Large scale container management with LXD and OpenStack
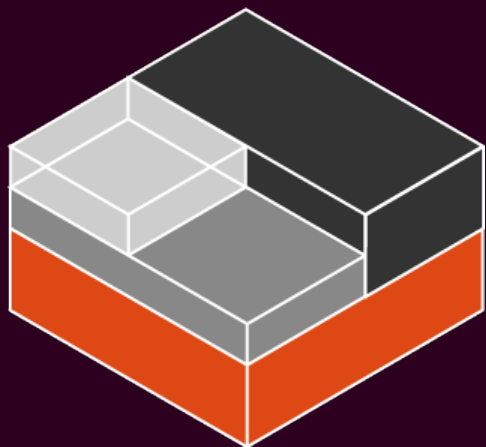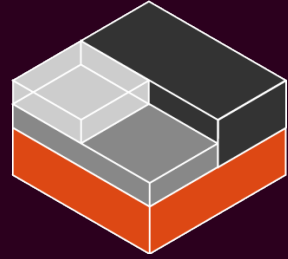
Stéphane Graber
LXD project leader, Canonical Ltd.

stgraber@ubuntu.com   @stgraber
https://www.stgraber.org

ubuntu

CANONICAL

LXD: the container lighter-visor

What it IS

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

→ ## Fast
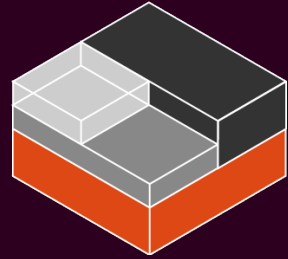*No virtualization overhead so as fast as bare metal.*

→ ## 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.

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What it **IS**
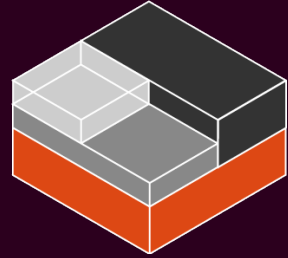
LXD: the container lighter-visor

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.
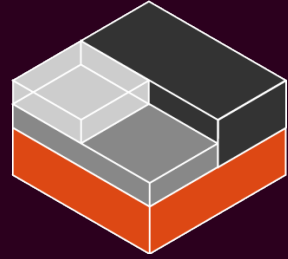
➜ A fork of LXC

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

Who it's for

➜ ## Users and developers
LXD can be used as an alternative user experience to LXC.
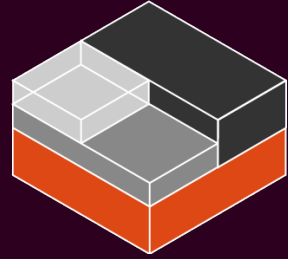
➜ ## DevOps
LXD makes it easy to prepare a container locally or in staging and then move it to production.

➜ ## Clouds
LXD lets you manage containers in very much the same way you would virtual machines. It also integrates with OpenStack.

LXD: the container lighter-visor

Secure containers

➔ User namespaces
   LXD defaults to running containers in a separate user namespace.

➔ Mandatory Access Control
   LXD integrates with AppArmor, SELinux and Seccomp to prevent containers from interacting with each other and the host.
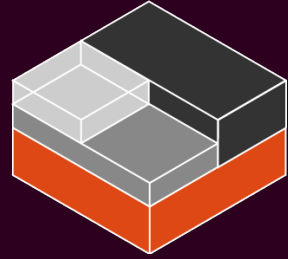
➔ Resource restrictions
   LXD makes it easy to restrict the use of physical resources like CPU, memory and storage devices through the use of Control Cgroups.
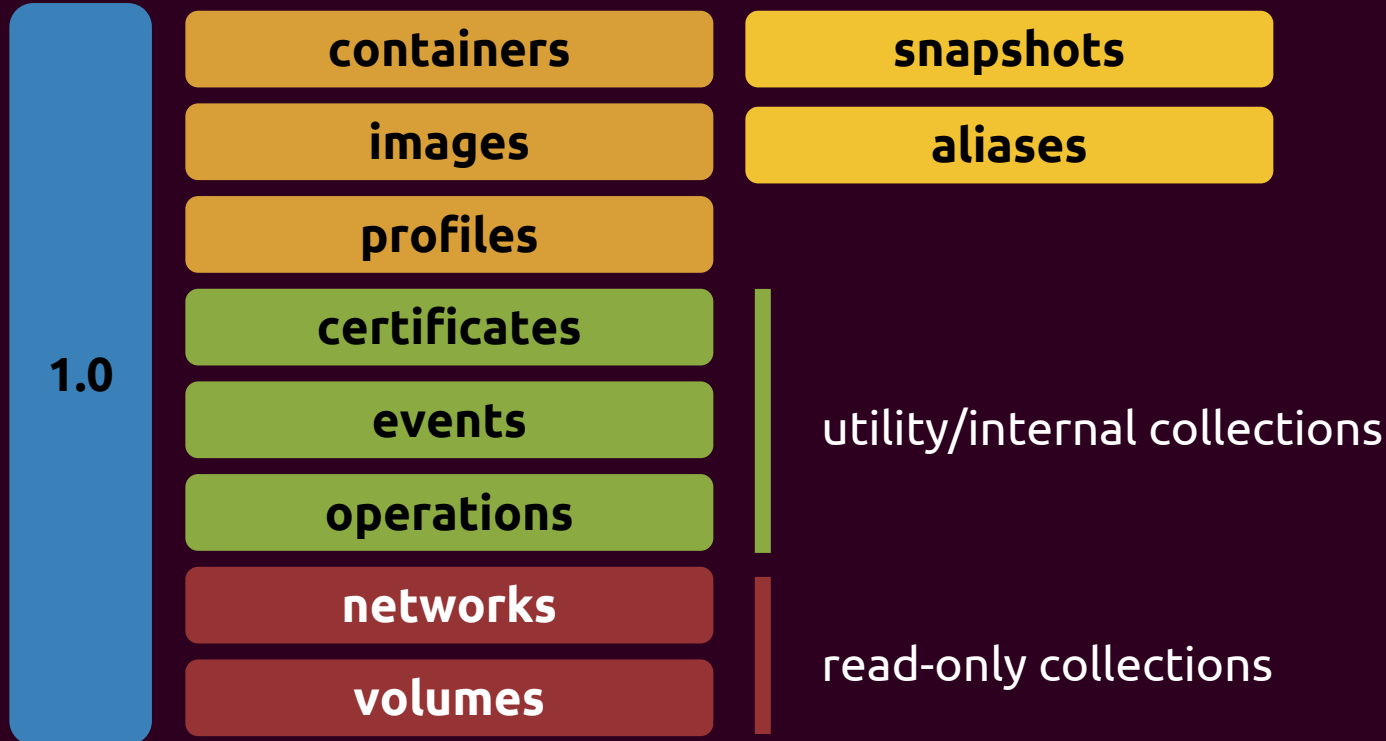
➔ Secure network operations
   Using only modern TLS with safe ciphers.
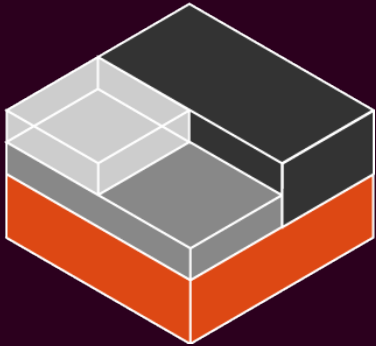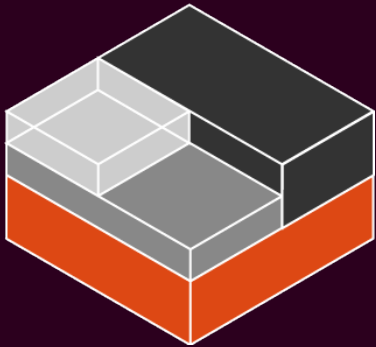
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REST API

1.0

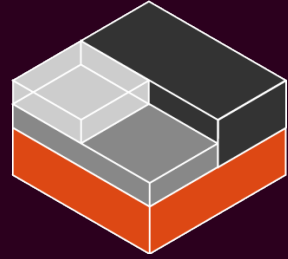|	
containers	**snapshots**
images	**aliases**
profiles	
certificates	
events	utility/internal collections
operations	
networks	
volumes	read-only collections

Demo time
LXD standalone

Demo time
LXD through OpenStack

LXD: the container hypervisor
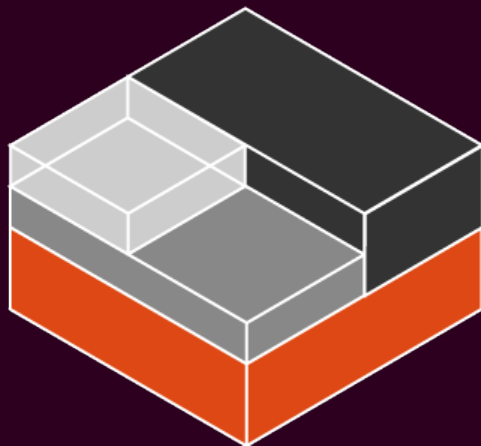
What's coming up next

➔ Support of all LXD features with OpenStack

➔ Safe live migration
Don't miss Tycho Andersen's talk on Wednesday!

➔ Improved network & storage handling
Ensure LXD works with SDNs like Contrail and more storage backends

➔ Snappy LXD on Ubuntu Core
➔ LXD in Ubuntu 16.04 LTS
LXD and nova-computed-lxd commercially supported for 5 years

Stéphane Graber
LXC project leader, Canonical Ltd.

stgraber@ubuntu.com   @stgraber
https://www.stgraber.org

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

Questions?