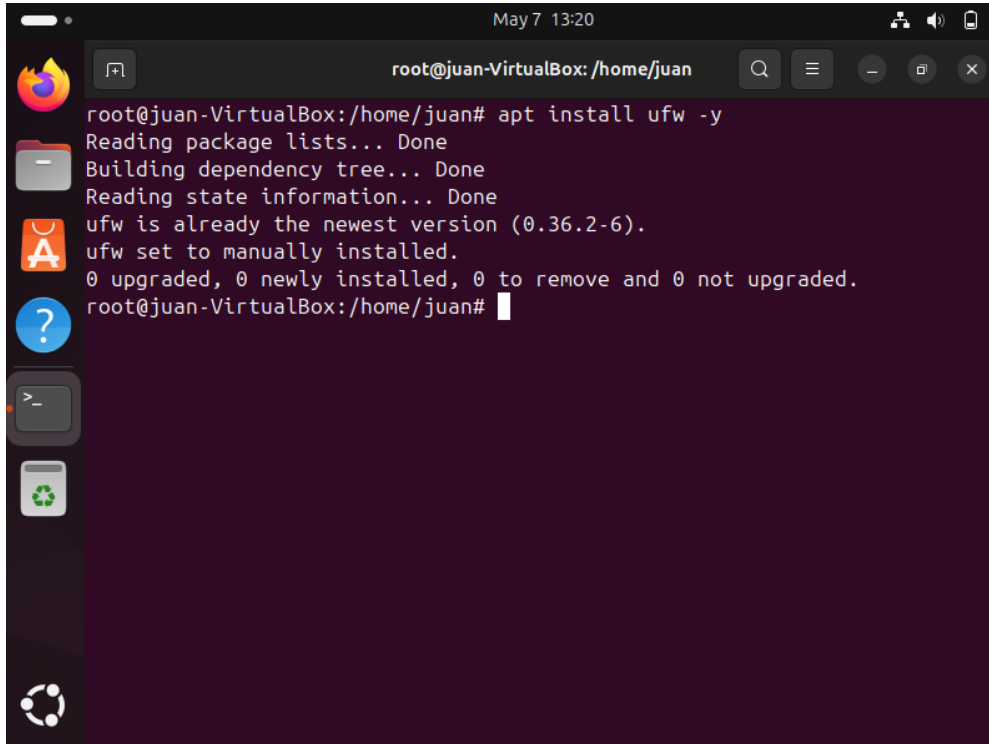


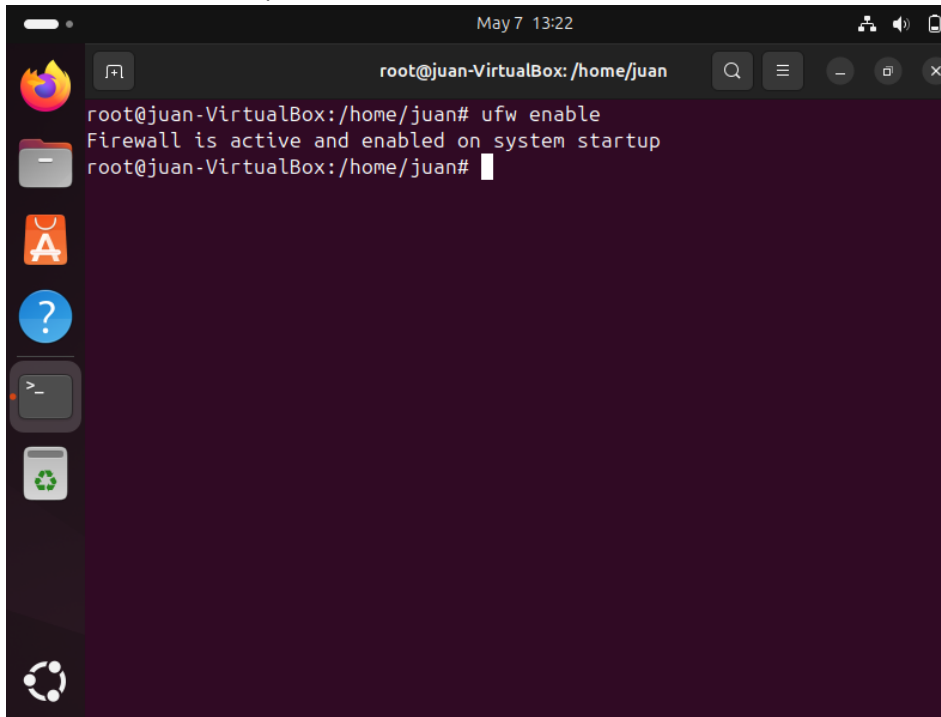
## LABORATORIO 7 CYBERSEGURIDAD

### 1. Instalamos ufw:

A terminal window titled 'root@juan-VirtualBox: /home/juan' with a search bar and window controls. The terminal output shows the command 'apt install ufw -y' being executed. The output indicates that ufw is already the newest version (0.36.2-6) and is set to manually installed. The terminal also shows the status of upgrades: 0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded. The terminal has a dark purple background and a sidebar with icons for file manager, application store, help, and other system utilities.

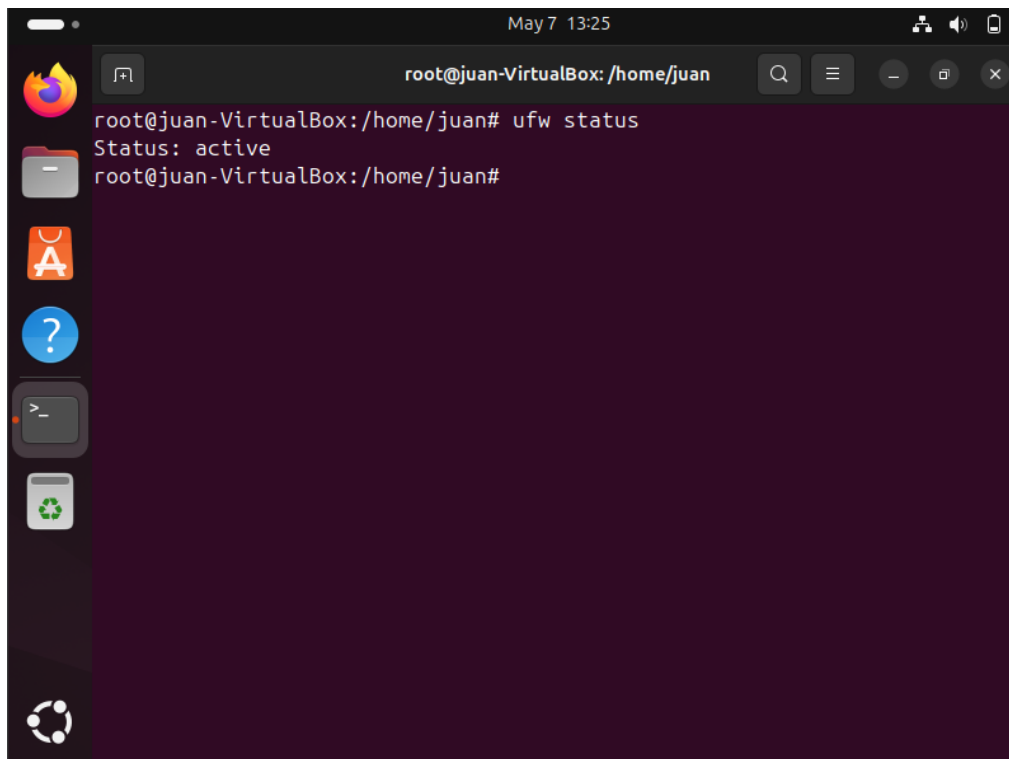
```
root@juan-VirtualBox:/home/juan# apt install ufw -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ufw is already the newest version (0.36.2-6).
ufw set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@juan-VirtualBox:/home/juan#
```

### 2. Se activa el comando para activar el firewall con ufw

A terminal window titled 'root@juan-VirtualBox: /home/juan' with a search bar and window controls. The terminal output shows the command 'ufw enable' being executed. The output indicates that the firewall is active and enabled on system startup. The terminal has a dark purple background and a sidebar with icons for file manager, application store, help, and other system utilities.

```
root@juan-VirtualBox:/home/juan# ufw enable
Firewall is active and enabled on system startup
root@juan-VirtualBox:/home/juan#
```

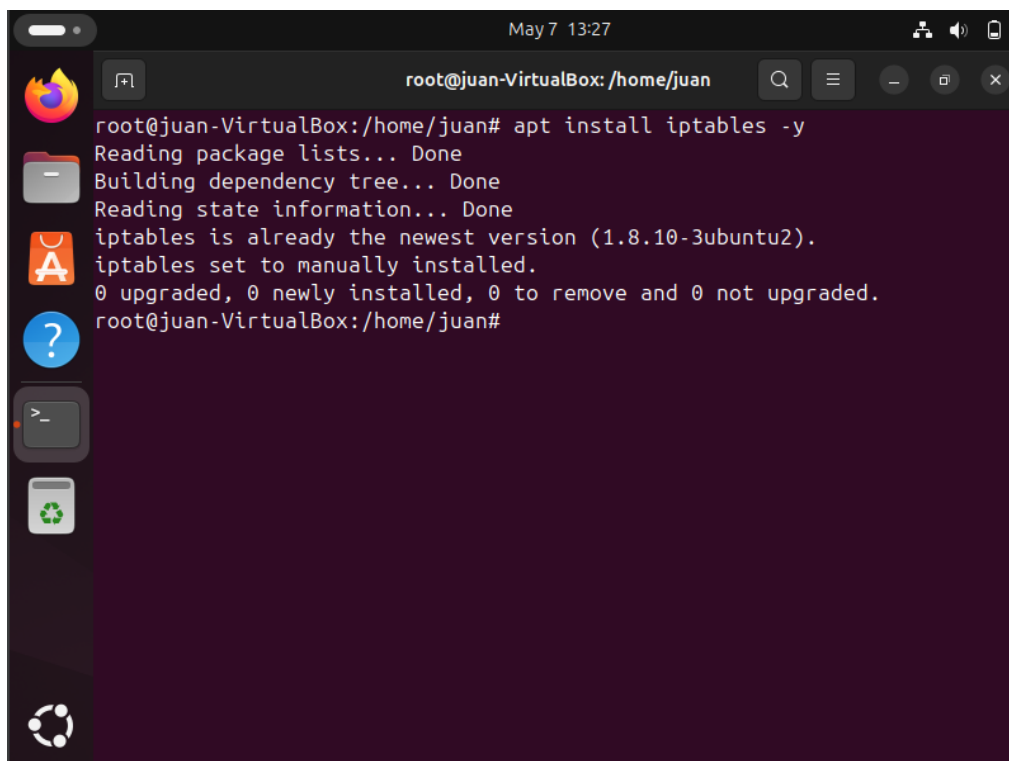
3. Ahora se procede a activar el status con el ufw



A terminal window titled 'root@juan-VirtualBox: /home/juan' with a search icon, menu icon, and window control buttons. The terminal shows the command 'ufw status' and its output 'Status: active'. The prompt is 'root@juan-VirtualBox: /home/juan#'. On the left, there is a vertical dock with icons for Firefox, a file manager, an application store, a help icon, a terminal, a trash, and a refresh icon.

```
root@juan-VirtualBox: /home/juan# ufw status
Status: active
root@juan-VirtualBox: /home/juan#
```

4. Ahora se instala el iptables:



A terminal window titled 'root@juan-VirtualBox: /home/juan' with a search icon, menu icon, and window control buttons. The terminal shows the command 'apt install iptables -y' and its output. The output indicates that iptables is already the newest version (1.8.10-3ubuntu2) and is set to manually installed. The prompt is 'root@juan-VirtualBox: /home/juan#'. On the left, there is a vertical dock with icons for Firefox, a file manager, an application store, a help icon, a terminal, a trash, and a refresh icon.

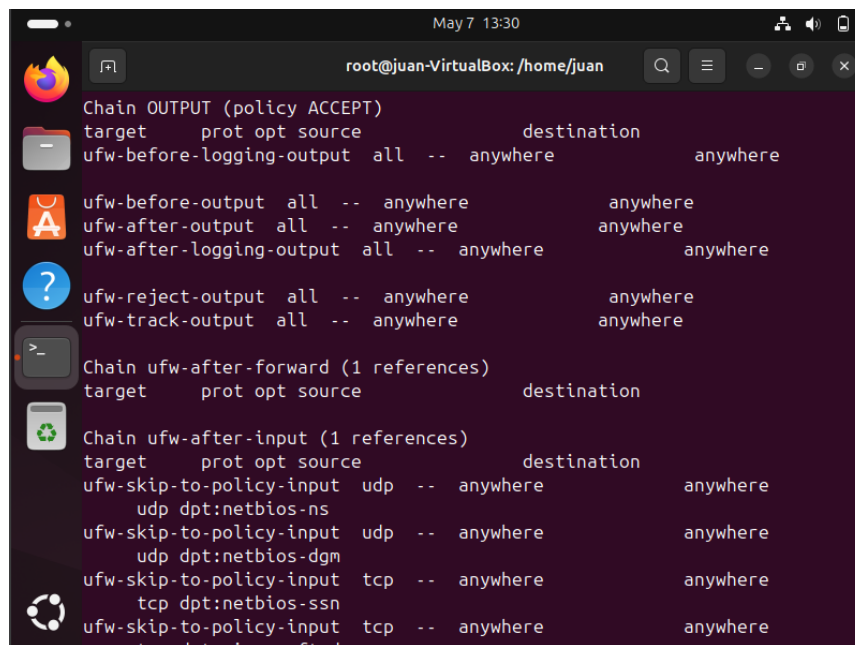
```
root@juan-VirtualBox: /home/juan# apt install iptables -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
iptables is already the newest version (1.8.10-3ubuntu2).
iptables set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@juan-VirtualBox: /home/juan#
```

5. Ahora revisamos lo que esta configurado en iptables con este commando:

```
root@juan-VirtualBox:/home/juan# iptables -L
Chain INPUT (policy DROP)
target     prot opt source                destination
ufw-before-logging-input  all  --  anywhere               anywhere
ufw-before-input          all  --  anywhere               anywhere
ufw-after-input           all  --  anywhere               anywhere
ufw-after-logging-input   all  --  anywhere               anywhere
ufw-reject-input          all  --  anywhere               anywhere
ufw-track-input           all  --  anywhere               anywhere

Chain FORWARD (policy DROP)
target     prot opt source                destination
ufw-before-logging-forward all  --  anywhere               anywhere
ufw-before-forward        all  --  anywhere               anywhere
ufw-after-forward         all  --  anywhere               anywhere
ufw-after-logging-forward all  --  anywhere               anywhere
ufw-reject-forward        all  --  anywhere               anywhere
ufw-track-forward         all  --  anywhere               anywhere

Chain OUTPUT (policy ACCEPT)
```



```
root@juan-VirtualBox:/home/juan# iptables -L
Chain OUTPUT (policy ACCEPT)
target     prot opt source                destination
ufw-before-logging-output all  --  anywhere               anywhere
ufw-before-output        all  --  anywhere               anywhere
ufw-after-output         all  --  anywhere               anywhere
ufw-after-logging-output  all  --  anywhere               anywhere
ufw-reject-output         all  --  anywhere               anywhere
ufw-track-output          all  --  anywhere               anywhere

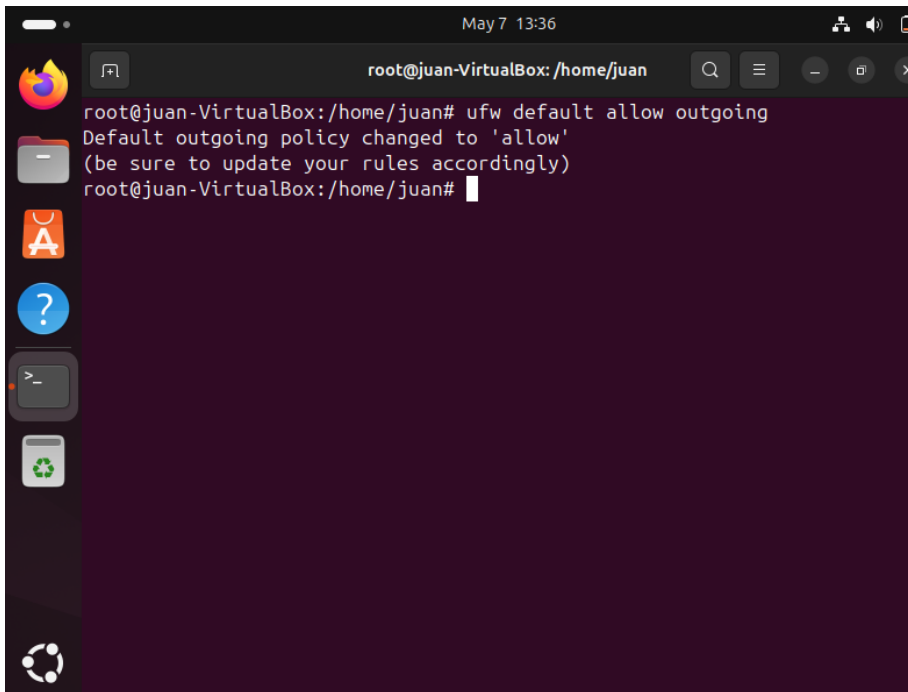
Chain ufw-after-forward (1 references)
target     prot opt source                destination

Chain ufw-after-input (1 references)
target     prot opt source                destination
ufw-skip-to-policy-input  udp  --  anywhere               anywhere
ufw-skip-to-policy-input  udp  --  anywhere               anywhere
ufw-skip-to-policy-input  tcp  --  anywhere               anywhere
ufw-skip-to-policy-input  tcp  --  anywhere               anywhere
```

6. Ahora denegamos cualquier conexión que no cumpla con una regla específica

```
root@juan-VirtualBox:/home/juan# ufw default deny incoming
Default incoming policy changed to 'deny'
(be sure to update your rules accordingly)
root@juan-VirtualBox:/home/juan#
```

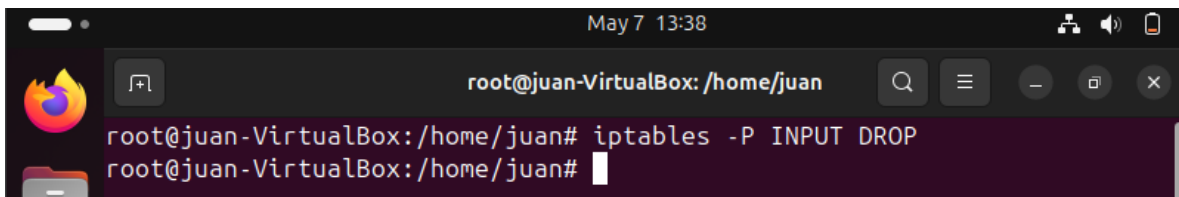
7. Ahora se hace todo lo contrario que es permitir las conexiones en ufw



A terminal window titled 'root@juan-VirtualBox: /home/juan' with a search bar and window controls. The terminal shows the command 'ufw default allow outgoing' being executed. The output is 'Default outgoing policy changed to 'allow'' followed by '(be sure to update your rules accordingly)'. The prompt returns to 'root@juan-VirtualBox: /home/juan#'. On the left side of the terminal, there is a vertical dock with icons for Firefox, a file manager, an application store, a help icon, a terminal icon, a trash icon, and a refresh icon.

```
root@juan-VirtualBox: /home/juan# ufw default allow outgoing
Default outgoing policy changed to 'allow'
(be sure to update your rules accordingly)
root@juan-VirtualBox: /home/juan#
```

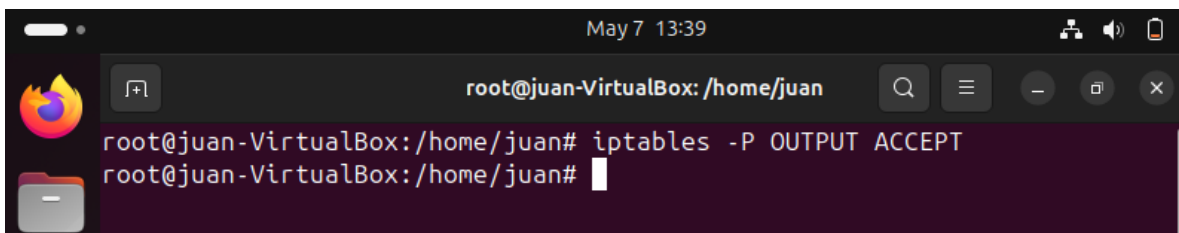
8. Con este comando se hace pero para denegar en iptables:



A terminal window titled 'root@juan-VirtualBox: /home/juan' with a search bar and window controls. The terminal shows the command 'iptables -P INPUT DROP' being executed. The prompt returns to 'root@juan-VirtualBox: /home/juan#'. On the left side of the terminal, there is a vertical dock with icons for Firefox, a file manager, an application store, a help icon, a terminal icon, a trash icon, and a refresh icon.

```
root@juan-VirtualBox: /home/juan# iptables -P INPUT DROP
root@juan-VirtualBox: /home/juan#
```

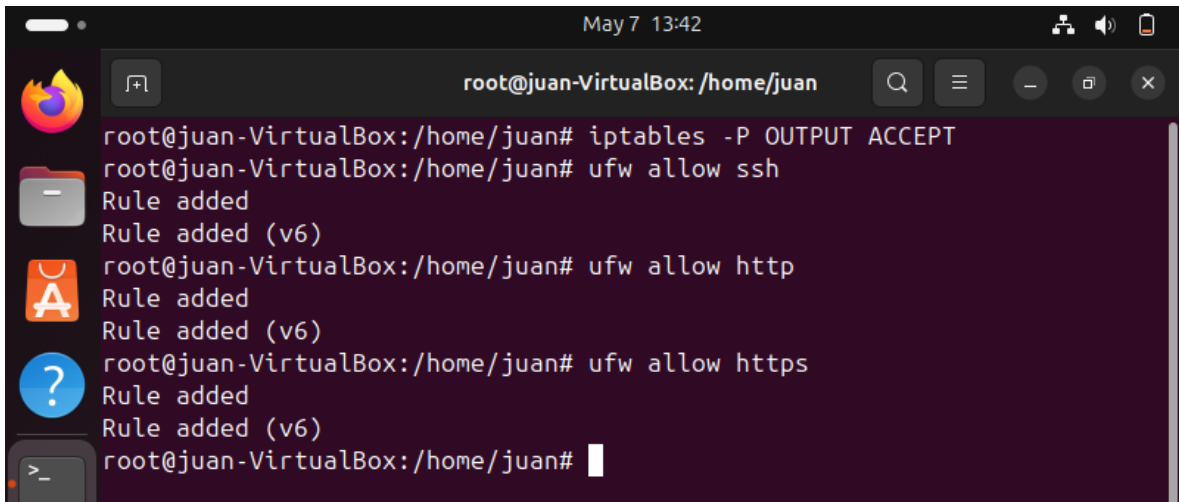
9. Y con este para aceptar:



A terminal window titled 'root@juan-VirtualBox: /home/juan' with a search bar and window controls. The terminal shows the command 'iptables -P OUTPUT ACCEPT' being executed. The prompt returns to 'root@juan-VirtualBox: /home/juan#'. On the left side of the terminal, there is a vertical dock with icons for Firefox, a file manager, an application store, a help icon, a terminal icon, a trash icon, and a refresh icon.

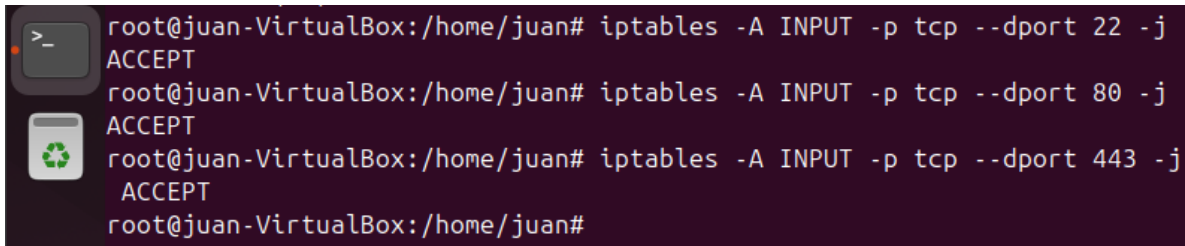
```
root@juan-VirtualBox: /home/juan# iptables -P OUTPUT ACCEPT
root@juan-VirtualBox: /home/juan#
```

10. Ahora con ufw vamos aceptar las conexión con ssh, http y https:



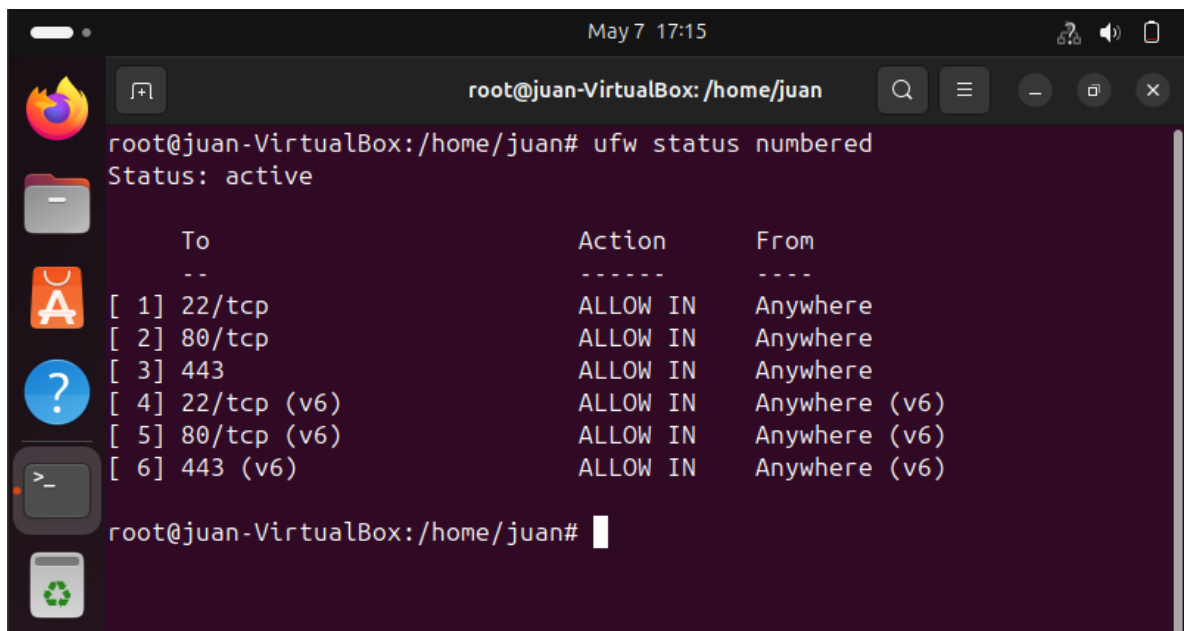
```
root@juan-VirtualBox: /home/juan
root@juan-VirtualBox:/home/juan# iptables -P OUTPUT ACCEPT
root@juan-VirtualBox:/home/juan# ufw allow ssh
Rule added
Rule added (v6)
root@juan-VirtualBox:/home/juan# ufw allow http
Rule added
Rule added (v6)
root@juan-VirtualBox:/home/juan# ufw allow https
Rule added
Rule added (v6)
root@juan-VirtualBox:/home/juan#
```

11. Ahora se hace lo mismo, pero para iptables:



```
root@juan-VirtualBox:/home/juan# iptables -A INPUT -p tcp --dport 22 -j ACCEPT
root@juan-VirtualBox:/home/juan# iptables -A INPUT -p tcp --dport 80 -j ACCEPT
root@juan-VirtualBox:/home/juan# iptables -A INPUT -p tcp --dport 443 -j ACCEPT
root@juan-VirtualBox:/home/juan#
```

12. Ahora vamos a revisar en ufw si se hicieron correctamente las conexiones:



```
root@juan-VirtualBox: /home/juan
root@juan-VirtualBox:/home/juan# ufw status numbered
Status: active

      To Action From
      --
[ 1] 22/tcp ALLOW IN Anywhere
[ 2] 80/tcp ALLOW IN Anywhere
[ 3] 443 ALLOW IN Anywhere
[ 4] 22/tcp (v6) ALLOW IN Anywhere (v6)
[ 5] 80/tcp (v6) ALLOW IN Anywhere (v6)
[ 6] 443 (v6) ALLOW IN Anywhere (v6)

root@juan-VirtualBox:/home/juan#
```

### 13. Y ahora lo vamos hacer con iptables

```
root@juan-VirtualBox:/home/juan# iptables -L
Chain INPUT (policy DROP)
target     prot opt source                destination
ufw-before-logging-input  all  --  anywhere               anywhere
ufw-before-input          all  --  anywhere               anywhere
ufw-after-input           all  --  anywhere               anywhere
ufw-after-logging-input   all  --  anywhere               anywhere
ufw-reject-input          all  --  anywhere               anywhere
ufw-track-input           all  --  anywhere               anywhere

Chain FORWARD (policy DROP)
target     prot opt source                destination
ufw-before-logging-forward all  --  anywhere               anywhere
ufw-before-forward        all  --  anywhere               anywhere
ufw-after-forward         all  --  anywhere               anywhere
ufw-after-logging-forward all  --  anywhere               anywhere
ufw-reject-forward        all  --  anywhere               anywhere
ufw-track-forward         all  --  anywhere               anywhere

Chain OUTPUT (policy ACCEPT)
```

```
root@juan-VirtualBox:/home/juan# iptables -L
Chain ufw-user-forward (1 references)
target     prot opt source                destination
ufw-user-input (1 references)
target     prot opt source                destination
ACCEPT     tcp  --  anywhere               anywhere            tcp dpt:ss
h
ACCEPT     tcp  --  anywhere               anywhere            tcp dpt:ht
tp
ACCEPT     tcp  --  anywhere               anywhere            tcp dpt:ht
tps
ACCEPT     udp  --  anywhere               anywhere            udp dpt:ht
tps

Chain ufw-user-limit (0 references)
target     prot opt source                destination
LOG         all  --  anywhere               anywhere            limit: avg
3/min burst 5 LOG level warn prefix "[UFW LIMIT BLOCK] "
REJECT     all  --  anywhere               anywhere            reject-with icmp-port-unreachable

Chain ufw-user-limit-accept (0 references)
target     prot opt source                destination
```

### 14. Ahora vamos aceptar y a su vez denegar una dirección ip con ufw

```
root@juan-VirtualBox:/home/juan# ufw allow from 192.168.1.20
Rule added
root@juan-VirtualBox:/home/juan# ufw deny from 192.168.1.20
Rule updated
root@juan-VirtualBox:/home/juan#
```

15. Y Ahora lo mismo, pero con iptables

```
root@juan-VirtualBox:/home/juan# iptables -A INPUT -s 192.168.1.45 -j ACCEPT
root@juan-VirtualBox:/home/juan# iptables -A INPUT -s 192.168.1.45 -j DROP
root@juan-VirtualBox:/home/juan#
```

16. Y para finalizar vamos a negar todas las direcciones que salgan o entren del puerto 8080 con ufw y también con ufw.

```
root@juan-VirtualBox:/home/juan# ufw deny from any to any port 8080
Rule added
Rule added (v6)
root@juan-VirtualBox:/home/juan# iptables -A INPUT -p tcp --dport 8080 -j DROP
root@juan-VirtualBox:/home/juan#
```

17. Y ah si estarían las reglas añadidas en ufw e iptables:

```
root@juan-VirtualBox:/home/juan# ufw deny from any to any port 8080
Rule added
Rule added (v6)
root@juan-VirtualBox:/home/juan# iptables -A INPUT -p tcp --dport 8080 -j DROP
root@juan-VirtualBox:/home/juan# ufw status
Status: active
```

To	Action	From
--	----	----
22/tcp	ALLOW	Anywhere
80/tcp	ALLOW	Anywhere
443	ALLOW	Anywhere
Anywhere	DENY	192.168.1.20
8080	DENY	Anywhere
22/tcp (v6)	ALLOW	Anywhere (v6)
80/tcp (v6)	ALLOW	Anywhere (v6)
443 (v6)	ALLOW	Anywhere (v6)
8080 (v6)	DENY	Anywhere (v6)

```
May 7 17:34
root@juan-VirtualBox: /home/juan# iptables -L
Chain INPUT (policy DROP)
target    prot opt source                destination
ufw-before-logging-input all -- anywhere             anywhere
ufw-before-input all -- anywhere             anywhere
ufw-after-input all -- anywhere             anywhere
ufw-after-logging-input all -- anywhere             anywhere
ufw-reject-input all -- anywhere             anywhere
ufw-track-input all -- anywhere             anywhere
ACCEPT    all -- 192.168.1.45         anywhere
DROP      all -- 192.168.1.45         anywhere
DROP      tcp -- anywhere             anywhere             tcp dpt:http-alt

Chain FORWARD (policy DROP)
target    prot opt source                destination
ufw-before-logging-forward all -- anywhere             anywhere
ufw-before-forward all -- anywhere             anywhere
ufw-after-forward all -- anywhere             anywhere
ufw-after-logging-forward all -- anywhere             anywhere
ufw-reject-forward all -- anywhere             anywhere
ufw-track-forward all -- anywhere             anywhere

Chain OUTPUT (policy ACCEPT)
target    prot opt source                destination
ufw-before-logging-output all -- anywhere             anywhere
ufw-before-output all -- anywhere             anywhere
ufw-after-output all -- anywhere             anywhere
ufw-after-logging-output all -- anywhere             anywhere
```

```
May 7 17:36
root@juan-VirtualBox: /home/juan# iptables -L
target    prot opt source                destination
ACCEPT    tcp -- anywhere             anywhere             ctstate NEW
ACCEPT    udp -- anywhere             anywhere             ctstate NEW

Chain ufw-user-forward (1 references)
target    prot opt source                destination

Chain ufw-user-input (1 references)
target    prot opt source                destination
ACCEPT    tcp -- anywhere             anywhere             tcp dpt:ssh
ACCEPT    tcp -- anywhere             anywhere             tcp dpt:http
ACCEPT    tcp -- anywhere             anywhere             tcp dpt:https
ACCEPT    udp -- anywhere             anywhere             udp dpt:https
DROP      all -- 192.168.1.20         anywhere
DROP      tcp -- anywhere             anywhere             tcp dpt:http-alt
DROP      udp -- anywhere             anywhere             udp dpt:8080

Chain ufw-user-limit (0 references)
target    prot opt source                destination
LOG      all -- anywhere             anywhere             limit: avg 3/min burst 5 LOG
level warn prefix "[UFW LIMIT BLOCK] "
REJECT    all -- anywhere             anywhere             reject-with icmp-port-unreach
hable

Chain ufw-user-limit-accept (0 references)
target    prot opt source                destination
ACCEPT    all -- anywhere             anywhere

Chain ufw-user-logging-forward (0 references)
```