LXC Classic Linux containers

CONCEPTS

Every tool is a separate lxc-* program taking -n <name>; there is no single lxc command in the classic tools. The lxc client of LXD/Incus is a different thing: see the Incus sheet.

Template download, busybox
↓ lxc-create
Container dir config + rootfs
↓ lxc-start
RUNNING init + namespaces
↓ lxc-stop
STOPPED still defined
↓ lxc-destroy
Gone dir removed

Unprivileged containers (run as your user, uid-mapped) need /etc/subuid, /etc/subgid and an /etc/lxc/lxc-usernet quota; root-run containers are privileged by default.

Containers live in /var/lib/lxc/<name>/ (root) or ~/.local/share/lxc/ (unprivileged); -P <path> points any tool at another store.

CREATE AND DESTROY

lxc-create -n *<name>* -t download
Create from the image server (asks distro)

lxc-create -n *<name>* -t download -- -d debian -r bookworm -a amd64
Create non-interactively

lxc-create -n *<name>* -t download -f *<config>*
Create with a config file

lxc-create -n *<name>* -t download -B btrfs
Pick the backing store

lxc-destroy -n *<name>*
Delete a stopped container

lxc-destroy -n *<name>* -f
Stop and delete in one go

RUN AND STOP

lxc-start -n *<name>*
Start in the background

RUN AND STOP (cont.)

lxc-start -n *<name>* -F
Start in foreground, see boot output

lxc-start -n *<name>* -l DEBUG -o *<file>*
Log a failing start

lxc-stop -n *<name>*
Request clean shutdown

lxc-stop -n *<name>* -k
Kill instead of shutting down

lxc-stop -n *<name>* -t *<sec>*
Hard-stop after a timeout

lxc-stop -n *<name>* -r
Reboot the container

lxc-freeze -n *<name>*
Pause all processes

lxc-unfreeze -n *<name>*
Resume a frozen container

INSPECT

lxc-ls -f
List containers, state, IPs

lxc-ls --running
Only running containers

lxc-ls --stopped
Only stopped containers

lxc-ls -F NAME,STATE,IPV4
Pick the fancy columns

lxc-info -n *<name>*
Show state, PID, IPs, usage

lxc-info -n *<name>* -iH
Only the IP addresses, plain

lxc-info -n *<name>* -s
Only the state

lxc-info -n *<name>* -S
Usage stats (CPU, memory, I/O)

lxc-top
Live per-container usage

GET INSIDE

lxc-attach -n *<name>*
Shell inside the container

lxc-attach -n *<name>* -- *<cmd>*
Run one command inside

lxc-attach -n *<name>* --clear-env -- *<cmd>*
Run with a clean environment

GET INSIDE (cont.)

lxc-console -n *<name>*
Attach to the container console

CLONES AND SNAPSHOTS

lxc-snapshot -n *<name>*
Create next snapshot (snap0, snap1...)

lxc-snapshot -n *<name>* -L
List snapshots

lxc-snapshot -n *<name>* -r *<snap>*
Restore a snapshot

lxc-snapshot -n *<name>* -d *<snap>*
Delete a snapshot

lxc-copy -n *<name>* -N *<new>*
Clone a container

lxc-copy -n *<name>* -N *<new>* -s
Clone as copy-on-write snapshot

lxc-copy -n *<name>* -e
Start a throwaway ephemeral copy

lxc-copy -n *<name>* -N *<new>* -R
Rename a container

CONFIG AND LIMITS

lxc.start.auto = 1
Start at host boot

lxc.net.0.type = veth
Virtual NIC type

lxc.net.0.link = *<bridge>*
Bridge to attach to

lxc.net.0.flags = up
Bring the NIC up

lxc.mount.entry = *<src>* *<dst>* none bind 0 0
Bind-mount a host dir

lxc.cgroup2.memory.max = *<bytes>*
Memory limit (cgroup v2)

FILES AND PATHS

/var/lib/lxc/*<name>*/config
Per-container config (root)

/var/lib/lxc/*<name>*/rootfs
Container filesystem on the host