Podman Daemonless containers

CONCEPTS

The CLI mirrors docker: alias docker=podman works for most commands. No daemon runs; each container is a child process, and it is rootless by default.

Containerfile recipe
↓ `podman build`
Image template; push to a registry
↓ `podman run`
Container running instance

Short image names are resolved through registries.conf; use full names like docker.io/library/nginx to be explicit.

A pod groups containers that share one network namespace, like a Kubernetes pod; they reach each other on localhost.

RUN

`podman run <image> <cmd>`
Run a command in a new container

`podman run -d --name <name> <image>`
Run in background with a name

`podman run -it <image> sh`
Interactive shell

`podman run --rm <image>`
Remove container on exit

`podman run -p <host>:<ctr> <image>`
Publish a port

`podman run -v <src>:<dst>:Z <image>`
Bind mount a path

`podman run -e <KEY>=<val> <image>`
Set an environment variable

`podman run --pod <pod> <image>`
Join an existing pod

`podman run --userns=keep-id <image>`
Map your UID into the container

CONTAINERS

`podman ps`
List running containers

`podman ps -a`
List all containers

`podman start <name>`
Start a stopped container

`podman stop <name>`
Stop a container

`podman restart <name>`
Restart a container

`podman rm <name>`
Remove a container

`podman rm -f <name>`
Force-remove, even if running

`podman logs -f <name>`
Follow container logs

`podman exec -it <name> <cmd>`
Run a command in a container

`podman inspect <name>`
Show full configuration as JSON

`podman cp <name>:<path> <dest>`
Copy files in or out

IMAGES

`podman images`
List local images

`podman pull <image>`
Download an image

`podman build -t <tag> .`
Build from a Containerfile

`podman build -f <file> -t <tag> .`
Build from a specific file

`podman push <image> <dest>`
Upload an image

`podman tag <image> <new>`
Add a name to an image

`podman rmi <image>`
Remove an image

`podman search <term>`
Search registries

`podman login <registry>`
Authenticate to a registry

PODS

`podman pod create --name <pod> -p <h>:<c>`
Create a pod with a port

`podman pod ps`
List pods

`podman pod start <pod>`
Start a pod and its containers

`podman pod stop <pod>`
Stop a pod

`podman pod rm -f <pod>`
Remove a pod and its containers

VOLUMES & NETWORKS

`podman volume create <name>`
Create a named volume

`podman volume ls`
List volumes

`podman volume rm <name>`
Remove a volume

`podman network create <name>`
Create a network

`podman network ls`
List networks

`podman run --network <name> <image>`
Attach to a network

SYSTEMD & QUADLET

`systemctl --user daemon-reload`
Regenerate units from Quadlet files

`systemctl --user start <name>.service`
Start a Quadlet service

`podman quadlet install <file>`
Install a Quadlet file

`podman quadlet list`
List installed Quadlets

`loginctl enable-linger <user>`
Keep user services running after logout

Quadlet file locations

Mode	Directory
rootless	`~/.config/containers/systemd/`
rootful	`/etc/containers/systemd/`