# Incus System containers and VMs

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

## 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.

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

## INSTANCES (cont.)

**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

**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

## ACCESS AND FILES (cont.)

**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

**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

## CONFIG AND PROFILES (cont.)

**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