



# Las Características Unicas

De Podman

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The poster features a blue and white marbled background. At the top left is a stylized cat skull logo with 'f' eyes and the text 'f MEXICO'. At the top right is a circular portrait of Scott McCarthy. The main text is in Spanish, announcing a meeting on January 26th. It highlights 'Cool features only in Podman\*' and lists the speaker as Scott McCarthy (@fatherlinux) for the '[Fedora México Año 3]'. It includes a registration link and a note about the event being online. At the bottom are logos for rootzilopochtli, YouTube, Facebook Live, Twitch, and the Fedora logo.

  
**f MEXICO**

**¡Acompáñanos en nuestra  
primer reunión del año!**

**\*Cool features only in  
Podman\***  
- Scott McCarthy (@fatherlinux)  
[Fedora México Año 3]

**Miércoles  
26 de Enero**  
A partir de las 8 PM

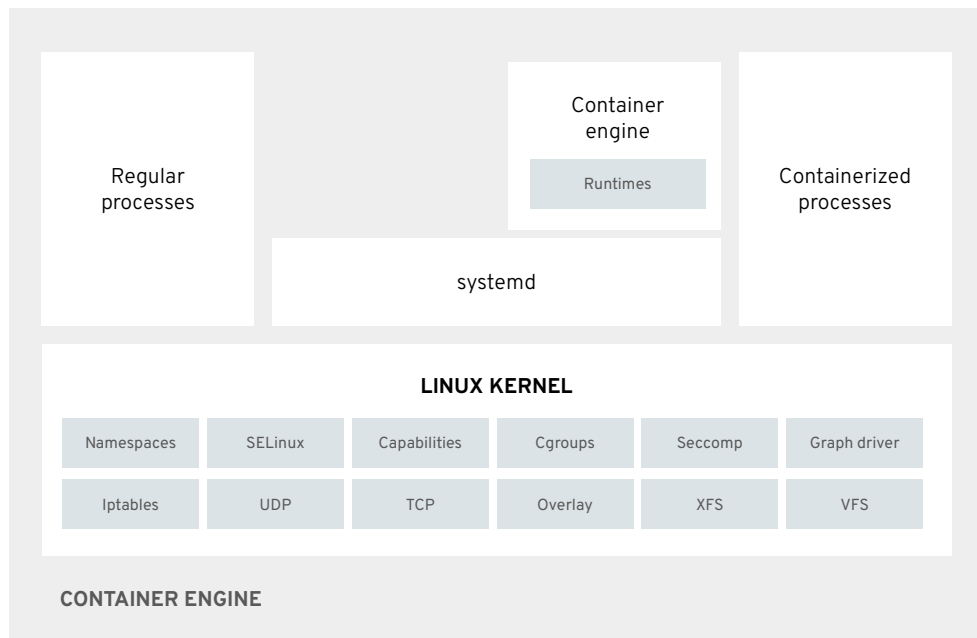
 **rootzilopochtli**  
 **YouTube**  **LIVE**  **twitch**

**Registro:**  
<https://www.meetup.com/es/Fedora-Mexico/events/283393923/>  
\*Evento en Línea\*

 **fedora**

# Container Hosts

## Kernel, container engines, and systemd from Red Hat Enterprise Linux

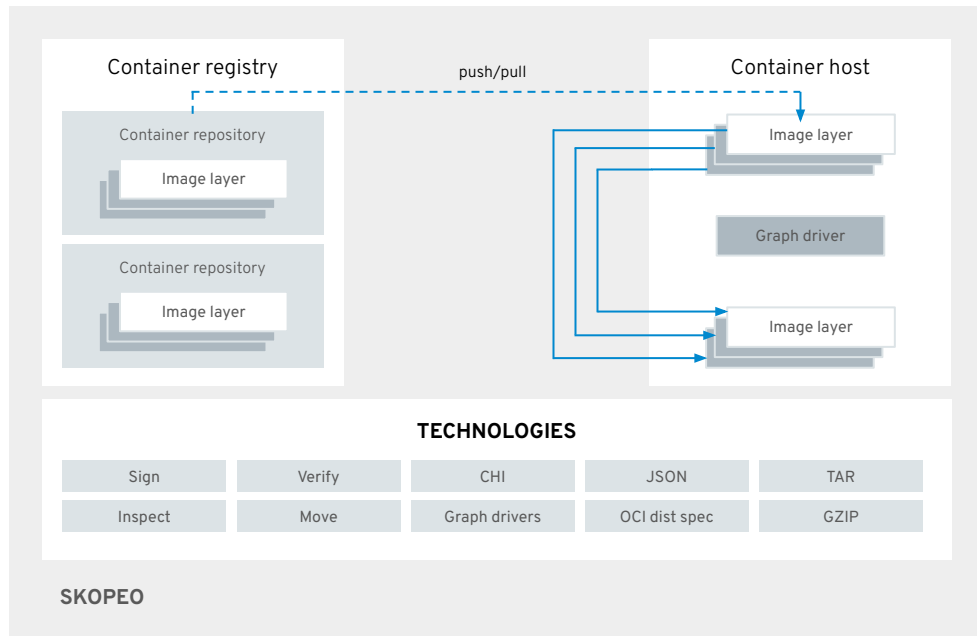


Tightly coupled communication through the kernel—all-or-nothing feature support:

- › Operating system (kernel)
- › Container runtime (runC)
- › Container engine (Podman, CRI-O)
- › The whole stack is responsible for containers—the container host

# Container Images

## Linux binaries and libraries built from Red Hat Enterprise Linux

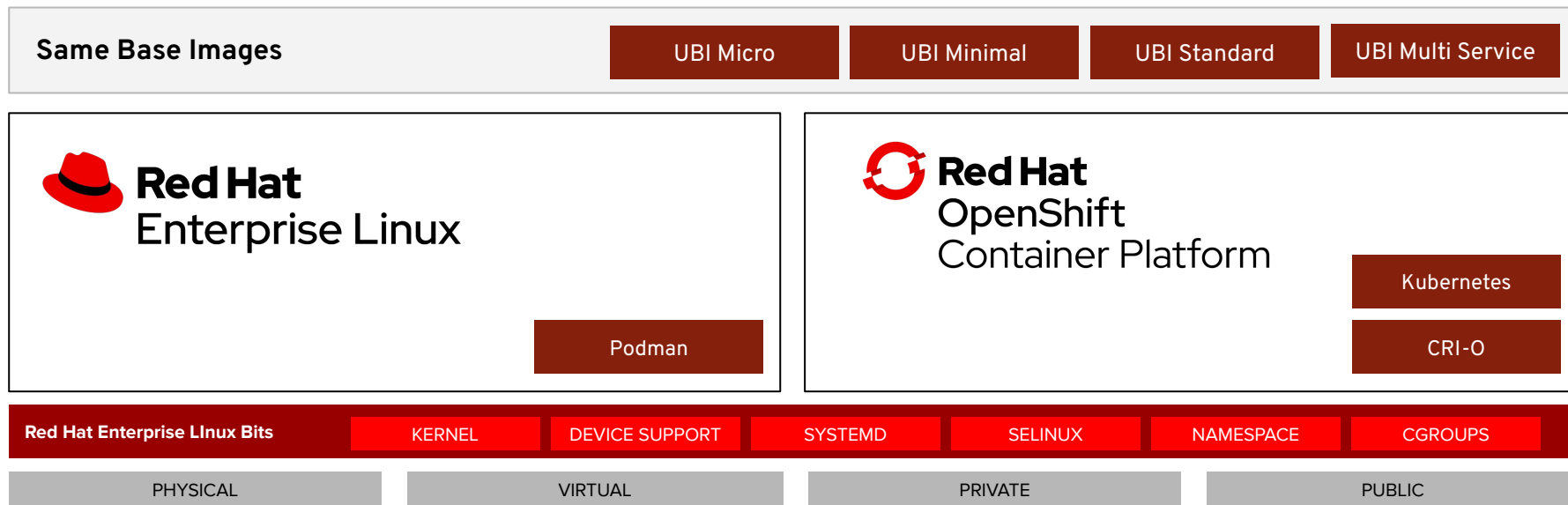


Container engines and runtimes rely on the kernel for storage:

- › Cached container images map to layered file system
- › Running containers often use an extra copy on write layer

# Red Hat Enterprise Linux & OpenShift Container Hosts

Same foundational technology, two products



# Container Tools

RHEL 8 delivers a new  
set of container tools  
including Podman,  
Buildah, Skopeo  
packaged in a way that is  
easy to consume

# Container Standards Are Open



Established in June 2015 by Docker and other leaders in the container industry, the OCI currently contains three specifications which govern, building, running, and moving containers.

# Container Standards Are Open

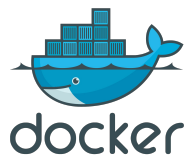


- Governed by The Linux Foundation
- Ecosystem includes:
  - Vendors
  - Cloud Providers
  - Open Source Projects
- Does not govern of Linux binaries and libraries in container images



# OCI Project & Technology Evolution

## Mapping technologies to offerings



docker



kubernetes



cri-o



**Red Hat**  
OpenShift



podman



skopeo



buildah



**Red Hat**  
Enterprise Linux



OPEN CONTAINER  
INITIATIVE





# podman

## Capabilities

- All in one tool for finding, running, building, and sharing containers
- Intuitive CLI makes it a great starting point for containers
- Better security
  - No client-server architecture, no daemon running
  - Least privilege by default, runs as a regular user (rootless)
- Docker compatibility
  - CLI: Provides a familiar command line experience compatible with the docker cli
  - Socket based API which leverages systemd
  - Storage plugins
  - Can often be wired into existing infrastructure where the docker daemon/cli are used today



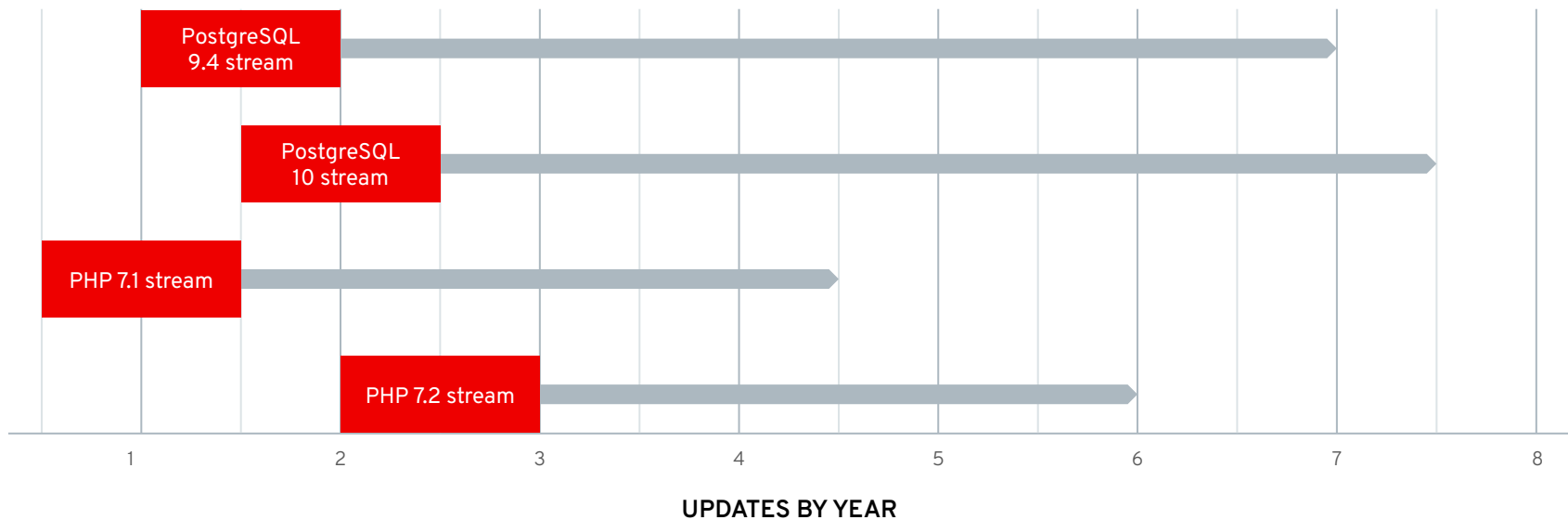
# buildah

## Capabilities

- Advanced container image build tool
- Can run inside a container
- Can leverage the tools on the container host (good for ubi-micro)
- Multi-stage builds
- Customizable image layer caching, squashing, etc
- Shares underlying libraries with Podman and CRI-O ensuring compatibility

# Application Streams Use Modules

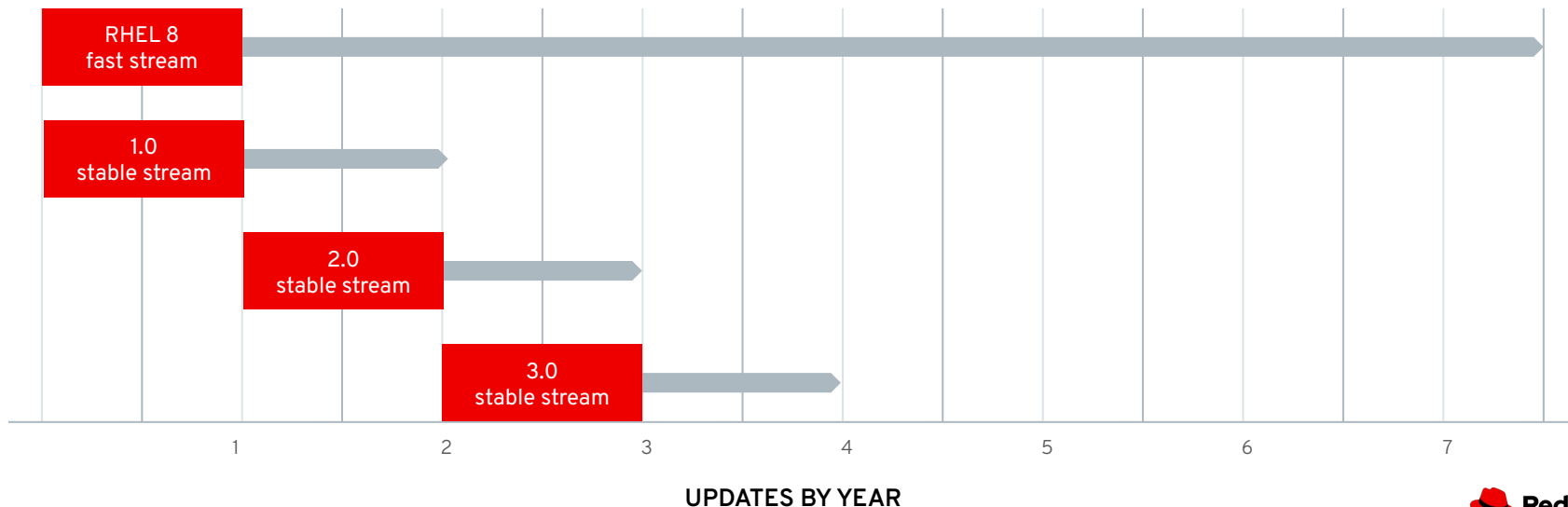
Each module defines its own life cycle, which is closer to the natural life of the application rather than the Red Hat Enterprise Linux life cycle.



# The Container Tools Module

One module delivered with multiple application streams based on different use cases:

- The Red Hat Enterprise Linux 8 stream delivers new versions for developers
- The versioned, stable streams provide stability for operations



# Cada Una Característica Unica

Tody, this roadmap  
covers Red Hat  
Enterprise Linux 6, 7, and  
8



# podman

## Características 1/3

1. `--latest`
2. `--replace`
3. `Podman rm --ignore`
4. `--all` (`podman rm, start, stop, ...`)
5. `--tz`
6. `Pods`
7. `Podman generate kube/Podman play kube`
8. `Podman generate systemd`
9. `Podman image mount/podman container mount (Unmount)`
10. `Podman build --imagemount`
11. `Podman unshare`
12. `--users=auto, --users=keep-id, --group=keeps-group`
13. `Auto update`
14. `podman top [format descriptor...]` (especially host related ones such as `hpid, huser, hgroup`)
15. `podman machine`



# podman

## Características 2/3

1. Podman image scp
2. Transports
3. Podman overlay-ed rootfs from custom path (--rootfs /some/readonly/path:O) and overlay-ed mutable volumes.
4. --rootfs
5. Daemonless (Run your container and then now Podman goes away.)
6. Modular approach (c/image, c/storage, c/common, buildah, skopeo, etc) rather the monolithic all in one project
7. --pull-never
8. Run label
9. Generate and read kube yaml
10. System reset
11. Overlay mounts
12. Fork-exec mode
13. Quay.io container images for our projects.
14. We support multiple registries ootb
15. Two API personalities: Compatible/Docker and Extended/Libpod





# podman

## Características 3/3

1. Sdnotify
2. Socket activation
3. Podman container mount/unmount

# Containers Roadmap

Tody, this roadmap  
covers Red Hat  
Enterprise Linux 6, 7, and  
8

# Containers Roadmap 9 Beta

## 9 Beta

### Native Overlayfs

Kernel native overlayfs offers better rootless performance

### Default Signature Verification

All images pulled from the Red Hat registry are verified by default

### Enforce Short Name Verification

Short names (e.x. ubi8) are verified against full name (e.x. registry.redhat.com/ubi8/ubi)

## Future

### Centralized Management of Rootless Users

Using IdM, administrators can manage subuids/subguids

### Expand UBI Micro

Expand to include container images for httpd, nginx, and openssl

### Containerized Virtual Environments

Toolbox will provide developers, admins, and architects with a simple VM-like experience with containers

### Advanced Network Stack

Will better support complex setups and IPV6

### Podman Support for Cosign

Will be able to natively sign and verify images with Cosign

# Containers Roadmap 8.5

## 8.4

### UBI Micro

Tiny distroless container base image weighing in at 13MB compressed and 38MB uncompressed

### Container Images for Buildah, Skopeo & Podman

GA versions of Podman, Buildah and Skopeo in containers. Useful for CI/CD systems, and on Workstations for testing new versions easily.

### Secure Short Names

Safely search multiple registry servers for container images, while preventing spoofing attacks.

### Automatic Image Updates

Podman can automatically monitor and update an application when a new image is published to a registry server.

### Podman Volume Plugins

All partners to bring existing Docker plugins into RHEL 8 with Podman

## 8.5

### Containerized Podman Generally Available

Use newer (or older) versions of podman anywhere by deploying it in a container.

### Cgroups V2 Support with crun

Better resource management in containers.

### UBI on DockerHub

Developers can access UBI Verified Publisher images on DockerHub

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# Containers Roadmap 7.9+

## 7.7

### Container Tools

Podman 1.4.2 with tech preview rootless support

### Container Images

Go toolset released as part of UBI. Users can now access and redistribute Golang build containers.

### RHEL Workstation

Receives podman, buildah and skopeo to be used as a development platform for UBI containers (no subscription content available)

### Rootless Tech Preview

Users can try out rootless container with Podman on RHEL Server and Workstation using the VFS driver

## 7.8

### Container Tools

Last update to podman. Podman version 1.6.4 with full rootless support.

### Container Images

Rebuilds of all container images.

### Rootless GA

Users are now supported to use rootless on RHEL Server and Workstation using OverlayFS for fast starting containers.

## Future (no new features)

### Container Tools

No new features or versions. RHEL 7.9 will have podman 1.6.4 until end of maintenance in 2024. RHEL 7 is in Maintenance Phase II, so only limited security errata and bug fixes will be provided

### Container Images

Images will continue to be rebuilt during Maintenance Phase II until Extended Life Phase. Then, users will need to update to a later release or a subscription to ELS in order to update their own images

# Containers Roadmap 6.10+

## 6.10

### Container Tools

No container tools have ever been provided on RHEL 6 hosts

### Container Images

Supported on RHEL 7 and RHEL 8 container hosts

## Future (no new features)

### Container Tools

No container tools have ever been provided on RHEL 6 hosts

### Container Images

Images will cease being rebuilt with the Extended Life Phase. Users will need an ELS subscription - they will need to use 6.11 images as a base and run their own updates using ELS channels

# Reference Information

All of this information is  
publicly available

# RHEL 8 Blogs

- 8.4: [What's new in RHEL Container Tools?](#)
- 8.3: [Updates to Container Tools in Red Hat Enterprise Linux 8.3](#)
- 8.2: [New container capabilities in Red Hat Enterprise Linux 8.2](#)
- 8.1: [A minor release with major new container capabilities](#)
- 8.0: [Using the rootless containers Tech Preview in RHEL 8.0](#)
- 8.0: [RHEL 8 enables containers with the tools of software craftsmanship](#)
- 8.0: [Introducing the Red Hat Universal Base Image](#)
- 8.0: [Why Red Hat is investing in CRI-O and Podman](#)



# RHEL 8 Documentation

## How To

- [Building, running, and managing containers](#)
  - [Getting started with Podman](#) (Docker to Podman)
  - [Getting started with UBI](#)
- [Red Hat Universal Base Image FAQ](#)
- [RHEL 8 Katacoda Tutorials](#)
  - [Podman Katacoda](#)
  - [Buildah Katacoda](#)

## Policies

- [Container Support Policy](#)
- [Container Compatibility Matrix](#)
- [UBI Content Availability](#)
- [Container Tools Appstream Content Availability](#)

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# RHEL 7 Blogs

- 7.8: TBD
- 7.7: [Three New Container Capabilities in Red Hat Enterprise Linux 7.7](#)
- 7.6: [Intro to Podman \(Red Hat Enterprise Linux 7.6 Beta\)](#)
- 7.5: [Container-related Changes in Red Hat Enterprise Linux 7.5](#)
- 7.4: [What's New in Red Hat Enterprise Linux Atomic Host 7.4?](#)

# RHEL 7 Documentation

## How To

- [Getting started with containers](#)
  - [Getting started with Podman](#) (Docker to Podman)
  - [Getting started with UBI](#)
- [Managing containers](#)
- [Red Hat Universal Base Image FAQ](#)

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