

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
Evidencia balanceador de carga

Alumno:

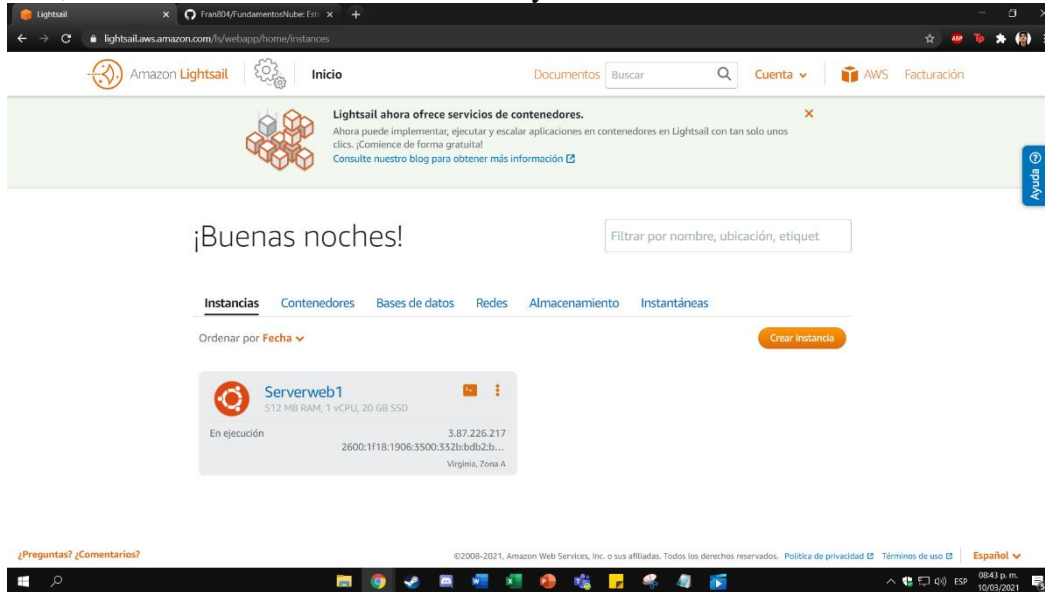
Francisco Iván Pérez Villalobos

Fecha de elaboración:

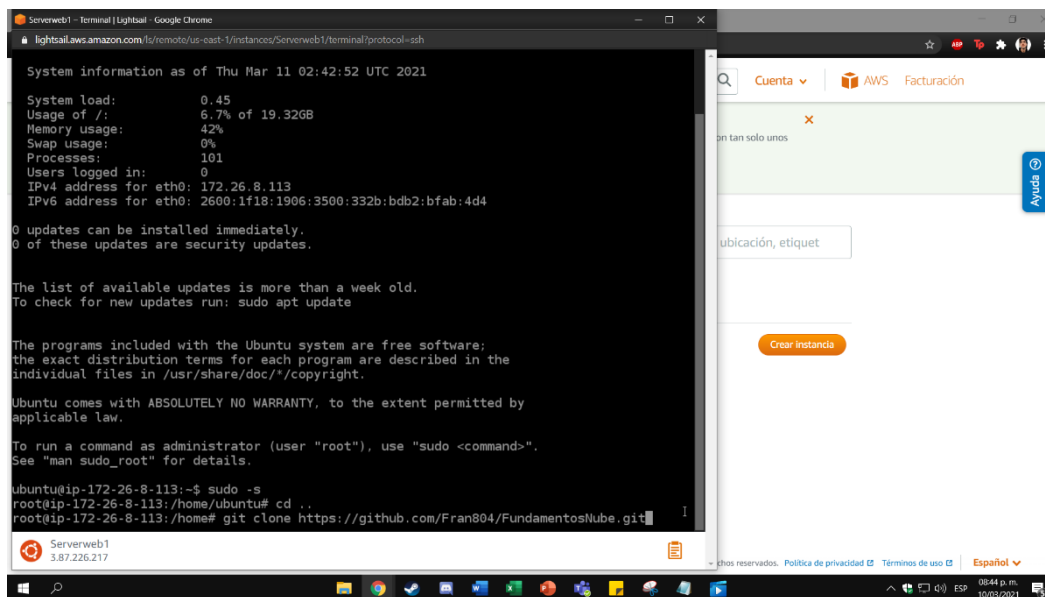
10/03/2021

Evidencia balanceador de carga

Lo primero que se debe realizar es la primera instancia del procesamiento para el servicio web, en este caso se creo una de Ubuntu y se le nombro como **Serverweb1**



Después, se abrió la consola de la instancia para copiar el repositorio de nuestros archivos utilizados con anterioridad para poderlos reutilizarlos en esta practica



Se instala el docker-compose

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

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

sudo apt-key fingerprint 0EBFCD88

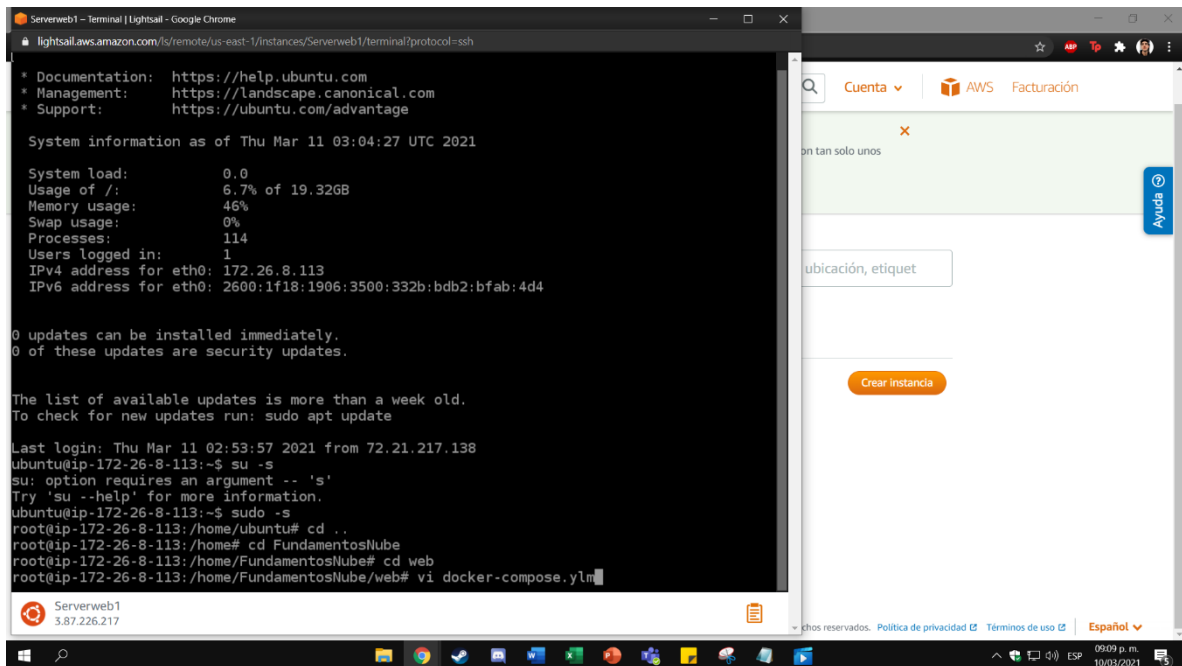
sudo add-apt-repository \
    "deb [arch=amd64] https://download.docker.com/linux/ubu
ntu \
    $(lsb_release -cs) \
    stable"

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)" -o /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#
```

Luego se entrega a la carpeta descargada con anterioridad del proyecto de github para abrir el archivo docker-compose.ymlm



The screenshot shows a terminal window titled 'Serverweb1 - Terminal | Lightsail - Google Chrome'. The terminal output includes system information as of Thu Mar 11 03:04:27 UTC 2021, such as system load, memory usage, and IP addresses. It also shows the user logging in as 'ubuntu' and navigating through directories: 'cd ..', 'cd FundamentosNube', 'cd web', and finally 'vi docker-compose.ymlm'. The terminal status bar at the bottom indicates 'Serverweb1 3.87.226.217'. In the background, a web browser window shows the AWS console with a 'Crear instancia' button.

```
lightsail.aws.amazon.com/s/remote/us-east-1/instances/Serverweb1/terminal?protocol=ssh

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

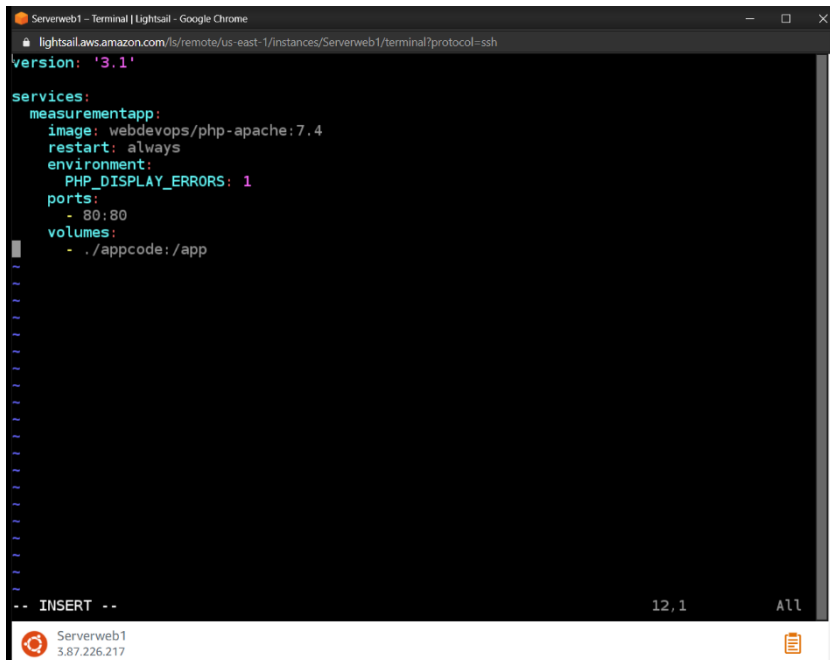
System information as of Thu Mar 11 03:04:27 UTC 2021
System load:        0.0
Usage of /:         6.7% of 19.32GB
Memory usage:       46%
Swap usage:         0%
Processes:          114
Users logged in:    1
IPv4 address for eth0: 172.26.8.113
IPv6 address for eth0: 2600:1f18:1906:3500:332b:bdb2:bfab:4d4

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.ymlm
```

Y se le cambia el puerto a 80



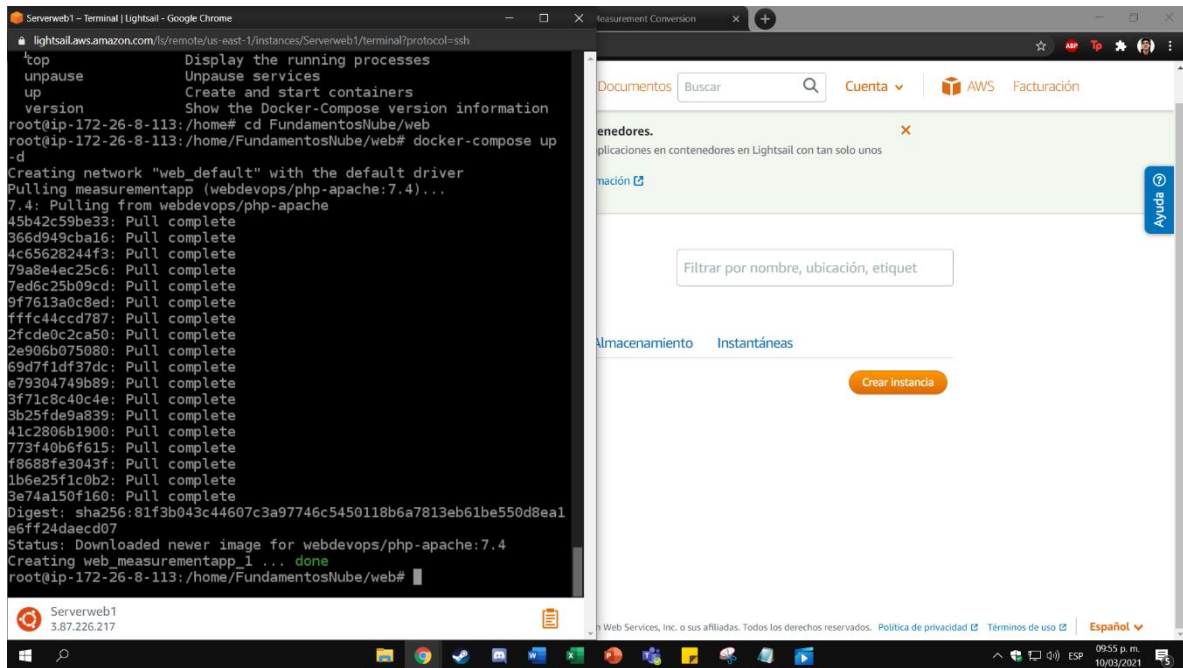
The screenshot shows a terminal window titled 'Serverweb1 - Terminal | Lightsail - Google Chrome'. The terminal output displays the contents of the 'docker-compose.yml' file, which defines a service named 'measurementapp'. The service configuration includes the image 'webdevops/php-apache:7.4', restart policy 'always', environment variable 'PHP_DISPLAY_ERRORS: 1', and ports '80:80'. The volumes section is also present. The terminal status bar at the bottom indicates 'Serverweb1 3.87.226.217'.

```
lightsail.aws.amazon.com/s/remote/us-east-1/instances/Serverweb1/terminal?protocol=ssh

version: '3.1'

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

Despues se levanta el docker-compose de la carpeta web para montar la pagina web en la nube



The screenshot shows a terminal window on the left and a web browser on the right. The terminal window displays the output of the `docker-compose up` command, showing the creation of a network and the pulling of the `webdevops/php-apache:7.4` image. The web browser shows the AWS Lightsail console with a notification for the application deployment.

```
Serverweb1 - Terminal | Lightsail - Google Chrome
lightsail.amazonaws.com/remote/us-east-1/instances/Serverweb1/terminal/protocol-ssh

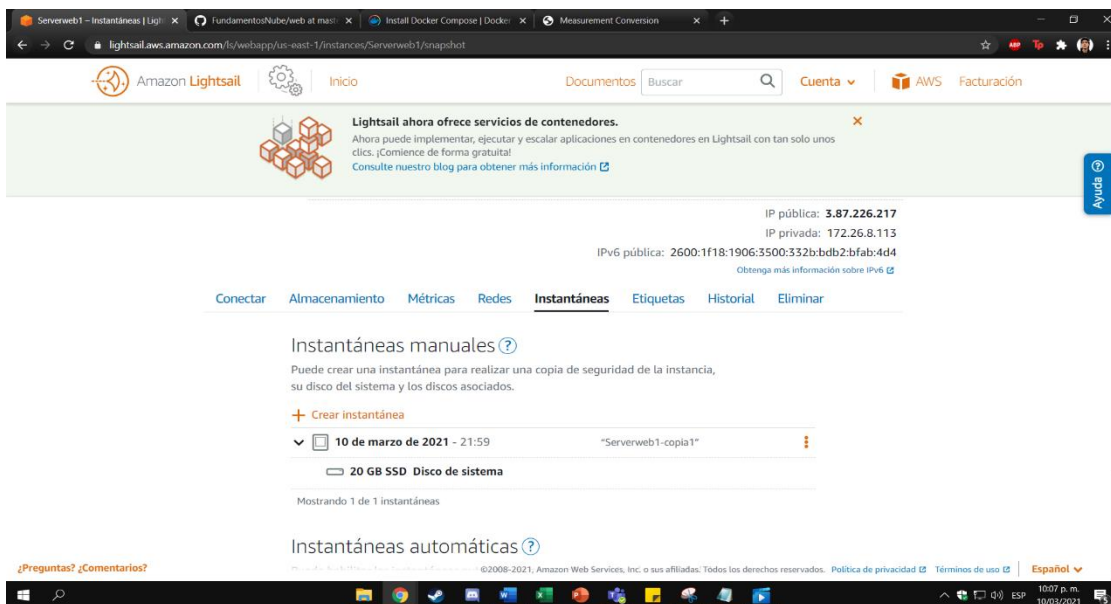
top          Display the running processes
unpause      Unpause services
up           Create and start containers
version      Show the Docker-Compose version information
root@ip-172-26-8-113: /home# cd FundamentosNube/web
root@ip-172-26-8-113: /home/FundamentosNube/web# docker-compose up
-d
Creating network "web_default" with the default driver
Pulling measurementapp (webdevops/php-apache:7.4)...
7.4: Pulling from webdevops/php-apache
45b42c59be33: Pull complete
366d949c8a16: Pull complete
4c65628244f3: Pull complete
79a8e4ec25c6: Pull complete
7ad6c25b09cd: Pull complete
9f7613a0c8ed: Pull complete
fffc44ccd787: Pull complete
2fcd0c2ca50: Pull complete
2e906b075080: Pull complete
69d7f1df37dc: Pull complete
e79304749b89: Pull complete
3f71c840c4e: Pull complete
3b25fde9a839: Pull complete
41c2806b1900: Pull complete
773f40b6f615: Pull complete
f8688fe3043f: Pull complete
1b6e25f1c0b2: Pull complete
3e74a150f160: Pull complete
Digest: sha256:81f3b043c44607c3a97746c5450118b6a7813eb61be550d8ea1e6ff24daecd07
Status: Downloaded newer image for webdevops/php-apache:7.4
Creating web_measurementapp_1 ... done
root@ip-172-26-8-113: /home/FundamentosNube/web#
```

The web browser shows the AWS Lightsail console. The top navigation bar includes "Documentos", "Buscar", "Cuenta", "AWS", and "Facturación". A notification banner at the top states: "Aplicaciones en contenedores en Lightsail con tan solo unos clics". Below this, there is a search bar with the text "Filtrar por nombre, ubicación, etiqueta". The main content area shows "Almacenamiento" and "Instantáneas" with a "Crear instancia" button. The bottom of the browser shows the URL "lightsail.amazonaws.com/remote/us-east-1/instances/Serverweb1/terminal/protocol-ssh" and the time "09:55 p. m. 10/03/2021".

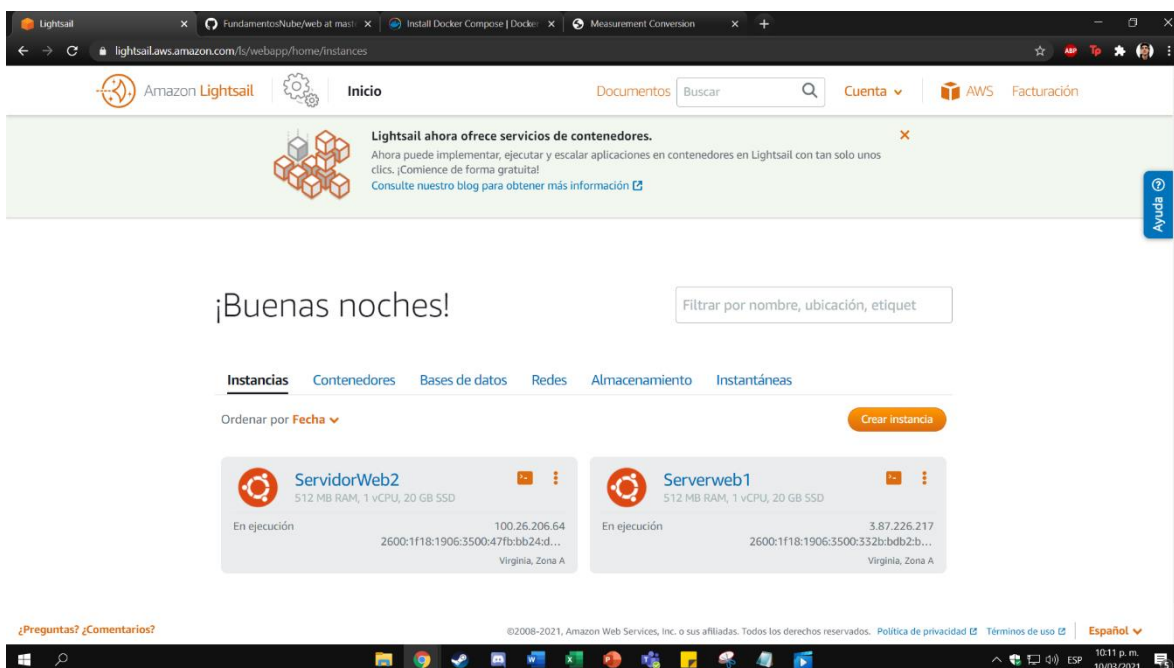
Measurement Conversion v1.0

- [Length and Distance](#)
- [Area](#)
- [Volume and Capacity](#)
- [Mass and Weight](#)
- [Speed](#)
- [Temperature](#)

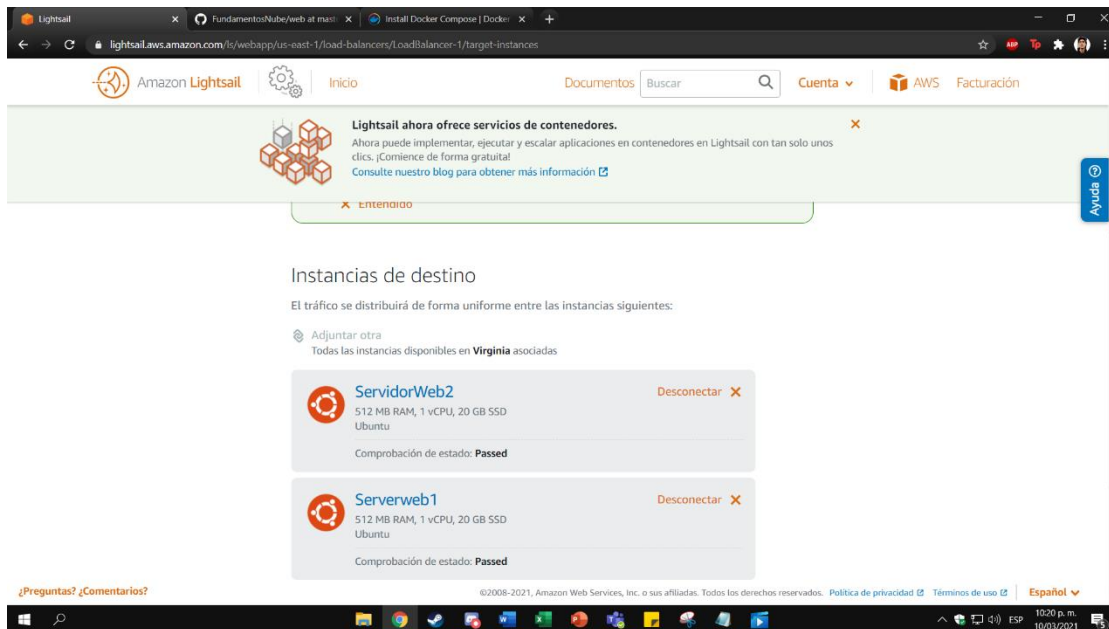
Una vez levantada la pagina web, se realiza un snapshots de la instancia



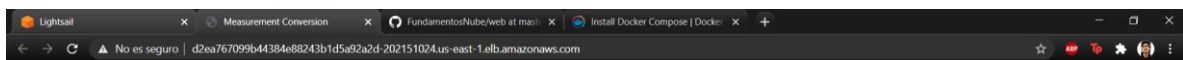
Ahora, se crea una instancia de esa misma snapshot, lo cual nombraremos Servidorweb2



Ahora se procederá crear un balanceador de carga con las dos instancias de procesamiento.



Despues se accede al enlace o Dns del balanceador de carga desde el explorador para comprobar el correcto funcionamiento.

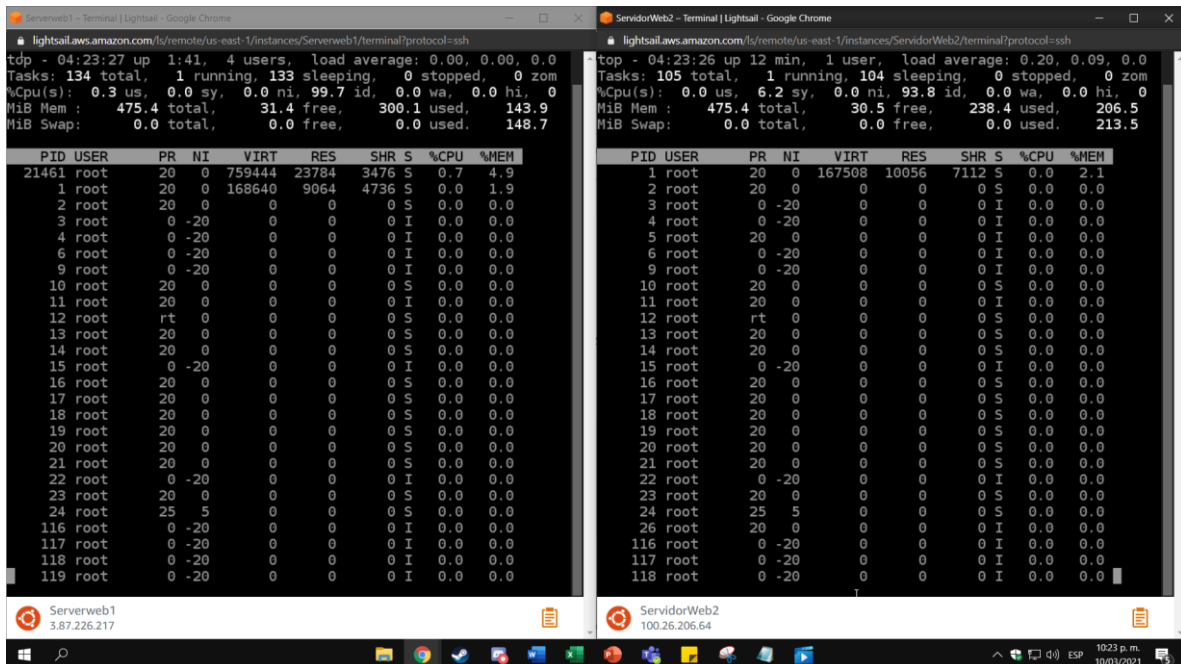


Measurement Conversion v1.0

- [Length and Distance](#)
- [Area](#)
- [Volume and Capacity](#)
- [Mass and Weight](#)
- [Speed](#)
- [Temperature](#)



Y por ultimo se ejecuta el comando top en ambas instancias para confirmar que estén funcionales y no existe una saturación de procesamiento.



The image displays two side-by-side terminal windows from a Windows desktop environment, showing the output of the 'top' command on AWS Lightsail instances. The left window is for 'Serverweb1' (IP: 3.87.226.217) and the right window is for 'ServidorWeb2' (IP: 100.26.206.64). Both windows show system statistics at the top and a table of running processes below.

Serverweb1 Output:

```
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

ServidorWeb2 Output:

```
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