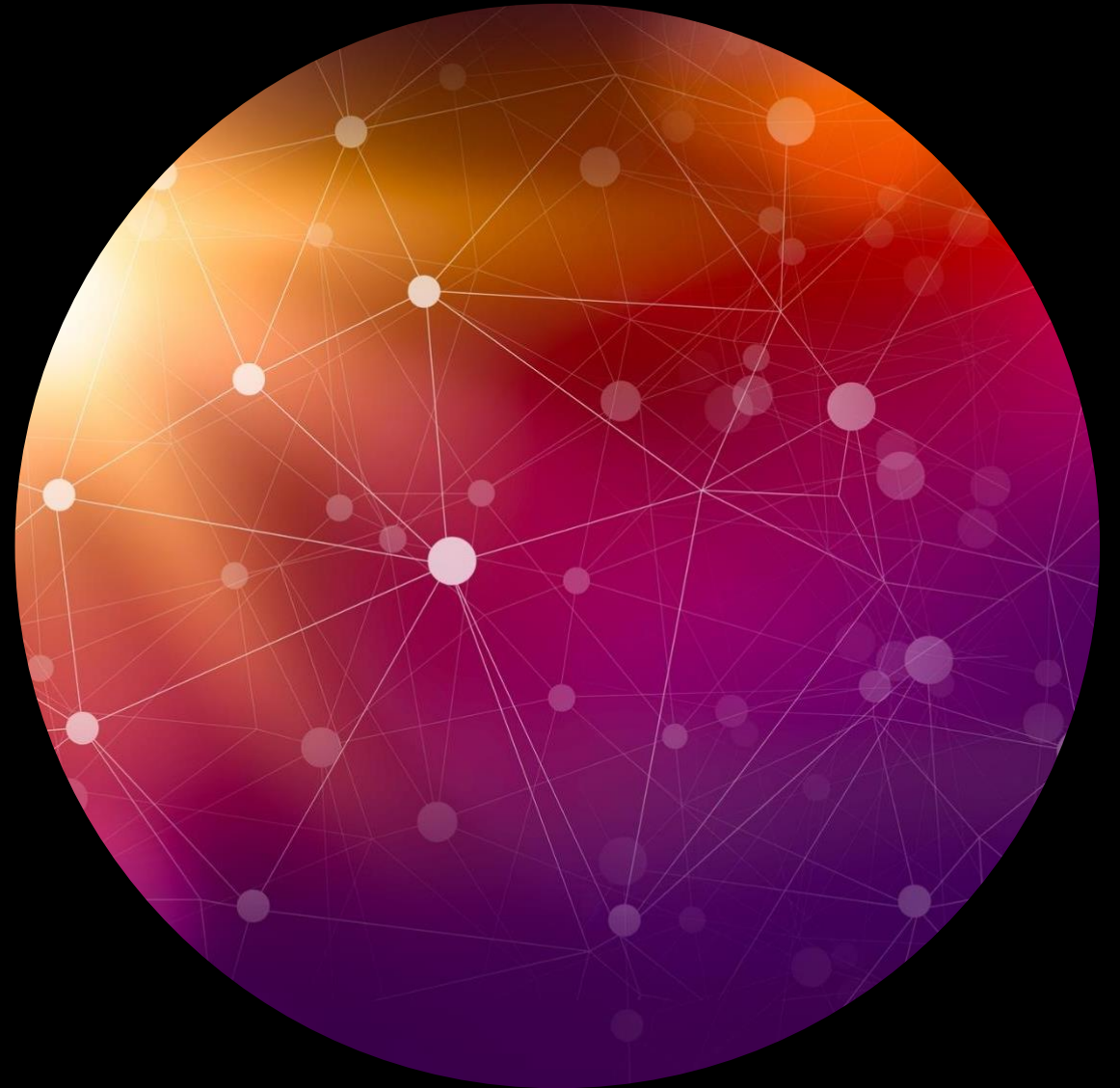


UNLEASHING THE POWER OF PODMAN: A DOCKER ALTERNATIVE

Andrew Denner

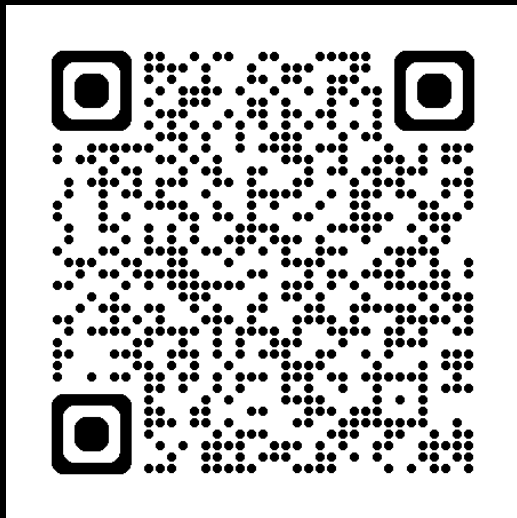
St Louis Linux Users Group

November 13 2024



INTRO

- Linux user since 2003
- Senior Software Developer
- President of Central Iowa Linux User's Group (we meet 3rd Wednesday at 7)
- <https://denner.co>
- Social media:
denner.co/social



A yellow corrugated metal container is shown against a blue background. The container has a scalloped top edge and a small vent on its side. The text "WHEN WE LAST LEFT OFF..." is overlaid on the container in white, bold, sans-serif font.

WHEN WE LAST
LEFT OFF...

- Aug 2024, "Elevating Containerization a Dive into Buildah" ([video](#))([slides](#))

BUILD AH



buildah

- create a working container, either from scratch or using an image as a starting point
- create an image, either from a working container or via the instructions in a Dockerfile
- images can be built in either the OCI image format or the traditional upstream docker image format
- mount a working container's root filesystem for manipulation
- unmount a working container's root filesystem
- use the updated contents of a container's root filesystem as a filesystem layer to create a new image
- delete a working container or an image
- rename a local container

OVERVIEW


- Brief review OCI universe
- What is docker, Podman? (Catch up)
- Architecture (Daemonless, security, compatibility)
- Demo: install and setup + hello world
- A Brief discussion of Selinux and security
- Podman and Kubernetes
- Podman and Docker Compose
- Podman and Systemd
- Review



REVIEW




← × <https://techsparx.com/software-development/docker/docker-desktop/not-free.html>

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Docker Inc squeezing money from Docker Desktop and other Docker tools

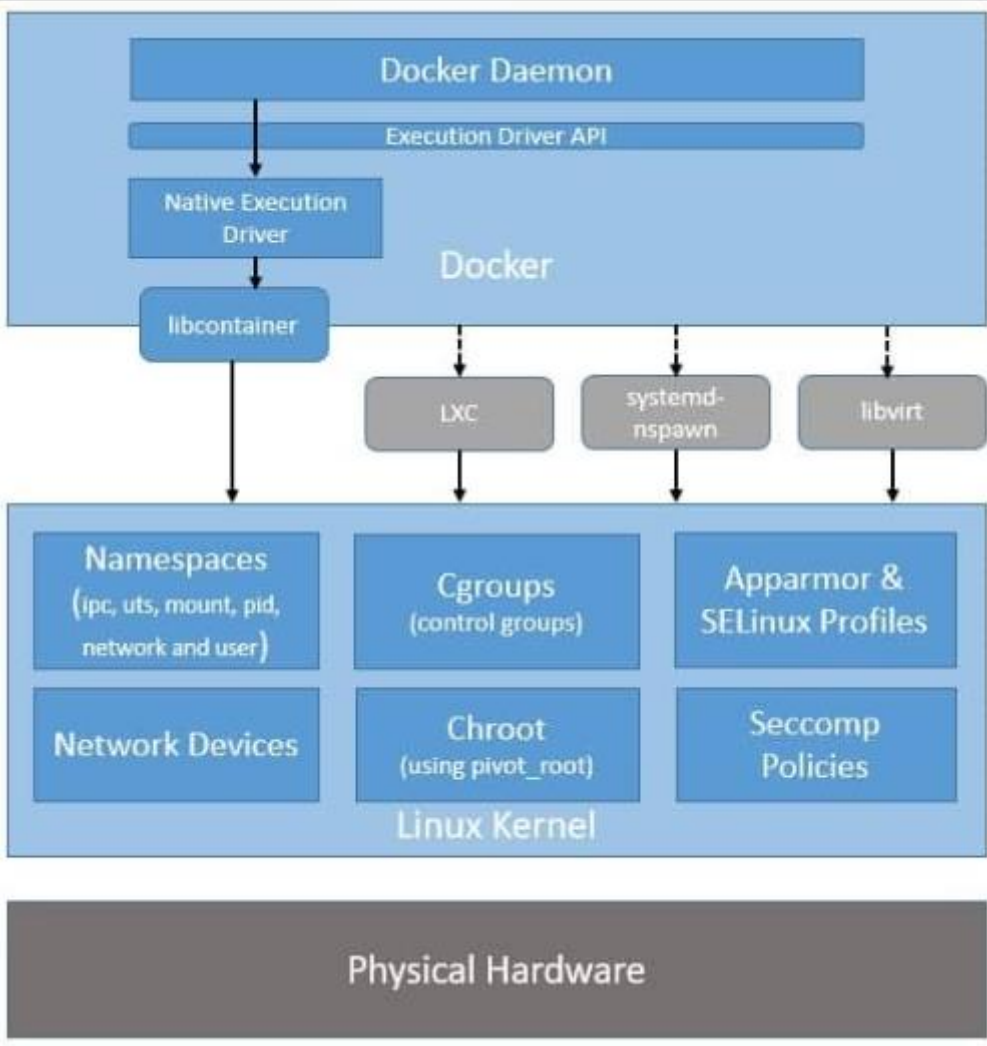
[TechSparx](#) / [Software Development](#) / [Using Docker to deploy applications, encapsulate software tools, and otherwise simplify software development](#) / [Docker Desktop](#) / [Docker Inc squeezing money from Docker Desktop and other Docker tools](#)

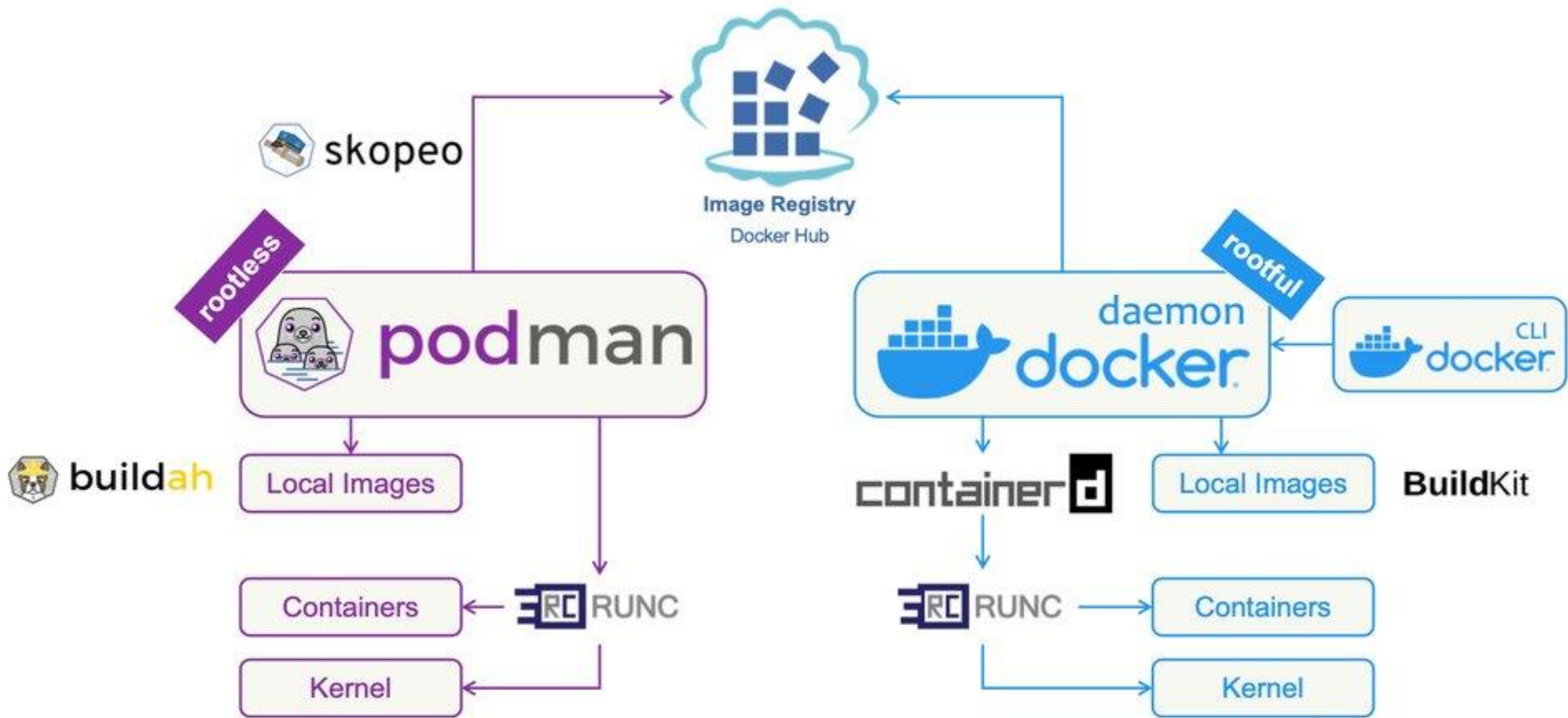
By  [David Herron](#) : Date: Sat Oct 30 2021

Tags: [Docker](#)

From its launch, Docker Desktop was a free product letting us easily install Docker on macOS and Windows machines. Docker doesn't run natively on either, and previously required serious hackery to get Docker running. But, the company behind Docker recently announced changes including describing Docker Desktop as being available for *individual developers, education, open source, and small businesses*. That's led to some outcry, and calls to abandon using Docker.







A BRIEF CHAT ON DOCKER DESKTOP

- Windows and Mac tool, basically runs docker inside of a container and magic glue to integrate it
- Costs \$\$\$\$ (if you are big enough)
- Podman Desktop
(<https://github.com/containers/podman/blob/main/docs/tutorials/podman-for-windows.md>)
- (Or can install via brew / wsl2)

INSTALL:

- <https://podman.io/docs/installation#installing-on-linux>
- Apt install podman



DEMO

SELINUX AND PODMAN SECURITY

- MAC (Mandatory access control) vs DAC (Discretionary Access Control)
- DOD Style access control, originally developed by NSA.
- Open Sourced in 2000, integrated into Kernel 2.6.0-Test3 in 2003
- Big in RHEL universe
- Vs App Armor



SELINUX AND PODMAN

- `--security-opt label=...` i.e. `system_u:system_r:container_t:s0`
- Use `podman inspect` to see context
- `-v /hostpath:/containerpath:Z`

PODMAN AND KUBERNETES

- Can run pods created for k8s... ish
- Podman play kube yamllpath
- Call out that this is running on one machine... may not have special things like ingress etc.
- Stop with podman pod stop podid
- Podman pod rm podid

PODMAN AND DOCKER COMPOSE

- Had to install podman-compose with apt
- Podman-compose up





PODMAN SYSTEMD

- Sysd can run pods as services
- Podman generate system `–name pod –file --new`

REVIEW

- Very powerful
- But rough edges