PRACTICO 02 DOCKER

martes, 29 de agosto de 2023   15:19

```
C:\Users\Benja>docker version
error during connect: this error may indicate that the docker daemon is not running: Get "http://%2F%2F.%2Fpipe%2Fdocker
_engine/v1.24/version": open //./pipe/docker_engine: El sistema no puede encontrar el archivo especificado.
Client:
 Cloud integration: v1.0.35-desktop+001
 Version:           24.0.5
 API version:       1.43
 Go version:        go1.20.6
 Git commit:        ced0996
 Built:             Fri Jul 21 20:36:24 2023
 OS/Arch:           windows/amd64
 Context:           default
```

```
C:\Users\Benja>docker pull busybox
Using default tag: latest
latest: Pulling from library/busybox
3f4d90098f5b: Pull complete
Digest: sha256:3fbc632167424a6d997e74f52b878d7cc478225cffac6bc977eedfe51c7f4e79
Status: Downloaded newer image for busybox:latest
docker.io/library/busybox:latest

What's Next?
  View summary of image vulnerabilities and recommendations → docker scout quickview busybox
```

```
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C:\Users\Benja>docker images
REPOSITORY          TAG        IMAGE ID       CREATED       SIZE
redis               alpine     6c09b0364aa8   2 weeks ago   30.2MB
busybox             latest     a416a98b71e2   5 weeks ago   4.26MB
alexisfr/flask-app  latest     5f184752a58e   3 years ago   700MB

C:\Users\Benja>docker run busybox
```

```
C:\Users\Benja>docker run busybox echo "Hola Mundo"
Hola Mundo

C:\Users\Benja>docker ps
CONTAINER ID   IMAGE     COMMAND      CREATED      STATUS      PORTS       NAMES

C:\Users\Benja>docker ps -a
CONTAINER ID   IMAGE                       COMMAND                  CREATED          STATUS                    PORTS
                    NAMES
be7de425f59a   busybox                     "echo 'Hola Mundo'"      16 seconds ago   Exited (0) 14 seconds ago
                    zealous_curran
e8aff81a0f00   busybox                     "sh"                     52 seconds ago   Exited (0) 48 seconds ago
                    focused_jang
4fd5a4753832   alexisfr/flask-app:latest   "python /app.py"         2 weeks ago      Exited (255) 2 minutes ago  0.0.0.
0:5000->5000/tcp   web
3b0eb79d44c4   redis:alpine                "docker-entrypoint.s…"   2 weeks ago      Exited (255) 2 minutes ago  6379/t
cp                  db

C:\Users\Benja>
```

```
C:\Users\Benja>docker run -it busybox sh
/ # ps
PID   USER     TIME  COMMAND
    1 root      0:00 sh
    7 root      0:00 ps
/ # uptime
 18:22:16 up 3 min,  0 users,  load average: 0.24, 0.26, 0.11
/ # free
              total        used        free      shared  buff/cache   available
Mem:        1861396      806924      659224        3776      395248      905932
Swap:       1048576        1036     1047540
/ # ls -l /
total 40
drwxr-xr-x    2 root     root         12288 Jul 17 18:30 bin
drwxr-xr-x    5 root     root           360 Aug 29 18:22 dev
drwxr-xr-x    1 root     root          4096 Aug 29 18:22 etc
drwxr-xr-x    2 nobody   nobody        4096 Jul 17 18:30 home
drwxr-xr-x    2 root     root          4096 Jul 17 18:30 lib
lrwxrwxrwx    1 root     root             3 Jul 17 18:30 lib64 -> lib
dr-xr-xr-x  231 root     root             0 Aug 29 18:22 proc
drwx------    1 root     root          4096 Aug 29 18:22 root
dr-xr-xr-x   11 root     root             0 Aug 29 18:22 sys
drwxrwxrwt    2 root     root          4096 Jul 17 18:30 tmp
drwxr-xr-x    4 root     root          4096 Jul 17 18:30 usr
drwxr-xr-x    4 root     root          4096 Jul 17 18:30 var
```

```
C:\Users\Benja>docker ps -a
CONTAINER ID   IMAGE                     COMMAND                  CREATED              STATUS                       PORTS                      NAMES
21dc7cbf3e83   busybox                   "sh"                     About a minute ago   Exited (0) 8 seconds ago                                exciting_k
hayyam
be7de425f59a   busybox                   "echo 'Hola Mundo'"      2 minutes ago        Exited (0) About a minute ago                           zealous_cu
rran
e8aff81a0f00   busybox                   "sh"                     2 minutes ago        Exited (0) 2 minutes ago                                focused_ja
ng
4fd5a4753832   alexisfr/flask-app:latest "python /app.py"         2 weeks ago          Exited (255) 3 minutes ago   0.0.0.0:5000->5000/tcp     web
3b0eb79d44c4   redis:alpine              "docker-entrypoint.s…"   2 weeks ago          Exited (255) 3 minutes ago   6379/tcp                   db

C:\Users\Benja>docker rm elated_lalande
Error response from daemon: No such container: elated_lalande

C:\Users\Benja>docker rm exciting_k
Error response from daemon: No such container: exciting_k

C:\Users\Benja>docker rm focused_ja
Error response from daemon: No such container: focused_ja

C:\Users\Benja>docker rm exciting_khayyam
exciting_khayyam
```

```
C:\Users\Benja>docker container prune
WARNING! This will remove all stopped containers.
Are you sure you want to continue? [y/N] Y
Deleted Containers:
be7de425f59ad49ab4b80938661b5131d4e3ed076bb2d624ecc266c690b3b78f
e8aff81a0f00c4d732163a12ca03a6e8be42416f79d3ecc1018abe136f756224
4fd5a4753832b4041e81bcfed874b8527a2ecf738764cab99c3353679f93239e
3b0eb79d44c4fb4a636209d05519e92f370e4febad32dd4d7d63f9789b44e085

Total reclaimed space: 285.7kB

C:\Users\Benja>
```

```
C:\Users\Benja\prueba>cd SimpleWebAPI

C:\Users\Benja\prueba\SimpleWebAPI>docker build -t mywebapi .
[+] Building 37.8s (18/18) FINISHED                                                                           docker:default
 => [internal] load build definition from Dockerfile                                                                    0.1s
 => => transferring dockerfile: 810B                                                                                    0.0s
 => [internal] load .dockerignore                                                                                       0.1s
 => => transferring context: 2B                                                                                         0.0s
 => [internal] load metadata for mcr.microsoft.com/dotnet/sdk:7.0                                                       1.3s
 => [internal] load metadata for mcr.microsoft.com/dotnet/aspnet:7.0                                                    2.3s
 => CACHED [build 1/7] FROM mcr.microsoft.com/dotnet/sdk:7.0@sha256:d0755fbf1ed34aecd79c127fd1dd01b80587acdb8ff50e5a68d1adf8b076922b  0.0s
 => [internal] load build context                                                                                      0.3s
 => => transferring context: 80.80kB                                                                                    0.3s
 => [base 1/2] FROM mcr.microsoft.com/dotnet/aspnet:7.0@sha256:77ea66eb200fa06d2929cc937b75724bb2f5cdf2bcf6dc6aaf0851bb75bb631f       0.4s
 => => resolve mcr.microsoft.com/dotnet/aspnet:7.0@sha256:77ea66eb200fa06d2929cc937b75724bb2f5cdf2bcf6dc6aaf0851bb75bb631f            0.1s
 => => sha256:77ea66eb200fa06d2929cc937b75724bb2f5cdf2bcf6dc6aaf0851bb75bb631f 1.79kB / 1.79kB                          0.0s
 => => sha256:4cecefeb3ad7531e38b0915ad8f4e297a888d8260634162f899e7bc83f25e2ef 1.37kB / 1.37kB                          0.0s
 => => sha256:b06452c8ee916a8c0a9863aad05f86b728ec72a1e43bcbfd8e7bd304953285a1 2.36kB / 2.36kB                          0.0s
 => [build 2/7] WORKDIR /src                                                                                            0.3s
 => [build 3/7] COPY [SimpleWebAPI/SimpleWebAPI.csproj, SimpleWebAPI/]                                                  0.1s
 => [base 2/2] WORKDIR /app                                                                                             0.0s
 => [build 4/7] RUN dotnet restore "SimpleWebAPI/SimpleWebAPI.csproj"                                                  24.0s
 => [final 1/2] WORKDIR /app                                                                                            0.0s
 => [build 5/7] COPY . .                                                                                                0.2s
 => [build 6/7] WORKDIR /src/SimpleWebAPI                                                                               0.0s
 => [build 7/7] RUN dotnet build "SimpleWebAPI.csproj" -c Release -o /app/build                                         7.2s
 => [publish 1/1] RUN dotnet publish "SimpleWebAPI.csproj" -c Release -o /app/publish /p:UseAppHost=false               3.2s
 => [final 2/2] COPY --from=publish /app/publish .                                                                      0.1s
 => exporting to image                                                                                                  0.1s
 => => exporting layers                                                                                                 0.1s
 => => writing image sha256:c57ff1bdbb53c8f49333b535157dee833787fb653c5b306c10b876fda9d2331a                           0.0s
 => => naming to docker.io/library/mywebapi                                                                             0.0s

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```

Explicacion del doker file

```
FROM mcr.microsoft.com/dotnet/aspnet:7.0 AS base
WORKDIR /app
EXPOSE 80
EXPOSE 443
EXPOSE 5254

FROM mcr.microsoft.com/dotnet/sdk:7.0 AS build
WORKDIR /src
COPY ["SimpleWebAPI/SimpleWebAPI.csproj", "SimpleWebAPI/"]
RUN dotnet restore "SimpleWebAPI/SimpleWebAPI.csproj"
COPY . .
WORKDIR "/src/SimpleWebAPI"
RUN dotnet build "SimpleWebAPI.csproj" -c Release -o /app/build

FROM build AS publish
RUN dotnet publish "SimpleWebAPI.csproj" -c Release -o /app/publish /p:UseAppHost=false

FROM base AS final
WORKDIR /app
COPY --from=publish /app/publish .
ENTRYPOINT ["dotnet", "SimpleWebAPI.dll"]
#CMD ["/bin/bash"]
```

FROM mcr.microsoft.com/dotnet/aspnet:7.0 AS base: Utiliza una imagen base de ASP.NET 7.0 de Microsoft como la base para las etapas posteriores de construcción. Esta imagen proporciona un entorno de ejecución para aplicaciones ASP.NET.

WORKDIR /app: Establece el directorio de trabajo dentro del contenedor en /app. Todos los comandos siguientes se ejecutarán en este directorio.

EXPOSE 80, EXPOSE 443, EXPOSE 5254: Expone los puertos 80, 443 y 5254 en el contenedor. Esto no abre estos puertos en el host, pero indica que la aplicación dentro del contenedor estará escuchando en estos puertos.

FROM mcr.microsoft.com/dotnet/sdk:7.0 AS build: Inicia una nueva etapa utilizando una imagen de SDK de .NET 7.0. Esta etapa se utiliza para construir la aplicación.

WORKDIR /src: Establece el directorio de trabajo en /src para la etapa de construcción.

COPY ["SimpleWebAPI/SimpleWebAPI.csproj", "SimpleWebAPI/"]: Copia el archivo de proyecto de la aplicación (SimpleWebAPI.csproj) al directorio /src/SimpleWebAPI/. Esto se realiza antes de restaurar las dependencias para aprovechar la caché de Docker y mejorar la eficiencia del proceso de construcción.

RUN dotnet restore "SimpleWebAPI/SimpleWebAPI.csproj": Restaura las dependencias de la aplicación.

COPY . .: Copia todo el contenido del directorio de trabajo local al directorio actual dentro del contenedor (/src).

WORKDIR "/src/SimpleWebAPI": Cambia el directorio de trabajo a la carpeta de la aplicación dentro del contenedor.

RUN dotnet build "SimpleWebAPI.csproj" -c Release -o /app/build: Compila la aplicación en modo Release y coloca los resultados en el directorio /app/build dentro del contenedor.

FROM build AS publish: Inicia una nueva etapa basada en la etapa de construcción anteriormente definida (build). Esta etapa se utilizará para publicar la aplicación.

RUN dotnet publish "SimpleWebAPI.csproj" -c Release -o /app/publish /p:UseAppHost=false: Publica la aplicación en el directorio /app/publish dentro del contenedor, deshabilitando el uso del AppHost.

FROM base AS final: Inicia una nueva etapa basada en la etapa base definida al principio. Esta etapa será la etapa final y contendrá la aplicación publicada.

WORKDIR /app: Cambia el directorio de trabajo a /app.

COPY --from=publish /app/publish .: Copia los archivos publicados desde la etapa de publicación (publish) al directorio actual del contenedor (/app).

ENTRYPOINT ["dotnet", "SimpleWebAPI.dll"]: Establece el punto de entrada para la ejecución del contenedor. Cuando el contenedor se inicie, ejecutará la aplicación .NET especificada.

#CMD ["/bin/bash"]: Este comando está comentado, lo que significa que está deshabilitado. Podría ser descomentado para proporcionar un punto de entrada diferente si es necesario, pero en este caso, el ENTRYPOINT ya está definido.

```
C:\Users\Benja\prueba\SimpleWebAPI>docker images
REPOSITORY                      TAG        IMAGE ID       CREATED         SIZE
mywebapi                        latest     c57ff1bdbb53   6 minutes ago   216MB
jenkins-with-dotnetcore         latest     a0e3692aeed5   6 hours ago     1.27GB
example-voting-app-worker       latest     d257107ba278   8 hours ago     194MB
example-voting-app-result       latest     53e2478a85de   8 hours ago     267MB
example-voting-app-vote         latest     77102e72cf3b   8 hours ago     145MB
postgres                        15-alpine  9f959158ce82   12 days ago     237MB
test-node                       latest     498c79327910   5 weeks ago     367MB
benjaangelone/test-node         latest     498c79327910   5 weeks ago     367MB
miproyectowebapi                latest     a47df31d88dd   5 weeks ago     906MB
<none>                          <none>     1cb47993b78d   5 weeks ago     906MB
<none>                          <none>     bddc9e78a169   5 weeks ago     906MB
redis                           alpine     6c09b0364aa8   2 months ago    30.2MB
busybox                         latest     a416a98b71e2   3 months ago    4.26MB
alexisfr/flask-app              latest     5f184752a58e   3 years ago     700MB
mongo                           3.4        f76f959b2a49   3 years ago     431MB
weaveworksdemos/load-test       0.1.1      3ab3fd5cd04e   6 years ago     570MB
weaveworksdemos/catalogue       0.3.5      0bd359b6d6e8   6 years ago     41.2MB
rabbitmq                        3.6.8      8cdcbee37f62   6 years ago     179MB
weaveworksdemos/user            0.4.4      ab8af7050996   6 years ago     35.3MB
weaveworksdemos/payment         0.4.3      4f2c23055dcd   6 years ago     32.5MB
weaveworksdemos/front-end       0.3.12     b54402ef78a5   6 years ago     120MB
weaveworksdemos/shipping        0.4.8      4fc533e8180a   6 years ago     199MB
weaveworksdemos/carts           0.4.8      c00473736118   6 years ago     198MB
weaveworksdemos/orders          0.4.7      8275c5b9181b   6 years ago     198MB
weaveworksdemos/queue-master    0.3.1      76f0de7a12ac   6 years ago     179MB
weaveworksdemos/edge-router     0.1.1      584dac9095de   6 years ago     21.9MB
weaveworksdemos/catalogue-db    0.3.0      9d0c5eb88949   6 years ago     400MB
weaveworksdemos/user-db         0.4.0      196601f91030   6 years ago     717MB

C:\Users\Benja\prueba\SimpleWebAPI>
```

```
C:\Users\Benja\prueba\SimpleWebAPI>docker run -p 8080:80 mywebapi
info: Microsoft.Hosting.Lifetime[14]
      Now listening on: http://[::]:80
info: Microsoft.Hosting.Lifetime[0]
      Application started. Press Ctrl+C to shut down.
info: Microsoft.Hosting.Lifetime[0]
      Hosting environment: Production
info: Microsoft.Hosting.Lifetime[0]
      Content root path: /app
```



```
C:\Users\Benja\prueba\SimpleWebAPI>docker run --name myapi -d mywebapi
bc9d65b6cc653996ffae1284ac30ec330c0e5b31207a1bb0f6d431a4ddd553e0
```
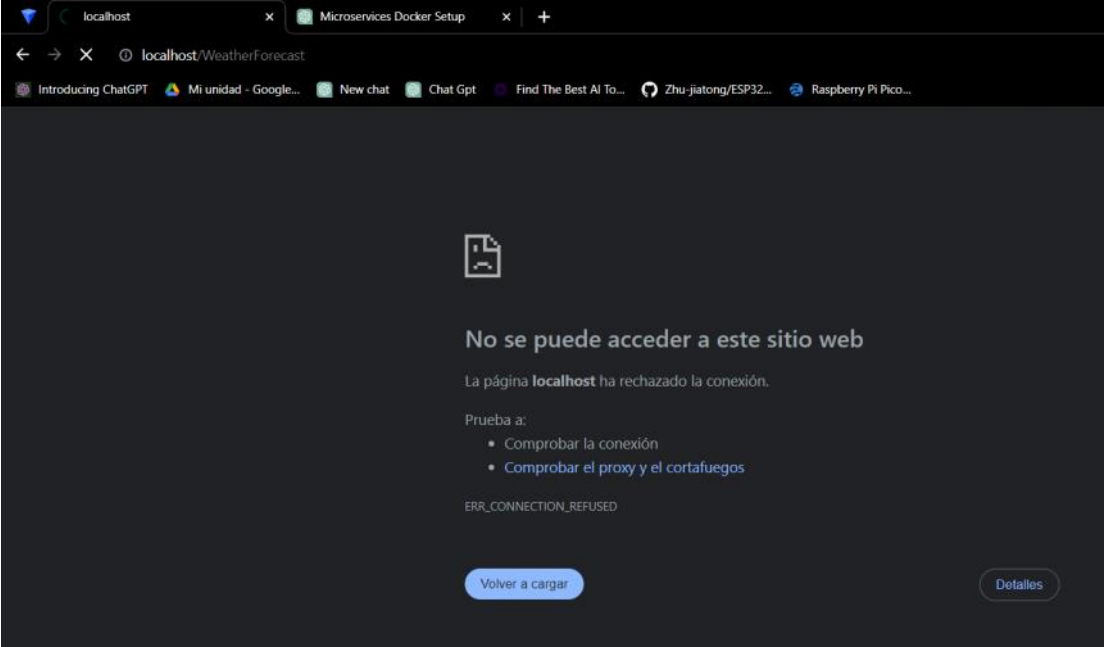
```
C:\Users\Benja\prueba\SimpleWebAPI>docker kill myapi
myapi

C:\Users\Benja\prueba\SimpleWebAPI>docker rm myapi
myapi

C:\Users\Benja\prueba\SimpleWebAPI>docker run --name myapi -d -p 80:80 -p 5254:5254 mywebapi
c0dc41308d6e6518fc73341c9fbd68bf4c10f488d45a88965f73de3139231ff7

C:\Users\Benja\prueba\SimpleWebAPI>
```
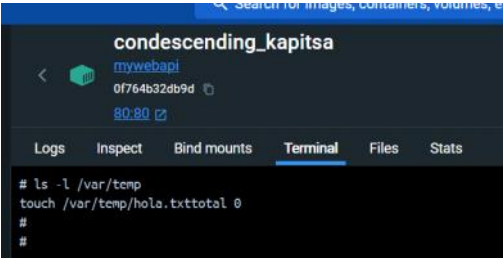

[{"date":"2023-10-18","temperatureC":12,"temperatureF":53,"summary":"Mild"},{"date":"2023-10-19","temperatureC":48,"temperatureF":118,"summary":"Mild"},{"date":"2023-10-20","temperatureC":39,"temperatureF":102,"summary":"Balmy"},{"date":"2023-10-21","temperatureC":13,"temperatureF":55,"summary":"Caloron"},{"date":"2023-10-22","temperatureC":6,"temperatureF":42,"summary":"Calido"}]

http://localhost/WeatherForecast: Este enlace muestra datos de pronóstico del tiempo. La ruta "/WeatherForecast"
El otro enlace sigue sin funcionar

```
22    COPY --from=publish /app/publish .
23    ENTRYPOINT ["dotnet", "SimpleWebAPI.dll"]
24    CMD ["/bin/bash"]
25
```

```
C:\Users\Benja\prueba\SimpleWebAPI>docker run -it --rm -p 80:80 mywebapi
info: Microsoft.Hosting.Lifetime[14]
      Now listening on: http://[::]:80
info: Microsoft.Hosting.Lifetime[0]
      Application started. Press Ctrl+C to shut down.
info: Microsoft.Hosting.Lifetime[0]
      Hosting environment: Production
info: Microsoft.Hosting.Lifetime[0]
      Content root path: /app
```


[{"date":"2023-10-18","temperatureC":-13,"temperatureF":9,"summary":"Mild"},{"date":"2023-10-19","temperatureC":3,"temperatureF":37,"summary":"Helado"},{"date":"2023-10-20","temperatureC":2,"temperatureF":35,"summary":"Fresquito"},{"date":"2023-10-21","temperatureC":-3,"temperatureF":27,"summary":"Calido"},{"date":"2023-10-22","temperatureC":-17,"temperatureF":2,"summary":"Helado"}]

condescending_kapitsa
mywebapi
0f764b32db9d
80:80

Logs   Inspect   Bind mounts   Terminal   Files   Stats

```
# ls -l /var/temp
touch /var/temp/hola.txttotal 0
#
#
```

```
∨ 🗀 var                                          MODIFIED
  › 🗀 backups
  › 🗀 cache
  › 🗀 lib
  › 🗀 local
    🗋 lock -> /run/lock                                            9 Bytes
  › 🗀 log
  › 🗀 mail
  › 🗀 opt
    🗋 run -> /run                                                  4 Bytes
  › 🗀 spool
  ∨ 🗀 temp                                        MOUNT
    🗋 hola.txt                                    MOUNT            0 Bytes
```