# nerdctl: Docker-compatible CLI for containerd

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Maintainer of Containerd/Nerdctl

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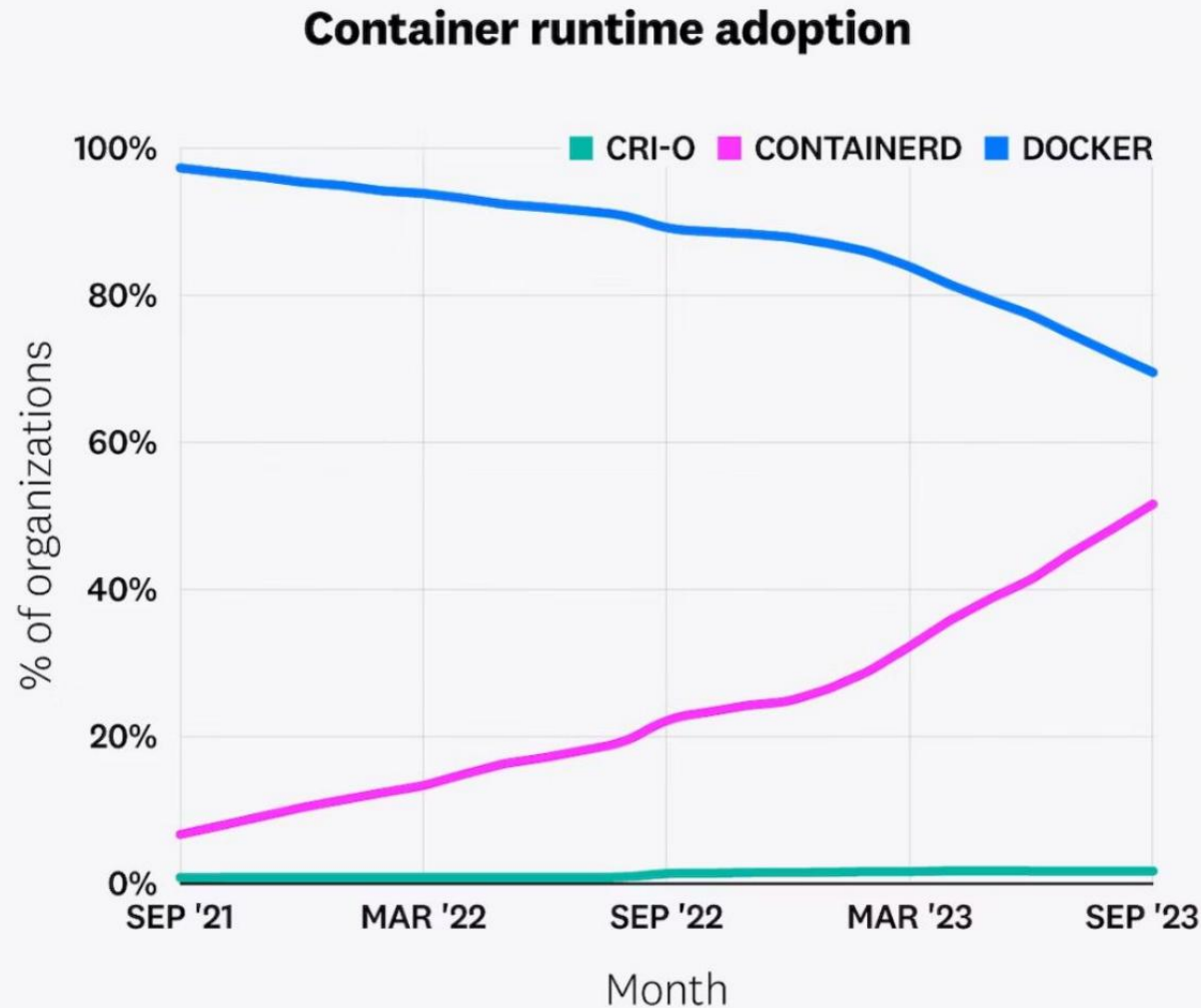
# Part 01

## Introduction

# Contai nerd                  CTL

# Containerd Usage Growth



**Container runtime adoption**

Legend: ■ CRI-O ■ CONTAINERD ■ DOCKER

Y-axis: % of organizations (0% to 100%)
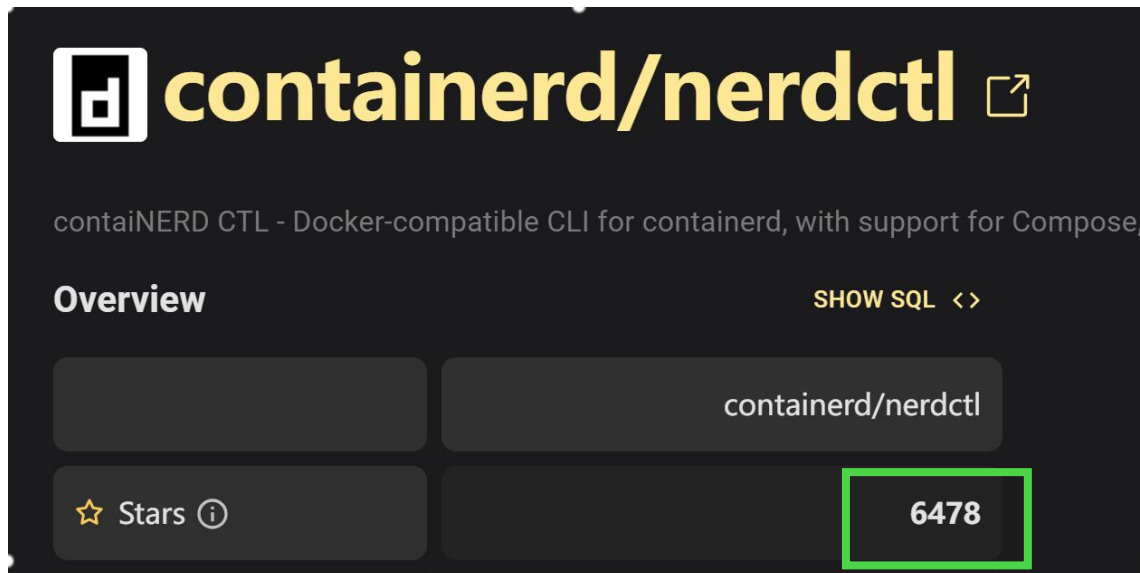X-axis: Month (SEP '21, MAR '22, SEP '22, MAR '23, SEP '23)

**CONTAINERD ADOPTION HAS MORE THAN DOUBLED IN THE LAST YEAR**
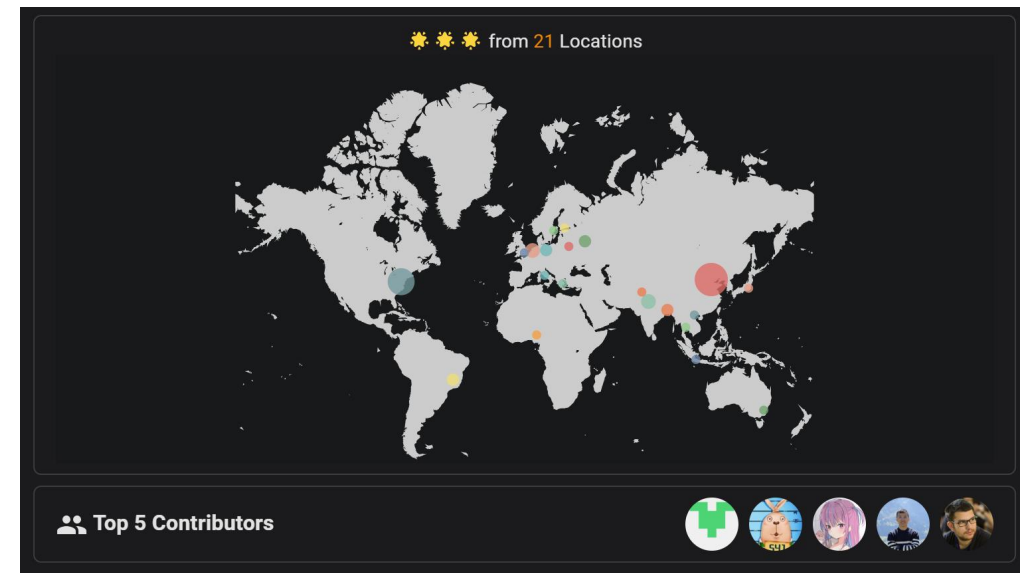
Source: Datadog

# What is nerdctl

- Docker-compatible CLI for containerd (and buildkitd)

- **Made for facilitating new experiments in the containerd platform**

- Useful for debugging Kubernetes nodes too

# Part 02
# Features

# DEMO - RUN
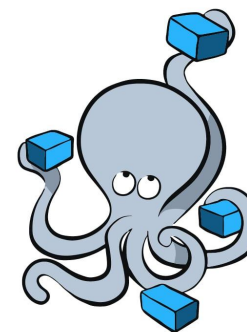


root@kay201: ~

root@kay201:~#

Demo 视频请查看：
https://www.bilibili.com/video/BV1Cz42167qP

alias
docker=nerdctl

# DEMO - Compose Up

```
root@kay201: /tmp/test
root@kay201:/tmp/test#
```

Demo 视频请查看：
https://www.bilibili.com/video/BV1Cz42167qP

# Advanced features of containerd & nerdctl

- Lazy-pulling with eStargz/SOCI/Nydus/OverlayBD

- Registry-less P2P image distribution with IPFS *

- Image encryption with OCIcrypt *

- Image signing with Cosign / Notation *

- "Real" read-only mounts with mount_setattr

- Slirp-less rootless containers with bypass4netns *

- Interactive debugging of Dockerfiles, with buildg *

# Part 03

## Ecosystem

# Containerd Clients

| ctr | nerdctl | crictl | docker(moby) |
|---|---|---|---|
| command-line dev tool, part of core containerd project | non-core containerd project, Docker-like CLI | a CLI for the CRI API; a Kubernetes project (cri-tools) | further integration with containerd image store |
| | added features for lazy-loaded, image encryption, signing | | allows use of snapshotters, containerd features |

## - developer platforms using containerd -

- **Colima** - container runtimes on macOS (and Linux) with minimal setup
- **Finch** - Docker-like CLI for MacOS
- **Rancher Desktop** - Docker-like experience on MacOS, Windows, and Linux

# Tools using nerdctl



## Lima
Linux virtual machines, with a focus on running containers
Github Star(13k)

## Colima
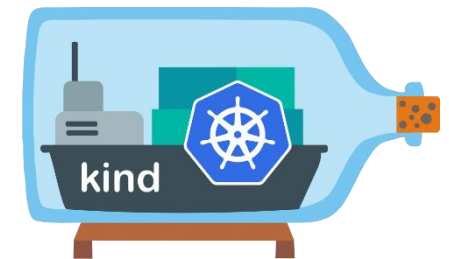Colima - container runtimes on macOS (and Linux) with minimal setup.
Github Star(15k)

## Finch
AWS : The Finch CLI an open source client for container development

## RANCHER DESKTOP
Electron-based application that wraps other tools while providing a simple user experience.

DaoCloud Enterprise 5.0

kind
New!

Thanks.