

PROJET RESEAU

EPREUVE E6

E6 – Projet Réseau

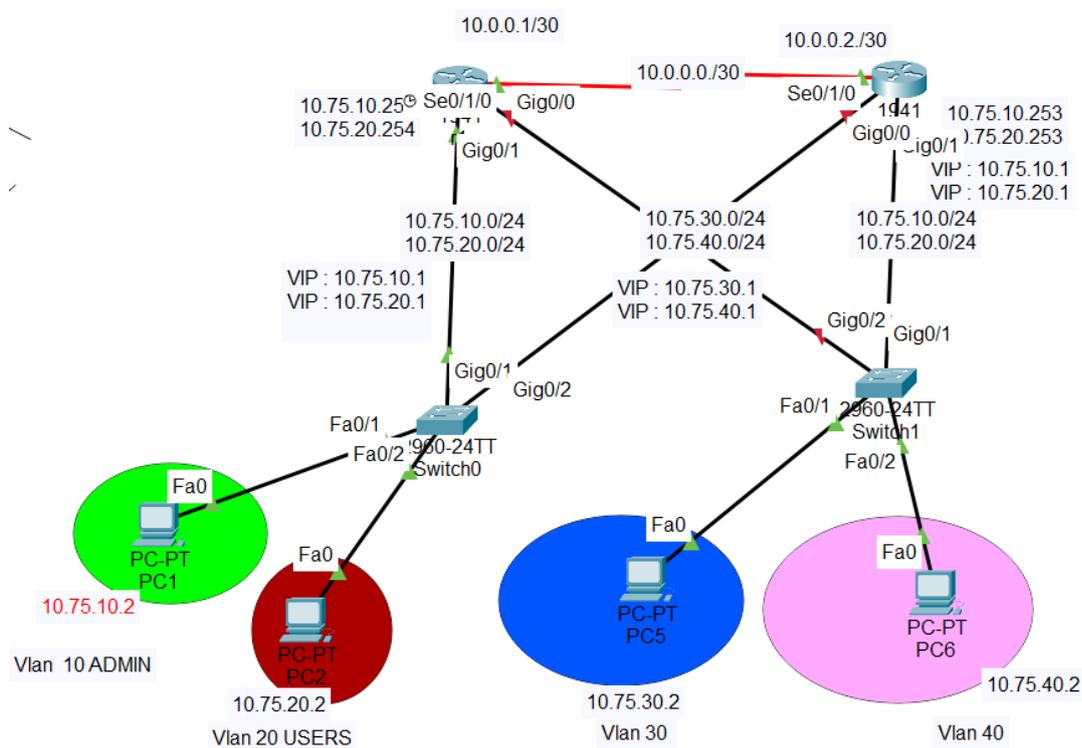
Dans cette procédure, vous trouverez les étapes détaillées pour la configuration des routeurs Cisco afin de reproduire mon projet réseau, ainsi que la mise en place HSRP, routage Inter-Vlan et routage RIP visant à établir une infrastructure robuste et fonctionnelle pour répondre aux besoins de votre organisation.

Nous commençons par reproduire notre topologie sur Cisco Packet Tracer où nous allons également faire toutes les configurations.

Introduction

HSRP ou « **Hot Standby Routing Protocol** » est un protocole propriétaire **Cisco** qui a pour fonction d'accroître la haute disponibilité dans un réseau par une tolérance aux pannes. Cela se fait par la mise en commun du fonctionnement de plusieurs routeurs physiques (au minimum deux ce qui est notre cas) qui, de manière automatique, assureront la relève entre eux d'un routeur à un autre.

Topologie



Mise en place

Configuration des routeurs

Routeur 0 : r0

```
r0
Physical Config CLI Attributes
IOS Command Line Interface

speed auto
shutdown
!
interface GigabitEthernet0/0.30
encapsulation dot1Q 30
ip address 10.75.30.251 255.255.255.0
standby 1 ip 10.75.30.1
standby 1 preempt
!
interface GigabitEthernet0/0.40
encapsulation dot1Q 40
ip address 10.75.40.251 255.255.255.0
standby 1 ip 10.75.40.1
standby 1 priority 105
standby 1 preempt
!
interface GigabitEthernet0/1
no ip address
duplex auto
speed auto
!
interface GigabitEthernet0/1.10
encapsulation dot1Q 10
ip address 10.75.10.253 255.255.255.0
standby 1 ip 10.75.10.1
standby 1 preempt
!
interface GigabitEthernet0/1.20
encapsulation dot1Q 20
ip address 10.75.20.253 255.255.255.0
standby 1 ip 10.75.20.1
standby 1 priority 105
standby 1 preempt
!
interface Serial0/1/0
ip address 10.0.0.2 255.255.255.252
!

R0(config)#router rip
R0(config-router)#version 2
R0(config-router)#no au
R0(config-router)#no auto-summary
R0(config-router)#net
R0(config-router)#network 10.0.0.0
R0(config-router)#network 10.75.10.0
R0(config-router)#network 10.75.20.0
R0(config-router)#network 10.75.30.0
R0(config-router)#network 10.75.40.0
R0(config-router)#
```

Routeur 1 : r1

```
r1
Physical Config CLI Attributes
IOS Command Line Interface
!
interface GigabitEthernet0/0.30
 encapsulation dot1Q 30
 ip address 10.75.30.252 255.255.255.0
 standby 1 ip 10.75.30.1
 standby 1 priority 105
 standby 1 preempt
!
interface GigabitEthernet0/0.40
 encapsulation dot1Q 40
 ip address 10.75.40.252 255.255.255.0
 standby 1 ip 10.75.40.1
 standby 1 preempt
!
interface GigabitEthernet0/1
 no ip address
 duplex auto
 speed auto
!
interface GigabitEthernet0/1.10
 encapsulation dot1Q 10
 ip address 10.75.10.254 255.255.255.0
 standby 1 ip 10.75.10.1
 standby 1 priority 105
 standby 1 preempt
!
interface GigabitEthernet0/1.20
 encapsulation dot1Q 20
 ip address 10.75.20.254 255.255.255.0
 standby 1 ip 10.75.20.1
 standby 1 preempt
!
interface Serial0/1/0
 ip address 10.0.0.1 255.255.255.252
 clock rate 56000
!
```

```
R1(config)#router rip
R1(config-router)#ver
R1(config-router)#version 2
R1(config-router)#no au
R1(config-router)#no auto-summary
R1(config-router)#network 10.0.0.0
R1(config-router)#network 10.75.10.0
R1(config-router)#network 10.75.20.0
R1(config-router)#network 10.75.30.0
R1(config-router)#network 10.75.40.0
```

Configuration des Switchs

Switch 0

```

Switch(config)#VLAN 10
Switch(config-vlan)#NAME ADMIN
Switch(config-vlan)#ex
Switch(config)#VLAN 20
Switch(config-vlan)#NAME USERS
Switch(config-vlan)#EX
Switch(config)#VLAN 30
Switch(config-vlan)#VLAN 40
Switch(config-vlan)#int fa0/1
Switch(config-if)#no shut
Switch(config-if)#sw mode acces
Switch(config-if)#sw acces vlan 10
Switch(config-if)#ex
Switch(config)#int fa0/2
Switch(config-if)#no shut
Switch(config-if)#sw mode acces
Switch(config-if)#sw acces vlan 20
Switch(config-if)#

```

Switch 1

Tests

Test de ping entre les PC :

Nous pouvons voir que le PC6 communique avec tous les autres postes

The screenshot shows a Cisco Packet Tracer PC Command Line window for PC6. The window title is 'PC6' and it has tabs for 'Physical', 'Config', 'Desktop', 'Programming', and 'Attributes'. The 'Desktop' tab is active, showing a 'Command Prompt' window. The command prompt displays the following output:

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.75.10.2

Pinging 10.75.10.2 with 32 bytes of data:

Reply from 10.75.10.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.75.20.2

Pinging 10.75.20.2 with 32 bytes of data:

Reply from 10.75.20.2: bytes=32 time<1ms TTL=127
Reply from 10.75.20.2: bytes=32 time=12ms TTL=127
Reply from 10.75.20.2: bytes=32 time<1ms TTL=127
Reply from 10.75.20.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 12ms, Average = 3ms

C:\>ping 10.75.30.2

Pinging 10.75.30.2 with 32 bytes of data:

Reply from 10.75.30.2: bytes=32 time<1ms TTL=127
Reply from 10.75.30.2: bytes=32 time<1ms TTL=127
Reply from 10.75.30.2: bytes=32 time=1ms TTL=127
Reply from 10.75.30.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.30.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

```

Nous pouvons voir que le PC5 communique avec tous les autres postes

```
PC5
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.75.10.2

Pinging 10.75.10.2 with 32 bytes of data:

Reply from 10.75.10.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.75.20.2

Pinging 10.75.20.2 with 32 bytes of data:

Reply from 10.75.20.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.75.40.2

Pinging 10.75.40.2 with 32 bytes of data:

Reply from 10.75.40.2: bytes=32 time<1ms TTL=127
Reply from 10.75.40.2: bytes=32 time=1ms TTL=127
Reply from 10.75.40.2: bytes=32 time<1ms TTL=127
Reply from 10.75.40.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.40.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Nous pouvons voir que le PC2 communique avec tous les autres postes

```
PC2
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.75.10.2

Pinging 10.75.10.2 with 32 bytes of data:

Reply from 10.75.10.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.10.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 10.75.30.2

Pinging 10.75.30.2 with 32 bytes of data:

Reply from 10.75.30.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.30.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

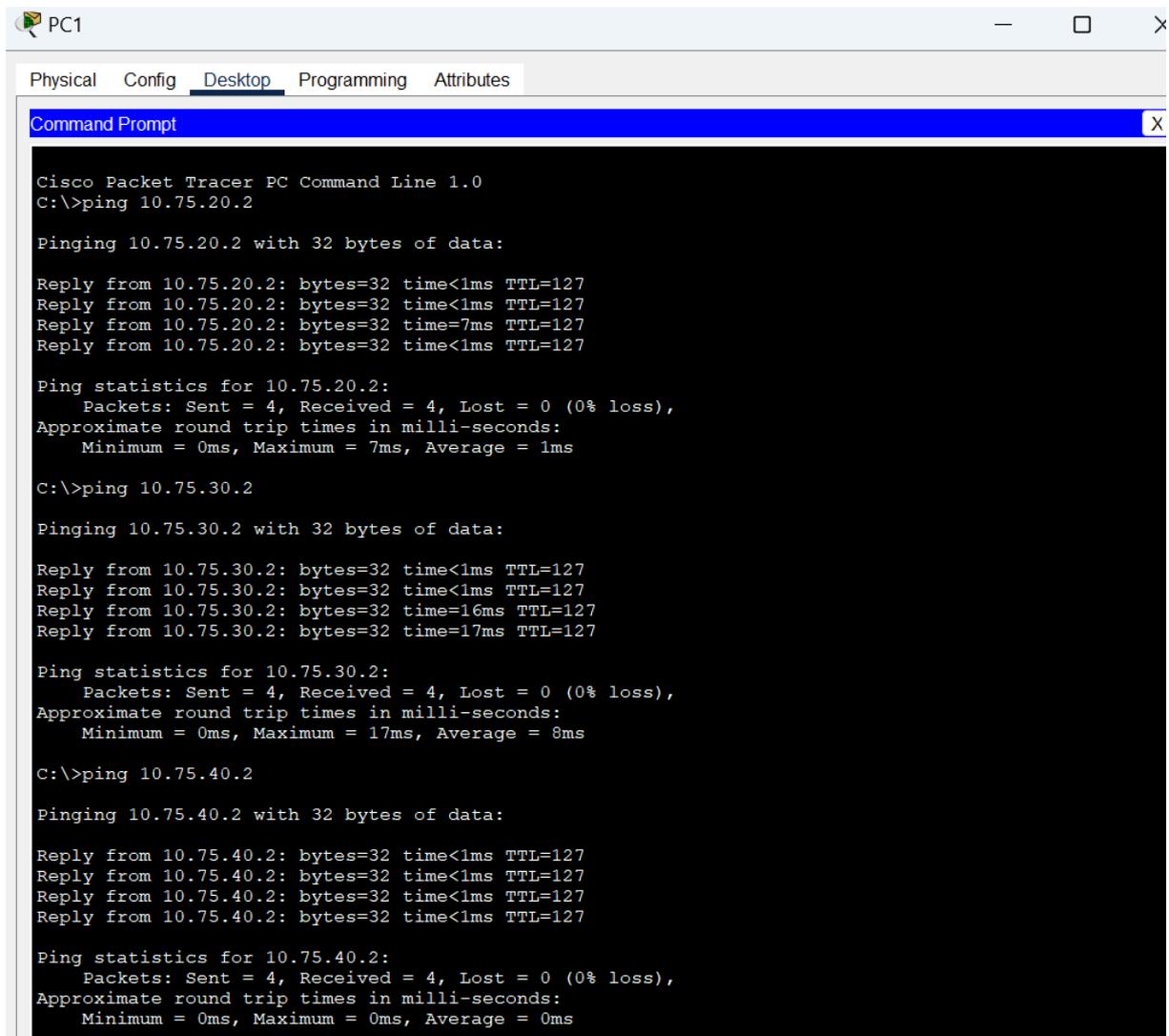
C:\>ping 10.75.40.2

Pinging 10.75.40.2 with 32 bytes of data:

Reply from 10.75.40.2: bytes=32 time<1ms TTL=127
Reply from 10.75.40.2: bytes=32 time<1ms TTL=127
Reply from 10.75.40.2: bytes=32 time=15ms TTL=127
Reply from 10.75.40.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.40.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 15ms, Average = 3ms
```

Nous pouvons voir que le PC1 communique avec tous les autres postes



```
PC1
Physical Config Desktop Programming Attributes
Command Prompt
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 10.75.20.2

Pinging 10.75.20.2 with 32 bytes of data:

Reply from 10.75.20.2: bytes=32 time<1ms TTL=127
Reply from 10.75.20.2: bytes=32 time<1ms TTL=127
Reply from 10.75.20.2: bytes=32 time=7ms TTL=127
Reply from 10.75.20.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.20.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 7ms, Average = 1ms

C:\>ping 10.75.30.2

Pinging 10.75.30.2 with 32 bytes of data:

Reply from 10.75.30.2: bytes=32 time<1ms TTL=127
Reply from 10.75.30.2: bytes=32 time<1ms TTL=127
Reply from 10.75.30.2: bytes=32 time=16ms TTL=127
Reply from 10.75.30.2: bytes=32 time=17ms TTL=127

Ping statistics for 10.75.30.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 17ms, Average = 8ms

C:\>ping 10.75.40.2

Pinging 10.75.40.2 with 32 bytes of data:

Reply from 10.75.40.2: bytes=32 time<1ms TTL=127

Ping statistics for 10.75.40.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```