

Practicando con Docker

1. Bajar las imágenes que serán la "plantilla" para los contenedores que usaremos posteriormente (usaremos **docker pull**)
2. Obtener la lista de imágenes disponibles

```
root@alberto-VirtualBox: /home/alberto# docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
mysql	latest	5fac85ee2c68	15 hours ago	408MB
httpd	latest	c24f66af34b4	4 days ago	177MB
ubuntu	latest	747cb2d60bbe	6 days ago	122MB
wordpress	latest	d3f0cddf9493	6 days ago	408MB
php	latest	c342f917459a	7 days ago	371MB
debian	latest	874e27b628fd	7 days ago	100MB
ubuntu	14.04	dea1945146b9	4 weeks ago	188MB
hello-world	latest	05a3bd381fc2	4 weeks ago	1.84kB

3. Creamos un contenedor partiendo de una imagen (la imagen ubuntu:14.04). Podéis probar con otras imágenes.

docker run -it --name u1 ubuntu:14.04 /bin/bash

```
root@55fd5839e91c: /
```

```
root@55fd5839e91c: /#
```

Al arrancar el contenedor obtendremos el prompt de administrador para un sistema Ubuntu 14.04 que vemos arriba

Ejecutar las siguientes ordenes dentro de ese contenedor:

```
root@55fd5839e91c: /# uname -a
Linux 55fd5839e91c 4.10.0-28-generic #32~16.04.2-Ubuntu SMP Thu Jul 20 10:19:48 UTC 2017 x86_64 x86_64 GNU/Linux
root@55fd5839e91c: /# apt-get update
Ign http://archive.ubuntu.com trusty InRelease
Get:1 http://archive.ubuntu.com trusty-updates InRelease [65.9 kB]
Get:2 http://archive.ubuntu.com trusty-backports InRelease [65.9 kB]
Get:3 http://security.ubuntu.com trusty-security InRelease [65.9 kB]
Get:4 http://archive.ubuntu.com trusty Release.gpg [933 B]
Get:5 http://archive.ubuntu.com trusty Release [58.5 kB]
Get:6 http://archive.ubuntu.com trusty-updates/universe Sources [242 kB]
Get:7 http://archive.ubuntu.com trusty-updates/main amd64 Packages [1283 kB]
Get:8 http://security.ubuntu.com trusty-security/universe Sources [77.2 kB]
Get:9 http://archive.ubuntu.com trusty-updates/restricted amd64 Packages [21.1 kB]
Get:10 http://archive.ubuntu.com trusty-updates/universe amd64 Packages [555 kB]
Get:11 http://security.ubuntu.com trusty-security/main amd64 Packages [842 kB]
Get:12 http://security.ubuntu.com trusty-security/restricted amd64 Packages [17.8 kB]
Get:13 http://security.ubuntu.com trusty-security/universe amd64 Packages [243 kB]
Get:14 http://security.ubuntu.com trusty-security/multiverse amd64 Packages [3999 B]
Get:15 http://archive.ubuntu.com trusty-updates/multiverse amd64 Packages [15.5 kB]
Get:16 http://archive.ubuntu.com trusty-backports/main amd64 Packages [14.8 kB]
Get:17 http://archive.ubuntu.com trusty-backports/restricted amd64 Packages [40 B]
Get:18 http://archive.ubuntu.com trusty-backports/universe amd64 Packages [52.6 kB]
Get:19 http://archive.ubuntu.com trusty-backports/multiverse amd64 Packages [1396 B]
Get:20 http://archive.ubuntu.com trusty/universe Sources [7926 kB]
```

```
root@55fd5839e91c: /# apt-get install nano
Get:24 http://archive.ubuntu.com trusty/multiverse amd64 Packages [169 kB]
Fetched 21.1 MB in 23s (910 kB/s)
Reading package lists... Done
root@55fd5839e91c: /# apt-get install nano
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  spell
The following NEW packages will be installed:
  nano
0 upgraded, 1 newly installed, 0 to remove and 5 not upgraded.
Need to get 194 kB of archives.
After this operation, 614 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu/ trusty/main nano amd64 2.2.6-1ubuntu1 [194 kB]
Fetched 194 kB in 1s (112 kB/s)
Selecting previously unselected package nano.
(Reading database ... 11569 files and directories currently installed.)
Preparing to unpack .../nano_2.2.6-1ubuntu1_amd64.deb ...
Unpacking nano (2.2.6-1ubuntu1) ...
Setting up nano (2.2.6-1ubuntu1) ...
update-alternatives: using /bin/nano to provide /usr/bin/editor (editor) in auto mode
update-alternatives: using /bin/nano to provide /usr/bin/pico (pico) in auto mode
root@55fd5839e91c: /# ifconfig
eth0      Link encap:Ethernet  HWaddr 02:42:ac:11:00:02
```

ifconfig (comprobar el tipo de ip que se le ha concedido al contenedor)
ping 8.8.8.8 desde el contenedor (podrás comprobar que funciona)

```
root@55fd5839e91c: /
root@55fd5839e91c:/# ifconfig
eth0      Link encap:Ethernet  HWaddr 02:42:ac:11:00:02
          inet addr:172.17.0.2  Bcast:0.0.0.0  Mask:255.255.0.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:16409 errors:0 dropped:0 overruns:0 frame:0
          TX packets:5017 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:22164559 (22.1 MB)  TX bytes:275508 (275.5 KB)

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

root@55fd5839e91c:/# ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=54 time=21.1 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=54 time=18.5 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=54 time=17.9 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=54 time=17.6 ms
^Z
[1]+  Stopped                  ping 8.8.8.8
```

ifconfig en otra terminal del host docker (fuera del contenedor, en nuestro equipo)

```
root@alberto-VirtualBox: /home/alberto
root@alberto-VirtualBox:/home/alberto# ifconfig
docker0   Link encap:Ethernet  HWaddr 02:42:bd:81:53:56
          inet addr:172.17.0.1  Bcast:0.0.0.0  Mask:255.255.0.0
          inet6 addr: fe80::42:bdf:fe81:5356/64 Scope:Link
          UP BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:15371 errors:0 dropped:0 overruns:0 frame:0
          TX packets:31597 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:809330 (809.3 KB)  TX bytes:43706492 (43.7 MB)

enp0s3    Link encap:Ethernet  HWaddr 08:00:27:c0:7f:ca
          inet addr:192.168.1.225  Bcast:192.168.1.255  Mask:255.255.255.0
          inet6 addr: fe80::6be2:e55b:883a:4a3a/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:134156 errors:42 dropped:0 overruns:0 frame:0
          TX packets:90734 errors:6 dropped:0 overruns:0 carrier:6
          collisions:0 txqueuelen:1000
          RX bytes:157367746 (157.3 MB)  TX bytes:69957182 (69.9 MB)
          Interrupt:19 Base address:0xd020

lo        Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
```

ping a la ip de tu host docker

```
root@55fd5839e91c: /
root@55fd5839e91c:/# ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=54 time=21.1 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=54 time=18.5 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=54 time=17.9 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=54 time=17.6 ms
^Z
[1]+  Stopped                  ping 8.8.8.8
root@55fd5839e91c:/# ping 172.17.0.1
PING 172.17.0.1 (172.17.0.1) 56(84) bytes of data.
64 bytes from 172.17.0.1: icmp_seq=1 ttl=64 time=0.039 ms
64 bytes from 172.17.0.1: icmp_seq=2 ttl=64 time=0.046 ms
64 bytes from 172.17.0.1: icmp_seq=3 ttl=64 time=0.045 ms
64 bytes from 172.17.0.1: icmp_seq=4 ttl=64 time=0.046 ms
^Z
[2]+  Stopped                  ping 172.17.0.1
root@55fd5839e91c:/# ping 10.0.2.15
PING 10.0.2.15 (10.0.2.15) 56(84) bytes of data.
64 bytes from 10.0.2.15: icmp_seq=1 ttl=64 time=0.055 ms
64 bytes from 10.0.2.15: icmp_seq=2 ttl=64 time=0.058 ms
64 bytes from 10.0.2.15: icmp_seq=3 ttl=64 time=0.055 ms
64 bytes from 10.0.2.15: icmp_seq=4 ttl=64 time=0.047 ms
^Z
[3]+  Stopped                  ping 10.0.2.15
```

exit

Hemos salido del contenedor y el contenedor, por cómo está definido y por como lo hemos arrancado dejará de ejecutarse.

4. Listar los contenedores que están en ejecución

```
root@alberto-VirtualBox: /home/alberto# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS
55fd5839e91c   ubuntu:14.04   "/bin/bash"   18 minutes ago   Up 18 minutes
root@alberto-VirtualBox: /home/alberto# docker ps -a
CONTAINER ID   IMAGE     NAMES   COMMAND   CREATED   STATUS
55fd5839e91c   ubuntu:14.04   u1      "/bin/bash"   19 minutes ago   Up 19 minutes
391a55d19a68   hello-world   tender_bartik   "/hello"   11 hours ago   Exited (0) 11 hour
```

Podemos ver que el estado de nuestro contenedor es Up, es decir, está funcionando.

5. Parar (**docker stop**) y rearrancar (**docker start**) contenedores

```
root@55fd5839e91c: /
root@alberto-VirtualBox: /home/alberto# docker stop u1
u1
root@alberto-VirtualBox: /home/alberto# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS
root@alberto-VirtualBox: /home/alberto# docker start -ai u1
root@55fd5839e91c: /#
root@alberto-VirtualBox: /home/alberto# docker start u1
u1
root@alberto-VirtualBox: /home/alberto# docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS
55fd5839e91c   ubuntu:14.04   u1      "/bin/bash"   25 minutes ago   Up 3 seconds
```

6. Ejecutar órdenes en un contenedor que está ejecutándose pero si necesidad de tener que ejecutar un Shell

Si el contenedor está funcionando (comprueba que está UP con **docker ps**) para ejecutar una orden en ese contenedor usaremos la orden:

```
root@alberto-VirtualBox: /home/alberto# docker exec u1 ping 8.8.8.8
Get:11 http://archive.ubuntu.com trusty-updates/universe amd64 Packages [555 kB]
Get:12 http://archive.ubuntu.com trusty-updates/multiverse amd64 Packages [15.5 kB]
Hit http://archive.ubuntu.com trusty-backports/main amd64 Packages
Hit http://archive.ubuntu.com trusty-backports/restricted amd64 Packages
Hit http://archive.ubuntu.com trusty-backports/universe amd64 Packages
Hit http://archive.ubuntu.com trusty-backports/multiverse amd64 Packages
Hit http://archive.ubuntu.com trusty/universe Sources
Hit http://archive.ubuntu.com trusty/main amd64 Packages
Hit http://archive.ubuntu.com trusty/restricted amd64 Packages
Hit http://archive.ubuntu.com trusty/universe amd64 Packages
Hit http://archive.ubuntu.com trusty/multiverse amd64 Packages
Fetched 3432 kB in 8s (427 kB/s)
Reading package lists...
root@alberto-VirtualBox: /home/alberto# docker exec u1 ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data:
64 bytes from 8.8.8.8: icmp_seq=1 ttl=54 time=19.2 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=54 time=17.4 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=54 time=20.4 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=54 time=19.2 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=54 time=17.8 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=54 time=17.5 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=54 time=19.5 ms
^Z
[1]+  Stopped                  docker exec u1 ping 8.8.8.8
root@alberto-VirtualBox: /home/alberto#
```

Y si queremos lanzar un bash en un contenedor funcionado:

```
root@55fd5839e91c: /
root@alberto-VirtualBox: /home/alberto# docker exec -it u1 /bin/bash
root@55fd5839e91c: /#
```


Arrancando contenedor con servicios

1. Arrancar contenedores con servicios

```
root@alberto-VirtualBox:/home/alberto# docker run -d -p 8080:80 --name a1 httpd
4d73802f4f3d7651b37adba2b1fe0cfc47af668c2546c54ddf0086cae0f8bede
root@alberto-VirtualBox:/home/alberto# docker ps
```

CONTAINER ID	PORTS	IMAGE	NAMES	COMMAND	CREATED	STATUS
4d73802f4f3d		httpd		"httpd-foreground"	About a minute ago	Up About a minut
e55fd5839e91c	0.0.0.0:8080->80/tcp	ubuntu:14.04	a1	"/bin/bash"	About an hour ago	Up 34 minutes
u1						

```
root@alberto-VirtualBox:/home/alberto#
```

2. Arrancar un contenedor de la imagen de MySQL

***No se puede realizar en la máquina virtual Ubuntu 16.04 de pruebas debido a problemas con la arquitectura del SO Windows, máquina real sobre la que se ejecuta el software de emulación. Se le adjunta la captura de un compañero en su defecto y a su petición**

```
root@ricaberto-GA-78LMT-S2P:/home/ricaberto# docker run -d --name m1 -e MYSQL_ROOT_PASSWORD=root -p 3316:3306 mysql
6c584b1a03e5331a6f49d2b5da91b3980e2a1bde533bd947ff4155e5cf8997ba
```

```
root@ricaberto-GA-78LMT-S2P:/home/ricaberto# docker exec -it m1 mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 5
Server version: 5.7.20 MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

mysql -u root -h X.X.X.X (tu ip) -P 3316 -p

3. Compartiendo directorios entre el host y el contenedor

```
root@alberto-VirtualBox:/home/alberto# docker run -it -v /home/alberto:/datos --name d3 debian /bin/bash
root@717cffe178:/#
```

4. Usando una carpeta propia como directorio raíz de un servidor web.

```
root@alberto-VirtualBox:/home/alberto# docker run -d --name a2 -v ruta_a_mi_carpeta:/usr/local/apache2/htdocs -p 8181:80 httpd
348e4487e013d541dea1a6428cf93f43a92ccce821a96d16309e5001171b43ba
root@alberto-VirtualBox:/home/alberto#
```

5. Viendo los puertos abiertos y compartidos por cada contenedor

```
root@alberto-VirtualBox: /home/alberto# docker ps -a
```

CONTAINER ID	PORTS	IMAGE	COMMAND	CREATED	STATUS
348e4487e013		httpd	"httpd-foreground"	21 hours ago	Exited (255)
717cffeeb178	0.0.0.0:8181->80/tcp	debian	"/bin/bash"	21 hours ago	Exited (0) 21
80c7f20dc93c		mysql	"docker-entrypoint..."	21 hours ago	Exited (255)
4d73802f4f3d	0.0.0.0:3316->3306/tcp	httpd	"httpd-foreground"	22 hours ago	Exited (255)
55fd5839e91c	0.0.0.0:8080->80/tcp	ubuntu:14.04	"/bin/bash"	23 hours ago	Exited (255)
391a55d19a68		hello-world	"/hello"	34 hours ago	Exited (0) 34

```
root@alberto-VirtualBox: /home/alberto# docker port m1
3306/tcp -> 0.0.0.0:3316
```

Gestión de imágenes y contenedores

1. Para borrar contenedores

*Primero se para el contenedor (**docker stop nombre_contenedor**)

```
root@alberto-VirtualBox: /home/alberto# docker stop d3
d3
root@alberto-VirtualBox: /home/alberto# docker rm d3
d3
root@alberto-VirtualBox: /home/alberto# docker ps -a
```

CONTAINER ID	PORTS	IMAGE	COMMAND	CREATED	STATUS
80c7f20dc93c		mysql	"docker-entrypoint..."	22 hours ago	Exited (255)
4d73802f4f3d	0.0.0.0:3316->3306/tcp	httpd	"httpd-foreground"	22 hours ago	Exited (255)
55fd5839e91c	0.0.0.0:8080->80/tcp	ubuntu:14.04	"/bin/bash"	23 hours ago	Exited (255)
391a55d19a68		hello-world	"/hello"	34 hours ago	Exited (0) 34

2. Para borrar imágenes

```
root@alberto-VirtualBox: /home/alberto# docker rmi debian
Untagged: debian:latest
Deleted: sha256:874e27b628fd79d9fa4c8072e8e5e0e7da6b26e699350b35aff00aaacff4e85d
Deleted: sha256:a75caa09eb1f7d732568c5d54de42819973958589702d415202469a550ffd0ea
```

3. Creando una nueva imagen a partir de un contenedor

```
root@alberto-VirtualBox: /home/alberto
root@alberto-VirtualBox:/home/alberto# docker run -it --name d1 debian /bin/bash
Unable to find image 'debian:latest' locally
latest: Pulling from library/debian
3e17c6eae66c: Pull complete
Digest: sha256:2e43e863a4ab6e53caf87a37d01d8c144cdcb732ad1b944fcf45cbfd7248a02a
Status: Downloaded newer image for debian:latest
root@620e6fdd3706:/# apt-get update
Get:1 http://security.debian.org stretch/updates InRelease [62.9 kB]
Ign:2 http://deb.debian.org/debian stretch InRelease
Get:3 http://deb.debian.org/debian stretch-updates InRelease [91.0 kB]
Get:4 http://deb.debian.org/debian stretch Release [118 kB]
Get:5 http://deb.debian.org/debian stretch Release.gpg [2479 B]
Get:6 http://deb.debian.org/debian stretch-updates/main amd64 Packages [5841 B]
Get:7 http://security.debian.org stretch/updates/main amd64 Packages [222 kB]
Get:8 http://deb.debian.org/debian stretch/main amd64 Packages [9500 kB]
Fetched 10.0 MB in 6s (1470 kB/s)
Reading package lists... Done
root@620e6fdd3706:/# apt-get install nano
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  spell
The following NEW packages will be installed:
```

En ese contenedor vamos a ejecutar la siguiente órdenes para instalar ciertos programas para la gestión de red que por defecto no vienen instalador en la imagen de debian:latest

```
root@alberto-VirtualBox: /home/alberto
Get:7 http://security.debian.org stretch/updates/main amd64 Packages [222 kB]
Get:8 http://deb.debian.org/debian stretch/main amd64 Packages [9500 kB]
Fetched 10.0 MB in 6s (1470 kB/s)
Reading package lists... Done
root@620e6fdd3706:/# apt-get install nano
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  spell
The following NEW packages will be installed:
  nano
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 485 kB of archives.
After this operation, 2092 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian stretch/main amd64 nano amd64 2.7.4-1 [485 kB]
Fetched 485 kB in 0s (889 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package nano.
(Reading database ... 6490 files and directories currently installed.)
Preparing to unpack .../nano_2.7.4-1_amd64.deb ...
Unpacking nano (2.7.4-1) ...
Setting up nano (2.7.4-1) ...
update-alternatives: using /bin/nano to provide /usr/bin/editor (editor) in auto mode
update-alternatives: using /bin/nano to provide /usr/bin/pico (pico) in auto mode

root@alberto-VirtualBox: /home/alberto
Setting up nano (2.7.4-1) ...
update-alternatives: using /bin/nano to provide /usr/bin/editor (editor) in auto mode
update-alternatives: using /bin/nano to provide /usr/bin/pico (pico) in auto mode
root@620e6fdd3706:/# apt-get install net-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 248 kB of archives.
After this operation, 963 kB of additional disk space will be used.
Get:1 http://deb.debian.org/debian stretch/main amd64 net-tools amd64 1.60+git20161116.90da8a0-1 [248 kB]
Fetched 248 kB in 0s (360 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package net-tools.
(Reading database ... 6590 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20161116.90da8a0-1_amd64.deb ...
Unpacking net-tools (1.60+git20161116.90da8a0-1) ...
Setting up net-tools (1.60+git20161116.90da8a0-1) ...
root@620e6fdd3706:/# apt-get install dnsutils
Reading package lists... Done
Building dependency tree
Reading state information... Done
```



```
root@alberto-VirtualBox: /home/alberto
Selecting previously unselected package net-tools.
(Reading database ... 6590 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20161116.90da8a0-1_amd64.deb ...
Unpacking net-tools (1.60+git20161116.90da8a0-1) ...
Setting up net-tools (1.60+git20161116.90da8a0-1) ...
root@620e6fdd3706:/# apt-get install dnsutils
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  bind9-host geoip-database krb5-locales libbind9-140 libcap2 libdns162 libgeoip1
  libgssapi-krb5-2 libicu57 libisc160 libisc940 libk5crypto3 libkeyutils1
  libkrb5-3 libkrb5support0 liblwres141 libssl1.0.2 libxml2 sgml-base xml-core
Suggested packages:
  rblcheck geoip-bin krb5-doc krb5-user sgml-base-doc debhelper
The following NEW packages will be installed:
  bind9-host dnsutils geoip-database krb5-locales libbind9-140 libcap2 libdns162 libgeoip1
  libgssapi-krb5-2 libicu57 libisc160 libisc940 libk5crypto3 libkeyutils1
  libkrb5-3 libkrb5support0 liblwres141 libssl1.0.2 libxml2 sgml-base xml-core
0 upgraded, 22 newly installed, 0 to remove and 0 not upgraded.
Need to get 15.8 MB of archives.
After this operation, 53.9 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://deb.debian.org/debian stretch/main amd64 sgml-base all 1.29 [14.8 kB]
Get:2 http://deb.debian.org/debian stretch/main amd64 libssl1.0.2 amd64 1.0.2l-2 [1294 kB]
```

```
root@alberto-VirtualBox: /home/alberto
Setting up dnsutils (1:9.10.3.dfsg.P4-12.3+deb9u3) ...
Processing triggers for libc-bin (2.24-11+deb9u1) ...
Processing triggers for sgml-base (1.29) ...
root@620e6fdd3706:/# apt-get install nmap
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  bzip2 file libblas-common libblas3 libexpat1 libffi6 libgfortran3 liblinear3 liblua5.3-0
  libmagic-mgc libmagic1 libpcap0.8 libpython-stdlib libpython2.7-minimal libpython2.7-stdlib
  libquadmath0 libreadline7 libsqlite3-0 libssl1.1 libxslt1.1 mime-support ndiff python
  python-bs4 python-chardet python-html5lib python-lxml python-minimal python-pkg-resources
  python-six python-webencodings python2.7 python2.7-minimal readline-common xz-utils
Suggested packages:
  bzip2-doc liblinear-tools liblinear-dev python-doc python-tk python-genshi python-lxml-dbg
  python-lxml-doc python-setuptools python2.7-doc binutils binfmt-support readline-doc
The following NEW packages will be installed:
  bzip2 file libblas-common libblas3 libexpat1 libffi6 libgfortran3 liblinear3 liblua5.3-0
  libmagic-mgc libmagic1 libpcap0.8 libpython-stdlib libpython2.7-minimal libpython2.7-stdlib
  libquadmath0 libreadline7 libsqlite3-0 libssl1.1 libxslt1.1 mime-support ndiff nmap python
  python-bs4 python-chardet python-html5lib python-lxml python-minimal python-pkg-resources
  python-six python-webencodings python2.7 python2.7-minimal readline-common xz-utils
0 upgraded, 36 newly installed, 0 to remove and 0 not upgraded.
Need to get 15.1 MB of archives.
After this operation, 60.9 MB of additional disk space will be used.
```

Salgo del contenedor y desde la línea de comandos del host ejecuto esta orden para crear mi nueva imagen:

```
root@alberto-VirtualBox: /home/alberto# docker commit d1 debian_net
sha256:6159b9c633978c9c40f8a0a50d80f8120504a925cae4d9c8b7967a512f007171
root@alberto-VirtualBox: /home/alberto# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
debian_net          latest             6159b9c63397       16 seconds ago     243MB
mysql               latest             5fac85ee2c68       46 hours ago       408MB
httpd               latest             c24f66af34b4       5 days ago         177MB
ubuntu              latest             747cb2d60bbe       7 days ago         122MB
wordpress           latest             d3f0cddf9493       8 days ago         408MB
php                 latest             c342f917459a       8 days ago         371MB
debian              latest             874e27b628fd       8 days ago         100MB
ubuntu              14.04             dea1945146b9       4 weeks ago        188MB
hello-world         latest             05a3bd381fc2       5 weeks ago        1.84kB
root@alberto-VirtualBox: /home/alberto#
```

Y al hacer docker images tendré esa nueva imagen en nuestra lista de imágenes. Para compartirla puedo hacer dos cosas:

- a) Guardarla con **docker save** , compartir el fichero y cargarla con **docker load**:

```
root@alberto-VirtualBox: /home/alberto
root@alberto-VirtualBox:/home/alberto# docker commit d1 debian_net
sha256:6159b9c633978c9c40f8a0a50d80f8120504a925cae4d9c8b7967a512f007171
root@alberto-VirtualBox:/home/alberto# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
debian_net           latest             6159b9c63397       16 seconds ago     243MB
mysql                latest             5fac85ee2c68       46 hours ago       408MB
httpd                latest             c24f66af34b4       5 days ago         177MB
ubuntu              latest             747cb2d60bbe       7 days ago         122MB
wordpress            latest             d3f0cddf9493       8 days ago         408MB
php                  latest             c342f917459a       8 days ago         371MB
debian               latest             874e27b628fd       8 days ago         100MB
ubuntu               14.04             dea1945146b9       4 weeks ago        188MB
hello-world          latest             05a3bd381fc2       5 weeks ago        1.84kB
root@alberto-VirtualBox:/home/alberto# docker save --output debian_net.tar debian_net
root@alberto-VirtualBox:/home/alberto# docker load --input debian_net.tar
Loaded image: debian_net:latest
root@alberto-VirtualBox:/home/alberto#
```

- b) Subirla a DockerHub

```
root@alberto-VirtualBox: /home/alberto
root@alberto-VirtualBox:/home/alberto# docker login
Login with your Docker ID to push and pull images from Docker Hub. If you don't have a Docker ID,
head over to https://hub.docker.com to create one.
Username (albpenu):
Password:
Login Succeeded
root@alberto-VirtualBox:/home/alberto# docker images
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
debian_net           latest             6159b9c63397       17 minutes ago     243MB
mysql                latest             5fac85ee2c68       46 hours ago       408MB
httpd                latest             c24f66af34b4       5 days ago         177MB
ubuntu              latest             747cb2d60bbe       7 days ago         122MB
wordpress            latest             d3f0cddf9493       8 days ago         408MB
php                  latest             c342f917459a       8 days ago         371MB
debian               latest             874e27b628fd       8 days ago         100MB
ubuntu               14.04             dea1945146b9       4 weeks ago        188MB
hello-world          latest             05a3bd381fc2       5 weeks ago        1.84kB
root@alberto-VirtualBox:/home/alberto# docker tag debian_net albpenu/debian_net
root@alberto-VirtualBox:/home/alberto# docker push albpenu/debian_net
The push refers to a repository [docker.io/albpenu/debian_net]
cb58c272ae22: Pushed
a75caa09eb1f: Mounted from library/debian
latest: digest: sha256:ef55b94057cfeaa4b7a06ecc78a77b8afb3cf5bb9e08160118cd0cb48c88c63e size: 741
root@alberto-VirtualBox:/home/alberto#
```

Y podremos comprobar que esa imagen ya está pública a través de nuestra cuenta de DockerHub.

