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1. Examen des routes statiques.

Pour reseau 1 (172.16.3.0/24)

```

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
!

```

ont Entre la commande **show ip route** pour afficher la table de routage

```

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

```

les ping pour testé la conextivité(pc1)

```

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=28ms TTL=128
Reply from 172.16.3.10: bytes=32 time=20ms TTL=128
Reply from 172.16.3.10: bytes=32 time=23ms TTL=128
Reply from 172.16.3.10: bytes=32 time=25ms TTL=128

Ping statistics for 172.16.3.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 20ms, Maximum = 28ms, Average = 24ms

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Reply from 192.168.2.10: bytes=32 time=10ms TTL=125
Reply from 192.168.2.10: bytes=32 time=2ms TTL=125
Reply from 192.168.2.10: bytes=32 time=47ms 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 = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 47ms, Average = 17ms

```

Pour reseau 2 (172.16.1.0/24)

```

!
ip classless
ip route 172.16.3.0 255.255.255.0 Serial0/0/0
ip route 192.168.2.0 255.255.255.0 Serial0/0/1
!
ip flow-export version 9

```

Entrez la commande **show ip route** pour afficher la table de routage

```

Gateway of last resort is not set

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

```

les ping pour testé la conextivité (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=4ms TTL=128
Reply from 172.16.1.10: bytes=32 time=30ms TTL=128
Reply from 172.16.1.10: bytes=32 time=5ms TTL=128
Reply from 172.16.1.10: bytes=32 time=1ms TTL=128

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 = 30ms, Average = 10ms

C:\>ping 192.168.2.10

Pinging 192.168.2.10 with 32 bytes of data:

Reply from 192.168.2.10: bytes=32 time=10ms TTL=126
Reply from 192.168.2.10: bytes=32 time=1ms TTL=126
Reply from 192.168.2.10: bytes=32 time=1ms TTL=126
Reply from 192.168.2.10: bytes=32 time=3ms TTL=126

Ping statistics for 192.168.2.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 10ms, Average = 3ms

```

Pour reseau 3 (192.168.2.0/24)

```

!
ip classless
ip route 172.16.3.0 255.255.255.0 192.168.1.2
ip route 172.16.2.0 255.255.255.0 192.168.1.2
ip route 172.16.1.0 255.255.255.0 192.168.1.2
!

```

Entrez la commande **show ip route** pour afficher la table de routage

```

172.16.0.0/24 is subnetted, 3 subnets
S    172.16.1.0 [1/0] via 192.168.1.2
S    172.16.2.0 [1/0] via 192.168.1.2
S    172.16.3.0 [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

```

les ping pour testé la conextivité(pc3)

```

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=1ms TTL=126
Reply from 172.16.1.10: bytes=32 time=10ms TTL=126
Reply from 172.16.1.10: bytes=32 time=1ms TTL=126
Reply from 172.16.1.10: bytes=32 time=1ms 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 = 10ms, Average = 3ms

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=2ms TTL=125
Reply from 172.16.3.10: bytes=32 time=3ms TTL=125
Reply from 172.16.3.10: bytes=32 time=2ms TTL=125
Reply from 172.16.3.10: bytes=32 time=3ms 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 = 2ms, Maximum = 3ms, Average = 2ms

```

2. Résumé des routes statiques (routeur R3)

Etape 1 : remplacement des routes statiques existantes par une route résumée (agrégée)

```

Configuring from terminal, memory, or network (terminal):
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

```

Etape 2 : enregistrement des configurations mises à jour

```

R3#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R3#

```

Etape 3 : consultation de la configuration

```

shutdown
!
ip classless
ip route 172.16.0.0 255.255.252.0 192.168.1.2
!
ip flow-export version 9
!
!

```

```

-----
      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, Serial10/0/1
C       192.168.2.0/24 is directly connected, FastEthernet0/0

```

Etape 4 : vérification de la connectivité

```

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=2ms TTL=125
Reply from 172.16.3.10: bytes=32 time=2ms TTL=125
Reply from 172.16.3.10: bytes=32 time=12ms TTL=125
Reply from 172.16.3.10: bytes=32 time=3ms 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 = 2ms, Maximum = 12ms, Average = 4ms

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=12ms TTL=126
Reply from 172.16.1.10: bytes=32 time=1ms TTL=126
Reply from 172.16.1.10: bytes=32 time=1ms TTL=126
Reply from 172.16.1.10: bytes=32 time=2ms 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 = 12ms, Average = 4ms

```

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

Etape 1 : remplacement des routes statiques existantes par une route par défaut

```

R1>ena
Password:
R1#config
Configuring from terminal, memory, or network [terminal]?
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)#

```

