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### Configuration réseau

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## Consulter configuration MAC

Consulter association entre adresse réseau (IP) et adresse MAC (Éthernet)

- arp

```
#arp -s 192.168.1.1 ca:fe:00:ca:fe:00
```

```
#arp
```

Address	HWtype	HWaddress	Flags	Mask	Iface
172.21.60.1	ether	00:e0:b1:a9:75:c0	C		eth0
192.168.1.1	ether	00:ca:fe:00:ca:fe	CM		eth0

- iproute2

```
#ip neighbor add 192.168.1.1 lladdr 00:ca:fe:00:ca:fe dev eth0
```

```
#ip neighbor show
```

```
172.21.60.1 dev eth0 lladdr 00:e0:b1:a9:75:c0 STALE  
192.168.1.1 dev eth0 lladdr 00:ca:fe:00:ca:fe PERMANENT
```

## Changer configuration MAC

Changer son adresse MAC.

- utiliser ifconfig

```
#ifconfig eth0 hw ether 00:ca:fe:00:ca:fe
```

```
#ifconfig
```

```
eth0      Link encap:Ethernet  HWaddr 00:ca:fe:00:ca:fe
```

```
...
```

- utiliser les fonctionnalités d'iproute2

```
#ip link set eth0 addr 00:ca:fe:00:ca:fe
```

```
#ip link show
```

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state  
   UNKNOWN mode DEFAULT group default
```

```
   link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
```

```
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state  
   UP mode DEFAULT group default qlen 1000
```

```
   link/ether 00:ca:fe:00:ca:fe brd ff:ff:ff:ff:ff:ff
```

## VLAN sous linux

- linux prend en charge le protocole 802.1Q et permet à une carte réseaux d'être présente dans plusieurs VLAN
- configuration au choix :

```
#modprobe 8021q
#vconfig add eth0 20
#ifconfig eth0.20 192.168.1.1/24

#modprobe 8021q
#ip link add link eth0 name eth0.20 type vlan id 20
#ip addr add 192.168.1.1/24 dev eth0.20
```

- il existe aussi des alias de cartes réseaux
- l'avantage de la technologie VLAN est de pouvoir appliquer des règles de filtrages → iptables

## Configurer configuration IP 1/2

```
#ifconfig
```

```
eth0  Lien encap:Ethernet  HWaddr 00:00:C0:9A:01:F2
      inet adr:192.168.0.7 Bcast:192.168.0.255 Masque:255.255.255.0
      UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
      RX packets:0 errors:0 dropped:0 overruns:0 frame:0
      TX packets:0 errors:197 dropped:0 overruns:0 carrier:197
      collisions:0 lg file transmission:100
      RX bytes:0 (0.0 b)  TX bytes:0 (0.0 b)
      Interruption:10 Adresse de base:0xc400
```

```
lo    Lien encap:Boucle locale
      inet adr:127.0.0.1  Masque:255.0.0.0
      UP LOOPBACK RUNNING  MTU:16436  Metric:1
      RX packets:188 errors:0 dropped:0 overruns:0 frame:0
      TX packets:188 errors:0 dropped:0 overruns:0 carrier:0
      collisions:0 lg file transmission:0
      RX bytes:14264 (13.9 Kb)  TX bytes:14264 (13.9 Kb)
```

## Configurer configuration IP 2/2

```
#ip addr
```

```
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 16436 qdisc noqueue state UNKNOWN
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast st
    link/ether 00:00:c0:9a:01:f2 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.1/24 brd 192.168.1.255 scope global eth0
    inet6 fe80::200:c0ff:fe9a:01f2/64 scope link
        valid_lft forever preferred_lft forever
```

## Changer configuration IP

Trois solutions :

- configurer le fichier `/etc/network/interface` en remplaçant  
`iface eth0 inet dhcp`  
par :  
`iface eth0 inet static`  
`address 192.168.1.1`  
`netmask 255.255.255.0`
- utiliser `ifconfig`  
`#ifconfig eth0 192.168.1.1/24`
- utiliser les fonctionnalités d'`iproute2` (consultation `ip addr show`)  
`#ip addr add 192.168.1.1/24 dev eth0`

## Routage statique

Solutions :

- configurer le fichier `/etc/network/interface` en remplaçant

```
iface eth0 inet dhcp
```

par :

```
iface eth0 inet static
```

```
address 192.168.1.1
```

```
netmask 255.255.255.0
```

```
gateway 192.168.1.254
```

```
# route statique supplémentaire
```

```
up route add -net 172.20.11.0/16 gw 192.168.1.253 dev eth0
```

- systemd
- NetworkManager
- utiliser la commande `ip`

```
#ip route add 172.20.11.0/16 via 192.168.1.253
```
- utiliser la commande `route`

```
#route add -net 172.20.11.0/16 gw 192.168.1.253
```



## Routes

- route

```
#route
```

```
Table de routage IP du noyau
```

Destination	Passerelle	Genmask	Indic	Metric	Ref
172.21.60.0	*	255.255.252.0	U	0	0
10.0.0.0	172.21.63.5	255.0.0.0	UG	0	0
default	172.21.60.1	0.0.0.0	UG	100	0

- ip route show

```
#ip route
```

```
172.21.60.0/22 dev eth0 proto kernel scope link src 172.21.62.8  
10.0.0.0/8 via 172.21.63.5 dev eth0  
default via 172.21.60.1 dev eth0 metric 100
```