

1) Criar um container a partir de uma imagem ubuntu ou alpine;

```
Administrador: Windows PowerShell
Docker version 20.10.16, build aa7e414
PS C:\WINDOWS\system32> docker run ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
405f018f9d1d: Pull complete
Digest: sha256:b6b83d3c331794420340093eb706a6f152d9c1fa51b262d9bf34594887c2c7ac
Status: Downloaded newer image for ubuntu:latest
PS C:\WINDOWS\system32> docker pull ubuntu
Using default tag: latest
latest: Pulling from library/ubuntu
Digest: sha256:b6b83d3c331794420340093eb706a6f152d9c1fa51b262d9bf34594887c2c7ac
Status: Image is up to date for ubuntu:latest
docker.io/library/ubuntu:latest
PS C:\WINDOWS\system32> docker run ubuntu
PS C:\WINDOWS\system32> docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
9f7a6d05c040	ubuntu	"bash"	36 seconds ago	Exited (0) 34 seconds ago		sleepy_yalow
92f095256a3d	ubuntu	"bash"	3 minutes ago	Exited (0) 3 minutes ago		admiring_leakey
2c690d3c3e7f	docker/101tutorial	"/docker-entrypoint..."	19 minutes ago	Up 19 minutes	0.0.0.0:80->80/tcp	docker-tutorial
eb7c47e42109	alpine/git	"git clone https://g..."	25 minutes ago	Exited (0) 25 minutes ago		repo

```
PS C:\WINDOWS\system32>
```

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2) Entrar no container de forma a usar o shell e instalar o Apache

```
> root@6991136eadce: /
```

```
root@C:\WINDOWS\system32> docker run -it ubuntu:latest
root@6991136adce:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy InRelease [270 kB]
Get:3 http://archive.ubuntu.com/ubuntu jammy-security/multiverse amd64 Packages [4648 B]
root@6991136adce:/# _
Get:5 http://security.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [212 kB]
Get:6 http://archive.ubuntu.com/ubuntu jammy-updates InRelease [109 kB]
Get:7 http://archive.ubuntu.com/ubuntu jammy-backports InRelease [99.8 kB]
Get:8 http://security.ubuntu.com/ubuntu jammy-security/main amd64 Packages [238 kB]
Get:9 http://archive.ubuntu.com/ubuntu jammy/main amd64 Packages [1792 kB]
Get:10 http://archive.ubuntu.com/ubuntu jammy/restricted amd64 Packages [164 kB]
Get:11 http://archive.ubuntu.com/ubuntu jammy/universe amd64 Packages [17.5 MB]
Get:12 http://archive.ubuntu.com/ubuntu jammy/multiverse amd64 Packages [266 kB]
Get:13 http://archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [162 kB]
Get:14 http://archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [4648 B]
Get:15 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [406 kB]
Get:16 http://archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [250 kB]
Get:17 http://archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [2016 B]
Fetched 21.7 MB in 51s (423 kB/s)
Reading package lists... Done
root@6991136adce:/# apt-get install docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apparmor bridge-utils ca-certificates contained-db dmsetup dns-root-data dnsmasq-base git git-man iproute2
  iptables less libapparmor1 libatm1 libbpf0 libbrotl1 libbsd0 libc-bin libc-l10n libc-lsb1 libc-nss-nis libc-nss-smbldap
  libidn2-0 libidnmtls0 liblber2 libperl-perl libpam-runtime libpangocairo-1.0 libpangoft2-1.0 libpangox-1.0 libpangoxmm-1.0
  libpcap0.8 libperl-modules-5.34 pigz publicsuffix ruler ubuntu-fan xauth xz-utils
Suggested packages:
  apparmor-profiles-extra apparmor-utils ifupdown default-dbus-session-bus | dbus-session-bus aufs-tools btrfs-progs
  cgroupfs-mount | cgroup-lite debostart dock-gcd rinse zfs-fuse | zfsutils gettext-base git-daemon-run | git-daemon-sysvinit
  git-doc git-email git-gui gitk gitweb git-cvs git-mediawiki git-svn iproute2-doc firewalld kmod lshw lshw-sensors
  libbsd-dev libidn2-dev liblber2-dev libperl-dev perl-doc perl-modules-5.34 pigz publicsuffix ruler ubuntu-fan xauth xz-utils
The following NEW packages will be installed:
  apparmor bridge-utils ca-certificates contained-db dmsetup dns-root-data dnsmasq-base docker.io git git-man iproute2
  iptables less libapparmor1 libatm1 libbpf0 libbrotl1 libbsd0 libc-bin libc-l10n libc-lsb1 libc-nss-nis libc-nss-smbldap
  libidn2-0 libidnmtls0 liblber2 libperl-perl libpam-runtime libpangocairo-1.0 libpangoft2-1.0 libpangox-1.0 libpangoxmm-1.0
  libpcap0.8 libperl-modules-5.34 pigz publicsuffix ruler ubuntu-fan xauth xz-utils
```

```
exit
PS C:\WINDOWS\system32> docker pull httpd
Using default tag: latest
latest: Pulling from library/httpd
Digest: sha256:bb3908c9ed452c50fa0756e603116fb30cf66270249d936ab646e806f368ebc3
Status: Image is up to date for httpd:latest
docker.io/library/httpd:latest
PS C:\WINDOWS\system32> docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
helloworld          latest          6de9e39461ae   28 minutes ago  77.8MB
docker101tutorial   latest          947c4c155ea5   About an hour ago  28.8MB
alpine/git           latest          620bef75a214   2 days ago     39.4MB
httpd                latest          b260a49eebf9   9 days ago     145MB
ubuntu              latest          27941809078c   2 weeks ago    77.8MB
PS C:\WINDOWS\system32> docker run -d --name apache-serve -p 80:80 httpd
545e18add9096af7b662754cc946b4ef0fb074a155c2d55792a98f7d4b9451a4
docker: Error response from daemon: driver failed programming external connectivity on endpoint apache-serve (bdaed7c88b8b223a5f12ac5c563608d580228b7659c7e7e62074e52d78930da4): Bind for 0.0.0.0:80 failed: port is already allocated.
PS C:\WINDOWS\system32>
```

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2) Entrar no container de formar a usar o shell e instalar o PHP

```
PS C:\WINDOWS\system32> docker pull php:7.4-apache
7.4-apache: Pulling from library/php
42c077c10790: Already exists
8934009a9160: Pull complete
5357ac116991: Pull complete
54ae63894b5a: Pull complete
772088206f85: Pull complete
3b81c5474649: Pull complete
c62a528527ae: Pull complete
344c792709d4: Pull complete
ef9638273c35: Pull complete
4ec70638e42f: Pull complete
5a0f65f5bb3b: Pull complete
55578a5ce5e8: Pull complete
f1dd85b4dfa5: Pull complete
Digest: sha256:c65cd02abef32e0ab1558788dbcf855e6dde301159da14651c844f533b34a411
Status: Downloaded newer image for php:7.4-apache
docker.io/library/php:7.4-apache
PS C:\WINDOWS\system32> docker volume create apache-data
apache-data
PS C:\WINDOWS\system32> docker volume inspect apache-data
[
  {
    "CreatedAt": "2022-06-23T03:20:54Z",
    "Driver": "local",
    "Labels": {},
    "Mountpoint": "/var/lib/docker/volumes/apache-data/_data",
    "Name": "apache-data",
    "Options": {},
    "Scope": "local"
  }
]
```



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2) Entrar no container de forma a usar o shell e instalar o MySQL;

```
Administrador: Windows PowerShell
PS C:\WINDOWS\system32> docker pull mysql
Using default tag: latest
latest: Pulling from library/mysql
c1ad9731b2c7: Pull complete
54f6eb0ee84d: Pull complete
cffc8691bc5: Pull complete
89a783b5ac8a: Pull complete
6a8393c7be5f: Pull complete
af768d0b181e: Pull complete
810d6aaaf54a: Pull complete
2e014a8ae4c9: Pull complete
a821425a3341: Pull complete
3a10c2652132: Pull complete
4419638feac4: Pull complete
681aee97dfe: Pull complete
Digest: sha256:548da4c67fd8a71908f17c308b8ddb098acf5191d3d7694e56801c6a8b2072cc
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest
PS C:\WINDOWS\system32>
```

+ FullyQualifiedErrorId : CommandNotFoundException

PS C:\WINDOWS\system32> docker pull mysql

Using default tag: latest

latest: Pulling from library/mysql

c1ad9731b2c7: Pull complete

54f6eb0ee84d: Pull complete

cffc8691bc5: Pull complete

89a783b5ac8a: Pull complete

6a8393c7be5f: Pull complete

af768d0b181e: Pull complete

810d6aaaf54a: Pull complete

2e014a8ae4c9: Pull complete

a821425a3341: Pull complete

3a10c2652132: Pull complete

4419638feac4: Pull complete

681aee997dfe: Pull complete

Digest: sha256:548da4c67fd8a71908f17c308b8ddb098acf5191d3d7694e56801c6a8b2072cc

Status: Downloaded newer image for mysql:latest

docker.io/library/mysql:latest

PS C:\WINDOWS\system32> docker images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
helloworld	latest	6de9e39461ae	44 minutes ago	77.8MB
docker101tutorial	latest	947c4c155ea5	About an hour ago	28.8MB
alpine/git	latest	620bef75a214	2 days ago	39.4MB
httpd	latest	b260a49eebf9	9 days ago	145MB
php	7.4-apache	54884b354869	13 days ago	452MB
ubuntu	latest	27941809078c	2 weeks ago	77.8MB
mysql	latest	65b636d5542b	3 weeks ago	524MB

PS C:\WINDOWS\system32> docker run -d --name mysql-server -p 3306:3306 -e "MYSQL_ROOT_PASSWORD=kamisama123" mysql

c8c4d34c0521c6f139c6d0cd4b8152c61bade3c4975ffc2db501933ba27c63c6

docker: Error response from daemon: Ports are not available: exposing port TCP 0.0.0.0:3306 -> 0.0.0.0:0: listen tcp 0.0.0.0:3306: bind: Only one usage of each socket address (protocol/network address/port) is normally permitted.

PS C:\WINDOWS\system32>

3) Instalar o PHPMyAdmin;

```
Administrador: Windows PowerShell
aa424b771e79bcb50905eafd02fcb5ee1b2259569b3b0e1d6daf6d79d168d11b
PS C:\WINDOWS\system32> docker pull mysql
Using default tag: latest
latest: Pulling from library/mysql
Digest: sha256:548da4c67fd8a71908f17c308b8ddb098acf5191d3d7694e56801c6a8b2072cc
Status: Image is up to date for mysql:latest
docker.io/library/mysql:latest
PS C:\WINDOWS\system32> docker pull phpmyadmin/phpmyadmin
Using default tag: latest
latest: Pulling from phpmyadmin/phpmyadmin
214ca5fb9032: Pull complete
cd813a1b2cb8: Pull complete
63cf7574573d: Pull complete
54c27146d16e: Pull complete
078f4450f949: Pull complete
5f145e355bc4: Pull complete
fdc797cb9eea: Pull complete
af45e7153a31: Pull complete
b546fbaf263b: Pull complete
16dd2eabbc42: Pull complete
30ae426b49280: Pull complete
c9ae73d5f13e: Pull complete
2f5a3464a278: Pull complete
a4f9f723c297: Pull complete
5b04d16a8086: Pull complete
2a3d1fa22772: Pull complete
ef56affc4552: Pull complete
9b9b44731108: Pull complete
Digest: sha256:ae6dadd9cf3c158e42937788f7255fa820ea3daef0349226d8d43f32e76535e1
Status: Downloaded newer image for phpmyadmin/phpmyadmin:latest
docker.io/phpmyadmin/phpmyadmin:latest
PS C:\WINDOWS\system32> docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
helloworld          latest             6de9e39461ae       49 minutes ago     77.8MB
docker101tutorial   latest            947c4c155ea5       About an hour ago   28.8MB
alpine/git          latest            620bef75a214       2 days ago         39.4MB
httpd               latest            b260a40eebf9       9 days ago         145MB
php                 7.4-apache       54884b354869       13 days ago        452MB
ubuntu              latest           279418009078c       2 weeks ago        77.8MB
mysql               latest           65b636d5542b       3 weeks ago        524MB
phpmyadmin/phpmyadmin latest          4a4023c7e22a       5 weeks ago        510MB
PS C:\WINDOWS\system32> docker volume create mysql-data
mysql-data
PS C:\WINDOWS\system32> docker volume inspect mysql-data
[
  {
    "CreatedAt": "2022-06-23T03:34:30Z",
    "Driver": "local",
    "Labels": {},
  }
]
```

4) Commitar o container com o apelido ubuntu/phpmyadmin;

```
PS C:\WINDOWS\system32> docker commit 24eb79d81ef4 ubuntu/phpmyadmin
sha256:33819838be6fa2ca83f5af9f7ca8fe23953dfb512720a4c22c3f5e3183b17ebc
PS C:\WINDOWS\system32> docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
ubuntu/phpmyadmin	latest	33819838be6f	11 seconds ago	510MB
helloworld	latest	6de9e39461ae	About an hour ago	77.8MB
docker101tutorial	latest	947c4c155ea5	2 hours ago	28.8MB
alpine/git	latest	620bef75a214	2 days ago	39.4MB
httpd	latest	b260a49eebf9	9 days ago	145MB
php	7.4-apache	54884b354869	13 days ago	452MB
ubuntu	latest	27941809078c	2 weeks ago	77.8MB
mysql	latest	65b636d5542b	3 weeks ago	524MB
phpmyadmin/phpmyadmin	latest	4a4023c7e22a	5 weeks ago	510MB

```
PS C:\WINDOWS\system32>
```

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