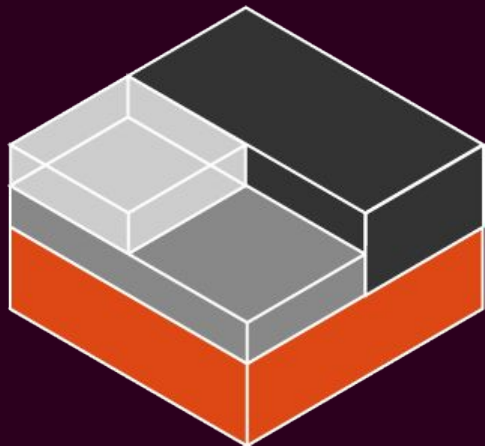


LXD - The container lighter-visor

HPCKP 2016
Barcelona, Spain

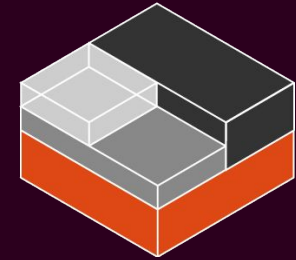


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@stgraber

LXD: the container lighter-visor



What it IS

→ Simple

Clean command line interface, simple REST API and clear terminology.

→ Fast

No virtualization overhead so as fast as bare metal.

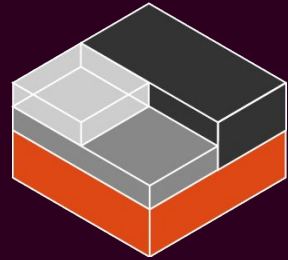
→ Secure

Safe by default. Combines all available kernel security features.

→ Scalable

From a single container on a developer's laptop to thousands of containers per host in a datacenter.

LXD: the container lighter-visor



What it IS

nova-lxd

command line tool

your own client/script ?

LXD REST API

LXD

LXD

LXD

LXD

LXD

LXC

LXC

LXC

LXC

LXC

Linux kernel

Linux kernel

Linux kernel

Linux kernel

Linux kernel

Host A

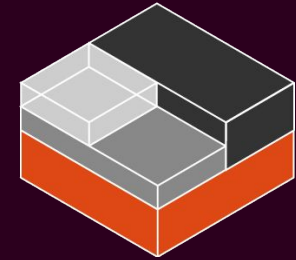
Host B

Host C

Host D

Host ...

LXD: the container lighter-visor



What it **ISN'T**

→ Another virtualization technology

LXD tries to offer as similar a user experience as that of a virtual machine but it doesn't itself virtualize anything, you always get access to the real hardware and the real native performance.

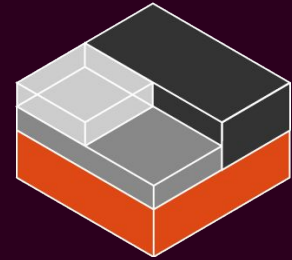
→ A fork of LXC

LXD uses LXC's API to manage the containers behind the scene.

→ Another application container manager

LXD only cares about full system containers and doesn't care about what runs inside the container.

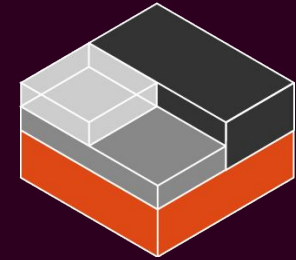
LXD: the container lighter-visor



LXD in the Enterprise

- Integrates with Ubuntu OpenStack
- Easy to interface/interact with
- Perfect for idle workloads
- Direct hardware access
- Negligible overhead
- Fine grained resource limits

LXD: the container lighter-visor



Checkpoint/restore (with CRIU)

→ Container live-migration

Transfer running state as well as the container filesystem

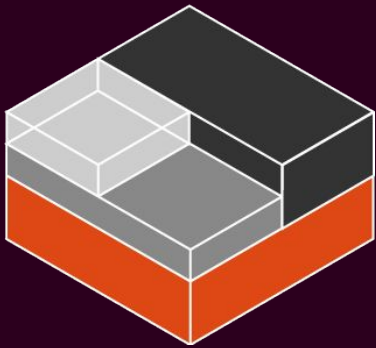
→ Stateful snapshots

Store the container state as part of a snapshot, allows for rollback of container state.

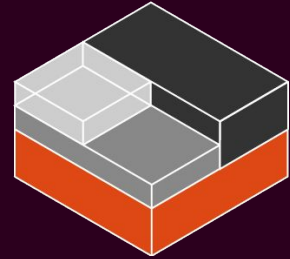
→ Stateful stop/start

Stop the container right after storing its state, effectively suspend-to-disk for containers.

Demo time



LXD: the container hypervisor

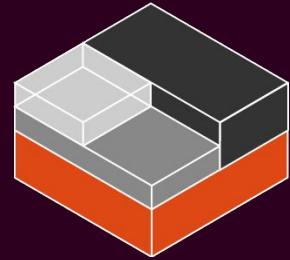


Let's recap

- Simple but powerful REST API to manage infrastructure containers
- Image based
- Trustable containers
- Scalable
- Designed with developers and enterprise in mind

LXD: the container hypervisor

Contributing



- Written in Go
- Fully translatable
- API client in Go and python
- Apache2 licensed
- No CLA

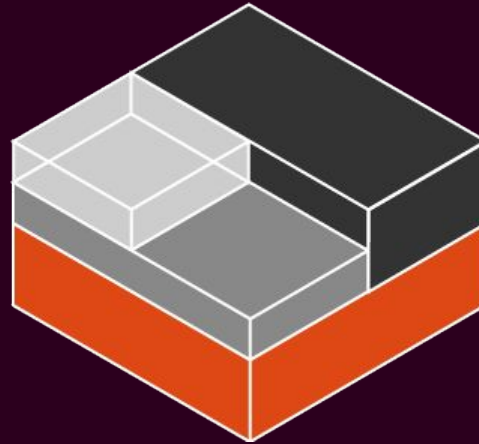
```
git clone https://github.com/lxc/lxd
```

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<https://www.stgraber.org>

<https://linuxcontainers.org/lxd>
<https://github.com/lxc/lxd>



Questions?

Try it yourself at: <https://linuxcontainers.org/lxd/try-it>
LXD 2.0 tutorial available at: <https://www.stgraber.org>