Lima
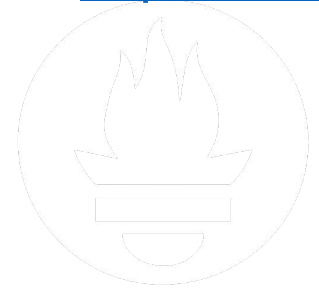
Linux virtual machines for running containers (on macOS)

- 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
```

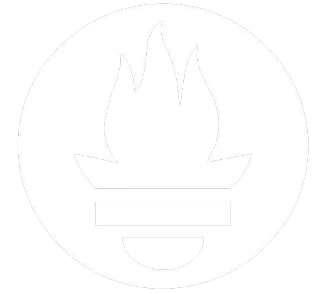1

How it works

- **Hypervisor**
QEMU (default) or Virtualization.framework

- **Intel-on-ARM binary executor**
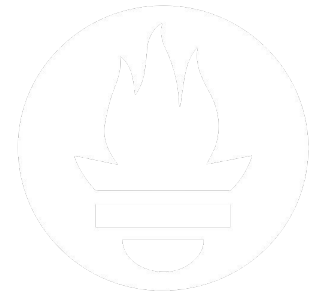qemu-user (default) or Rosetta 2 (faster)

- **Filesystem sharing**
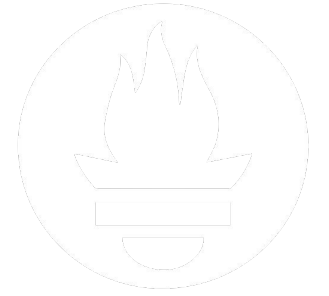reverse sshfs (default), virtio-9p-pci, or virtiofs (faster)

How it works

- **Network**
  - user mode networking (default)
  - socket_vmnet (for direct access to the IP, etc. with sudo)

- **Port forwarding**
  Implemented by watching /proc/net/tcp, iptables, and Kubernetes services

Built-in templates

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

- **Container engines**
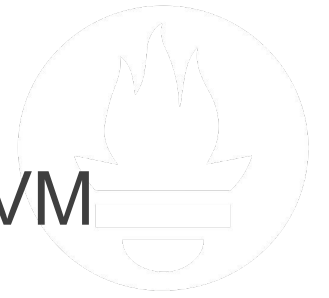 apptainer, docker, docker-rootful, podman, podman-rootful, ...

- **Container orchestration**
  faasd, k3s, k8s, nomad

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

Recent updates

- **v0.16**: Implemented "user-v2" network to support VM-to-VM communication without the root privilege on the host
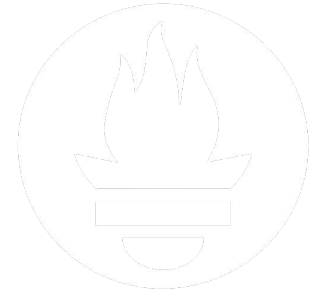
```
$ limactl start --name=default template://experimental/user-v2
```

- **v0.17**: Enhanced the CLI syntax; No longer need to care about YAML

```
$ limactl create --cpus=2 --memory=2 --vm-type=vz
```

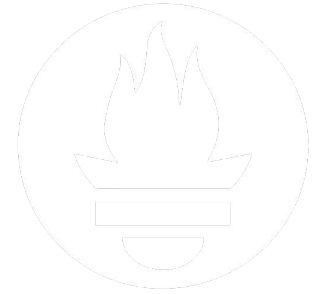- **v0.18**: Added the support for WSL2 driver

Recent updates

- **v0.19**: Stability improvement & support for Apple M3

- **v0.20**: Added the support for propagating timezone from the host

- **v0.21**: Added the support for inotify and start-on-login

No native support for GPU, but …

- [WASI-NN] Support RPC mode
(e.g., for allowing Lima guest to use the host GPU)
https://github.com/WasmEdge/WasmEdge/pull/3128
  - Universal gRPC API for WASI Neural Net

  - Non-wasm applications can use the API as well

Future plans

- Switch the default hypervisor from QEMU to Virtualization.framework
    - virtiofs (fast) by default

- UX improvement for multi-VM
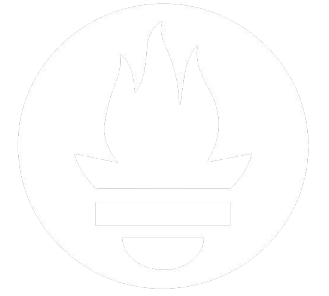
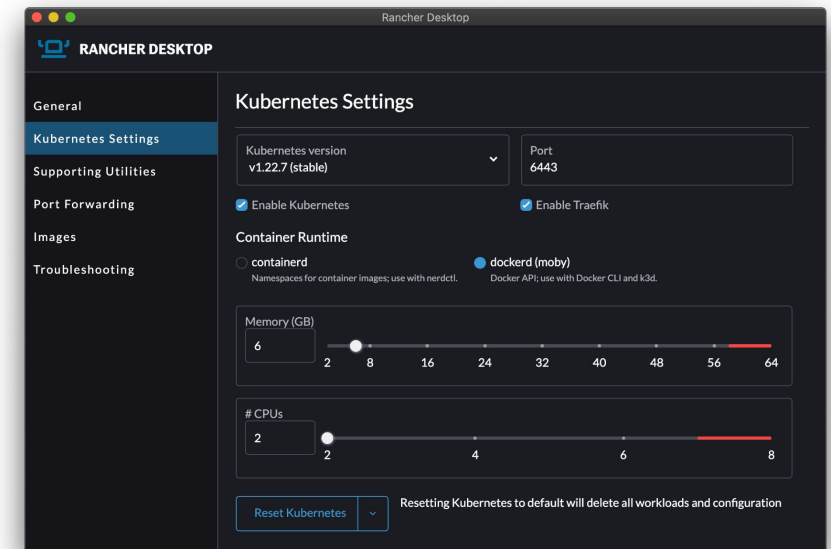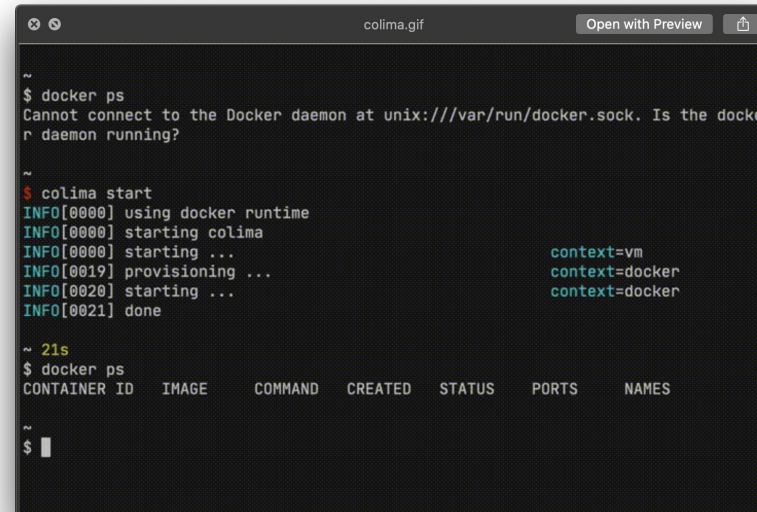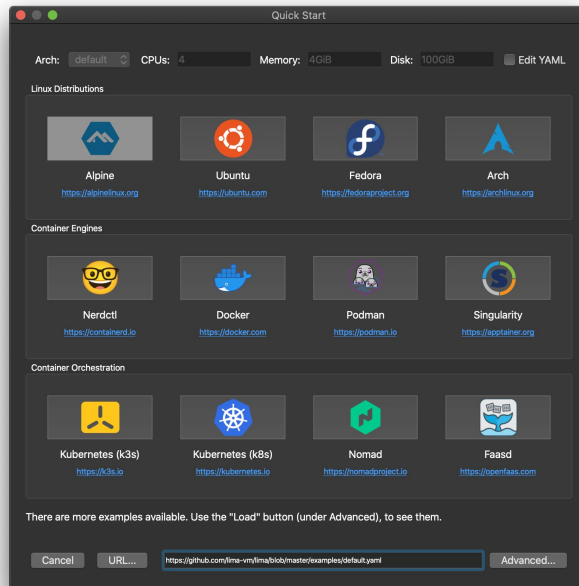# Third party FLOSS projects based on Lima

Lima-GUI	https://github.com/afbjorklund/lima-gui
Colima	https://github.com/abiosoft/colima
Rancher Desktop	https://rancherdesktop.io/
Finch	https://github.com/runfinch/finch

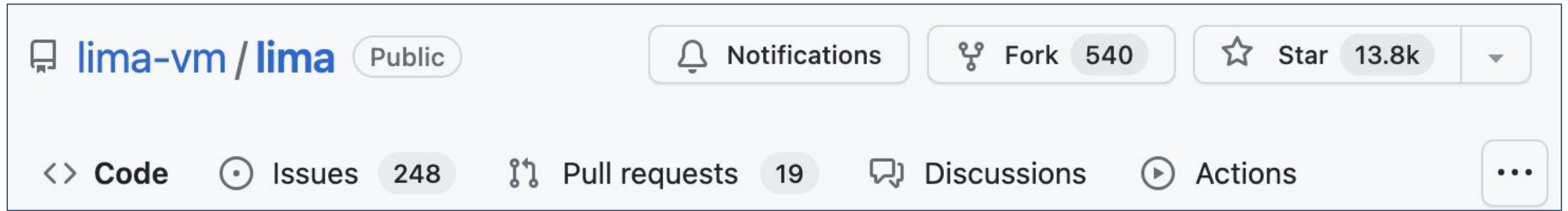# Join the community!

- **GitHub:** https://github.com/lima-vm/lima/

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