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1. Examen des routes statiques

- Affichage de la configuration actuelle de R1

```
User Access Verification
```

```
Password:
```

```
R1>en
```

```
Password:
```

```
R1#sh run
```

```
Building configuration...
```

```
Current configuration : 927 bytes
```

```
!
```

```
version 12.3
```

```
no service timestamps log datetime msec
```

```
no service timestamps debug datetime msec
```

```
no service password-encryption
```

```
!
```

```
hostname R1
```

```
!
```

```
!
```

```
!
```

```
enable secret 5 $1$.3RO$VLUOdBF2OqNBn0EjQBvR./
```

```
!
```

```
!
```

```
!
```

```
!
```

```
!
```

```
!
```

```
ip cef
```

```
no ipv6 cef
```

```
--More--
```

```

!
spanning-tree mode pvst
!
!
!
!
!
!
interface FastEthernet0/0
 ip address 172.16.3.1 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 shutdown
!
interface Serial0/0/0
 ip address 172.16.2.1 255.255.255.0
 clock rate 64000
!
interface Serial0/0/1
 no ip address
 clock rate 2000000
!
interface Vlan1
 no ip address
 shutdown
!
ip classless
ip route 192.168.2.0 255.255.255.0 172.16.2.2
ip route 192.168.1.0 255.255.255.0 172.16.2.2
ip route 172.16.1.0 255.255.255.0 172.16.2.2
.

ip flow-export version 9
!
!
!
!
!
!
!
!
line con 0
 password cisco
 login
!
line aux 0
!
line vty 0 4
 password cisco
 login
!
!
!
end

R1#

```

■ Affichage de la table de routage de R1

```
R1#sh ip route
Codes: C - connected, S - static, I - IGRP, 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

    172.16.0.0/24 is subnetted, 3 subnets
S       172.16.1.0 [1/0] via 172.16.2.2
C       172.16.2.0 is directly connected, Serial0/0/0
C       172.16.3.0 is directly connected, FastEthernet0/0
S     192.168.1.0/24 [1/0] via 172.16.2.2
S     192.168.2.0/24 [1/0] via 172.16.2.2

R1#|
```

■ Vérification de la connexion entre les pc

De PC 1 vers les autres

```
C:\>ping 172.16.1.10

Pinging 172.16.1.10 with 32 bytes of data:

Request timed out.
Reply from 172.16.1.10: bytes=32 time=5ms TTL=126
Reply from 172.16.1.10: bytes=32 time=6ms TTL=126
Reply from 172.16.1.10: bytes=32 time=5ms TTL=126

Ping statistics for 172.16.1.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 5ms, Maximum = 6ms, Average = 5ms

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.10: bytes=32 time=8ms TTL=125
Reply from 192.168.2.10: bytes=32 time=8ms TTL=125
Reply from 192.168.2.10: bytes=32 time=10ms TTL=125

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 8ms, Maximum = 10ms, Average = 8ms

C:\>
```

De PC 2 vers les autres

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 172.16.3.10

Pinging 172.16.3.10 with 32 bytes of data:

Request timed out.
Reply from 172.16.3.10: bytes=32 time=8ms TTL=126
Reply from 172.16.3.10: bytes=32 time=9ms TTL=126
Reply from 172.16.3.10: bytes=32 time=9ms TTL=126

Ping statistics for 172.16.3.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 8ms, Maximum = 9ms, Average = 8ms

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.10: bytes=32 time=10ms TTL=126
Reply from 192.168.2.10: bytes=32 time=9ms TTL=126
Reply from 192.168.2.10: bytes=32 time=9ms TTL=126

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 9ms, Maximum = 10ms, Average = 9ms

C:\>
```

De PC3 vers les autres

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 172.16.1.10

Pinging 172.16.1.10 with 32 bytes of data:

Reply from 172.16.1.10: bytes=32 time=9ms TTL=126
Reply from 172.16.1.10: bytes=32 time=9ms TTL=126
Reply from 172.16.1.10: bytes=32 time=1ms TTL=126
Reply from 172.16.1.10: bytes=32 time=8ms TTL=126

Ping statistics for 172.16.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 9ms, Average = 6ms

C:\>ping 172.16.3.10

Pinging 172.16.3.10 with 32 bytes of data:

Reply from 172.16.3.10: bytes=32 time=25ms TTL=125
Reply from 172.16.3.10: bytes=32 time=10ms TTL=125
Reply from 172.16.3.10: bytes=32 time=11ms TTL=125
Reply from 172.16.3.10: bytes=32 time=14ms TTL=125

Ping statistics for 172.16.3.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 10ms, Maximum = 25ms, Average = 15ms

C:\>

```

2. Résumé des routes statiques (routeur R3)

- Etape 1 / Etape 2 : remplacement des routes statiques en route résumée et sauvegarde

User Access Verification

Password:

R3>en

Password:

R3#conf t

Enter configuration commands, one per line. End with CNTL/Z.

R3(config)#no ip route 172.16.1.0 255.255.255.0 192.168.1.2

R3(config)#no ip route 172.16.2.0 255.255.255.0 192.168.1.2

R3(config)#no ip route 172.16.3.0 255.255.255.0 192.168.1.2

R3(config)#ip route 172.16.0.0 255.255.252.0 192.168.1.2

R3(config)#^Z

R3#

%SYS-5-CONFIG_I: Configured from console by console

copy run start

Destination filename [startup-config]?

Building configuration...

[OK]

■ Vérification de la route dans la configuration et dans la table de routage

```
!  
ip classless  
ip route 172.16.0.0 255.255.252.0 192.168.1.2  
!  
  
R3#sh ip route  
Codes: C - connected, S - static, I - IGRP, 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  
  
      172.16.0.0/22 is subnetted, 1 subnets  
S       172.16.0.0 [1/0] via 192.168.1.2  
C       192.168.1.0/24 is directly connected, Serial0/0/1  
C       192.168.2.0/24 is directly connected, FastEthernet0/0  
  
R3#
```

■ Vérification de la connectivité. Ping de PC3 vers PC2

```
C:\>ping 172.16.1.10  
  
Pinging 172.16.1.10 with 32 bytes of data:  
  
Reply from 172.16.1.10: bytes=32 time=7ms TTL=126  
Reply from 172.16.1.10: bytes=32 time=6ms TTL=126  
Reply from 172.16.1.10: bytes=32 time=6ms TTL=126  
Reply from 172.16.1.10: bytes=32 time=5ms TTL=126  
  
Ping statistics for 172.16.1.10:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
    Minimum = 5ms, Maximum = 7ms, Average = 6ms
```

3. Configuration d'un réseau d'extrémité (routeur R1)

■ Etape 1 / Etape 2 Remplacement des routes statiques existantes par une route par défaut + sauvegarde

```
Password:  
  
R1>en  
Password:  
R1#conf t  
Enter configuration commands, one per line. End with CNTL/Z.  
R1(config)#no ip route 172.16.1.0 255.255.255.0 172.16.2.2  
R1(config)#no ip route 192.168.1.0 255.255.255.0 172.16.2.2  
R1(config)#no ip route 192.168.2.0 255.255.255.0 172.16.2.2  
R1(config)#ip route 0.0.0.0 0.0.0.0 172.16.2.2  
R1(config)#^Z  
R1#  
%SYS-5-CONFIG_I: Configured from console by console  
copy run start  
Destination filename [startup-config]?  
Building configuration...  
[OK]
```

- Etape 3 Vérification de la présence de la route par défaut la configuration et dans la table de routage

```
!  
ip classless  
ip route 0.0.0.0 0.0.0.0 172.16.2.2  
!
```

```
R1# sh ip route
```

```
Codes: C - connected, S - static, I - IGRP, 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 172.16.2.2 to network 0.0.0.0
```

```
    172.16.0.0/24 is subnetted, 2 subnets
```

```
C        172.16.2.0 is directly connected, Serial0/0/0
```

```
C        172.16.3.0 is directly connected, FastEthernet0/0
```

```
S*    0.0.0.0/0 [1/0] via 172.16.2.2
```

- Etape 4 Vérification de la connectivité depuis pc1

```
C:\>ping 172.16.1.10  
  
Pinging 172.16.1.10 with 32 bytes of data:  
  
Reply from 172.16.1.10: bytes=32 time=9ms TTL=126  
Reply from 172.16.1.10: bytes=32 time=6ms TTL=126  
Reply from 172.16.1.10: bytes=32 time=6ms TTL=126  
Reply from 172.16.1.10: bytes=32 time=18ms TTL=126  
  
Ping statistics for 172.16.1.10:  
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),  
Approximate round trip times in milli-seconds:  
    Minimum = 6ms, Maximum = 18ms, Average = 9ms
```