

---

# Living in toolbox containers

FOSSASIA OpenTech Summit 2023, Singapore

---

Jens Petersen @juhp  
petersen@redhat.com

2023-04-15

# What is a Toolbox container?

# What is a Toolbox container?

- Linux pet container for a user

# What is a Toolbox container?

- Linux pet container for a user
- running in Podman or Docker

# What is a Toolbox container?

- Linux pet container for a user
- running in Podman or Docker
- with access to home dir, desktop and system resources of your host system

# Container Toolboxes

4 fundamental questions:

# Container Toolboxes

4 fundamental questions:

- Why?

# Container Toolboxes

4 fundamental questions:

- Why?
- How?



# Container Toolboxes

4 fundamental questions:

- Why?
- How?
- What?

# Container Toolboxes

4 fundamental questions:

- Why?
- How?
- What?
- Who?

# Why Toolboxes

# Why use Toolboxes?

- use a different OS version or system
- system package isolation: eg “immutable” ostree-based OS
- using different versions of apps, tools, toolchains, etc
- lightweight and resource saving/sharing

# How Toolboxes

# How do Toolboxes work?

- standard (rootless, privileged) user containers
  - use namespaces and bind mounts to make host system resources available
  - usually two step process: create and enter (or run) toolbox
- (This topic would make an interesting deep dive.)

# What Toolboxes

# Toolbox projects

currently 2 major projects supporting graphical desktops:

- Toolbx
- Distrobox



<https://github.com/containers/toolbox>



**T O O L B O X**

# Toolbx

- started in Red Hat by Debarshi Ray (rishi) in 2018

# Toolbx

- started in Red Hat by Debarshi Ray (rishi) in 2018
- originally shell scripts

# Toolbx

- started in Red Hat by Debarshi Ray (rishi) in 2018
- originally shell scripts
- rewritten in Golang by Ondřej Míchal (HarryMichal) in 2020

# Toolbx

- started in Red Hat by Debarshi Ray (rishi) in 2018
- originally shell scripts
- rewritten in Golang by Ondřej Míchal (HarryMichal) in 2020
- Available as:
  - toolbox in Fedora, RHEL, Arch
  - podman-toolbox in Debian & Ubuntu
- <https://containertoolbx.org/>
- <https://repology.org/project/toolbox-development-environment/versions>

# Toolbx images

Toolbox needs custom toolbox container images:

- `registry.fedoraproject.org/fedora-toolbox:{36,37,38,39}`
- `registry.access.redhat.com/ubi{8,9}/toolbox`

<https://github.com/toolbx-images/images> (since 2022)

- <https://quay.io/organization/toolbx-images>
- has images for:

alpine, almalinux, amazonlinux, archlinux, centos, debian, rockylinux,  
opensuse, rhel, ubuntu

# Toolbox demo

# Distrobox





# Distrobox

<https://github.com/89luca89/distrobox/>

- created by Luca Di Maio in 2021
- collection of shell script commands: `distrobox - *`
- <https://github.com/89luca89/distrobox/blob/main/docs/compatibility.md>
- <https://repology.org/project/distrobox/versions>

# Who Toolboxes

# Who Toolboxes

- developers
- testers
- power users
- system troubleshooting

# Thanks!

Toolbox projects:

1. Toolbx: <https://github.com/containers/toolbox>
2. Distrobox: <https://github.com/89luca89/distrobox/>

# Thanks!

Toolbox projects:

1. Toolbx: <https://github.com/containers/toolbox>
2. Distrobox: <https://github.com/89luca89/distrobox/>

Contact me: Jens Petersen

- @juhp (github, twitter, mstdn.social)
- [petersen@redhat.com](mailto:petersen@redhat.com)

Slides: <https://github.com/juhp/presentations/tree/master/fossasia2023-toolboxes/> (written in Typst)