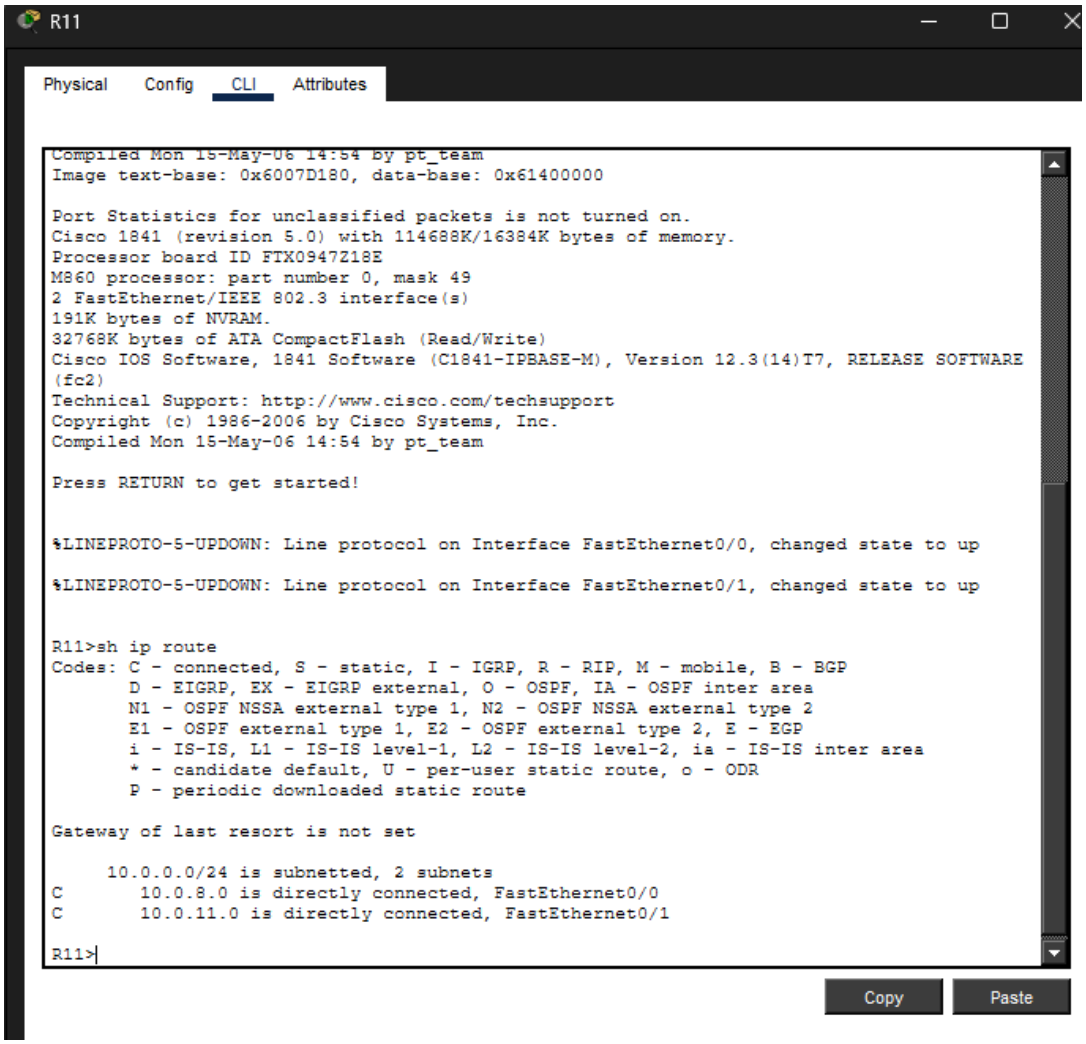
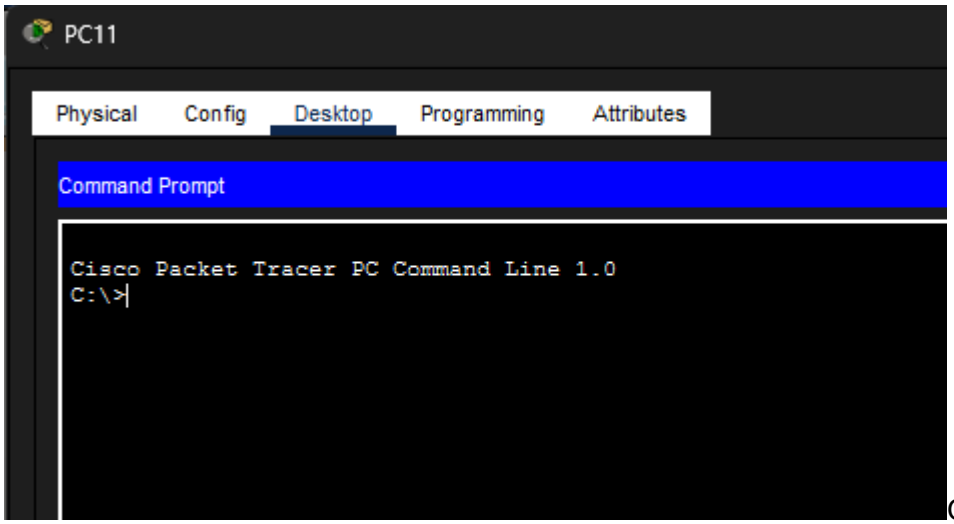
TP6 : Routage statique

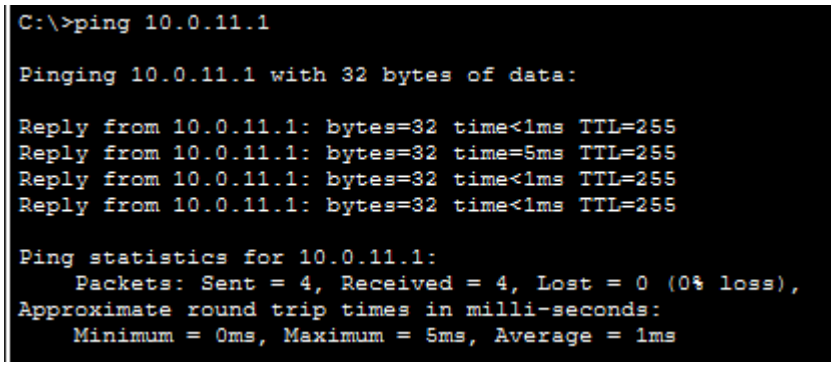
1. Visualisation de la table de routage.



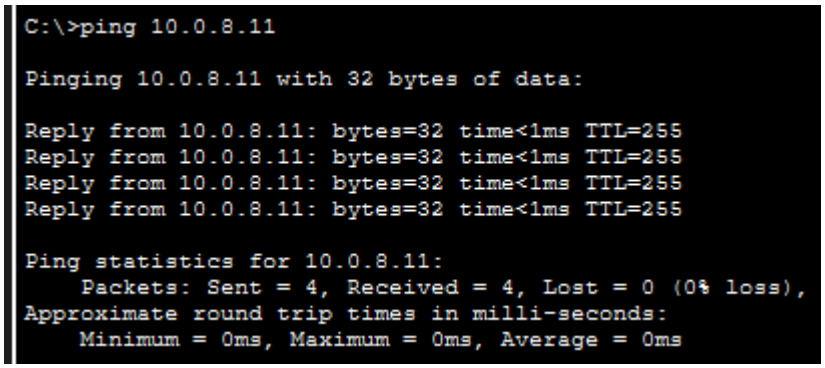
Affichage dans l'interface CLI après l'éxecution de la commande sh ip route dans R11



Ouverture de l'onglet invite de commande avec PC11



Ping de 10.0.11.1

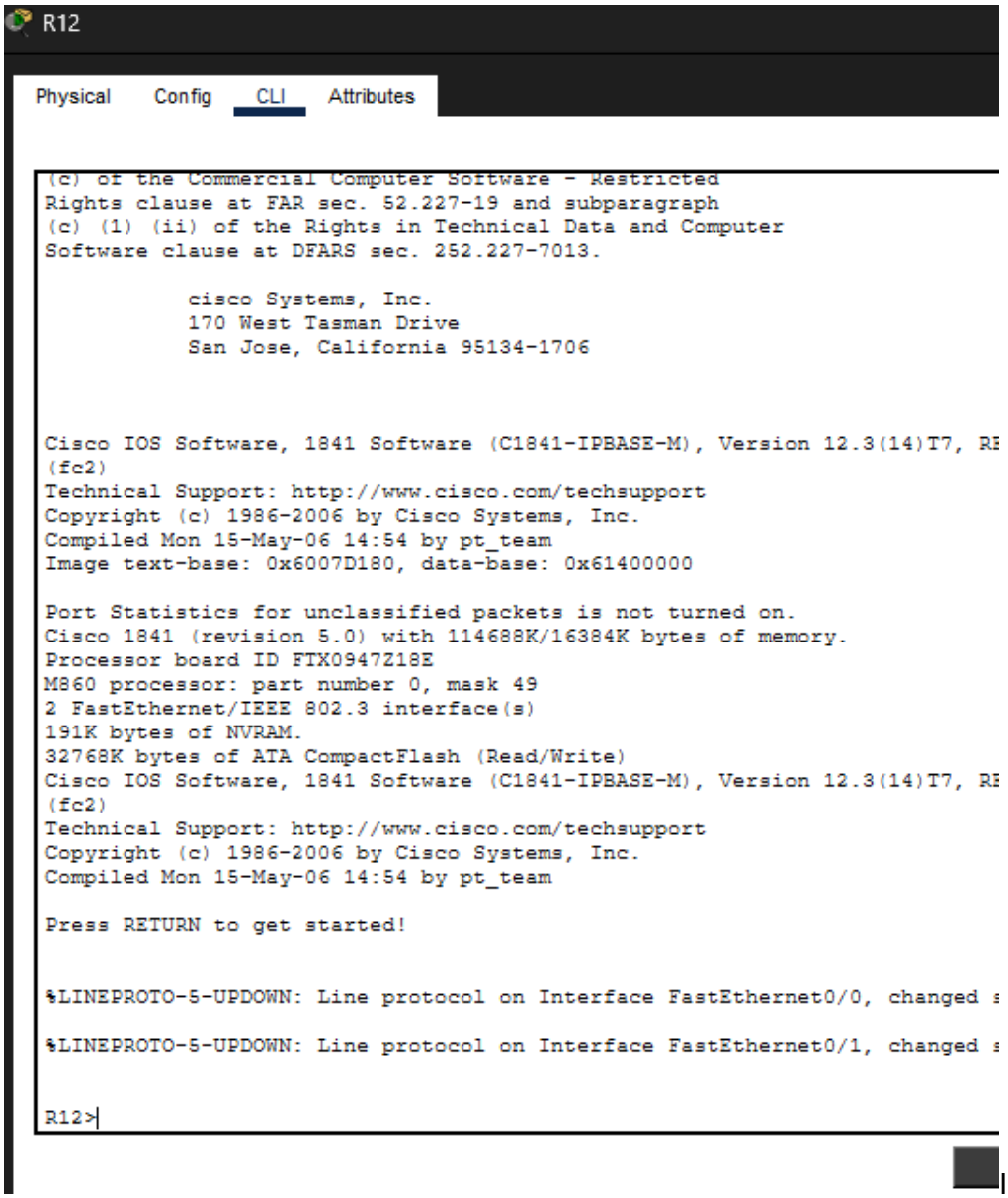


Ping de 10.0.8.11

```
C:\>ping 10.0.8.12

Pinging 10.0.8.12 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.8.12:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Ping 10.0.8.12 fonctionne pas car ping de R12 qui n'est pas encore dans la table de routage

2. Ajout d'une route statique sur R12.



Interface CLI du routeur R12

```
R12>en
R12#
```

Commande en pour passer en mode priviligié

```
R12#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R12(config)#
```

Commande conf t pour passer en mode configuration du terminale

```
R12(config)#ip route 10.0.11.0 255.255.255.0 10.0.8.11
```

Réseau de destination / msr / adresse du prochain saut

```
router rip
!
ip classless
ip route 10.0.11.0 255.255.255.0 10.0.8.11
!
```

Résultat après avoir effectuer la commande sh run

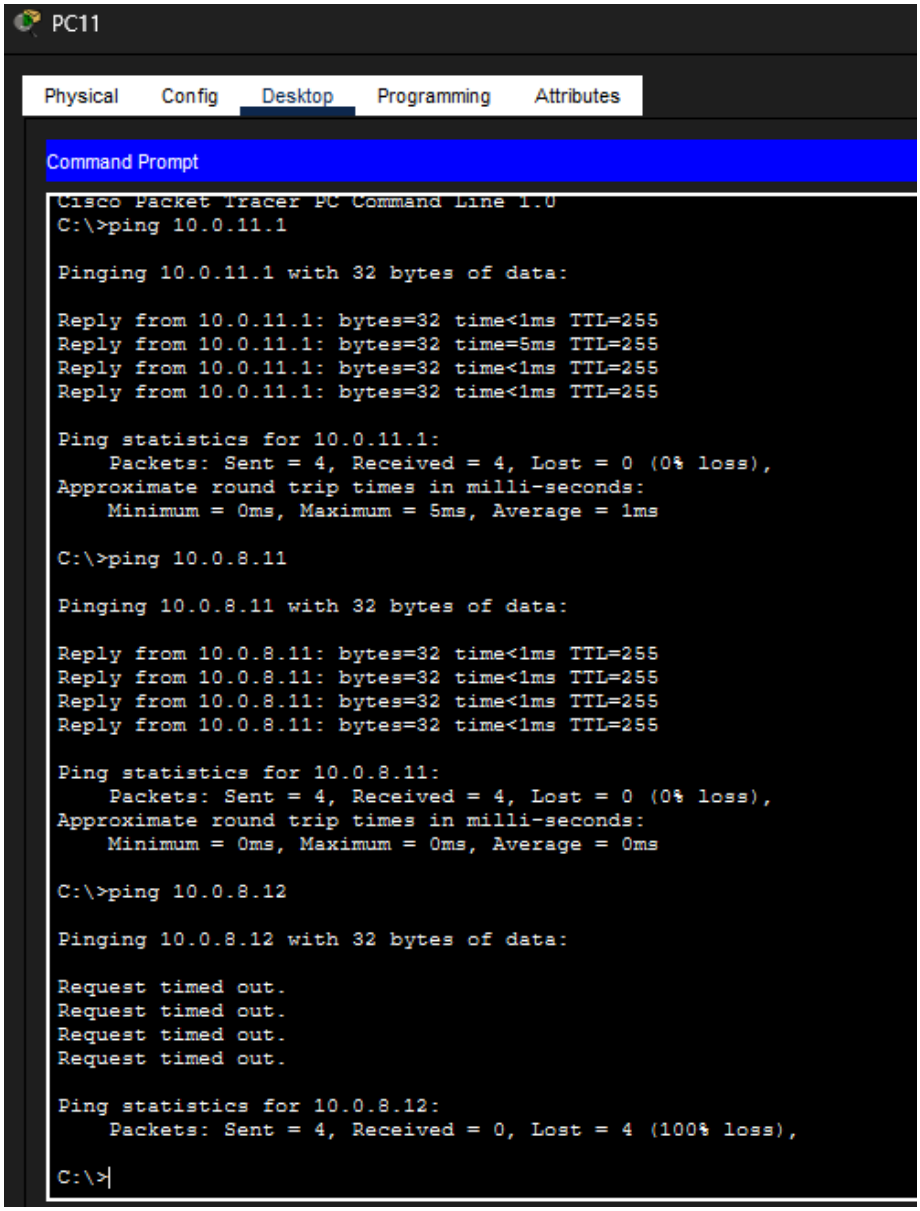
```
R12#sh ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
       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

     10.0.0.0/24 is subnetted, 3 subnets
C       10.0.8.0 is directly connected, FastEthernet0/0
S       10.0.11.0 [1/0] via 10.0.8.11
C       10.0.12.0 is directly connected, FastEthernet0/1
```

Résultat après la commande sh ip route

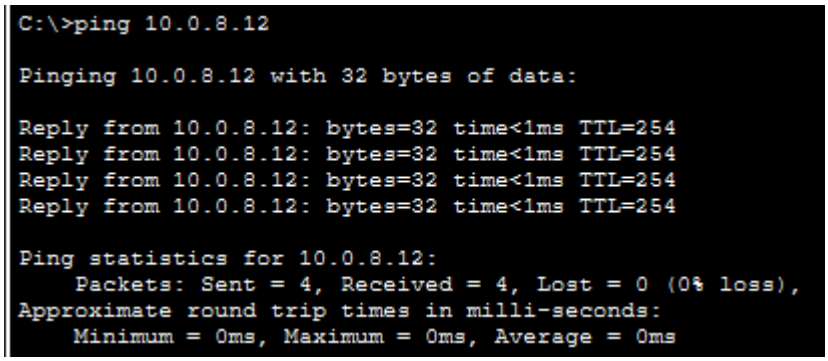
```
R12#copy run start
Destination filename [startup-config]?
Building configuration...
[OK]
R12#
```

Enregistrement de la configuration

3. Ajout d’une route statique sur R11.



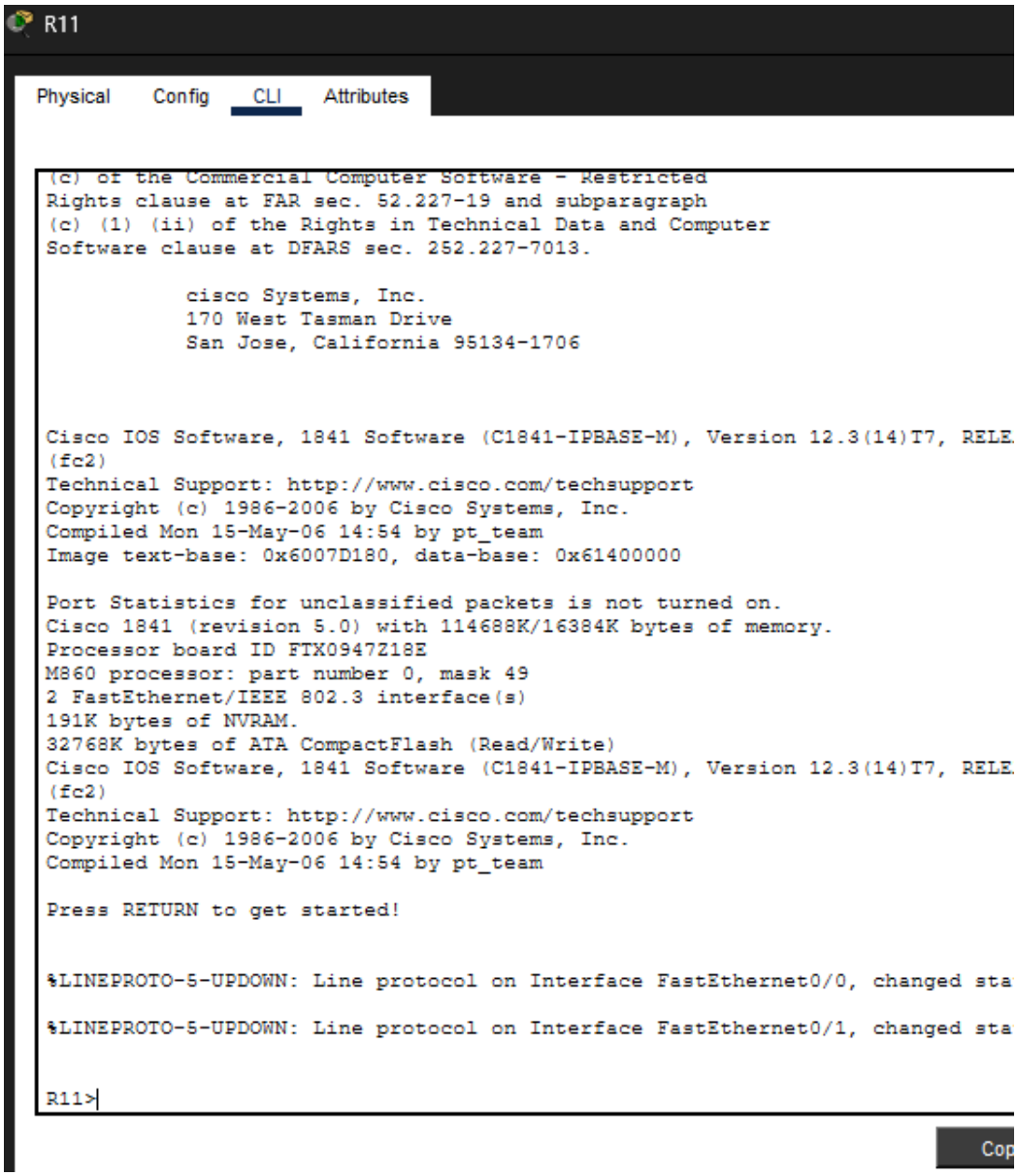
Espace invite de commande du pc11



Ping de 10.0.8.12

```
C:\>ping 10.0.12.1

Pinging 10.0.12.1 with 32 bytes of data:

Reply from 10.0.11.1: Destination host unreachable.
Reply from 10.0.11.1: Destination host unreachable.
Request timed out.
Reply from 10.0.11.1: Destination host unreachable.

Ping statistics for 10.0.12.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Ping de 10.0.12.1 (non fonctionnel car la table de routage comporte que les réseaux connecter directement



Interface CLI de R11

```
R11>en
R11#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
R11(config)#ip route 10.0.12.0 255.255.255.0 10.0.8.12
R11(config)#
```

Passage en mode priviligé -> configuration et enregistrememement de l'ip 10.0.12.0 à la table de routage

```
R11(config)#exit
R11#
%SYS-5-CONFIG_I: Configured from console by console

R11#sh ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B -
       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
       * - candidate default, U - per-user static route, o - ODR
       P - periodic downloaded static route

Gateway of last resort is not set

     10.0.0.0/24 is subnetted, 3 subnets
C       10.0.8.0 is directly connected, FastEthernet0/0
C       10.0.11.0 is directly connected, FastEthernet0/1
S       10.0.12.0 [1/0] via 10.0.8.12
```

Adresse Ip 10.0.12.0 dans la table de routage

```
C:\>ping 10.0.12.1

Pinging 10.0.12.1 with 32 bytes of data:

Reply from 10.0.12.1: bytes=32 time<1ms TTL=254
Reply from 10.0.12.1: bytes=32 time<1ms TTL=254
Reply from 10.0.12.1: bytes=32 time<1ms TTL=254
Reply from 10.0.12.1: bytes=32 time<1ms TTL=254

Ping statistics for 10.0.12.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Ping de 10.0.12.1 fonctionnelle

4. A vous de jouer.

1. Relier PC 21 à PC 22

```
R22(config)#ip route 10.0.21.0 255.255.255.0 10.0.16.21
R22(config)#exit
```

Ajout de la route 10.0.21.0 en passant par 10.0.16.21

```
C:\>ping 10.0.16.22

Pinging 10.0.16.22 with 32 bytes of data:

Reply from 10.0.16.22: bytes=32 time=1ms TTL=254
Reply from 10.0.16.22: bytes=32 time<1ms TTL=254
Reply from 10.0.16.22: bytes=32 time<1ms TTL=254
Reply from 10.0.16.22: bytes=32 time<1ms TTL=254

Ping statistics for 10.0.16.22:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Ping du routeur 22 depuis le PC 21 -> fonctionnel

```
R21#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

     10.0.0.0/24 is subnetted, 3 subnets
C       10.0.16.0 is directly connected, FastEthernet0/0
C       10.0.21.0 is directly connected, FastEthernet0/1
S       10.0.22.0 [1/0] via 10.0.16.22
```

```
C:\>ping 10.0.22.0

Pinging 10.0.22.0 with 32 bytes of data:

Reply from 10.0.16.22: bytes=32 time<1ms TTL=254
Reply from 10.0.16.22: bytes=32 time<1ms TTL=254
Reply from 10.0.16.22: bytes=32 time<1ms TTL=254
Reply from 10.0.16.22: bytes=32 time<1ms TTL=254

Ping statistics for 10.0.22.0:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Ping de PC21 à coté hote de R22

2. Relier tous les pc ensembles

```
R21#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

     10.0.0.0/24 is subnetted, 7 subnets
S       10.0.1.0 [1/0] via 10.0.16.16
S       10.0.8.0 [1/0] via 10.0.1.8
S       10.0.11.0 [1/0] via 10.0.8.11
S       10.0.12.0 [1/0] via 10.0.8.12
C       10.0.16.0 is directly connected, FastEthernet0/0
C       10.0.21.0 is directly connected, FastEthernet0/1
S       10.0.22.0 [1/0] via 10.0.16.22
```

Table de routage du routeur 21

```
R22#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

     10.0.0.0/24 is subnetted, 7 subnets
S       10.0.1.0 [1/0] via 10.0.16.16
S       10.0.8.0 [1/0] via 10.0.1.8
S       10.0.11.0 [1/0] via 10.0.8.11
S       10.0.12.0 [1/0] via 10.0.8.12
C       10.0.16.0 is directly connected, FastEthernet0/0
S       10.0.21.0 [1/0] via 10.0.16.21
C       10.0.22.0 is directly connected, FastEthernet0/1
```

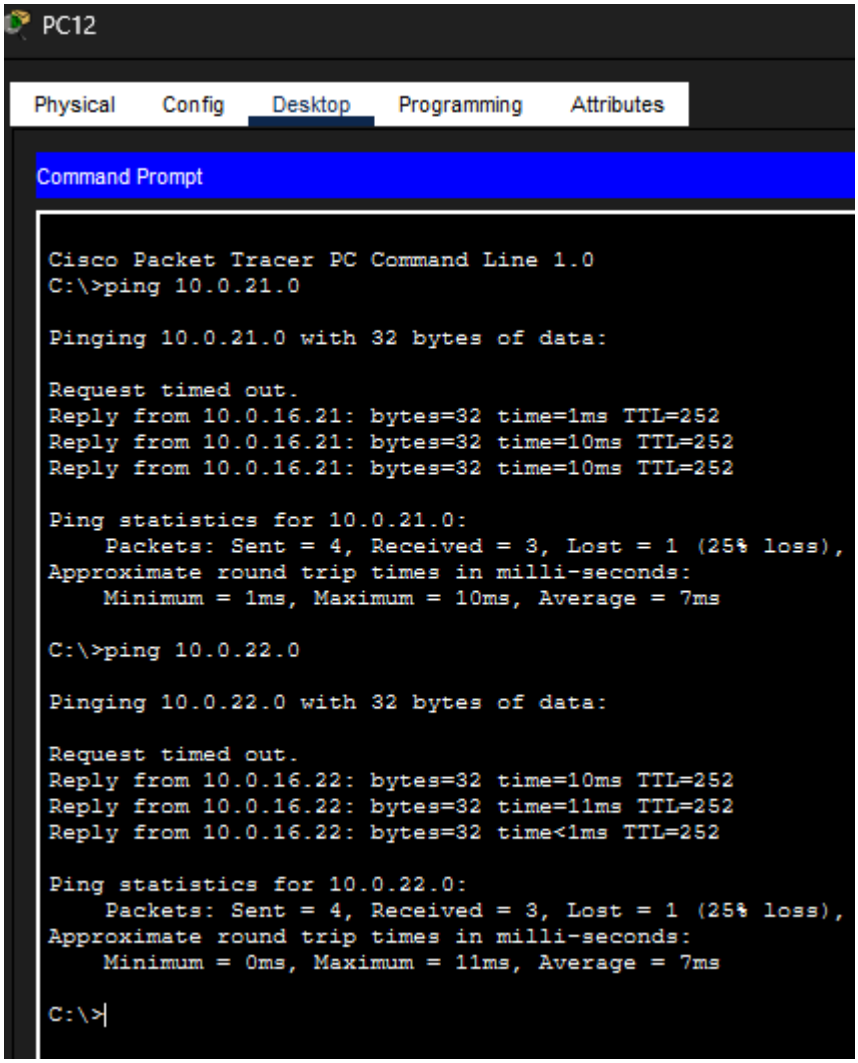
Table de routage du routeur 22

```
R11#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

     10.0.0.0/24 is subnetted, 7 subnets
S       10.0.1.0 [1/0] via 10.0.8.8
C       10.0.8.0 is directly connected, FastEthernet0/0
C       10.0.11.0 is directly connected, FastEthernet0/1
S       10.0.12.0 [1/0] via 10.0.8.12
S       10.0.16.0 [1/0] via 10.0.1.16
S       10.0.21.0 [1/0] via 10.0.16.21
S       10.0.22.0 [1/0] via 10.0.16.22
```

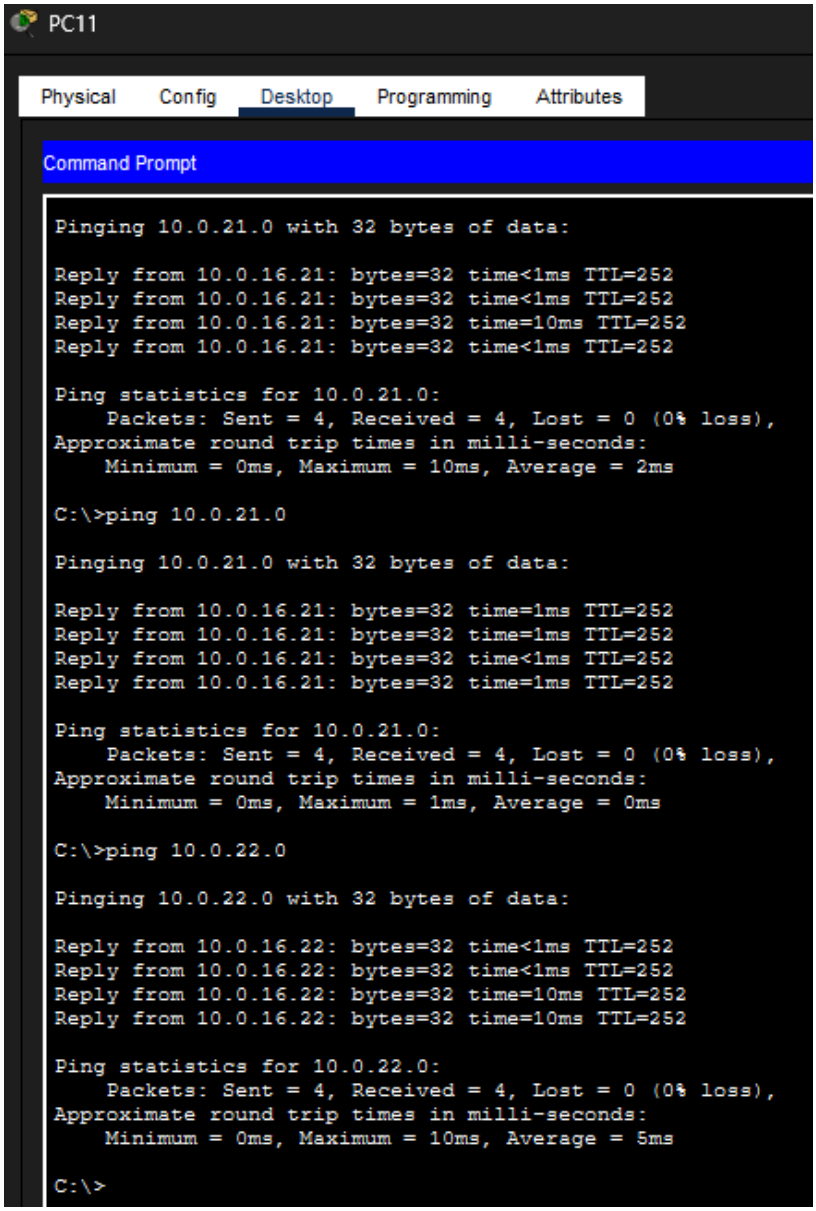
Table de routage du routeur 11

```
R12#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

     10.0.0.0/24 is subnetted, 7 subnets
S       10.0.1.0 [1/0] via 10.0.8.8
C       10.0.8.0 is directly connected, FastEthernet0/0
S       10.0.11.0 [1/0] via 10.0.8.11
C       10.0.12.0 is directly connected, FastEthernet0/1
S       10.0.16.0 [1/0] via 10.0.1.16
S       10.0.21.0 [1/0] via 10.0.16.21
S       10.0.22.0 [1/0] via 10.0.16.22
```

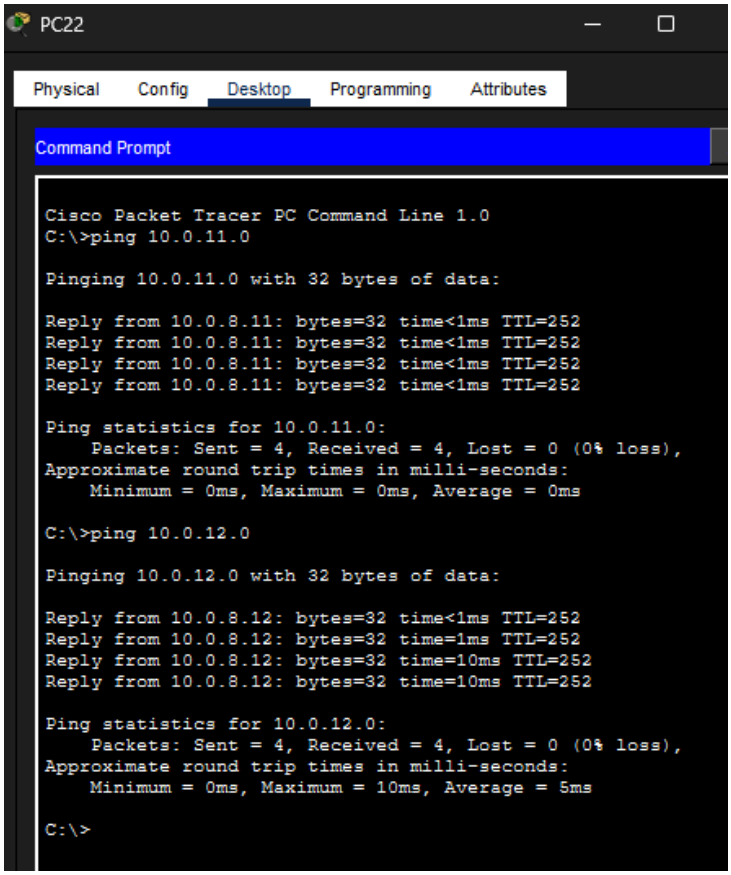
Table de routage du routeur 12



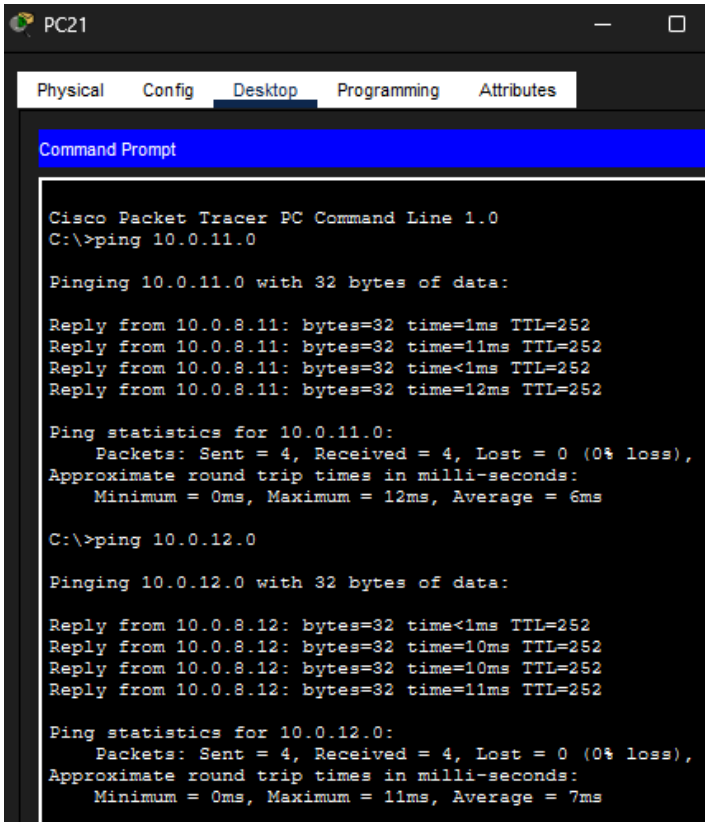
Ping des reseaux 10.0.21.0 et 10.0.22.0 du pc 12



Ping des réseaux 10.0.21.0 et 10.0.22.0 du pc 11



Ping des réseaux 10.0.11.0 et 10.0.12.0 depuis le pc 22



ping des réseaux 10.0.11.0 et 10.0.12.0 depuis le pc 21