



Faculté des Sciences et Technologies (FST)

Rapport du travail de Laboratoire N° 4 _Réseaux I

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Niveau : L3

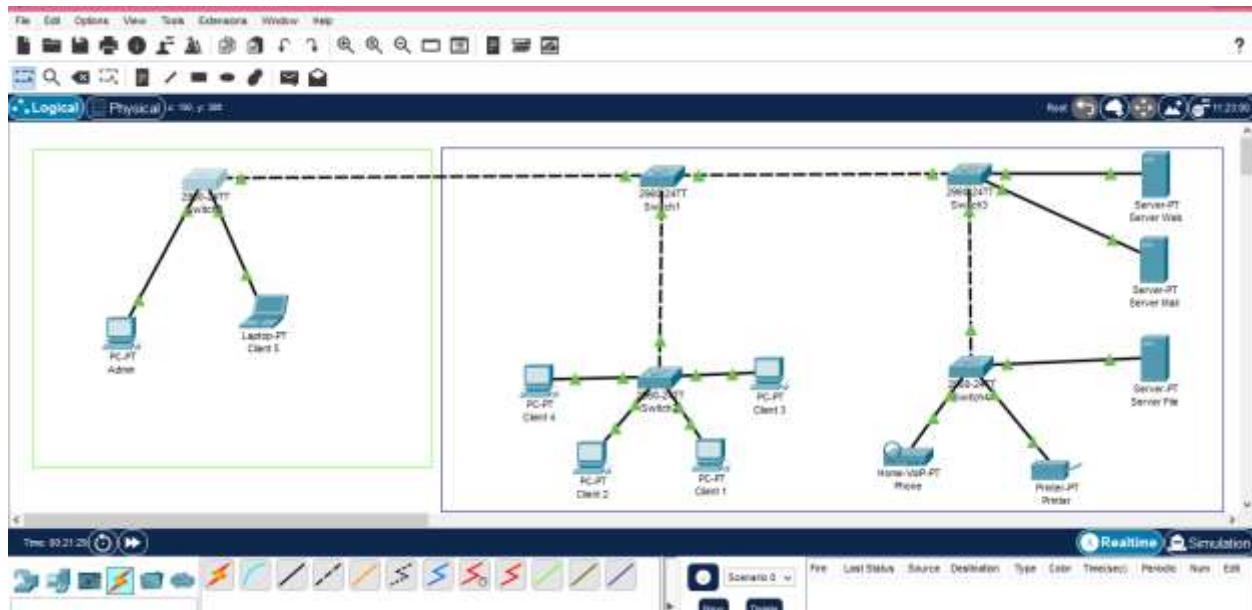
18 Novembre 2025

L'objectif de ce TD est de :

- Découvrir la configuration de base d'un switch et d'un routeur.
- Attribuer des adresses IPv4 et IPv6 aux périphériques.
- Tester la connectivité entre les hôtes.
- Utiliser le Mode Simulation pour analyser le trafic réseau.

1. Reproduisez cette topologie en configurant les switchs, puis en attribuant les adresses IP aux dispositifs. Utilisez soit IPv4, soit IPv6, et testez la connectivité des deux VLAN à l'aide de la commande ping et du mode de simulation.

- **Reproduction de la topologie**



- Configuration des Switchs

The screenshot shows a Windows application window titled "Switch0" running the Cisco IOS Command Line Interface (CLI). The window has tabs at the top: "Physical", "Config", "CLI" (which is selected), and "Attributes". Below the tabs is a header "IOS Command Line Interface". A message "Press RETURN to get started!" is displayed. The main text area contains the following configuration and interface status output:

```
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
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

Switch> enable
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# hostname SW1
SW1(config)# interface vlan 1
SW1(config-if)# ip address 192.168.1.1 255.255.255.0
SW1(config-if)# no shutdown

SW1(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up
SW1(config-if)# exit
SW1(config)# end
SW1#
%SYS-5-CONFIG_I: Configured from console by console
```

At the bottom right of the text area are "Copy" and "Paste" buttons. At the bottom left is a checkbox labeled "Top".

Switch1

Physical Config **CLI** Attributes

IOS Command Line Interface

```
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
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up

Switch> enable
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# hostname SW2
SW2(config)# interface vlan 1
SW2(config-if)# ip address 192.168.2.1 255.255.255.0
SW2(config-if)# no shutdown

SW2(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

SW2(config-if)# exit
SW2(config)# end
SW2#
%SYS-5-CONFIG_I: Configured from console by console
```

Top

Copy Paste

Switch5

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/5, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/5, changed state to up

Switch> enable
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# hostname SW3
SW3(config)# interface vlan 1
SW3(config-if)# ip address 192.168.2.2 255.255.255.0
SW3(config-if)# no shutdown

SW3(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

SW3(config-if)# exit
SW3(config)# end
SW3#
%SYS-5-CONFIG_I: Configured from console by console
```

Top

Copy Paste

Switch> Switch3

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%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
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

Switch> enable
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# hostname SW4
SW4(config)# interface vlan 1
SW4(config-if)# ip address 192.168.2.3 255.255.255.0
SW4(config-if)# no shutdown

SW4(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

SW4(config-if)# exit
SW4(config)# end
SW4#
%SYS-5-CONFIG_I: Configured from console by console
```

Top

Copy **Paste**

Switch> Switch4

Physical Config **CLI** Attributes

IOS Command Line Interface

```
%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
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/3, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/4, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/4, changed state to up

Switch> enable
Switch# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)# hostname SW5
SW5(config)# interface vlan 1
SW5(config-if)# ip address 192.168.2.4 255.255.255.0
SW5(config-if)# no shutdown

SW5(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state to up

SW5(config-if)# exit
SW5(config)# end
SW5#
%SYS-5-CONFIG_I: Configured from console by console
```

Top

- Test de connectivité

The screenshot shows a Cisco Packet Tracer interface with a Command Prompt window. The window title is "Command Prompt". The content of the window is as follows:

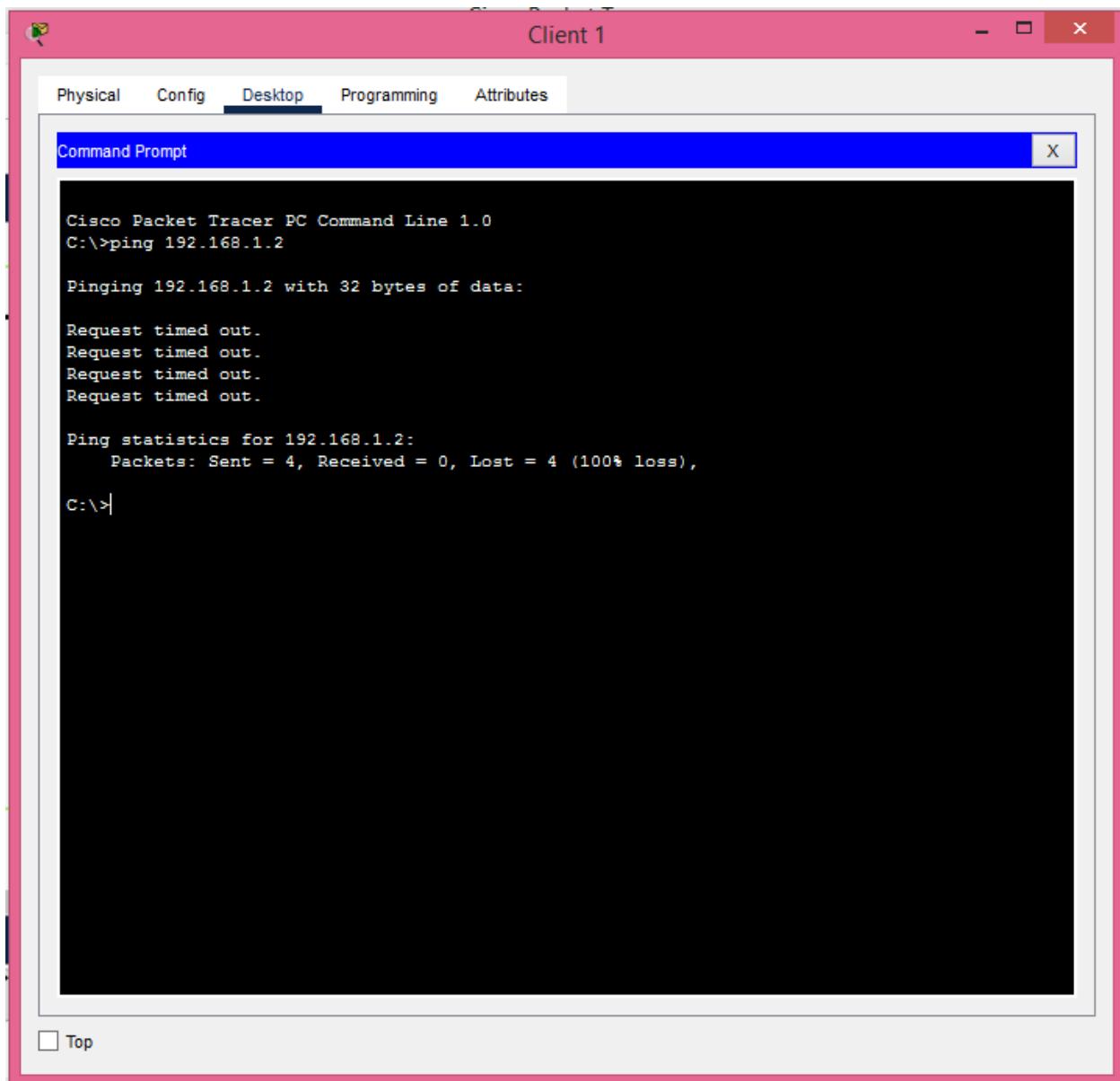
```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.6

Pinging 192.168.2.6 with 32 bytes of data:

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

Ping statistics for 192.168.2.6:
  Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
```

At the bottom left of the window, there is a checkbox labeled "Top".

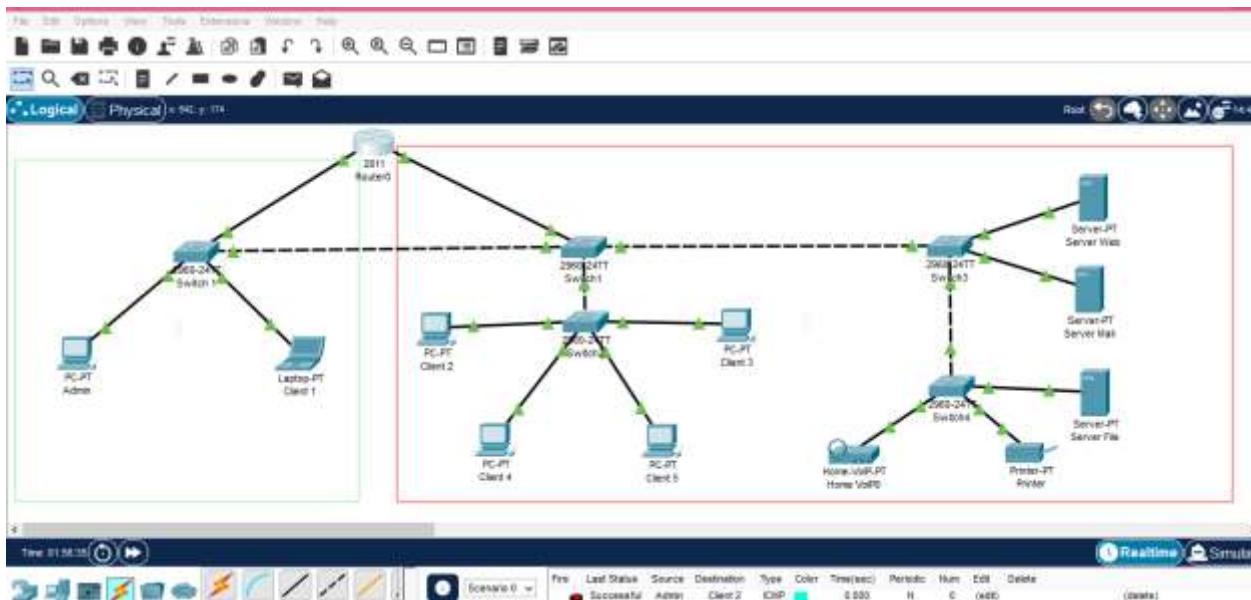


- **Simulation**

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit ^
●	Failed	Admin	Client 1	ICMP	█	7.475	N	1	(edit)
●	Failed	Admin	Client 1	ICMP	█	0.000	N	2	(edit)
●	Failed	Admin	Client 3	ICMP	█	0.401	N	3	(edit)

2. Reproduisez cette topologie en configurant le routeur et les switchs, puis en attribuant les adresses IP aux dispositifs. Utilisez soit IPv4, soit IPv6, et testez la connectivité des deux VLAN à l'aide de la commande ping et du mode de simulation.

- **Reproduction de la topologie**



- Configuration Router

The screenshot shows a Windows application window titled "Router0". The window has tabs at the top: "Physical", "Config", "CLI" (which is selected), and "Attributes". Below the tabs is a title bar "IOS Command Line Interface" and a sub-header "--- System Configuration Dialog ---". The main area contains the following text:

```
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(config)# hostname R1
R1(config)# interface FastEthernet0/0
R1(config-if)# ip address 192.168.1.4 255.255.255.0
R1(config-if)# no shutdown

R1(config-if)# exit
R1(config)# end
R1# interface FastEthernet0/1
^
% Invalid input detected at '^' marker.

R1# enable
R1# configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)# interface FaastEthernet0?
% Unrecognized command
R1(config)# interface FastEthernet0/1
R1(config-if)# ip address 192.168.2.12 255.255.255.0
R1(config-if)# no shutdown

R1(config-if)# exit
R1(config)# end
R1#
```

At the bottom right of the main window are "Copy" and "Paste" buttons. At the bottom left is a "Top" button.

- Test de connectivité

The screenshot shows a Windows Command Prompt window titled "Admin". The window has tabs at the top: Physical, Config, Desktop (which is selected), Programming, and Attributes. The main area is a "Command Prompt" window with the title "Command Prompt" and an "X" button in the top right corner. The command prompt displays the following output:

```
Reply from 192.168.2.3: bytes=32 time=5ms TTL=127
Reply from 192.168.2.3: bytes=32 time=14ms TTL=127

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 5ms, Maximum = 37ms, Average = 16ms

C:\>ping 192.168.2.5

Pinging 192.168.2.5 with 32 bytes of data:

Reply from 192.168.2.5: bytes=32 time=10ms TTL=127
Reply from 192.168.2.5: bytes=32 time<1ms TTL=127
Reply from 192.168.2.5: bytes=32 time=14ms TTL=127
Reply from 192.168.2.5: bytes=32 time=12ms TTL=127

Ping statistics for 192.168.2.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 14ms, Average = 9ms

C:\>ping 192.168.2.6

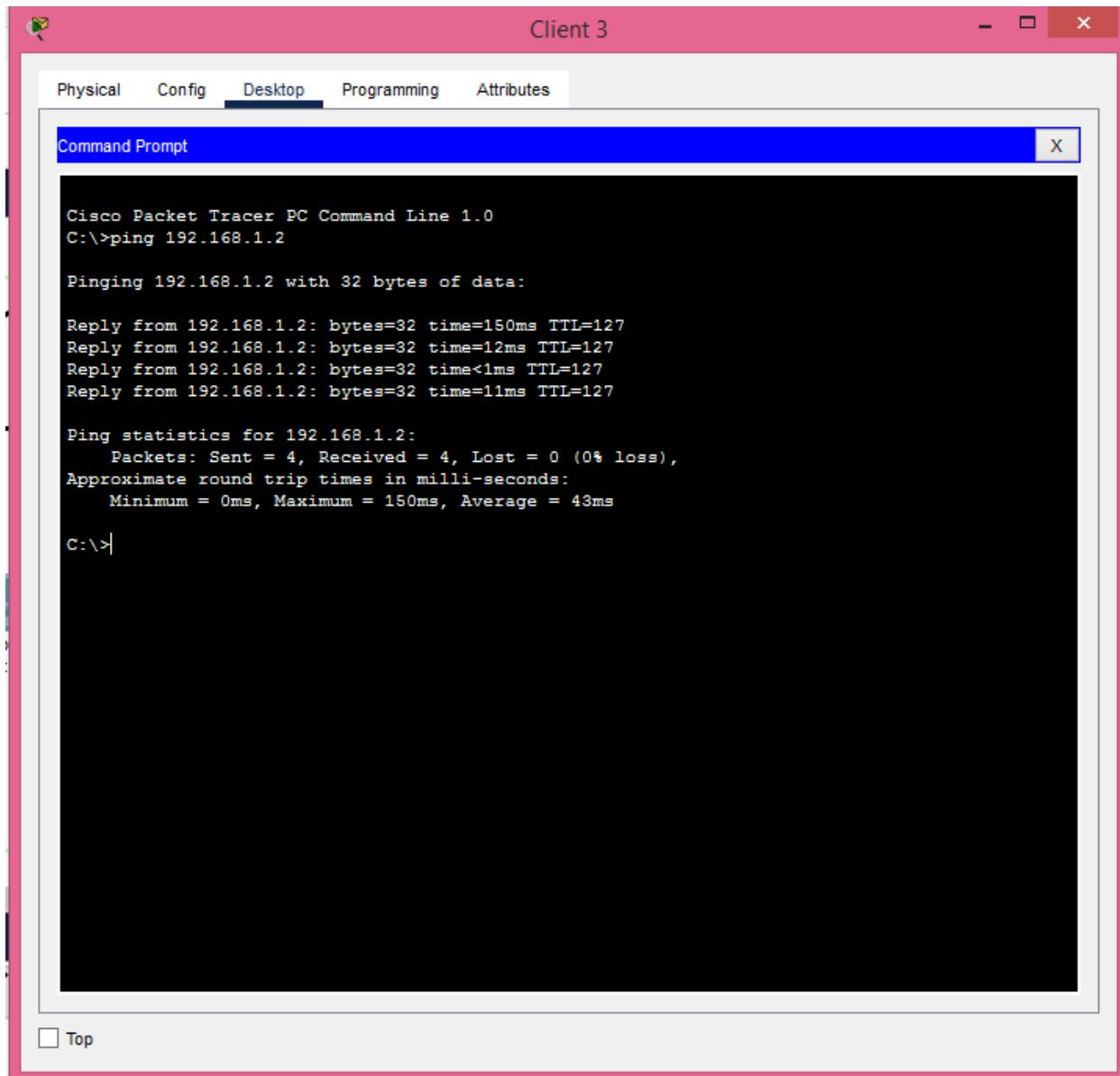
Pinging 192.168.2.6 with 32 bytes of data:

Reply from 192.168.2.6: bytes=32 time=37ms TTL=127
Reply from 192.168.2.6: bytes=32 time=13ms TTL=127
Reply from 192.168.2.6: bytes=32 time<1ms TTL=127
Reply from 192.168.2.6: bytes=32 time=17ms TTL=127

Ping statistics for 192.168.2.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 37ms, Average = 16ms

C:\>
```

At the bottom left of the command prompt window, there is a checkbox labeled "Top".



- **Simulation**

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	Admin	Client 2	ICMP		0.000	N	0	(edit)	(delete)
	Successful	Client 1	Client 1	ICMP		0.000	N	1	(edit)	(delete)
	Successful	Client 1	Client 5	ICMP		0.000	N	2	(edit)	(delete)
	Successful	Client 3	Admin	ICMP		0.000	N	3	(edit)	(delete)

Conclusion

Ce laboratoire de Système m'a permis de maîtriser les bases de la configuration des équipements réseau essentiels. J'ai notamment appris à configurer des switchs et des routeurs. En attribuant des adresses IPv4 et IPv6 aux périphériques, j'ai pu tester la connectivité entre deux réseaux à l'aide de commandes comme ping. Cette connectivité est rendue possible grâce à une passerelle ou un routeur, qui permet d'interconnecter des réseaux ayant des plages d'adresses différentes. Enfin, l'utilisation du Mode Simulation m'a permis d'analyser le trafic réseau en visualisant le cheminement des paquets et en identifiant d'éventuelles anomalies.