



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
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","EndpointI
D":"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":[]}]
```