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DEVOIR LIBRE

Module : Réseau

Filière : Génie Informatique et Intelligence Artificielle (G.I.I.A.)

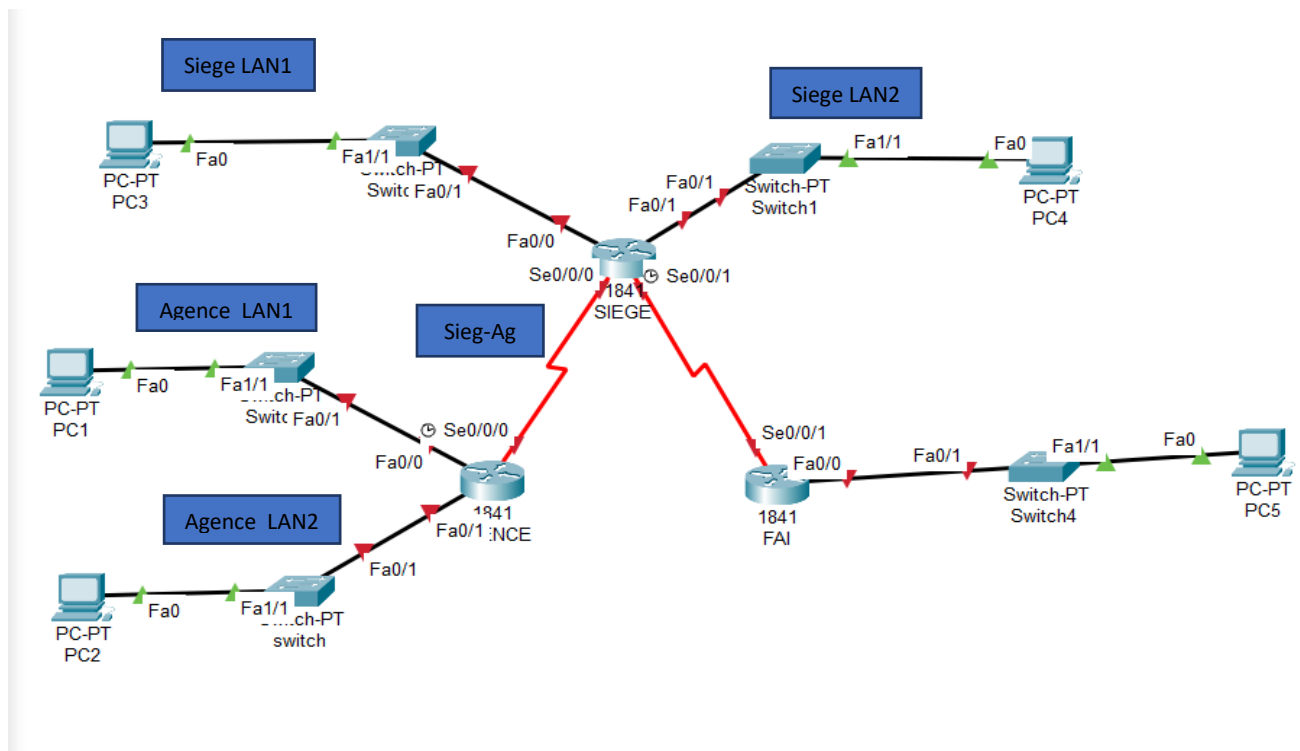
Première Année G.I.I.A.

Réalisée par :

CHEBBAB AYA

ROUTAGE STATIQUE

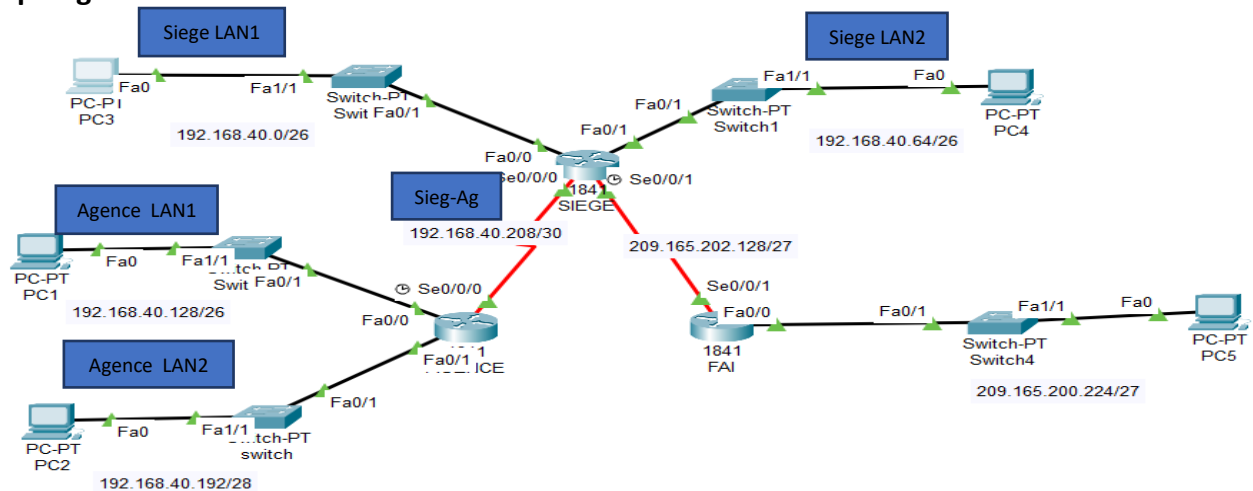
Étape 1 : Représentation de la topologie réseau sur le simulateur Packet Tracer



Étape 2 : Subdivision de l'espace d'adressage en sous-réseaux :

Routeur	Segment	@réseau	Masque	@diffusion	Nombre hôtes
Siège	LAN1	192.168.40.0	255.255.255.192	192.168.40.63	50+3
	LAN2	192.168.40.64	255.255.255.192	192.168.40.127	50+3
Agence1	LAN1	192.168.40.128	255.255.255.192	192.168.40.191	30+3
	LAN2	192.168.40.192	255.255.255.240	192.168.40.207	12+3
Sieg-Ag	Siège – Agence1	192.168.40.208	255.255.255.252	192.168.40.211	2+2

Topologie des réseaux :



Étape 3 : Etablissement d'un plan d'adressage

Routeur/PC	Interface	@ip	Masque sous-rsx	Passerelle par défaut
Siege	Fa0/0	192.168.40.1	255.255.255.192	
	Fa0/1	192.168.40.65	255.255.255.192	
	S0/0/0	192.168.40.209	255.255.255.252	
	S0/0/1	209.165.202.129	255.255.255.224	
Agence1	Fa0/0	192.168.40.129	255.255.255.192	
	Fa0/1	192.168.40.193	255/255.255.240	
	S0/0/0	192.168.40.210	255.255.255.252	
FAI	Fa0/0	209.165.200.225	255.255.255.224	
	S0/0/1	209.165.202.130	255.255.255.224	
	PC1	192.168.40.130	255.255.255.240	192.168.40.129
	PC2	192.168.40.194	255.255.255.240	192.168.40.193
	PC3	192.168.40.2	255.255.255.192	192.168.40.1
	PC4	192.168.40.66	255.255.255.192	192.168.40.65
	PC5	209.165.200.226	255.255.255.224	209.165.200.225

Étape 4 : Configuration des interfaces de trois routeurs :

Routeur Siege :

```

SIEGE
Physical Config CLI Attributes
IOS Command Line Interface

!
!
!
!
!
!
interface FastEthernet0/0
ip address 192.168.40.1 255.255.255.192
duplex auto
speed auto
!
interface FastEthernet0/1
ip address 192.168.40.65 255.255.255.192
duplex auto
speed auto
!
interface Serial0/0/0
ip address 192.168.40.209 255.255.255.252
!
interface Serial0/0/1
ip address 209.165.202.129 255.255.255.224
clock rate 64000
!

```

Routeur Agence :

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

Router>
Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#int fa0/0
Router(config-if)#ip^add
Router(config-if)#ip add
Router(config-if)#ip address 192.168.40.129 255.255.255.240
Router(config-if)#NO SH

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0,
changed state to up

Router(config-if)#exit
Router(config)#int f0/1
Router(config-if)#ip add
Router(config-if)#ip address 192.168.40.193 255.255.255.240
Router(config-if)#NO SH

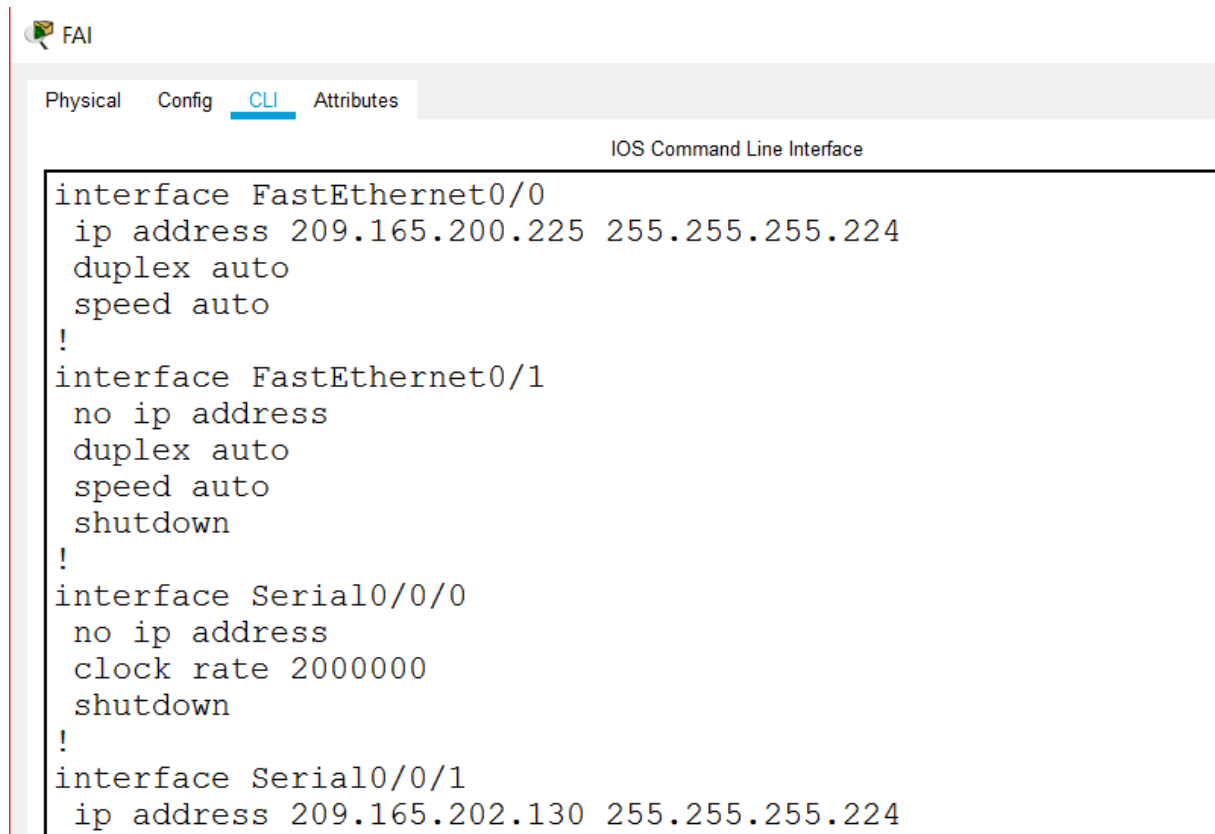
Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1,
changed state to up
```

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

!
!
!
!
!
!
!
interface FastEthernet0/0
 ip address 192.168.40.129 255.255.255.240
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 192.168.40.193 255.255.255.240
 duplex auto
 speed auto
!
interface Serial0/0/0
 ip address 192.168.40.210 255.255.255.252
 clock rate 64000
.
```

Routeur FAI:



The screenshot shows the Cisco Packet Tracer interface with the FAI router selected. The 'CLI' tab is active, displaying the following configuration:

```
interface FastEthernet0/0
  ip address 209.165.200.225 255.255.255.224
  duplex auto
  speed auto
!
interface FastEthernet0/1
  no ip address
  duplex auto
  speed auto
  shutdown
!
interface Serial0/0/0
  no ip address
  clock rate 2000000
  shutdown
!
interface Serial0/0/1
  ip address 209.165.202.130 255.255.255.224
```

Étape 5 : Affichage des tables de routage de trois routeurs :

#show ip route

Routeur Siege :

```
192.168.40.0/24 is variably subnetted, 3 subnets, 2 masks
C    192.168.40.0/26 is directly connected, FastEthernet0/0
C    192.168.40.64/26 is directly connected, FastEthernet0/1
C    192.168.40.208/30 is directly connected, Serial0/0/0
209.165.202.0/27 is subnetted, 1 subnets
C    209.165.202.128 is directly connected, Serial0/0/1
```

Routeur Agence:

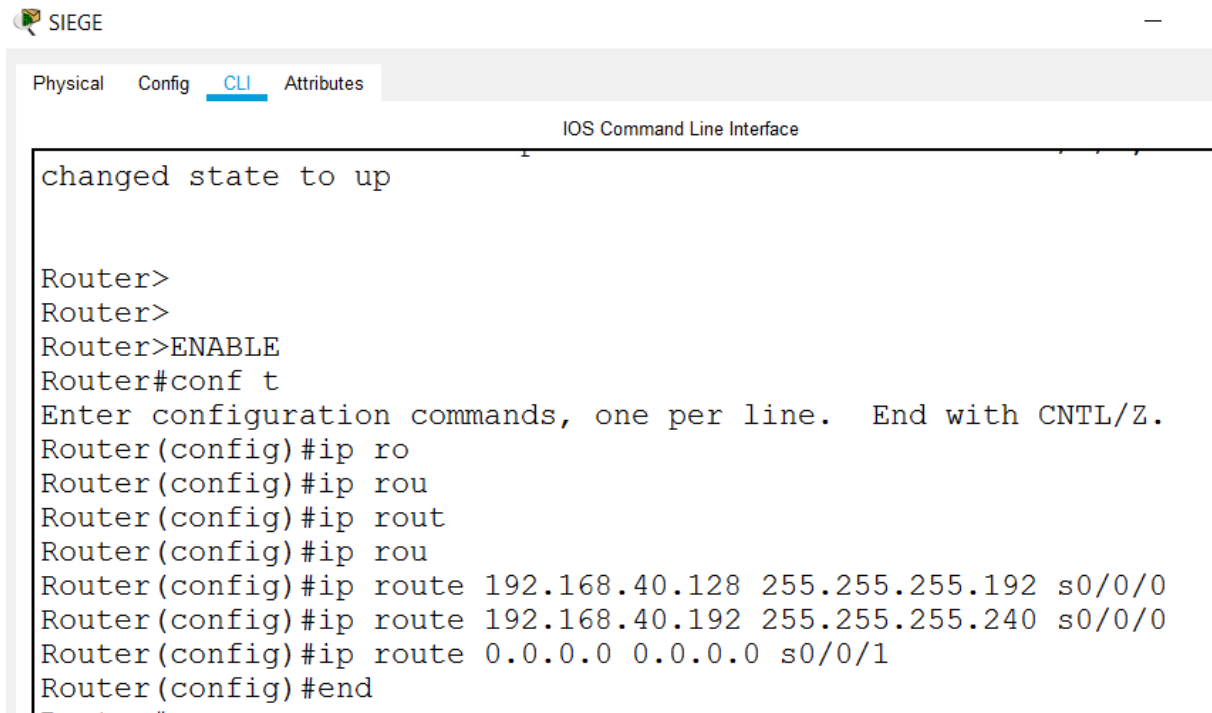
```
192.168.40.0/24 is variably subnetted, 3 subnets, 3 masks
C    192.168.40.128/26 is directly connected, FastEthernet0/0
C    192.168.40.192/28 is directly connected, FastEthernet0/1
C    192.168.40.208/30 is directly connected, Serial0/0/0
```

Routeur FAI:

```
209.165.200.0/27 is subnetted, 1 subnets
C    209.165.200.224 is directly connected, FastEthernet0/0
209.165.202.0/27 is subnetted, 1 subnets
C    209.165.202.128 is directly connected, Serial0/0/1
```

Étape 6,7 : Configuration des routes statiques :

Routeur Siege :

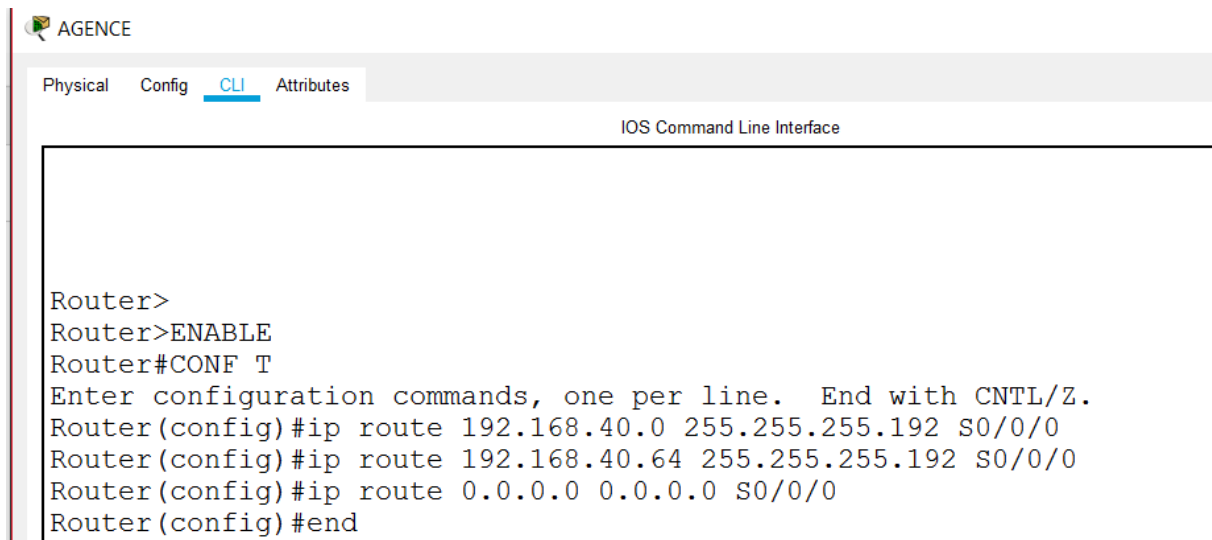


The screenshot shows the SIEGE terminal window with the 'CLI' tab selected. The terminal displays the following commands and output for the 'Routeur Siege' configuration:

```
changed state to up

Router>
Router>
Router>ENABLE
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip ro
Router(config)#ip rou
Router(config)#ip rout
Router(config)#ip rou
Router(config)#ip route 192.168.40.128 255.255.255.192 s0/0/0
Router(config)#ip route 192.168.40.192 255.255.255.240 s0/0/0
Router(config)#ip route 0.0.0.0 0.0.0.0 s0/0/1
Router(config)#end
```

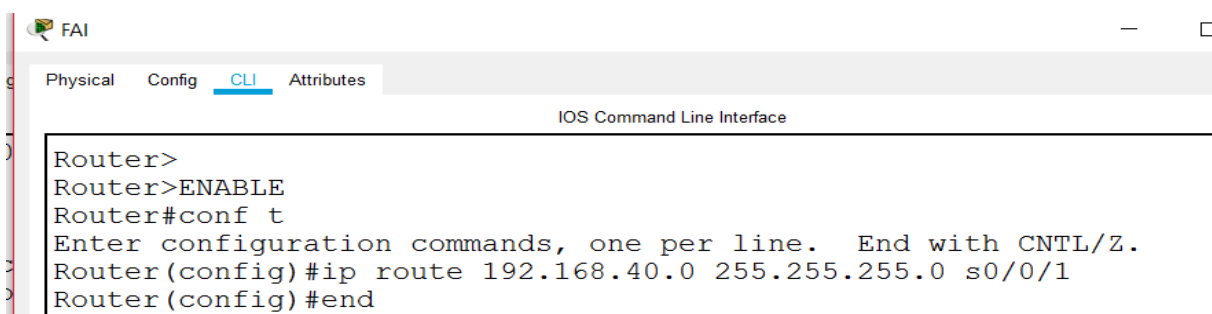
Routeur Agence:



The screenshot shows the AGENCE terminal window with the 'CLI' tab selected. The terminal displays the following commands and output for the 'Routeur Agence' configuration:

```
Router>
Router>ENABLE
Router#CONF T
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 192.168.40.0 255.255.255.192 S0/0/0
Router(config)#ip route 192.168.40.64 255.255.255.192 S0/0/0
Router(config)#ip route 0.0.0.0 0.0.0.0 S0/0/0
Router(config)#end
```

Étape 8 : Configuration d'une route statique résumé :



The screenshot shows the FAI terminal window with the 'CLI' tab selected. The terminal displays the following commands and output for the 'Routeur FAI' configuration:

```
Router>
Router>ENABLE
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#ip route 192.168.40.0 255.255.255.0 s0/0/1
Router(config)#end
```

Étape 9 : Affichage des tables de routage :

Routeur Siege :

```
SIEGE#show 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 0.0.0.0 to network 0.0.0.0

        192.168.40.0/24 is variably subnetted, 5 subnets, 3 masks
C        192.168.40.0/26 is directly connected, FastEthernet0/0
C        192.168.40.64/26 is directly connected, FastEthernet0/1
S        192.168.40.128/26 is directly connected, Serial0/0/0
S        192.168.40.192/28 is directly connected, Serial0/0/0
C        192.168.40.208/30 is directly connected, Serial0/0/0
        209.165.202.0/27 is subnetted, 1 subnets
C        209.165.202.128 is directly connected, Serial0/0/1
S* 0.0.0.0/0 is directly connected, Serial0/0/1
```

Routeur Agence:

```
AGENCE#show 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 0.0.0.0 to network 0.0.0.0

        192.168.40.0/24 is variably subnetted, 5 subnets, 3 masks
S        192.168.40.0/26 is directly connected, Serial0/0/0
S        192.168.40.64/26 is directly connected, Serial0/0/0
C        192.168.40.128/28 is directly connected, FastEthernet0/0
C        192.168.40.192/28 is directly connected, FastEthernet0/1
C        192.168.40.208/30 is directly connected, Serial0/0/0
S* 0.0.0.0/0 is directly connected, Serial0/0/0
```

Routeur FAI:

```

Router>
Router>enable
Router#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hoqt
Router(config)#hos
Router(config)#hostname FAI
FAI(config)#exit
FAI#
%SYS-5-CONFIG_I: Configured from console by console

FAI#
FAI#show 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

S    192.168.40.0/24 is directly connected, Serial0/0/1
    209.165.200.0/27 is subnetted, 1 subnets
C    209.165.200.224 is directly connected, FastEthernet0/0
    209.165.202.0/27 is subnetted, 1 subnets
C    209.165.202.128 is directly connected, Serial0/0/1
FAI#

```



Étape 10 : Test de connectivité entre les sous-réseaux :

Scenario 0

New

Delete

Toggle PDU List Window







Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC3	PC5	ICMP		0.000	N	2	(edit)	(delete)
	Successful	PC4	PC2	ICMP		0.000	N	3	(edit)	(delete)
	Successful	PC3	PC5	ICMP		0.000	N	4	(edit)	(delete)

Scenario 0

New

Delete

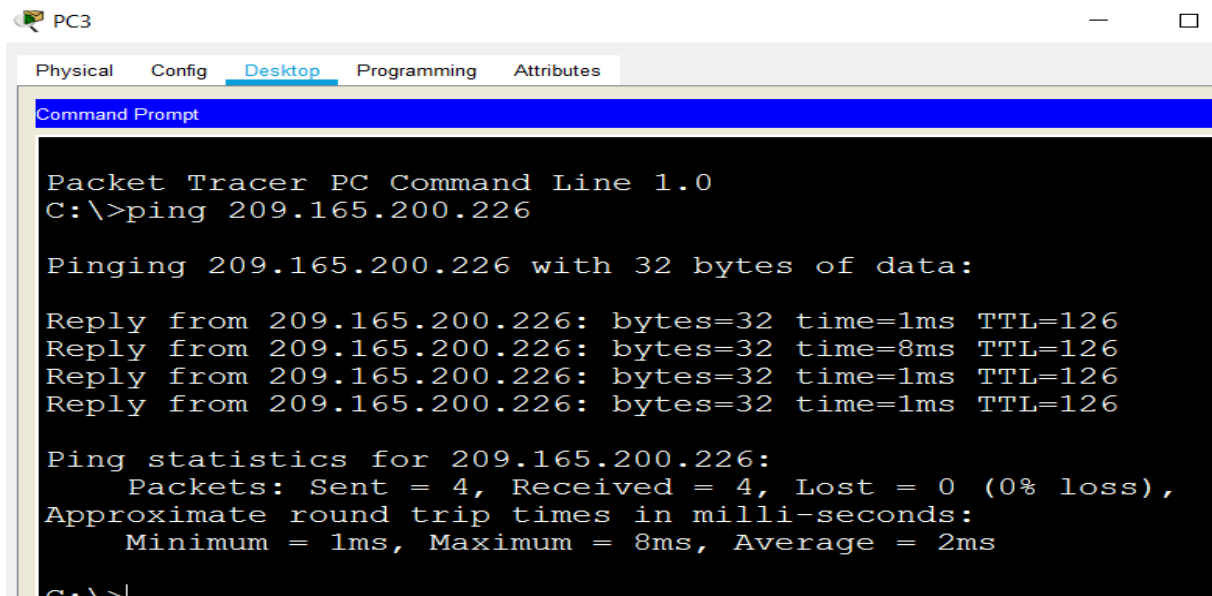
Toggle PDU List Window

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC3	PC4	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC3	PC2	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC3	PC5	ICMP		0.000	N	2	(edit)	(delete)

Realtime

Simulation

PING entre PC3 et PC5



The screenshot shows the Packet Tracer interface for PC3. The 'Desktop' tab is selected, displaying a 'Command Prompt' window. The command prompt shows the execution of a ping command to the IP address 209.165.200.226. The output indicates that all four packets were received successfully with 0% loss. The round trip times are listed as 1ms, 8ms, 1ms, and 1ms, with an average of 2ms.

```
Packet Tracer PC Command Line 1.0
C:\>ping 209.165.200.226

Pinging 209.165.200.226 with 32 bytes of data:

Reply from 209.165.200.226: bytes=32 time=1ms TTL=126
Reply from 209.165.200.226: bytes=32 time=8ms TTL=126
Reply from 209.165.200.226: bytes=32 time=1ms TTL=126
Reply from 209.165.200.226: bytes=32 time=1ms TTL=126

Ping statistics for 209.165.200.226:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 8ms, Average = 2ms

C:\>
```