

CCNA05 - Créer et configurer un réseau complet dans Packet Tracer

Nº	ID	DS-237
☰	Compétence(s)	
☰	Type	

1. Topologie

Situation réaliste en entreprise

Le réseau est composé de deux sites interconnectés.

- **Site A :**

Router A → Switch A → PC1, PC2

- **Site B :**

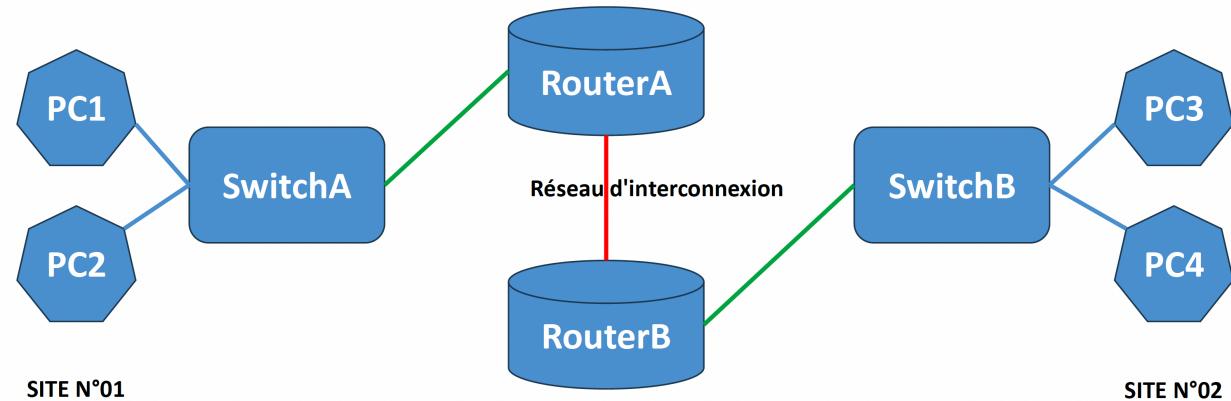
Router B → Switch B → PC3, PC4

Les deux routeurs sont reliés entre eux (lien WAN simulé).

Objectifs techniques

- Chaque PC communique avec son switch local.
- Les deux sites doivent pouvoir communiquer via les routeurs.
- Les switches doivent être administrables via une IP sur VLAN 1.
- Tous les équipements doivent être dans des sous-réseaux distincts.

Schéma simplifié



Plan d'adressage IP

Équipement	Adresse IP	Description
PC1	192.168.1.10/24	LAN Site A
PC2	192.168.1.11/24	LAN Site A
Switch A (VLAN1)	192.168.1.2/24	Gestion
Router A LAN	192.168.1.1/24	Passerelle
Router A WAN	10.10.10.1/30	Vers Router B
Router B WAN	10.10.10.2/30	Vers Router A
Router B LAN	192.168.2.1/24	Passerelle
Switch B (VLAN1)	192.168.2.2/24	Gestion
PC3	192.168.2.10/24	LAN Site B
PC4	192.168.2.11/24	LAN Site B

Résumé de l'attendu

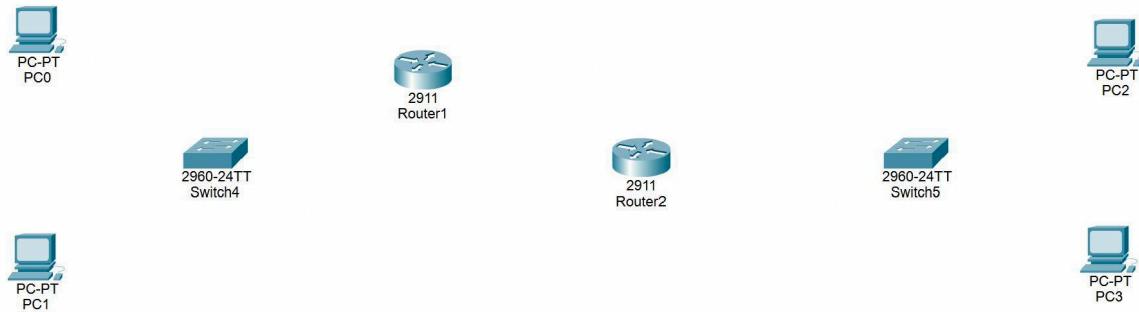
- Configurer toutes les interfaces (PC, switches, routeurs).
- Assigner toutes les IP.
- Mettre en place du routage statique entre les routeurs.
- Vérifier la connectivité (exemple : ping PC1 → PC3).
- Sauvegarder le travail (.pkt).

2. Mise en place

Étape 1 : Placement des équipements

Dans Packet Tracer :

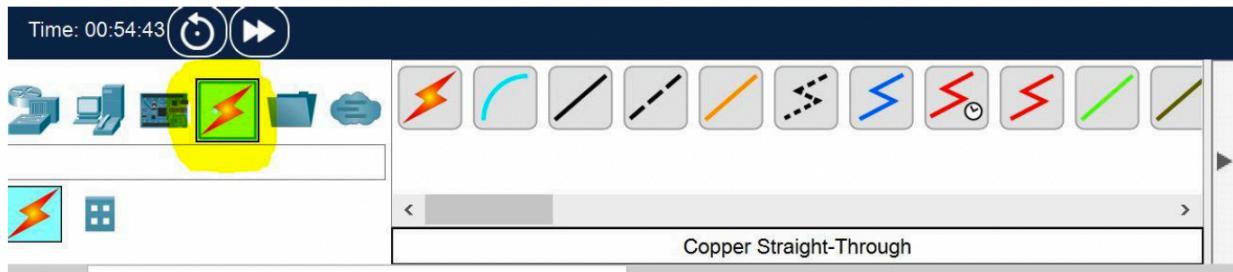
- 2 routeurs (2911 ou 1941)
- 2 switches 2960
- 4 PC
- Renommer selon la topologie



Étape 2 : Câblage

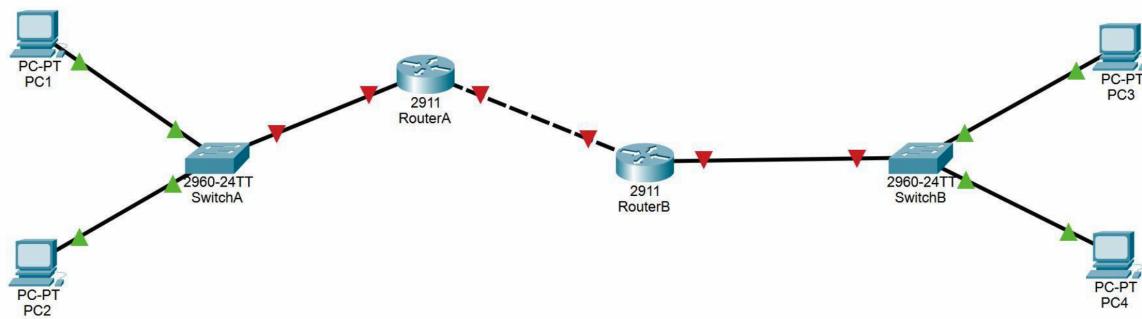
Câbles droits (straight-through)

- PC1 → Switch A
- PC2 → Switch A
- Switch A → Router A
- PC3 → Switch B
- PC4 → Switch B
- Switch B → Router B



Câble croisé (cross-over)

- Router A ↔ Router B
(car équipements de même type)



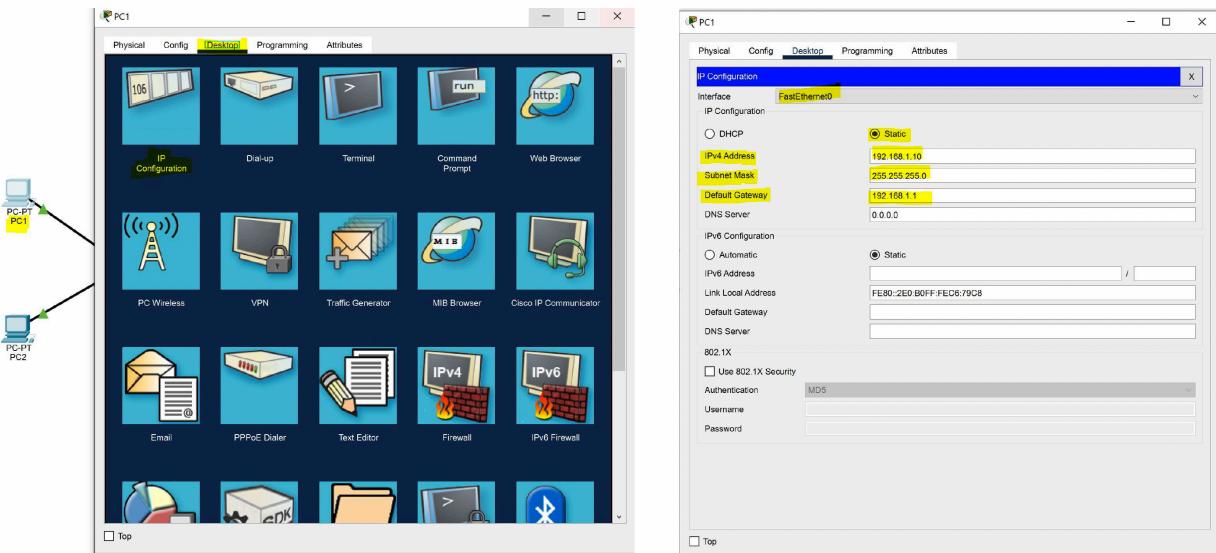
Étape 3 : Configuration des PC

PC	IP	Masque	Passerelle
PC1	192.168.1.10	255.255.255.0	192.168.1.1
PC2	192.168.1.11	255.255.255.0	192.168.1.1
PC3	192.168.2.10	255.255.255.0	192.168.2.1
PC4	192.168.2.11	255.255.255.0	192.168.2.1

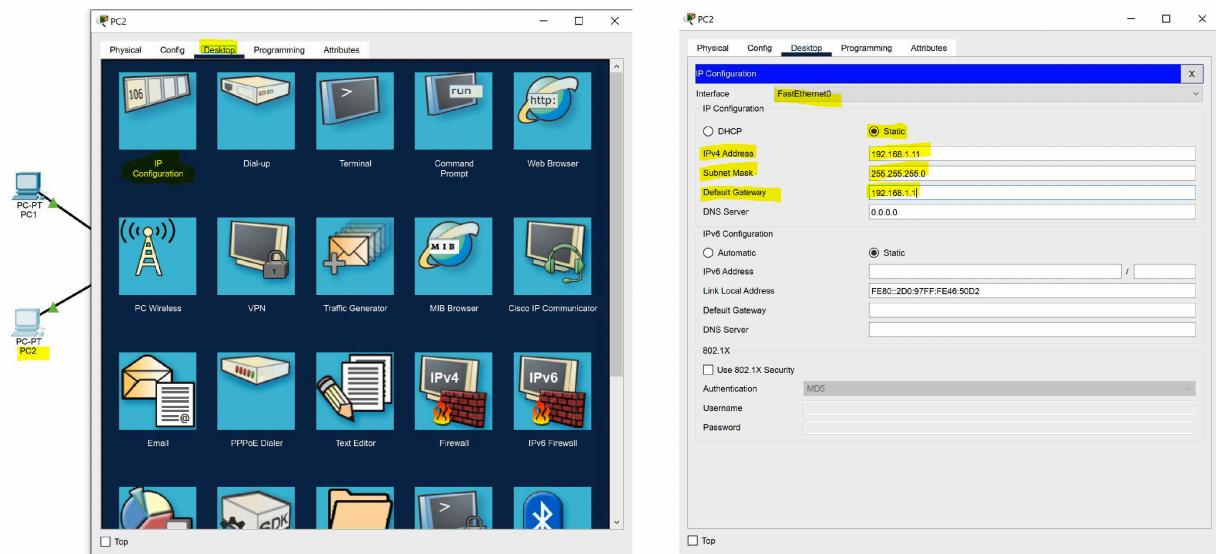
La configuration se fait via :

Desktop → IP Configuration

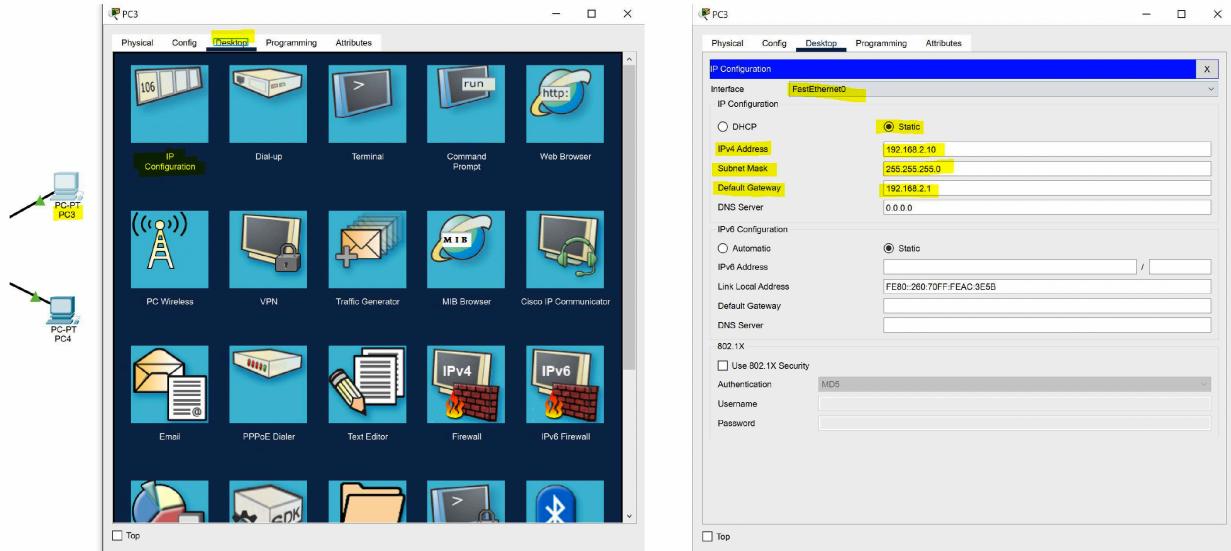
PC1



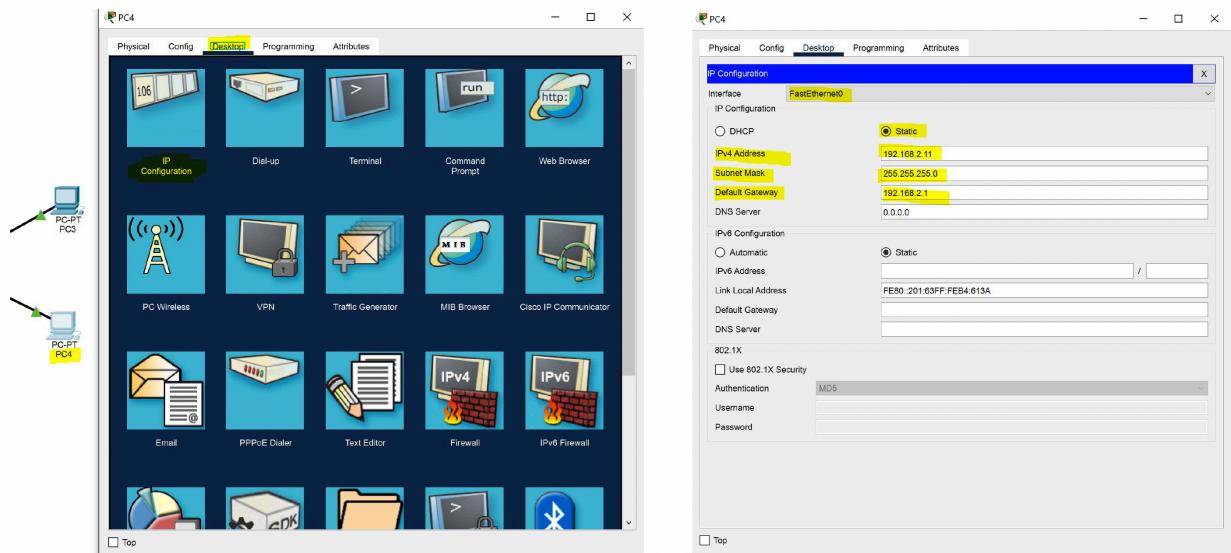
PC2



PC3



PC4



Étape 4 : Configuration des switches

Switch A

```
Switch> enable
Switch# configure terminal
Switch(config)# hostname SwitchA
SwitchA(config)# interface vlan 1
SwitchA(config-if)# ip address 192.168.1.2 255.255.255.0
SwitchA(config-if)# no shutdown
SwitchA(config-if)# exit
SwitchA(config)# ip default-gateway 192.168.1.1
SwitchA# write
```

Switch B

Même logique :

```
SwitchB> enable
SwitchB# configure terminal
SwitchB(config)# hostname SwitchB
SwitchB(config)# interface vlan 1
SwitchB(config-if)# ip address 192.168.2.2 255.255.255.0
SwitchB(config-if)# no shutdown
SwitchB(config-if)# exit
SwitchB(config)# ip default-gateway 192.168.2.1
SwitchB# write
```

```

SwitchA
Physical Config CLI Attributes
IOS Command Line Interface
Copyright (C) 1986-2013 by Cisco Systems, Inc.
Compiled Wed Jun 26 02:14:59 by msuguyen

Press RETURN to get started!

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

SwitchA#enable
SwitchA#configure terminal
SwitchA(config)#hostname SwitchA
SwitchA(config)#int v1
SwitchA(config-if)#ip address 192.168.1.2 255.255.255.0
SwitchA(config-if)#no shutdown

SwitchA(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

SwitchA(config-if)#
SwitchA(config-if)#exit
SwitchA(config)#ip default-gateway 192.168.1.1
SwitchA#
#SYS-3-CONFIG_I: Configured from console by console

SwitchA#write
Building configuration...
%SYS-5-INFO: Configuration saved
SwitchA#

```



```

SwitchB
Physical Config CLI Attributes
IOS Command Line Interface
Copyright (C) 1986-2013 by Cisco Systems, Inc.
Compiled Wed Jun 26 02:14:59 by msuguyen

Press RETURN to get started!

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up

SwitchB#enable
SwitchB#configure terminal
SwitchB(config)#hostname SwitchB
SwitchB(config)#int v1
SwitchB(config-if)#ip address 192.168.2.2 255.255.255.0
SwitchB(config-if)#no shutdown

SwitchB(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

SwitchB(config-if)#
SwitchB(config-if)#exit
SwitchB(config)#ip default-gateway 192.168.2.1
SwitchB(config)#exit
SwitchB#
#SYS-3-CONFIG_I: Configured from console by console

SwitchB#write
Building configuration...
%SYS-5-INFO: Configuration saved
SwitchB#

```

Étape 5 : Configuration des routeurs

Router A

```

RouterA> enable
RouterA# configure terminal
RouterA(config)# hostname RouterA
RouterA(config)# interface GigabitEthernet0/1
RouterA(config-if)# ip address 192.168.1.1 255.255.255.0
RouterA(config-if)# no shutdown
RouterA(config)# interface GigabitEthernet0/2
RouterA(config-if)# ip address 10.10.10.1 255.255.255.252
RouterA(config-if)# no shutdown

```

Router B

```

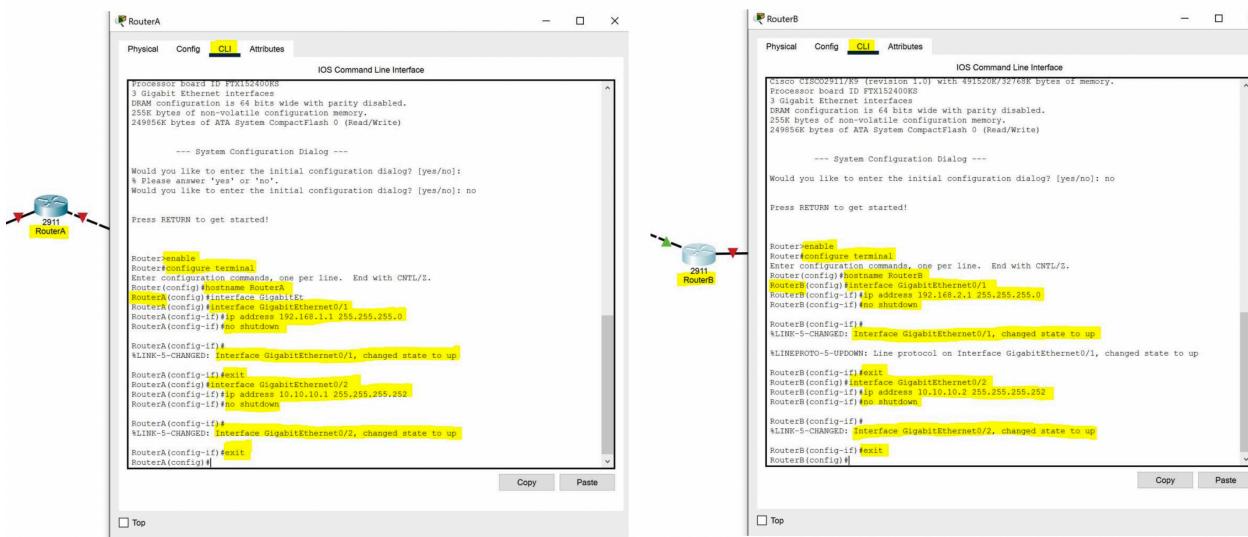
RouterB> enable
RouterB# configure terminal
RouterB(config)# hostname RouterB
RouterB(config)# interface GigabitEthernet0/1
RouterB(config-if)# ip address 192.168.2.1 255.255.255.0
RouterB(config-if)# no shutdown

```

```

RouterB(config)# interface GigabitEthernet0/2
RouterB(config-if)# ip address 10.10.10.2 255.255.255.252
RouterB(config-if)# no shutdown

```



Étape 6 : Routage statique

Router A → Réseau du site B

```

RouterA# configure terminal
RouterA(config)# ip route 192.168.2.0 255.255.255.0 10.10.10.2
RouterA# write

```

Router B → Réseau du site A

```

RouterB# configure terminal
RouterB(config)# ip route 192.168.1.0 255.255.255.0 10.10.10.1
RouterB# write

```

RouterA

Physical Config **CLI** Attributes

IOS Command Line Interface

```
Press RETURN to get started!

Router>enable
Router>configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router>conf t
Router>interface GigabitEthernet0/1
Router>config #interface GigabitEthernet0/1
Router>config #ip address 192.168.1.1 255.255.255.0
Router>config #no shutdown
Router>exit
Router>interface GigabitEthernet0/1, changed state to up

Router>config #exit
Router>interface GigabitEthernet0/2
Router>config #ip address 10.10.1.1 255.255.255.252
Router>config #no shutdown

Router>config #
 4LNK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up
Router>config #exit
Router>config #
 4LNK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

Router>config #exit
Router>write
Building configuration...
[OK]
RouterA#
```

RouterB

Physical Config **CLI** Attributes

IOS Command Line Interface

```
-- System Configuration Dialog --
Would you like to enter the initial configuration dialog? [yes/no]: no

Press RETURN to get started!

Router>enable
Router>configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router>conf t
Router>interface GigabitEthernet0/1
Router>config #ip address 192.168.2.1 255.255.255.0
Router>config #no shutdown

Router>config #
  4LNK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up
  4LNPROT-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed state to up

Router>config #exit
Router>interface GigabitEthernet0/2
Router>config #ip address 10.10.2 255.255.255.252
Router>config #no shutdown

Router>config #
  4LNK-5-CHANGED: Interface GigabitEthernet0/2, changed state to up
  4LNK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

Router>config #exit
Router>config #ip route 192.168.1.0 255.255.255.0 10.10.1.2
Router>config #exit
Router>config #
  4SY-5-CONFIG-I: Configured from console by console

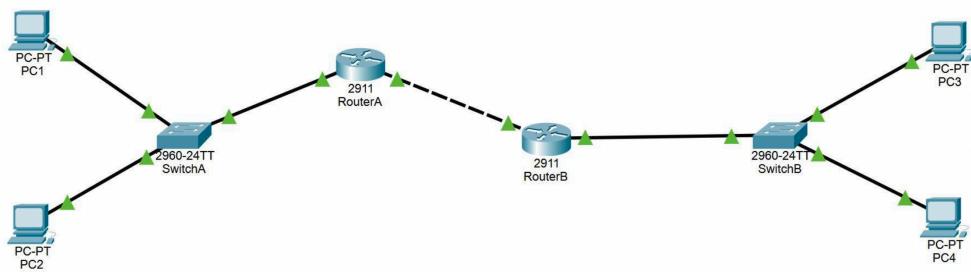
Router>write
Building configuration...
[OK]
RouterB#
```

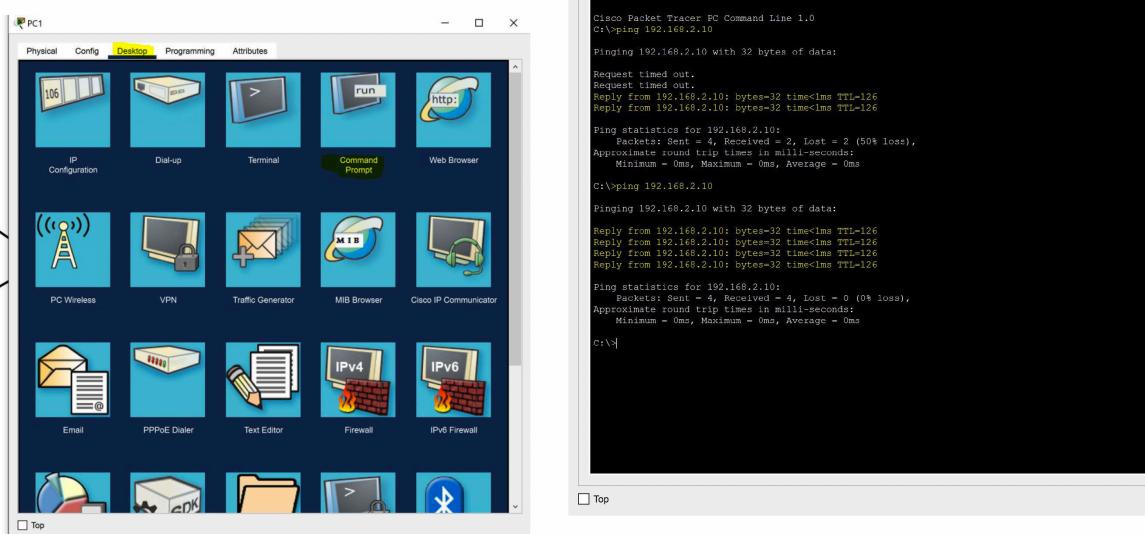
Étape 7 : Tests de connectivité

Dans Packet Tracer :

- Attendre que tous les liens deviennent verts.
 - Depuis PC1 : ping 192.168.2.10
 - Depuis PC4 : ping 192.168.1.11

Si tout est correct, les pings réussissent.





```
Cisco Packet Tracer PC Command Line 1.0
C:\ping 192.168.2.10 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.10: bytes=32 time<1ms TTL=126
Reply from 192.168.2.10: bytes=32 time<1ms TTL=126

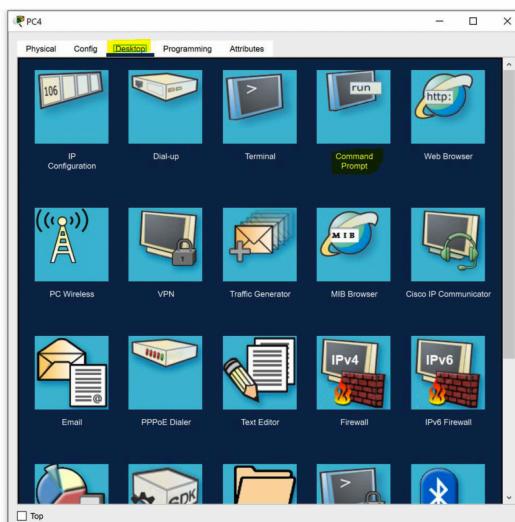
Ping statistics for 192.168.2.10:
Packets: Sent = 4, Received = 2, Lost = 2 (50% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.2.10 with 32 bytes of data:

Reply from 192.168.2.10: bytes=32 time<1ms 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 = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```



```
Cisco Packet Tracer PC Command Line 1.0
C:\ping 192.168.1.11 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.11: bytes=32 time<1ms TTL=126
Reply from 192.168.1.11: bytes=32 time<1ms TTL=126
Reply from 192.168.1.11: bytes=32 time<1ms TTL=126

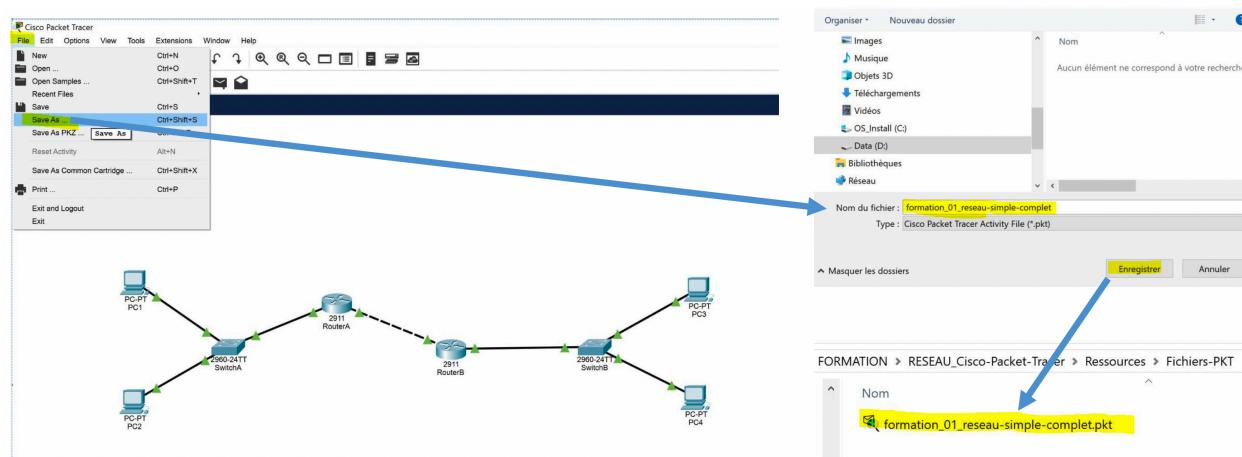
Ping statistics for 192.168.1.11:
Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 14ms, Average = 4ms

C:\>ping 192.168.1.11 with 32 bytes of data:

Reply from 192.168.1.11: bytes=32 time<1ms TTL=126

Ping statistics for 192.168.1.11:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>
```



Étape 8 : Sauvegarde

File → Save As → Enregistrer sous .pkt

3. Exercice de compréhension

Expliquer :

1. Les 3 éléments principaux à configurer sur un routeur
2. Les 3 éléments principaux à configurer sur un switch
3. L'intérêt du routage statique