# Incus System containers and VMs

## CONCEPTS

Incus runs system containers (a full OS with init, like a light VM) and, with --vm, real QEMU virtual machines. Both use the same commands.

**Remote** images: image server
↓ `incus launch`
**Image** cached locally
↓ `incus launch`
**Instance** container or VM; profiles + devices
↓ `incus publish`

Profiles are reusable bundles of config and devices applied to instances. New instances get the default profile (root disk and NIC) unless you pass --profile.

images: is a remote name, debian/12 an image alias. Add other servers with incus remote add; incus remote list shows what is configured.

## INSTANCES

**incus launch** *<image> <name>*
Create and start an instance

**incus launch** *<image> <name>* **--vm**
Launch as a virtual machine

**incus init** *<image> <name>*
Create without starting

**incus list**
List instances with state and IPs

**incus start** *<name>*
Start an instance

**incus stop** *<name>*
Stop an instance

**incus restart** *<name>*
Restart an instance

**incus delete** *<name>*
Delete a stopped instance

**incus info** *<name>*
Show status, network and snapshots

**incus launch** *<image> <name>* **-c limits.cpu=2 -c limits.memory=2GiB**
Launch with resource limits

## INSTANCES (cont.)

**incus launch** *<image> <name>* **--profile default --profile** *<p>*
Launch with several profiles

## ACCESS AND FILES

**incus shell** *<name>*
Login shell as root

**incus exec** *<name>* **--** *<cmd>*
Run a command inside

**incus console** *<name>*
Attach to the text console

**incus file push** *<local> <name>*/*<path>*
Copy a file into an instance

**incus file pull** *<name>*/*<path> <local>*
Copy a file out

**incus file push -r** *<dir> <name>*/*<path>*
Copy a directory recursively

**incus file edit** *<name>*/*<path>*
Edit a file in place

## IMAGES

**incus image list images:** *<filter>*
Search a remote image server

**incus image list**
List local images

**incus image copy images:***<alias>* **local: --alias** *<a>*
Cache a remote image locally

**incus publish** *<name>* **--alias** *<alias>*
Turn an instance into an image

## CONFIG AND PROFILES

**incus config show** *<name>*
Show instance config

**incus config set** *<name> <key>*=*<value>*
Set an option

**incus config get** *<name> <key>*
Read an option

**incus config edit** *<name>*
Edit config in $EDITOR as YAML

## CONFIG AND PROFILES (cont.)

**incus config device add** *<name> <dev>* **disk source=***<host>* **path=***<dir>*
Mount a host directory

**incus config device add** *<name> <dev>* **proxy listen=tcp:0.0.0.0:***<p>* **connect=tcp:127.0.0.1:***<p>*
Publish a port

**incus config device set** *<name>* **root size=***<size>*
Resize the root disk

**incus profile list**
List profiles

**incus profile show** *<profile>*
Show a profile

**incus profile create** *<profile>*
Create a profile

**incus profile edit** *<profile>*
Edit a profile as YAML

**incus profile assign** *<name> <p1>*,*<p2>*
Replace an instance's profiles

## SNAPSHOTS AND COPIES

**incus snapshot create** *<name> <snap>*
Create a snapshot

**incus snapshot list** *<name>*
List snapshots

**incus snapshot restore** *<name> <snap>*
Roll back to a snapshot

**incus snapshot delete** *<name> <snap>*
Delete a snapshot

**incus copy** *<name> <new>*
Clone an instance

**incus export** *<name> <file>*
Back up to a tarball

## STORAGE AND NETWORK

**incus storage list**
List storage pools

**incus storage create** *<pool> <driver>*
Create a pool (dir, btrfs, zfs, lvm)