

Práctica 1 – SWAP

Presentación de las prácticas y preparación de las herramientas

María Sanz Sánchez 77147710Y

PASOS SEGUIDOS DURANTE LA PRÁCTICA:

1. Creamos dos máquinas virtuales con Ubuntu Server 16.
2. Instalamos apache2 , mysql y php.
3. Comprobamos que apache está funcionando en ambas máquinas:

```
root@m1:/home/mariasanzsanchez# apache2 -v
Server version: Apache/2.4.29 (Ubuntu)
Server built: 2019-12-03T15:55:03
root@m1:/home/mariasanzsanchez# ps aux | grep apache
root      2807  0.0  0.7 73960 3656 ?        Ss   17:56   0:00 /usr/sbin/apache2 -k
www-data  2809  0.0  0.7 826256 3592 ?        S1   17:56   0:00 /usr/sbin/apache2 -k
www-data  2810  0.0  0.7 826256 3644 ?        S1   17:56   0:00 /usr/sbin/apache2 -k
root      3905  0.0  0.2 13136 1008 tty1    S+   17:58   0:00 grep --color=auto ap
root@m1:/home/mariasanzsanchez# sudo service apache2 status
• apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabl
   Drop-In: /lib/systemd/system/apache2.service.d
            └─apache2-systemd.conf
   Active: active (running) since Fri 2020-03-06 17:56:18 UTC; 2min 38s ago
   Main PID: 2807 (apache2)
     Tasks: 55 (limit: 503)
    CGroup: /system.slice/apache2.service
            └─2807 /usr/sbin/apache2 -k start
              └─2809 /usr/sbin/apache2 -k start
                └─2810 /usr/sbin/apache2 -k start

mar 06 17:56:18 m1 systemd[1]: Starting The Apache HTTP Server...
mar 06 17:56:18 m1 apachectl[2784]: AH00558: apache2: Could not reliably determine th
mar 06 17:56:18 m1 systemd[1]: Started The Apache HTTP Server.
lines 1-15/15 (END)
```

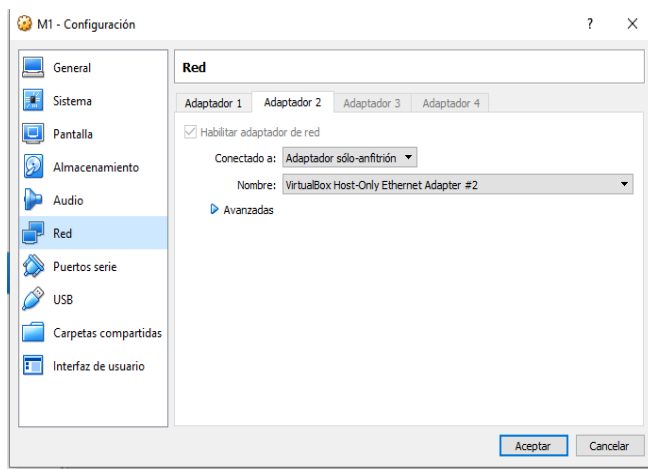
En la máquina M1

```
root@m2:/home/mariasanzsanchez# apache2 -v
Server version: Apache/2.4.29 (Ubuntu)
Server built: 2019-12-03T15:55:03
arg: 1) ps aux ^C
root@m2:/home/mariasanzsanchez# sudo service apache2 status
• apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabl
   Drop-In: /lib/systemd/system/apache2.service.d
            └─apache2-systemd.conf
   Active: active (running) since Fri 2020-03-06 18:06:09 UTC; 2min 14s ago
   Main PID: 2727 (apache2)
     Tasks: 55 (limit: 503)
    CGroup: /system.slice/apache2.service
            └─2727 /usr/sbin/apache2 -k start
              └─2729 /usr/sbin/apache2 -k start
                └─2730 /usr/sbin/apache2 -k start

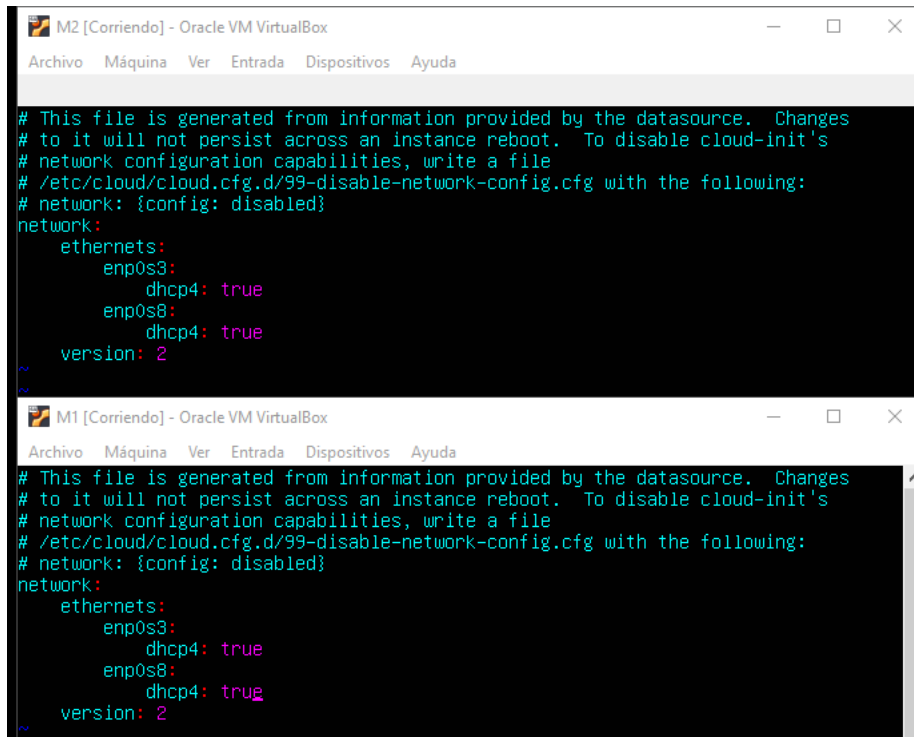
mar 06 18:06:09 m2 systemd[1]: Starting The Apache HTTP Server...
mar 06 18:06:09 m2 apachectl[2703]: AH00558: apache2: Could not reliably determine th
mar 06 18:06:09 m2 systemd[1]: Started The Apache HTTP Server.
lines 1-15/15 (END)
```

En la máquina M2

4. Añadimos un adaptador solo anfitrión para poder comunicar ambas máquinas. En una de ellas lo hice antes de la instalación para evitar tener que hacer la configuración de red, mientras que en la otra lo hice tras la instalación para ver los cambios que tenía que configurar en la máquina para que esta funcionara.



5. Configuramos las direcciones IP para evitar que ambas máquinas usen la misma dirección, para ello configuramos el archivo `.yaml` de la carpeta `/etc/netplan`. Tras la edición del contenido de los ficheros ejecutamos: `sudo netplan apply`



6. Vemos cuáles son esas nuevas direcciones usando *Ifconfig*:

```
root@m1:/etc/netplan# ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::a00:27ff:fe27:11af prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:27:11:af txqueuelen 1000 (Ethernet)
    RX packets 32086 bytes 37251214 (37.2 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 5438 bytes 351512 (351.5 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.159.4 netmask 255.255.255.0 broadcast 192.168.159.255
    inet6 fe80::a00:27ff:fe5a:569e prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:5a:56:9e txqueuelen 1000 (Ethernet)
    RX packets 317 bytes 41838 (41.8 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 31 bytes 4778 (4.7 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 (Local Loopback)
    RX packets 192 bytes 14836 (14.8 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 192 bytes 14836 (14.8 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@m1:/etc/netplan#
```

1. IfConfig en M1

```
mariasanzsanchez@m2:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::a00:27ff:fedf:587 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:df:05:87 txqueuelen 1000 (Ethernet)
    RX packets 29431 bytes 37120338 (37.1 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 3738 bytes 251348 (251.3 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

enp0s8: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.159.3 netmask 255.255.255.0 broadcast 192.168.159.255
    inet6 fe80::a00:27ff:fe35:b583 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:35:b5:83 txqueuelen 1000 (Ethernet)
    RX packets 295 bytes 36644 (36.6 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 31 bytes 4778 (4.7 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 (Local Loopback)
    RX packets 456 bytes 33944 (33.9 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 456 bytes 33944 (33.9 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

2. ifconfig en M2

7. Hacemos ping para comprobar que podemos conectarnos a ella:

```
root@m1:/etc/netplan# ping 192.168.159.3
PING 192.168.159.3 (192.168.159.3) 56(84) bytes of data:
64 bytes from 192.168.159.3: icmp_seq=1 ttl=64 time=0.584 ms
64 bytes from 192.168.159.3: icmp_seq=2 ttl=64 time=0.774 ms
64 bytes from 192.168.159.3: icmp_seq=3 ttl=64 time=0.448 ms
64 bytes from 192.168.159.3: icmp_seq=4 ttl=64 time=0.777 ms
64 bytes from 192.168.159.3: icmp_seq=5 ttl=64 time=0.798 ms
64 bytes from 192.168.159.3: icmp_seq=6 ttl=64 time=0.754 ms
64 bytes from 192.168.159.3: icmp_seq=7 ttl=64 time=0.874 ms
64 bytes from 192.168.159.3: icmp_seq=8 ttl=64 time=0.704 ms
^C
--- 192.168.159.3 ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 7013ms
rtt min/avg/max/mdev = 0.448/0.714/0.874/0.127 ms
root@m1:/etc/netplan#
```

3. Ping de M1 a M2

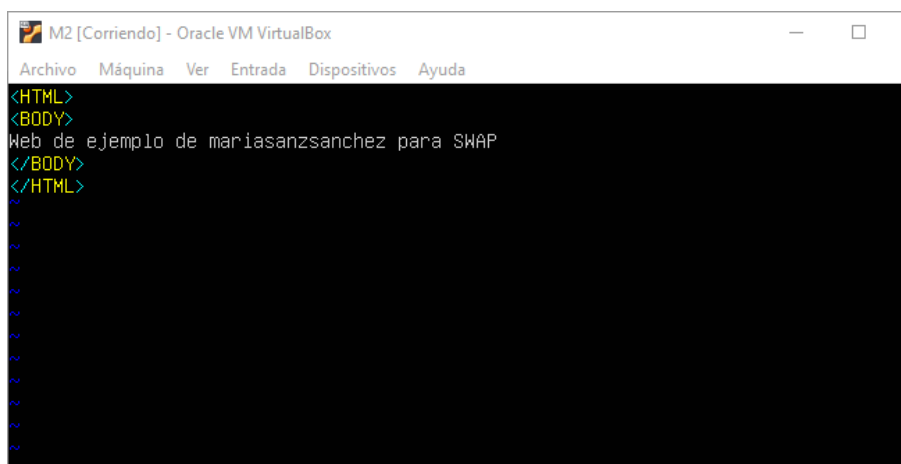
```

mariasanzsanchez@m2:~$ ping 192.168.159.4
PING 192.168.159.4 (192.168.159.4) 56(84) bytes of data.
64 bytes from 192.168.159.4: icmp_seq=1 ttl=64 time=0.542 ms
64 bytes from 192.168.159.4: icmp_seq=2 ttl=64 time=0.630 ms
64 bytes from 192.168.159.4: icmp_seq=3 ttl=64 time=0.734 ms
64 bytes from 192.168.159.4: icmp_seq=4 ttl=64 time=0.802 ms
64 bytes from 192.168.159.4: icmp_seq=5 ttl=64 time=0.839 ms
64 bytes from 192.168.159.4: icmp_seq=6 ttl=64 time=0.756 ms
64 bytes from 192.168.159.4: icmp_seq=7 ttl=64 time=0.749 ms
64 bytes from 192.168.159.4: icmp_seq=8 ttl=64 time=0.809 ms
^C
--- 192.168.159.4 ping statistics ---
8 packets transmitted, 8 received, 0% packet loss, time 7036ms
rtt min/avg/max/mdev = 0.542/0.732/0.839/0.098 ms
mariasanzsanchez@m2:~$ _

```

4. Ping de M2 a M1

8. Creamos un fichero HTML para comprobar el funcionamiento de curl:

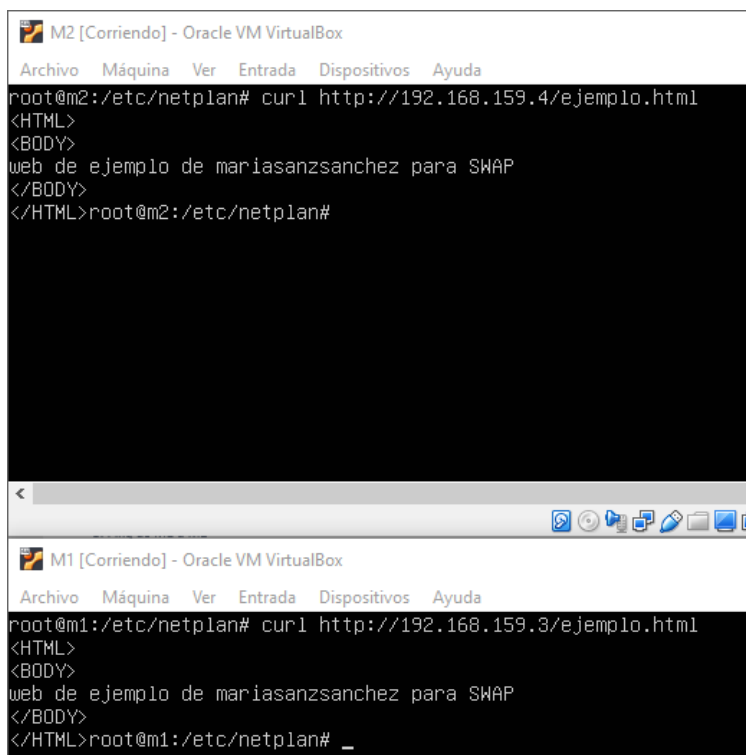


```

M2 [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
<HTML>
<BODY>
Web de ejemplo de mariasanzsanchez para SHAP
</BODY>
</HTML>
~
~
~
~
~
~
~
~
~
~

```

9. Hacemos uso del comando curl de una máquina a otra:



```

M2 [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
root@m2:/etc/netplan# curl http://192.168.159.4/ejemplo.html
<HTML>
<BODY>
web de ejemplo de mariasanzsanchez para SHAP
</BODY>
</HTML>root@m2:/etc/netplan#

M1 [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda
root@m1:/etc/netplan# curl http://192.168.159.3/ejemplo.html
<HTML>
<BODY>
web de ejemplo de mariasanzsanchez para SHAP
</BODY>
</HTML>root@m1:/etc/netplan# _

```

10. Hacemos SSH de una máquina a otra:

```
root@m2:/home/mariasanzsanchez# ssh mariasanzsanchez@192.168.159.4
mariasanzsanchez@192.168.159.4's password:
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 4.15.0-88-generic x86_64)

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

System information as of Sun Mar 15 17:38:28 UTC 2020

System load:  0.1               Processes:            96
Usage of /:   33.2% of 9.78GB   Users logged in:     1
Memory usage: 64%              IP address for enp0s3: 10.0.2.15
Swap usage:   0%               IP address for enp0s8: 192.168.159.4

 * Latest Kubernetes 1.18 beta is now available for your laptop, NUC, cloud
   instance or Raspberry Pi, with automatic updates to the final GA release.

   sudo snap install microk8s --channel=1.18/beta --classic

 * Multipass 1.1 adds proxy support for developers behind enterprise
   firewalls. Rapid prototyping for cloud operations just got easier.

   https://multipass.run/

Pueden actualizarse 15 paquetes.
0 actualizaciones son de seguridad.

Last login: Sun Mar 15 17:33:16 2020
mariasanzsanchez@m2:~$
```

1. ssh de la máquina 2 a la 1

```
mariasanzsanchez@m1:~$ ssh mariasanzsanchez@192.168.159.3
The authenticity of host '192.168.159.3 (192.168.159.3)' can't be established.
ECDSA key fingerprint is SHA256:YQSnm8yEJg2XhhENawxpy5EKTwIP+o122L11P0wLJ/o.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '192.168.159.3' (ECDSA) to the list of known hosts.
mariasanzsanchez@192.168.159.3's password:
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 4.15.0-88-generic x86_64)

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

System information as of Sun Mar 15 17:41:16 UTC 2020

System load:  0.0               Processes:            92
Usage of /:   36.0% of 9.78GB   Users logged in:     1
Memory usage: 38%              IP address for enp0s3: 10.0.2.15
Swap usage:   13%              IP address for enp0s8: 192.168.159.3

 * Latest Kubernetes 1.18 beta is now available for your laptop, NUC, cloud
   instance or Raspberry Pi, with automatic updates to the final GA release.

   sudo snap install microk8s --channel=1.18/beta --classic

 * Multipass 1.1 adds proxy support for developers behind enterprise
   firewalls. Rapid prototyping for cloud operations just got easier.

   https://multipass.run/

Pueden actualizarse 15 paquetes.
0 actualizaciones son de seguridad.

Last login: Wed Mar 11 11:00:47 2020
mariasanzsanchez@m1:~$
```

1. ssh de M1 a M2