host switcher feature deprecated
- Legacy KVM virtual machine type i440fx
 - i440fx-rhel7.6 → i440fx-rhel10.0

Start finding alternatives ...

● Following packages are deprecated:

- daxio
- gvisor-tap-vsock-gvforwarder
- libpmem
- libpmem2
- libpmemblk
- libpmemlog
- libpmemobj
- libpmemobj-cpp
- libpmempool
- libslirp
- nvml
- pmempool
- pmreorder
- wget

Thank you

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