14/01/2022

DEVOIR LIBRE

Module : Réseau

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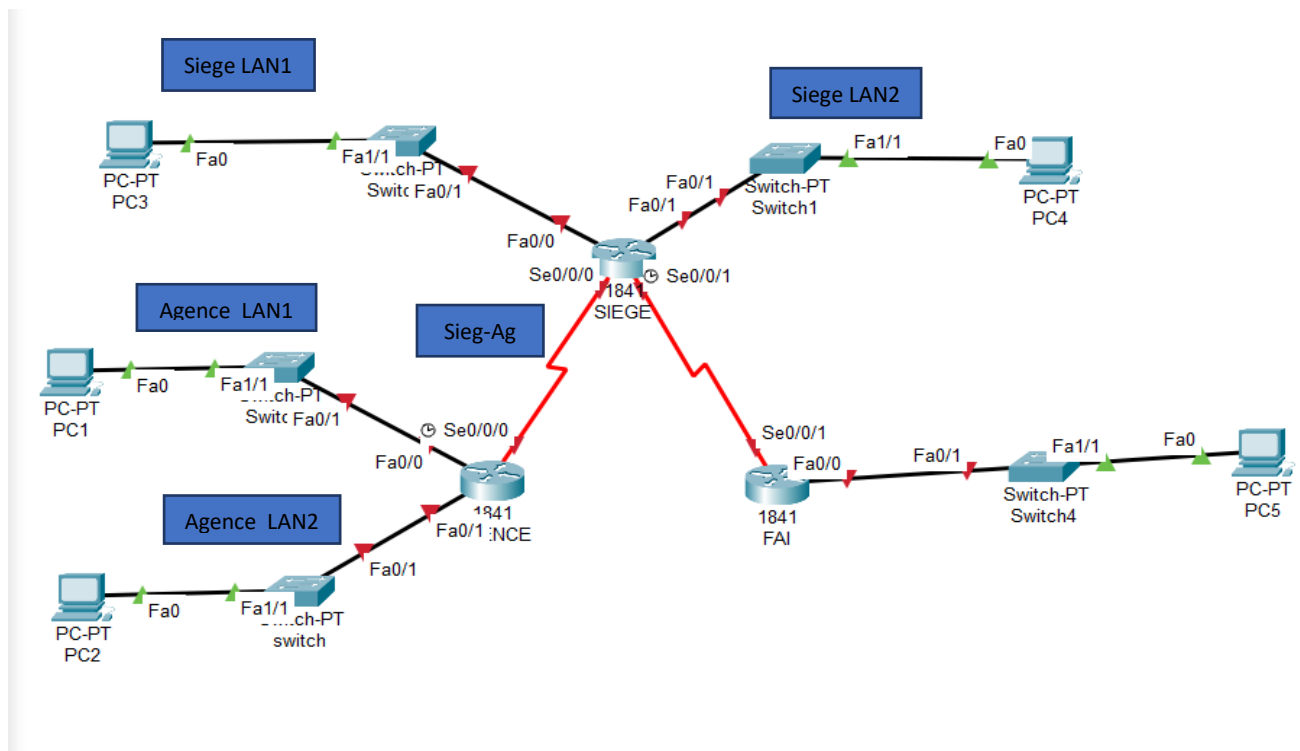
Première Année G.I.I.A.

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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 :
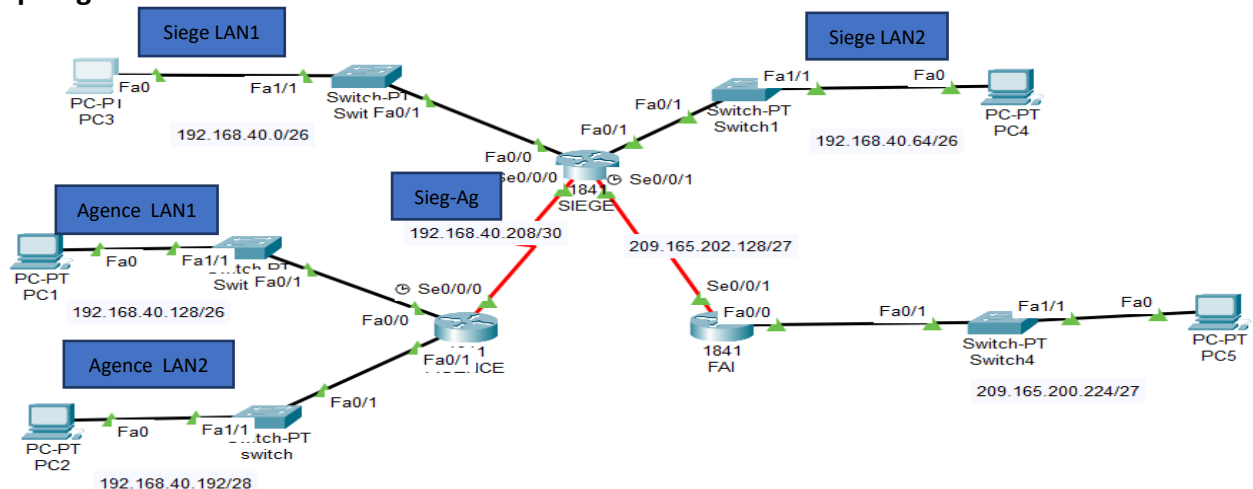
Étape 3 : Etablissement d'un plan d'adressage

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 :


```
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
```
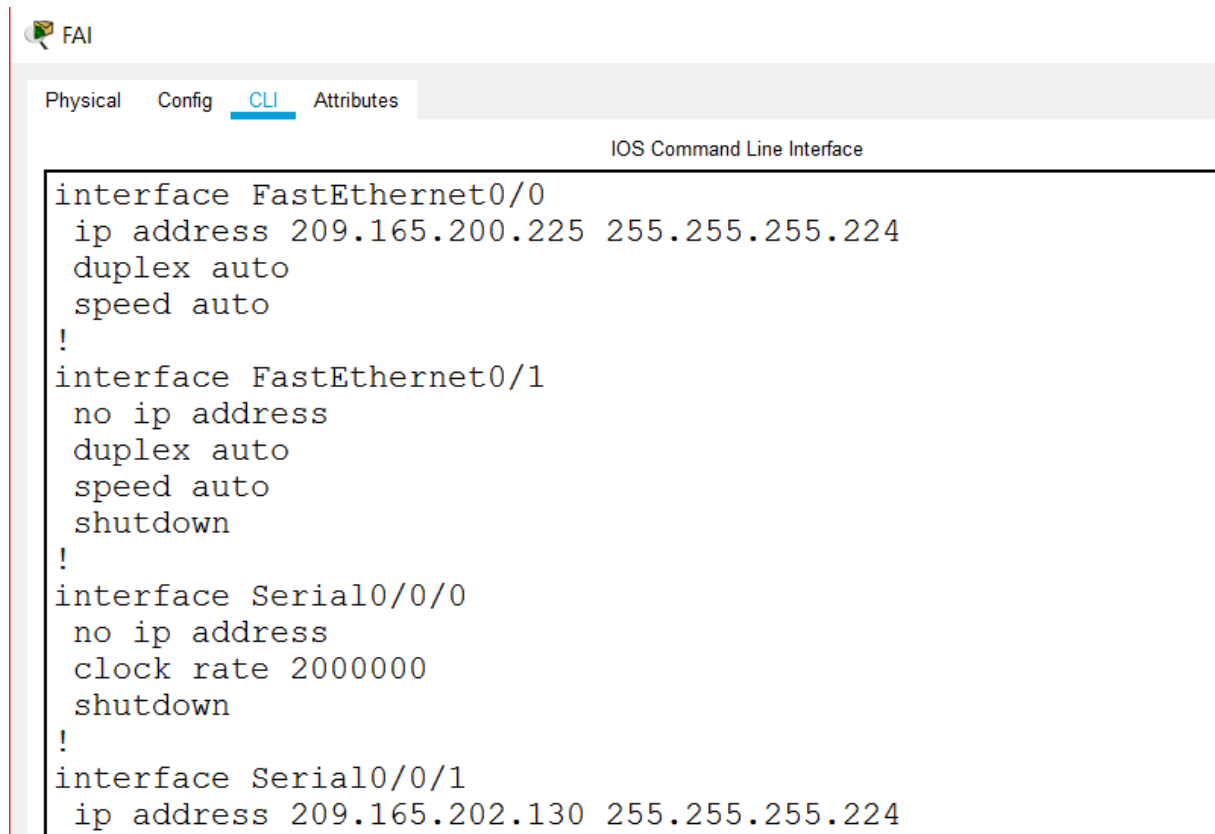


```
!
!
!
!
!
!
interface FastEthernet0/0
 ip address 192.168.40.129 255.255.255.240
 duplex auto
 speed auto
!
interface FastEthernet0/1
 ip address 192.168.40.193 255.255.255.240
 duplex auto
 speed auto
!
interface Serial0/0/0
 ip address 192.168.40.210 255.255.255.252
 clock rate 64000
```

Routeur FAI:


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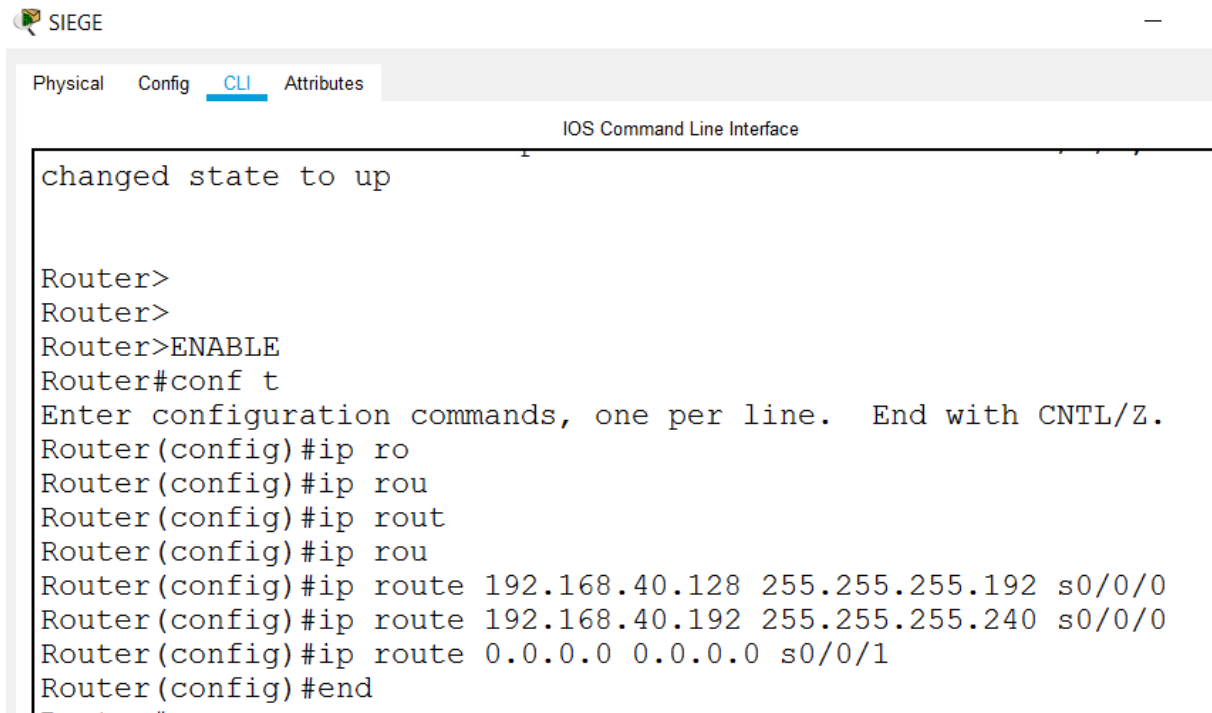
```
     192.168.40.0/24 is variably subnetted, 3 subnets, 3 masks
C    192.168.40.128/26 is directly connected, FastEthernet0/0
C    192.168.40.192/28 is directly connected, FastEthernet0/1
C    192.168.40.208/30 is directly connected, Serial0/0/0
```

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 :
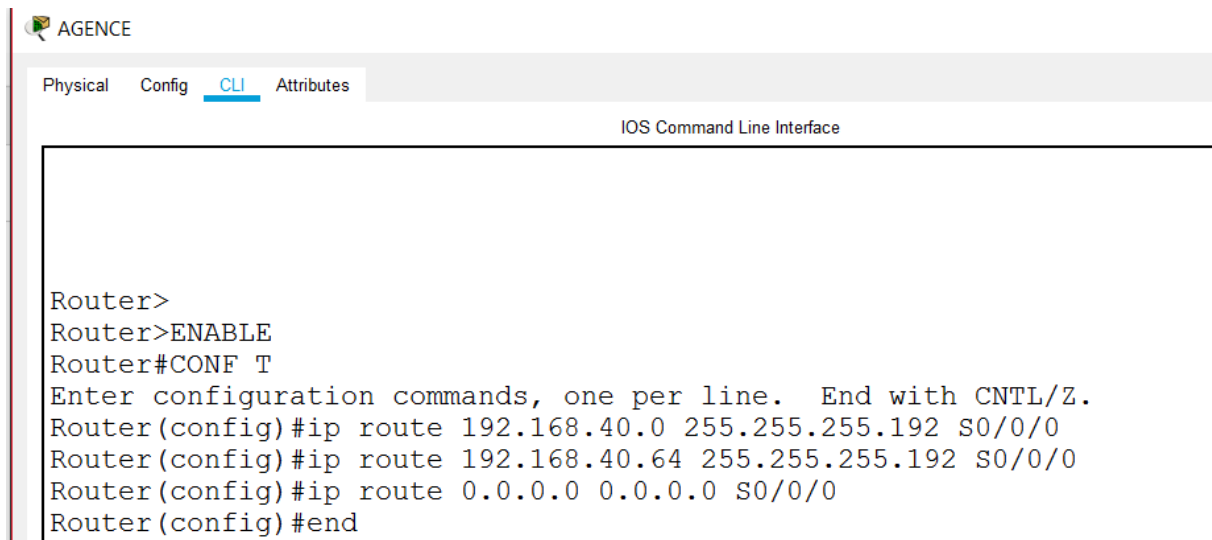
Routeur Siege :


```
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
```
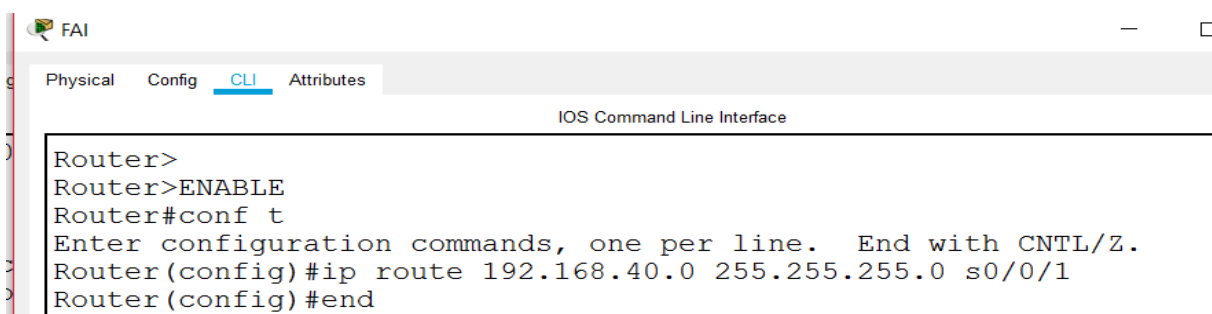
Routeur Agence:


```
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 :


```
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 :

PING entre PC3 et PC5

PC3 — □

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
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:\>
```