



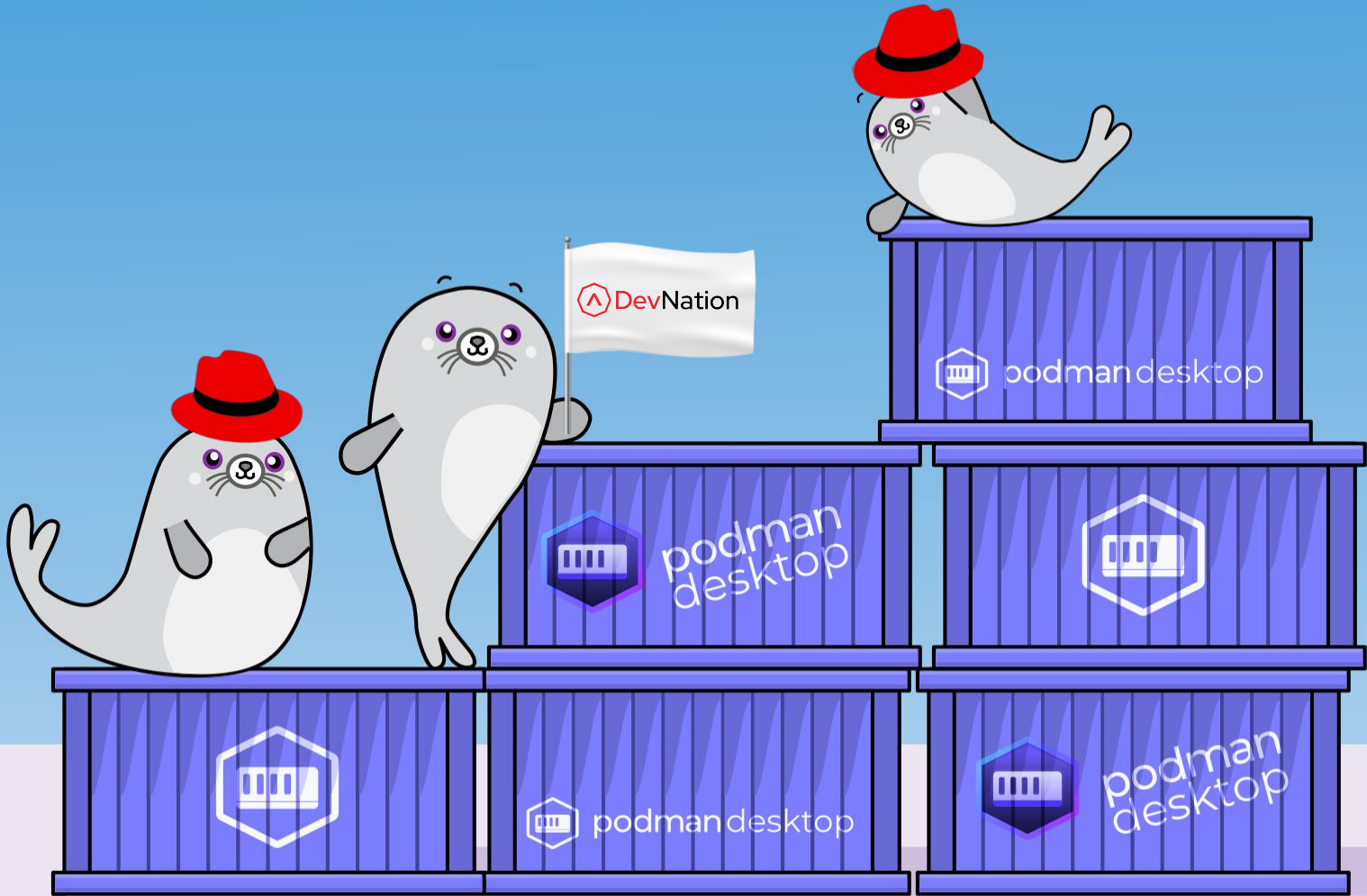
Simplifying containers & Kubernetes on your laptop with Podman & Podman Desktop

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What's Podman?



DevNation

podman desktop

podman desktop



podman desktop

podman desktop

Red Hat's Container Philosophy



Red Hat has a unique perspective when it comes to approaching container technology

- ▶ There's *no one-size-fits-all* solution
- ▶ Our tools cover specific use-cases with:
 - Open standards, open development, open source, and open community!
- ▶ This leads to more interoperability & compatibility

What is Podman?

A seamless way to work with containers (& Kubernetes!)



Fast and light

Daemonless, using the fastest technologies for a snappy experience.



Secure

Rootless containers allow you to contain privileges without compromising functionality.



Open

Podman is open source first and won't lock you in. Podman Desktop even supports Docker as an engine!



Compatible

Compatible with other OCI compliant container formats including Docker, as well as docker-compose files.

Podman in Action

It's easy to get started with Podman to manage containers and container images!

- ▶ Pulling, building, pushing images
- ▶ Running containers & debugging
- ▶ Working with Kubernetes
- ▶ & much more!

```
cedric@ccllyburn-mac ~ % podman --help
Manage pods, containers and images

Usage:
  podman [options] [command]

Available Commands:
  attach      Attach to a running container
  build       Build an image using instructions from Containerfiles
  commit      Create new image based on the changed container
  container   Manage containers
  cp          Copy files/folders between a container and the local filesystem
  create      Create but do not start a container
  diff        Display the changes to the object's file system
  events      Show podman system events
  exec        Run a process in a running container
  export      Export container's filesystem contents as a tar archive
  generate    Generate structured data based on containers, pods or volumes
  healthcheck Manage health checks on containers
  help        Help about any command
  history     Show history of a specified image
  image       Manage images
```

Podman in Action: **Images**

Container Images: Lightweight and isolated packages that encapsulate an application & it's dependencies.

- ▶ podman search <image>
- ▶ podman pull <image>
- ▶ podman images
- ▶ podman build .
- ▶ podman push <image>

A terminal window with a title bar that reads "cedric -- zsh -- 73x19". The terminal content shows the prompt "cedric@cclyburn-mac ~ %" followed by a cursor. The window has standard macOS window controls (red, yellow, green buttons) in the top-left corner.

```
cedric@cclyburn-mac ~ %
```

Podman in Action: **Containers**

Containers: Running instance of a container image, sharing host OS kernel and is ephemeral.

- ▶ `podman run <image>`
- ▶ `podman ps`
- ▶ `podman attach`
- ▶ `podman logs <container>`

A terminal window titled "cedric -- zsh -- 73x19" is shown. The prompt "cedric@cclyburn-mac ~ %" is visible, followed by a cursor. The window has standard macOS window controls (red, yellow, green buttons) in the top-left corner.

```
cedric@cclyburn-mac ~ %
```


Podman in Action: **Pods**

Pods: Group of containers that run together and share the same storage & network as a single unit.

- ▶ `podman pod create <name>`
- ▶ `podman run --pod`
- ▶ `podman generate kube`
- ▶ `podman play kube`

A terminal window with a title bar that reads "cedric -- zsh -- 73x19". The prompt is "cedric@cclyburn-mac ~ %" followed by a cursor. The terminal is otherwise empty.

```
cedric@cclyburn-mac ~ %
```

Podman 101's



Secure Rootless Containers

User namespace mapping, seccomp profiles, and SELinux support

No Daemon Process

Podman launches containers as child processes, fork/exec model

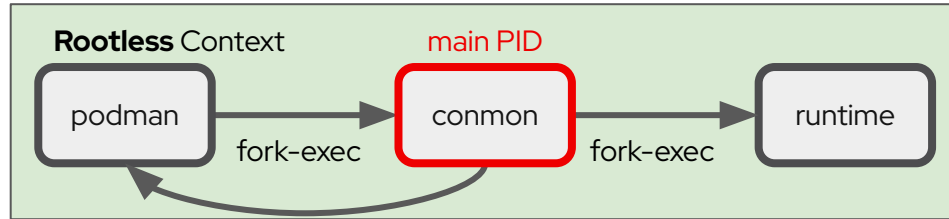
Kubernetes Support

Supports Kubernetes YAML & testing before cluster deployment

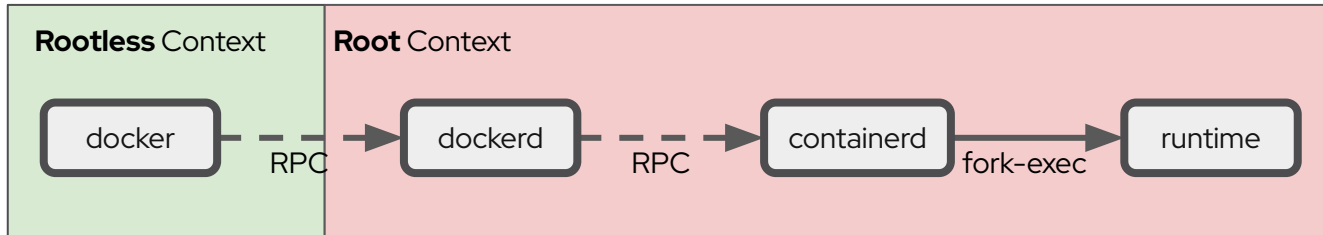
Platform Compatible

Runs on Linux, as well as Windows, Mac OS, FreeBSD

Container Engine Architectures



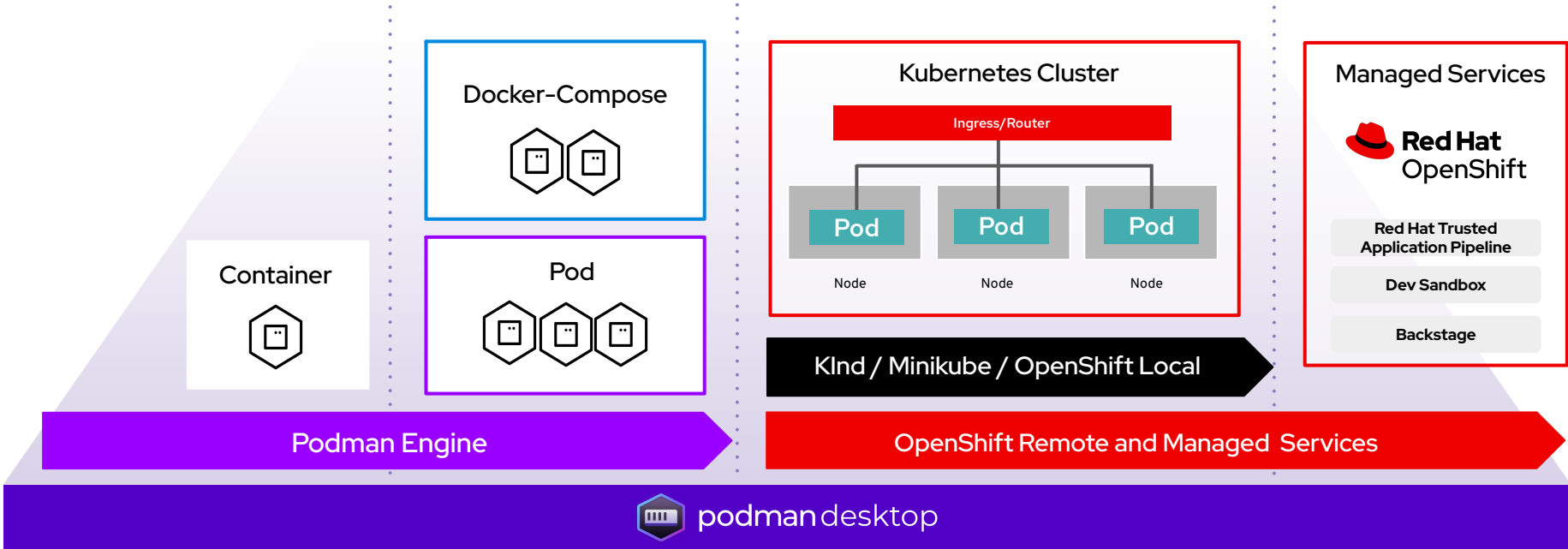
Compared to...



What's Podman Desktop?

Simplistic onboarding.

From applications to containers, to pods, to Kubernetes.





Free, Open and Extensible – By Default

Introducing Podman Desktop: Community Edition

Containers and Kubernetes for Application Developers

Podman and Kubernetes/OpenShift Local

- Install and run anywhere: Windows, Mac and Linux
- Keep it up-to-date

Containers and Pods

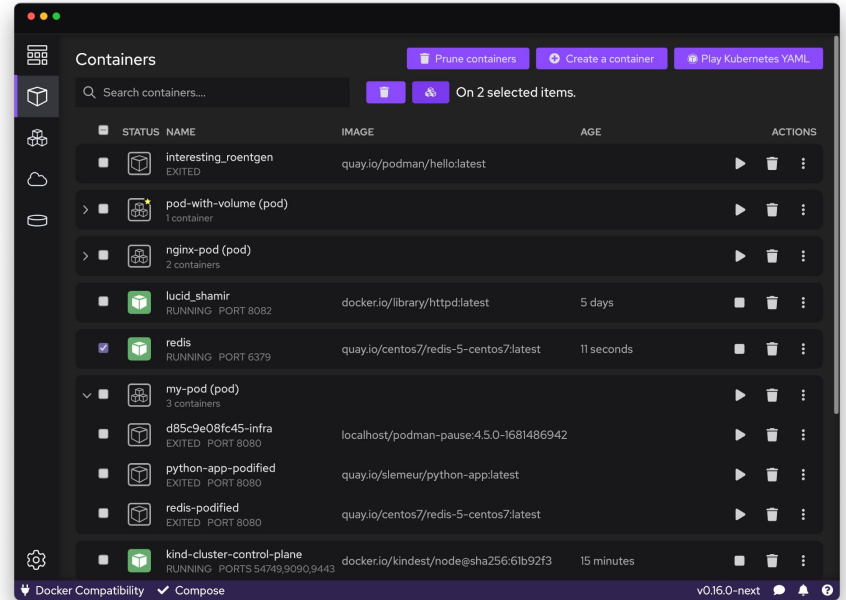
- Build, run, manage and debug Containers and Pods
- Run Pods with or without Kubernetes
- Manage multiple container Engines
- Compatibility with Docker and Compose

Enterprise Readiness

- VPN and Proxies configuration
- Image registry management
- AirGapped Installation

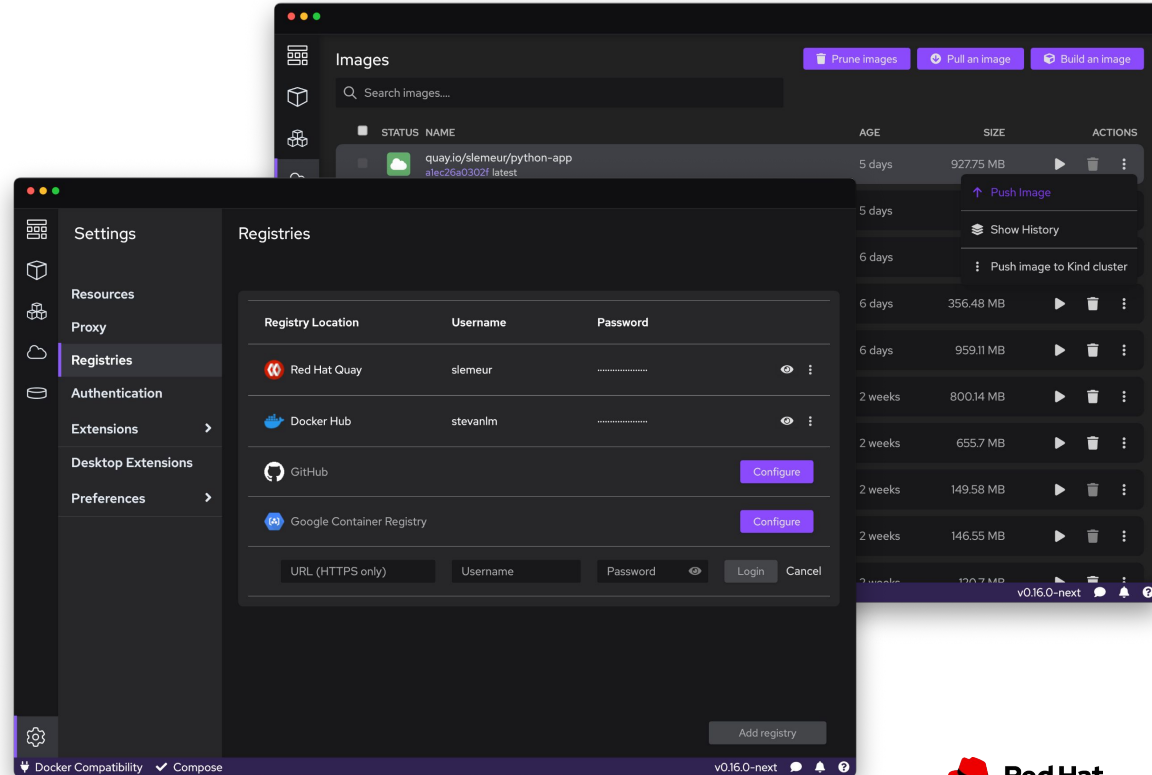
Bridge between local and remote

- Connect and deploy to remote OpenShift clusters
- Enable remote managed services locally



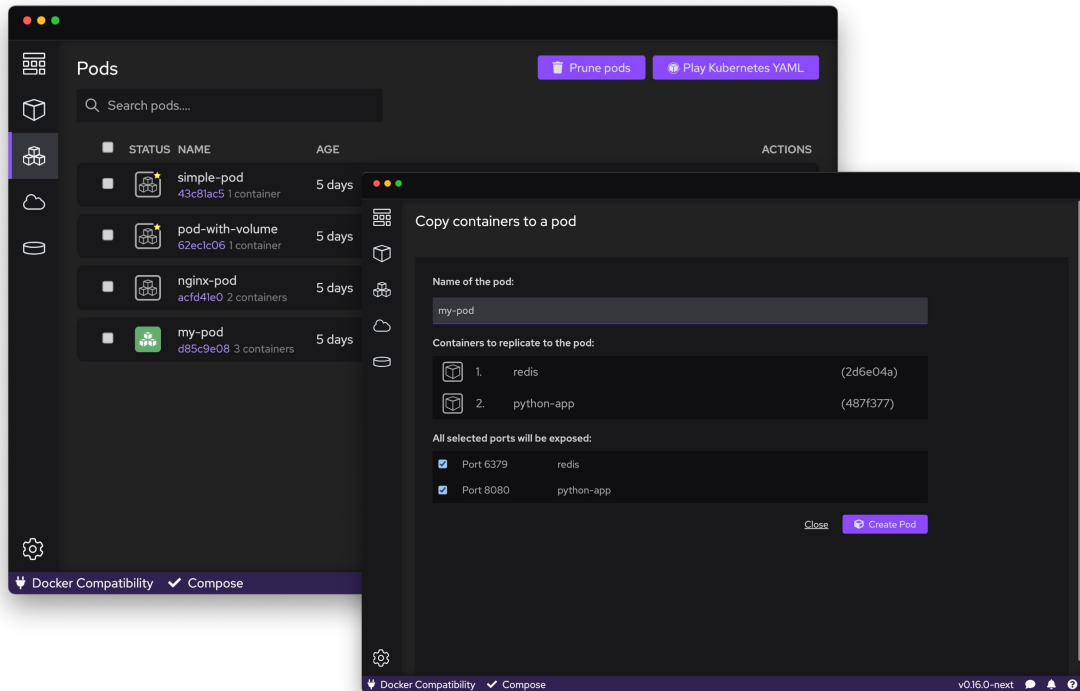
Podman Desktop: Support for OCI Registries

- Configure multiple OCI registries
- Authenticate to registries
- Pull, tag and push images to your registries



Podman Desktop: Pods

- Create and start Pods with Podman
- Select containers to run as a Pod
- Play Kubernetes YAML locally without Kubernetes
- Generate Kubernetes YAML from Pods



Demo Time!

Podman training

&

YouTube demos!



More About Docker vs Podman

Red Hat + IBM Combo!



Podman vs. Docker



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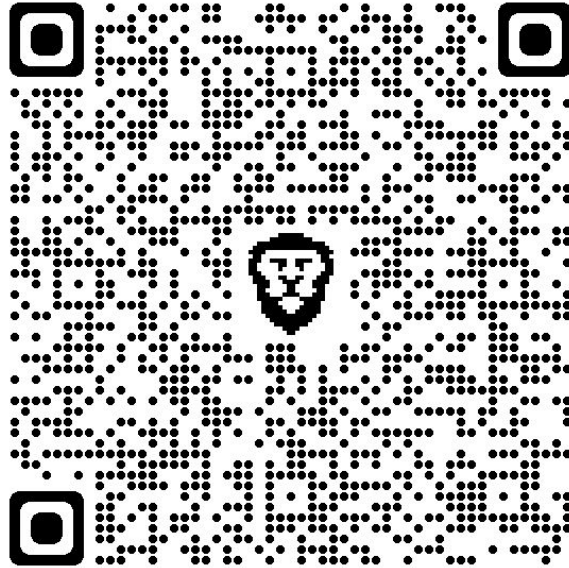


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