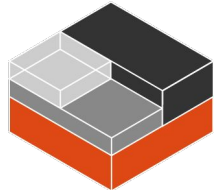


Introducing Incus

System containers and virtual machines at any scale

Stéphane Graber, Owner at Zabbly
<https://stgraber.org> / stgraber@stgraber.org
[@stgraber](#) / [@stgraber@hackyderm.io](#)



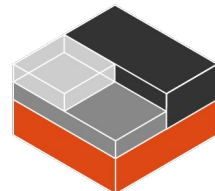
How did we get there?

- 2008/08: The LXC project is created by Daniel Lezcano
- 2013/09: The Linux Containers project, website and image server get created
- 2014/11: The LXD project is announced by Canonical (as part of Linux Containers)

- 2023/07/04: Canonical announces that LXD is to be moved out of Linux Containers
- 2023/07/05: All existing non-Canonical maintainers of LXD are removed from the project
- 2023/07/07: My last day at Canonical
- 2023/08/01: The Incus project is created by Aleksa Sarai
- 2023/08/07: Incus joins Linux Containers, taking LXD's place

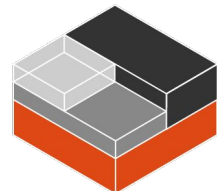
- 2023/10/07: Incus 0.1 is released

- 2023/12/12: LXD adds a CLA requirement and re-licenses to AGPLv3

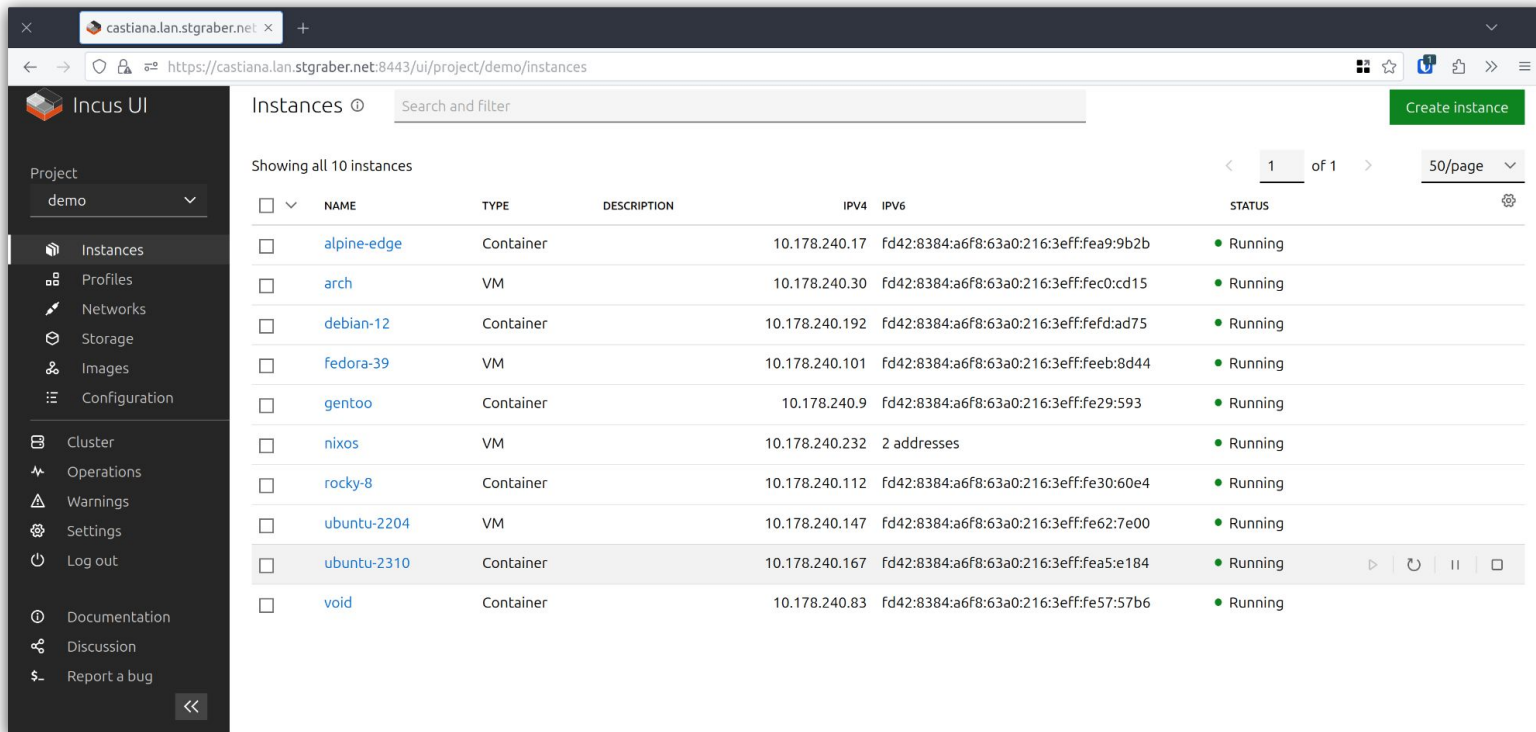


So what is it anyway?

```
Terminal
stgraber@castiana:~$ incus list
+-----+-----+-----+-----+-----+-----+
| NAME | STATE | IPV4 | IPV6 | TYPE | SNAPSHOTS |
+-----+-----+-----+-----+-----+-----+
| alpine-edge | RUNNING | 10.178.240.17 (eth0) | fd42:8384:a6f8:63a0:216:3eff:fea9:9b2b (eth0) | CONTAINER | 0 |
+-----+-----+-----+-----+-----+-----+
| arch | RUNNING | 10.178.240.30 (enp5s0) | fd42:8384:a6f8:63a0:216:3eff:fec0:cd15 (enp5s0) | VIRTUAL-MACHINE | 0 |
+-----+-----+-----+-----+-----+-----+
| debian-12 | RUNNING | 10.178.240.192 (eth0) | fd42:8384:a6f8:63a0:216:3eff:fed:ad75 (eth0) | CONTAINER | 0 |
+-----+-----+-----+-----+-----+-----+
| fedora-39 | RUNNING | 10.178.240.101 (enp5s0) | fd42:8384:a6f8:63a0:216:3eff:feeb:8d44 (enp5s0) | VIRTUAL-MACHINE | 0 |
+-----+-----+-----+-----+-----+-----+
| gentoo | RUNNING | 10.178.240.9 (eth0) | fd42:8384:a6f8:63a0:216:3eff:fe29:593 (eth0) | CONTAINER | 0 |
+-----+-----+-----+-----+-----+-----+
| nixos | RUNNING | 10.178.240.232 (enp5s0) | fd42:8384:a6f8:63a0:613d:8e53:eef8:9b74 (enp5s0) | VIRTUAL-MACHINE | 0 |
| | | | fd42:8384:a6f8:63a0:216:3eff:fe7d:88e5 (enp5s0) | | |
+-----+-----+-----+-----+-----+-----+
| rocky-8 | RUNNING | 10.178.240.112 (eth0) | fd42:8384:a6f8:63a0:216:3eff:fe30:60e4 (eth0) | CONTAINER | 0 |
+-----+-----+-----+-----+-----+-----+
| ubuntu-2204 | RUNNING | 10.178.240.147 (enp5s0) | fd42:8384:a6f8:63a0:216:3eff:fe62:7e00 (enp5s0) | VIRTUAL-MACHINE | 0 |
+-----+-----+-----+-----+-----+-----+
| ubuntu-2310 | RUNNING | 10.178.240.167 (eth0) | fd42:8384:a6f8:63a0:216:3eff:fea5:e184 (eth0) | CONTAINER | 0 |
+-----+-----+-----+-----+-----+-----+
| void | RUNNING | 10.178.240.83 (eth0) | fd42:8384:a6f8:63a0:216:3eff:fe57:57b6 (eth0) | CONTAINER | 0 |
+-----+-----+-----+-----+-----+-----+
stgraber@castiana:~$
```

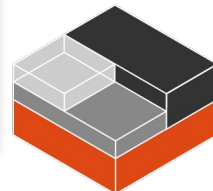


So what is it anyway?



The screenshot shows the Incus UI interface. The browser address bar indicates the URL is `https://castiana.lan.stgraber.net:8443/ui/project/demo/instances`. The page title is "Instances" with a search and filter input field. A green "Create instance" button is located in the top right corner. The main content area displays a table of 10 instances, all of which are in a "Running" status. The table columns are: NAME, TYPE, DESCRIPTION, IPV4, IPV6, and STATUS. The instances listed are: alpine-edge (Container), arch (VM), debian-12 (Container), fedora-39 (VM), gentoo (Container), nixos (VM), rocky-8 (Container), ubuntu-2204 (VM), ubuntu-2310 (Container), and void (Container). A sidebar on the left contains navigation links for Project (demo), Instances, Profiles, Networks, Storage, Images, Configuration, Cluster, Operations, Warnings, Settings, Log out, Documentation, Discussion, and Report a bug. A control bar at the bottom of the table includes play, refresh, pause, and stop icons.

<input type="checkbox"/>	NAME	TYPE	DESCRIPTION	IPV4	IPV6	STATUS
<input type="checkbox"/>	alpine-edge	Container		10.178.240.17	fd42:8384:a6f8:63a0:216:3eff:fea9:9b2b	Running
<input type="checkbox"/>	arch	VM		10.178.240.30	fd42:8384:a6f8:63a0:216:3eff:fec0:cd15	Running
<input type="checkbox"/>	debian-12	Container		10.178.240.192	fd42:8384:a6f8:63a0:216:3eff:fed:ad75	Running
<input type="checkbox"/>	fedora-39	VM		10.178.240.101	fd42:8384:a6f8:63a0:216:3eff:feeb:8d44	Running
<input type="checkbox"/>	gentoo	Container		10.178.240.9	fd42:8384:a6f8:63a0:216:3eff:fe29:593	Running
<input type="checkbox"/>	nixos	VM		10.178.240.232	2 addresses	Running
<input type="checkbox"/>	rocky-8	Container		10.178.240.112	fd42:8384:a6f8:63a0:216:3eff:fe30:60e4	Running
<input type="checkbox"/>	ubuntu-2204	VM		10.178.240.147	fd42:8384:a6f8:63a0:216:3eff:fe62:7e00	Running
<input type="checkbox"/>	ubuntu-2310	Container		10.178.240.167	fd42:8384:a6f8:63a0:216:3eff:fea5:e184	Running
<input type="checkbox"/>	void	Container		10.178.240.83	fd42:8384:a6f8:63a0:216:3eff:fe57:57b6	Running



What can I run on there?



Container or VM



Container



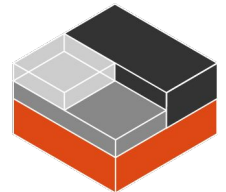
FreeBSD®



VM

Demo time!

Using Incus on a standalone system



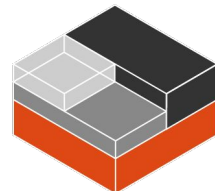
How about scripting it?

OpenTofu 

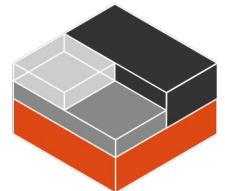
 **ANSIBLE**

 HashiCorp
Packer

 HashiCorp
Terraform

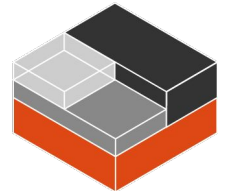


What if I like dashboards?



Demo time!

Using Incus in a clustered environment



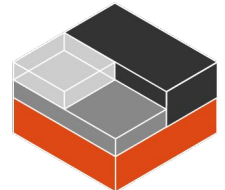
Where do I get it?



Server

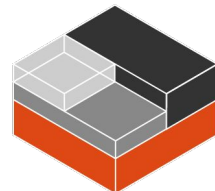


Client



What's next?

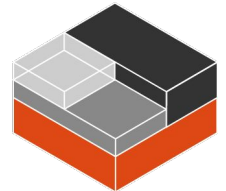
- Availability in more Linux distributions
 - Alpine packaging in progress
 - Fedora native package in progress
- Long Term Support (LTS) release
 - 2 years of bugfixes and minor improvements
 - 5 years of security updates
 - Expected in late March / early April 2024
- Planned major features:
 - bcache storage driver
 - Distributed LVM storage driver (lvmlockd)
 - Basic OCI application container support
 - Cross-cluster networking with OVN interconnect



Demo time!

Try it for yourself!

<https://linuxcontainers.org/incus/try-it>



Questions ?

Try Incus online:
<https://linuxcontainers.org/incus/try-it>

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