

## PARTIE 2 : MISE EN PLACE D'UN ROUTEUR SOUS LINUX AVEC AGENT RELAIS DHCP

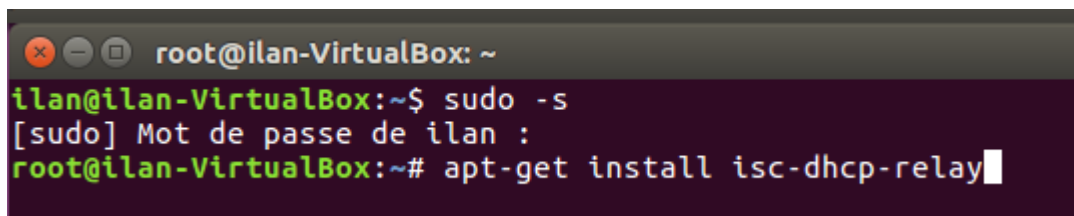
### Prérequis:

Un serveur DHCP sous Linux.

Une machine Linux avec deux interfaces qui jouera le rôle de routeur et d'agent relais DHCP.

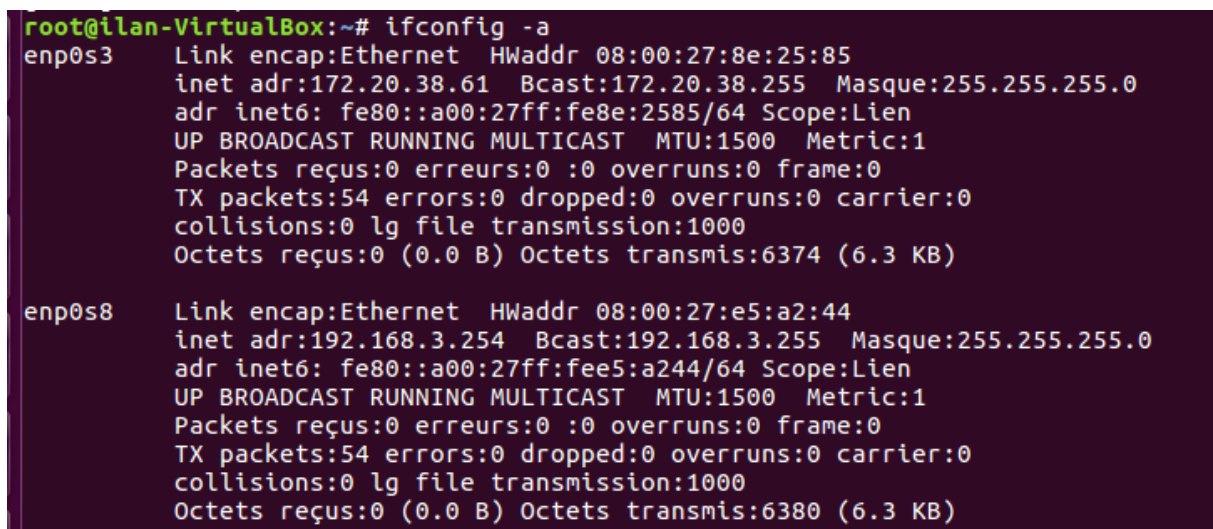
Un client DHCP Windows/Linux.

Avant de mettre en place le routage, il est nécessaire de télécharger le paquet suivant :



```
root@ilan-VirtualBox: ~  
ilan@ilan-VirtualBox:~$ sudo -s  
[sudo] Mot de passe de ilan :  
root@ilan-VirtualBox:~# apt-get install isc-dhcp-relay
```

### Installation et configuration du routage



```
root@ilan-VirtualBox:~# ifconfig -a  
enp0s3      Link encap:Ethernet  HWaddr 08:00:27:8e:25:85  
            inet adr:172.20.38.61  Bcast:172.20.38.255  Masque:255.255.255.0  
            adr inet6: fe80::a00:27ff:fe8e:2585/64  Scope:Lien  
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
            Packets reçus:0 erreurs:0 :0 overruns:0 frame:0  
            TX packets:54 errors:0 dropped:0 overruns:0 carrier:0  
            collisions:0 lg file transmission:1000  
            Octets reçus:0 (0.0 B) Octets transmis:6374 (6.3 KB)  
  
enp0s8      Link encap:Ethernet  HWaddr 08:00:27:e5:a2:44  
            inet adr:192.168.3.254  Bcast:192.168.3.255  Masque:255.255.255.0  
            adr inet6: fe80::a00:27ff:fee5:a244/64  Scope:Lien  
            UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1  
            Packets reçus:0 erreurs:0 :0 overruns:0 frame:0  
            TX packets:54 errors:0 dropped:0 overruns:0 carrier:0  
            collisions:0 lg file transmission:1000  
            Octets reçus:0 (0.0 B) Octets transmis:6380 (6.3 KB)
```

On se rend dans le dossier `/etc/network`. On édite le fichier `interfaces`.

```
root@ilan-VirtualBox:~# gedit /etc/network/interfaces
```

```
# interfaces(5) file used by ifup(8) and ifdown(8)
auto lo
iface lo inet loopback

auto enp0s8
iface enp0s8 inet static
address 192.168.3.254
netmask 255.255.255.0

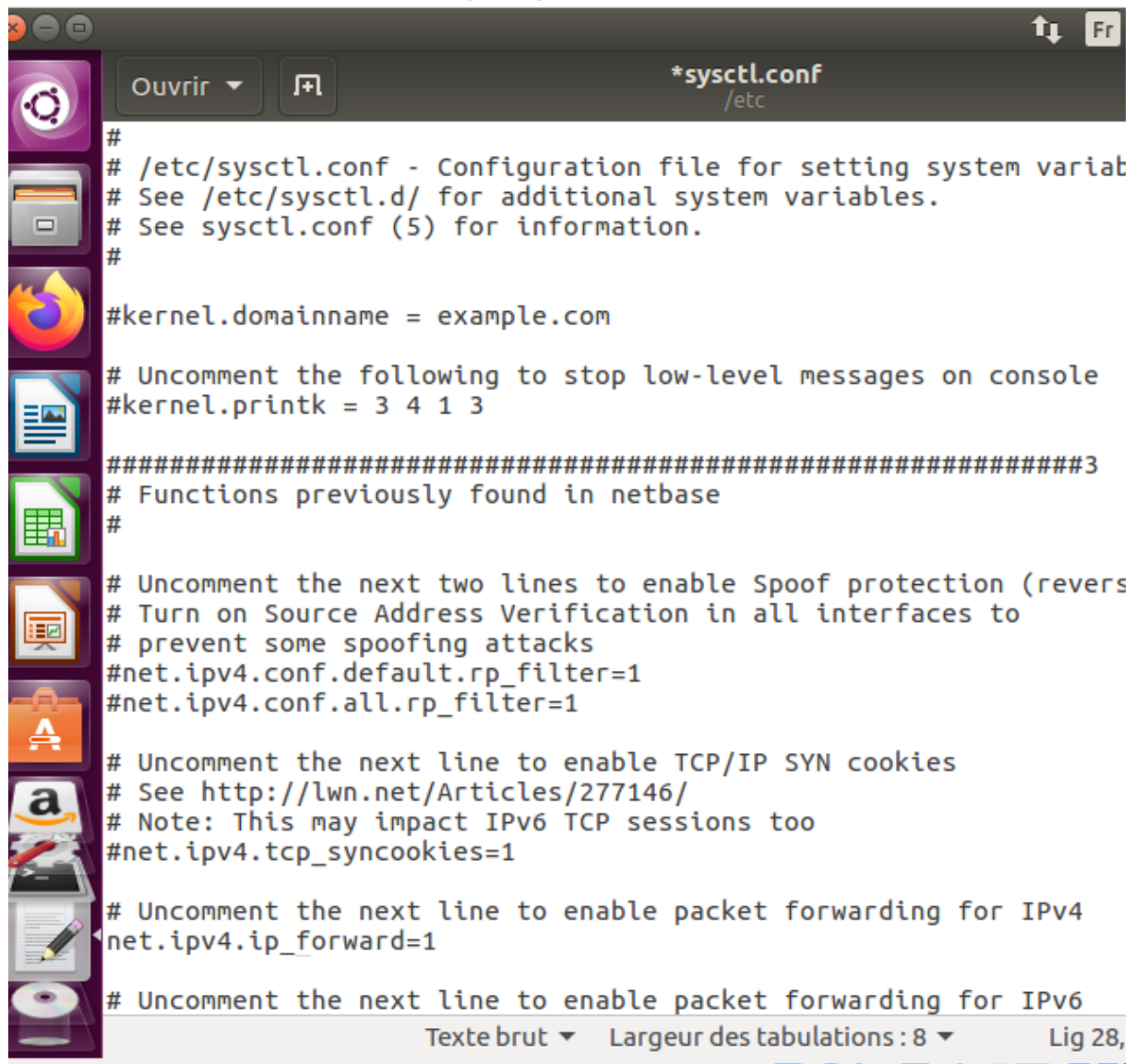
auto enp0s3
iface enp0s3 inet static
address 172.20.38.61
netmask 255.255.255.0
```

On exécute ensuite la commande :

```
root@ilan-VirtualBox:~# service networking restart
```

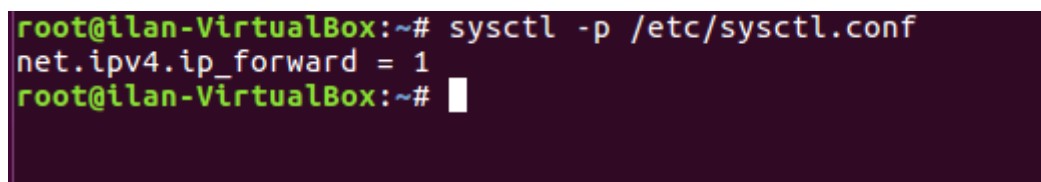
On configure ensuite le routage. Pour cela on se rend dans le dossier `/etc` et on édite le fichier `sysctl.conf`

```
root@ilan-VirtualBox:~# gedit /etc/sysctl.conf
```



```
#
# /etc/sysctl.conf - Configuration file for setting system variat
# See /etc/sysctl.d/ for additional system variables.
# See sysctl.conf (5) for information.
#
#kernel.domainname = example.com
# Uncomment the following to stop low-level messages on console
#kernel.printk = 3 4 1 3
#####3
# Functions previously found in netbase
#
# Uncomment the next two lines to enable Spoof protection (revers
# Turn on Source Address Verification in all interfaces to
# prevent some spoofing attacks
#net.ipv4.conf.default.rp_filter=1
#net.ipv4.conf.all.rp_filter=1
# Uncomment the next line to enable TCP/IP SYN cookies
# See http://lwn.net/Articles/277146/
# Note: This may impact IPv6 TCP sessions too
#net.ipv4.tcp_syncookies=1
# Uncomment the next line to enable packet forwarding for IPv4
net.ipv4.ip_forward=1
# Uncomment the next line to enable packet forwarding for IPv6
```

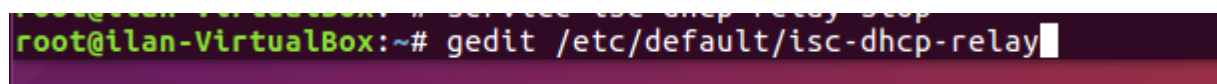
On active ensuite le routage avec la commande



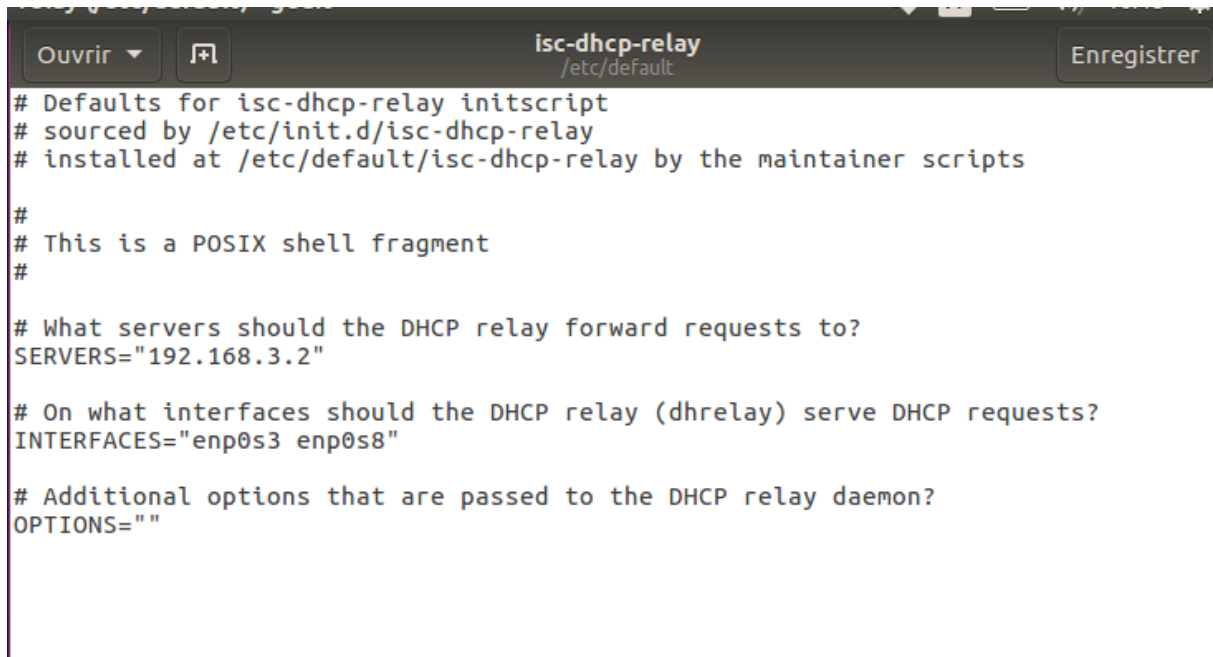
```
root@ilan-VirtualBox:~# sysctl -p /etc/sysctl.conf
net.ipv4.ip_forward = 1
root@ilan-VirtualBox:~#
```

## Mise en place de l'agent DHCP Relay

On se rend dans le dossier **/etc/default** et on édite le fichier **isc-dhcp-relay**



```
root@ilan-VirtualBox:~# gedit /etc/default/isc-dhcp-relay
```



The screenshot shows a file editor window titled 'isc-dhcp-relay /etc/default'. The file content is as follows:

```
# Defaults for isc-dhcp-relay initscript
# sourced by /etc/init.d/isc-dhcp-relay
# installed at /etc/default/isc-dhcp-relay by the maintainer scripts

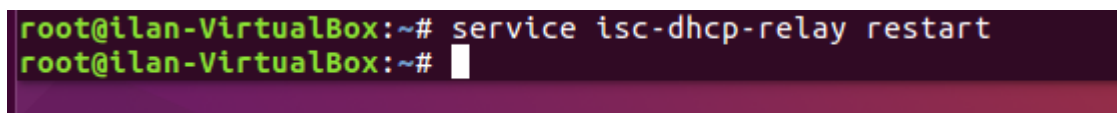
#
# This is a POSIX shell fragment
#

# What servers should the DHCP relay forward requests to?
SERVERS="192.168.3.2"

# On what interfaces should the DHCP relay (dhrelay) serve DHCP requests?
INTERFACES="enp0s3 enp0s8"

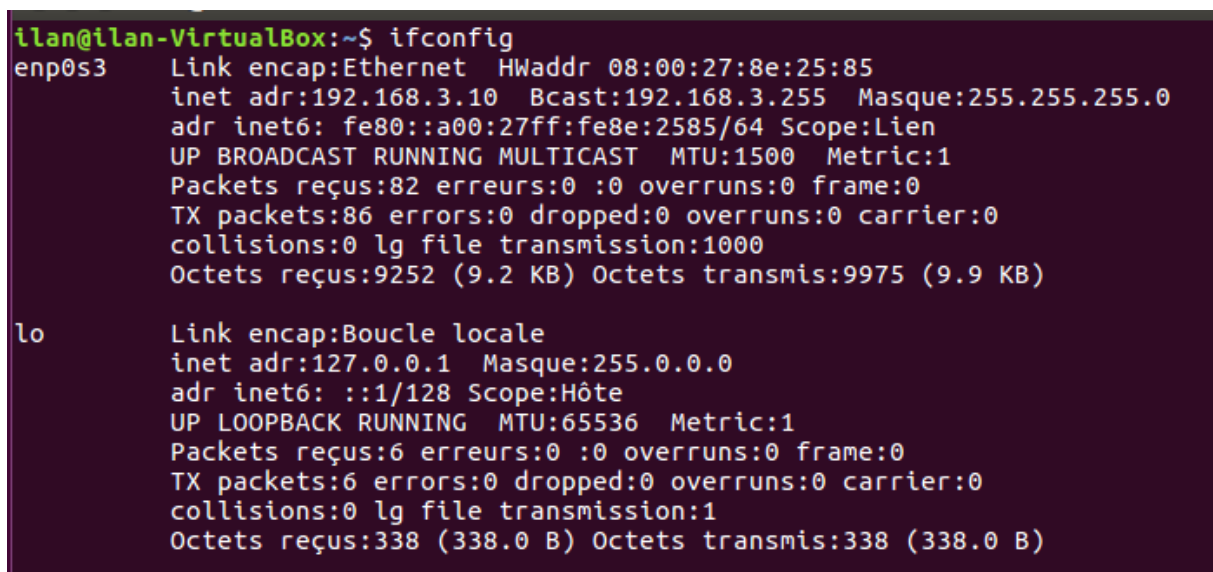
# Additional options that are passed to the DHCP relay daemon?
OPTIONS=""
```

On active le DHCP relay avec la commande suivante :



```
root@ilan-VirtualBox:~# service isc-dhcp-relay restart
root@ilan-VirtualBox:~#
```

On lance le DHCP et le client, et on remarque que le client récupère correctement une adresse IP.



```
ilan@ilan-VirtualBox:~$ ifconfig
enp0s3  Link encap:Ethernet  HWaddr 08:00:27:8e:25:85
        inet adr:192.168.3.10  Bcast:192.168.3.255  Masque:255.255.255.0
        adr inet6: fe80::a00:27ff:fe8e:2585/64  Scope:Lien
        UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
        Packets reçus:82 erreurs:0 :0 overruns:0 frame:0
        TX packets:86 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 lg file transmission:1000
        Octets reçus:9252 (9.2 KB) Octets transmis:9975 (9.9 KB)

lo      Link encap:Boucle locale
        inet adr:127.0.0.1  Masque:255.0.0.0
        adr inet6: ::1/128  Scope:Hôte
        UP LOOPBACK RUNNING  MTU:65536  Metric:1
        Packets reçus:6 erreurs:0 :0 overruns:0 frame:0
        TX packets:6 errors:0 dropped:0 overruns:0 carrier:0
        collisions:0 lg file transmission:1
        Octets reçus:338 (338.0 B) Octets transmis:338 (338.0 B)
```