

SIO

TP- ROUTAGE DYAMIQUE OSPF

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1/

```
Routeur-A#ping 6.6.6.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 6.6.6.2, timeout is 2 seconds:
U.U.U
Success rate is 0 percent (0/5)

Routeur-A#ping 20.6.6.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.6.6.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 34/49/57 ms

Routeur-A#ping 20.4.4.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.4.4.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/33/44 ms

Routeur-A#ping 20.5.5.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.5.5.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 2/28/47 ms
```

Ping du routeur A vers B, C, D, E
réussite

1/

```
Routeur-A#ping 20.0.0.2
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.0.0.2, timeout is 2 seconds:
U.U.U
Success rate is 0 percent (0/5)
```

Ping du routeur A vers F Echeque

J'ai ensuite réalisé les memes
testes avec le routeur F et j'ai les
meme résultat, donc les routeur
fonctionne mais pas els
extrémités

2/

```
Pinging 192.168.0.254 with 32 bytes of data:  
  
Reply from 192.168.0.254: bytes=32 time<1ms TTL=255  
  
Ping statistics for 192.168.0.254:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

PC A vers la carte NAT

Fonctionne correctement également

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Voici les commandes a réaliser dans les routeurs :

```
router ospf 1
```

```
router-id X.X.X.X
```

```
network ON DONNE ICI LES ROUTEUR ADJACENTS area X
```

et sur chaque routeur

Je vais donc réalisé depuis le routeur A puis F des pings vers le autres routeurs :

A vers B, C, D, E,

```
Sending 5, 100-byte ICMP Echos to 20.6.6.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/38/58 ms
Routeur-A#ping 20.5.5.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.5.5.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 37/58/69 ms
Routeur-A#ping 20.4.4.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.4.4.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 29/45/76 ms
Routeur-A#ping 20.2.2.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.2.2.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 31/48/72 ms
Routeur-A#ping 20.3.3.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.3.3.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 43/55/62 ms
```

F vers B, C, D, E,

```
Sending 5, 100-byte ICMP Echos to 20.6.6.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/38/58 ms
Routeur-A#ping 20.5.5.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.5.5.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 37/58/69 ms
Routeur-A#ping 20.4.4.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.4.4.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 29/45/76 ms
Routeur-A#ping 20.2.2.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.2.2.1, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 31/48/72 ms
Routeur-A#ping 20.3.3.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 20.3.3.1, timeout is 2 seconds:
!!!!
```

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je prend trois moment clé du changement, avant avec un tracert, pendant avec un ping -t et après avec un autre tracert

Avant :

```
C:\>tracert 20.0.0.1

Tracing route to 20.0.0.1 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    192.168.0.254
  1  0 ms    1 ms   13 ms    20.6.6.1
  2  0 ms    1 ms    0 ms    20.2.2.1
  3  1 ms    1 ms    0 ms    20.0.0.1

Trace complete.
```

Pendant

```
C:\>ping -t 20.0.0.1

Pinging 20.0.0.1 with 32 bytes of data:

Reply from 20.0.0.1: bytes=32 time=20ms TTL=252
Reply from 20.0.0.1: bytes=32 time=36ms TTL=252
Reply from 20.0.0.1: bytes=32 time=4ms TTL=252
Reply from 20.0.0.1: bytes=32 time=4ms TTL=252
Reply from 20.0.0.1: bytes=32 time=4ms TTL=252
Request timed out.
Reply from 20.0.0.1: bytes=32 time=5ms TTL=251
Reply from 20.0.0.1: bytes=32 time=6ms TTL=251
Reply from 20.0.0.1: bytes=32 time=4ms TTL=251
```

```
graph TD
    C[Router C] --- SeC1[Se0/0/1]
    C --- SeC0[Se0/0/0]
    E[Router E] --- SeE1[Se0/0/1]
    E --- SeE0[Se0/0/0]
    E --- Gig0/1[Gig0/1]
    SeC1 --- SeE1
    SeC0 --- SeE0
```

Ici on observe la coupure d'une durée de UN ping

Après

```
C:\>tracert 20.0.0.1

Tracing route to 20.0.0.1 over a maximum of 30 hops:

  0  0 ms    0 ms    0 ms    192.168.0.254
  1  0 ms    0 ms    0 ms    20.6.6.1
  2  *        2 ms    1 ms    20.4.4.1
  3  1 ms    2 ms    1 ms    20.1.1.1
  4  1 ms    2 ms    1 ms    20.0.0.1

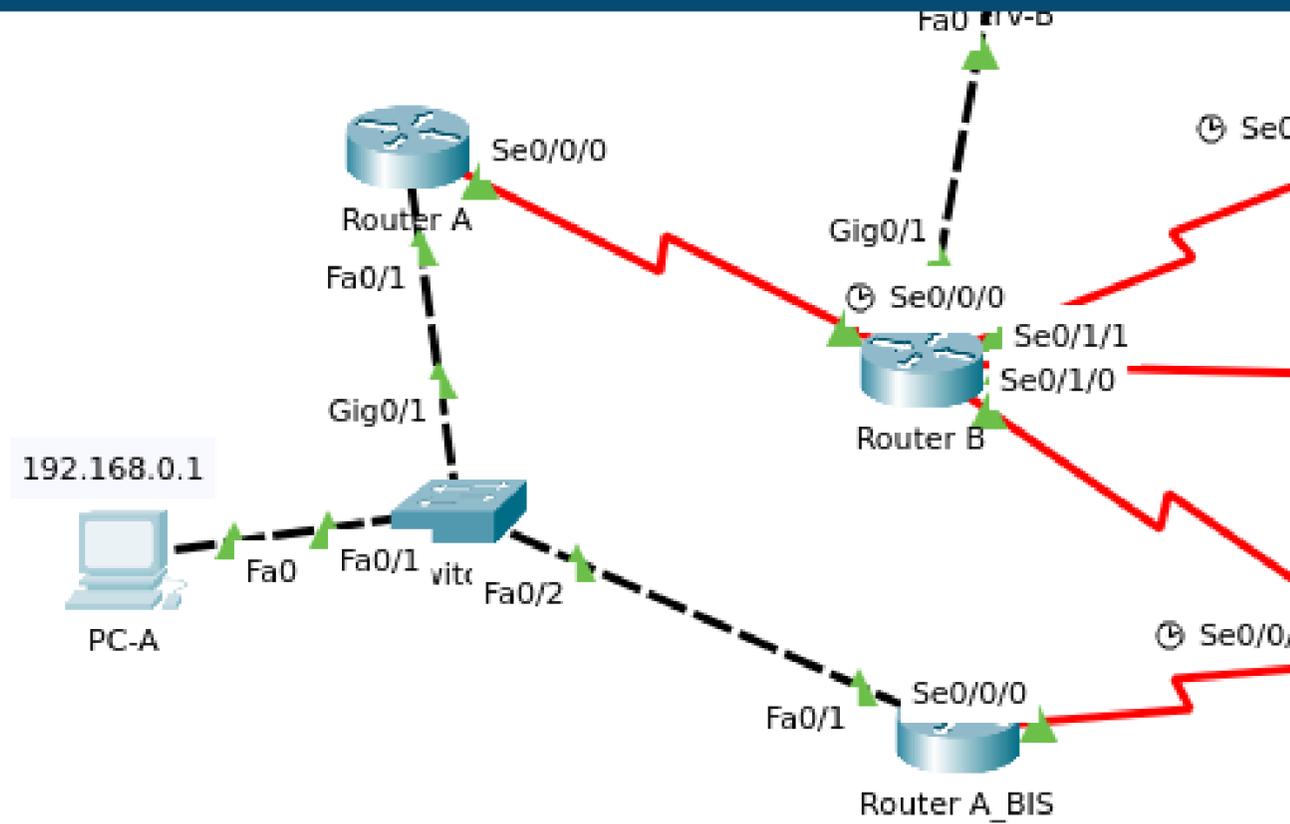
Trace complete.
```

SIO

TP- ROUTAGE DÉCOUVERTE HSRP

Axel Hespel

1. Mettre en place un second routeur « RtA-bis » sur le site A



2. Compléter le paramétrage OSPF du routeur RtD

```
interface Serial0/0/0
 ip address 20.7.7.2 255.255.255.252
 clock rate 2000000
!
```

```
router ospf 1
 log-adjacency-changes
 network 20.4.4.0 0.0.0.255 area 0
 network 20.3.3.0 0.0.0.255 area 0
 network 20.7.7.0 0.0.0.255 area 0
!
```

3. Tester le nouveau chemin en changeant la passerelle de PC-A.

192.168.0.253 = router A-Bis

<input type="radio"/> DHCP	<input checked="" type="radio"/> Static
IPv4 Address	192.168.0.1
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.253
DNS Server	0.0.0.0

PING Vers routeur F

```
Pinging 20.0.0.2 with 32 bytes of data:  
  
Reply from 20.0.0.2: bytes=32 time=2ms TTL=253  
Reply from 20.0.0.2: bytes=32 time=2ms TTL=253  
  
Ping statistics for 20.0.0.2:  
    Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
    Minimum = 2ms, Maximum = 2ms, Average = 2ms
```

4. Mettre en place le protocole HSRP sur les routeurs RtA et RtA-bis. Définir RtA en tant que routeur prioritaire

A Configuration A-Bis

```
interface FastEthernet0/1
 ip address 192.168.0.254 255.255.255.0
 ip nat inside
 duplex auto
 speed auto
 standby 10 ip 192.168.0.250
 standby 10 priority 255
 standby 10 preempt
!
interface Serial0/0/0
 ip address 20.6.6.2 255.255.255.252
 ip nat outside
!
interface Serial0/0/1
 no ip address
 clock rate 2000000
 shutdown
!
interface Vlan1
 no ip address
 shutdown
!
router ospf 1
 router-id 1.1.1.1
 log-adjacency-changes
 passive-interface FastEthernet0/1
 network 20.6.6.0 0.0.0.255 area 0
!
```

```
interface FastEthernet0/1
 ip address 192.168.0.253 255.255.255.0
 ip nat inside
 duplex auto
 speed auto
 standby 10 ip 192.168.0.250
 standby 10 preempt
!
interface Serial0/0/0
 ip address 20.7.7.1 255.255.255.252
 ip nat outside
!
interface Serial0/0/1
 no ip address
 clock rate 2000000
 shutdown
!
interface Vlan1
 no ip address
 shutdown
!
router ospf 1
 router-id 3.3.3.3
 log-adjacency-changes
 passive-interface FastEthernet0/1
 network 20.7.7.0 0.0.0.255 area 0
!
router rip
!
```

5. Paramétrer le PC PC-A avec l'adresse de passerelle virtuelle et tester son accès à un serveur Web externe. Vérifier la route empruntée.

PC - A vers Routeur A, B, C, D, E

```
C:\>ping 20.6.6.2

Pinging 20.6.6.2 with 32 bytes of data:

Reply from 20.6.6.2: bytes=32 time<1ms TTL=255
Reply from 20.6.6.2: bytes=32 time<1ms TTL=255
Reply from 20.6.6.2: bytes=32 time<1ms TTL=255

Ping statistics for 20.6.6.2:
    Packets: Sent = 3, Received = 3, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

Control-C
^C
C:\>ping 20.5.5.2

Pinging 20.5.5.2 with 32 bytes of data:

Reply from 20.5.5.2: bytes=32 time=22ms TTL=254
Reply from 20.5.5.2: bytes=32 time=1ms TTL=254

Ping statistics for 20.5.5.2:
    Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 22ms, Average = 11ms

Control-C
^C
C:\>ping 20.4.4.2

Pinging 20.4.4.2 with 32 bytes of data:

Reply from 20.4.4.2: bytes=32 time=1ms TTL=254
Reply from 20.4.4.2: bytes=32 time=1ms TTL=254

Ping statistics for 20.4.4.2:
    Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 1ms, Average = 1ms
```

```
C:\>ping 20.3.3.2

Pinging 20.3.3.2 with 32 bytes of data:

Reply from 20.3.3.2: bytes=32 time=40ms TTL=253
Reply from 20.3.3.2: bytes=32 time=2ms TTL=253

Ping statistics for 20.3.3.2:
    Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 40ms, Average = 21ms

Control-C
^C
C:\>ping 20.2.2.2

Pinging 20.2.2.2 with 32 bytes of data:

Reply from 20.2.2.2: bytes=32 time=28ms TTL=254
Reply from 20.2.2.2: bytes=32 time=2ms TTL=254

Ping statistics for 20.2.2.2:
    Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 28ms, Average = 15ms

Control-C
^C
C:\>ping 20.1.1.2

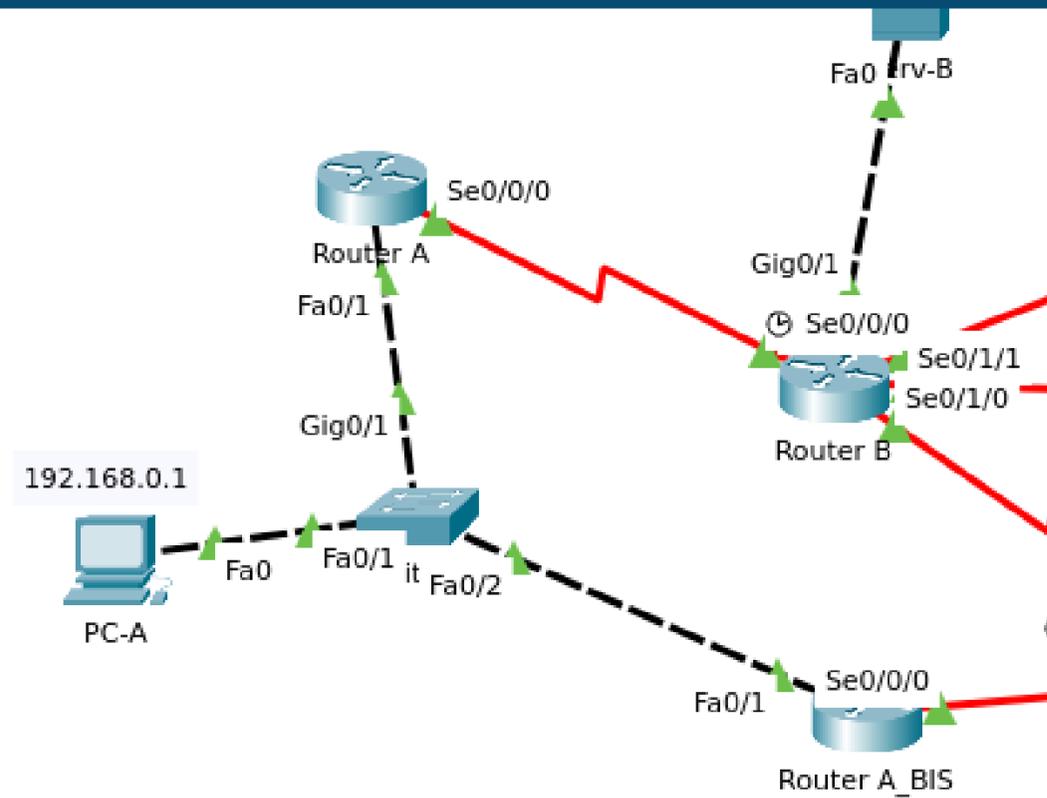
Pinging 20.1.1.2 with 32 bytes of data:

Reply from 20.1.1.2: bytes=32 time=2ms TTL=253
Reply from 20.1.1.2: bytes=32 time=2ms TTL=253

Ping statistics for 20.1.1.2:
    Packets: Sent = 2, Received = 2, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 2ms, Average = 2ms
```

5. Paramétrer le PC PC-A avec l'adresse de passerelle virtuelle et tester son accès à un serveur Web externe. Vérifier la route empruntée.

PC - A vers Routeur E



```
C:\>tracert 20.3.3.1
```

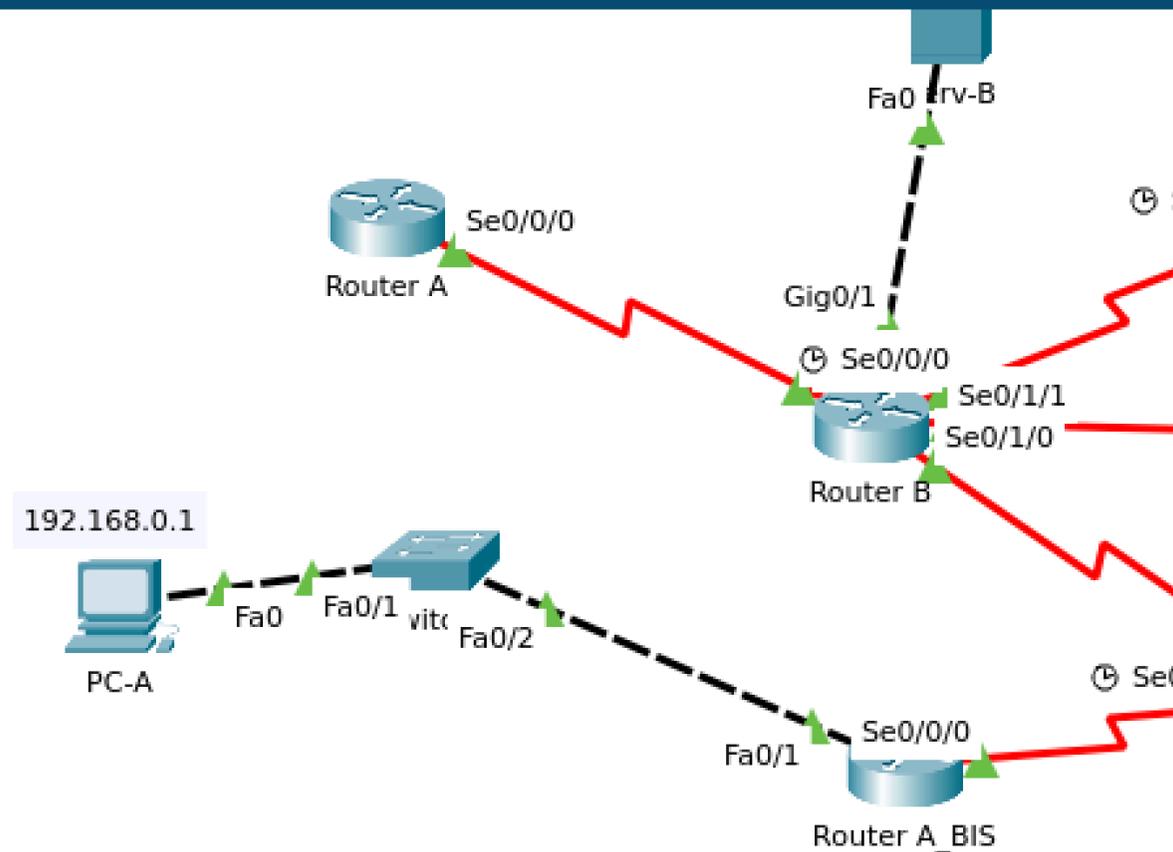
```
Tracing route to 20.3.3.1 over a maximum of 30 hops:
```

1	0 ms	0 ms	0 ms	192.168.0.254
2	0 ms	11 ms	0 ms	20.6.6.1
3	3 ms	1 ms	14 ms	20.4.4.1
4	17 ms	1 ms	16 ms	20.3.3.1

```
Trace complete.
```

5. Paramétrer le PC PC-A avec l'adresse de passerelle virtuelle et tester son accès à un serveur Web externe. Vérifier la route empruntée.

PC - A vers Routeur E



```
C:\>tracert 20.3.3.1
```

```
Tracing route to 20.3.3.1 over a maximum of 30 hops:
```

1	*	*	0 ms	192.168.0.253
2	0 ms	1 ms	0 ms	20.7.7.2
3	3 ms	5 ms	2 ms	20.3.3.1

```
Trace complete.
```