LOW LEVEL

CONTAINER RUNTIME - RUNC

Prerequisites:

sudo apt-get -y install umoci runc

Tutorial1:

mkdir my-bundle & cd my-bundle
runc spec
docker export $(docker create alpine:3.15) | tar -C rootfs -xvf -
runc run my-alp-container

Tutorial2:

docker run -it alpine:3.15 /bin/sh
aureliano@aureliano-N141CU ~ $ docker ps
CONTAINER ID   IMAGE   COMMAND   CREATED   STATUS   PORTS
NAMES
35819c2a4cf7   alpine:3.15   "/bin/sh"   10 seconds ago   Up 9 seconds
affectionate_swanson

DOCKER SDK

Docker provides an API for interacting with the Docker daemon (called the Docker Engine API), as well as SDKs for Go and Python. The SDKs allow you to build and scale Docker apps and solutions quickly and easily. If Go or Python don't work for you, you can use the Docker Engine API directly.

REST API: https://docs.docker.com/engine/api/v1.43/

A command-line interface (**CLI**) is a text-based user interface (UI) used to run programs, manage computer files and interact with the computer.

DOCKER CLI (docker)

DOCKER COMPOSE CLI (docker-compose)

DAEMON CLI (dockerd)

API DOCKER

DISPLAY DOCKER VERSION: curl http://localhost:2375/version

CREATE A CONTAINER:

aureliano@aureliano-HP-EliteBook-1050-G1 ~ $ curl -XPOST -d '{"Image":"nginx:latest"}' -H 'Content-Type: application/json' http://localhost:2375/containers/create?name=nginx

{"Id":"**b3228689b0a09b4541679be5a36866eda0eb1124de5d6fa220e8a3559fbbe57d**","Warnings":[]}

START CONTAINER:

$ curl -XPOST -H 'Content-Type: application/json' http://localhost:2375/containers/b3228689b0a09b4541679be5a36866eda0eb1124de5d6fa220e8a3559fbbe57d/start

LIST CONTAINERS: curl http://localhost:2375/containers/json

[{"Id":"b3228689b0a09b4541679be5a36866eda0eb1124de5d6fa220e8a3559fbbe57d","Names":["/nginx"],"Image":"nginx:latest","ImageID":"sha256:61395b4c586da2b9b3b7ca903ea6a448e6783dfdd7f768ff2c1a0f3360aaba99","Command":"/docker-entrypoint.sh nginx -g 'daemon off;'","Created":1696065088,"Ports":[{"PrivatePort":80,"Type":"tcp"}],"Labels":{"maintainer":"NGINX Docker Maintainers <docker-maint@nginx.com>"},"State":"running","Status":"Up 11 seconds","HostConfig":{"NetworkMode":"default"},"NetworkSettings":{"Networks":{"bridge":{"IPAMConfig":null,"Links":null,"Aliases":null,"NetworkID":"78fb4a09272337e530bea132236ac46aa51bd283a94138bd828e73694a9a9661","EndpointID":"ab9d944dea97bccbdcda750033bfa562451108ed407695e6ee2fcc3c83a10247","Gateway":"172.17.0.1","IPAddress":"172.17.0.2","IPPrefixLen":16,"IPv6Gateway":"","GlobalIPv6Address":"","GlobalIPv6PrefixLen":0,"MacAddress":"02:42:ac:11:00:02","DriverOpts":null}}},"Mounts":[]}]