Dersim Besiktas

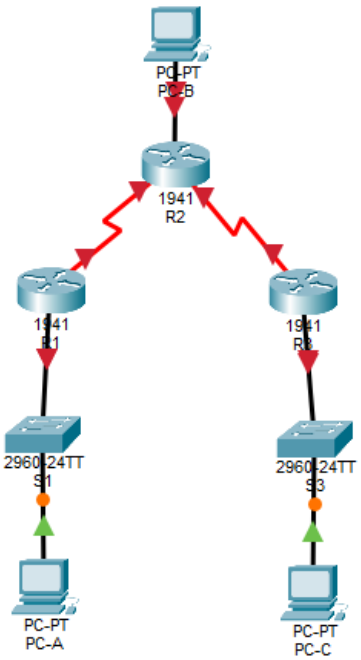
TP 8 - RIPV2

SOMMAIRE

Partie 1 : Création du réseau et configuration des paramètres de base du périphérique

Étape 1 : Câblez le réseau conformément à la topologie

Je mets en place la configuration des périphériques sur le réseau comme indiqué dans la topologie



Étape 2 : Initialisez et redémarrez le routeur et le commutateur

Configuration du routeur R1 :

Je change le nom du routeur

```
Router>en
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R1
R1(config)#
```

Je désactive la recherche DNS

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#no ip domain-lookup
R1(config)#
```

Je mets un mot de passe pour **enable**

```
R1(config)#enable secret class
R1(config)#
```

J'attribue cisco comme mot de passe de console et vty

```
R1(config)#line vty 0 4
R1(config-line)#password cisco
R1(config-line)#login
R1(config-line)#exec-timeout 5 0
R1(config-line)#logging synchronous
R1(config-line)#exit
R1(config)#
```

Je crée une bannière MOTD

```
R1(config)#banner motd #Tout acces non autorise est interdit#
R1(config)#
```

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int g0/1
R1(config-if)#ip address 172.30.10.1 255.255.255.0
R1(config-if)#no shut

R1(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up
```

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#int s0/0/0
R1(config-if)#ip address 10.1.1.1 255.255.255.252
R1(config-if)#no shut
```

Je fais la synchronisation

```
R1(config)#int s0/0/0
R1(config-if)#clock rate 64000
This command applies only to DCE interfaces
R1(config-if)#no shut
R1(config-if)#
```

Configuration de R2 :

Je change le nom du Routeur 2

```
Routeur2>en
Routeur2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Routeur2(config)#hostname R2
R2(config)#
```

Je désactive la recherche DNS

```
R2(config)#no ip domain-lookup
R2(config)#
```

Je mets un mot de passe pour le mode privilégié (enable)

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#enable secret class
R2(config)#
```

Je mets un mot de passe de console vty

```
R2(config)#line vty 0 4
R2(config-line)#password cisco
R2(config-line)#login
R2(config-line)#exec-timeout 5 0
R2(config-line)#logging synchronous
R2(config-line)#exit
R2(config)#
```

Configuration de l’interface g0/0

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#int g0/0
R2(config-if)#ip address 209.165.201.1 255.255.255.0
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/0, changed state to up
```

Configuration de l’interface S0/0/0

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#int s0/0/0
R2(config-if)#ip address 10.1.1.2 255.255.255.252
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/0, changed state to up
```

Configuration de l’interface S0/0/1

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#int s0/0/1
R2(config-if)#ip address 10.2.2.2 255.255.255.252
R2(config-if)#no shut

%LINK-5-CHANGED: Interface Serial0/0/1, changed state to down
R2(config-if)#
```

Je mets un MOTD

```
R2(config)#banner motd #Tout acces non autorise est interdit#
R2(config)#
```

J'enregistre la configuration

```
R2#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R2#
```

```
R2#sh ip in br
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0     209.165.201.1   YES manual up                    up
GigabitEthernet0/1     unassigned      YES NVRAM  administratively down down
Serial0/0/0            10.1.1.2        YES manual up                    up
Serial0/0/1            10.2.2.2        YES manual down                  down
Vlan1                  unassigned      YES NVRAM  administratively down down
R2#
```

Je fais la synchronisation

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#int s0/0/1
R2(config-if)#clock rate 64000
R2(config-if)#no shut
R2(config-if)#
```

Configuration du Routeur R3 :

Je change le nom du Routeur 3

```
Routeur3>en
Routeur3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Routeur3(config)#hostname R3
R3(config)#
```

Je mets un mot de passe pour le mode privilégié

```
R3(config)#enable secret class
R3(config)#
```

Je change le nom du routeur

```
Routeur3(config)#hostname R3
R3(config)#
```

Je désactive la recherche DNS

```
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#no ip domain-lookup
R3(config)#
```

Je configure le logging synchronous pour la ligne de console

```
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#line vty 0 4
R3(config-line)#password cisco
R3(config-line)#login
R3(config-line)#exec-timeout 5 0
R3(config-line)#logging synchronous
R3(config-line)#exit
R3(config)#
```

Je configure une bannière MOTD

```
R3(config)#banner motd #Tout acces non autorise est interdit#
R3(config)#
```

Je configure l'interface G0/1

```
R3(config)#int g0/1
R3(config-if)#ip address 172.30.30.1 255.255.255.0
R3(config-if)#no shut

R3(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to
up
```

Je configure l'interface S0/0/1

```
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#int s0/0/1
R3(config-if)#ip address 10.2.2.1 255.255.255.252
R3(config-if)#no shut

R3(config-if)#
%LINK-5-CHANGED: Interface Serial0/0/1, changed state to up
```

```
R3#sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0     unassigned      YES NVRAM  administratively down down
GigabitEthernet0/1     172.30.30.1     YES manual up                    up
Serial0/0/0            unassigned      YES NVRAM  administratively down down
Serial0/0/1            10.2.2.1        YES manual up                    up
Vlan1                  unassigned      YES unset  administratively down down
R3#
```

Configuration de S1 :

Je change le nom du switch

```
Switch1#enable
Switch1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch1(config)#hostname S1
S1(config)#
```

Je désactive la recherche DNS

```
S1(config)#no ip domain-lookup
S1(config)#
```

Je mets class comme mot de passe pour le mode privilégié

```
S1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
S1(config)#enable secret class
S1(config)#
```

Je mets une bannière motd

```
S1(config)#banner motd #Tout acces non autorise est interdit#
S1(config)#
```

J'attribue le mot de passe cisco comme mot de passe vty

```
S1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
S1(config)#line vty 0 4
S1(config-line)#password cisco
S1(config-line)#login
S1(config-line)#exec-timeout 5 0
S1(config-line)#logging synchronous
S1(config-line)#exit
S1(config)#
```

Configuration de S3 :

Je mets class comme mot de passe pour le mode privilégié

```
Switch3>en
Switch3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch3(config)#enable secret class
Switch3(config)#
```

Je change le nom du Switch

```
Switch3(config)#hostname S3
S3(config)#
```

J'ajoute une bannière motd

```
S3(config)#banner motd #Tout acces non autorise est interdit#
S3(config)#
```

Je désactive la recherche DNS

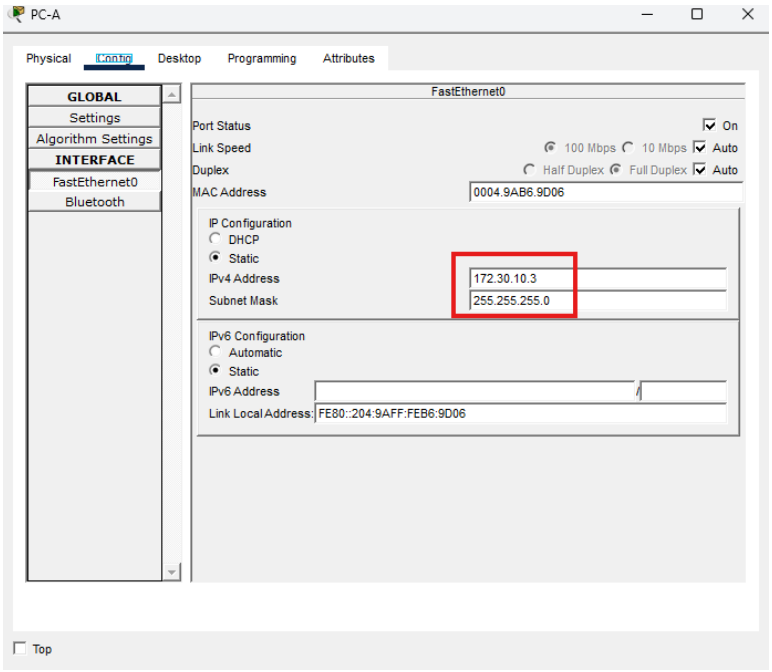
```
S3(config)#no ip domain-lookup
S3(config)#
```

Je configure le logging synchronous

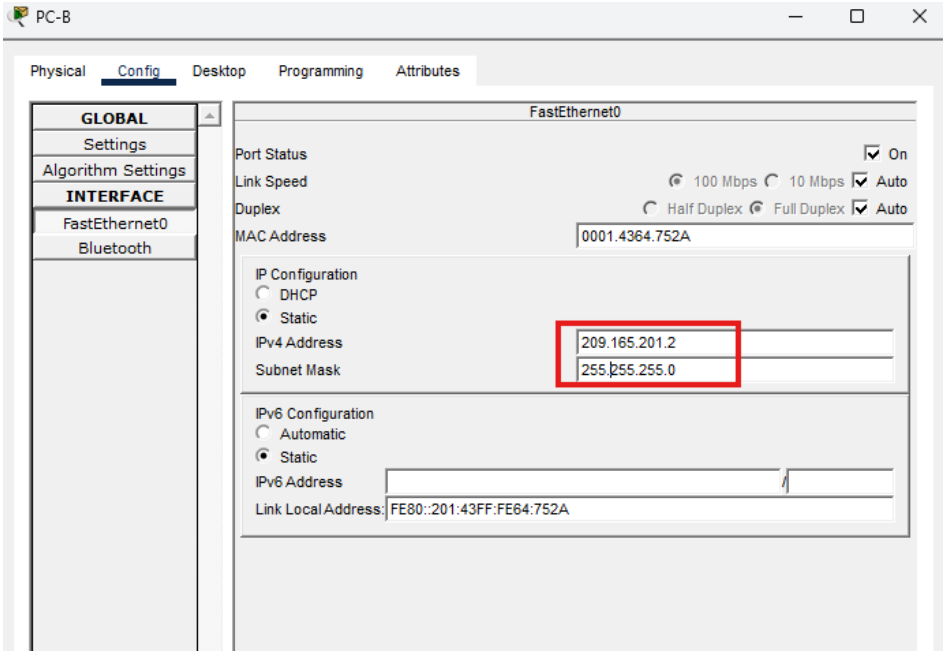
```
S3(config)#line vty 0 4
S3(config-line)#password cisco
S3(config-line)#login
S3(config-line)#exec-timeout 5 0
S3(config-line)#logging synchronous
S3(config-line)#exit
S3(config)#
```

Étape 4 : Configurez les hôtes de PC

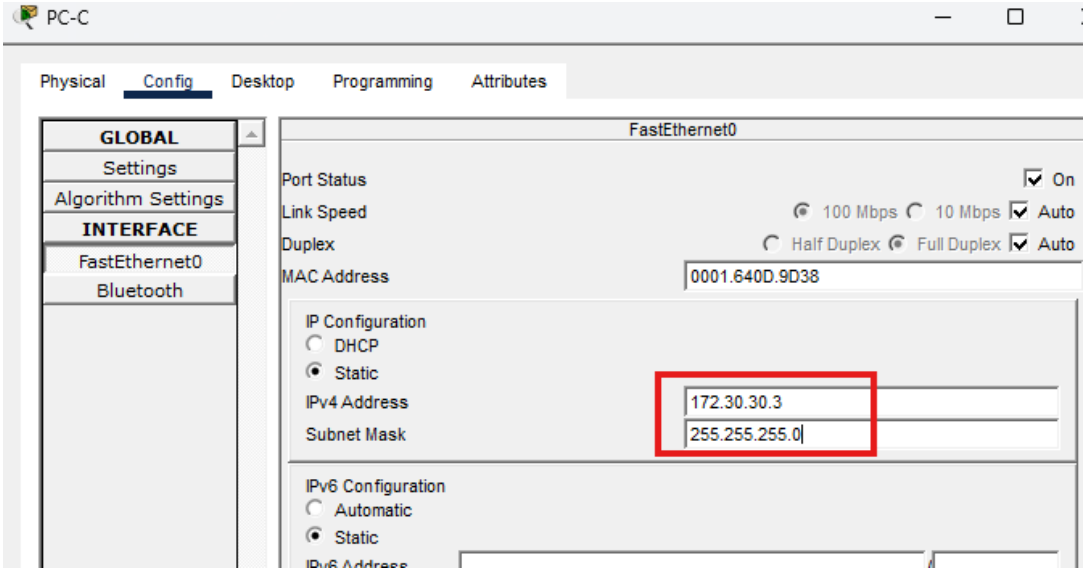
PC A :



PC B



PC C :

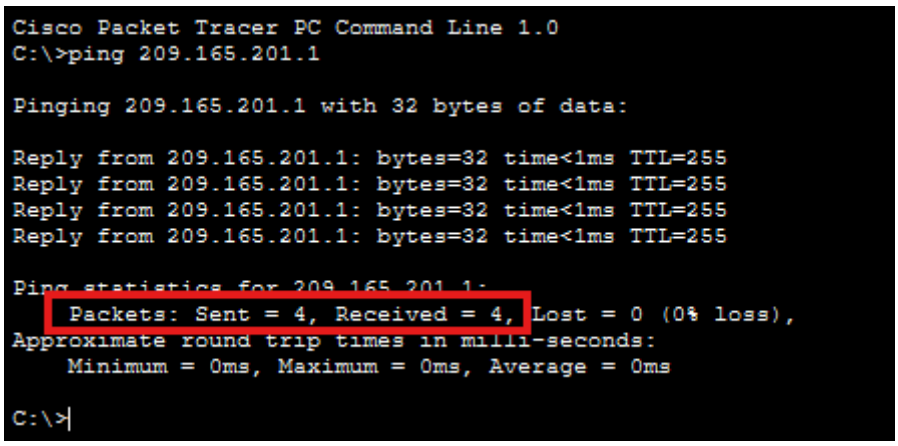


Étape 5 : Testez la connectivité

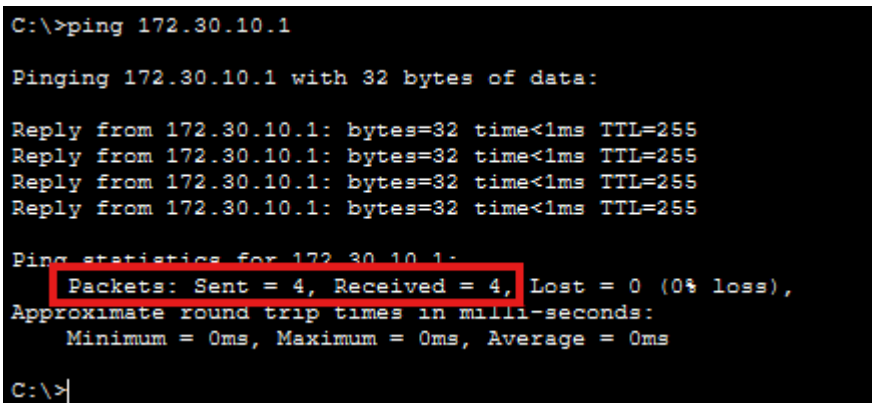
PC A :

```
C:\>ping 172.30.30.1

Pinging 172.30.30.1 with 32 bytes of data:

Reply from 172.30.30.1: bytes=32 time<1ms TTL=255
Reply from 172.30.30.1: bytes=32 time<1ms TTL=255
Reply from 172.30.30.1: bytes=32 time<1ms TTL=255
Reply from 172.30.30.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.30.30.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```

PC B :


Cisco Packet Tracer PC Command Line 1.0
C:\>ping 209.165.201.1
Pinging 209.165.201.1 with 32 bytes of data:
Reply from 209.165.201.1: bytes=32 time<1ms TTL=255
Reply from 209.165.201.1: bytes=32 time<1ms TTL=255
Reply from 209.165.201.1: bytes=32 time<1ms TTL=255
Reply from 209.165.201.1: bytes=32 time<1ms TTL=255
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>

PC C :


C:\>ping 172.30.10.1
Pinging 172.30.10.1 with 32 bytes of data:
Reply from 172.30.10.1: bytes=32 time<1ms TTL=255
Reply from 172.30.10.1: bytes=32 time<1ms TTL=255
Reply from 172.30.10.1: bytes=32 time<1ms TTL=255
Reply from 172.30.10.1: bytes=32 time<1ms TTL=255
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>

Ping R3 vers R2 :

```
R3>ping 10.2.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/4/5 ms

R3>
```

Ping R1 vers R2 :

```
R1>ping 10.1.1.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.1.1.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 3/4/5 ms

R1>
```

Partie 2 : Configuration et vérification du routage RIPv2

Étape 1 : Configurer le routage RIPv2

Sur R1 je configure le routage RPV2

```
R1#config t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#router rip
R1(config-router)#version 2
R1(config-router)#passive-interface g0/1
R1(config-router)#network 172.30.0.0
R1(config-router)#network 10.0.0.0
R1(config-router)#
```

Sur R3 je configure le routage RIPV2

```
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#router rip
R3(config-router)#version 2
R3(config-router)#passive-interface g0/1
R3(config-router)#network 172.30.0.0
R3(config-router)#network 10.0.0.0
R3(config-router)#
```

Étape 2 : Examinez l'état actuel du réseau

Je tape la comande **sh ip int br** sur le routeur R2

```
R2>en
Password:
R2#sh ip int br
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0     209.165.201.1   YES NVRAM  up                    up
GigabitEthernet0/1     unassigned      YES NVRAM  administratively down down
Serial0/0/0            10.1.1.2        YES NVRAM  up                    up
Serial0/0/1            10.2.2.2        YES NVRAM  up                    up
Vlan1                  unassigned      YES NVRAM  administratively down down
R2#
```

Je vérifie que RIPv2 s'exécute bien sur tout les routeurs

```
R1#show ip protocols
Routing Protocol is "rip"
Sending updates every 30 seconds, next due in 3 seconds
Invalid after 180 seconds, hold down 180, flushed after 240
Outgoing update filter list for all interfaces is not set
Incoming update filter list for all interfaces is not set
Redistributing: rip
Default version control: send version 2, receive 2
  Interface              Send  Recv  Triggered RIP  Key-chain
  Serial0/0/0            22
Automatic network summarization is in effect
Maximum path: 4
Routing for Networks:
            10.0.0.0
            172.30.0.0
Passive Interface(s):
            GigabitEthernet0/1
Routing Information Sources:
            Gateway         Distance      Last Update
Distance: (default is 120)
R1#
```

J’affiche la table de routage de R2

```
R2#show ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C       10.1.1.0/30 is directly connected, Serial0/0/0
L       10.1.1.2/32 is directly connected, Serial0/0/0
C       10.2.2.0/30 is directly connected, Serial0/0/1
L       10.2.2.2/32 is directly connected, Serial0/0/1
     209.165.201.0/24 is variably subnetted, 2 subnets, 2 masks
C       209.165.201.0/24 is directly connected, GigabitEthernet0/0
L       209.165.201.1/32 is directly connected, GigabitEthernet0/0

R2#
```

J’affiche la table de routage de R1

```
R1#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/8 is variably subnetted, 2 subnets, 2 masks
C       10.1.1.0/30 is directly connected, Serial0/0/0
L       10.1.1.1/32 is directly connected, Serial0/0/0
     172.30.0.0/16 is variably subnetted, 2 subnets, 2 masks
C       172.30.10.0/24 is directly connected, GigabitEthernet0/1
L       172.30.10.1/32 is directly connected, GigabitEthernet0/1

R1#
```

Étape 3 : Désactivez la fonction de récapitulation automatique

Sur R1 je désactive la fonction de récapitulation automatique et j'efface sa table de routage

```
R1#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#router rip
R1(config-router)#no auto-summary
R1(config-router)#end
R1#
%SYS-5-CONFIG_I: Configured from console by console

R1#clear ip route *
R1#
```

Même chose sur R2

```
R2#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#router rip
R2(config-router)#no auto-summary
R2(config-router)#end
R2#
%SYS-5-CONFIG_I: Configured from console by console

R2#clear ip route *
R2#
```

Même chose sur R3

```
R3#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#router rip
R3(config-router)#no auto-summary
R3(config-router)#end
R3#
%SYS-5-CONFIG_I: Configured from console by console

R3#clear ip route *
R3#
```

J’examine les tables de routages :

R2

```
R2#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
C       10.1.1.0/30 is directly connected, Serial0/0/0
L       10.1.1.2/32 is directly connected, Serial0/0/0
C       10.2.2.0/30 is directly connected, Serial0/0/1
L       10.2.2.2/32 is directly connected, Serial0/0/1
     172.30.0.0/24 is subnetted, 2 subnets
R       172.30.10.0/24 [120/1] via 10.1.1.1, 00:00:28, Serial0/0/0
R       172.30.30.0/24 [120/1] via 10.2.2.1, 00:00:01, Serial0/0/1
     209.165.201.0/24 is variably subnetted, 2 subnets, 2 masks
C       209.165.201.0/24 is directly connected, GigabitEthernet0/0
L       209.165.201.1/32 is directly connected, GigabitEthernet0/0

R2#
```

R1

```
R1# sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/8 is variably subnetted, 3 subnets, 2 masks
C       10.1.1.0/30 is directly connected, Serial0/0/0
L       10.1.1.1/32 is directly connected, Serial0/0/0
R       10.2.2.0/30 [120/1] via 10.1.1.2, 00:00:21, Serial0/0/0
     172.30.0.0/16 is variably subnetted, 3 subnets, 2 masks
C       172.30.10.0/24 is directly connected, GigabitEthernet0/1
L       172.30.10.1/32 is directly connected, GigabitEthernet0/1
R       172.30.30.0/24 [120/2] via 10.1.1.2, 00:00:21, Serial0/0/0
```

R3

```
R3#sh ip route
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/8 is variably subnetted, 3 subnets, 2 masks
R       10.1.1.0/30 [120/1] via 10.2.2.2, 00:00:04, Serial0/0/1
C       10.2.2.0/30 is directly connected, Serial0/0/1
L       10.2.2.1/32 is directly connected, Serial0/0/1
     172.30.0.0/16 is variably subnetted, 3 subnets, 2 masks
R       172.30.10.0/24 [120/2] via 10.2.2.2, 00:00:04, Serial0/0/1
C       172.30.30.0/24 is directly connected, GigabitEthernet0/1
L       172.30.30.1/32 is directly connected, GigabitEthernet0/1

R3#
```

Étape 4 : Configurez et redistribuez une route statique pour l'accès à Internet.

Je mets une route statique par défaut sur R2

```
R2(config)#ip route 0.0.0.0 0.0.0.0 209.165.201.2
R2(config)#
```

```
R2(config)#router rip
R2(config-router)#default-information originate
R2(config-router)#
```

Étape 5 : Vérifiez la configuration du routage.

J'affiche la table de routage de R1

```
Gateway of last resort is 10.1.1.2 to network 0.0.0.0

     10.0.0.0/8 is variably subnetted, 3 subnets, 2 masks
C       10.1.1.0/30 is directly connected, Serial0/0/0
L       10.1.1.1/32 is directly connected, Serial0/0/0
R       10.2.2.0/30 [120/1] via 10.1.1.2, 00:00:01, Serial0/0/0
     172.30.0.0/16 is variably subnetted, 3 subnets, 2 masks
C       172.30.10.0/24 is directly connected, GigabitEthernet0/1
L       172.30.10.1/32 is directly connected, GigabitEthernet0/1
R       172.30.30.0/24 [120/2] via 10.1.1.2, 00:00:01, Serial0/0/0
R*   0.0.0.0/0 [120/1] via 10.1.1.2, 00:00:01, Serial0/0/0

R1#
```

Étape 6 : Vérifiez la connectivité.

Ping depuis PC A :

```
C:\>ping 209.165.201.2

Pinging 209.165.201.2 with 32 bytes of data:

Reply from 209.165.201.2: bytes=32 time=1ms TTL=126
Reply from 209.165.201.2: bytes=32 time=32ms TTL=126
Reply from 209.165.201.2: bytes=32 time=59ms TTL=126
Reply from 209.165.201.2: bytes=32 time=36ms TTL=126

Ping statistics for 209.165.201.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 59ms, Average = 32ms
```

Ping depuis PC C :