

## 1- Install docker

```
C:\Users\imarw>docker -v
Docker version 20.10.11, build dea9396
```

## 2- List all running containers

```
C:\Users\imarw>docker ps
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
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## 3- List all containers in your system

```
C:\Users\imarw>docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
7c459a234c6a	ubuntu	"bash"	37 hours ago	Exited (0) 36 hours ago		wizardly_sammet
64ce2a5c6a36	httpd	"httpd-foreground"	38 hours ago	Exited (0) 37 hours ago		unruffled_archimedes
035caa0af70d	python:3.9	"python3"	38 hours ago	Exited (137) 38 hours ago		affectionate_hamilton
e2ce63c4ecc7	python:3.9	"python3"	38 hours ago	Exited (0) 38 hours ago		angry_nash
b6ad5128b067	python:3.9	"python3"	38 hours ago	Exited (0) 38 hours ago		thirsty_feistel
9bdc108cbeb1	mysql:5.7	"docker-entrypoint.s..."	7 days ago	Exited (0) 21 hours ago		business-backend_db-sql_1
849099ba86d4	redis:alpine	"docker-entrypoint.s..."	7 days ago	Exited (0) 21 hours ago		business-backend_redis_1
c9d5f5374b17	mrsool-backend_app	"docker-entrypoint.s..."	2 weeks ago	Exited (137) 13 days ago		mrsool-backend_app_1
4b6b5d8122c7	mysql:5.7	"docker-entrypoint.s..."	2 weeks ago	Exited (255) 12 days ago	0.0.0.0:3306->3306/tcp	mrsool-backend_mysql_1
06f7d33063f7	redis:alpine	"docker-entrypoint.s..."	2 weeks ago	Exited (255) 12 days ago	0.0.0.0:6379->6379/tcp	mrsool-backend_redis_1

## 4- List all images in your system

```
C:\Users\imarw>docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
<none>	<none>	9c076d26767c	37 hours ago	72.8MB
<none>	<none>	d64bc703e521	38 hours ago	912MB
business-backend_app	latest	98819ea134d7	7 days ago	1.15GB
business-backend_test	latest	7dfb16a7950d	7 days ago	1.07GB
python	3.9	8033d9650e4e	9 days ago	912MB
mrsool-backend_app	latest	0718d3334136	2 weeks ago	1.7GB
mrsool-backend_sideiq	latest	0718d3334136	2 weeks ago	1.7GB
<none>	<none>	ee88c759e922	2 weeks ago	1.7GB
<none>	<none>	c5409517d79d	2 weeks ago	1.7GB
ubuntu	latest	54c9d81cbb44	2 weeks ago	72.8MB
httpd	latest	a8ea074f4566	3 weeks ago	144MB
<none>	<none>	53ab62584112	5 weeks ago	1.76GB
mysql	5.7	c20987f18b13	8 weeks ago	448MB
redis	alpine	3900abf41552	2 months ago	32.4MB

## 5- Pull nginx image and give it a name

```
C:\Users\imarw>docker pull nginx
Using default tag: latest
latest: Pulling from library/nginx
5eb5b503b376: Already exists
1ae07ab881bd: Pull complete
78091884b7be: Pull complete
091c283c6a66: Pull complete
55de5851019b: Pull complete
b559bad762be: Pull complete
Digest: sha256:2834dc507516af02784808c5f48b7cbe38b8ed5d0f4837f16e78d00deb7e7767
Status: Downloaded newer image for nginx:latest
docker.io/library/nginx:latest
```

```
C:\Users\imarw>docker image tag nginx mynginx
```

6- Try to run nginx.

```
C:\Users\imarw>docker run -p 8000:80 --name nginx-container nginx
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2022/02/17 08:18:03 [notice] 1#1: using the "epoll" event method
2022/02/17 08:18:03 [notice] 1#1: nginx/1.21.6
2022/02/17 08:18:03 [notice] 1#1: built by gcc 10.2.1 20210110 (Debian 10.2.1-6)
2022/02/17 08:18:03 [notice] 1#1: OS: Linux 5.10.16.3-microsoft-standard-WSL2
2022/02/17 08:18:03 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2022/02/17 08:18:03 [notice] 1#1: start worker processes
2022/02/17 08:18:03 [notice] 1#1: start worker process 31
2022/02/17 08:18:03 [notice] 1#1: start worker process 32
2022/02/17 08:18:03 [notice] 1#1: start worker process 33
2022/02/17 08:18:03 [notice] 1#1: start worker process 34
2022/02/17 08:18:03 [notice] 1#1: start worker process 35
2022/02/17 08:18:03 [notice] 1#1: start worker process 36
2022/02/17 08:18:03 [notice] 1#1: start worker process 37
2022/02/17 08:18:03 [notice] 1#1: start worker process 38
2022/02/17 08:18:03 [notice] 1#1: start worker process 39
2022/02/17 08:18:03 [notice] 1#1: start worker process 40
2022/02/17 08:18:03 [notice] 1#1: start worker process 41
2022/02/17 08:18:03 [notice] 1#1: start worker process 42
2022/02/17 08:18:03 [notice] 1#1: start worker process 43
2022/02/17 08:18:03 [notice] 1#1: start worker process 44
2022/02/17 08:18:03 [notice] 1#1: start worker process 45
2022/02/17 08:18:03 [notice] 1#1: start worker process 46
```

7- Watch container logs

```

C:\Users\imarw>docker logs nginx-container
/docker-entrypoint.sh: /docker-entrypoint.d/ is not empty, will attempt to perform configuration
/docker-entrypoint.sh: Looking for shell scripts in /docker-entrypoint.d/
/docker-entrypoint.sh: Launching /docker-entrypoint.d/10-listen-on-ipv6-by-default.sh
10-listen-on-ipv6-by-default.sh: info: Getting the checksum of /etc/nginx/conf.d/default.conf
10-listen-on-ipv6-by-default.sh: info: Enabled listen on IPv6 in /etc/nginx/conf.d/default.conf
/docker-entrypoint.sh: Launching /docker-entrypoint.d/20-envsubst-on-templates.sh
/docker-entrypoint.sh: Launching /docker-entrypoint.d/30-tune-worker-processes.sh
/docker-entrypoint.sh: Configuration complete; ready for start up
2022/02/17 08:18:03 [notice] 1#1: using the "epoll" event method
2022/02/17 08:18:03 [notice] 1#1: nginx/1.21.6
2022/02/17 08:18:03 [notice] 1#1: built by gcc 10.2.1 20210110 (Debian 10.2.1-6)
2022/02/17 08:18:03 [notice] 1#1: OS: Linux 5.10.16.3-microsoft-standard-WSL2
2022/02/17 08:18:03 [notice] 1#1: getrlimit(RLIMIT_NOFILE): 1048576:1048576
2022/02/17 08:18:03 [notice] 1#1: start worker processes
2022/02/17 08:18:03 [notice] 1#1: start worker process 31
2022/02/17 08:18:03 [notice] 1#1: start worker process 32
2022/02/17 08:18:03 [notice] 1#1: start worker process 33
2022/02/17 08:18:03 [notice] 1#1: start worker process 34
2022/02/17 08:18:03 [notice] 1#1: start worker process 35
2022/02/17 08:18:03 [notice] 1#1: start worker process 36
2022/02/17 08:18:03 [notice] 1#1: start worker process 37
2022/02/17 08:18:03 [notice] 1#1: start worker process 38
2022/02/17 08:18:03 [notice] 1#1: start worker process 39
2022/02/17 08:18:03 [notice] 1#1: start worker process 40
2022/02/17 08:18:03 [notice] 1#1: start worker process 41
2022/02/17 08:18:03 [notice] 1#1: start worker process 42
2022/02/17 08:18:03 [notice] 1#1: start worker process 43
2022/02/17 08:18:03 [notice] 1#1: start worker process 44
2022/02/17 08:18:03 [notice] 1#1: start worker process 45
2022/02/17 08:18:03 [notice] 1#1: start worker process 46

```

## 8- Try inspect container ip

```

C:\Users\imarw>docker inspect nginx-container
[
  {

```

```

    "MacAddress": "02:42:ac:11:00:02",
    "Networks": {
      "bridge": {
        "IPAMConfig": null,
        "Links": null,
        "Aliases": null,
        "NetworkID": "14c752aa689094e4d977c1bf8c91f091767882c0da55f3a4f58f4eff4d2349ca",
        "EndpointID": "673a5ef09d07bfbcb140d8fd79090f9606090a997141faab8f8b106a6a5db19a0",
        "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
      }
    }

```

9- Try to execute inside nginx container

```
C:\Users\imarw>docker exec -it nginx-container bash
root@11ed58b9962d:/# ks
bash: ks: command not found
root@11ed58b9962d:/# ls
bin      dev          docker-entrypoint.sh  home  lib64  mnt  proc  run  srv  tmp  var
boot    docker-entrypoint.d  etc                  lib   media  opt  root  sbin  sys  usr
root@11ed58b9962d:/# _
```

10- Try to remove nginx image.

```
C:\Users\imarw>docker stop nginx-container
nginx-container

C:\Users\imarw>docker rm nginx-container
nginx-container

C:\Users\imarw>docker rmi nginx
Untagged: nginx:latest
Untagged: nginx@sha256:2834dc507516af02784808c5f48b7cbe38b8ed5d0f4837f16e78d00deb7e7767
C:\Users\imarw>_
```

11- Try run ubuntu container.

```
C:\Users\imarw>docker run -it ubuntu
root@fb962ad78f7f:/#
```

12- Create a file inside ubuntu container

```
C:\Users\imarw>docker run -it ubuntu
root@fb962ad78f7f:/# touch Hi
root@fb962ad78f7f:/#
```

13- Exit the container.

```
C:\Users\imarw>docker run -it ubuntu
root@fb962ad78f7f:/# touch Hi
root@fb962ad78f7f:/# exit
exit
C:\Users\imarw>_
```

14- Try to start it again.

```
C:\Users\imarw>docker exec -it zen_sammet bash
root@fb962ad78f7f:/# ls
Hi bin boot dev etc home lib lib32 lib64 libx32 media mnt opt proc root run sbin srv sys tmp usr var
root@fb962ad78f7f:/# _
```