UNIT 11.COMPUTER NETWORKS

Iptables. Examples

Computer Systems
CFGS DAW

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Licencia

Nomenclatura

A lo largo de este tema se utilizarán distintos símbolos para distinguir elementos importantes dentro del contenido. Estos símbolos son:

Actividad opcional. Normalmente hace referencia a un contenido que se ha comentado en la documentación por encima o que no se ha hecho, pero es interesante que le alumno investigue y practique. Son tipos de actividades que no entran para examen

Atención. Hace referencia a un tipo de actividad donde los alumnos suelen cometer equivocaciones.

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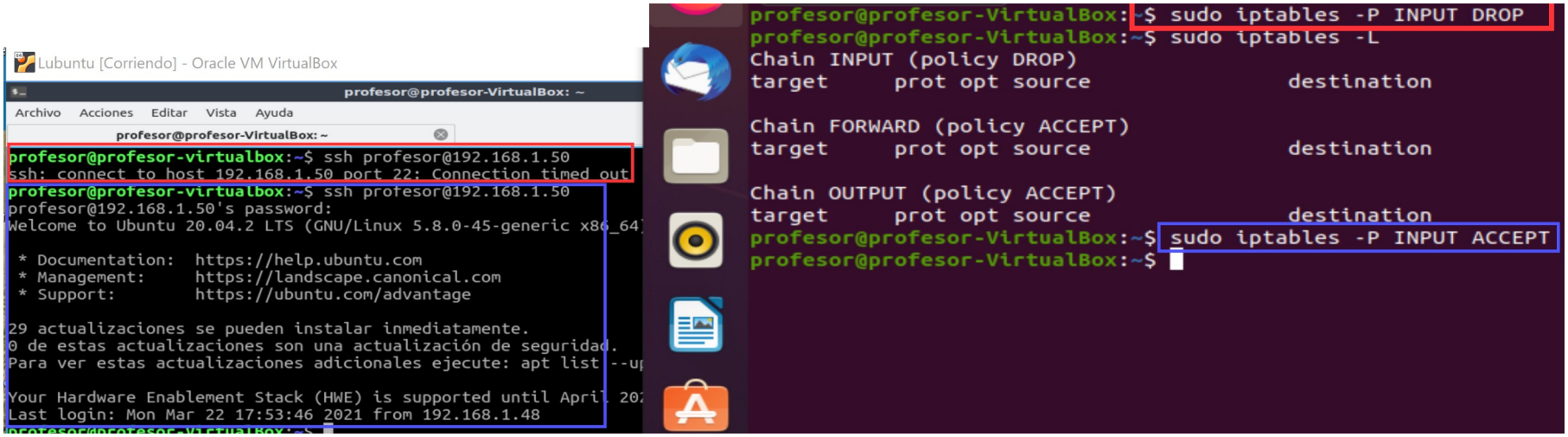
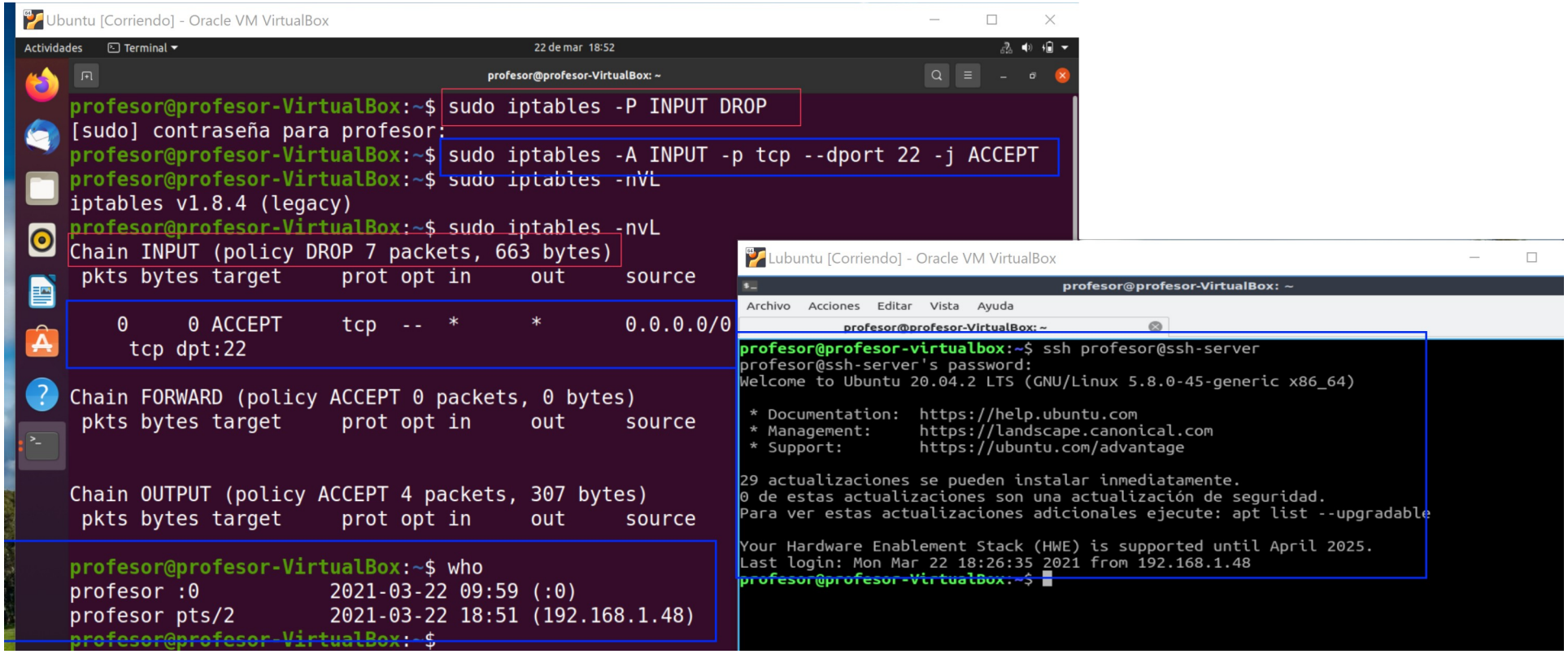
Iptables. Examples

1.1 Example 1



1. Server (right) (in red): the incoming connections are blocked.
2. Client (left) (in red) tries to connect using ssh, and it gets a timeout.
3. Server (right) (in blue) the incoming connections are allowed.
4. Client (left) (in blue) can connect using ssh.

1.2 Example 2



1. Server (left) (in red): the incoming policy is changed to DROP.
2. Server (left) (in blue): add a new rule to accept incoming connections to port 22 (ssh) using protocol (tcp)
3. Server (left) (in blue): check the new network security configuration.
4. Client (left) (in blue) can connect using ssh.
5. The command who shows the users connected: remote client (192.168.1.48).

1.3 Example 3

- Blocking http and https protocols so that the user cannot access websites.

```
sudo iptables -A OUTPUT -p tcp --dport 80 -j DROP
sudo iptables -A OUTPUT -p tcp --dport 443 -j DROP
```

- Using **wget** command (like using a web browser) to connect. *Had to CTRL+C to stop after a couple of minutes.*

```
profesor@profesor-VirtualBox:~$ wget http://www.google.es
--2021-03-23 11:23:16--  http://www.google.es/
Resolviendo www.google.es (www.google.es)... 142.250.200.131, 2a00:1450:4003:800::2003
Conectando con www.google.es (www.google.es)[142.250.200.131]:80... ^C
profesor@profesor-VirtualBox:~$ wget https://www.google.es
--2021-03-23 11:24:32--  https://www.google.es/
Resolviendo www.google.es (www.google.es)... 142.250.200.131, 2a00:1450:4003:800::2003
Conectando con www.google.es (www.google.es)[142.250.200.131]:443... ^C
```

- Deleting rule that blocks outgoing connections to port 443 (https). First, you must get the rule number and the delete it.

```
profesor@profesor-VirtualBox:~$ sudo iptables -L OUTPUT --line-numbers
Chain OUTPUT (policy ACCEPT)
num  target     prot opt source               destination
1    DROP       tcp  --  anywhere             anywhere             tcp dpt:http
2    DROP       tcp  --  anywhere             anywhere             tcp dpt:https
profesor@profesor-VirtualBox:~$ sudo iptables -D OUTPUT 2
profesor@profesor-VirtualBox:~$ wget https://www.google.es
--2021-03-23 11:29:28--  https://www.google.es/
Resolviendo www.google.es (www.google.es)... 142.250.200.131, 2a00:1450:4003:808::2003
Conectando con www.google.es (www.google.es)[142.250.200.131]:443... conectado.
Petición HTTP enviada, esperando respuesta... 200 OK
Longitud: no especificado [text/html]
Guardando como: “index.html”

index.html                [ <=>                 ]  13,54K  --.-KB/s    en 0s

2021-03-23 11:29:28 (55,2 MB/s) - “index.html” guardado [13861]
```

1.4 Example 4

- Deleting all rules and verifying.

```
profesor@profesor-VirtualBox:~$ sudo iptables -F
[sudo] contraseña para profesor:
profesor@profesor-VirtualBox:~$ sudo iptables -nvL
Chain INPUT (policy ACCEPT 4 packets, 128 bytes)
 pkts bytes target     prot opt in     out     source               destination


Chain FORWARD (policy ACCEPT 0 packets, 0 bytes)
 pkts bytes target     prot opt in     out     source               destination


Chain OUTPUT (policy ACCEPT 2 packets, 64 bytes)
 pkts bytes target     prot opt in     out     source               destination
```

1.5 Activities

1. How would you block a ping connection to your computer?
2. First, add a rule to drop all incoming connections to the port 22. Then, add another rule that accepts all incoming connections from an IP to that port (22).