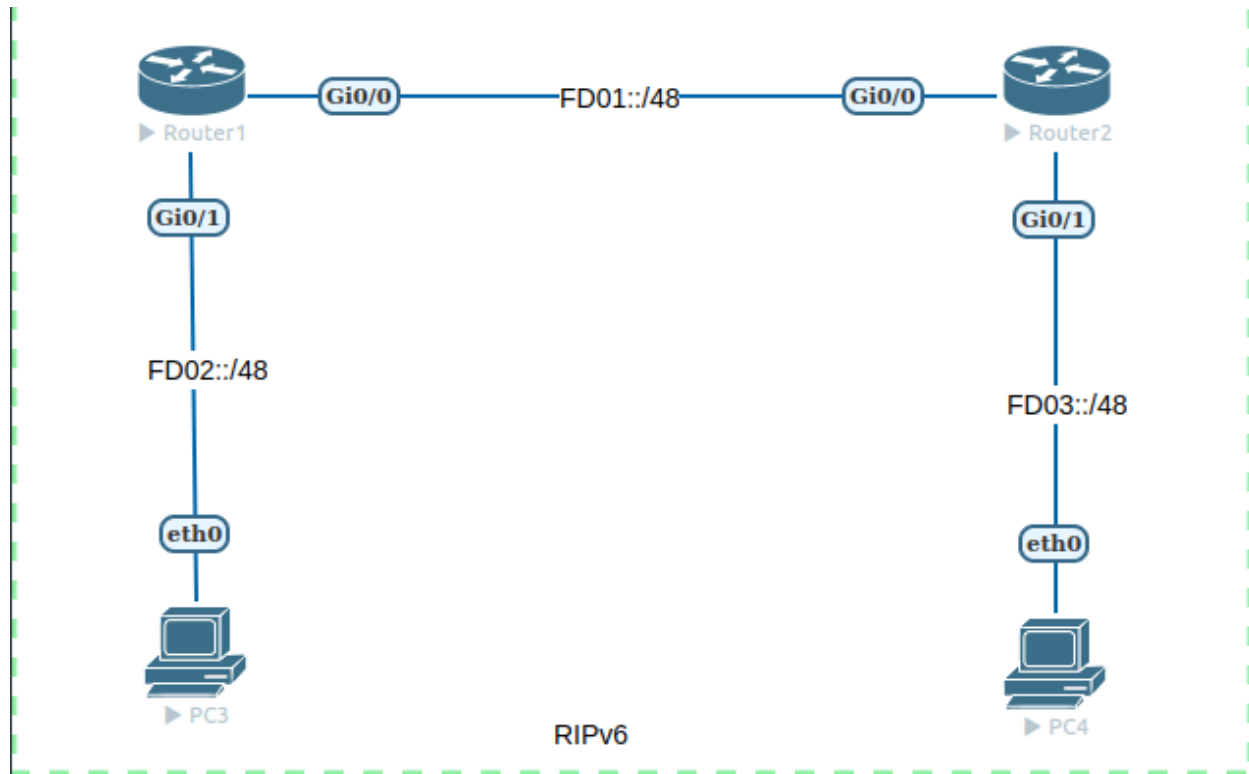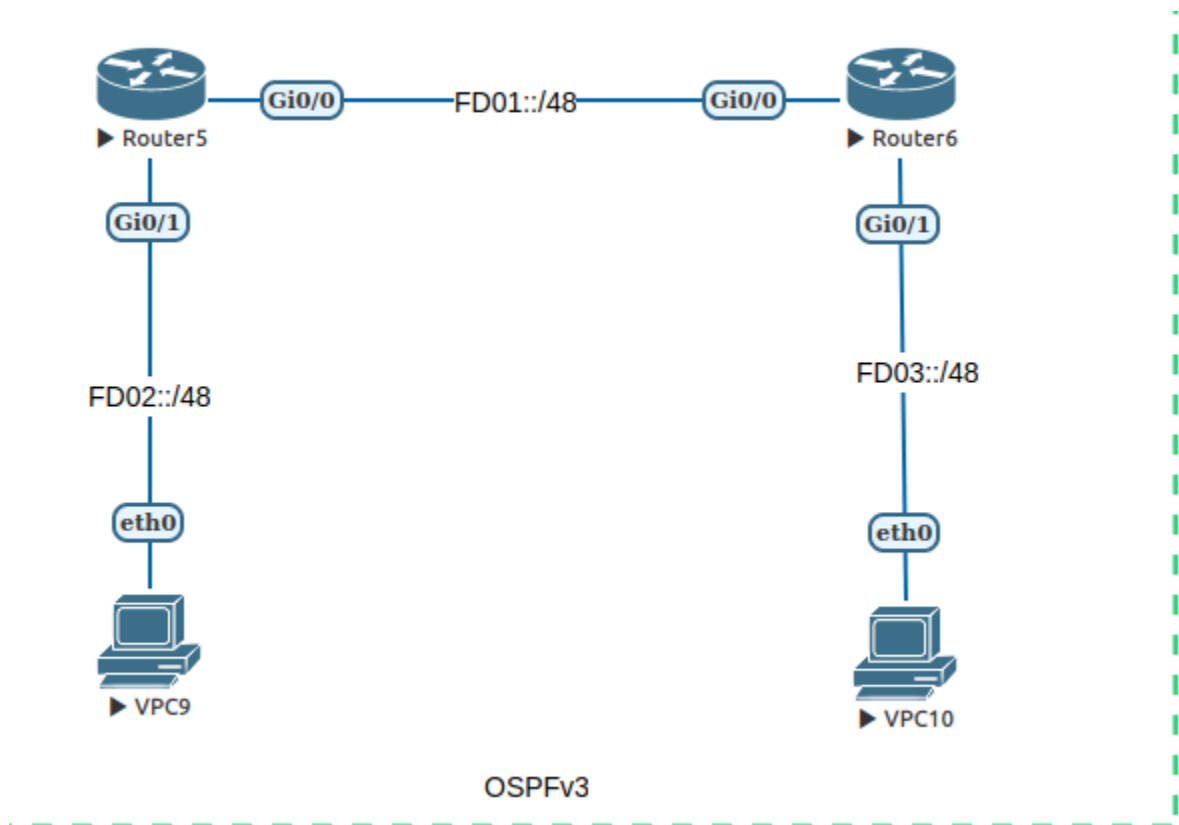# IPv6 CONFIGURATION

IPNET INSTITUTE OF TECHNOLOGY

Matiere: Conception et
Implémentation
d'un Réseau
Sécurisé
Code: NET379
Professeur: M.
NOUGBEGNON ELISEE
Etudiant: AHLIDZA K.
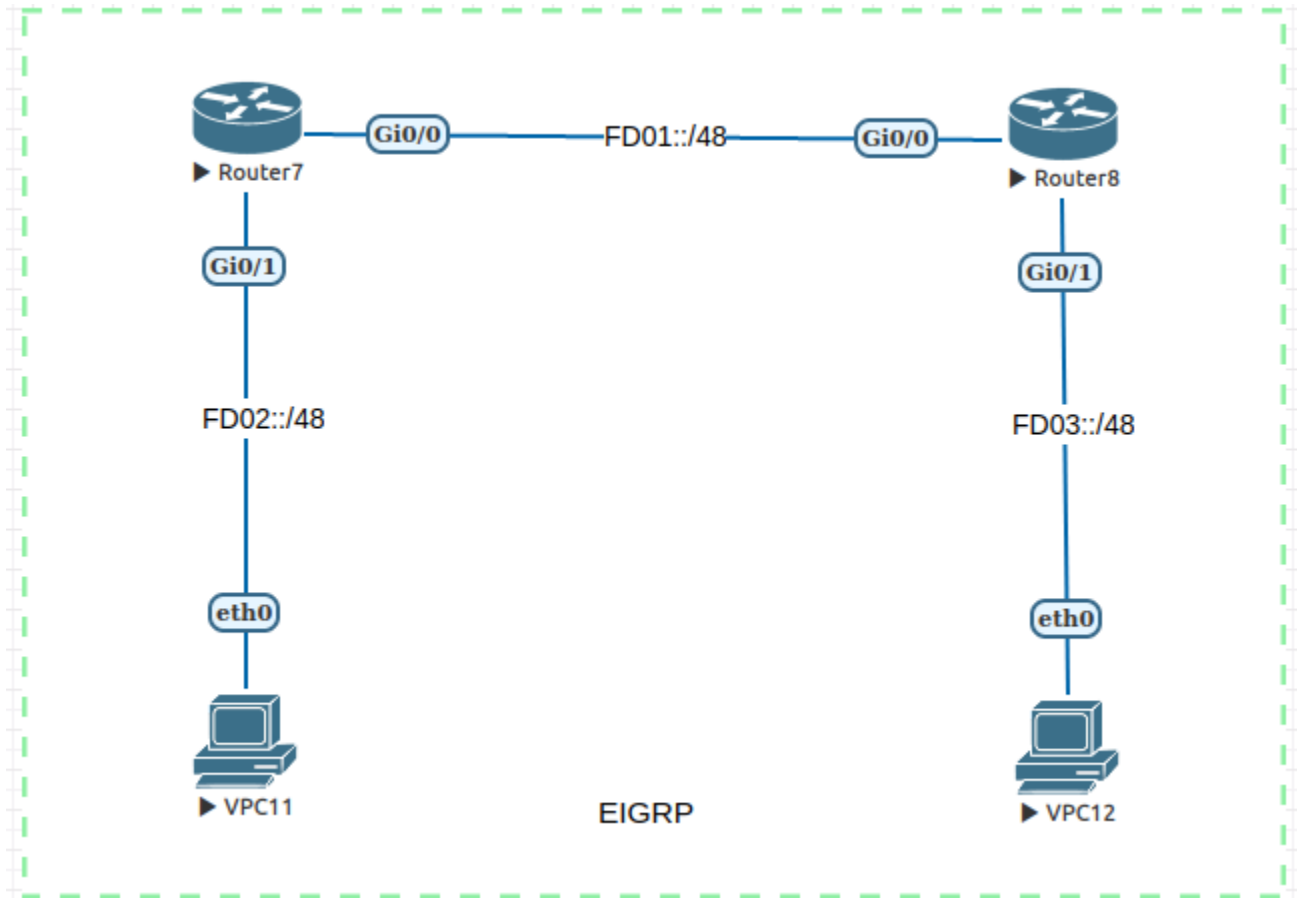Emmanuel
Annee universitaire:2021-
2022

Topologie

- ## RIPv6

Router1	FD01::/48	Router2
Gi0/0		Gi0/0
Gi0/1		Gi0/1
FD02::/48		FD03::/48
eth0		eth0
PC3	RIPv6	PC4

- ## OSPFv3

Router5	FD01::/48	Router6
Gi0/0		Gi0/0
Gi0/1		Gi0/1
FD02::/48		FD03::/48
eth0		eth0
VPC9	OSPFv3	VPC10

- ## EIGRP IPv6

- ## Configuration

- ## PC
PC3 - VPC9 - VPC11: FD02::2/48
PC4 - VPC10 - VPC12: FD03::2/48

- **Routers**
  - **RIPv6**

```
Router1#sh run
hostname Router1
!
ipv6 unicast-routing
ipv6 cef
!
interface
GigabitEthernet0/0
 no ip address
 duplex auto
 speed auto
 media-type rj45
 ipv6 address
FD01::1/48
 ipv6 rip Emma enable
!
interface
GigabitEthernet0/1
 no ip address
 duplex auto
 speed auto
 media-type rj45
 ipv6 address
FD02::1/48
 ipv6 rip Emma enable
!
ipv6 router rip Emma
!
end
Router1#

Router2#sh run

hostname Router2
!
ipv6 unicast-routing
ipv6 cef
!
interface
GigabitEthernet0/0
 no ip address
 duplex auto
 speed auto
 media-type rj45
 ipv6 address
FD01::2/48
 ipv6 rip Emma enable
!
interface
GigabitEthernet0/1
 no ip address
 duplex auto
 speed auto
 media-type rj45
```

ipv6 address FD03::1/48
 ipv6 rip Emma enable
!
ipv6 router rip Emma
!
end
Router2#

> **OSPFv3**
Router5#sh run
Building configuration...

hostname Router5
!
ipv6 unicast-routing
ipv6 cef
!
interface GigabitEthernet0/0
 no ip address
 duplex auto
 speed auto
 media-type rj45
 ipv6 address FD01::1/48
 ipv6 ospf 1 area 1
!

interface GigabitEthernet0/1
 no ip address
 duplex auto
 speed auto
 media-type rj45
 ipv6 address FD02::1/48
 ipv6 ospf 1 area 1
!
router ospfv3 1
 router-id 1.1.1.1
 area 1 stub no-summary
 !
 address-family ipv6 unicast
 exit-address-family
!
!
end

Router5#

Router6#sh run
Building configuration...

!

```
hostname Router6
!
ipv6 unicast-routing
ipv6 cef
!
interface
GigabitEthernet0/0
 no ip address
 duplex auto
 speed auto
 media-type rj45
 ipv6 address
FD01::2/48
 ipv6 ospf 1 area 1
!
interface
GigabitEthernet0/1
 no ip address
 duplex auto
 speed auto
 media-type rj45
 ipv6 address
FD03::1/48
 ipv6 ospf 1 area 1
!
router ospfv3 1
 router-id 2.2.2.2
```

```
 area 1 stub no-
summary
 !
 address-family ipv6
unicast
 exit-address-family
!
end

Router6#
```

➢ **EIGRP IPv6**
```
Router7#sh run
Building configuration...

!
hostname Router7
!
ipv6 unicast-routing
ipv6 cef
!
interface
GigabitEthernet0/0
 no ip address
 duplex auto
 speed auto
 media-type rj45
```

```
 ipv6 address                  ipv6 cef
FD01::1/48                     !
 ipv6 eigrp 1                  interface
!                              GigabitEthernet0/0
interface                       no ip address
GigabitEthernet0/1              duplex auto
 no ip address                  speed auto
 duplex auto                    media-type rj45
 speed auto                     ipv6 address
 media-type rj45               FD01::2/48
 ipv6 address                   ipv6 eigrp 1
FD02::1/48                     !
 ipv6 eigrp 1                  interface
!                              GigabitEthernet0/1
ipv6 router eigrp 1             no ip address
 eigrp router-id 1.1.1.1        duplex auto
!                               speed auto
end                             media-type rj45
                                ipv6 address
Router7#                       FD03::1/48
                                ipv6 eigrp 1
Router8#sh run                 !
Building configuration...      ipv6 router eigrp 1
                                eigrp router-id 2.2.2.2
!                              !
hostname Router8               end
!
ipv6 unicast-routing           Router8#
```

Quelques tests en images

➢ Ping avec configuration RIPv6
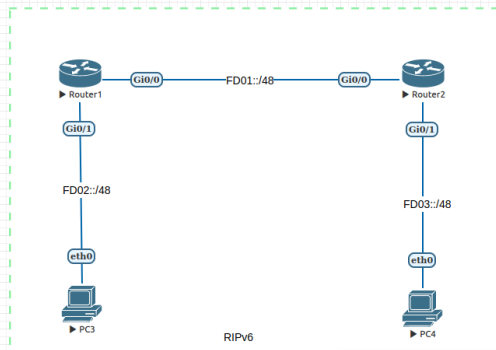

```
PC4
Escape character is '^]'.

VPCS> sh ipv6

NAME              : VPCS[1]
LINK-LOCAL SCOPE  : fe80::250:79ff:fe66:6804/64
GLOBAL SCOPE      : fd03::2/48
DNS               :
ROUTER LINK-LAYER : 50:00:00:02:00:01
MAC               : 00:50:79:66:68:04
LPORT             : 20000
RHOST:PORT        : 127.0.0.1:30000
MTU               : 1500

VPCS> ping fd02::2/48

fd02::2 icmp6_seq=1 ttl=60 time=16.309 ms
fd02::2 icmp6_seq=2 ttl=60 time=6.190 ms
fd02::2 icmp6_seq=3 ttl=60 time=3.560 ms
fd02::2 icmp6_seq=4 ttl=60 time=4.867 ms
fd02::2 icmp6_seq=5 ttl=60 time=5.633 ms

VPCS>
```

```
PC3
Escape character is '^]'.

VPCS> sh ipv6

NAME              : VPCS[1]
LINK-LOCAL SCOPE  : fe80::250:79ff:fe66:6803/64
GLOBAL SCOPE      : fd02::2/48
DNS               :
ROUTER LINK-LAYER : 50:00:00:01:00:01
MAC               : 00:50:79:66:68:03
LPORT             : 20000
RHOST:PORT        : 127.0.0.1:30000
MTU               : 1500

VPCS> ping fd03::2/48

fd03::2 icmp6_seq=1 ttl=60 time=73.515 ms
fd03::2 icmp6_seq=2 ttl=60 time=5.775 ms
fd03::2 icmp6_seq=3 ttl=60 time=9.034 ms
fd03::2 icmp6_seq=4 ttl=60 time=4.538 ms
fd03::2 icmp6_seq=5 ttl=60 time=17.322 ms

VPCS>
```
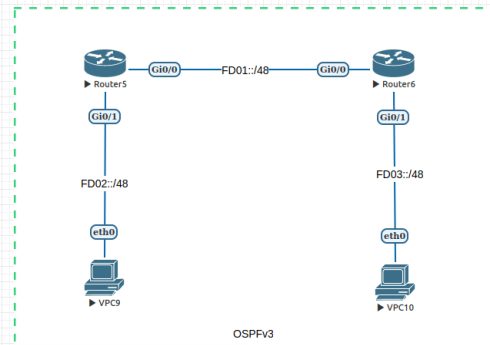
➢ Ping avec configuration OSPFv3

```
VPC9
VPCS> sh ipv6

NAME              : VPCS[1]
LINK-LOCAL SCOPE  : fe80::250:79ff:fe66:6809/64
GLOBAL SCOPE      : fd02::2/48
DNS               :
ROUTER LINK-LAYER : 50:00:00:05:00:01
MAC               : 00:50:79:66:68:09
LPORT             : 20000
RHOST:PORT        : 127.0.0.1:30000
MTU               : 1500

VPCS> ping fd03::2/48

fd03::2 icmp6_seq=1 ttl=60 time=7.572 ms
fd03::2 icmp6_seq=2 ttl=60 time=7.615 ms
fd03::2 icmp6_seq=3 ttl=60 time=4.725 ms
fd03::2 icmp6_seq=4 ttl=60 time=9.209 ms
fd03::2 icmp6_seq=5 ttl=60 time=24.545 ms

VPCS>
```



```
VPC10
VPCS> sh ipv6

NAME              : VPCS[1]
LINK-LOCAL SCOPE  : fe80::250:79ff:fe66:680a/64
GLOBAL SCOPE      : fd03::2/48
DNS               :
ROUTER LINK-LAYER : 50:00:00:06:00:01
MAC               : 00:50:79:66:68:0a
LPORT             : 20000
RHOST:PORT        : 127.0.0.1:30000
MTU               : 1500

VPCS> ping fd02::2/48

fd02::2 icmp6_seq=1 ttl=60 time=25.682 ms
fd02::2 icmp6_seq=2 ttl=60 time=5.849 ms
fd02::2 icmp6_seq=3 ttl=60 time=6.895 ms
fd02::2 icmp6_seq=4 ttl=60 time=6.313 ms
fd02::2 icmp6_seq=5 ttl=60 time=8.712 ms

VPCS>
```

➢ Ping avec configuration EIGRP IPv6


```
VPC11
VPCS> sh ipv6

NAME             : VPCS[1]
LINK-LOCAL SCOPE : fe80::250:79ff:fe66:680b/64
GLOBAL SCOPE     : fd02::2/48
DNS              :
ROUTER LINK-LAYER : 50:00:00:07:00:01
MAC              : 00:50:79:66:68:0b
LPORT            : 20000
RHOST:PORT       : 127.0.0.1:30000
MTU:             : 1500

VPCS> ping fd03::2/48

fd03::2 icmp6_seq=1 ttl=60 time=10.650 ms
fd03::2 icmp6_seq=2 ttl=60 time=7.477 ms
fd03::2 icmp6_seq=3 ttl=60 time=11.503 ms
fd03::2 icmp6_seq=4 ttl=60 time=5.168 ms
fd03::2 icmp6_seq=5 ttl=60 time=5.074 ms

VPCS>
```

```
VPC12
VPCS> sh ipv6

NAME             : VPCS[1]
LINK-LOCAL SCOPE : fe80::250:79ff:fe66:680c/64
GLOBAL SCOPE     : fd03::2/48
DNS              :
ROUTER LINK-LAYER : 50:00:00:08:00:01
MAC              : 00:50:79:66:68:0c
LPORT            : 20000
RHOST:PORT       : 127.0.0.1:30000
MTU:             : 1500

VPCS> ping fd02::2/48

fd02::2 icmp6_seq=1 ttl=60 time=19.041 ms
fd02::2 icmp6_seq=2 ttl=60 time=6.083 ms
fd02::2 icmp6_seq=3 ttl=60 time=3.284 ms
fd02::2 icmp6_seq=4 ttl=60 time=15.067 ms
fd02::2 icmp6_seq=5 ttl=60 time=11.870 ms

VPCS>
```