Universidad Modelo

Ingeniería en Desarrollo de Tecnología y Software

Asignatura: Fundamentos de la nube

Nombre del Profesor: Mtro. Alfredo José Bolio Domínguez

Nombre de la Actividad:

Actividad #1
Load balancer evidence

Alumno:

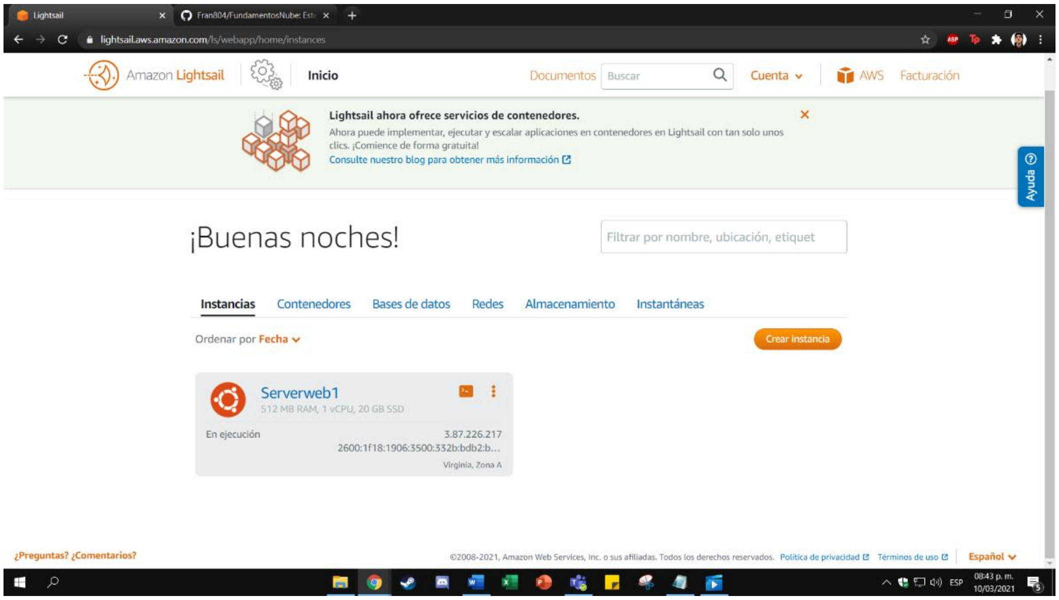
Francisco Iván Pérez Villalobos

Fecha de elaboración:

10/03/2021

Load balancer evidence

The first thing that must be done is the first instance of the processing for the web service, in this case one of Ubuntu was created and it was named as Serverweb1



Lightsail ahora ofrece servicios de contenedores.
Ahora puede implementar, ejecutar y escalar aplicaciones en contenedores en Lightsail con tan solo unos clics. ¡Comience de forma gratuita!
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Serverweb1
512 MB RAM, 1 vCPU, 20 GB SSD
En ejecución
3.87.226.217
2600:1f18:1906:3500:332b:bdb2:b...
Virginia, Zona A

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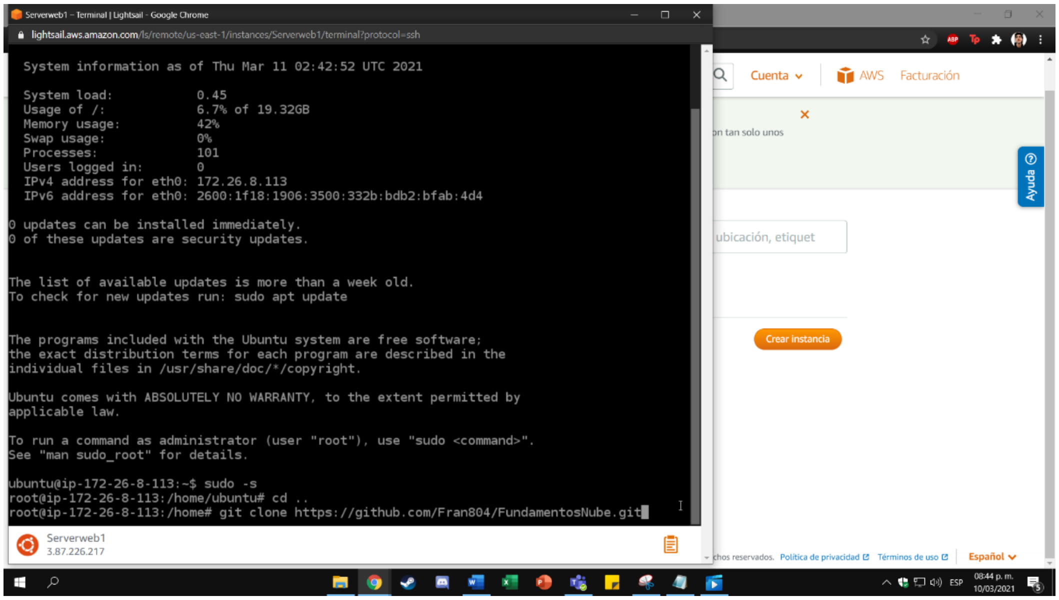
Afterwards, the instance console was opened to copy the repository of our files used previously to be able to reuse them in this practice.



```
  System information as of Thu Mar 11 02:42:52 UTC 2021

  System load:           0.45
  Usage of /:            6.7% of 19.32GB
  Memory usage:          42%
  Swap usage:            0%
  Processes:             101
  Users logged in:       0
  IPv4 address for eth0: 172.26.8.113
  IPv6 address for eth0: 2600:1f18:1906:3500:332b:bdb2:bfab:4d4

0 updates can be installed immediately.
0 of these updates are security updates.


The list of available updates is more than a week old.
To check for new updates run: sudo apt update


The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-26-8-113:~$ sudo -s
root@ip-172-26-8-113:/home/ubuntu# cd ..
root@ip-172-26-8-113:/home# git clone https://github.com/Fran804/FundamentosNube.git
```

Serverweb1 – Terminal | Lightsail - Google Chrome
lightsail.aws.amazon.com/ls/remote/us-east-1/instances/Serverweb1/terminal?protocol=ssh
Serverweb1
3.87.226.217
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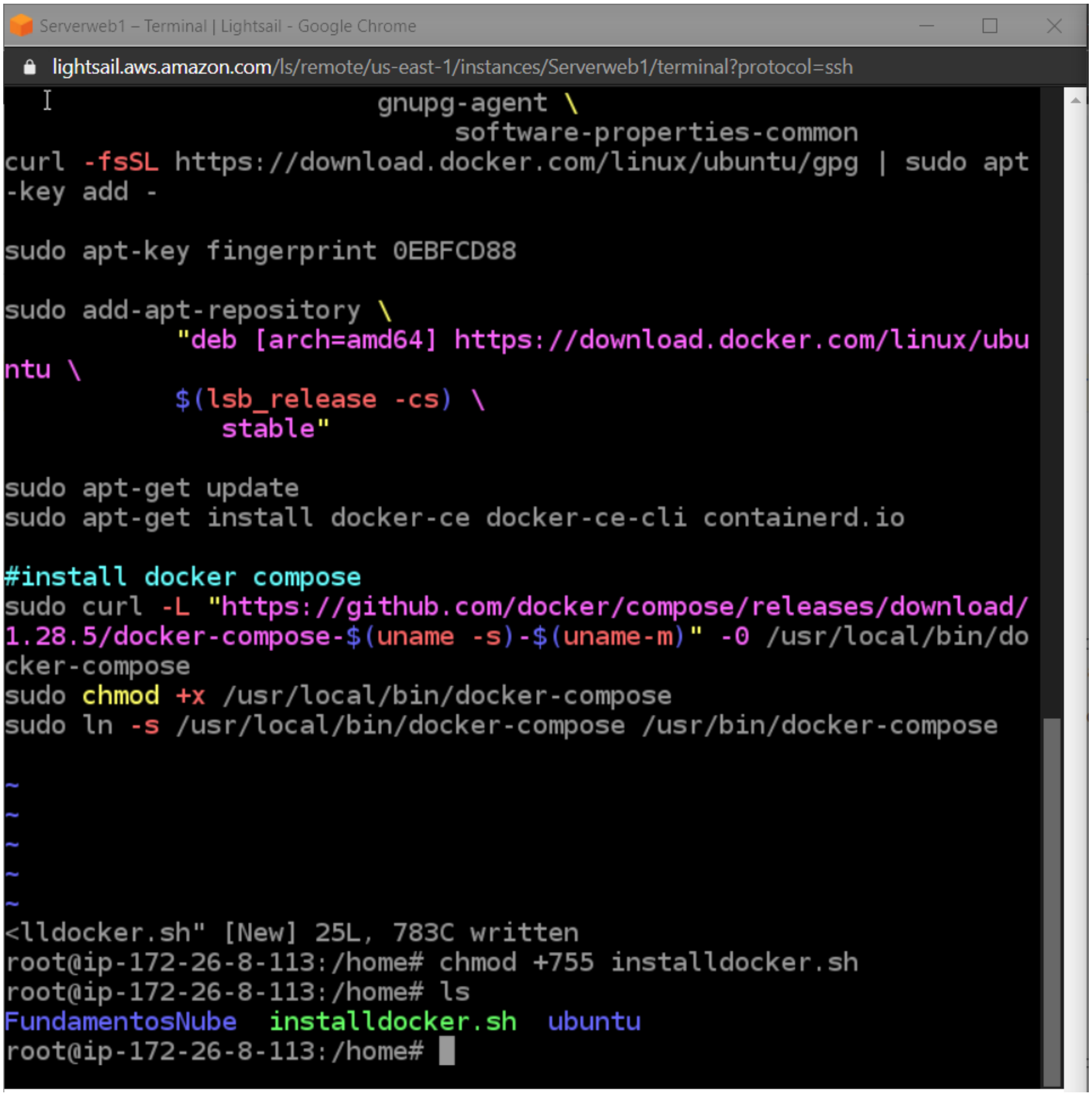
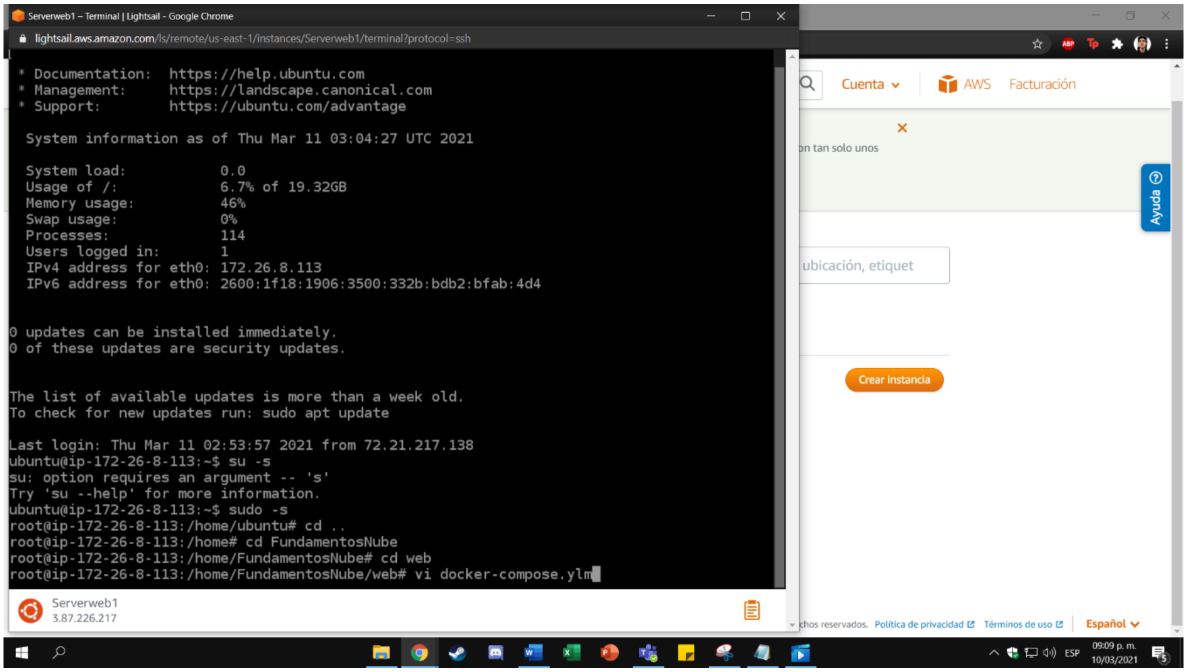
ESP
08:44 p. m.
10/03/2021

then install the docker-compose


Serverweb1 – Terminal | Lightsail - Google Chrome
lightsail.aws.amazon.com/ls/remote/us-east-1/instances/Serverweb1/terminal?protocol=ssh

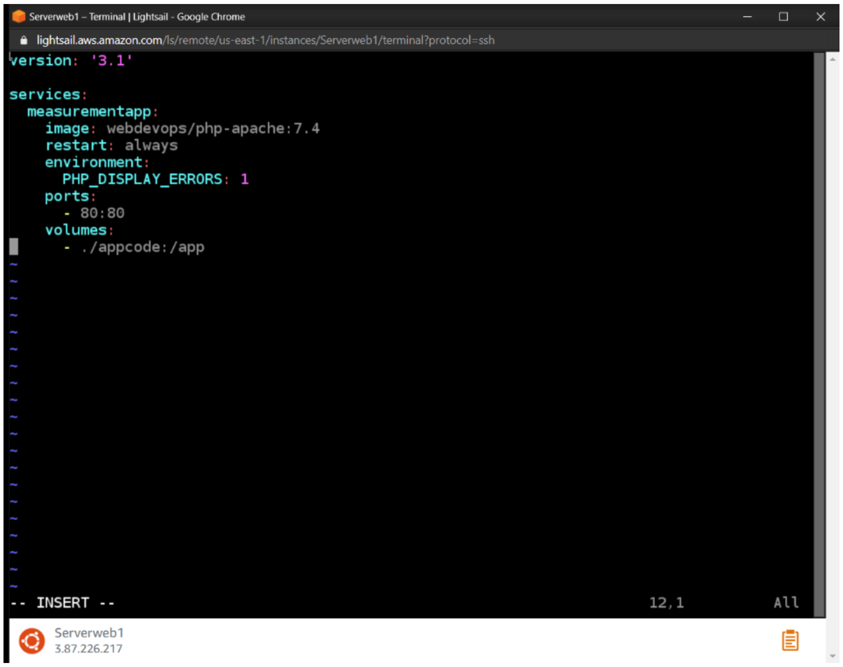
```
                        gnupg-agent \
                             software-properties-common
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt
-key add -

sudo apt-key fingerprint 0EBFCD88

sudo add-apt-repository \
           "deb [arch=amd64] https://download.docker.com/linux/ubu
ntu \
           $(lsb_release -cs) \
              stable"

sudo apt-get update
sudo apt-get install docker-ce docker-ce-cli containerd.io

#install docker compose
sudo curl -L "https://github.com/docker/compose/releases/download/
1.28.5/docker-compose-$(uname -s)-$(uname-m)" -0 /usr/local/bin/do
cker-compose
sudo chmod +x /usr/local/bin/docker-compose
sudo ln -s /usr/local/bin/docker-compose /usr/bin/docker-compose

~
~
~
~
~
<lldocker.sh" [New] 25L, 783C written
root@ip-172-26-8-113:/home# chmod +755 installdocker.sh
root@ip-172-26-8-113:/home# ls
FundamentosNube  installdocker.sh  ubuntu
root@ip-172-26-8-113:/home# 
```

Then you go to the previously downloaded folder of the github project to open the docker-compose.ylm file



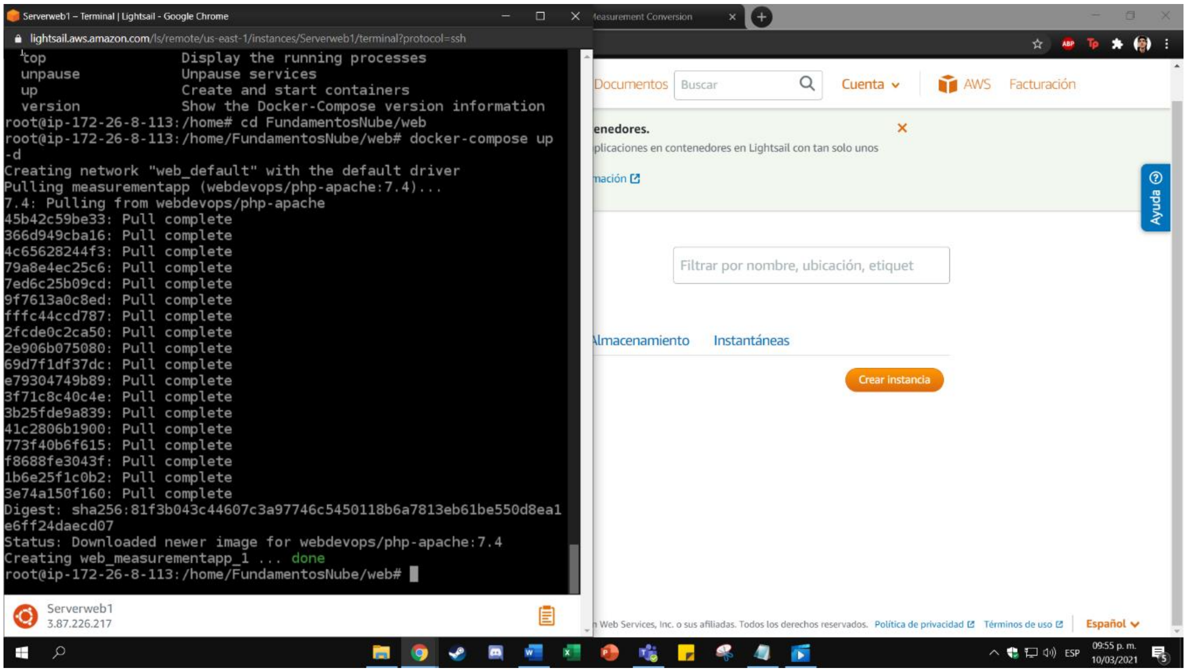
```
 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Thu Mar 11 03:04:27 UTC 2021

  System load:           0.0
  Usage of /:            6.7% of 19.32GB
  Memory usage:          46%
  Swap usage:            0%
  Processes:             114
  Users logged in:       1
  IPv4 address for eth0: 172.26.8.113
  IPv6 address for eth0: 2600:1f18:1906:3500:332b:bdb2:bfab:4d4


0 updates can be installed immediately.
0 of these updates are security updates.


The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Thu Mar 11 02:53:57 2021 from 72.21.217.138
ubuntu@ip-172-26-8-113:~$ su -s
su: option requires an argument -- 's'
Try 'su --help' for more information.
ubuntu@ip-172-26-8-113:~$ sudo -s
root@ip-172-26-8-113:/home/ubuntu# cd ..
root@ip-172-26-8-113:/home# cd FundamentosNube
root@ip-172-26-8-113:/home/FundamentosNube# cd web
root@ip-172-26-8-113:/home/FundamentosNube/web# vi docker-compose.ylm
```

And the port is changed to 80


Serverweb1 – Terminal | Lightsail - Google Chrome
lightsail.aws.amazon.com/ls/remote/us-east-1/instances/Serverweb1/terminal?protocol=ssh
Serverweb1
3.87.226.217

```
version: '3.1'

services:
  measurementapp:
    image: webdevops/php-apache:7.4
    restart: always
    environment:
      PHP_DISPLAY_ERRORS: 1
    ports:
      - 80:80
    volumes:
      - ./appcode:/app
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
~
-- INSERT --                                              12,1          All
```

Then the docker-compose of the web folder is lifted to mount the web page in the cloud


Serverweb1 – Terminal | Lightsail - Google Chrome
lightsail.aws.amazon.com/ls/remote/us-east-1/instances/Serverweb1/terminal?protocol=ssh
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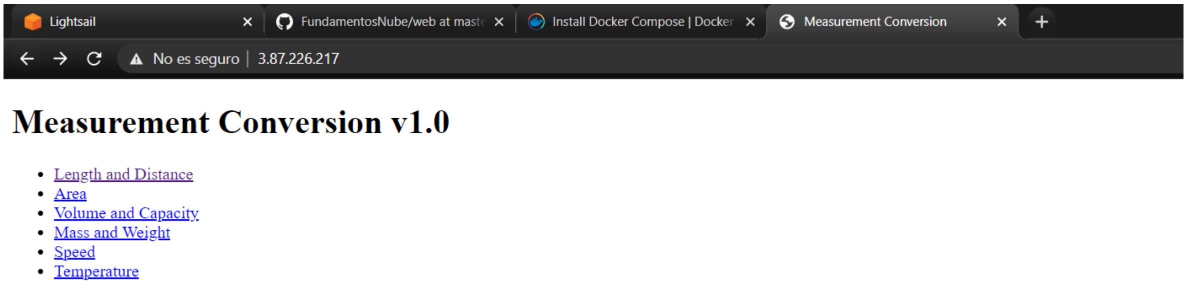
3.87.226.217

```
  top                 Display the running processes
  unpause             Unpause services
  up                  Create and start containers
  version             Show the Docker-Compose version information
root@ip-172-26-8-113:/home# cd FundamentosNube/web
root@ip-172-26-8-113:/home/FundamentosNube/web# docker-compose up
-d
Creating network "web_default" with the default driver
Pulling measurementapp (webdevops/php-apache:7.4)...
7.4: Pulling from webdevops/php-apache
45b42c59be33: Pull complete
366d949cba16: Pull complete
4c65628244f3: Pull complete
79a8e4ec25c6: Pull complete
7ed6c25b09cd: Pull complete
9f7613a0c8ed: Pull complete
fffc44ccd787: Pull complete
2fcde0c2ca50: Pull complete
2e906b075080: Pull complete
69d7f1df37dc: Pull complete
e79304749b89: Pull complete
3f71c8c40c4e: Pull complete
3b25fde9a839: Pull complete
41c2806b1900: Pull complete
773f40b6f615: Pull complete
f8688fe3043f: Pull complete
1b6e25f1c0b2: Pull complete
3e74a150f160: Pull complete
Digest: sha256:81f3b043c44607c3a97746c5450118b6a7813eb61be550d8ea1
e6ff24daecd07
Status: Downloaded newer image for webdevops/php-apache:7.4
Creating web_measurementapp_1 ... done
root@ip-172-26-8-113:/home/FundamentosNube/web# 
```


Lightsail
FundamentosNube/web at maste
Install Docker Compose | Docker
Measurement Conversion
No es seguro | 3.87.226.217

Measurement Conversion v1.0

- Length and Distance
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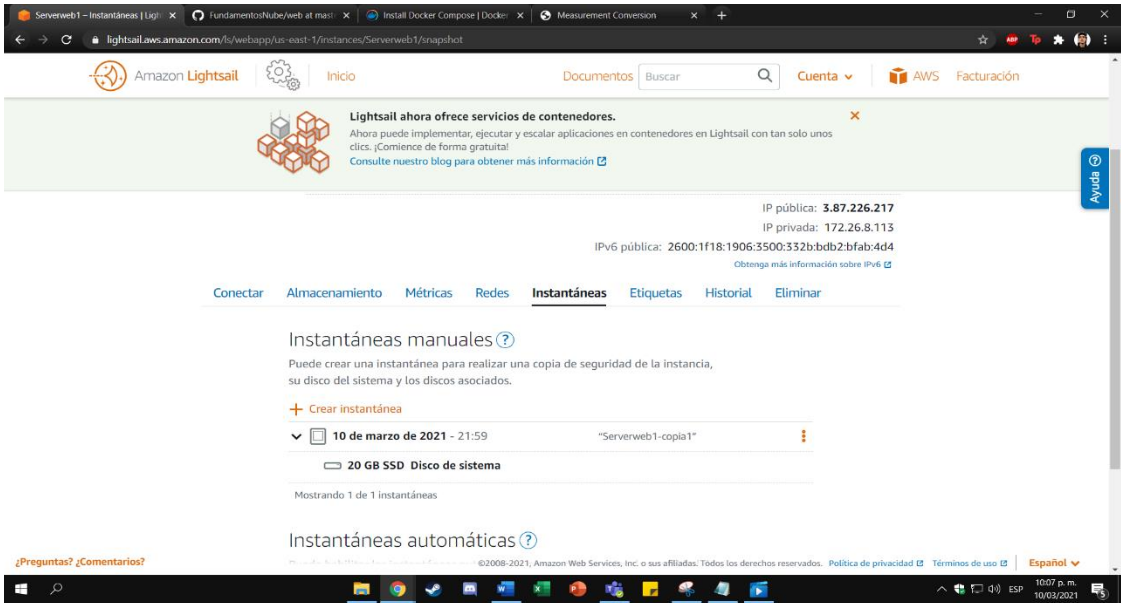
- Mass and Weight
- Speed
- Temperature

Once the web page is up, a snapshot of the instance is made


Serverweb1 – Instantáneas | Light
FundamentosNube/web at mast
Install Docker Compose | Docker
Measurement Conversion
lightsail.aws.amazon.com/ls/webapp/us-east-1/instances/Serverweb1/snapshot
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IP pública: **3.87.226.217**
IP privada: 172.26.8.113
IPv6 pública: 2600:1f18:1906:3500:332b:bdb2:bfab:4d4
Obtenga más información sobre IPv6

Conectar | Almacenamiento | Métricas | Redes | **Instantáneas** | Etiquetas | Historial | Eliminar

Instantáneas manuales

Puede crear una instantánea para realizar una copia de seguridad de la instancia, su disco del sistema y los discos asociados.

+ Crear instantánea

10 de marzo de 2021 - 21:59 "Serverweb1-copia1"

20 GB SSD Disco de sistema

Mostrando 1 de 1 instantáneas

Instantáneas automáticas

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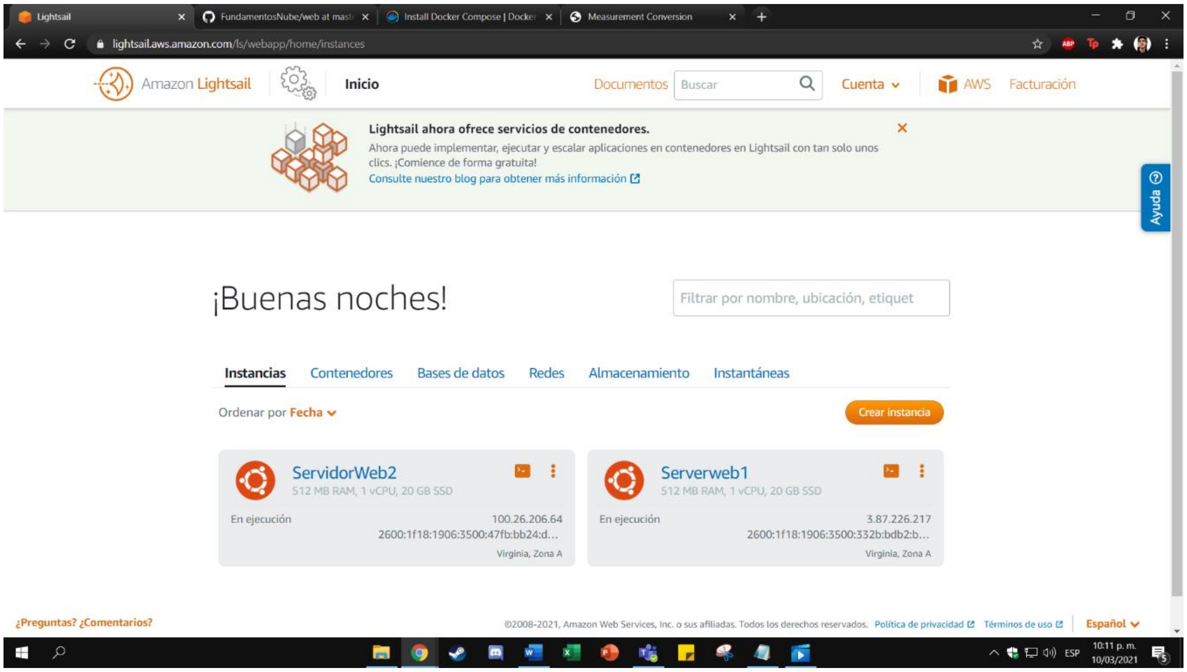
Now, an instance of that same snapshot is created, which we will name Webserver2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lightsail.aws.amazon.com/ls/webapp/home/instances
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Filtrar por nombre, ubicación, etiquet

Instancias | Contenedores | Bases de datos | Redes | Almacenamiento | Instantáneas

Ordenar por **Fecha**

Crear instancia

ServidorWeb2
512 MB RAM, 1 vCPU, 20 GB SSD
En ejecución
100.26.206.64
2600:1f18:1906:3500:47fb:bb24:d...
Virginia, Zona A

Serverweb1
512 MB RAM, 1 vCPU, 20 GB SSD
En ejecución
3.87.226.217
2600:1f18:1906:3500:332b:bdb2:b...
Virginia, Zona A

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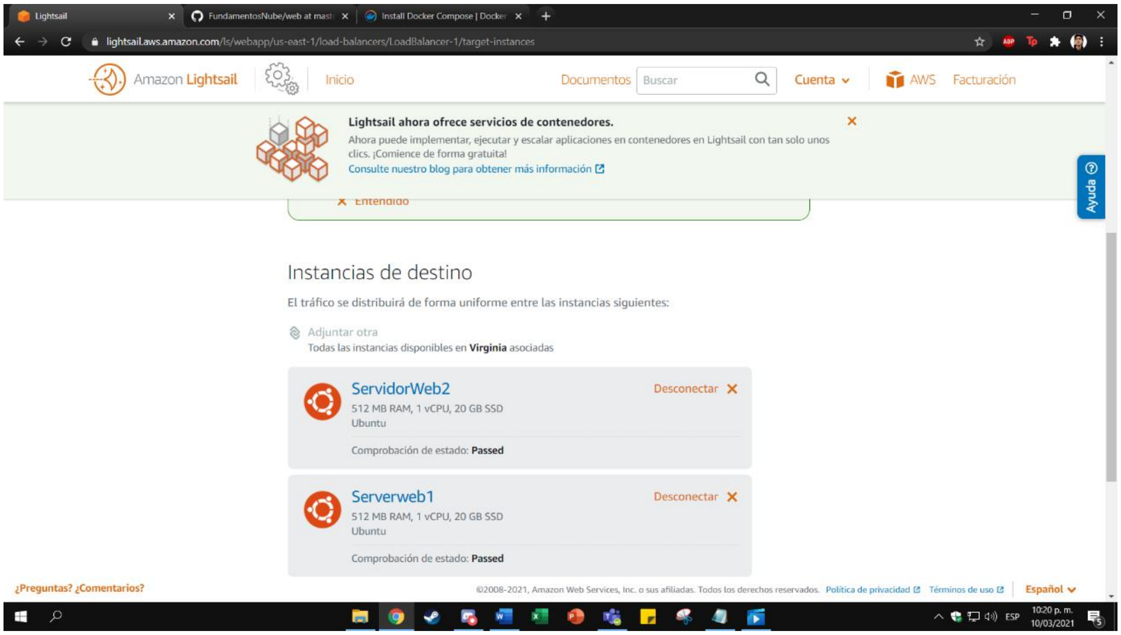
Now we will proceed to create a load balancer with the two processing instances.



Lightsail
FundamentosNube/web at mast
Install Docker Compose | Docker
lightsail.aws.amazon.com/ls/webapp/us-east-1/load-balancers/LoadBalancer-1/target-instances
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Ahora puede implementar, ejecutar y escalar aplicaciones en contenedores en Lightsail con tan solo unos clics. ¡Comience de forma gratuita!

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× Entendido

Instancias de destino

El tráfico se distribuirá de forma uniforme entre las instancias siguientes:

Adjuntar otra
Todas las instancias disponibles en **Virginia** asociadas

ServidorWeb2 — Desconectar ×
512 MB RAM, 1 vCPU, 20 GB SSD
Ubuntu
Comprobación de estado: **Passed**

Serverweb1 — Desconectar ×
512 MB RAM, 1 vCPU, 20 GB SSD
Ubuntu
Comprobación de estado: **Passed**

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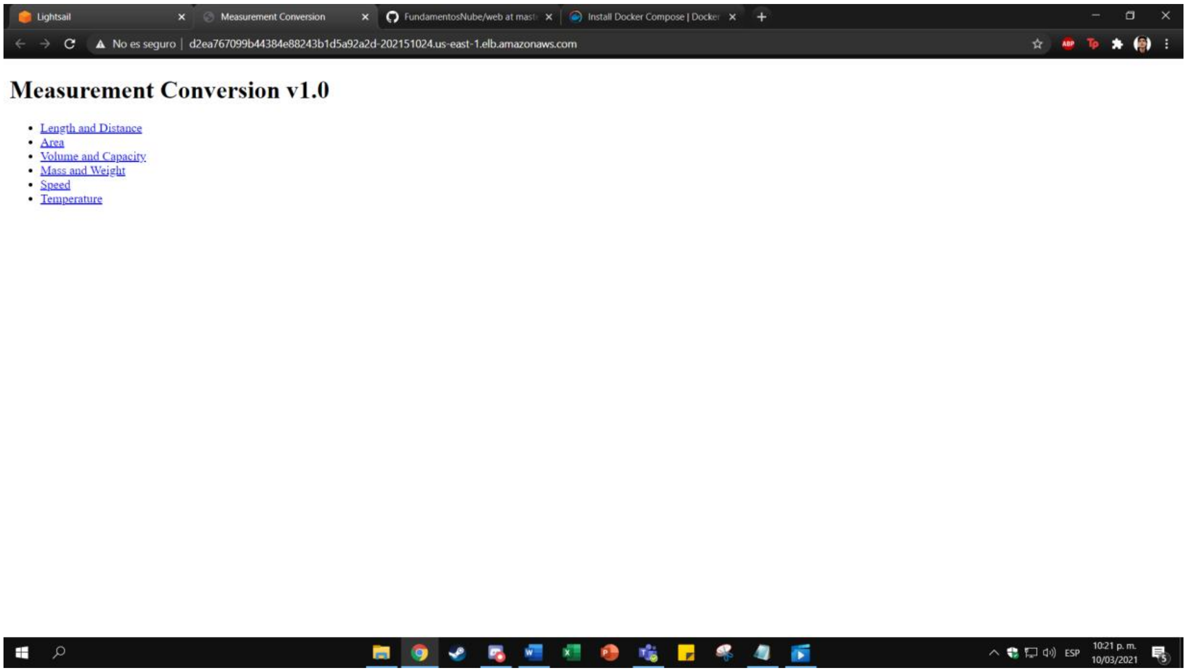
Política de privacidad
Términos de uso
Español
ESP
10:20 p. m.
10/03/2021

The link or Dns of the load balancer is then accessed from the browser to verify proper operation.



Lightsail
Measurement Conversion
FundamentosNube/web at mast
Install Docker Compose | Docker
No es seguro | d2ea767099b44384e88243b1d5a92a2d-202151024.us-east-1.elb.amazonaws.com

Measurement Conversion v1.0

- Length and Distance
- Area
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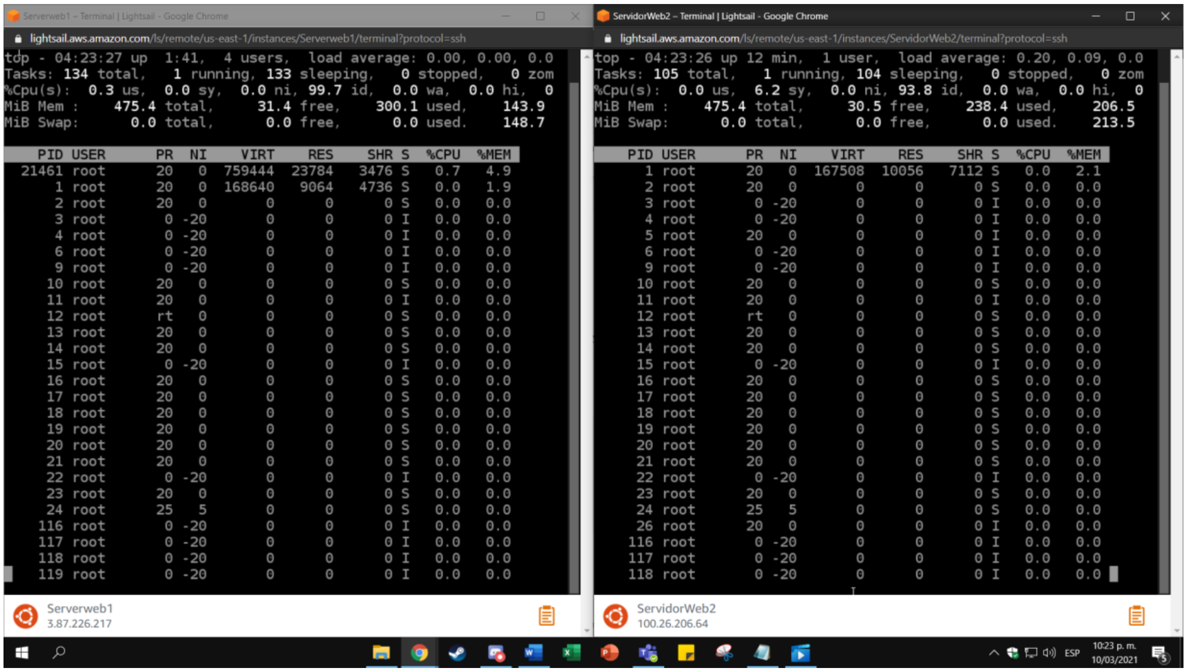
- Mass and Weight
- Speed
- Temperature

ESP
10:21 p. m.
10/03/2021

And finally, the top command is executed in both instances to confirm that they are functional and there is no processing saturation.



Serverweb1 – Terminal | Lightsail - Google Chrome
lightsail.aws.amazon.com/ls/remote/us-east-1/instances/Serverweb1/terminal?protocol=ssh

```
top - 04:23:27 up  1:41,  4 users,  load average: 0.00, 0.00, 0.0
Tasks: 134 total,   1 running, 133 sleeping,   0 stopped,   0 zom
%Cpu(s):  0.3 us,  0.0 sy,  0.0 ni, 99.7 id,  0.0 wa,  0.0 hi,  0
MiB Mem :    475.4 total,     31.4 free,    300.1 used,    143.9
MiB Swap:      0.0 total,      0.0 free,      0.0 used.    148.7

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM
21461 root      20   0  759444  23784   3476 S   0.7   4.9
    1 root      20   0  168640   9064   4736 S   0.0   1.9
    2 root      20   0       0      0      0 S   0.0   0.0
    3 root       0 -20       0      0      0 I   0.0   0.0
    4 root       0 -20       0      0      0 I   0.0   0.0
    6 root       0 -20       0      0      0 I   0.0   0.0
    9 root       0 -20       0      0      0 I   0.0   0.0
   10 root      20   0       0      0      0 S   0.0   0.0
   11 root      20   0       0      0      0 I   0.0   0.0
   12 root      rt   0       0      0      0 S   0.0   0.0
   13 root      20   0       0      0      0 S   0.0   0.0
   14 root      20   0       0      0      0 S   0.0   0.0
   15 root       0 -20       0      0      0 I   0.0   0.0
   16 root      20   0       0      0      0 S   0.0   0.0
   17 root      20   0       0      0      0 S   0.0   0.0
   18 root      20   0       0      0      0 S   0.0   0.0
   19 root      20   0       0      0      0 S   0.0   0.0
   20 root      20   0       0      0      0 S   0.0   0.0
   21 root      20   0       0      0      0 S   0.0   0.0
   22 root       0 -20       0      0      0 I   0.0   0.0
   23 root      20   0       0      0      0 S   0.0   0.0
   24 root      25   5       0      0      0 S   0.0   0.0
  116 root       0 -20       0      0      0 I   0.0   0.0
  117 root       0 -20       0      0      0 I   0.0   0.0
  118 root       0 -20       0      0      0 I   0.0   0.0
  119 root       0 -20       0      0      0 I   0.0   0.0
```

Serverweb1
3.87.226.217
ServidorWeb2 – Terminal | Lightsail - Google Chrome
lightsail.aws.amazon.com/ls/remote/us-east-1/instances/ServidorWeb2/terminal?protocol=ssh

```
top - 04:23:26 up 12 min,  1 user,  load average: 0.20, 0.09, 0.0
Tasks: 105 total,   1 running, 104 sleeping,   0 stopped,   0 zom
%Cpu(s):  0.0 us,  6.2 sy,  0.0 ni, 93.8 id,  0.0 wa,  0.0 hi,  0
MiB Mem :    475.4 total,     30.5 free,    238.4 used,    206.5
MiB Swap:      0.0 total,      0.0 free,      0.0 used.    213.5

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM
    1 root      20   0  167508  10056   7112 S   0.0   2.1
    2 root      20   0       0      0      0 S   0.0   0.0
    3 root       0 -20       0      0      0 I   0.0   0.0
    4 root       0 -20       0      0      0 I   0.0   0.0
    5 root      20   0       0      0      0 I   0.0   0.0
    6 root       0 -20       0      0      0 I   0.0   0.0
    9 root       0 -20       0      0      0 I   0.0   0.0
   10 root      20   0       0      0      0 S   0.0   0.0
   11 root      20   0       0      0      0 I   0.0   0.0
   12 root      rt   0       0      0      0 S   0.0   0.0
   13 root      20   0       0      0      0 S   0.0   0.0
   14 root      20   0       0      0      0 S   0.0   0.0
   15 root       0 -20       0      0      0 I   0.0   0.0
   16 root      20   0       0      0      0 S   0.0   0.0
   17 root      20   0       0      0      0 S   0.0   0.0
   18 root      20   0       0      0      0 S   0.0   0.0
   19 root      20   0       0      0      0 S   0.0   0.0
   20 root      20   0       0      0      0 S   0.0   0.0
   21 root      20   0       0      0      0 S   0.0   0.0
   22 root       0 -20       0      0      0 I   0.0   0.0
   23 root      20   0       0      0      0 S   0.0   0.0
   24 root      25   5       0      0      0 S   0.0   0.0
   26 root      20   0       0      0      0 I   0.0   0.0
  116 root       0 -20       0      0      0 I   0.0   0.0
  117 root       0 -20       0      0      0 I   0.0   0.0
  118 root       0 -20       0      0      0 I   0.0   0.0
```