

# Lima v2.0

Plugins!  
GPU! MCP!

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## Linux virtual machines

for running containers, AI agents, etc.

- Automatic host filesystem sharing
- Automatic port forwarding
- Built-in integration for containerd

(and Docker, Podman, Kubernetes, Apptainer, ...)

```
$ brew install lima
$ limactl start
$ lima nerdctl run -p 80:80 nginx
```



<https://lima-vm.io/>



# Promoted to CNCF Incubating Project



## Linux virtual machines, typically on macOS, for running containerd

Lima was accepted to CNCF on September 14, 2022 and moved to the **Incubating** maturity level on October 14, 2025.

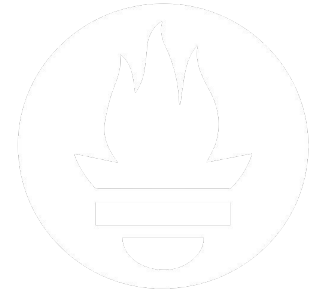
VISIT PROJECT WEBSITE





# v2.0 (November 2025)

- Plugin infrastructure to allow implementing new features without modifying Lima
  - VM driver plugins
  - CLI plugins
  - URL schema plugins
- GPU acceleration with krunkit VM driver
- MCP server for protecting AI agents such as Gemini
- Lots of CLI improvements



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# Extending the focus to AI

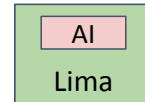


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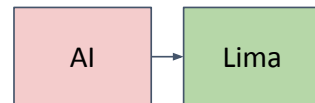
- Original goal in 2021 was to facilitate running containers on macOS
- Turned out to be highly useful for securing AI agents too

- AI inside Lima



- Just run Codex, Copilot, Claude, Gemini, etc. inside Lima
- LLM inference can be done inside Lima, using GPU acceleration

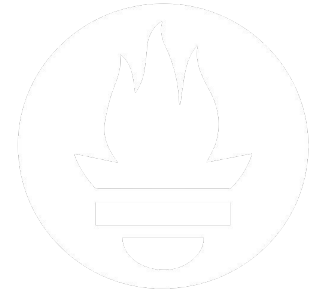
- AI outside Lima



- Lima's MCP server can be connected from AI agents running on the host
- VScode + Remote SSH + Copilot works well too with Lima

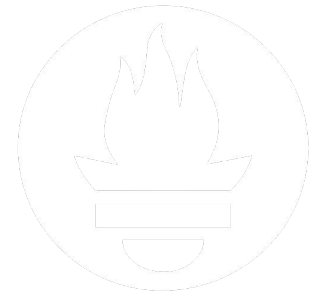


# GPU acceleration in action



```
lima
$ lima --version
limactl version 2.0.0
$ lima llama-cli --version
ggml_vulkan: Found 1 Vulkan devices:
ggml_vulkan: 0 = Virtio-GPU Venus (Apple M4 Max) (venus) | uma: 1 | fp16: 1 | bf
16: 0 | warp size: 32 | shared memory: 32768 | int dot: 0 | matrix cores: none
version: 6962 (230d1169e)
built with cc (GCC) 15.2.1 20251022 (Red Hat 15.2.1-3) for aarch64-redhat-linux
$
```

# How it works



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- **Hypervisor**

Virtualization.framework aka vz, QEMU, or krunkit

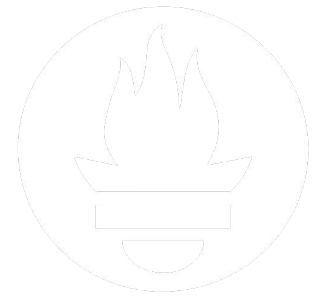
- **Intel-on-ARM binary executor**

Rosetta 2 (vz) or QEMU-user

- **Filesystem sharing**

virtiofs (vz, krunkit), virtio-9p (QEMU), or reverse-sshfs

# How it works



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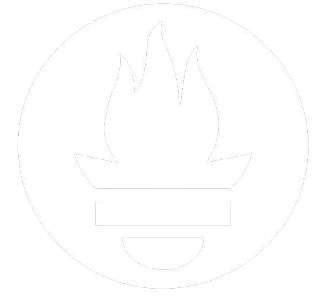
- **Network**

- user mode networking (default)
- `socket_vmnet` (for direct access to the IP, etc. with `sudo`)
- `vzNAT` (for faster direct access to the IP, with `vz`)

- **Port forwarding**

- `NETLINK_SOCK_DIAG` watcher (for most services)
- Kubernetes service watcher (for Kubernetes services)

# Built-in templates



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- **Distros**

almalinux, alpine, archlinux, centos-stream, debian, opensuse, oraclelinux, rocky, ubuntu, ...

- **Container engines**

apptainer, docker, docker-rootful, podman, podman-rootful, ...

- **Container orchestration**

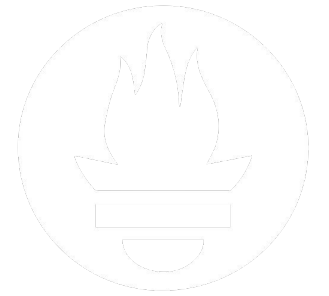
faasd, k3s, k8s

```
$ limctl start --name=default template://docker
```



# Future ideas

- More VM drivers
  - e.g., for managing IaaS instances
- Rsync instead of mounts
  - e.g., for cancelling file modifications committed by AI
- Menu-based text user interface
- UX improvement for composing multiple VMs



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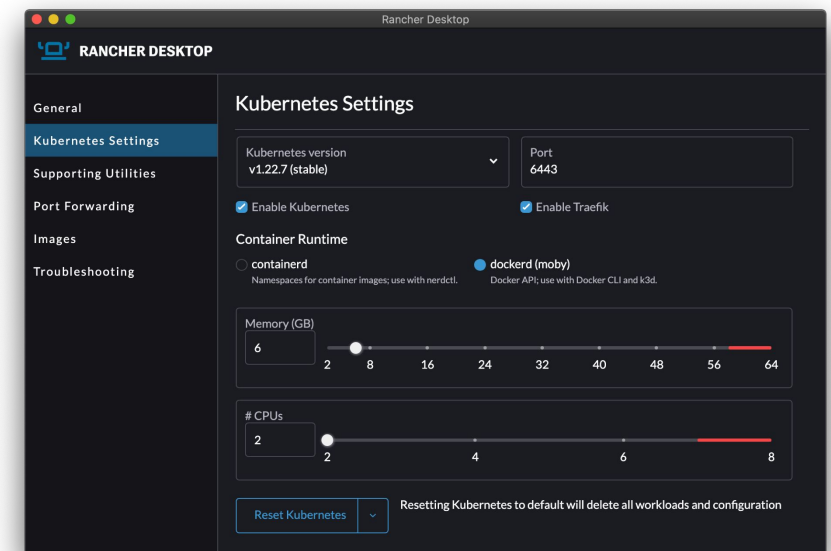
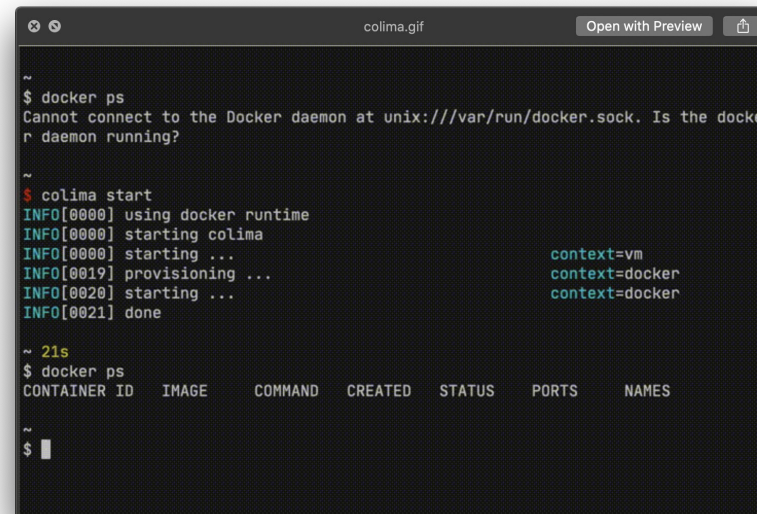
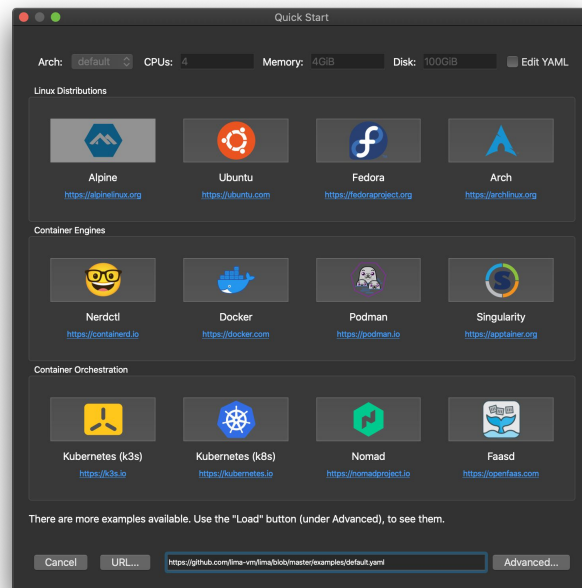
# Third party FLOSS projects based on Lima



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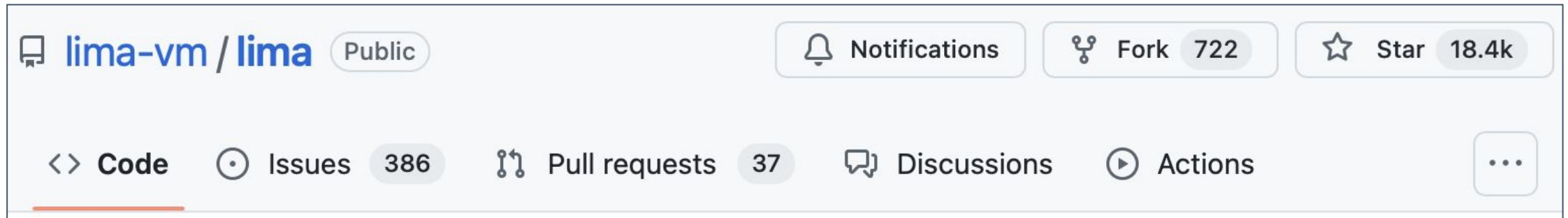
<b>Lima-GUI</b>	<a href="https://github.com/afbjorklund/lima-gui">https://github.com/afbjorklund/lima-gui</a>
<b>Colima</b>	<a href="https://github.com/abiosoft/colima">https://github.com/abiosoft/colima</a>
<b>Rancher Desktop</b>	<a href="https://rancherdesktop.io/">https://rancherdesktop.io/</a>
<b>Finch</b>	<a href="https://github.com/runfinch/finch">https://github.com/runfinch/finch</a>



# Join the community!

- Web site: <https://lima-vm.io/>

- GitHub: <https://github.com/lima-vm/lima>



- Slack: <https://slack.cncf.io/> (Channel: #lima)



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