compte rendu TP2

SMAIL AGHILAS

Groupe TP4

1 - Corrigé du TP1:

Vérification de la box:

```
s21219997@V-PJ-47-065:~$ vagrant box list
m1reseaux (virtualbox, 0)
```

2 - Un reseaux IPv6:

- configuration des machines.
  Le type d'adressage est Unicast.

- Vérifier qu'on a accès à toutes les machines depuis chacune :

  Ping de VM1-6 vers VM2-6

```
m1reseaux@VM1-6:~$ ping6 fc00:1234:2::2
 PING fc00:1234:2::2(fc00:1234:2::2) 56 data bytes
64 bytes from fc00:1234:2::2: icmp_seq=1 ttl=64 time=1.45 ms
64 bytes from fc00:1234:2::2: icmp_seq=2 ttl=64 time=1.12 ms
 ^C
 --- fc00:1234:2::2 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss,time 1002ms
rtt min/avg/max/mdev = 1.121/1.284/1.447/0.163 ms
```

  Ping de VM1-6 vers VM3-6

```
m1reseaux@VM1-6:~$ ping6 fc00:1234:2::3
PING fc00:1234:2::3(fc00:1234:2::3) 56 data bytes
64 bytes from fc00:1234:2::3: icmp_seq=1 ttl=63 time=2.12 ms
64 bytes from fc00:1234:2::3: icmp_seq=2 ttl=63 time=1.74 ms
^C
--- fc00:1234:2::3 ping statistics —
2 packets transmitted, 2 received, 0% packet loss, time
1002ms
rtt min/avg/max/mdev = 1.740/1.929/2.119/0.189 ms
```

  Ping de VM2-6 vers VM1-6

```
m1reseaux@VM2-6:~$ ping6 fc00:1234:1::1
PING fc00:1234:1::1(fc00:1234:1::1) 56 data bytes
64 bytes from fc00:1234:1::1: icmp_seq=1 ttl=64 time=0.940 ms
64 bytes from fc00:1234:1::1: icmp_seq=2 ttl=64 time=1.19 ms
64 bytes from fc00:1234:1::1: icmp_seq=3 ttl=64 time=1.73 ms
^C
--- fc00:1234:1::1 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time
2013ms
rtt min/avg/max/mdev = 0.940/1.284/1.725/0.327 ms
```

Ping de VM2-6 vers VM3-6

```
m1reseaux@VM2-6:~$ ping6 fc00:1234:2::3
PING fc00:1234:2::3(fc00:1234:2::3) 56 data bytes
64 bytes from fc00:1234:2::3: icmp_seq=1 ttl=64 time=0.978 ms
64 bytes from fc00:1234:2::3: icmp_seq=2 ttl=64 time=0.840 ms
^C
--- fc00:1234:2::3 ping statistics —
 2 packets transmitted, 2 received, 0% packet loss, time
1002ms
rtt min/avg/max/mdev = 0.840/0.909/0.978/0.069 ms
```

Ping de VM3-6 vers VM1-6

```
m1reseaux@VM3-6:~$ ping6 fc00:1234:1::1
PING fc00:1234:1::1(fc00:1234:1::1) 56 data bytes
64 bytes from fc00:1234:1::1: icmp_seq=1 ttl=63 time=1.88 ms
64 bytes from fc00:1234:1::1: icmp_seq=2 ttl=63 time=1.41 ms
^C
--- fc00:1234:1::1 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time
1002ms
rtt min/avg/max/mdev = 1.412/1.645/1.879/0.233 ms
```

Ping de VM3-6 vers VM2-6

```
m1reseaux@VM3-6:~$ ping6 fc00:1234:1::2
PING fc00:1234:1::2(fc00:1234:1::2) 56 data bytes
64 bytes from fc00:1234:1::2: icmp_seq=1 ttl=64 time=0.880 ms
64 bytes from fc00:1234:1::2: icmp_seq=2 ttl=64 time=0.813 ms
^C
```

```
--- fc00:1234:1::2 ping statistics —
2 packets transmitted, 2 received, 0% packet loss, time
1002ms
rtt min/avg/max/mdev = 0.813/0.846/0.880/0.033 ms
```

2- Les tables de routage :

La table de routage de VM1-6

```
m1reseaux@VM1-6:~$ ip -6 route
::1 dev lo proto kernel metric 256 pref medium
fc00:1234:1::/64 dev eth1 proto kernel metric 100 pref medium
fe80::/64 dev eth1 proto kernel metric 100 pref medium
fe80::/64 dev eth0 proto kernel metric 256 pref medium
default via fc00:1234:1::2 dev eth1 proto static metric 100
pref medium
```

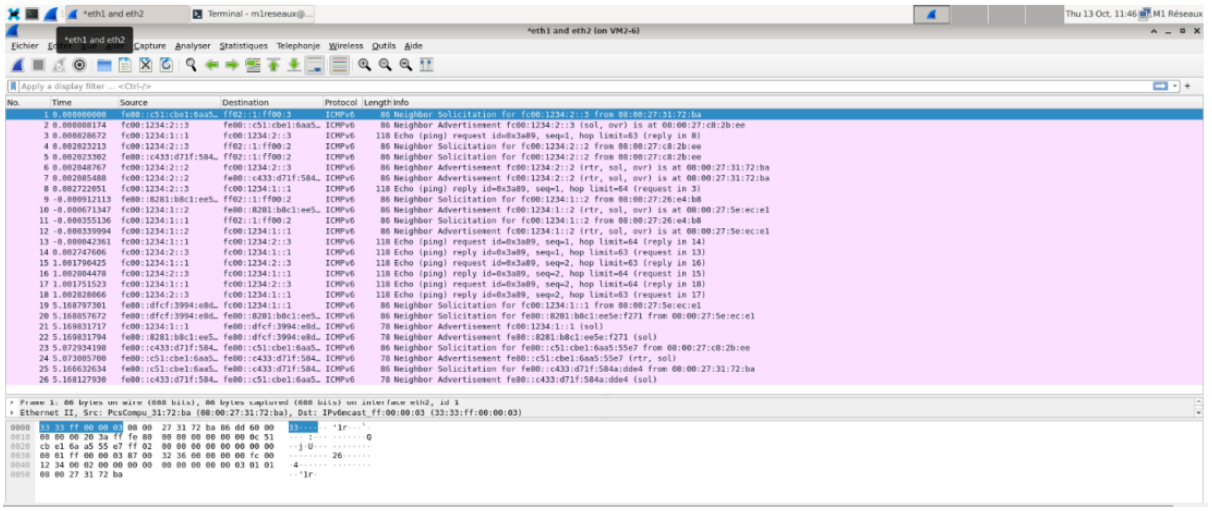
La table de routage de VM2-6

```
m1reseaux@VM2-6:~$ ip -6 route
::1 dev lo proto kernel metric 256 pref medium
fc00:1234:1::/64 dev eth1 proto kernel metric 101 pref medium
fc00:1234:2::/64 dev eth2 proto kernel metric 100 pref medium
fe80::/64 dev eth2 proto kernel metric 100 pref medium
fe80::/64 dev eth1 proto kernel metric 101 pref medium
fe80::/64 dev eth0 proto kernel metric 256 pref medium
```

La table de routage de VM3-6

```
m1reseaux@VM3-6:~$ ip -6 route
::1 dev lo proto kernel metric 256 pref medium
fc00:1234:2::/64 dev eth1 proto kernel metric 100 pref medium
fe80::/64 dev eth1 proto kernel metric 100 pref medium
fe80::/64 dev eth0 proto kernel metric 256 pref medium
default via fc00:1234:2::2 dev eth1 proto static metric 100
pref medium
```

3- Capture du trafic sur VM2-6 :



La machine VM1-6 envoie un message de sollicitation de voisin NS (Neighbor solicitation) vers l'adresse multicast afin d'obtenir l'adresse physique de la machine VM3-6. VM3-6 répond avec un message d'annonce de voisin NA (Neighbor Advertisement) et donne son adresse physique à VM1-6. Puis VM1-6 envoie les paquets ICMP.

3. Configuration réseau semi-automatique

3.2. Configuration de VM2-6

Vérifier que DNS fonctionne :

```
m1reseaux@VM2-6:~$ sudo dhclient eth0
We trust you have received the usual lecture from the local
System
Administrator. It usually boils down to these three things:

            #1) Respect the privacy of others.
             #2) Think before you type.
             #3) With great power comes great responsibility.
      [sudo] password for
```

4. Configuration de fichiers et de services via ansible

Configurations ansible au mode statique :

VM1-6

```yaml
# Configuration eth1 / Ansible playbook
# RAPPEL: eth0 est à vagrant, ne pas y toucher

- hosts: localhost
  remote_user: root
  tasks:

# Configurations Réseaux
  - name: Suppression de la passerelle par défaut
    shell: ip route del default
    ignore_errors: true

  - name: Configuration de VM1/eth1
    nmcli:
      type: ethernet
      conn_name: eth1 via ansible
      ifname: eth1
      state: present
      autoconnect: true
      ip6: fc00:1234:1::1/64

  - name: Configuration de la route vers LAN2 via VM2
    community.general.nmcli:
      type: ethernet
      conn_name: eth1 via ansible
      ifname: eth1
      routes6: fc00:1234:2::/64 fc00:1234:1::2
      state: present

  - name: Activation explicite de la configuration eth1
    shell: nmcli con up "eth1 via ansible"
```

VM2-6

```yaml
# Configuration eth1 / Ansible playbook
# RAPPEL: eth0 est à vagrant, ne pas y toucher

- hosts: localhost
  remote_user: root
  tasks:

# Configurations Réseaux
  - name: Suppression de la passerelle par défaut
    shell: ip route del default
    ignore_errors: true
```

```
  - name: Configuration de VM2/eth1
    nmcli:
      type: ethernet
      conn_name: eth1 via ansible
      ifname: eth1
      state: present
      autoconnect: true
      ip6: fc00:1234:1::2/64

  - name: Configuration de VM2/eth2
    nmcli:
      type: ethernet
      conn_name: eth2 via ansible
      ifname: eth2
      state: present
      autoconnect: true
      ip6: fc00:1234:2::2/64

  - name: Activation du routage IPv6
    sysctl:
      name: net.ipv6.conf.all.forwarding
      value: '1'
      sysctl_set: yes

  - name: Activation explicite de la configuration eth1
    shell: nmcli con up "eth1 via ansible"

  - name: Activation explicite de la configuration eth2
    shell: nmcli con up "eth2 via ansible"
```

VM3-6

```
# Configuration eth1 / Ansible playbook
# RAPPEL: eth0 est à vagrant, ne pas y toucher

- hosts: localhost
  remote_user: root
  tasks:

# Configurations Réseaux
  - name: Suppression de la passerelle par défaut
    shell: ip route del default
    ignore_errors: true

  - name: Configuration de VM3/eth1
    nmcli:
      type: ethernet
      conn_name: eth1 via ansible
      ifname: eth1
      state: present
      autoconnect: true
      ip6: fc00:1234:2::3/64

  - name: Configuration de la route vers LAN1 via VM2
    community.general.nmcli:
```

Configurations ansible au mode automatique :

VM1-6

```yaml
# Configuration eth1 / Ansible playbook
# RAPPEL: eth0 est à vagrant, ne pas y toucher

- hosts: localhost
  remote_user: root
  tasks:

# Configurations Réseaux
  - name: Suppression de la passerelle par défaut
    shell: ip route del default
    ignore_errors: true

  - name: Configuration de VM1-6/eth1
    nmcli:
      type: ethernet
      conn_name: eth1 via ansible
      ifname: eth1
      state: present
      autoconnect: true
      method6: auto

  - name: Activation explicite de la configuration eth1
    shell: nmcli con up "eth1 via ansible"
```

VM2

```yaml
# Configuration eth1 / Ansible playbook
# RAPPEL: eth0 est à vagrant, ne pas y toucher

- hosts: localhost
  remote_user: root
  tasks:

# Configurations Réseaux
  - name: Suppression de la passerelle par défaut
    shell: ip route del default
    ignore_errors: true

  - name: Configuration de VM2/eth1
    nmcli:
      type: ethernet
      conn_name: eth1 via ansible
```

```
      ifname: eth1
      state: present
      autoconnect: true
      ip6: fc00:1234:1::2/64

  - name: Configuration de VM2/eth2
    nmcli:
      type: ethernet
      conn_name: eth2 via ansible
      ifname: eth2
      state: present
      autoconnect: true
      ip6: fc00:1234:2::2/64

  - name: Installer radvd
    package:
      name: radvd
      state: present

  - name: fichier de configuration radvd.conf
    copy:
      src: /vagrant/radvd.conf
      dest: /etc/radvd.conf
      owner: root
      group: root
      mode: '0644'

  - name: Démarrer le service radvd
    service:
      name: radvd
      state: started

  - name: Activation du routage IPv6
    sysctl:
      name: net.ipv6.conf.all.forwarding
      value: '1'
      sysctl set: yes

  - name: Activation explicite de la configuration eth1
    shell: nmcli con up "eth1 via ansible"

  - name: Activation explicite de la configuration eth2
    shell: nmcli con up "eth2 via ansible"
```