Red Hat Enterprise Linux

RHEL 9 Update

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New Development Process

Projects

fedora

CentOS
Stream

Red Hat

Every 6 months

Rolling release

10 + 2 Years

Beta

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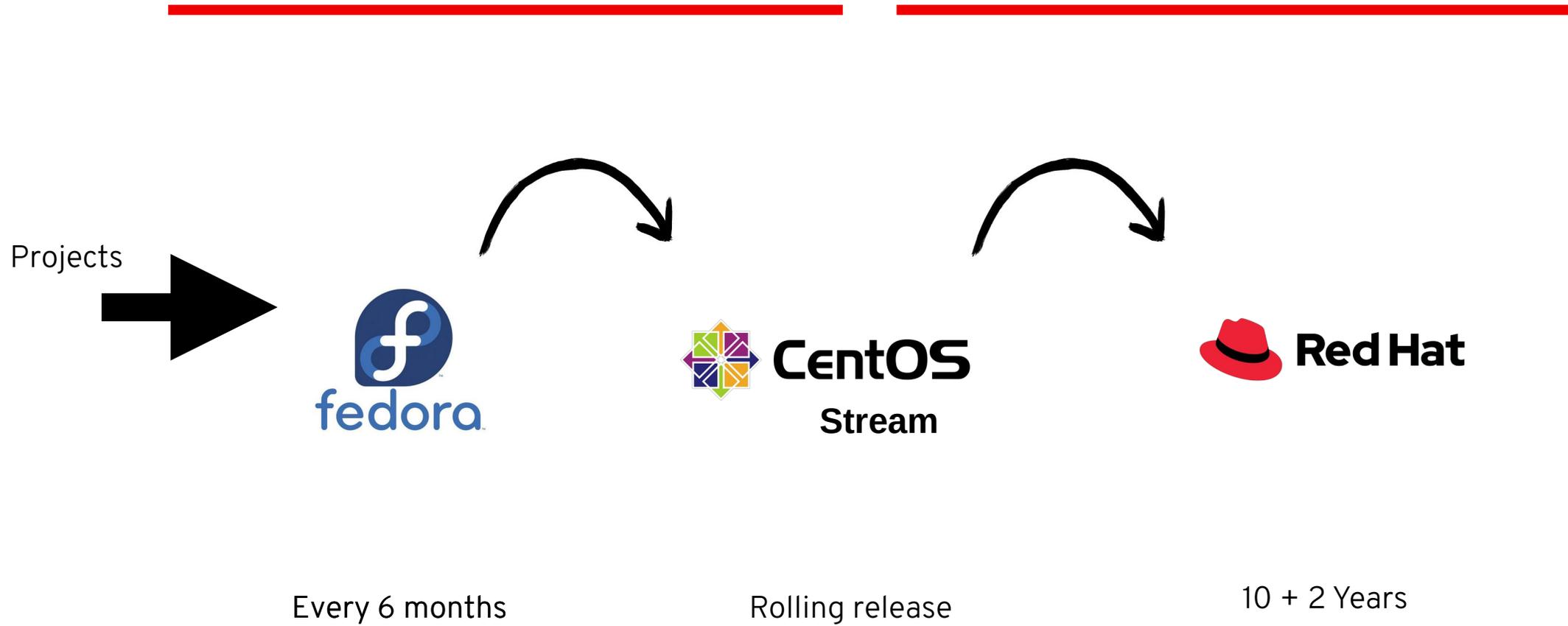
Beta vs High Touch Beta (HTB)

Beta

- Anyone can join, download, test

- No requirements

- Feedback is optional

- Access to public docs

HTB

- Must be nominated

- Must provide feedback

- Exclusive access to engineers and upcoming information

- Weekly engagement

* The beta bits can not convert into a supported subscription *

Beta vs High Touch Beta (HTB)

Beta

- Still ongoing (> 10,000)
- Please join / test

HTB

- Program was concluded March 2nd
- 100 Customers/Partners participated
- Valuable feedback loop

Overview

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Architecture

- Kernel 5.14
  - AMD/Intel X64
  - ARMv8
  - IBM Power9
  - IBM Z/LinuxOne

- BaseOS
- AppStream

- cgroup v2
- Link Time Optimization (LTO)
  - Faster and Smaller

Installation

KickStart / Interactive

- Anaconda supports rhsm

- Anaconda activates networking

- New options for locking root in SSH

Software Management

- RPM v4.16

  - Now uses sqlite vs Berkeley DB

- DNF vs Yum

Update

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Major Changes

Security

● OpenSSL v3

● TPM 2.0

  • Not backward compatible with 1.2

● Cyptographic Policies updates

  • #update-crypto-policies

● SELinux

  • Substantial performance improvements

● QEMU emulator more secure

● Clevis now supports SHA-256 vs SHA-1

● RHEL in Azure

  • WALinuxAgent rebased to 2.3.0.2

  • Supports Microsoft Azure Network Adapter (MANA)

Major Changes

FileSystems

- XFS new default features
  - bigtime (timestamp > 2038)
  - inobtcount
    - Reduce mount time on large filesystems
- ExFAT now supported

- Ext4 now supports timestamp > 2038
- VDO policies removed
  - sync
  - async-unsafe

Major Changes

Samba

- Rebased to v4.15.4

- Server multi-channel support enable by default

- Command line ignored unknown options, now rejects

- Now uses standard error

- Lots of command options cleaned up, removed, renamed

Major Changes

RHEL System Roles

- Storage

  - Added LVM VDO volumes

- Networking

  - Added Opportunistic Wireless Encryption (OWE)

  - Added WPA-SAE support

- VPN Management

Major Changes

HA

- Resource-stickiness defaults to 1 vs 0

- New LVM flag

  # vgcreate --setautoactivation n

- New pcs command options

  - Status display

  - Output display

  - Update SCSI fencing

  - Watchdog configuration

Major Changes

Containers

- The march to Podman 4

- Default OCI runtime changed from runc to crun

  - Faster, lower memory footprint

- container-tools meta-package

  - Podman

  - Buildah

  - Skopeo

  - CRIU

  - Udica

Major Changes

Programming Languages

- Node.js 16
- Perl 5.32
- PHP 8.0
- Python 3.9
- Ruby 3.0
- Java
  - 11,17 and 1.8 openjdk
- Git 2.31
- Subversion 1.14

Web and Databases

- Apache HTTP 2.4
- Nginx 1.20
- Varnish Cache 6.5
- Squid 5.1
- MariaDB 10.5
- MySQL 8.0
- PostgreSQL 13
- Redis 6.2

Major Changes

Compilers and development tools

- LLVM Toolset 12.0.1

- Rust Toolset 1.54.0

- Go Toolset 1.16.6

- GCC 11.2

- Glibc 2.34

- Binutils 2.35

- GDB 10.2

- Valgrind 3.17.0

- SystemTap 4.5

- Dyninst 11.0.0

- Elfutils 0.185

- Maven 3.6

- Ant 1.10

Major Changes

Desktop

- GNOME v40
- PipeWire default audio service
- Boot loader menu hidden by default
- Flatpak

Tech Preview

Some day in the not too distant future

In but not supported

- WireGuard VPN
- ReaR for IBM Z / LinuxOne
- KTLS "Kerenel Transport Layer Security"
  - TLS offloading to NICs
- systemd-resolved
  - DNS stub resolver, caching for local apps

- Intel Software Guard Extensions (SGX)
  - Kernel protection
- dax mount option for NVDIMMs
  - Direct Access Support - performance
- AMD SEV/SEV-ES for KVM Vms
  - VM memory encryption
  - VM CPU register encryption

Deprecated / Removed

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Farewall, so long ..

Deprecated

- Yum is deprecated
  - Use DNF
- teamd deprecated
  - Back to bonding
- Zchunk
- WEP Wi-Fi connection method
- Berkeley DB (libdb)

- Kickstart commands
  - timezone --ntpservers
  - timezone --nontp
  - logging --level
  - %packages --excludeWeakdeps
  - %packages --instLangs
  - %anaconda
  - pwpolicy

Farewall, so long ..

Deprecated

- virt-manager
  - Use Cockpit
- Virtual floppy driver
- qcow2-v2
  - Use qcow2-v3

Gone and forgotten

Removed

- Mailx
  - Use s-nail
- Python2
  - Use Python3
- Iptables,ip6tables,ebtables, arptables
  - Use firewalld and nftables
- network-scripts (Ifcfg-* files)
  - Use nmcli, nmtui, NetworkManager
  - "/etc/NetworkManager/system-connections"

- SHA-1 hash
- Ansible 2.9
  - Use Ansible Core
- SPICE remote display protocol
- KVM for IBM Power
- KVM machine types < 7.5
- Motif widget toolkit
  - Use GTK toolkit

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Other changes

Small changes

● Ansible Core included in appstream

● Single user mode recovery:

- Append to Kernel boot line:

"rw init=/bin/bash"

Gotcha!

● Want to disable SELINUX?

● "/etc/selinux/config"

- SELINUX=disabled

● Still enabled, but with no policy loaded!

● Append to Kernel boot line:

- "selinux=0"

More Details

RHEL 9 Beta Release Notes

https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/9-beta/html-single/9.0_release_notes/index

Adopting RHEL 9

https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/9-beta/html-single/considerations_in_adopting_rhel_9/index

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