SAE1.02 Société 4

S’initier au réseaux informatiques

Sommaire:

1.Gant

Untitled Gantt Project

13 déc. 2023

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Tâches

Nom	Date de début	Date de fin
Matrice RACI	07/12/2023	07/12/2023
Recherche Matériel	07/12/2023	07/12/2023
Draw.io	07/12/2023	07/12/2023
Gantt	07/12/2023	07/12/2023
Maquette Cisco	13/12/2023	13/12/2023
Ping, Capture de trames (cisco)	13/12/2023	13/12/2023
DNS, DHCP (cisco)	13/12/2023	13/12/2023
Test VM	19/12/2023	19/12/2023
Capture de trames (VM)	19/12/2023	19/12/2023
Cablage (réel)	15/01/2024	15/01/2024
Configuration du Switch	15/01/2024	15/01/2024
Configuration du Routeur	15/01/2024	15/01/2024
DHCP, DNS (réel)	15/01/2024	15/01/2024
Web (apache) (réel)	15/01/2024	15/01/2024
Capture de trames (réel)	15/01/2024	15/01/2024

Untitled Gantt Project

Diagramme de Gantt

2.Matrice RACI

A1 | fx

	A	B	C	D	E
1		Pierre	Mathis	Rania	Rémi
2	Cablage	C	R, A	I	C
3	Configuration du Switch	R, A	I	C	I
4	Configuration du Routeur	C	C	I	R, A
5	DHCP, DNS	I	C	R, A	I
6	Web (apache)	R, A	I	C	I
7	Capture de trames	I	R, A	R	C
8	Rapport final	R, A	C	C	C
9					

R = Responsable
A = Autorité
C = Consultant
I = Informé

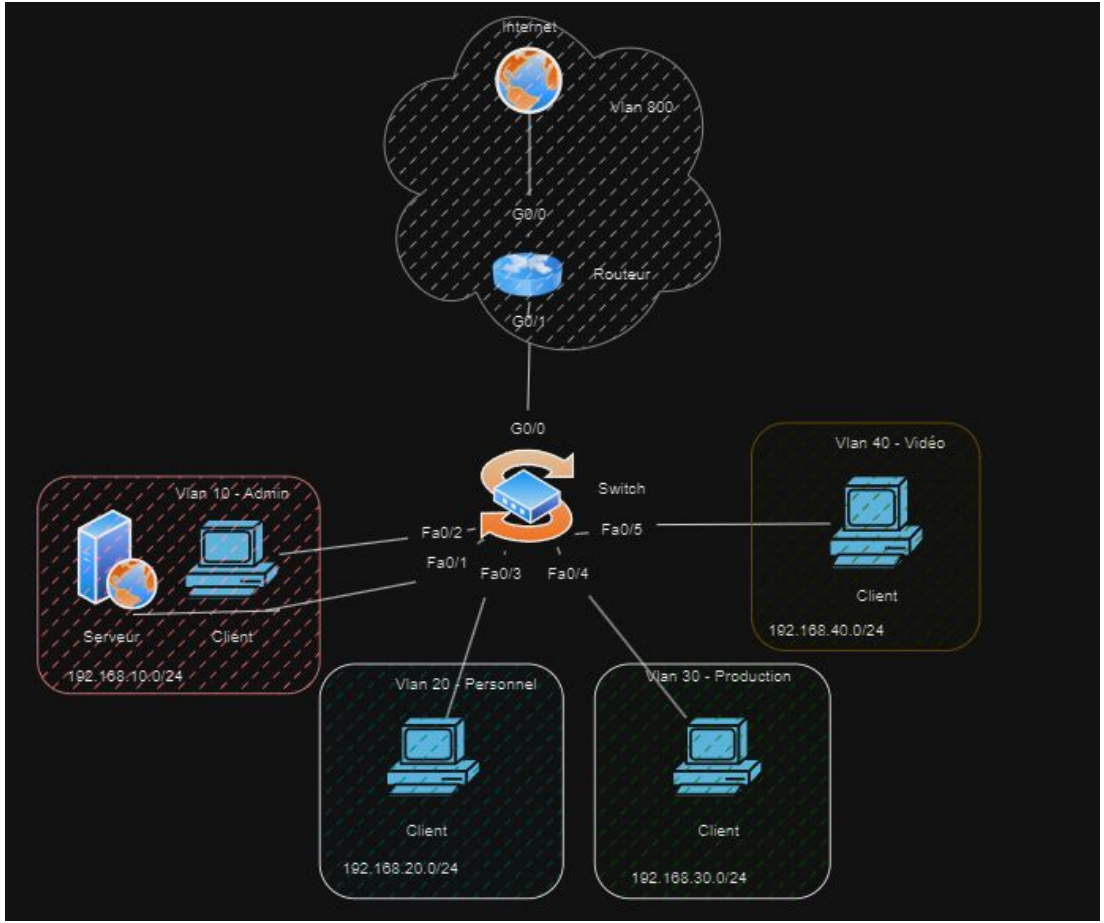
3.Recherche Matérielle

Matérielle requis :

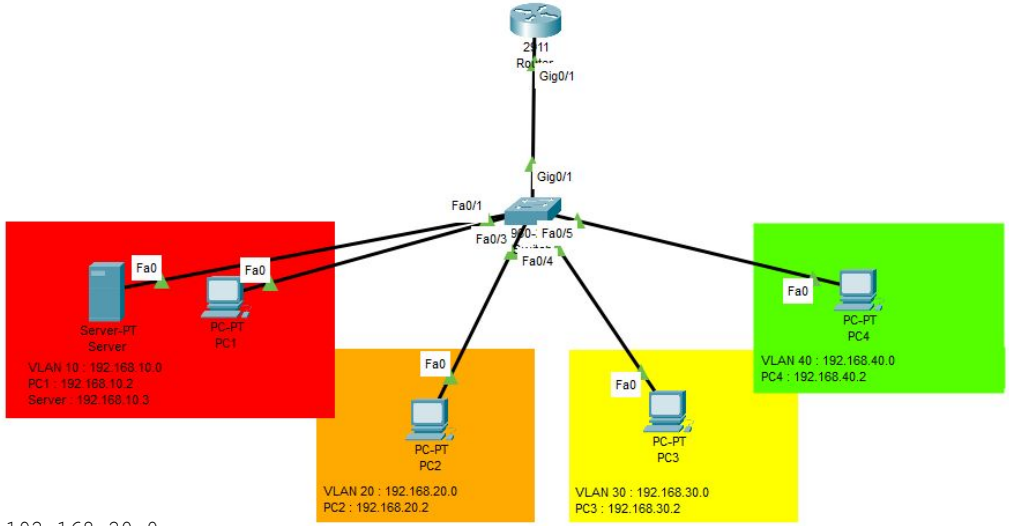
- Câbles RJ45
- 5 Machines (4 clients + serveur web)
- 1 Routeur Cisco (C841M-4X)
- 1 Switch Cisco (2960-24TT)
- Câbles console pour la configuration des équipements Cisco

Plus d’informations sur le matérielle utiliser dans le rapport final disponible sur le moodle.

4.Draw.io


Internet
Vlan 800
G0/0
Routeur
G0/1
G0/0
Switch
Fa0/2
Fa0/1
Fa0/3
Fa0/4
Fa0/5
Vlan 10 - Admin
Serveur
Client
192.168.10.0/24
Vlan 40 - Vidéo
Client
192.168.40.0/24
Vlan 20 - Personnel
Client
192.168.20.0/24
Vlan 30 - Production
Client
192.168.30.0/24

5.Maquette Cisco



IP Machines Clientes et VLAN :

VLAN 10 -> 192.168.10.0

g0/0.10 : 192.168.10.1
192.168.20.1
PC0 : 192.168.10.2
WEB : 192.168.10.3

VLAN 20 -> 192.168.20.0

g0/0.20 :

PC1 : 192.168.20.2

VLAN 30 -> 192.168.30.0

g0/0.30 : 192.168.30.1
192.168.40.1
PC2 : 192.168.30.2

VLAN 40 -> 192.168.40.0

g0/0.40 :

PC3 : 192.168.40.2

6.Configuration VLAN, DNS, DHCP, ACL, (Cisco)

Switch :

```
vlan 10
name ADMIN
vlan 20
name PERSONNEL
vlan 30
name PRODUCTION
vlan 40
name VIDEO
```

```
interface FastEthernet 0/1
 switchport access Vlan 10
 switchport mode access

interface FastEthernet 0/2
 switchport access Vlan 10
 switchport mode access

interface FastEthernet 0/3
 switchport access Vlan 20
```

```
interface FastEthernet 0/4
 switchport access Vlan 30
 switchport mode access

interface FastEthernet 0/5
 switchport access Vlan 40
 switchport mode access

interface FastEthernet 0/5
 switchport mode trunk
```

Routeur : Configuration en mode trunk, et DHCP, DNS

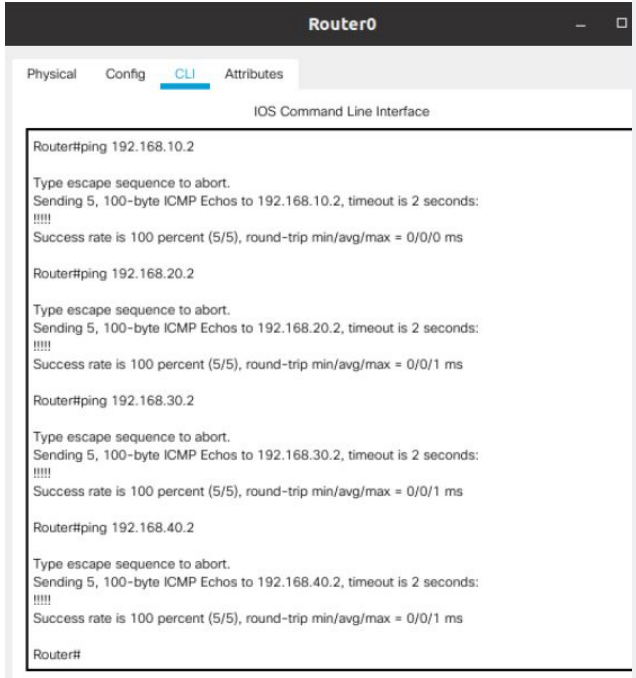
```
ip dhcp pool VLAN  10
 network 192.168.10.0 255.255.255.0
 default-router 192.168.10.1

ip dhcp pool VLAN  20
 network 192.168.20.0 255.255.255.0
 default-router 192.168.20.1

ip dhcp pool VLAN  30
 network 192.168.30.0 255.255.255.0
 default-router 192.168.30.1

ip dhcp pool VLAN  40
 network 192.168.40.0 255.255.255.0
 default-router 192.168.40.1
```

```
interface GigabitEthernet0/0
 no ip address
 duplex auto
 speed auto

interface GigabitEthernet0/0.1
 encapsulation dot1Q 10
 ip address 192.168.10.1 255.255.255.0
 ip access-group 10 in


interface GigabitEthernet0/0.2
 encapsulation dot1Q 20
 ip address 192.168.20.1 255.255.255.0
 ip access-group 20 in


interface GigabitEthernet0/0.3
 encapsulation dot1Q 30
 ip address 192.168.30.1 255.255.255.0
 ip access-group 30 in
```

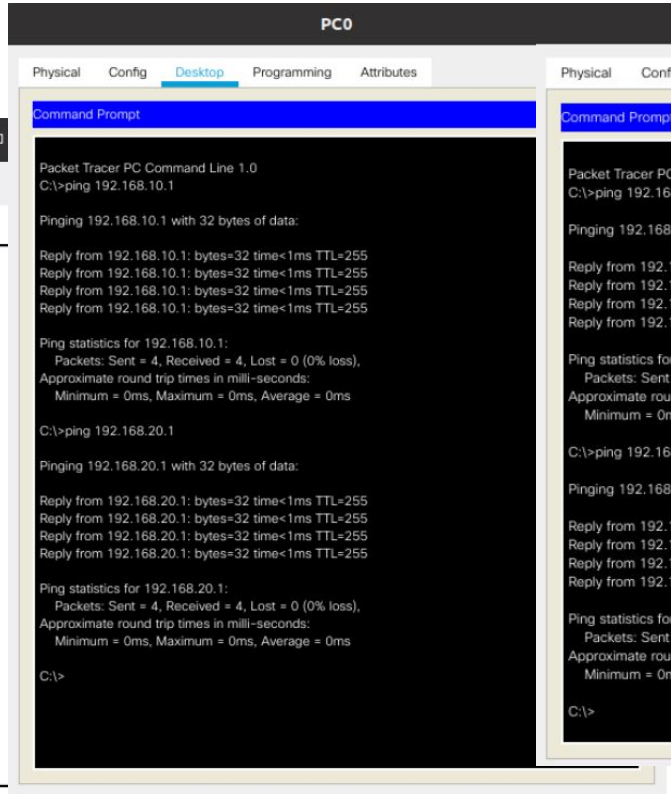
```
interface GigabitEthernet0/0.4
 encapsulation dot1Q 40
 ip address 192.168.40.1 255.255.255.0
 ip access-group 40 in


access-list 10 permit 192.168.10.0 0.0.0.255
access-list 20 permit 192.168.20.0 0.0.0.255
access-list 30 permit 192.168.30.0 0.0.0.255
access-list 40 permit 192.168.40.0 0.0.0.255
```

7.Ping (Cisco)

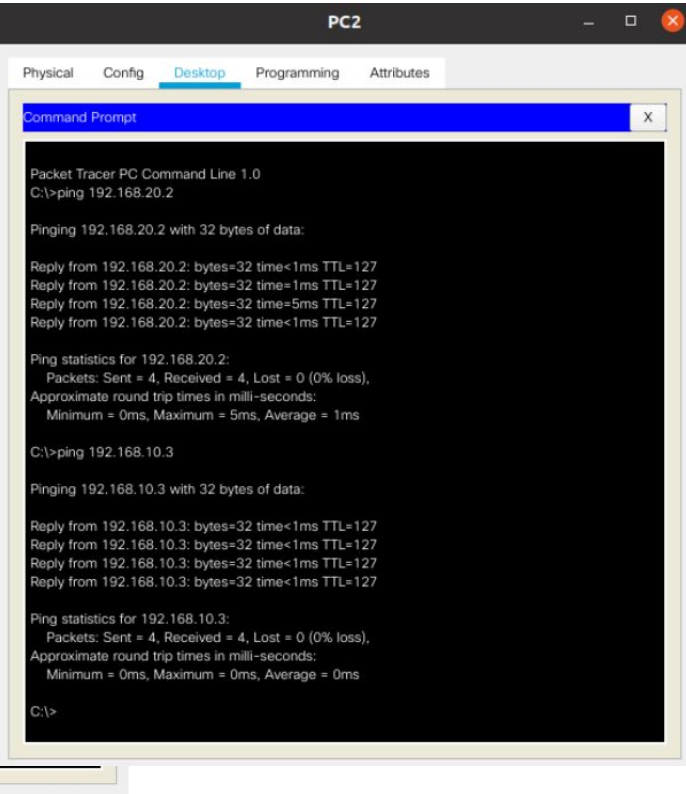
Routeur vers client :



Client vers routeur :



Client vers client:



8.Serveur Apache (VM)

Installation du serveur Apache :

```
sudo apt update
sudo apt install apache2
```

```
administrateur@rt-mv:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor pres>
     Active: active (running) since Tue 2023-12-19 14:25:58 CET; 30s ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 3221 (apache2)
      Tasks: 55 (limit: 2878)
     Memory: 5.0M
        CPU: 21ms
     CGroup: /system.slice/apache2.service
             ├─3221 /usr/sbin/apache2 -k start
             ├─3222 /usr/sbin/apache2 -k start
             └─3223 /usr/sbin/apache2 -k start
```

```
administrateur@rt-mv:~$ sudo ufw allow 'Apache'
Les règles ont été mises à jour
Les règles ont été mises à jour (IPv6)
```

Pour la modification du serveur Apache :

```
cd /var/www/html
sudo -s

nano index.html
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.>
<html xmlns="http://www.w3.org/1999/xhtml">
  <!--
    Modified from the Debian original for Ubuntu
    Last updated: 2022-03-22
    See: https://launchpad.net/bugs/1966004
  -->
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <title>Apache2 Ubuntu Default Page: It works</title>
    <style type="text/css" media="screen">
  * {
    margin: 0px 0px 0px 0px;
    padding: 0px 0px 0px 0px;
  }
```

9.Câblage, Adressage (réel)

	Poste	Switch
Pierre	port 1.5	port 1
Rania	port 4.5	port 4
Remi	port 3.5	port 3
Mathis	port 2.5	port 2

Switch	Routeur
g0/1	g0/0

Adressage :

IP Machines Clientes et VLAN :

VLAN 10 -> 192.168.10.0
g0/0.10 : 192.168.10.1
PC0 : 192.168.10.2
WEB : 192.168.10.3

VLAN 20 -> 192.168.20.0
g0/0.20 : 192.168.20.1
PC1 : 192.168.20.3

VLAN 30 -> 192.168.30.0
g0/0.30 : 192.168.30.1
PC2 : 192.168.30.3

VLAN 40 -> 192.168.40.0
g0/0.40 : 192.168.40.1
PC3 : 192.168.40.2

10.Configuration VLAN, DNS, DHCP, ACL, NAT

Switch :

```
vlan 10
name ADMIN
vlan 20
name PERSONNEL
vlan 30
name PRODUCTION
vlan 40
name VIDEO
```

```
interface FastEthernet 0/1
 switchport access Vlan 10
 switchport mode access

interface FastEthernet 0/2
 switchport access Vlan 20
 switchport mode access

interface FastEthernet 0/3
 switchport access Vlan 30
 switchport mode access
```

```
interface FastEthernet 0/4
 switchport access Vlan 40
 switchport mode access

interface FastEthernet 0/5
 switchport access Vlan 10
 switchport mode access

interface Gigabit g0/1
 switchport mode trunk
```

Routeur - Configuration en mode trunk, et DHCP, DNS

```
ip dhcp pool VLAN 10
 network 192.168.10.0 255.255.255.0
 default-router 192.168.10.1
 dns-server 10.0.0.1

ip dhcp pool VLAN 20
 network 192.168.20.0 255.255.255.0
 default-router 192.168.20.1
 dns-server 10.0.0.1

ip dhcp pool VLAN 30
 network 192.168.30.0 255.255.255.0
 default-router 192.168.30.1
 dns-server 10.0.0.1

ip dhcp pool VLAN 40
 network 192.168.40.0 255.255.255.0
 default-router 192.168.40.1
 dns-server 10.0.0.1
```

```
interface GigabitEthernet0/0
 no ip address
 duplex auto
 speed auto

interface GigabitEthernet0/0.1
 encapsulation dot1Q 10
 ip address 192.168.10.1 255.255.255.0
 ip access-group 10 in


interface GigabitEthernet0/0.2
 encapsulation dot1Q 20
 ip address 192.168.20.1 255.255.255.0
 ip access-group 20 in
```

```
interface GigabitEthernet0/0.3
 encapsulation dot1Q 30
 ip address 192.168.30.1 255.255.255.0
 ip access-group 30 in


interface GigabitEthernet0/0.4
 encapsulation dot1Q 40
 ip address 192.168.40.1 255.255.255.0
 ip access-group 40 in


access-list 10 permit 192.168.10.0 0.0.0.255
access-list 20 permit 192.168.20.0 0.0.0.255
access-list 30 permit 192.168.30.0 0.0.0.255
access-list 40 permit 192.168.40.0 0.0.0.255
```

11.Serveur Web apache (réel)

Installation du serveur Apache :

```
export http_proxy=cache-etu.univ-artois.fr:3128
export https_proxy=cache-etu.univ-artois.fr:3128

sudo apt update
sudo apt install apache2
```

```
administrateur@rt-mv:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor pres>
     Active: active (running) since Tue 2023-12-19 14:25:58 CET; 30s ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 3221 (apache2)
      Tasks: 55 (limit: 2878)
     Memory: 5.0M
        CPU: 21ms
     CGroup: /system.slice/apache2.service
             ├─3221 /usr/sbin/apache2 -k start
             ├─3222 /usr/sbin/apache2 -k start
             └─3223 /usr/sbin/apache2 -k start
```

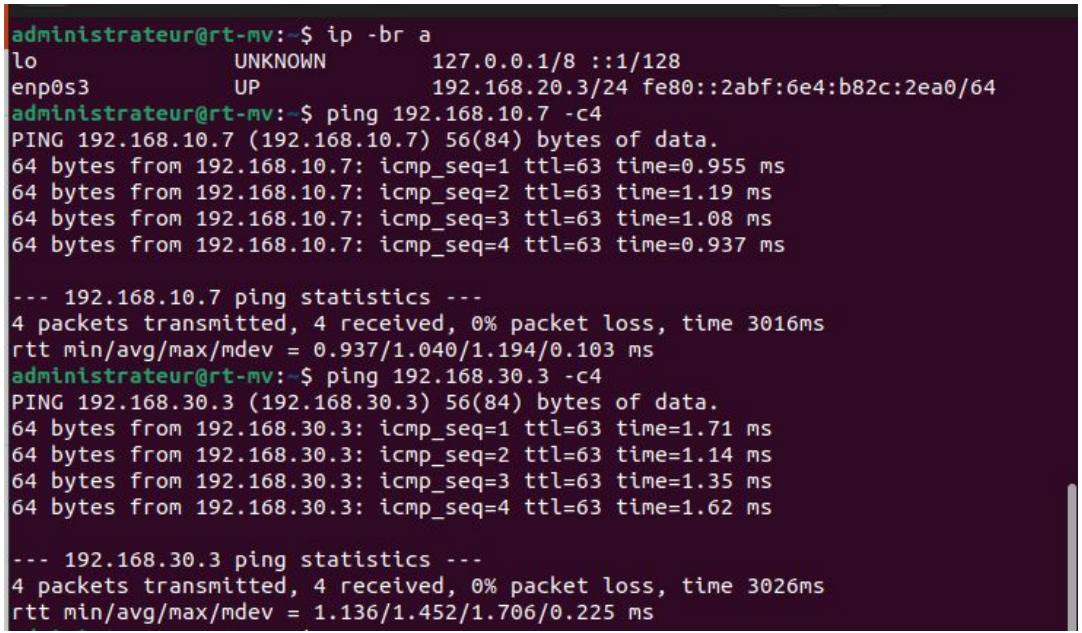
```
administrateur@rt-mv:~$ sudo ufw allow 'Apache'
Les règles ont été mises à jour
Les règles ont été mises à jour (IPv6)
```

Pour la modification du serveur Apache :

```
cd /var/www/html
sudo -s

nano index.html
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3>
<html xmlns="http://www.w3.org/1999/xhtml">
  <!--
    Modified from the Debian original for Ubuntu
    Last updated: 2022-03-22
    See: https://launchpad.net/bugs/1966004
  -->
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <title>Apache2 Ubuntu Default Page: It works</title>
    <style type="text/css" media="screen">
  * {
    margin: 0px 0px 0px 0px;
    padding: 0px 0px 0px 0px;
  }
```

12.Ping (réel)


administrateur@rt-mv:~$ ip -br a
lo UNKNOWN 127.0.0.1/8 ::1/128
enp0s3 UP 192.168.20.3/24 fe80::2abf:6e4:b82c:2ea0/64
administrateur@rt-mv:~$ ping 192.168.10.7 -c4
PING 192.168.10.7 (192.168.10.7) 56(84) bytes of data.
64 bytes from 192.168.10.7: icmp_seq=1 ttl=63 time=0.955 ms
64 bytes from 192.168.10.7: icmp_seq=2 ttl=63 time=1.19 ms
64 bytes from 192.168.10.7: icmp_seq=3 ttl=63 time=1.08 ms
64 bytes from 192.168.10.7: icmp_seq=4 ttl=63 time=0.937 ms
--- 192.168.10.7 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3016ms
rtt min/avg/max/mdev = 0.937/1.040/1.194/0.103 ms
administrateur@rt-mv:~$ ping 192.168.30.3 -c4
PING 192.168.30.3 (192.168.30.3) 56(84) bytes of data.
64 bytes from 192.168.30.3: icmp_seq=1 ttl=63 time=1.71 ms
64 bytes from 192.168.30.3: icmp_seq=2 ttl=63 time=1.14 ms
64 bytes from 192.168.30.3: icmp_seq=3 ttl=63 time=1.35 ms
64 bytes from 192.168.30.3: icmp_seq=4 ttl=63 time=1.62 ms
--- 192.168.30.3 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3026ms
rtt min/avg/max/mdev = 1.136/1.452/1.706/0.225 ms