FACULTAD DE INGENIERÍAS Y TECNOLOGÍAS DE LA INFORMACIÓN

BACHILLERATO EN INGENIERÍA EN TELEMÁTICA

Curso:

Sistemas Operativos II (BIT-28)

Laboratorio

Contenedores

Profesor:

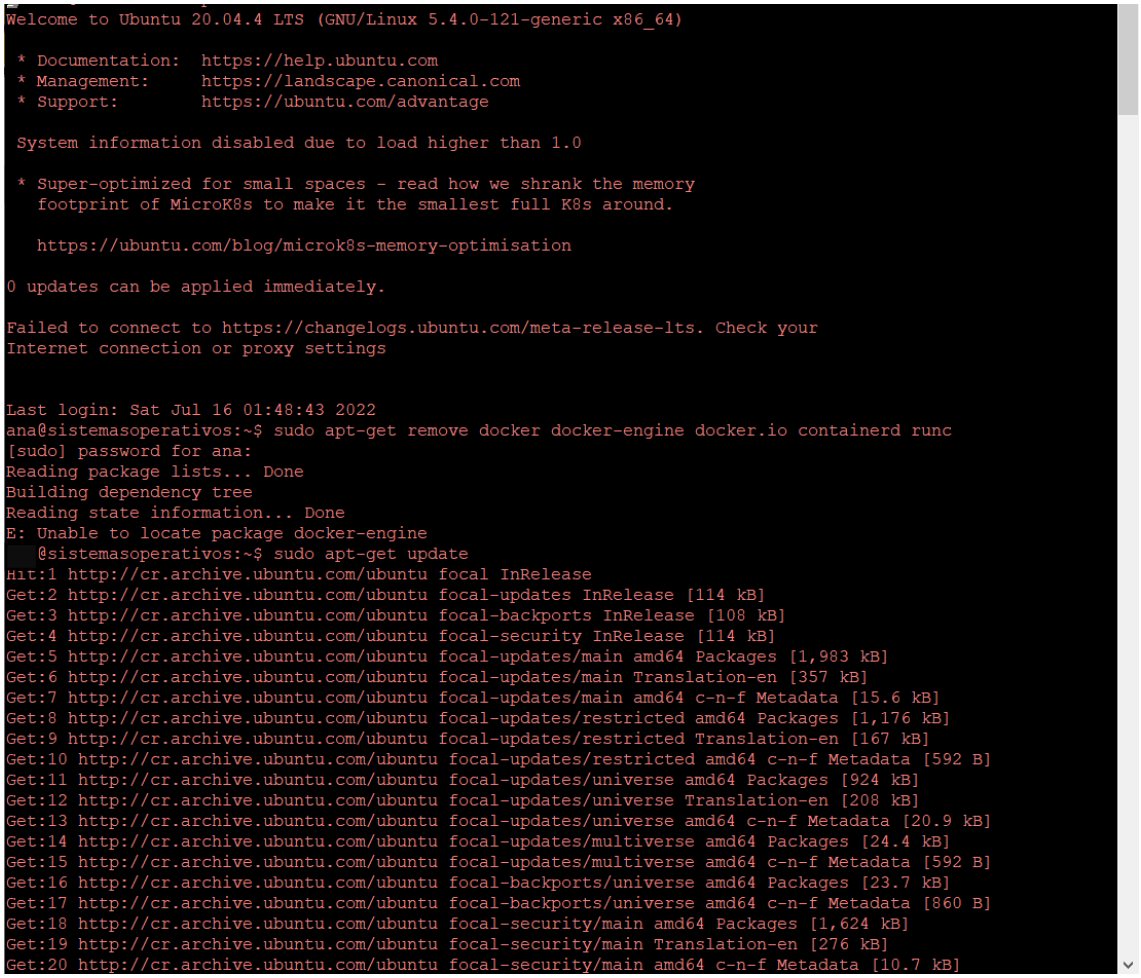
Carlos Méndez Rodríguez

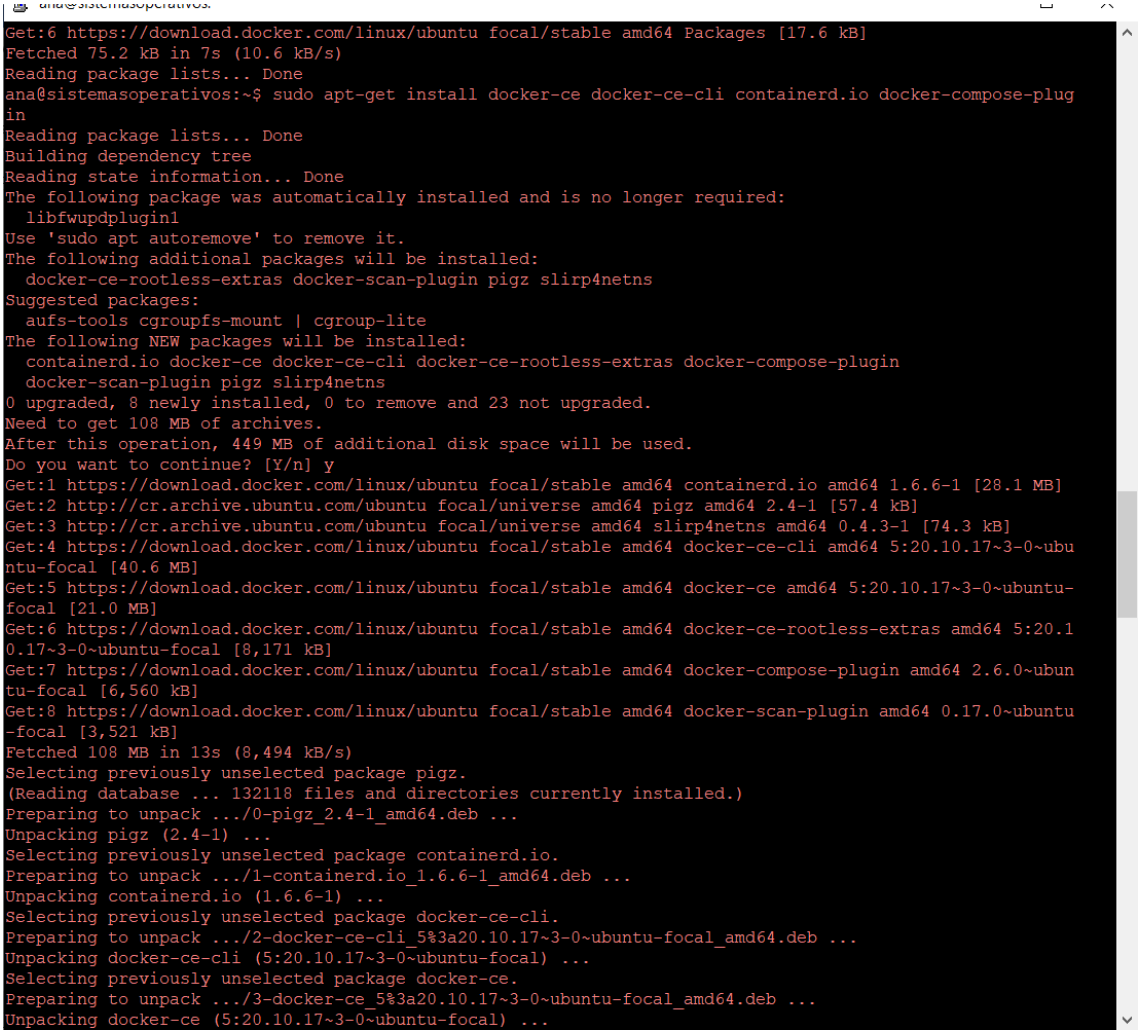
Estudiante:

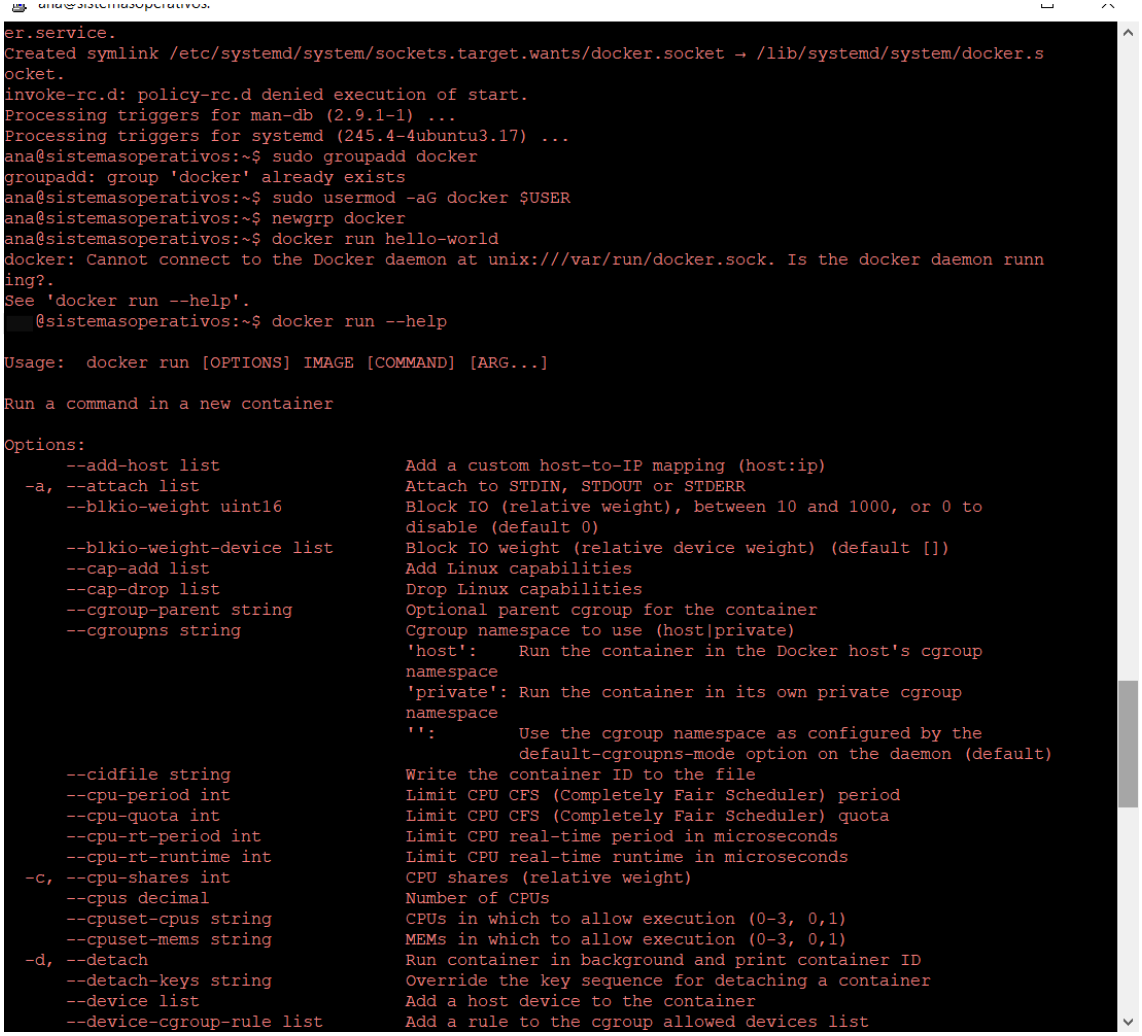
Liliam Castillo Brenes

Cuatrimestre I, 2024

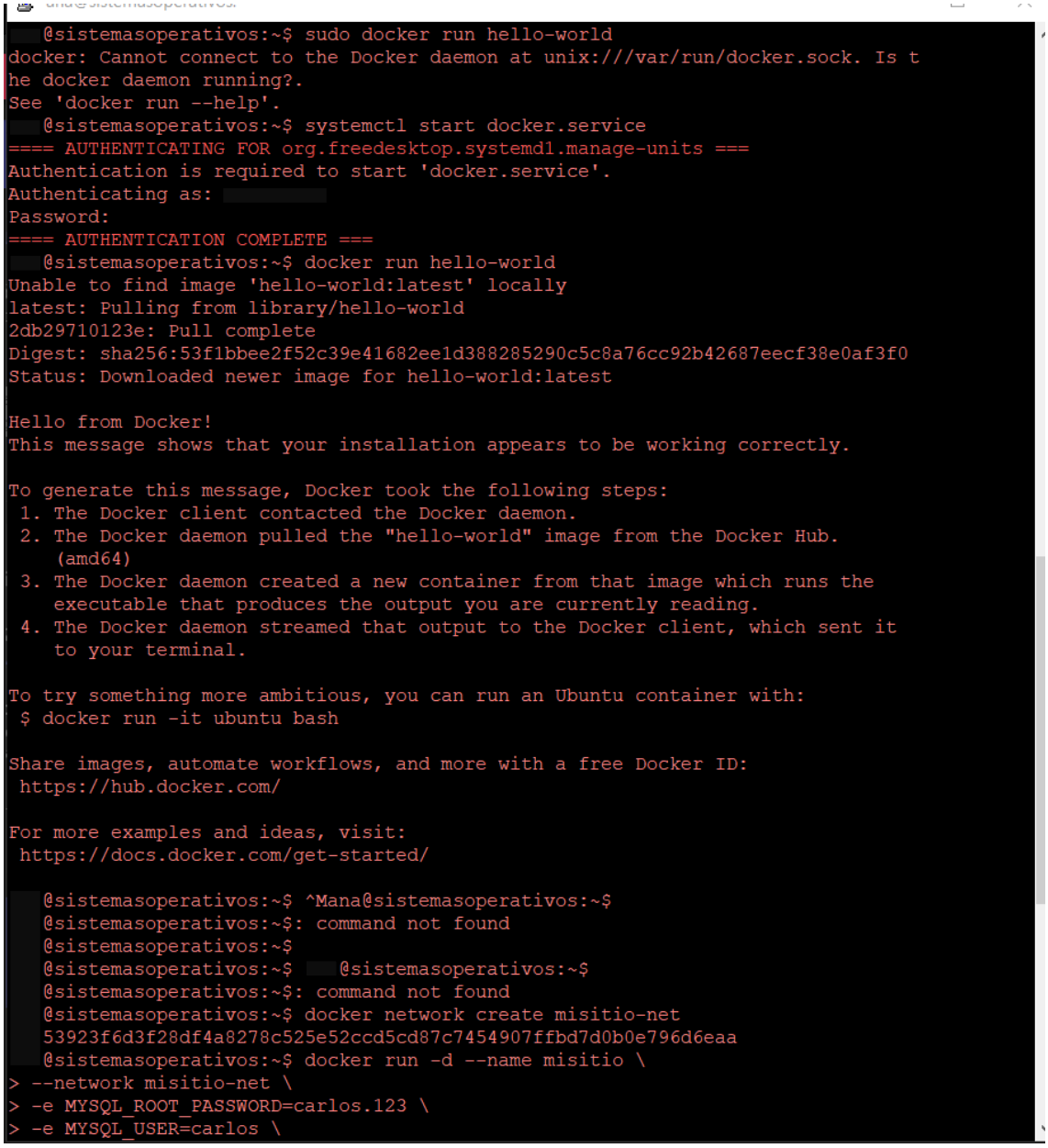
Se adjuntan los pantallazos correspondientes al laboratorio 4 de Contenedores:




Get:6 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages [17.6 kB]
Fetched 75.2 kB in 7s (10.6 kB/s)
Reading package lists... Done
ana@sistemasoperativos:~$ sudo apt-get install docker-ce docker-ce-cli containerd.io docker-compose-plug
in
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
libfwupdplugin1
Use 'sudo apt autoremove' to remove it.
The following additional packages will be installed:
docker-ce-rootless-extras docker-scan-plugin pigz slirp4netns
Suggested packages:
aufs-tools cgroupfs-mount | cgroup-lite
The following NEW packages will be installed:
containerd.io docker-ce docker-ce-cli docker-ce-rootless-extras docker-compose-plugin
docker-scan-plugin pigz slirp4netns
0 upgraded, 8 newly installed, 0 to remove and 23 not upgraded.
Need to get 108 MB of archives.
After this operation, 449 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 https://download.docker.com/linux/ubuntu focal/stable amd64 containerd.io amd64 1.6.6-1 [28.1 MB]
Get:2 http://cr.archive.ubuntu.com/ubuntu focal/universe amd64 pigz amd64 2.4-1 [57.4 kB]
Get:3 http://cr.archive.ubuntu.com/ubuntu focal/universe amd64 slirp4netns amd64 0.4.3-1 [74.3 kB]
Get:4 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce-cli amd64 5:20.10.17~3-0~ubu
ntu-focal [40.6 MB]
Get:5 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce amd64 5:20.10.17~3-0~ubuntu-
focal [21.0 MB]
Get:6 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce-rootless-extras amd64 5:20.1
0.17~3-0~ubuntu-focal [8,171 kB]
Get:7 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-compose-plugin amd64 2.6.0~ubun
tu-focal [6,560 kB]
Get:8 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-scan-plugin amd64 0.17.0~ubuntu
-focal [3,521 kB]
Fetched 108 MB in 13s (8,494 kB/s)
Selecting previously unselected package pigz.
(Reading database ... 132118 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.4-1_amd64.deb ...
Unpacking pigz (2.4-1) ...
Selecting previously unselected package containerd.io.
Preparing to unpack .../1-containerd.io_1.6.6-1_amd64.deb ...
Unpacking containerd.io (1.6.6-1) ...
Selecting previously unselected package docker-ce-cli.
Preparing to unpack .../2-docker-ce-cli_5%3a20.10.17~3-0~ubuntu-focal_amd64.deb ...
Unpacking docker-ce-cli (5:20.10.17~3-0~ubuntu-focal) ...
Selecting previously unselected package docker-ce.
Preparing to unpack .../3-docker-ce_5%3a20.10.17~3-0~ubuntu-focal_amd64.deb ...
Unpacking docker-ce (5:20.10.17~3-0~ubuntu-focal) ...


er.service.
Created symlink /etc/systemd/system/sockets.target.wants/docker.socket → /lib/systemd/system/docker.s
ocket.
invoke-rc.d: policy-rc.d denied execution of start.
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for systemd (245.4-4ubuntu3.17) ...
ana@sistemasoperativos:~$ sudo groupadd docker
groupadd: group 'docker' already exists
ana@sistemasoperativos:~$ sudo usermod -aG docker $USER
ana@sistemasoperativos:~$ newgrp docker
ana@sistemasoperativos:~$ docker run hello-world
docker: Cannot connect to the Docker daemon at unix:///var/run/docker.sock. Is the docker daemon runn
ing?.
See 'docker run --help'.
@sistemasoperativos:~$ docker run --help
Usage: docker run [OPTIONS] IMAGE [COMMAND] [ARG...]
Run a command in a new container
Options:
--add-host list Add a custom host-to-IP mapping (host:ip)
-a, --attach list Attach to STDIN, STDOUT or STDERR
--blkio-weight uint16 Block IO (relative weight), between 10 and 1000, or 0 to
disable (default 0)
--blkio-weight-device list Block IO weight (relative device weight) (default [])
--cap-add list Add Linux capabilities
--cap-drop list Drop Linux capabilities
--cgroup-parent string Optional parent cgroup for the container
--cgroupns string Cgroup namespace to use (host|private)
'host': Run the container in the Docker host's cgroup
namespace
'private': Run the container in its own private cgroup
namespace
'': Use the cgroup namespace as configured by the
default-cgroupns-mode option on the daemon (default)
--cidfile string Write the container ID to the file
--cpu-period int Limit CPU CFS (Completely Fair Scheduler) period
--cpu-quota int Limit CPU CFS (Completely Fair Scheduler) quota
--cpu-rt-period int Limit CPU real-time period in microseconds
--cpu-rt-runtime int Limit CPU real-time runtime in microseconds
-c, --cpu-shares int CPU shares (relative weight)
--cpus decimal Number of CPUs
--cpuset-cpus string CPUs in which to allow execution (0-3, 0,1)
--cpuset-mems string MEMs in which to allow execution (0-3, 0,1)
-d, --detach Run container in background and print container ID
--detach-keys string Override the key sequence for detaching a container
--device list Add a host device to the container
--device-cgroup-rule list Add a rule to the cgroup allowed devices list

```
File '/etc/apt/keyrings/docker.gpg' exists. Overwrite? (y/N) y
    @sistemasoperativos:~$ echo \
    deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg
] https://download.docker.com/linux/ubuntu \
> echo "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docke
r.gpg] https://download.docker.com/linux/ubuntu \ $(lsb_release -cs) stable" | s
udo tee /etc/apt/sources.list.d/docker.list > /dev/null
>  $(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /
dev/null
    @sistemasoperativos:~$ sudo dcoker run hello-world
sudo: dcoker: command not found
ana@sistemasoperativos:~$ sudo docker run hello-world
docker: Cannot connect to the Docker daemon at unix:///var/run/docker.sock. Is t
he docker daemon running?.
See 'docker run --help'.
    @sistemasoperativos:~$ systemctl start docker.service
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ===
Authentication is required to start 'docker.service'.
Authenticating as:
Password:
==== AUTHENTICATION COMPLETE ===
ana@sistemasoperativos:~$ docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
2db29710123e: Pull complete
Digest: sha256:53f1bbee2f52c39e41682ee1d388285290c5c8a76cc92b42687eecf38e0af3f0
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash

Share images, automate workflows, and more with a free Docker ID:
 https://hub.docker.com/

For more examples and ideas, visit:
 https://docs.docker.com/get-started/

    @sistemasoperativos:~$
```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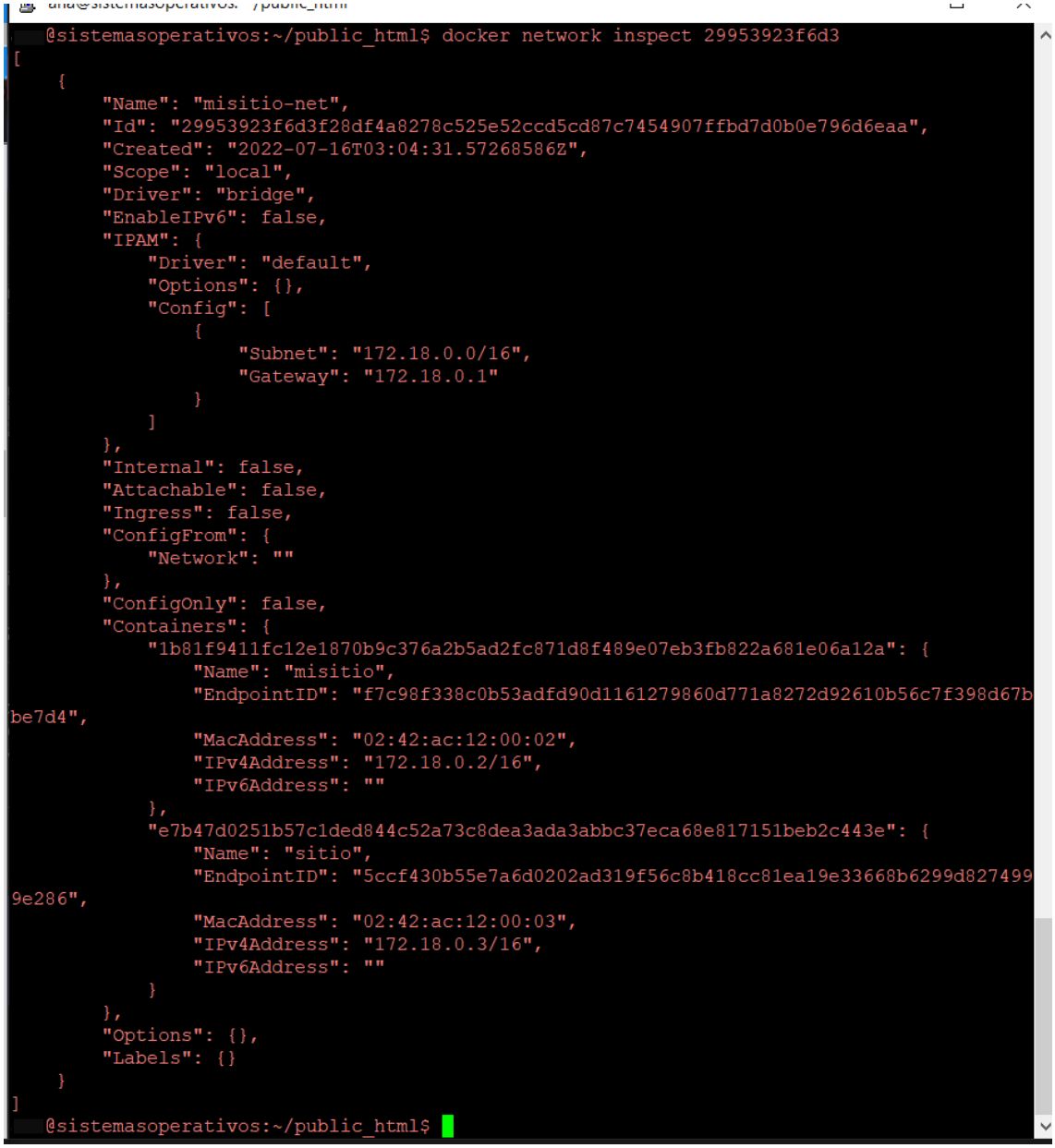
@sistemasoperativos:~$ ^Mana@sistemasoperativos:~$
@sistemasoperativos:~$: command not found
@sistemasoperativos:~$
@sistemasoperativos:~$ @sistemasoperativos:~$
@sistemasoperativos:~$: command not found
@sistemasoperativos:~$ docker network create misitio-net
53923f6d3f28df4a8278c525e52ccd5cd87c7454907ffbd7d0b0e796d6eaa
@sistemasoperativos:~$ docker run -d --name misitio \
> --network misitio-net \
> -e MYSQL_ROOT_PASSWORD=carlos.123 \
> -e MYSQL_USER=carlos \


@sistemasoperativos:~/public_html$ docker network inspect 29953923f6d3
[
{
"Name": "misitio-net",
"Id": "29953923f6d3f28df4a8278c525e52ccd5cd87c7454907ffbd7d0b0e796d6eaa",
"Created": "2022-07-16T03:04:31.57268586Z",
"Scope": "local",
"Driver": "bridge",
"EnableIPv6": false,
"IPAM": {
"Driver": "default",
"Options": {},
"Config": [
{
"Subnet": "172.18.0.0/16",
"Gateway": "172.18.0.1"
}
]
},
"Internal": false,
"Attachable": false,
"Ingress": false,
"ConfigFrom": {
"Network": ""
},
"ConfigOnly": false,
"Containers": {
"1b81f9411fc12e1870b9c376a2b5ad2fc871d8f489e07eb3fb822a681e06a12a": {
"Name": "misitio",
"EndpointID": "f7c98f338c0b53adfd90d1161279860d771a8272d92610b56c7f398d67b
be7d4",
"MacAddress": "02:42:ac:12:00:02",
"IPv4Address": "172.18.0.2/16",
"IPv6Address": ""
},
"e7b47d0251b57c1ded844c52a73c8dea3ada3abbc37eca68e817151beb2c443e": {
"Name": "sitio",
"EndpointID": "5ccf430b55e7a6d0202ad319f56c8b418cc81ea19e33668b6299d827499
9e286",
"MacAddress": "02:42:ac:12:00:03",
"IPv4Address": "172.18.0.3/16",
"IPv6Address": ""
}
},
"Options": {},
"Labels": {}
}
]
@sistemasoperativos:~/public_html$