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Momento 1 – Talleres Docker

Talleres básicos e introductorios a Docker

Taller 1 – Introducción a Docker

Para el desarrollo del taller, se creó una máquina virtual Ubuntu 18.04 Desktop en la aplicación VirtualBox.

Las especificaciones fueron: Memoria Ram 2GB y Memoria Interna de 10GB.

Dentro de la máquina virtual se abrió una terminal en donde se ingresarán todos los comandos utilizados en el taller.

1. **Instalar e Iniciar Docker:** El primer comando **apt-get update** que se utiliza para actualizar la lista de paquetes y versiones a los que puede acceder para instalarlos.

```
Archivo Editar Ver Buscar Terminal Ayuda
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

kevin@kevin-VirtualBox:~$ sudo su
[sudo] contraseña para kevin:
root@kevin-VirtualBox:/home/kevin# apt-get update
Obj:1 http://co.archive.ubuntu.com/ubuntu bionic InRelease
Obj:2 http://co.archive.ubuntu.com/ubuntu bionic-updates InRelease
Obj:3 http://security.ubuntu.com/ubuntu bionic-security InRelease
Obj:4 http://co.archive.ubuntu.com/ubuntu bionic-backports InRelease
Leyendo lista de paquetes... Hecho _
```

Se ingreso el comando **apt-get install docker.io** para instalar la plataforma de Docker en la máquina virtual.

```
Archivo Editar Ver Buscar Terminal Ayuda
Se instalarán los siguientes paquetes adicionales:
bridge-utils containerd git git-man liberror-perl pigz runc ubuntu-fan
Paquetes sugeridos:
aufs-tools btrfs-progs cgroupfs-mount | cgroup-lite debootstrap docker-doc rinse zfs-fuse | zfsutils git-daemon-run | git-d
git-mediawiki git-svn
Se instalarán los siguientes paquetes NUEVOS:
bridge-utils containerd docker.io git git-man liberror-perl pigz runc ubuntu-fan
0 actualizados, 9 nuevos se instalarán, 0 para eliminar y 285 no actualizados.
Se necesita descargar 70,4 MB de archivos.
Se Rhythmbox en 326 MB de espacio de disco adicional después de esta operación.
¿Desea continuar? [S/n] s
Des:1 http://co.archive.ubuntu.com/ubuntu bionic/universe amd64 pigz amd64 2.4-1 [57,4 kB]
Des:2 http://co.archive.ubuntu.com/ubuntu bionic/main amd64 bridge-utils amd64 1.5-15ubuntu1 [30,1 kB]
Des:3 http://co.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 runc amd64 1.1.4-0ubuntu1~18.04.1 [3.820 kB]
Des:4 http://co.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 containerd amd64 1.6.12-0ubuntu1~18.04.1 [31,5 kB]
Des:5 http://co.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 docker.io amd64 20.10.21-0ubuntu1~18.04.2 [30,3 kB]
Des:6 http://co.archive.ubuntu.com/ubuntu bionic/main amd64 liberror-perl all 0.17025-1 [22,8 kB]
Des:7 http://co.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git-man all 1:2.17.1-1ubuntu0.17 [804 kB]
Des:8 http://co.archive.ubuntu.com/ubuntu bionic-updates/main amd64 git amd64 1:2.17.1-1ubuntu0.17 [3.924 kB]
Des:9 http://co.archive.ubuntu.com/ubuntu bionic/main amd64 ubuntu-fan all 0.12.10 [34,7 kB]
Descargados 70,4 MB en 6s (11,9 MB/s)
Preconfigurando paquetes ...
Seleccionando el paquete pigz previamente no seleccionado.
(Leyendo la base de datos ... 129489 ficheros o directorios instalados actualmente.)
```

Para iniciar el servicio de Docker se utilizaba el comando **/etc/init.d/docker start** aunque no se ejecutó o no estaba bien escrito el comando, esto puede ser ya que ese comando se utiliza además con un id de contenedor o, su otro funcionamiento es iniciar un contenedor que este parado.

2. Bajar imagen de Ubuntu 18.04 del repositorio de Docker: Se utilizo el comando **docker pull ubuntu:18.04** que seria como una plantilla de Ubuntu que está siendo descargada.

```
To get more help with docker, check out our guides at https://docs.docker.com/go/guides/
root@kevin-VirtualBox:/etc/init.d# docker pull ubuntu:18.04
18.04: Pulling from library/ubuntu
58289280d3c7: Pull complete
Digest: sha256:1e32b9c52e8f22769df41e8f61066c77b2b35b0a423c4161c0e48eca2fd24f75
Status: Downloaded newer image for ubuntu:18.04
docker.io/library/ubuntu:18.04
root@kevin-VirtualBox:/etc/init.d#
```

3. Creación de Container con Docker y administración: la creación de container fue a partir de la imagen de Ubuntu 18.04 y por el comando **docker run -it ubuntu:18.04 /bin/bash**.

Run se utiliza para crear contenedores, luego las opciones que le da a ese contenedor, con i para tener un modo interactivo y t para asignar un Pseudo-TTY que podría ser el crear una terminal dentro del contenedor y poder utilizarla.

Con /bin/bash permite interactuar ejecutando el intérprete de comandos.

```
docker.io/library/ubuntu:18.04
root@kevin-VirtualBox:/etc/init.d# docker run -it ubuntu:18.04 /bin/bash
root@dcabbddc2fa4:/#
```

Ya teniendo creado el contenedor, este tiene un id que lo identifica y que aparece en la terminal de comandos.

Para ver los archivos que aparecen dentro del contenedor se utilizó **ls**.

```
root@kevin-VirtualBox:/etc/init.d# docker run -it ubuntu:18.04 /bin/bash
root@dcabbddc2fa4:/# ls
bin  boot  dev  etc  home  lib  lib64  media  mnt  opt  proc  root  run  sbin  srv  sys  tmp  usr  var
root@dcabbddc2fa4:/#
```

Luego se abrió otra terminal para ejecutar el comando **docker ps -a** para poder ver el estado del contenedor.

```
root@kevin-VirtualBox: /home/kevin
Archivo Editar Ver Buscar Terminal Ayuda
kevin@kevin-VirtualBox:~$ sudo su
[sudo] contraseña para kevin:
root@kevin-VirtualBox:/home/kevin# docker ps -a
CONTAINER ID   IMAGE      COMMAND      CREATED      STATUS      PORTS      NAMES
dcabbddc2fa4   ubuntu:18.04 "/bin/bash"   3 minutes ago   Up 3 minutes   fervent_turing
root@kevin-VirtualBox:/home/kevin#
```

Al ingresar el comando **exit** en la consola que estaba dentro del contenedor y luego volver a verificar el estado del contenedor, el estado cambia a Exited() por haber finalizado el proceso o ejecución del contenedor; sin que se haya borrado el contenedor.

```
root@kevin-VirtualBox:/home/kevin# docker ps -a
CONTAINER ID   IMAGE      COMMAND      CREATED      STATUS      PORTS      NAMES
dcabbddc2fa4   ubuntu:18.04 "/bin/bash"   3 minutes ago   Exited (0) 9 seconds ago
root@kevin-VirtualBox:/home/kevin#
```

Ahora para volver a ejecutar el contenedor se utilizó el comando **docker start id_container** ya con el id que nos dieron anteriormente para referirse a un contenedor en específico.

```
root@kevin-VirtualBox:/etc/init.d# docker start dcabbddc2fa4  
dcabbddc2fa4  
root@kevin-VirtualBox:/etc/init.d# █
```

Aparecerá el id en la consola y el contenedor esta en ejecución. Para volver a ingresar al contenedor se utilizó el comando **docker exec -it id_container /bin/bash**

```
root@kevin-VirtualBox:/etc/init.d# docker exec -it dcabbddc2fa4 /bin/bash  
root@dcabbddc2fa4:# █
```

4. **Detener y borrar Contenedor:** Ya fuera del contenedor, es posible utilizar el comando **docker stop id_container** para volver a detener la ejecución del contenedor o si ya se quiere eliminar se utiliza el comando **docker rm id_container**

```
root@kevin-VirtualBox:/etc/init.d# docker stop dcabbddc2fa4  
dcabbddc2fa4  
root@kevin-VirtualBox:/etc/init.d# █
```

```
root@kevin-VirtualBox:/etc/init.d# docker rm dcabbddc2fa4  
dcabbddc2fa4  
root@kevin-VirtualBox:/etc/init.d# █
```

Volviendo a ver el estado de los contenedores con **docker ps -a**, no debería aparecer el contenedor en la lista.

```
root@kevin-VirtualBox:/home/kevin  
Archivo Editar Ver Buscar Terminal Ayuda  
kevin@kevin-VirtualBox:~$ sudo su  
[sudo] contraseña para kevin:  
root@kevin-VirtualBox:/home/kevin# docker ps -a  
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES  
dcabbddc2fa4 ubuntu:18.04 "/bin/bash" 3 minutes ago Up 3 minutes fervent_turing  
root@kevin-VirtualBox:/home/kevin# docker ps -a  
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES  
dcabbddc2fa4 ubuntu:18.04 "/bin/bash" 3 minutes ago Exited (0) 9 seconds ago fervent_turing  
root@kevin-VirtualBox:/home/kevin# docker ps -a  
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES  
root@kevin-VirtualBox:/home/kevin# █
```

Taller 2 – Acceso público de containers

1. **Crear contenedor y exponer los puertos:** Se utiliza el comando para crear un contenedor con otras opciones que va a tener, por ejemplo **-d** que se utiliza para ejecutar en segundo plano, **-p 8001:80** indica que estará expuesto el puerto 80 del contenedor y el puerto 8001 del host (petición al puerto 8001, ira dirigida al 80 del contenedor), y se le da un nombre de acceso “apache”.

```
root@kevin-VirtualBox:/etc/init.d# docker run -it -d -p 8001:80 --name=apache ubuntu:18.04 /bin/bash  
e63f824be47edfe9b8d345a56c6879acf64efe39d9c746f6c779d18aff34c9f3  
root@kevin-VirtualBox:/etc/init.d#
```

Esto lo realizamos con el fin de revisar y realizar pruebas locales a nuestro container, después de esto procedemos a visualizar un sitio el cual estará enlazado con nuestro container, en este paso únicamente estaremos actualizando e instalando los recursos necesarios para un correcto funcionamiento.

2. **Acceso al contenedor en segundo plano:** Para acceder al container debemos de usar el comando **docker exec -it apache /bin/bash** por lo que nos mostrara por consola el id del contenedor. (e63f824be47e)

```
root@kevin-VirtualBox:/etc/init.d# docker exec -it apache /bin/bash  
root@e63f824be47e:#
```

Para mantener actualizado el container debemos de ejecutar el comando **apt-get update** para cargar las últimas versiones de el repositorio de Ubuntu

```
root@e63f824be47e:/# apt-get update  
Get:1 http://archive.ubuntu.com/ubuntu bionic InRelease [242 kB]  
Get:2 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]  
Get:3 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [23.8 kB]  
Get:4 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]  
Get:5 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [1462 kB]  
Get:6 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [83.3 kB]  
Get:7 http://archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [11.3 MB]  
Get:8 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [3218 kB]  
Get:9 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [1605 kB]  
Get:10 http://archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [186 kB]  
Get:11 http://archive.ubuntu.com/ubuntu bionic/restricted amd64 Packages [13.5 kB]  
Get:12 http://archive.ubuntu.com/ubuntu bionic/main amd64 Packages [1344 kB]  
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [2379 kB]  
Get:14 http://archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [1503 kB]  
Get:15 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [3638 kB]  
Get:16 http://archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [30.8 kB]  
Get:17 http://archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [64.0 kB]  
Get:18 http://archive.ubuntu.com/ubuntu bionic-backports/universe amd64 Packages [20.5 kB]  
Fetched 27.3 MB in 4s (7289 kB/s)  
Reading package lists... Done  
root@e63f824be47e:/#
```

Ya que requerimos del uso de apache para este laboratorio, tenemos que instalarlo y se realiza mediante el siguiente comando **apt-get install apache2**. Esto nos da acceso al servidor web de apache para complementar las tareas para nuestro Docker.

```
root@e63f824be47e:/# apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils file libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libasn1-8-heimdal libexpat1 libgdbm-compat4 libgdbm-compat4-heimdal libheimntlm0-heimdal libhx509-5-heimdal libicu60 libkrb5-26-heimdal libldap-2.4-2 libldap-common liblua5.2-0 libmagic-mgc libmagic1 libssl2-2 libsasl2-modules libsasl2-modules-db libsqlite3-0 libssl1.1 libwind0-heimdal libxml2 mime-support netbase openssl perl perl-modules-5.26 ssl-cert
Suggested packages:
  www-browser apache2-doc apache2-suexec-pristine | apache2-suexec-custom ufw gdbm-l10n libsasl2-modules-gssapi-mit | libsasl2-modules-gssapi-heimdal libsasl2-modules-sql ca-certificates perl-doc libterm-readline-gnu-perl | libterm-readline-perl-perl make openssl-blacklist
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils file libapr1 libaprutil1 libaprutil1-dbd-sqlite3 libaprutil1-ldap libasn1-8-heimdal libexpat1 libgdbm-compat4 libgdbm-compat4-heimdal libheimntlm0-heimdal libhx509-5-heimdal libicu60 libkrb5-26-heimdal libldap-2.4-2 libldap-common liblua5.2-0 liblumen18-heimdal libsasl2-2 libsasl2-modules libsasl2-modules-db libsqlite3-0 libssl1.1 libwind0-heimdal libxml2 mime-support netbase openssl perl perl-modules-5.26
0 upgraded, 42 newly installed, 0 to remove and 2 not upgraded.
Need to get 21.1 MB of archives.
After this operation, 99.4 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 perl-modules-5.26 all 5.26.1-6ubuntu0.6 [2764 kB]
Get:2 http://archive.ubuntu.com/ubuntu bionic/main amd64 libgdbm5 amd64 1.14.1-6 [26.0 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic/main amd64 libgdbm-compat4 amd64 1.14.1-6 [6084 B]
Get:4 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libperl5.26 amd64 5.26.1-6ubuntu0.6 [3556 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 perl amd64 5.26.1-6ubuntu0.6 [201 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic/main amd64 mime-support all 3.60ubuntu1 [30.1 kB]
Get:7 http://archive.ubuntu.com/ubuntu bionic/main amd64 libapr1 amd64 1.6.3-2 [90.9 kB]
Get:8 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libexpat1 amd64 2.2.5-3ubuntu0.9 [82.8 kB]
Get:9 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libss1.1 amd64 1.1.1-1ubuntu2.1-18.04.21 [1304 kB]
Get:10 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libaprutil1 amd64 1.6.1-2ubuntu0.1 [84.6 kB]
Get:11 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libsqlite3-0 amd64 3.22.0-1ubuntu0.7 [499 kB]
Get:12 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-2ubuntu0.1 [10.6 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libroken18-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [42.3 kB]
Get:14 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libasn1-8-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [175 kB]
Get:15 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libheimbase1-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [30.3 kB]
Get:16 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libhcrypto4-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [85.9 kB]
Get:17 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libwind0-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [48.0 kB]
Get:18 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libhx509-5-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [107 kB]
Get:19 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libkrb5-26-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [207 kB]
Get:20 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libheimntlm0-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [14.8 kB]
Get:21 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgssapi3-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [96.7 kB]
Get:22 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libsasl2-modules-db amd64 2.1.27-101-g0780600+dfsg-3ubuntu2.4 [15.0 kB]
Get:23 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libsasl2-2 amd64 2.1.27-101-g0780600+dfsg-3ubuntu2.4 [49.2 kB]
Get:24 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libldap-common all 2.4.45+dfsg-1ubuntu1.11 [15.8 kB]
Get:25 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libldap-2.4-2 amd64 2.4.45+dfsg-1ubuntu1.11 [154 kB]
Get:26 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libaprutil1-ldap amd64 1.6.1-2ubuntu0.1 [8752 B]
Get:27 http://archive.ubuntu.com/ubuntu bionic/main amd64 liblua5.2-0 amd64 5.2.4-1.1build1 [108 kB]
Get:28 http://archive.ubuntu.com/ubuntu bionic/main amd64 libnghttp2-14 amd64 1.30.0-1ubuntu1 [77.8 kB]
Get:29 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libicu60 amd64 60.2-3ubuntu3.2 [8050 kB]
Get:30 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libxml2 amd64 2.9.4+dfsg1-6.1ubuntu1.8 [664 kB]
Get:31 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-bin amd64 2.4.29-1ubuntu4.27 [1071 kB]
```

```
Get:32 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-utils amd64 2.4.29-1ubuntu4.27 [83.3 kB]
Get:33 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-data all 2.4.29-1ubuntu4.27 [160 kB]
Get:34 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2 amd64 2.4.29-1ubuntu4.27 [95.1 kB]
Get:35 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libmagic-mgc amd64 1:5.32-2ubuntu0.4 [184 kB]
Get:36 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libmagic1 amd64 1:5.32-2ubuntu0.4 [68.6 kB]
Get:37 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 file amd64 1:5.32-2ubuntu0.4 [22.1 kB]
Get:38 http://archive.ubuntu.com/ubuntu bionic/main amd64 netbase all 5.4 [12.7 kB]
Get:39 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 openssl amd64 1.1.1-1ubuntu2.1~18.04.21 [614 kB]
Get:40 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 xz-utils amd64 5.2.2-1.3ubuntu0.1 [83.8 kB]
Get:41 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libsasl2-modules amd64 2.1.27~101-g0780600+dfsg-3ubuntu2.4 [10.4 kB]
Get:42 http://archive.ubuntu.com/ubuntu bionic/main amd64 ssl-cert all 1.0.39 [17.0 kB]
Fetched 21.1 MB in 5s (4516 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package perl-modules-5.26.
(Reading database ... 4051 files and directories currently installed.)
Preparing to unpack .../00-perl-modules-5.26_5.26.1-6ubuntu0.6_all.deb ...
Unpacking perl-modules-5.26 (5.26.1-6ubuntu0.6) ...
Selecting previously unselected package libgdbm5:amd64.
Preparing to unpack .../01-libgdbm5_1.14.1-6_amd64.deb ...
Unpacking libgdbm5:amd64 (1.14.1-6) ...
Selecting previously unselected package libgdbm-compat4:amd64.
Preparing to unpack .../02-libgdbm-compat4_1.14.1-6_amd64.deb ...
Unpacking libgdbm-compat4:amd64 (1.14.1-6) ...
Selecting previously unselected package libperl5.26:amd64.
Preparing to unpack .../03-libperl5.26_5.26.1-6ubuntu0.6_amd64.deb ...
Unpacking libperl5.26:amd64 (5.26.1-6ubuntu0.6) ...
Selecting previously unselected package perl.
Preparing to unpack .../04-perl_5.26.1-6ubuntu0.6_amd64.deb ...
Unpacking perl (5.26.1-6ubuntu0.6) ...
Selecting previously unselected package mime-support.
Preparing to unpack .../05-mime-support_3.60ubuntu1_all.deb ...
Unpacking mime-support (3.60ubuntu1) ...
Selecting previously unselected package libapr1:amd64.
Preparing to unpack .../06-libapr1_1.6.3-2_amd64.deb ...
Unpacking libapr1:amd64 (1.6.3-2) ...
Selecting previously unselected package libexpat1:amd64.
Preparing to unpack .../07-libexpat1_2.2.5-3ubuntu0.9_amd64.deb ...
Unpacking libexpat1:amd64 (2.2.5-3ubuntu0.9) ...
Selecting previously unselected package libssl1.1:amd64.
Preparing to unpack .../08-libssl1.1_1.1.1-1ubuntu2.1~18.04.21_amd64.deb ...
Unpacking libssl1.1:amd64 (1.1.1-1ubuntu2.1~18.04.21) ...
Selecting previously unselected package libaprutil1:amd64.
Preparing to unpack .../09-libaprutil1_1.6.1-2ubuntu0.1_amd64.deb ...
Unpacking libaprutil1:amd64 (1.6.1-2ubuntu0.1) ...
Selecting previously unselected package libssqlite3-0:amd64.
Preparing to unpack .../10-libssqlite3-0_3.22.0-1ubuntu0.7_amd64.deb ...
Unpacking libssqlite3-0:amd64 (3.22.0-1ubuntu0.7) ...
Selecting previously unselected package libaprutil1-dbd-sqlite3:amd64.
Preparing to unpack .../11-libaprutil1-dbd-sqlite3_1.6.1-2ubuntu0.1_amd64.deb ...
Unpacking libaprutil1-dbd-sqlite3:amd64 (1.6.1-2ubuntu0.1) ...
```

```
Selecting previously unselected package libbroken18-heimdal:amd64.
Preparing to unpack .../12-libbroken18-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libbroken18-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libasn1-8-heimdal:amd64.
Preparing to unpack .../13-libasn1-8-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libasn1-8-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libheimbase1-heimdal:amd64.
Preparing to unpack .../14-libheimbase1-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libheimbase1-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libhcrypto4-heimdal:amd64.
Preparing to unpack .../15-libhcrypto4-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
UnLibreOfficeWriterypto4-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libwind0-heimdal:amd64.
Preparing to unpack .../16-libwind0-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libwind0-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libhx509-5-heimdal:amd64.
Preparing to unpack .../17-libhx509-5-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libhx509-5-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libkrb5-26-heimdal:amd64.
Preparing to unpack .../18-libkrb5-26-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libkrb5-26-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libheimntlm0-heimdal:amd64.
Preparing to unpack .../19-libheimntlm0-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libheimntlm0-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libgssapi3-heimdal:amd64.
Preparing to unpack .../20-libgssapi3-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libgssapi3-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libsasl2-modules-db:amd64.
Preparing to unpack .../21-libsasl2-modules-db_2.1.27~101-g0780600+dfsg-3ubuntu2.4_amd64.deb ...
Unpacking libsasl2-modules-db:amd64 (2.1.27~101-g0780600+dfsg-3ubuntu2.4) ...
Selecting previously unselected package libsasl2-2:amd64.
Preparing to unpack .../22-libsasl2-2_2.1.27~101-g0780600+dfsg-3ubuntu2.4_amd64.deb ...
Unpacking libsasl2-2:amd64 (2.1.27~101-g0780600+dfsg-3ubuntu2.4) ...
Selecting previously unselected package libldap-common.
Preparing to unpack .../23-libldap-common_2.4.45+dfsg-1ubuntu1.11_all.deb ...
Unpacking libldap-common (2.4.45+dfsg-1ubuntu1.11) ...
Selecting previously unselected package libldap-2.4-2:amd64.
Preparing to unpack .../24-libldap-2.4-2_2.4.45+dfsg-1ubuntu1.11_amd64.deb ...
Unpacking libldap-2.4-2:amd64 (2.4.45+dfsg-1ubuntu1.11) ...
Selecting previously unselected package libaprutil1-ldap:amd64.
Preparing to unpack .../25-libaprutil1-ldap_1.6.1-2ubuntu0.1_amd64.deb ...
Unpacking libaprutil1-ldap:amd64 (1.6.1-2ubuntu0.1) ...
Selecting previously unselected package liblua5.2-0:amd64.
Preparing to unpack .../26-liblua5.2-0_5.2.4-1.1build1_amd64.deb ...
Unpacking liblua5.2-0:amd64 (5.2.4-1.1build1) ...
Selecting previously unselected package libnghttp2-14:amd64.
Preparing to unpack .../27-libnghttp2-14_1.30.0-1ubuntu1_amd64.deb ...
Unpacking libnghttp2-14:amd64 (1.30.0-1ubuntu1) ...
Selecting previously unselected package libicu60:amd64.
Preparing to unpack .../28-libicu60_60.2-2ubuntu2.2_amd64.deb
```

```

Preparing to unpack .../28-libicu60_60.2-3ubuntu3.2_amd64.deb ...
Unpacking libicu60:amd64 (60.2-3ubuntu3.2) ...
Selecting previously unselected package libxml2:amd64.
Preparing to unpack .../29-libxml2_2.9.4+dfsg1-6.1ubuntu1.8_amd64.deb ...
Unpacking libxml2:amd64 (2.9.4+dfsg1-6.1ubuntu1.8) ...
Selecting previously unselected package apache2-bin.
Preparing to unpack .../30-apache2-bin_2.4.29-1ubuntu4.27_amd64.deb ...
Unpacking apache2-bin (2.4.29-1ubuntu4.27) ...
Selecting previously unselected package apache2-utils.
Preparing to unpack .../31-apache2-utils_2.4.29-1ubuntu4.27_amd64.deb ...
Unpacking apache2-utils (2.4.29-1ubuntu4.27) ...
Selecting previously unselected package apache2-data.
Preparing to unpack .../32-apache2-data_2.4.29-1ubuntu4.27_all.deb ...
Unpacking apache2-data (2.4.29-1ubuntu4.27) ...
Selecting previously unselected package apache.
Preparing to unpack .../33-apache2_2.4.29-1ubuntu4.27_amd64.deb ...
Unpacking apache2 (2.4.29-1ubuntu4.27) ...
Selecting previously unselected package libmagic-mgc.
Preparing to unpack .../34-libmagic-mgc_1%3a5.32-2ubuntu0.4_amd64.deb ...
Unpacking libmagic-mgc (1:5.32-2ubuntu0.4) ...
Selecting previously unselected package libmagic1:amd64.
Preparing to unpack .../35-libmagic1_1%3a5.32-2ubuntu0.4_amd64.deb ...
Unpacking libmagic1:amd64 (1:5.32-2ubuntu0.4) ...
Selecting previously unselected package file.
Preparing to unpack .../36-file_1%3a5.32-2ubuntu0.4_amd64.deb ...
Unpacking file (1:5.32-2ubuntu0.4) ...
Selecting previously unselected package netbase.
Preparing to unpack .../37-netbase_5.4_all.deb ...
Unpacking netbase (5.4) ...
Selecting previously unselected package openssl.
Preparing to unpack .../38-openssl_1.1.1-1ubuntu2.1-18.04.21_amd64.deb ...
Unpacking openssl (1.1.1-1ubuntu2.1-18.04.21) ...
Selecting previously unselected package xz-utils.
Preparing to unpack .../39-xz-utils_5.2.2-1.3ubuntu0.1_amd64.deb ...
Unpacking xz-utils (5.2.2-1.3ubuntu0.1) ...
Selecting previously unselected package libssasl2-modules:amd64.
Preparing to unpack .../40-libssasl2-modules_2.1.27~101-g0780600+dfsg-3ubuntu2.4_amd64.deb ...
Unpacking libssasl2-modules:amd64 (2.1.27~101-g0780600+dfsg-3ubuntu2.4) ...
Selecting previously unselected package ssl-cert.
Preparing to unpack .../41-ssl-cert_1.0.39_all.deb ...
Unpacking ssl-cert (1.0.39) ...
Setting up libapri:amd64 (1.6.3-2) ...
Setting up libexpat1:amd64 (2.2.5-3ubuntu0.9) ...
Setting up libicu60:amd64 (60.2-3ubuntu3.2) ...
Setting up libnghttp2-14:amd64 (1.30.0-1ubuntu1) ...
Setting up mime-support (3.60ubuntu1) ...
Setting up libldap-common (2.4.45+dfsg-1ubuntu1.11) ...
Setting up libssasl2-modules-db:amd64 (2.1.27~101-g0780600+dfsg-3ubuntu2.4) ...
Setting up libssasl2-2:amd64 (2.1.27~101-g0780600+dfsg-3ubuntu2.4) ...
Setting up apache2-data (2.4.29-1ubuntu4.27) ...
Setting up libroken18-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...

Setting up perl-modules-5.26 (5.26.1-6ubuntu0.6) ...
Setting up libgdbm8:amd64 (1.14.1-6) ...
Setting up libxml2:amd64 (2.9.4+dfsg1-6.1ubuntu1.8) ...
Setting up libmagic-mgc (1:5.32-2ubuntu0.4) ...
Setting up libssli:amd64 (1.1-1ubuntu2.1-18.04.21) ...
debconf: unable to initialize frontend: Dialog
debconf: (No usable dialog-like programs installed, so the dialog based frontend cannot be used. at /usr/share/perl5/Debconf/FrontEnd/Dialog.pm line 76.)
debconf: falling back to frontend: Readline
S: Rhythmbox-x-utils (5.2.2-1.3ubuntu0.1) ...
update-alternatives: using /usr/bin/lzcat to provide /usr/bin/lzma (lzma) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/man1/lzma.1.gz because associated file /usr/share/man/man1/xz.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/unlzma.1.gz because associated file /usr/share/man/man1/unxz.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzcat.1.gz because associated file /usr/share/man/man1/xzcat.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzmore.1.gz because associated file /usr/share/man/man1/xzmore.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzless.1.gz because associated file /usr/share/man/man1/xzless.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzdiff.1.gz because associated file /usr/share/man/man1/xzdiff.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzcmp.1.gz because associated file /usr/share/man/man1/xzcmp.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzgrep.1.gz because associated file /usr/share/man/man1/xzgrep.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzegrep.1.gz because associated file /usr/share/man/man1/xzegrep.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzgrep.1.gz because associated file /usr/share/man/man1/xzgrep.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzgrep.1.gz because associated file /usr/share/man/man1/xzgrep.1.gz (of link group lzma) doesn't exist
Setting up libapril1:heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up libheimbase1:heimdal:amd64 (1.1-1ubuntu2.1-18.04.21) ...
Setting up libsqlite3-0:amd64 (3.22.0-1ubuntu0.7) ...
Setting up liblbus5-2.0:amd64 (5.2.4-1.4bu1ld1) ...
Setting up liblbd0n-compat4:amd64 (1.14.1-6) ...
Setting up libssasl2-modules:amd64 (2.1.27~101-g0780600+dfsg-3ubuntu2.4) ...
Setting up libntlm2 (4) ...
Setting up libwind0:heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up libheimdal1:heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up liblber15-26:amd64 (5.26.1-6ubuntu0.6) ...
Setting up libkrb5-26:heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up libheimntlm0:heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up perl (5.26.1-6ubuntu0.6) ...
Setting up libgssapi3-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up libldap2-2.4-2:amd64 (2.4.45+dfsg-1ubuntu1.11) ...
Setting up libaprutil1-ldap:amd64 (1.6.1-2ubuntu0.1) ...
Setting up apache2-bin (2.4.29-1ubuntu4.27) ...
Setting up apache2 (2.4.29-1ubuntu4.27) ...
Enabling module npn_event.
Enabling module authz_core.

```

```
Enabling module authz_host.
Enabling module authn_core.
Enabling module auth_basic.
Enabling module access_compat.
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
invoke-rc.d: could not determine current runlevel
invoke-rc.d: policy-rc.d denied execution of start.
Processing triggers for libc-bin (2.27-3ubuntu1.6) ...
root@e63f824be47e:/#
```

Una vez terminada la instalación de apache en nuestra máquina virtual debemos de probar que funcione y esto lo realizamos iniciando apache con el siguiente comando:

/etc/init.d/apache2 start

```
root@e63f824be47e:/# /etc/init.d/apache2 start
* Starting Apache httpd web server apache2
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress this message
*
root@e63f824be47e:/#
```

3. Acceder al sitio localizado enlazado al contenedor:

Esto lo realizamos para tener una vista del sitio que contiene el contenedor; Para realizar esto se deben conocer las direcciones IP de la máquina virtual como del container.

En nuestro caso para poder ejecutar el comando para visualizar las IPs debemos de instalar previamente net-tools para tener acceso a herramientas o líneas de comandos utilizadas para redes. Esto lo realizamos con el comando **Apt install net-tools**.

```

root@kevin-VirtualBox:/etc/init.d# apt install net-tools
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias
Leyendo la información de estado... Hecho
Se instalarán los siguientes paquetes NUEVOS:
  net-tools
0 actualizados, 1 nuevos se instalarán, 0 para eliminar y 285 no actualizados.
Se necesita descargar 194 kB de archivos.
Se utilizarán 803 kB de espacio de disco adicional después de esta operación.
Des:1 http://co.archive.ubuntu.com/ubuntu bionic/main amd64 net-tools amd64 1.60+git20161116.90da8a0-1ubuntu1 [194 kB]
Descargados 194 kB en 1s (155 kB/s)
Seleccionando el paquete net-tools previamente no seleccionado.
(Leyendo la base de datos ... 130719 ficheros o directorios instalados actualmente.)
Preparando para desempaquetar .../net-tools_1.60+git20161116.90da8a0-1ubuntu1_amd64.deb ...
Desempaquetando net-tools (1.60+git20161116.90da8a0-1ubuntu1) ...
Configurando net-tools (1.60+git20161116.90da8a0-1ubuntu1) ...
Procesando disparadores para man-db (2.8.3-2ubuntu0.1) ...
root@kevin-VirtualBox:/etc/init.d# 
```

Una vez instalado el net-tools ya tenemos acceso a las direcciones IP públicas, estas las usaremos para acceder al sitio enlazado con el contenedor que tenemos.

Con el comando **ifconfig -a** el cual nos mostrara los datos de las IP de nuestra máquina virtual, en este caso para acceder al sitio debemos de tener en cuenta la IP que se nos muestra en docker0 en este caso 172.17.0.1

```

root@kevin-VirtualBox:/etc/init.d# ifconfig -a
docker0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
  inet 172.17.0.1 netmask 255.255.0.0 broadcast 172.17.255.255
    inet6 fe80::42:8dff:fe8a:c57c prefixlen 64 scopeid 0x20<link>
      ether 02:42:8d:8a:c5:7c txqueuelen 0 (Ethernet)
        RX packets 3883 bytes 216993 (216.9 KB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 7387 bytes 48902210 (48.9 MB)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

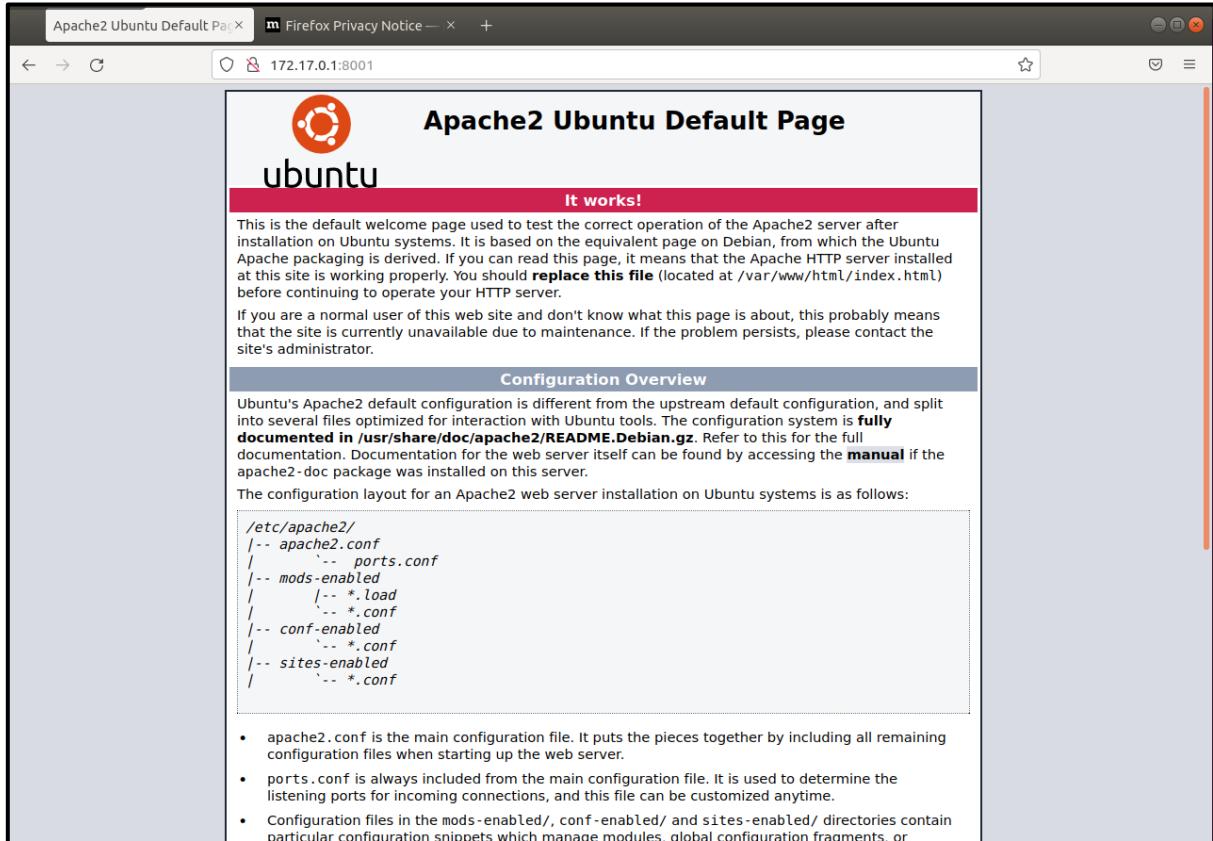
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
  inet 192.168.1.39 netmask 255.255.255.0 broadcast 192.168.1.255
    inet6 fe80::85d3:f9f2:2653:ae23 prefixlen 64 scopeid 0x20<link>
      ether 08:00:27:49:e0:d3 txqueuelen 1000 (Ethernet)
        RX packets 107331 bytes 154069505 (154.0 MB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 8533 bytes 636343 (636.3 KB)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
  inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
      loop txqueuelen 1000 (Bucle local)
        RX packets 276 bytes 27700 (27.7 KB)
        RX errors 0 dropped 0 overruns 0 frame 0
        TX packets 276 bytes 27700 (27.7 KB)
        TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

vethfb9a187: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
  inet6 fe80::2ce0:a6ff:febe:20ed prefixlen 64 scopeid 0x20<link>
    ether 2e:e0:a6:be:20:ed txqueuelen 0 (Ethernet)
      RX packets 3883 bytes 271355 (271.3 KB)
      RX errors 0 dropped 0 overruns 0 frame 0
      TX packets 7384 bytes 48901026 (48.9 MB)
      TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

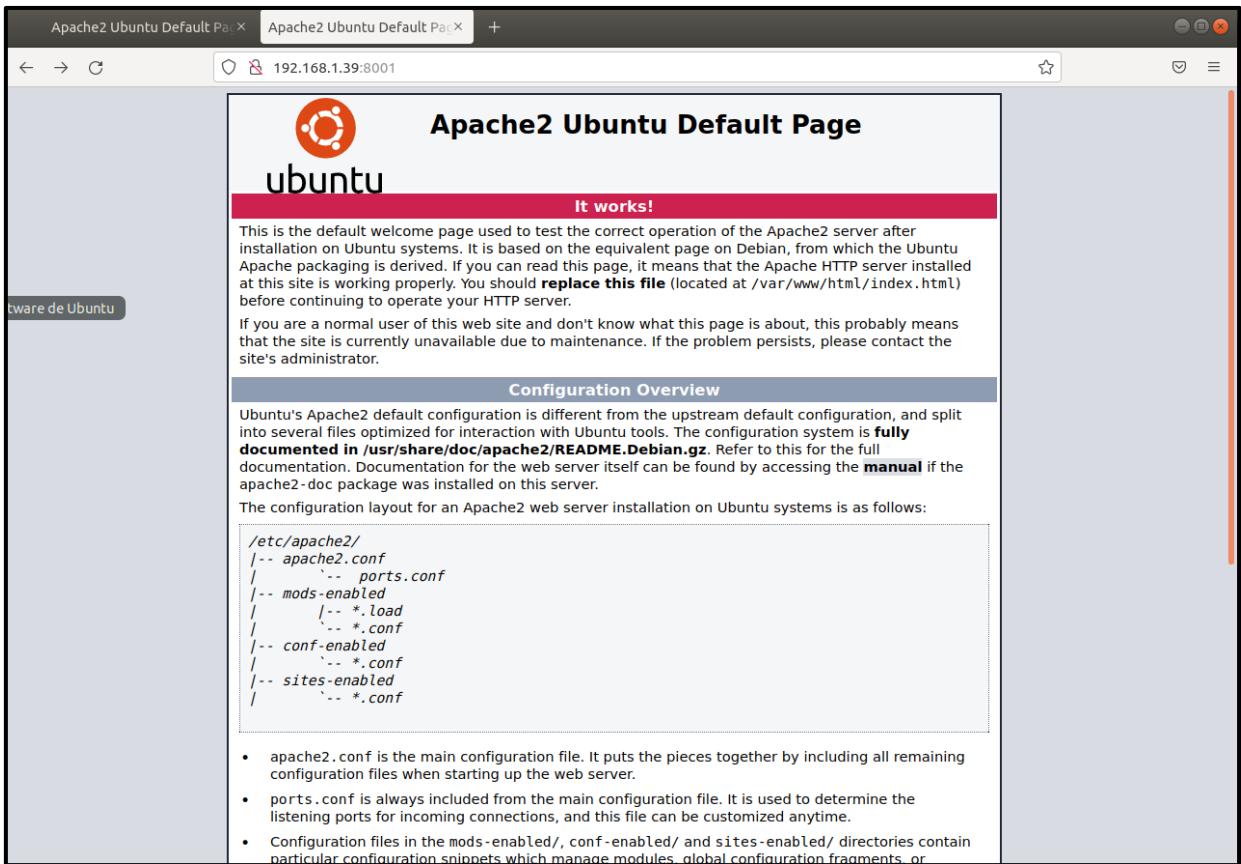
root@kevin-VirtualBox:/etc/init.d# 
```

Una vez que conozcamos la IP procedemos a acceder mediante el puerto 8001, con el comando <http://IP:PORT>. En nuestro caso sería <http://172.17.0.1:8001> para poder acceder al container esto lo hacemos con el IP publico.



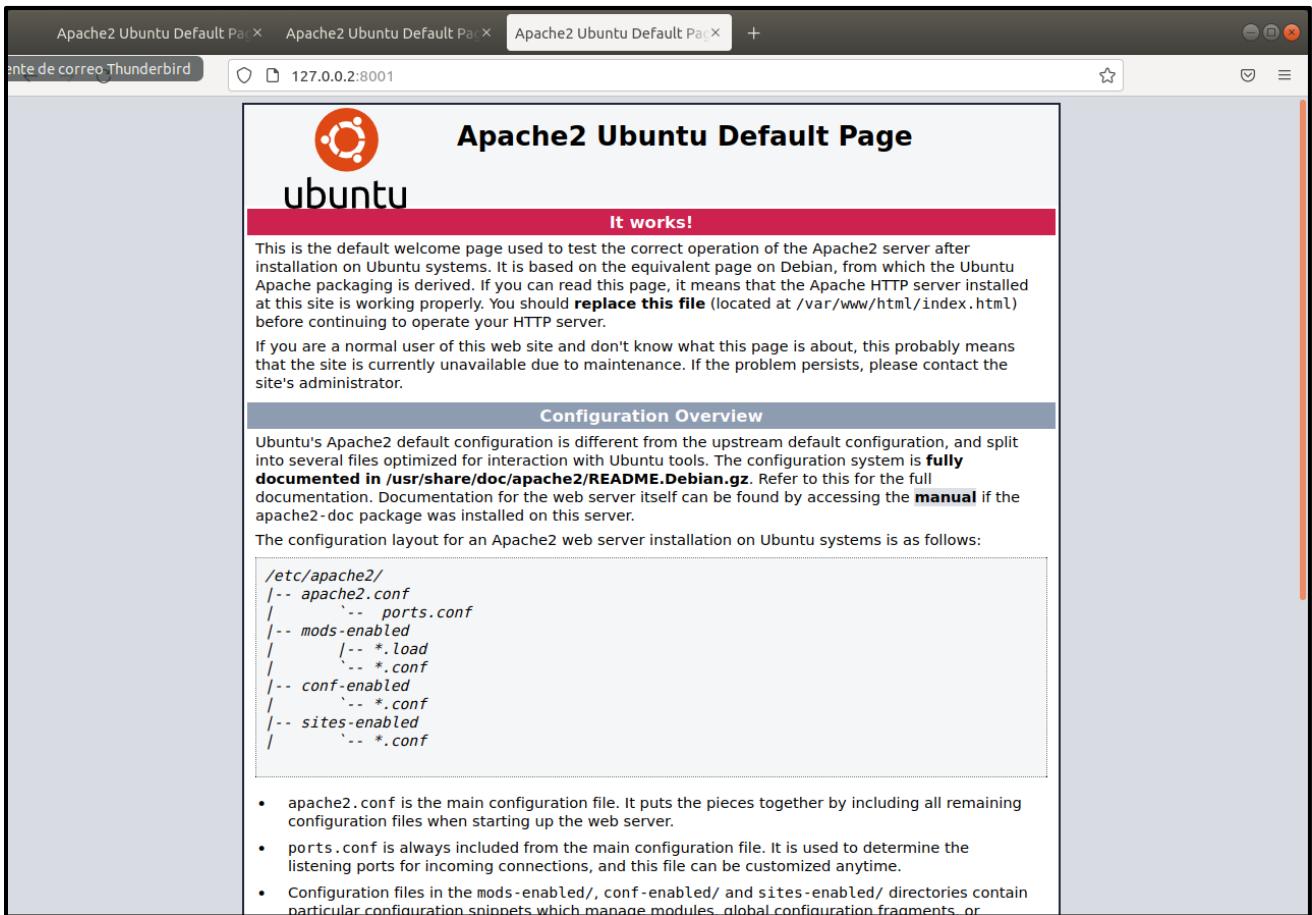
En cambio, si deseamos entrar mediante el host debemos de tener en cuenta otra IP la cual será la que se encuentra ubicada en ens0p3 en nuestro caso 192.168.1.39

Para acceder al container de esta manera es parecido al paso anterior solo que cambiando la IP: <http://IPHOST:PORT> = <http://192.168.1.39:8001>



En cambio, si deseamos entrar mediante el container debemos de tener en cuenta otra IP la cual será la que se encuentra ubicada en lo en nuestro caso 127.0.0.2

Para acceder al container de esta manera es parecido al paso anterior solo que cambiando la IP: http://IP_CONTAINER:80 = <http://127.0.0.2:80>



En los tres casos veremos la instalación por defecto de apache

Por último necesitamos conocer la IP del container para pruebas locales, esto lo realizamos con el comando `docker inspect apache | grep IPAddress`.

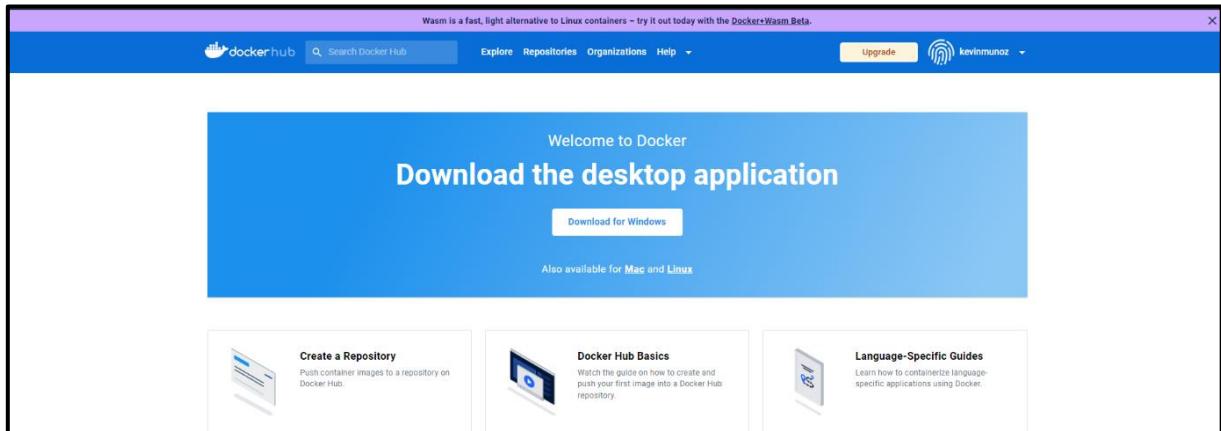
El cual nos mostrara la IP del container en nuestro caso 172.17.0.2

```
root@kevin-VirtualBox:/etc/init.d# docker inspect apache | grep IPAddress
    "SecondaryIPAddresses": null,
    "IPAddress": "172.17.0.2",
    "IPAddress": "172.17.0.2",
root@kevin-VirtualBox:/etc/init.d#
```

En el comando, **Docker inspect apache** es para conocer información sobre el contenedor llamado apache, luego una separación para obtener la dirección IP que se le asigno al contendor.

Taller 3 – Creación de imágenes de containers con Dockerfiles

Para este taller se debe tener una cuenta en Docker Hub.



1. Se crea el archivo Dockerfile y el archivo index.html en el mismo directorio
En el dockerfile, se especifican las instrucciones que Docker utilizará para construir la imagen, como el sistema operativo base, las dependencias, el software y las configuraciones necesarias para ejecutar una aplicación dentro del contenedor.

El index.html es un archivo de ejemplo que se utiliza en este caso específico como contenido para el servidor web Apache que se está instalando dentro del contenedor. Cuando el contenedor se ejecuta, el servidor web Apache utiliza este archivo como la página web predeterminada que se mostrará al usuario en el puerto 80.

```
root@kevin-VirtualBox:/etc/init.d# ls
acpid    apport      console-setup.sh  dbus      grub-common  kerneloops    network-manager  procps   speech-dispatcher  ufw          x11-common
alsa-utils avahi-daemon cron        dns-clean  hwclock.sh  keyboard-setup.sh  plymouth    rsync   spice-vdagent   unattended-upgrades
anacron   bluetooth   cups        Dockerfile  index.html  kmod        plymouth-log   rsyslog  ubuntu-fan    uidd
apparmor  build.sh    cups-browsed  gdm3     irqbalance  networking   pppd-dns    saned   udev       whoopsie
root@kevin-VirtualBox:/etc/init.d#
```

ingresamos al DockerHub usando el comando "docker login" con nuestras credenciales de DockerHub.

```
        "IP Address": "172.17.0.2",
root@kevin-VirtualBox:/etc/init.d# 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: kevimmunoz
Password:
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
root@kevin-VirtualBox:/etc/init.d#
```

Al ejecutar el comando "**docker build -t apache .**" se construye la imagen a partir del Dockerfile que está en la carpeta actual, además de asignarle el nombre de apache.

Al finalizar el proceso de construcción, se muestra en la línea de comandos un mensaje que indica que la imagen ha sido construida exitosamente.

```
root@kevin-VirtualBox:/etc/init.d# docker build -t apache .
Sending build context to Docker daemon 122.4kB
Step 1/8 : FROM ubuntu:18.04
--> b89fba62bc15
Step 2/8 : MAINTAINER CloudNativePlusGT
--> Running in a1d311fed9df
Removing intermediate container a1d311fed9df
--> 6e69f4a4cdd9
Step 3/8 : RUN apt-get update
--> Running in c24529f7630e
Get:1 http://archive.ubuntu.com/ubuntu bionic InRelease [242 kB]
Get:2 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]
Get:4 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [1462 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic-backports InRelease [83.3 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic/restricted amd64 Packages [13.5 kB]
Get:7 http://archive.ubuntu.com/ubuntu bionic/main amd64 Packages [1344 kB]
Get:8 http://archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [186 kB]
Get:9 http://archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [11.3 MB]
Get:10 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [3218 kB]
Get:11 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [23.8 kB]
Get:12 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [1605 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [30.8 kB]
Get:14 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [3638 kB]
Get:15 http://archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [1503 kB]
Get:16 http://archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [2379 kB]
Get:17 http://archive.ubuntu.com/ubuntu bionic-backports/universe amd64 Packages [20.5 kB]
Get:18 http://archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [64.0 kB]
Fetched 27.3 MB in 4s (7799 kB/s)
Reading package lists...
Removing intermediate container c24529f7630e
--> 27f00bd1b0af
Step 4/8 : RUN apt-get install -y apache2
--> Running in 61ebb6a5b673
Reading package lists...
Building dependency tree...
Reading state information...
The following additional packages will be installed:
 apache2-bin apache2-data apache2-utils file libapr1 libaprutil1
 libaprutil1-dbd-sqlite3 libaprutil1-ldap libasn1-8-heimdal libexpat1
 libgdbm-compat4 libgdbm5 libgssapi3-heimdal libhcrypto4-heimdal
 libheimbase1-heimdal libheimntlm0-heimdal libhx509-5-heimdal libicu60
 libkrb5-26-heimdal libldap-2.4-2 libldap-common liblua5.2-0 libmagic-mgc
 libmagic1 libnghttp2-14 libperl5.26 libroken18-heimdal libsasl2-2
 libsasl2-modules libsasl2-modules-db libsqlite3-0 libssl1.1 libwind0-heimdal
 libxml2 mime-support netbase openssl perl perl-modules-5.26 ssl-cert
 xz-utils
```

```

Suggested packages:
  www-browser apache2-doc apache2-suexec-pristine | apache2-suexec-custom ufw
  gdm-ion libasasl2-modules-gssapi-mit | libasasl2-modules-gssapi-helmdal
  libasasl2-modules-ldap libasasl2-modules-opt libasasl2-modules-sql
  ca-certificates perl-doc libterm-readline-gnu-perl
  | libterm-readline-perl-perl make openssl-blacklist
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils file libapr1 libaprutil1
  libaprutil1-dbd-sqlite3 libaprutil1-ldap libasn1-8-heimdal libexpat1
  libgdbm-compat4 libgdbm5 libgssapi3-heimdal libcrypto4-heimdal
  libheimbase1-heimdal libheimntlm0-heimdal libhx509-5-heimdal libicu60
  libkrb5-26-heimdal libldap-2.4-2 libldap-common liblbus5.2-0 libmagic-mgc
  libmagick1 libmagicktp2-14 libperl5.26 libroken18-heimdal libasasl2-2
  LibreOfficeWriter libxml2 libxml2-mime-support netbase openssl perl perl-modules-5.26 ssl-cert
  xz-utils
0 upgraded, 42 newly installed, 0 to remove and 2 not upgraded.
Need to get 21.1 MB of archives.
After this operation, 99.4 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 perl-modules-5.26 all 5.26.1-6ubuntu0.6 [2764 kB]
Get:2 http://archive.ubuntu.com/ubuntu bionic/main amd64 libgdbm5 amd64 1.14.1-6 [26.0 kB]
Get:3 http://archive.ubuntu.com/ubuntu bionic/main amd64 libgdbm-compat4 amd64 1.14.1-6 [6084 B]
Get:4 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libperl5.26 amd64 5.26.1-6ubuntu0.6 [3556 kB]
Get:5 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 perl amd64 5.26.1-6ubuntu0.6 [201 kB]
Get:6 http://archive.ubuntu.com/ubuntu bionic/main amd64 mime-support all 3.60ubuntu1 [30.1 kB]
Get:7 http://archive.ubuntu.com/ubuntu bionic/main amd64 libapr1 amd64 1.6.3-2 [90.9 kB]
Get:8 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libexpat1 amd64 2.2.5-3ubuntu0.9 [82.8 kB]
Get:9 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libssl1.1 amd64 1.1.1-1ubuntu2.1-18.04.21 [1304 kB]
Get:10 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libaprutil1 amd64 1.6.1-2ubuntu0.1 [84.6 kB]
Get:11 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libaprutil1-dbd-sqlite3-0 amd64 3.22.0-1ubuntu0.7 [499 kB]
Get:12 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.1-2ubuntu0.1 [10.6 kB]
Get:13 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libroken18-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [42.3 kB]
Get:14 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libasn1-8-heimdal libicu60 7.5.0+dfsg-1ubuntu0.4 [175 kB]
Get:15 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libheimbase1-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [30.3 kB]
Get:16 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libcrypto4-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [85.9 kB]
Get:17 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 liblhx509-5-heimdal libicu60 7.5.0+dfsg-1ubuntu0.4 [48.0 kB]
Get:18 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libhx509-5-heimdal libicu60 7.5.0+dfsg-1ubuntu0.4 [107 kB]
Get:19 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libkrb5-26-heimdal amd64 7.5.0+dfsg-1ubuntu0.4 [207 kB]
Get:20 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libheimntlm0-heimdal libicu60 7.5.0+dfsg-1ubuntu0.4 [34.8 kB]
Get:21 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libgssapi3-heimdal libicu60 7.5.0+dfsg-1ubuntu0.4 [96.7 kB]
Get:22 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libasasl2-modules-db libicu60 2.1.27-101-g0780600+dfsg-3ubuntu2.4 [15.0 kB]
Get:23 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libasasl2-2 amd64 2.1.27-101-g0780600+dfsg-3ubuntu2.4 [49.2 kB]
Get:24 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libldap-common all 2.4.45+dfsg-1ubuntu1.11 [15.8 kB]
Get:25 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libldap2-2.4-2 amd64 2.4.45+dfsg-1ubuntu1.11 [154 kB]
Get:26 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libaprutil1-ldap libicu60 2.1.27-101-g0780600+dfsg-3ubuntu2.4 [83.3 kB]
Get:27 http://archive.ubuntu.com/ubuntu bionic/main amd64 liblbus5.2-0 amd64 5.2.4-1.1build1 [108 kB]
Get:28 http://archive.ubuntu.com/ubuntu bionic/main amd64 libmagicktp2-14 amd64 1.30.0-2ubuntu1 [77.8 kB]
Get:29 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libicu60 amd64 60.2-3ubuntu3.2 [8050 kB]
Get:30 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libxml2 amd64 2.9.+dfsg1-6.1ubuntu1.8 [664 kB]
Get:31 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-bin amd64 2.4.29-1ubuntu0.27 [1071 kB]
Get:32 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-utils amd64 2.4.29-1ubuntu0.27 [83.3 kB]

Get:33 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2-data all 2.4.29-1ubuntu4.27 [160 kB]
Get:34 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 apache2 amd64 2.4.29-1ubuntu4.27 [95.1 kB]
Get:35 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libmagic-mgc amd64 1:5.32-2ubuntu0.4 [184 kB]
Get:36 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libmagick1 amd64 1:5.32-2ubuntu0.4 [68.6 kB]
Get:37 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 file amd64 1:5.32-2ubuntu0.4 [22.1 kB]
Get:38 http://archive.ubuntu.com/ubuntu bionic/main amd64 netbase all 5.4 [12.7 kB]
Get:39 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 openssl amd64 1.1.1-1ubuntu2.1-18.04.21 [614 kB]
Get:40 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 xz-utils amd64 5.2.2-1.3ubuntu0.1 [83.8 kB]
Get:41 http://archive.ubuntu.com/ubuntu bionic-updates/main amd64 libasasl2-modules amd64 2.1.27-101-g0780600+dfsg-3ubuntu2.4 [48.9 kB]
G-Rhyhmbbox://archive.ubuntu.com/ubuntu bionic/main amd64 ssl-cert all 1.0.39 [17.0 kB]
debcfg: delaying package configuration, since apt-utils is not installed
Fetched 21.1 MB in 5s (4435 kB/s)
Selecting previously unselected package perl-modules-5.26.
(Reading database ... 4051 files and directories currently installed.)
Preparing to unpack .../00-perl-modules-5.26_5.26.1-6ubuntu0.6_all.deb ...
Unpacking perl-modules-5.26 (5.26.1-6ubuntu0.6) ...
Selecting previously unselected package libgdbm5:amd64.
Preparing to unpack .../01-libgdbm5_1.14.1-6_amd64.deb ...
Unpacking libgdbm5:amd64 (1.14.1-6) ...
Selecting previously unselected package libgdbm-compat4:amd64.
Preparing to unpack .../02-libgdbm-compat4_1.14.1-6_amd64.deb ...
Unpacking libgdbm-compat4:amd64 (1.14.1-6) ...
Selecting previously unselected package libperl5.26:amd64.
Preparing to unpack .../03-libperl5.26_5.26.1-6ubuntu0.6_amd64.deb ...
Unpacking libperl5.26:amd64 (5.26.1-6ubuntu0.6) ...
Selecting previously unselected package perl.
Preparing to unpack .../04-perl_5.26.1-6ubuntu0.6_amd64.deb ...
Unpacking perl (5.26.1-6ubuntu0.6) ...
Selecting previously unselected package mime-support.
Preparing to unpack .../05-mime-support_3.60ubuntu1_all.deb ...
Unpacking mime-support (3.60ubuntu1) ...
Selecting previously unselected package libapr1:amd64.
Preparing to unpack .../06-libapr1_1.6.3-2_amd64.deb ...
Unpacking libapr1:amd64 (1.6.3-2) ...
Selecting previously unselected package libexpat1:amd64.
Preparing to unpack .../07-libexpat1_2.2.5-3ubuntu0.9_amd64.deb ...
Unpacking libexpat1:amd64 (2.2.5-3ubuntu0.9) ...
Selecting previously unselected package libssl1.1:amd64.
Preparing to unpack .../08-libssl1.1_1.1.1-1ubuntu2.1-18.04.21_amd64.deb ...
Unpacking libssl1.1:amd64 (1.1.1-1ubuntu2.1-18.04.21) ...
Selecting previously unselected package libaprutil1:amd64.
Preparing to unpack .../09-libaprutil1_1.6.1-2ubuntu0.1_amd64.deb ...
Unpacking libaprutil1:amd64 (1.6.1-2ubuntu0.1) ...
Selecting previously unselected package libsqlite3-0:amd64.
Preparing to unpack .../10-libsqlite3-0_3.22.0-1ubuntu0.7_amd64.deb ...
Unpacking libsqlite3-0:amd64 (3.22.0-1ubuntu0.7) ...
Selecting previously unselected package libaprutil1-dbd-sqlite3:amd64.
Preparing to unpack .../11-libaprutil1-dbd-sqlite3_1.6.1-2ubuntu0.1_amd64.deb ...
Unpacking libaprutil1-dbd-sqlite3:amd64 (1.6.1-2ubuntu0.1) ...
Selecting previously unselected package libroken18-heimdal:amd64.
Preparing to unpack .../12-libroken18-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...

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Selecting previously unselected package libasn1-8-heimdal:amd64.
Preparing to unpack .../i3-libasn1-8-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libasn1-8-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libheimbase1-heimdal:amd64.
Preparing to unpack .../i4-libheimbase1-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libheimbase1-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libbrcrypto4-heimdal:amd64.
Preparing to unpack .../i5-libbrcrypto4-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libbrcrypto4-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libwind0-heimdal:amd64.
Preparing to unpack .../i6-libwind0-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libwind0-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libhx509-5-heimdal:amd64.
Preparing to unpack .../i7-libhx509-5-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libhx509-5-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libkrb5-26-heimdal:amd64.
Preparing to unpack .../i8-libkrb5-26-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libkrb5-26-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libheimntlm0-heimdal:amd64.
Preparing to unpack .../i9-libheimntlm0-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Un Ayuda libheimntlm0-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libgssapi3-heimdal:amd64.
Preparing to unpack .../i20-libgssapi3-heimdal_7.5.0+dfsg-1ubuntu0.4_amd64.deb ...
Unpacking libgssapi3-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Selecting previously unselected package libssl2-modules:db:amd64.
Preparing to unpack .../i21-libssl2-modules-db_2.1.27-101-g0780600+dfsg-3ubuntu2.4_amd64.deb ...
Unpacking libssl2-modules:db:amd64 (2.1.27-101-g0780600+dfsg-3ubuntu2.4) ...
Selecting previously unselected package libss2-2:amd64.
Preparing to unpack .../i22-libssl2-2_2.1.27-101-g0780600+dfsg-3ubuntu2.4_amd64.deb ...
Unpacking libss2-2:amd64 (2.1.27-101-g0780600+dfsg-3ubuntu2.4) ...
Selecting previously unselected package libldap-common.
Preparing to unpack .../i23-libldap-common_2.4.45+dfsg-1ubuntu1.11_all.deb ...
Unpacking libldap-common (2.4.45+dfsg-1ubuntu1.11) ...
Selecting previously unselected package libldap2-2:amd64.
Preparing to unpack .../i24-libldap2-2_2.4.2-2.4.45+dfsg-1ubuntu1.11_amd64.deb ...
Unpacking libldap2-2:amd64 (2.4.45+dfsg-1ubuntu1.11) ...
Selecting previously unselected package libaprutil1-ldap:amd64.
Preparing to unpack .../i25-libaprutil1-ldap_1.6.1-2ubuntu0.1_amd64.deb ...
Unpacking libaprutil1-ldap:amd64 (1.6.1-2ubuntu0.1) ...
Selecting previously unselected package liblua5.2-0:amd64.
Preparing to unpack .../i26-liblua5.2-0_5.2.4-1.1build1_amd64.deb ...
Unpacking liblua5.2-0:amd64 (5.2.4-1.1build1) ...
Selecting previously unselected package libnghttp2-14:amd64.
Preparing to unpack .../i27-libnghttp2-14_1.30.0-1ubuntu1_amd64.deb ...
Unpacking libnghttp2-14:amd64 (1.30.0-1ubuntu1) ...
Selecting previously unselected package libicu60:amd64.
Preparing to unpack .../i28-libicu60_60.2-3ubuntu3.2_amd64.deb ...
Unpacking libicu60:amd64 (60.2-3ubuntu3.2) ...
Selecting previously unselected package libxml2:amd64.
Preparing to unpack .../i29-libxml2_2.9.4+dfsg1-6.1ubuntu1.8_amd64.deb ...
Unpacking libxml2:amd64 (2.9.4+dfsg1-6.1ubuntu1.8) ...

Unpacking libxml2:amd64 (2.9.4+dfsg1-6.1ubuntu1.8) ...
Selecting previously unselected package apache2-bin.
Preparing to unpack .../i30-apache2-bin_2.4.29-1ubuntu4.27_amd64.deb ...
Unpacking apache2-bin (2.4.29-1ubuntu4.27) ...
Selecting previously unselected package apache2-utils.
Preparing to unpack .../i31-apache2-utils_2.4.29-1ubuntu4.27_amd64.deb ...
Unpacking apache2-utils (2.4.29-1ubuntu4.27) ...
Selecting previously unselected package apache2-data.
Preparing to unpack .../i32-apache2-data_2.4.29-1ubuntu4.27_all.deb ...
Unpacking apache2-data (2.4.29-1ubuntu4.27) ...
Selecting previously unselected package apache2.
Preparing to unpack .../i33-apache2_2.4.29-1ubuntu4.27_amd64.deb ...
Unpacking apache2 (2.4.29-1ubuntu4.27) ...
Selecting previously unselected package libmagic-mgc.
Preparing to unpack .../i34-libmagic-mgc_1%3a5.32-2ubuntu0.4_amd64.deb ...
Unpacking libmagic-mgc (1:5.32-2ubuntu0.4) ...
Selecting previously unselected package libmagicc1:amd64.
Preparing to unpack .../i35-libmagicc1_1%3a5.32-2ubuntu0.4_amd64.deb ...
Unpacking libmagicc1:amd64 (1:5.32-2ubuntu0.4) ...
Selecting previously unselected package file.
Preparing to unpack .../i36-file_1%3a5.32-2ubuntu0.4_amd64.deb ...
Unpacking file (1:5.32-2ubuntu0.4) ...
Selecting previously unselected package netbase.
Preparing to unpack .../i37-netbase_5.4_all.deb ...
Unpacking netbase (5.4) ...
Selecting previously unselected package openssl.
Preparing to unpack .../i38-openssl_1.1.1-1ubuntu2.1~18.04.21_amd64.deb ...
Unpacking openssl (1.1.1-1ubuntu2.1~18.04.21) ...
Selecting previously unselected package xz-utils.
Preparing to unpack .../i39-xz-utils_5.2.2-1.3ubuntu0.1_amd64.deb ...
Unpacking xz-utils (5.2.2-1.3ubuntu0.1) ...
Selecting previously unselected package libsasl2-modules:amd64.
Preparing to unpack .../i40-libsasl2-modules_2.1.27-101-g0780600+dfsg-3ubuntu2.4_amd64.deb ...
Unpacking libsasl2-modules:amd64 (2.1.27-101-g0780600+dfsg-3ubuntu2.4) ...
Selecting previously unselected package ssl-cert.
Preparing to unpack .../i41-ssl-cert_1.0.39_all.deb ...
Unpacking ssl-cert (1.0.39) ...
Setting up libapr1:amd64 (1.6.3-2) ...
Setting up libexpat1:amd64 (2.2.5-3ubuntu0.9) ...
Setting up libicu60:amd64 (60.2-3ubuntu3.2) ...
Setting up libnghttp2-14:amd64 (1.30.0-1ubuntu1) ...
Setting up mime-support (3.60ubuntu1) ...
Setting up libldap-common (2.4.45+dfsg-1ubuntu1.11) ...
Setting up libsasl2-modules-db:amd64 (2.1.27-101-g0780600+dfsg-3ubuntu2.4) ...
Setting up libsasl2-2:amd64 (2.1.27-101-g0780600+dfsg-3ubuntu2.4) ...
Setting up apache2-data (2.4.29-1ubuntu4.27) ...
Setting up libroken18-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up perl-modules-5.26 (5.26.1-6ubuntu0.6) ...
Setting up libgdbsm:amd64 (1.14.1-6) ...
Setting up libxml2:amd64 (2.9.4+dfsg1-6.1ubuntu1.8) ...
Setting up libmagic-mgc (1:5.32-2ubuntu0.4) ...
```

root@kevin-VirtualBox: /etc/init.d

```
Archivo Editar Ver Buscar Terminal Ayuda
Setting up libmagic-mgc (1:5.32-2ubuntu0.4) ...
Setting up libmagic1:amd64 (1:5.32-2ubuntu0.4) ...
Setting up libssl1.1:amd64 (1.1.1-1ubuntu2.1-18.04.21) ...
debconf: unable to initialize frontend: Dialog
debconf: (TERM is not set, so the dialog frontend is not usable.)
debconf: falling back to frontend: Readline
Setting up xz-utils (5.2.2-1.3ubuntu0.1) ...
update-alternatives: using /usr/bin/xz to provide /usr/bin/lzma (lzma) in auto mode
update-alternatives: warning: skip creation of /usr/share/man/man1/lzma.1.gz because associated file /usr/share/man/man1/xz.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/unxz.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzcat.1.gz because associated file /usr/share/man/man1/xzcat.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzmore.1.gz because associated file /usr/share/man/man1/xzmore.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzless.1.gz because associated file /usr/share/man/man1/xzless.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzdif.1.gz because associated file /usr/share/man/man1/xzdiff.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzcmp.1.gz because associated file /usr/share/man/man1/xzcmp.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzgrep.1.gz because associated file /usr/share/man/man1/xzgrep.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzegrep.1.gz because associated file /usr/share/man/man1/xzegrep.1.gz (of link group lzma) doesn't exist
update-alternatives: warning: skip creation of /usr/share/man/man1/lzfgrep.1.gz because associated file /usr/share/man/man1/xzfgrep.1.gz (of link group lzma) doesn't exist
Setting up libaprutil1:amd64 (1.6.1-2ubuntu0.1) ...
Setting up libheimbase1-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up openssl (1.1.1-1ubuntu2.1-18.04.21) ...
Setting up libsqlite3-0:amd64 (3.22.0-1ubuntu0.7) ...
Setting up liblua5.2-0:amd64 (5.2.4-1.1build1) ...
Setting up libgdbm-compat4:amd64 (1.14.1-6) ...
Setting up libbsa12-modules:amd64 (2.1.27-101-g0780600+dfsg-3ubuntu2.4) ...
Setting up netbase (5.4) ...
Setting up libwind0-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up libaprutil1-dbd-sqlite3:amd64 (1.6.1-2ubuntu0.1) ...
Setting up apache2-utils (2.4.29-1ubuntu4.27) ...
Setting up libtbsn1-8-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up libbrcrypto4-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up ssl-cert (1.0.39) ...
debconf: unable to initialize frontend: Dialog
debconf: (TERM is not set, so the dialog frontend is not usable.)
debconf: falling back to frontend: Readline
Setting up file (1:5.32-2ubuntu0.4) ...
Setting up libbpx509-5-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up libperl5.26:amd64 (5.26.1-6ubuntu0.6) ...
Setting up libkrb5-26-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up libheimntlm0-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up perl (5.26.1-6ubuntu0.6) ...
Setting up libgssapi3-heimdal:amd64 (7.5.0+dfsg-1ubuntu0.4) ...
Setting up libldap-2.4-2:amd64 (2.4.45+dfsg-1ubuntu1.11) ...
Setting up libaprutil1-ldap:amd64 (1.6.1-2ubuntu0.1) ...
Setting up apache2-bin (2.4.29-1ubuntu4.27) ...
Setting up apache2 (2.4.29-1ubuntu4.27) ...
Enabling module mpm_event.
Enabling module authz_core.
Enabling module authz_host.
Enabling module authn_core.
Enabling module auth basic.
```

```
Setting up libldap-2.4-2:amd64 (2.4.45+dfsg-1ubuntu1.11) ...
Setting up libaprutil1-ldap:amd64 (1.6.1-2ubuntu0.1) ...
Setting up apache2-bin (2.4.29-1ubuntu4.27) ...
Setting up apache2 (2.4.29-1ubuntu4.27) ...
Enabling module mpm_event.
Enabling module authz_core.
Enabling module authz_host.
Enabling module authn_core.
Enabling module auth_basic.
E_Rhythmboxdule access_compat.
Enabling module authn_file.
Enabling module authz_user.
Enabling module alias.
Enabling module dir.
Enabling module autoindex.
Enabling module env.
Enabling module mime.
Enabling module negotiation.
Enabling module setenvif.
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
invoke-rc.d: could not determine current runlevel
invoke-rc.d: policy-rc.d denied execution of start.
Processing triggers for libc-bin (2.27-3ubuntu1.6) ...
Removing intermediate container 61ebb6a5b673
--> d7291de4e88c
Step 5/8 : RUN rm /var/www/html/*
--> Running in e9fe3ef28753
Removing intermediate container e9fe3ef28753
--> 0c18cf3e0025
Step 6/8 : COPY index.html /var/www/html/
--> 2ecfbbeb17103
Step 7/8 : CMD ["/usr/sbin/apache2ctl", "-D", "FOREGROUND"]
--> Running in c0a315e2d5b8
Removing intermediate container c0a315e2d5b8
--> 203518454468
Step 8/8 : EXPOSE 80
--> Running in 0f44be2fe2fc
Removing intermediate container 0f44be2fe2fc
--> 01d77d07a3e8
Successfully built 01d77d07a3e8
Successfully tagged apache:latest
root@kevin-VirtualBox:/etc/init.d#
```

Luego de la construcción de la imagen, ejecutamos el comando "**docker tag usuarioDockerHub/apache**" para taggear la imagen con el nombre de usuario de DockerHub y el nombre del repositorio para poder identificarlo.

Al taggear la imagen, se crea una nueva etiqueta o versión de la imagen original, esto permite tener un control sobre las imágenes que has creado y subido a DockerHub.

Por último, se ejecuta el comando "**docker push usuarioDockerHub/apache**" para subir la imagen taggeada a DockerHub.

```
root@kevin-VirtualBox:/etc/init.d# docker tag apache kevinnmunoz/apache
root@kevin-VirtualBox:/etc/init.d# docker push usuarioDockerHub/apache
invalid reference format: repository name must be lowercase
root@kevin-VirtualBox:/etc/init.d# docker push kevinnmunoz/apache
Using default tag: latest
The push refers to repository [docker.io/kevinnmunoz/apache]
7bec4cafba59: Pushed
791866796071: Pushed
10790f0692fc: Pushed
ea6f67fc2ff5: Pushed
52c5ca3e9f3b: Mounted from library/ubuntu
latest: digest: sha256:f18a6b163c05e78a53815382ab2480502d3c2f4ee8cb4a949e07e552d63847f4 size: 1367
root@kevin-VirtualBox:/etc/init.d#
```

Se realiza el comando **chmod 777 build.sh** para que el archivo tenga todos los permisos del sistema, y con el comando **./build usuarioDockerHub** se ejecuta el script guardado en build.sh, además de pasándole un argumento que seria el usuario de la cuenta.

```
root@kevin-VirtualBox:/etc/init.d# ./build.sh kevinnmunoz
Authenticating with existing credentials...
WARNING! Your password will be stored unencrypted in /root/.docker/config.json.
Configure a credential helper to remove this warning. See
https://docs.docker.com/engine/reference/commandline/login/#credentials-store

Login Succeeded
Sending build context to Docker daemon 123.4kB
Step 1/8 : FROM ubuntu:18.04
--> b89fba62bc15
Step 2/8 : MAINTAINER CloudNativePlusGT
--> Using cache
--> 6e69f4a4cdd9
Step 3/8 : RUN apt-get update
--> Using cache
--> 27f00bd1b0af
Step 4/8 : RUN apt-get install -y apache2
--> Using cache
--> d7291de4e88c
Step 5/8 : RUN rm /var/www/html/*
--> Using cache
--> 0c18cf3e0025
Step 6/8 : COPY index.html /var/www/html/
--> Using cache
--> 2ecfbbeb17103
Step 7/8 : CMD ["/usr/sbin/apache2ctl", "-D", "FOREGROUND"]
--> Using cache
--> 203518454468
Step 8/8 : EXPOSE 80
--> Using cache
--> 01d77d07a3e8
Successfully built 01d77d07a3e8
Successfully tagged apache:latest
Using default tag: latest
The push refers to repository [docker.io/kevinnmunoz/apache]
7bec4cafba59: Layer already exists
791866796071: Layer already exists
10790f0692fc: Layer already exists
ea6f67fc2ff5: Layer already exists
52c5ca3e9f3b: Layer already exists
latest: digest: sha256:f18a6b163c05e78a53815382ab2480502d3c2f4ee8cb4a949e07e552d63847f4 size: 1367
root@kevin-VirtualBox:/etc/init.d#
```

Una vez descargada la imagen, la ejecutamos en un container

```
root@kevin-VirtualBox:/etc/init.d# docker run -it -p 8888:80 --name=apacheNuevo kevinnmunoz/apache  
b2115a17f7a6b4d593ae74c42a64b8fef6cf9d2bcf3d6b6338302e1cfa9a1f84  
root@kevin-VirtualBox:/etc/init.d#
```

Y observaremos las estadísticas en tiempo real de los recursos que está utilizando el container.

root@kevin-VirtualBox:/etc/init.d								
Archivo	Editar	Ver	Buscar	Terminal	Ayuda			
CONTAINER ID	NAME	CPU %	MEM USAGE / LIMIT	MEM %	NET I/O	BLOCK I/O	PIDS	
b2115a17f7a6	apacheNuevo	0.00%	6.805MiB / 1.894GiB	0.35%	3.17kB / 0B	2.54MB / 0B	56	

Taller 4 – Uso de Docker Compose

1. **Descargar Docker Compose e instalarlo:** Se debe de tener una cuenta en

<https://www.docker.com/> para tener acceso desde la máquina virtual.

Con el fin de evitar tener que descargar el programa de Docker descargamos el binario con el comando:

```
sudo curl -L "https://github.com/docker/compose/releases/download/1.27.4/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compose
```

Con esto tendremos descargado el docker compose.

```
root@kevin-VirtualBox:/etc/init.d# curl -L "https://github.com/docker/compose/releases/download/1.27.4/docker-compose-$(uname -s)-$(uname -m)" -o /usr/local/bin/docker-compose
% Total    % Received % Xferd  Average Speed   Time     Time      Current
          Dload  Upload   Total Spent  Left  Speed
0       0     0     0       0      0 0:00:01 0:00:01 0:00:01 25.8M
100 11.6M 100 11.6M 0       0 11.4M      0 0:00:01 0:00:01 0:00:01 25.8M
root@kevin-VirtualBox:/etc/init.d#
```

Se le agregan los permisos necesarios para poder ejecutarse con el comando: **sudo chmod +x /usr/local/bin/docker-compose**.

En dado caso de tener que ubicar el Docker-compose podemos ejecutar el comando **sudo ln -s /usr/local/bin/docker-compose /usr/bin/docker-compose** con el fin de mover la ruta, en nuestro caso no es necesario, y el comando, **--version**, nos da información sobre el archivo.

```
root@kevin-VirtualBox:/etc/init.d# chmod +x /usr/local/bin/docker-compose
root@kevin-VirtualBox:/etc/init.d# ln -s /usr/local/bin/docker-compose /usr/bin/docker-compose
root@kevin-VirtualBox:/etc/init.d# docker-compose --version
docker-compose version 1.27.4, build 40524192
root@kevin-VirtualBox:/etc/init.d#
```

El comando: **sudo rm /usr/local/bin/docker-compose** se desinstala en Docker Compose por lo que se hará al final del taller.

```
root@kevin-VirtualBox:/etc/init.d# rm /usr/local/bin/docker-compose
root@kevin-VirtualBox:/etc/init.d#
```

Se creará el archivo Docker-compose.yml donde se define que se crearan dos contenedores, con un servidor web nginx con el puerto 8000 expuesto y enviando al puerto 80 del contenedor, y otro con una base de datos nosql redis.

```
root@kevin-VirtualBox:/etc/init.d# pico docker-compose.yml
root@kevin-VirtualBox:/etc/init.d# ls
acpid      apport      console-setup.sh  dbus          gdm3        irqbalance      networking    pppd-dns    sane          udev          whoopsie
alsa-utils avahi-daemon cron          dns-clean   grub-common kerneloops  network-manager  procps    speech-dispatcher ufw           x11-common
anacron    bluetooth   cups          docker-compose.yml hwclock.sh  keyboard-setup.sh plymouth    rsync       spice-vdagent unattended-upgrades
apparmor   build.sh    cups-browsed  Dockerfile    index.html  kmod          plymouth-log  rsyslog    ubuntu-fan   uidd
root@kevin-VirtualBox:/etc/init.d#
```

Iniciaremos los servicios definidos en el archivo Docker-compose.yml, ejecutando el siguiente comando: docker-compose up -d que define que estarán estos servicios en segundo plano.

```
root@kevin-VirtualBox:/etc/init.d# docker-compose up -d
Creating network "initd_default" with the default driver
Pulling web (nginx:...).
latest: Pulling from library/nginx
3f9582a2cbe7: Pull complete
9a8c6f286718: Pull complete
e81b85700bc2: Pull complete
73ae4d451120: Pull complete
6058e3569a68: Pull complete
3a1b8f201356: Pull complete
Digest: sha256:aa0afebbb3cfa473099a62c4b32e9b3fb73ed23f2a75a65ce1d4b4f55a5c2ef2
Status: Downloaded newer image for nginx:latest
Pulling redis (redis:...).
latest: Pulling from library/redis
3f9582a2cbe7: Already exists
241c2d338588: Pull complete
89515d93a23e: Pull complete
65e8ba9473fe: Pull complete
585124038cab: Pull complete
b483de716a47: Pull complete
Digest: sha256:e50c7e23f79ae81351beacb20e004720d4bed657415e68c2b1a2b5557c075ce0
Status: Downloaded newer image for redis:latest
Creating initd_web_1 ... done
Creating initd_redis_1 ... done
root@kevin-VirtualBox:/etc/init.d#
```

Luego se utiliza el comando **docker-compose ps** para saber el estado de los servidores creados.

```
root@kevin-VirtualBox:/etc/init.d# docker-compose ps
     Name          Command           State           Ports
----- 
initd_redis_1  docker-entrypoint.sh redis ...
initd_web_1    /docker-entrypoint.sh nginx ...
root@kevin-VirtualBox:/etc/init.d#
```

Para detener los dos contenedores se utilizó el comando **docker-compose stop**

```
root@kevin-VirtualBox:/etc/init.d# docker-compose stop
Stopping initd_web_1 ... done
Stopping initd_redis_1 ... done
root@kevin-VirtualBox:/etc/init.d#
```

Y para deterner y eliminar los contenedores creados se usó el comando **docker-compose down**

```
root@kevin-VirtualBox:/etc/init.d# docker-compose down
Removing initd_web_1 ... done
Removing initd_redis_1 ... done
Removing network initd_default
root@kevin-VirtualBox:/etc/init.d#
```