Faculté des Sciences et Technologies

(FST)

Rapport du travail de Laboratoire Nº 4 _Réseaux I

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Professeur : Ismael SAINT AMOUR

Niveau : L3

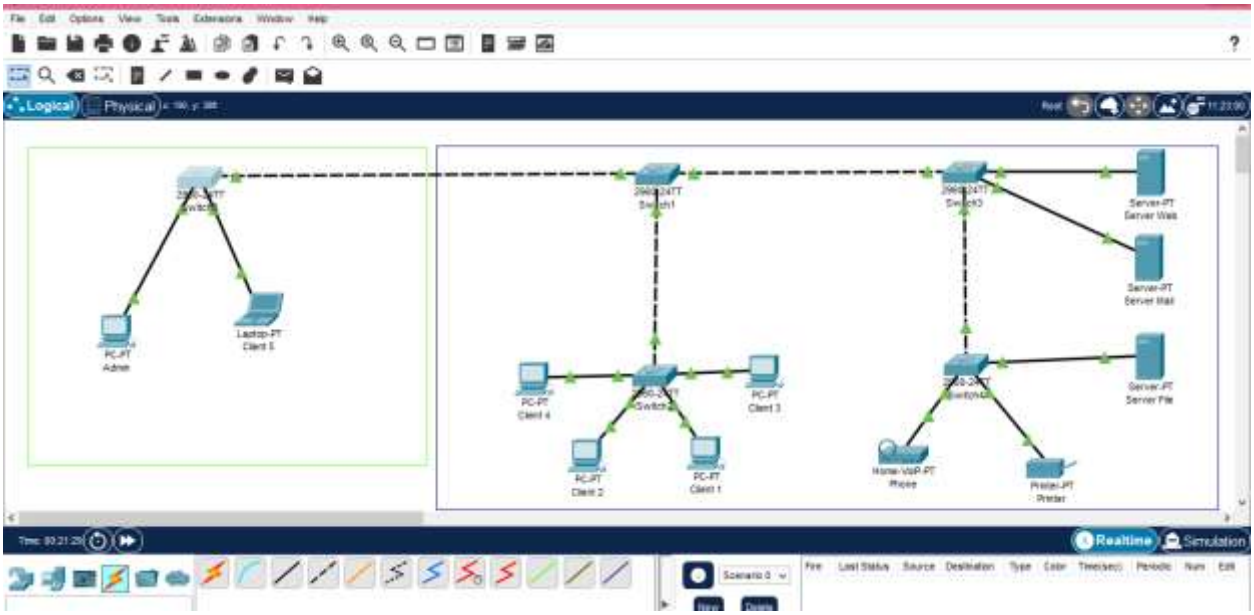
18 Novembre 2025

L’objectif de ce TD est de :

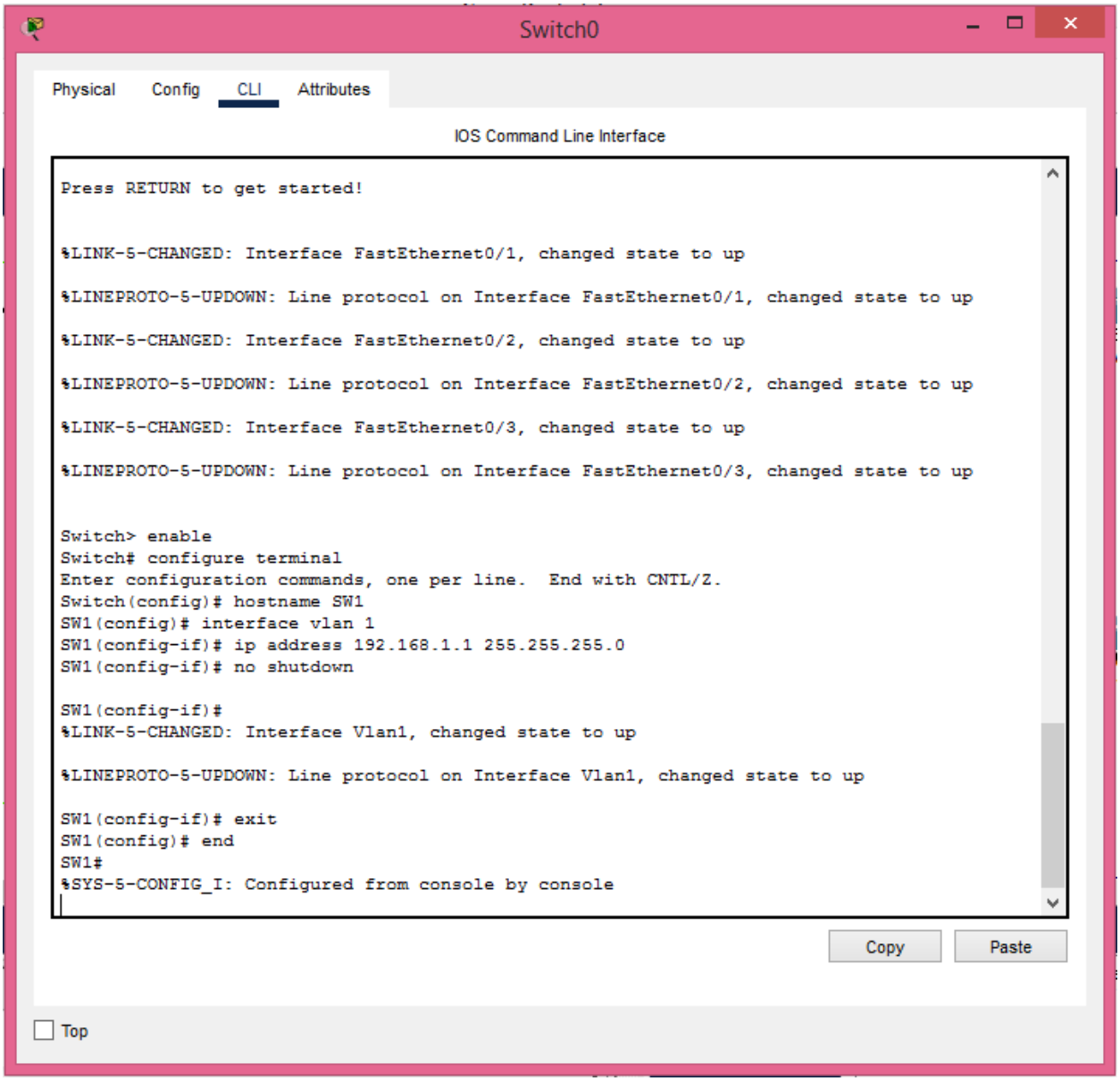
- Découvrir la configuration de base d’un switch et d'un routeur.
- Attribuer des adresses IPv4 et IPv6 aux périphériques.
- Tester la connectivité entre les hôtes.
- Utiliser le Mode Simulation pour analyser le trafic réseau.

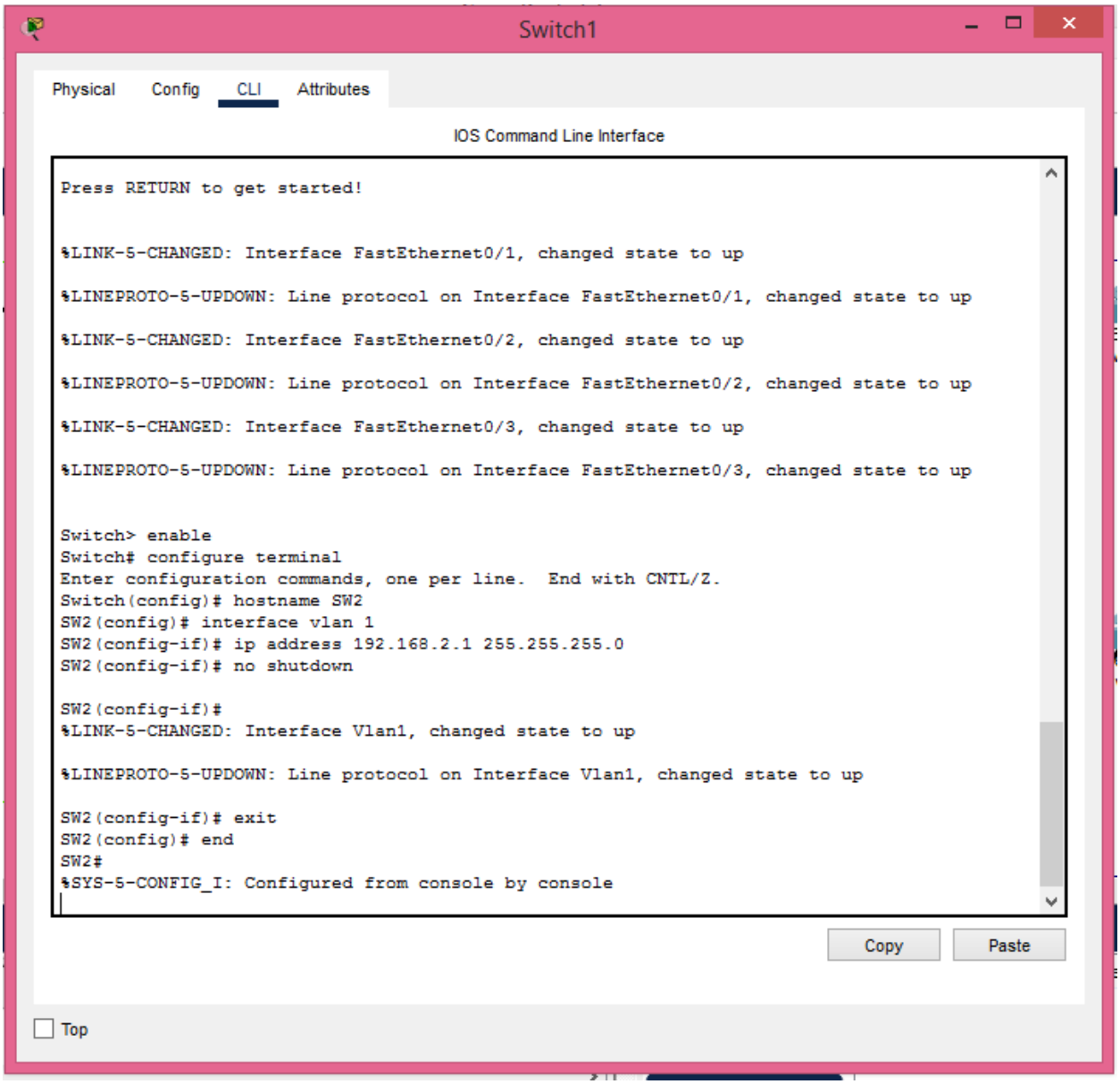
1. Reproduisez cette topologie en configurant les switchs, puis en attribuant les adresses IP aux dispositifs. Utilisez soit IPv4, soit IPv6, et testez la connectivité des deux VLAN à l'aide de la commande ping et du mode de simulation.

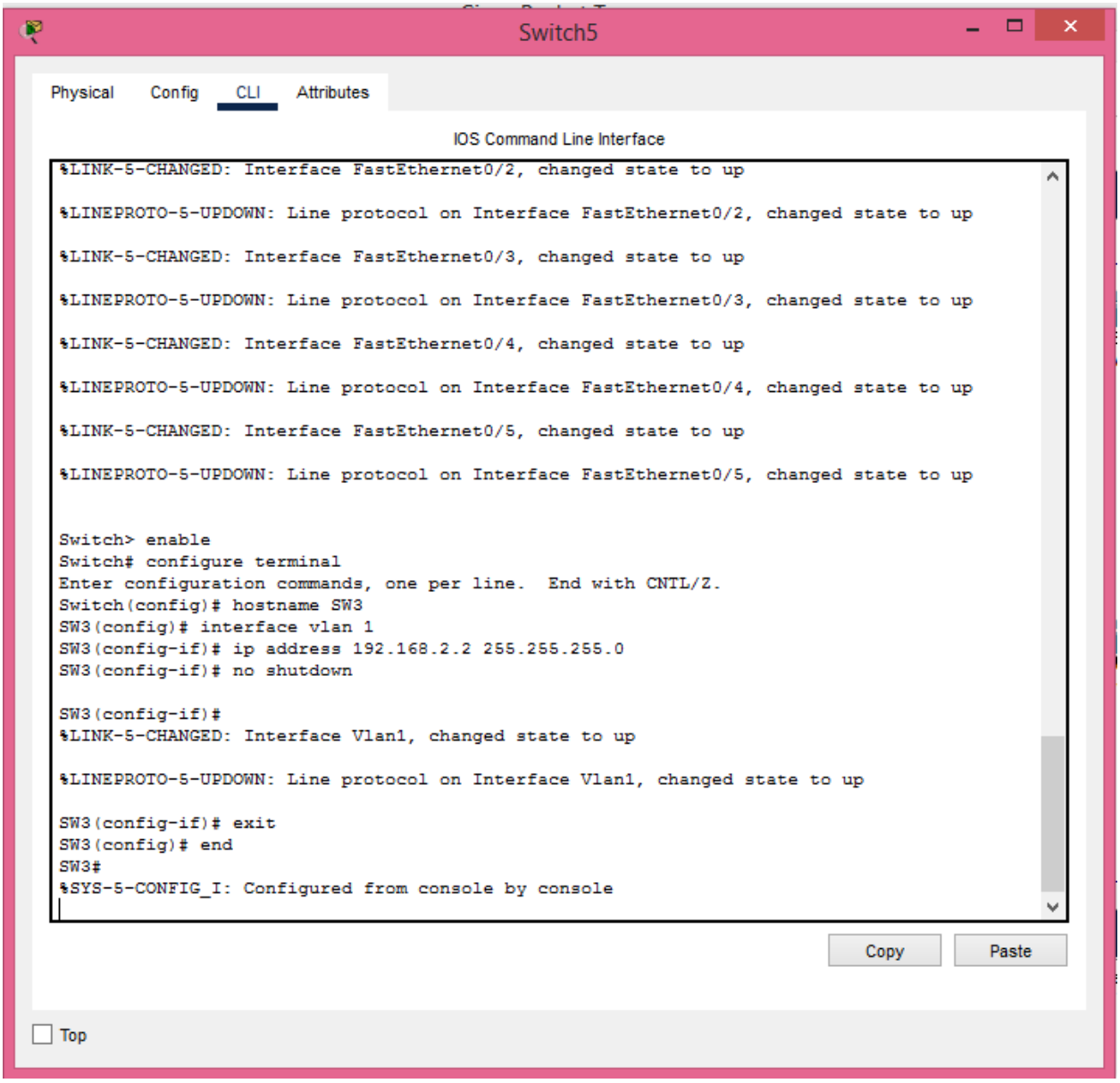
    - **Reproduction de la topologie**

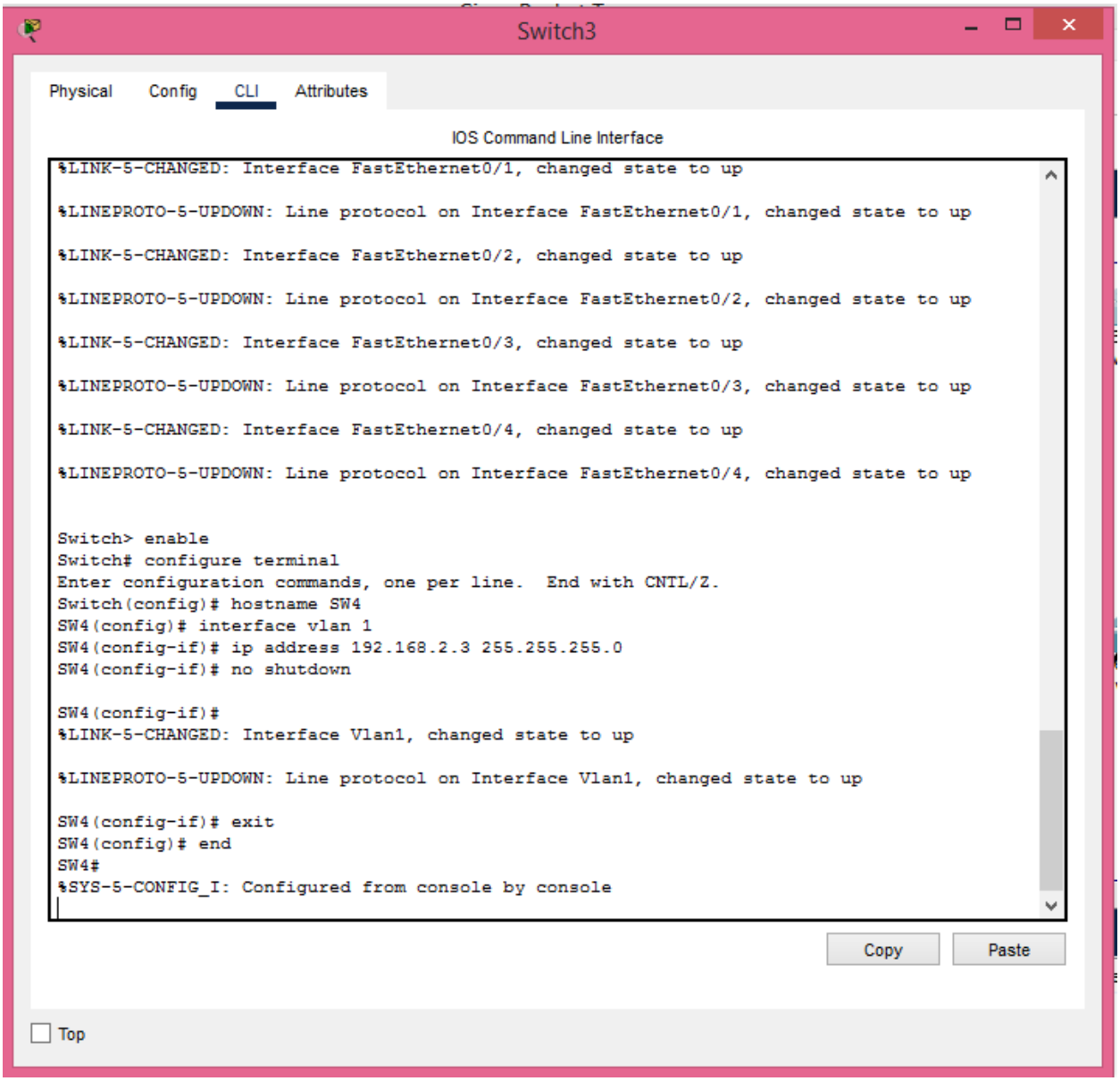


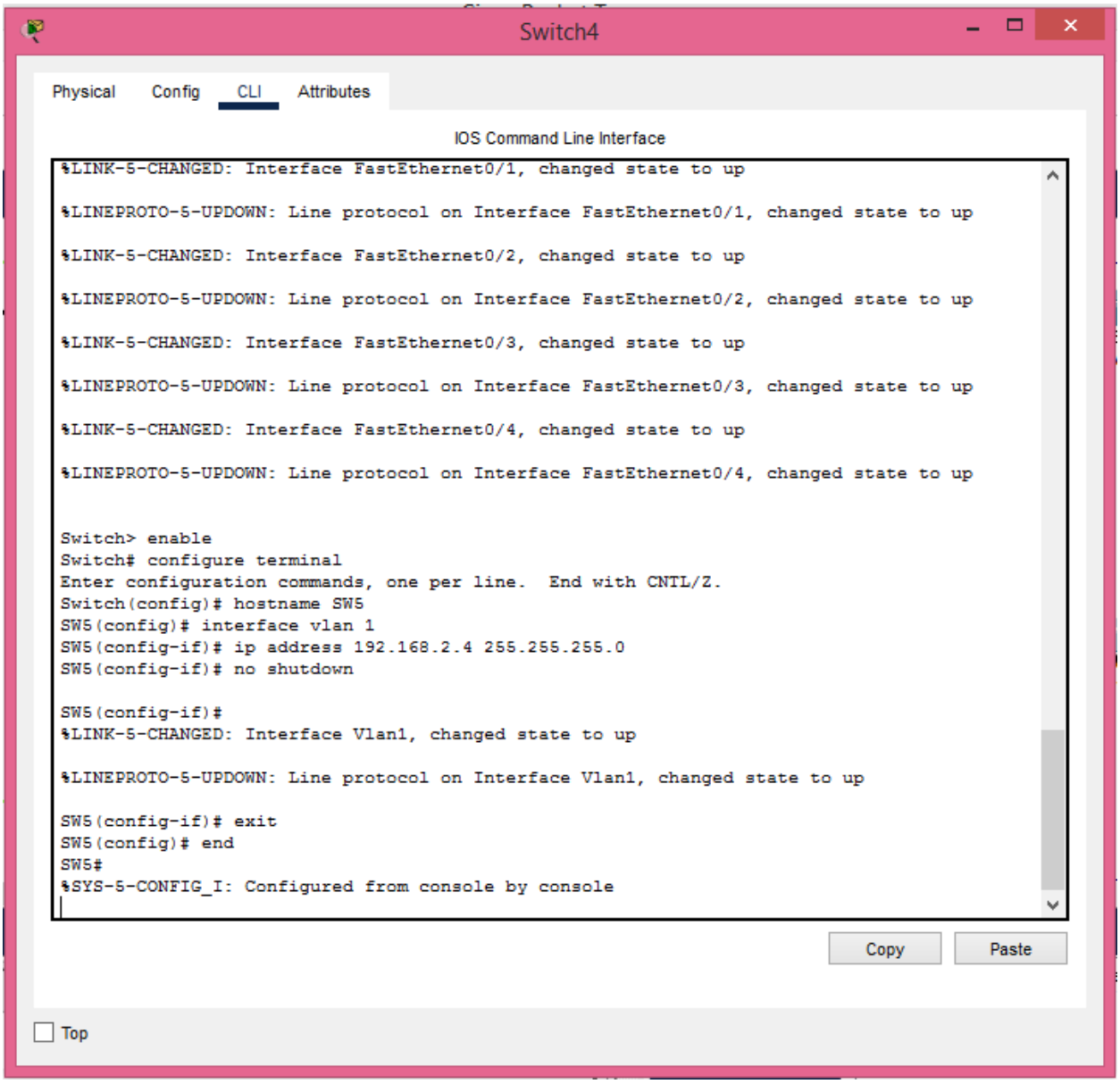
- **Configuration des Switchs**



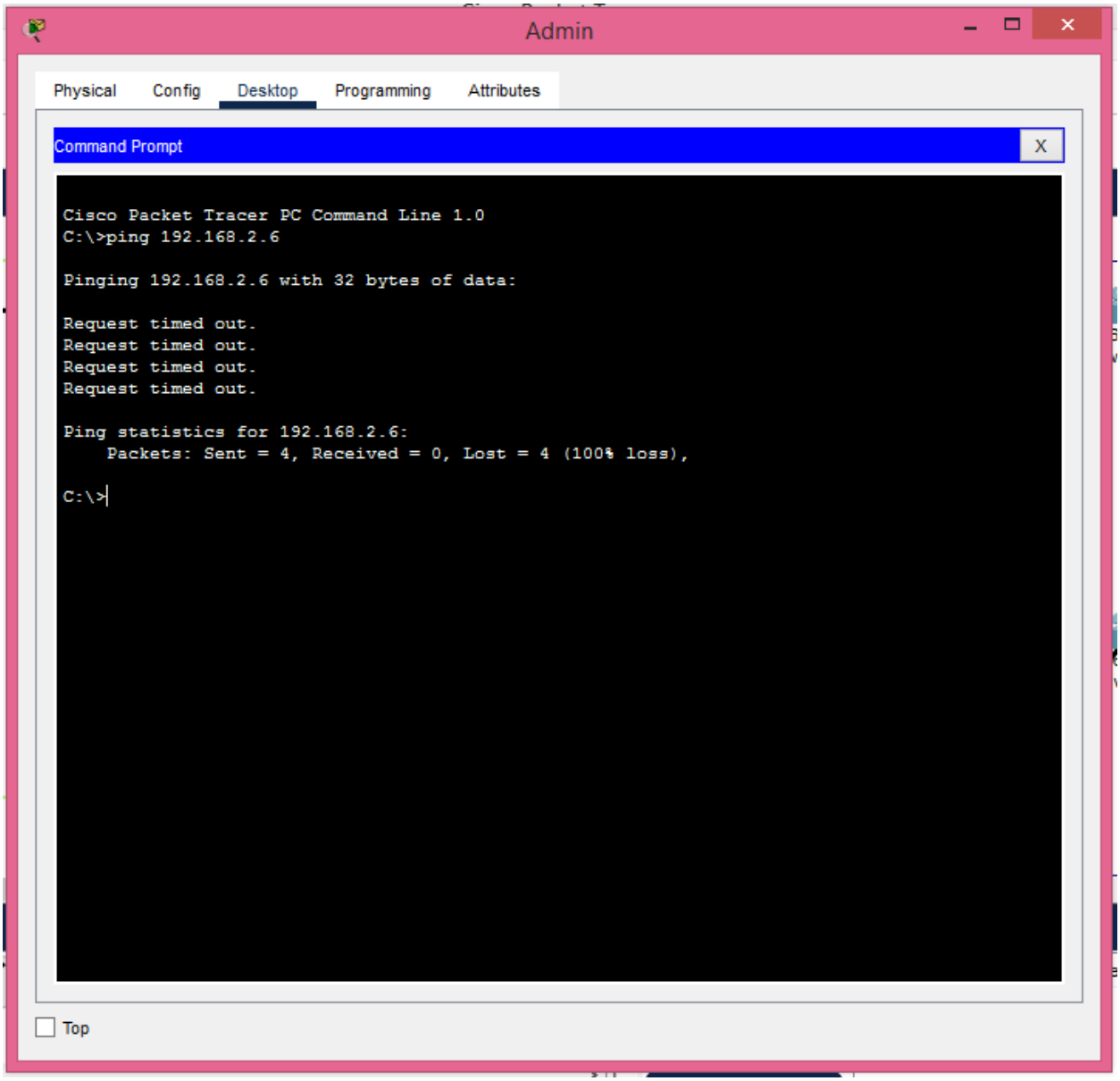

Switch1
Physical
Config
CLI
Attributes
IOS Command Line Interface
Press RETURN to get started!
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state 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
Copy
Paste
Top

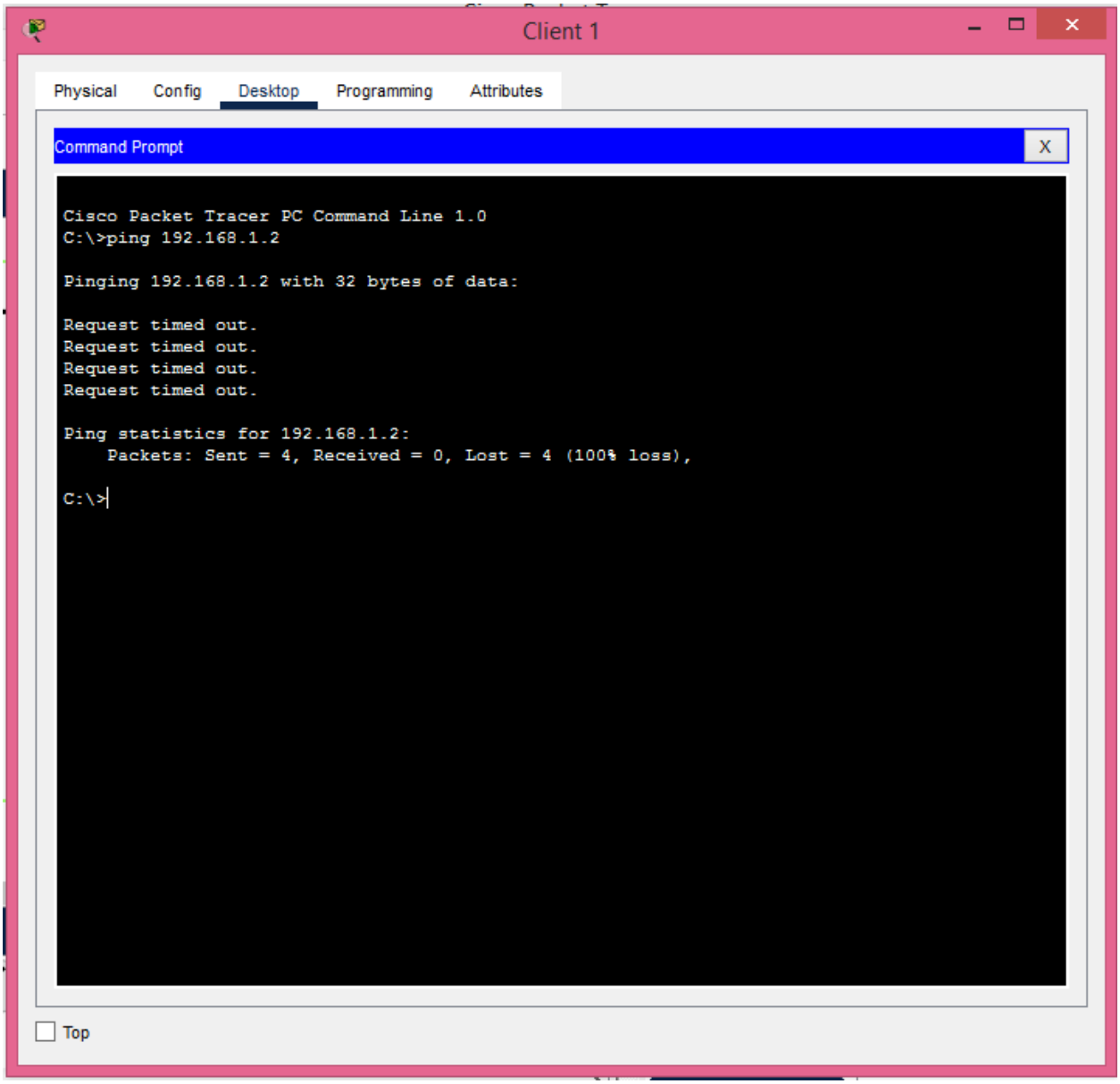

Switch5
Physical
Config
CLI
Attributes
IOS Command Line Interface
%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed state to up
%LINK-5-CHANGED: Interface FastEthernet0/3, changed state to up
%LINEPROTO-5-UPDOWN: Line 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
Copy
Paste
Top


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
Copy
Paste
Top


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
Copy
Paste
Top

- **Test de connectivité**



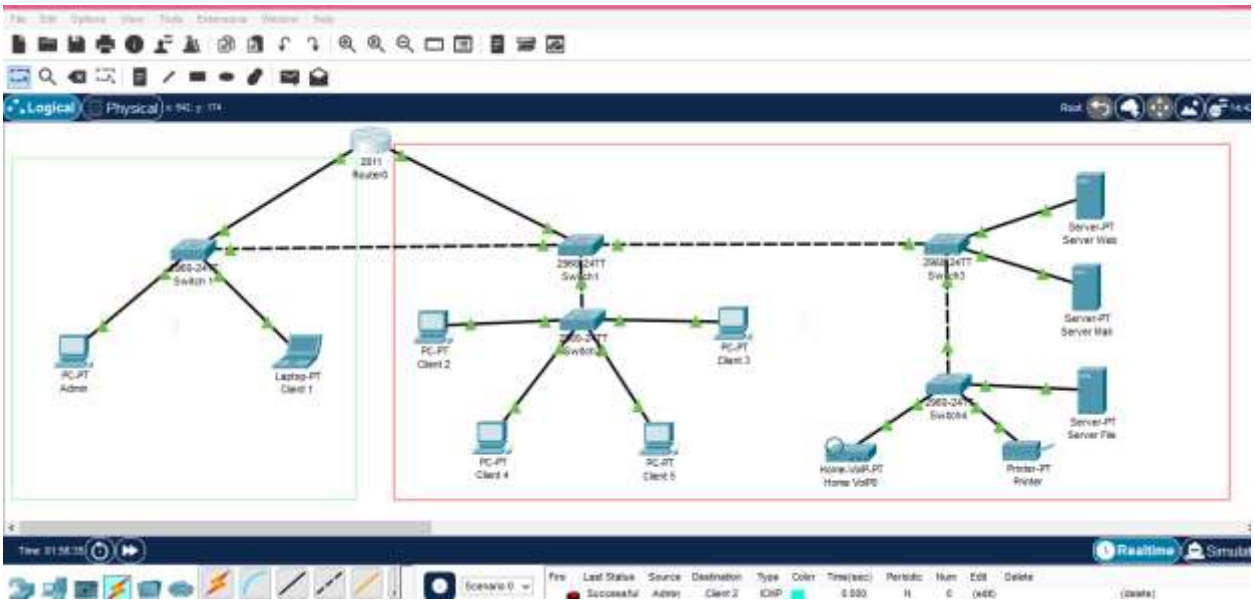


- **Simulation**

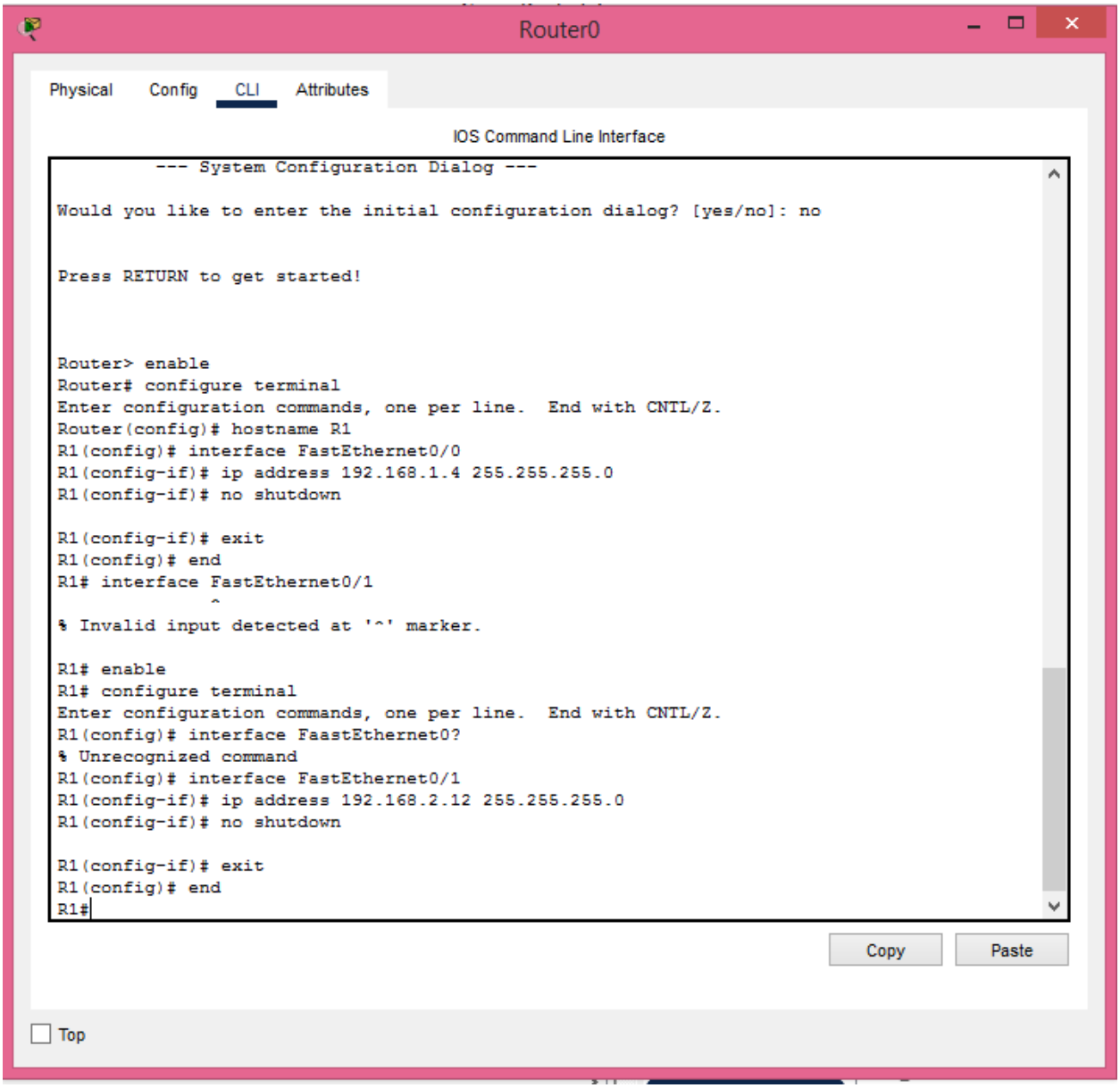
Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit
	Failed	Admin	Client 1	ICMP		7.475	N	1	(ed
	Failed	Admin	Client 1	ICMP		0.000	N	2	(ed
	Failed	Admin	Client 3	ICMP		0.401	N	3	(ed

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.

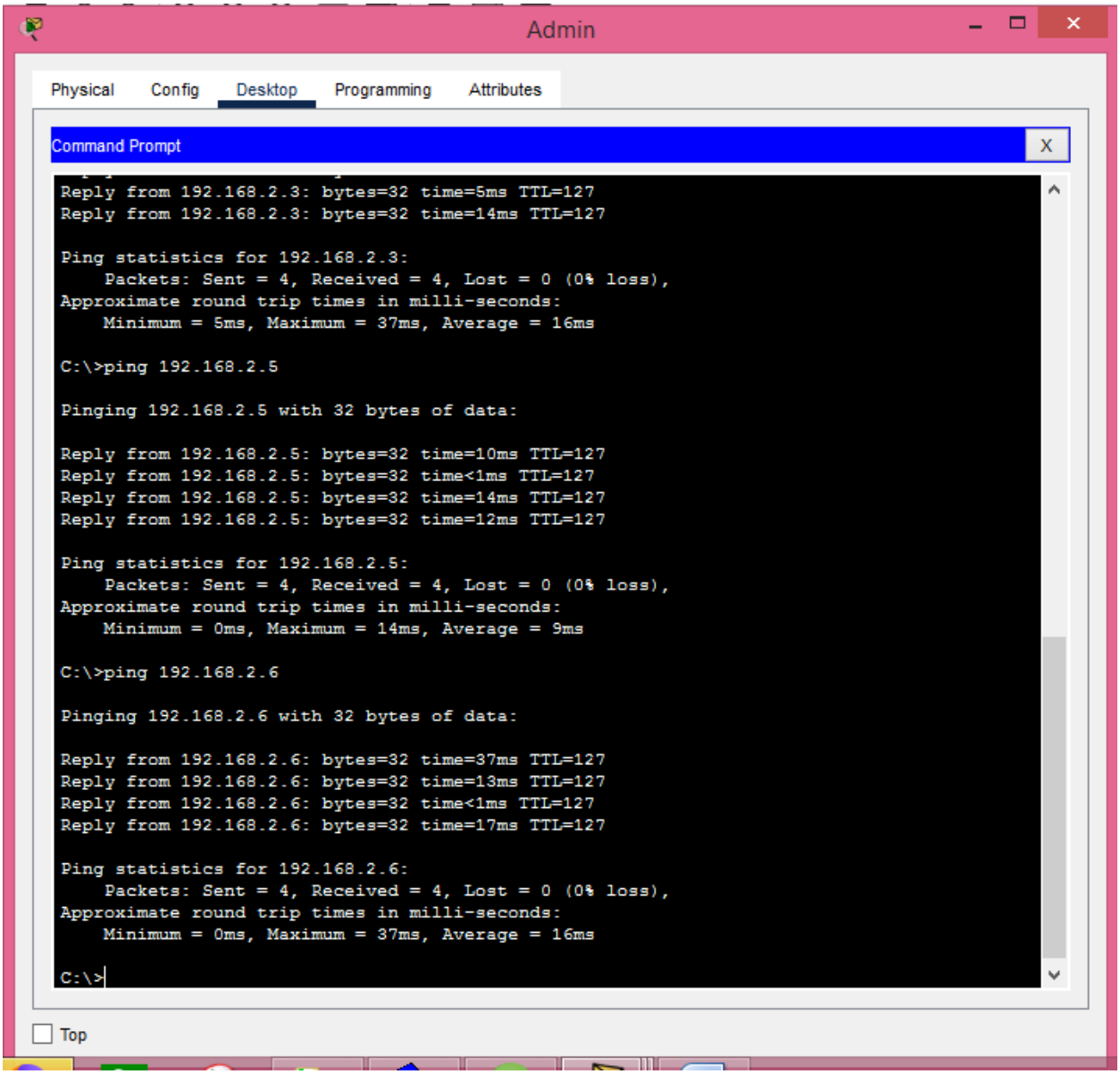
- **Reproduction de la topologie**

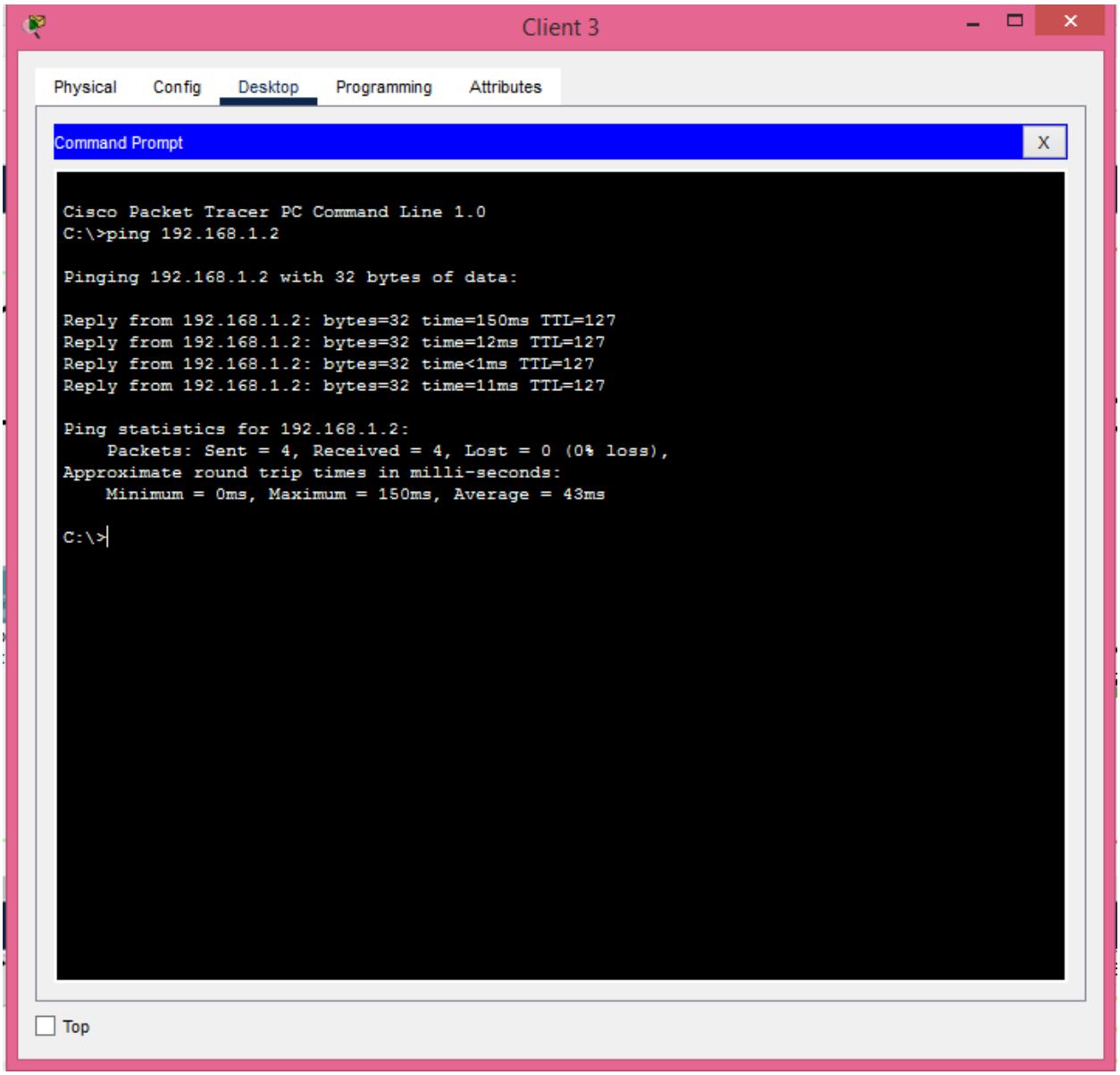


- **Configuration Router**



- **Test de connectivité**





- **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.