Podman Daemonless containers

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

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.

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

RUN (cont.)

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 --env-file *<file> <image>*
Load variables from a file

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

CONTAINERS (cont.)

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

IMAGES (cont.)

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

VOLUMES & NETWORKS (cont.)

podman volume rm *<name>*
Remove a volume

podman network create *<name>*
Create a network

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

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

Quadlet file locations

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