

# **INSTITUT UNIVERSITAIRE DES SCIENCES (IUS)**

**Faculté des Sciences Technologies**

**TD No 3 – Reseaux 1**

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etudiant en L3**

**Soumis au professeur : Ismael SAINT AMOUR**

**DATE: 12 novembre 2025**

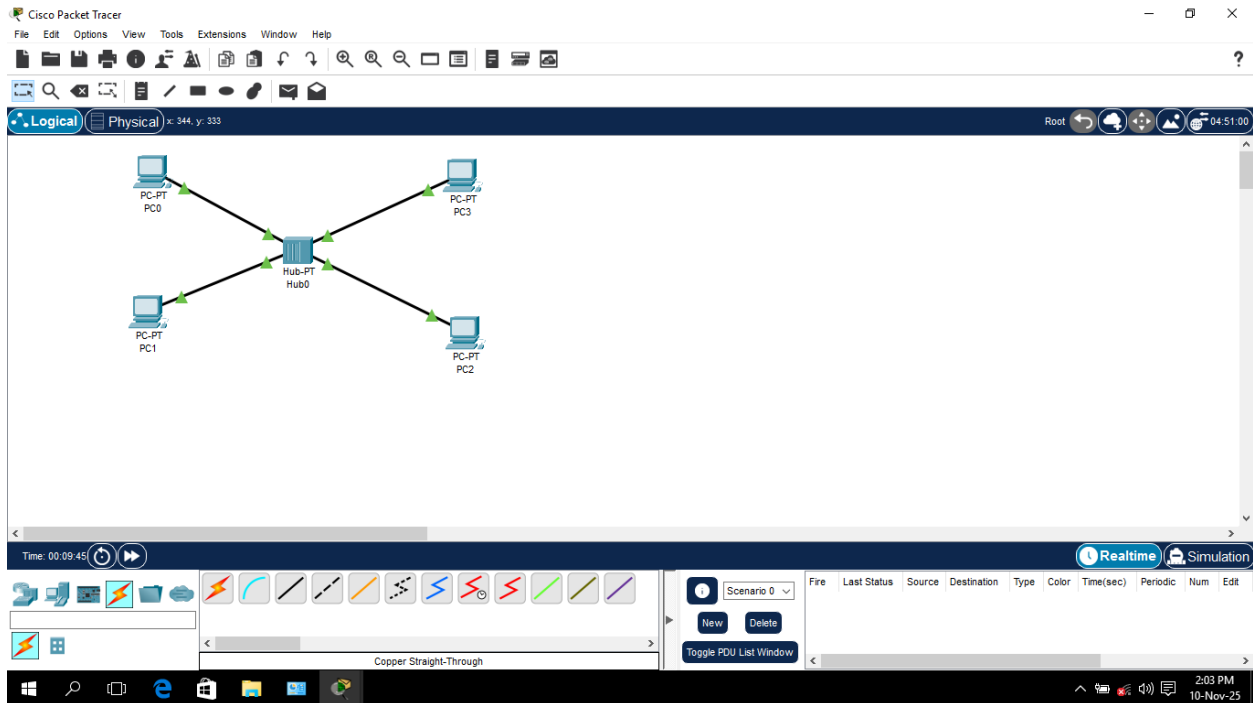
## **Adressage IPv4 et IPv6 avec Cisco Packet Tracer**

**L'objectif de ce TD est de:**

- 1. Savoir attribuer des adresses IP valides aux machines.**
- 2. Comprendre l'adressage IPv4 et IPv6.**
- 3. Configurer des adresses IP sur des hôtes et routeurs dans Cisco Packet Tracer.**
- 4. Vérifier la connectivité avec les commandes ping et ping ipv6.**

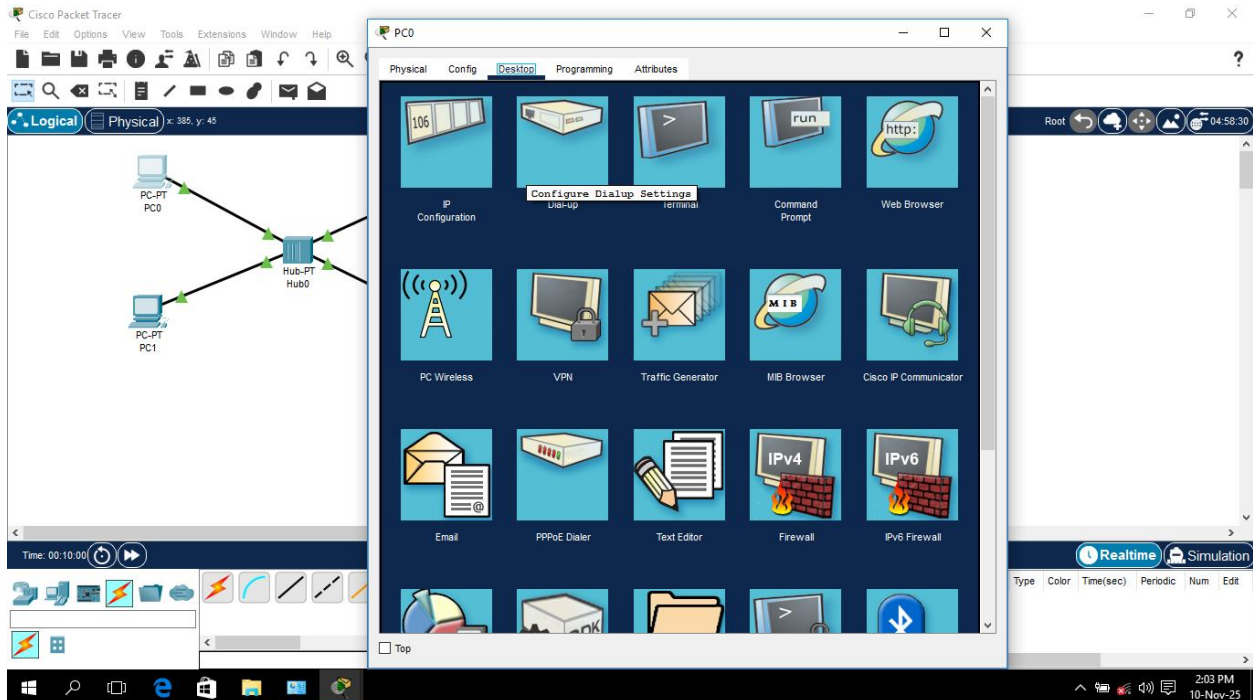
## IPv4

Pour commencer je crée une topologie pour configurer l'IPv4

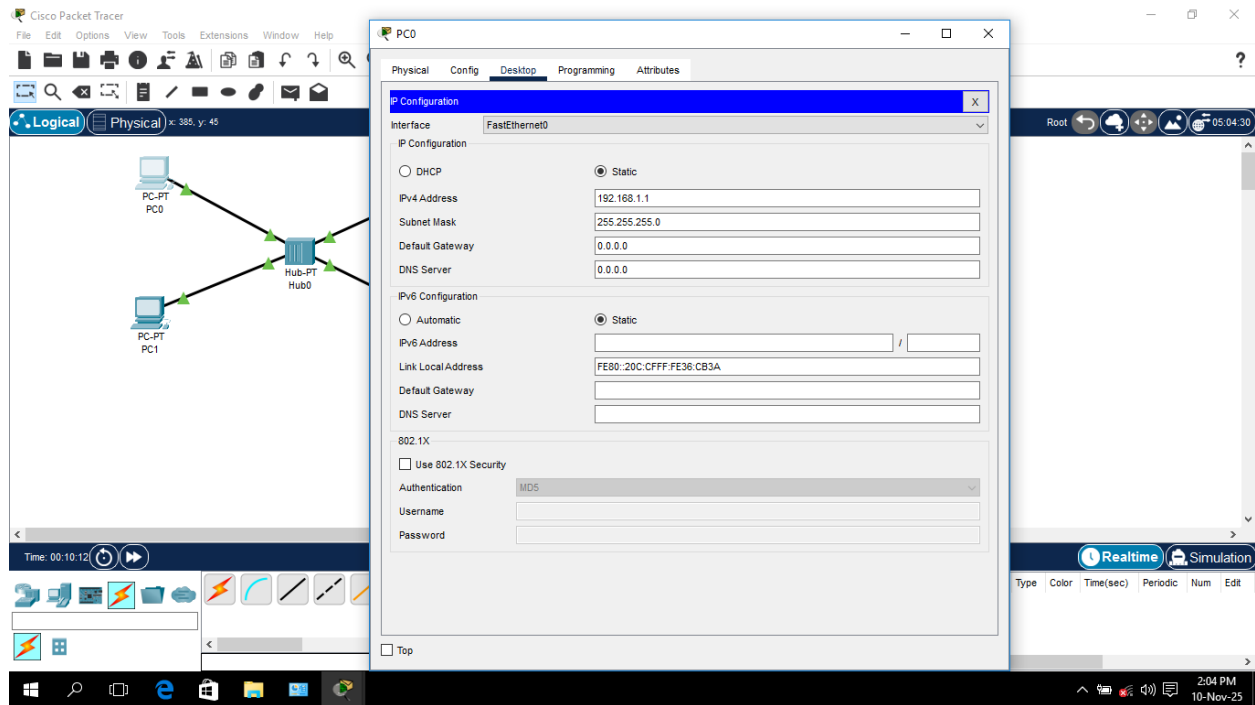


Pour faire la configuration je fais un double clique sur le Pc et trouve cette fenetre

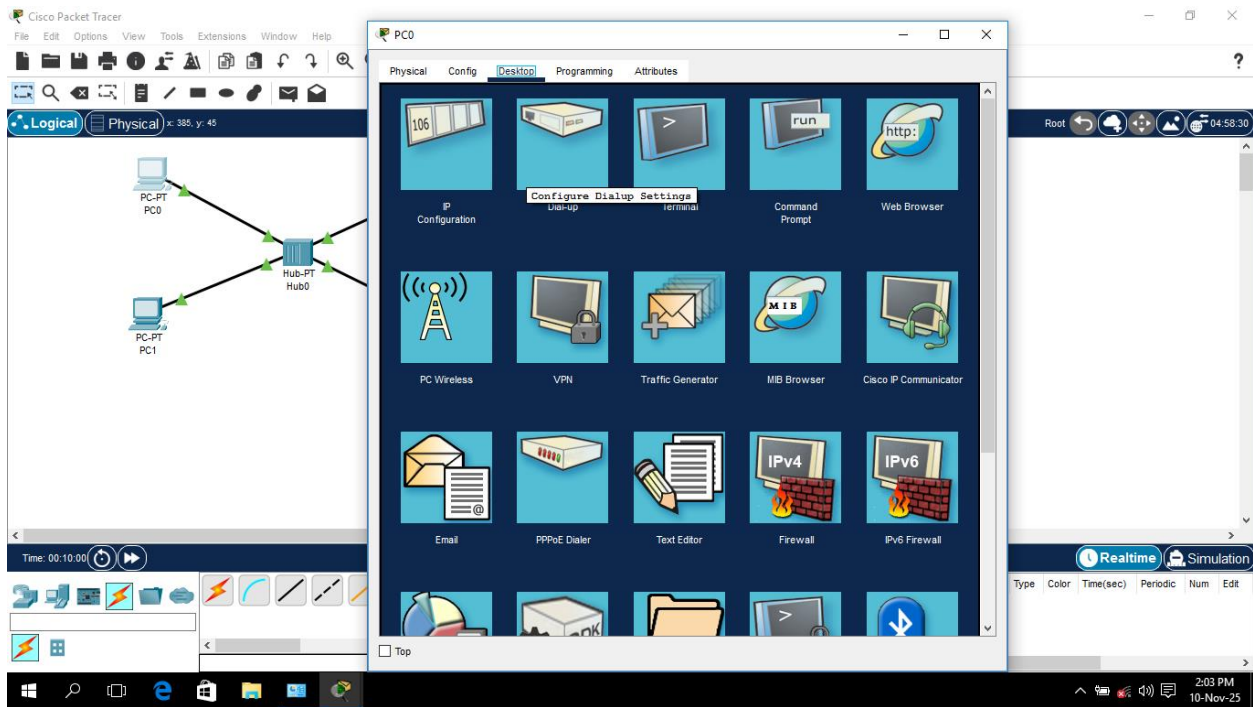
Dans laquelle on clique sur desktop pour ouvrir cette nouvelle fenetre



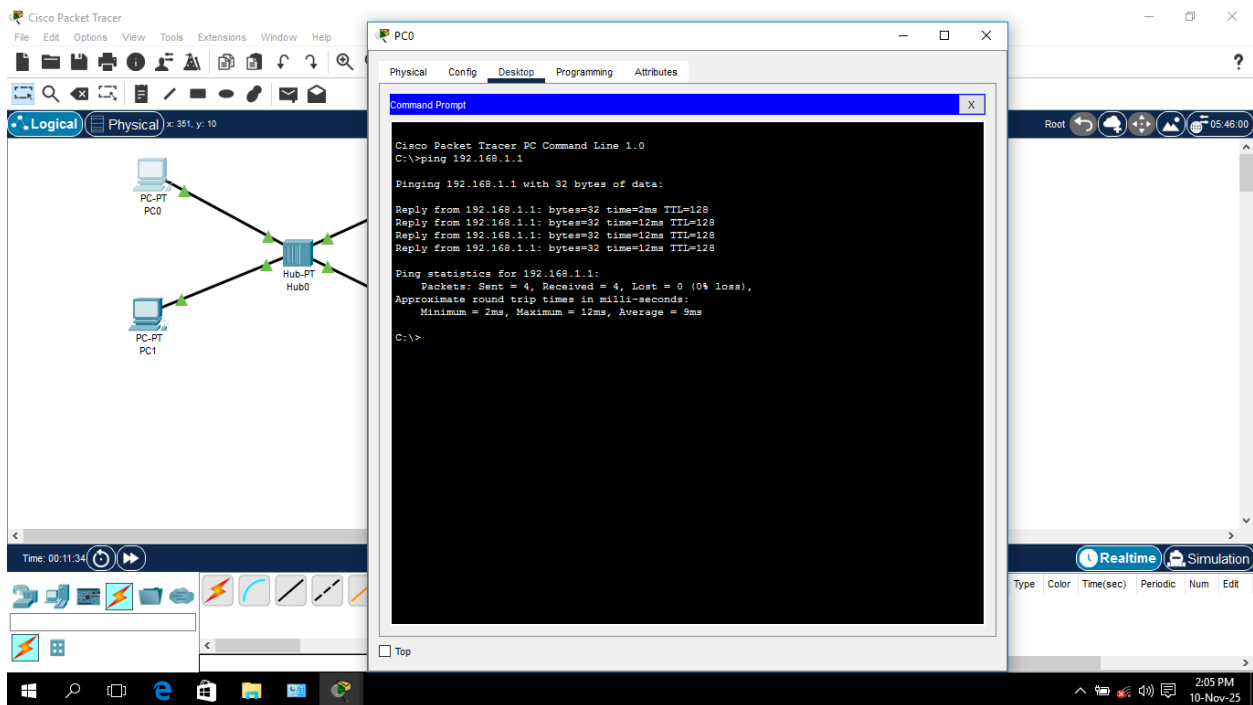
Dans la fenetre sous dessus on clique sur **IP configuration** pour mettre les IPv4 address, tandis que le **Subnet Mask** est automatique on n'aura pas a entre le code Subnet Mask



Apres l'adressage des IPv4 on doit verifier la connection, pour ce faire on fait un double clique sur le Pc, on va dans desktop et choisir commande prompt

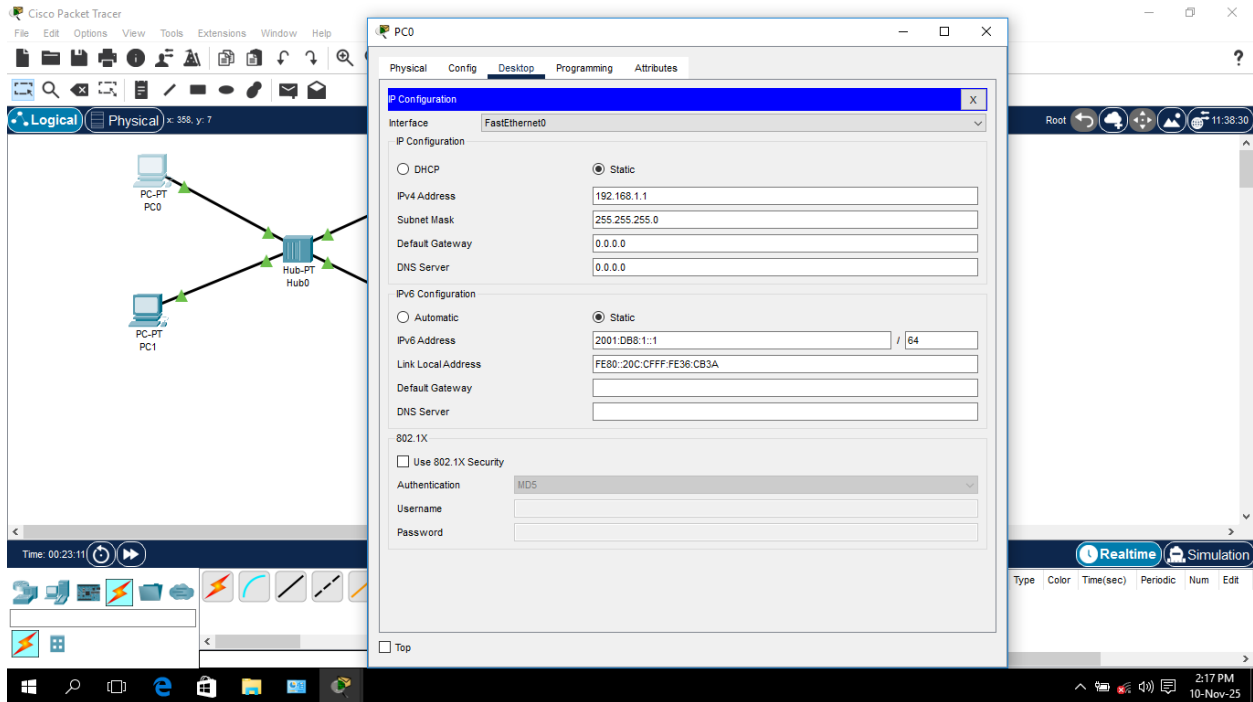


Une fois dans le commande prompt, pour verifier on ecrit ping + l'IPv4 en question et on fait Enter

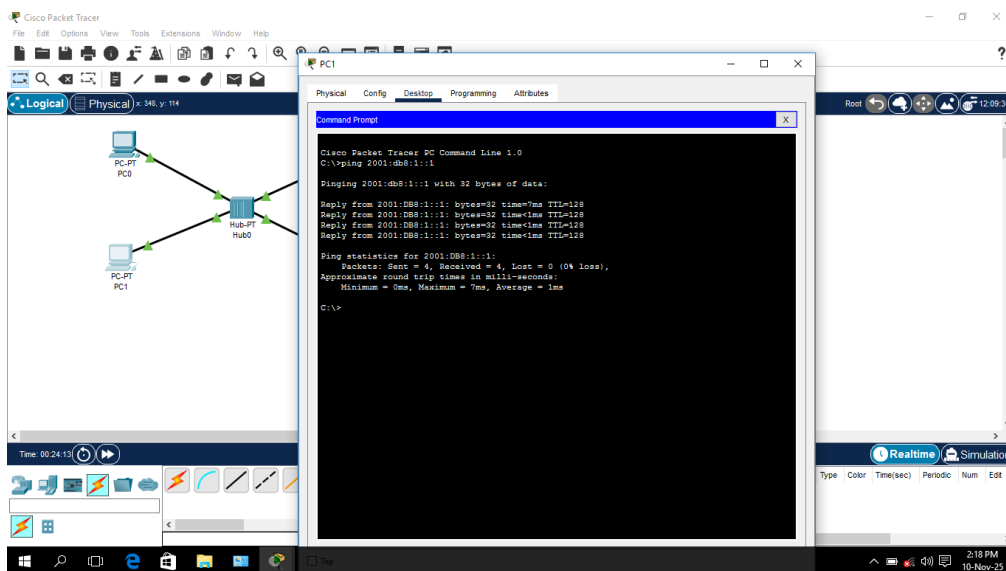


## IPv 6

Pour configurer l'IPv6 address on fait double cliquer sur le Pc en question dans notre topologie et ouvre la fenetre Desktop puis IP configuration, une fois la fenetre s'ouvre on va dans IPv6 address on ajoute l'adresse et on met 64.

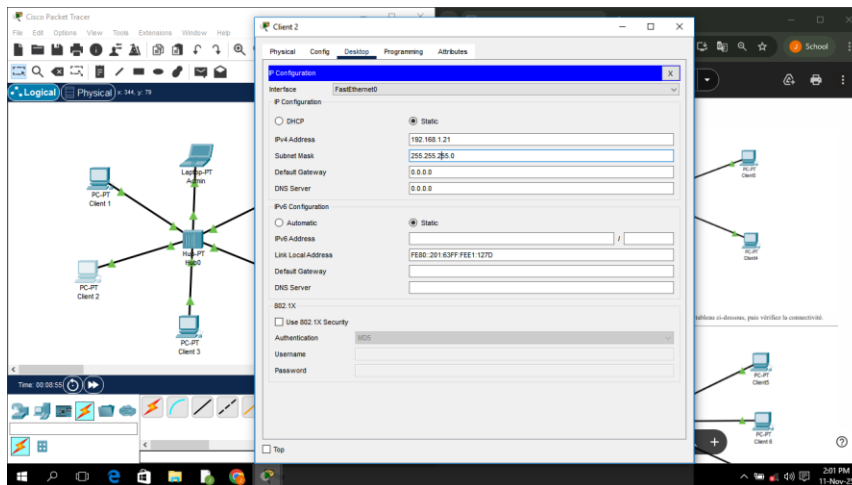
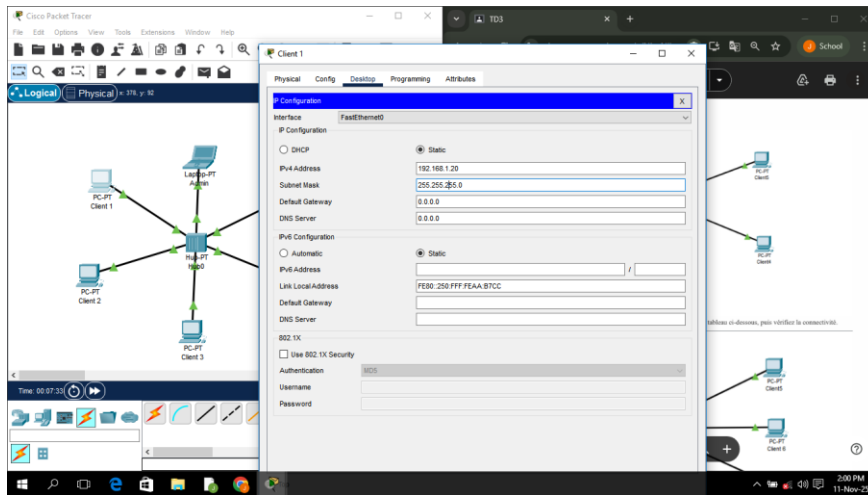


Pour tester la connectivite on fait double cliquer sur le Pc en question dans notre topologie et ouvre la fenetre Desktop puis on va dans commande prompt, une fois le terminal s'ouvre on tape ping suivit de l'IPv6 address

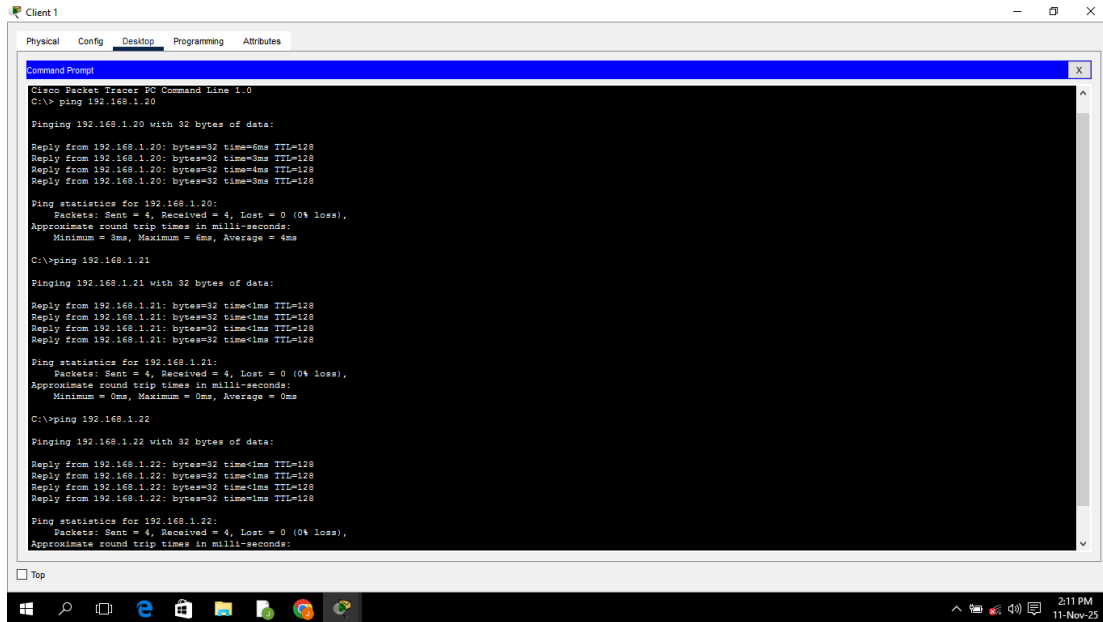


## 1) Reproduction de la topologie Etoile dans le TD (IPv4)

On va faire la configuration des adresses IPv4



On va verifier la connection maintenant



The screenshot shows a Cisco Packet Tracer PC Command Line window for 'Client 1'. The window has tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying a Command Prompt. The Command Prompt shows the following output:

```
Cisco Packet Tracer PC Command Line 1.0
C:\> ping 192.168.1.20

Pinging 192.168.1.20 with 32 bytes of data:

Reply from 192.168.1.20: bytes=32 time=6ms TTL=128
Reply from 192.168.1.20: bytes=32 time=3ms TTL=128
Reply from 192.168.1.20: bytes=32 time=4ms TTL=128
Reply from 192.168.1.20: bytes=32 time=3ms TTL=128

Ping statistics for 192.168.1.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 6ms, Average = 4ms
C:\>ping 192.168.1.21

Pinging 192.168.1.21 with 32 bytes of data:

Reply from 192.168.1.21: bytes=32 time<1ms TTL=128
Reply from 192.168.1.21: bytes=32 time<1ms TTL=128
Reply from 192.168.1.21: bytes=32 time<1ms TTL=128
Reply from 192.168.1.21: bytes=32 time<1ms TTL=128

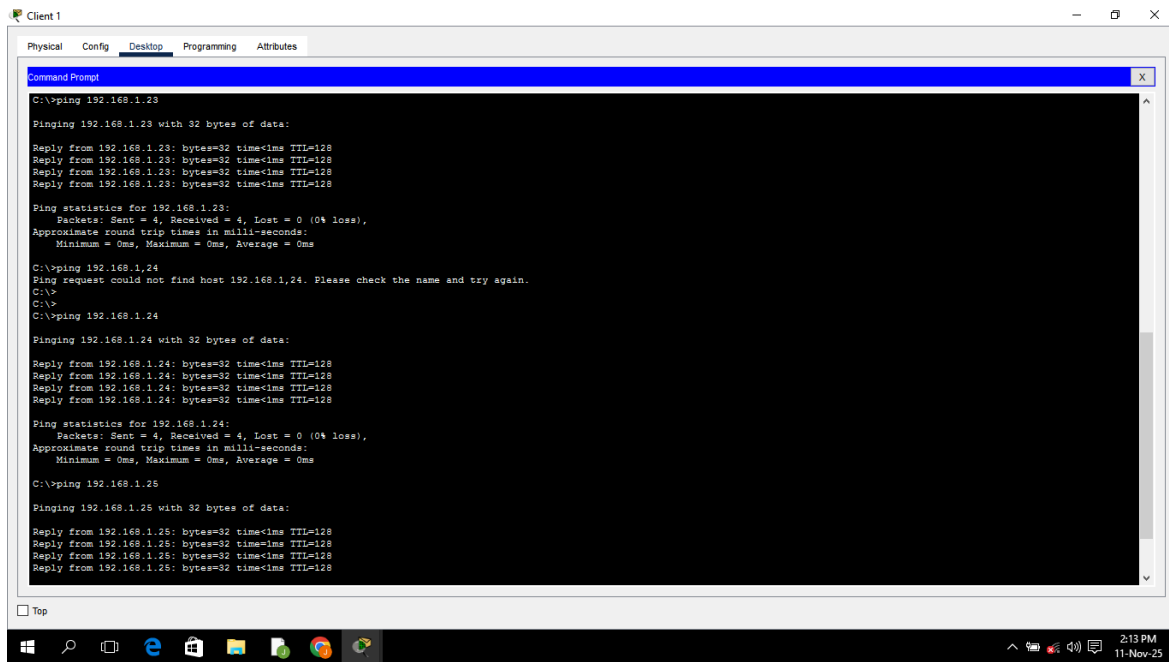
Ping statistics for 192.168.1.21:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.1.22

Pinging 192.168.1.22 with 32 bytes of data:

Reply from 192.168.1.22: bytes=32 time<1ms TTL=128
Reply from 192.168.1.22: bytes=32 time<1ms TTL=128
Reply from 192.168.1.22: bytes=32 time<1ms TTL=128
Reply from 192.168.1.22: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.22:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
```

The taskbar at the bottom shows the Windows Start button, search icon, and several application icons. The system clock in the bottom right corner displays 2:11 PM on 11-Nov-25.



The screenshot shows the same Cisco Packet Tracer PC Command Line window for 'Client 1'. The Command Prompt shows the following output:

```
C:\>ping 192.168.1.23

Pinging 192.168.1.23 with 32 bytes of data:

Reply from 192.168.1.23: bytes=32 time<1ms TTL=128
Reply from 192.168.1.23: bytes=32 time<1ms TTL=128
Reply from 192.168.1.23: bytes=32 time<1ms TTL=128
Reply from 192.168.1.23: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.23:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.1.24

Ping request could not find host 192.168.1.24. Please check the name and try again.
C:\>
C:\>ping 192.168.1.24

Pinging 192.168.1.24 with 32 bytes of data:

Reply from 192.168.1.24: bytes=32 time<1ms TTL=128
Reply from 192.168.1.24: bytes=32 time<1ms TTL=128
Reply from 192.168.1.24: bytes=32 time<1ms TTL=128
Reply from 192.168.1.24: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.24:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
C:\>ping 192.168.1.25

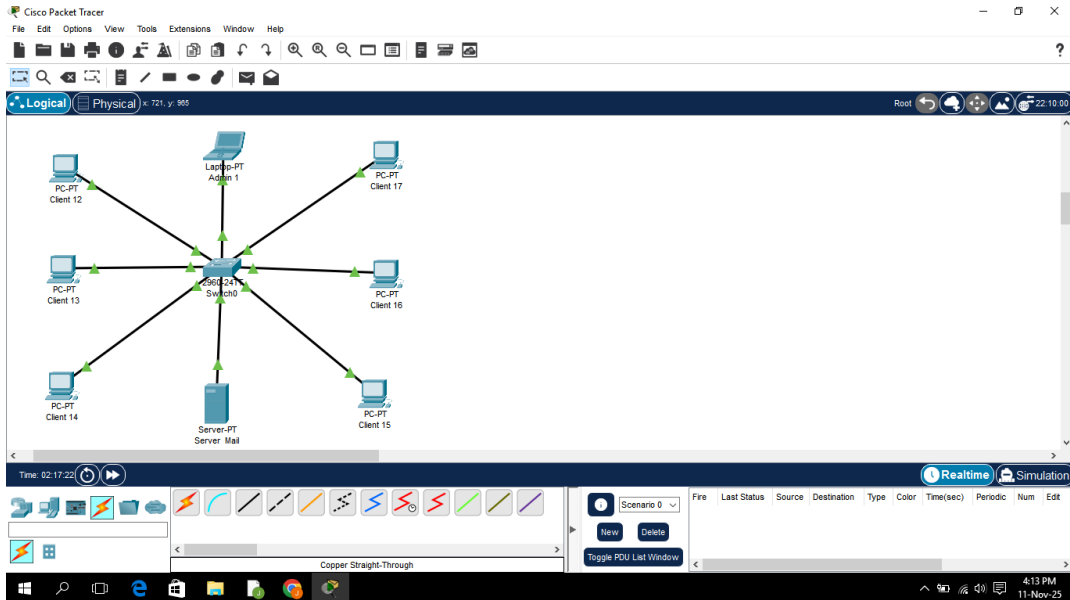
Pinging 192.168.1.25 with 32 bytes of data:

Reply from 192.168.1.25: bytes=32 time<1ms TTL=128
Reply from 192.168.1.25: bytes=32 time<1ms TTL=128
Reply from 192.168.1.25: bytes=32 time<1ms TTL=128
Reply from 192.168.1.25: bytes=32 time<1ms TTL=128
```

The taskbar at the bottom shows the Windows Start button, search icon, and several application icons. The system clock in the bottom right corner displays 2:13 PM on 11-Nov-25.



## 2) Reproduction de la topologie etoile 2

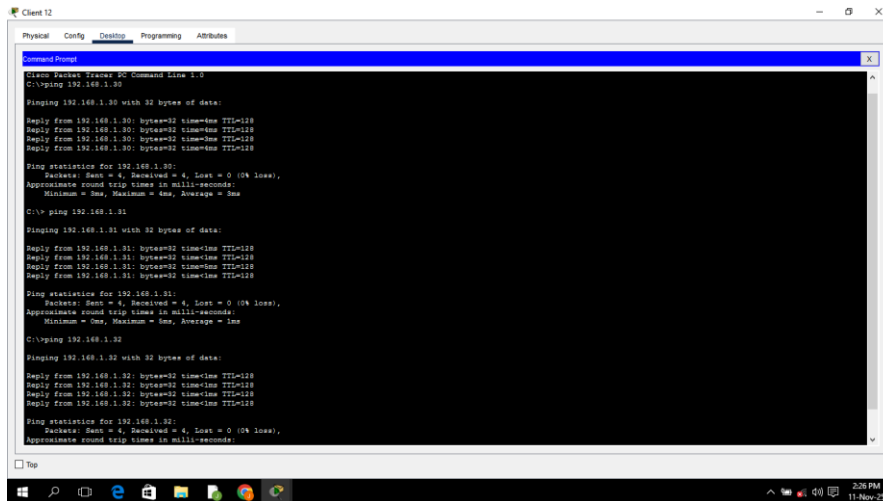


## Configuration des Adresses IPv4

The image shows the configuration of Client 13 in Cisco Packet Tracer. The IP Configuration window is open, displaying settings for the FastEthernet0 interface. The IPv4 configuration is set to Static with IP address 192.168.1.31, Subnet Mask 255.255.255.0, Default Gateway 0.0.0.0, and DNS Server 0.0.0.0. The IPv6 configuration is also set to Static with IP address 2001:db8:1::11, Link Local Address FE80::20A:F3FF:FEDB:110, and Default Gateway. The 802.1X security is disabled.

Interface	IP Configuration	IPv6 Configuration
FastEthernet0	<ul style="list-style-type: none"><li><input checked="" type="radio"/> DHCP</li><li><input checked="" type="radio"/> Static</li><li>IPv4 Address: 192.168.1.31</li><li>Subnet Mask: 255.255.255.0</li><li>Default Gateway: 0.0.0.0</li><li>DNS Server: 0.0.0.0</li></ul>	<ul style="list-style-type: none"><li><input type="radio"/> Automatic</li><li><input checked="" type="radio"/> Static</li><li>IPv6 Address: 2001:db8:1::11</li><li>Link Local Address: FE80::20A:F3FF:FEDB:110</li><li>Default Gateway: </li><li>DNS Server: </li></ul>

# Verification de la connection



```
Client 12
Physical Config Desktop Programming Attributes

Command Prompt
C:\> netsh interface tcp reset
C:\> ping 192.168.1.30

Pinging 192.168.1.30 with 32 bytes of data:

Reply from 192.168.1.30: bytes=32 time=4ms TTL=128
Reply from 192.168.1.30: bytes=32 time=4ms TTL=128
Reply from 192.168.1.30: bytes=32 time=4ms TTL=128
Reply from 192.168.1.30: bytes=32 time=4ms TTL=128

Ping statistics for 192.168.1.30:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 4ms, Average = 3ms

C:\> ping 192.168.1.31

Pinging 192.168.1.31 with 32 bytes of data:

Reply from 192.168.1.31: bytes=32 time=1ms TTL=128
Reply from 192.168.1.31: bytes=32 time=1ms TTL=128
Reply from 192.168.1.31: bytes=32 time=1ms TTL=128
Reply from 192.168.1.31: bytes=32 time=1ms TTL=128

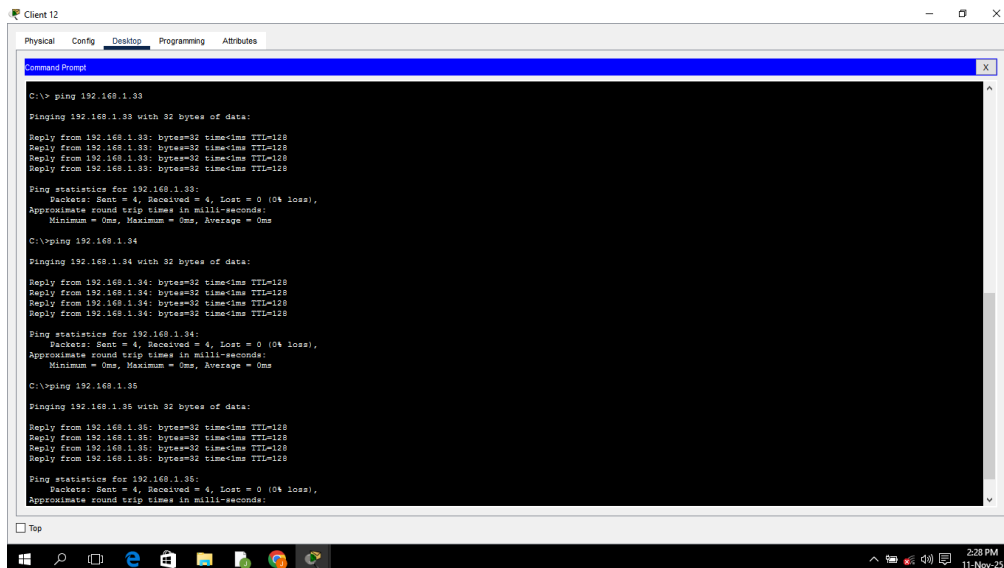
Ping statistics for 192.168.1.31:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 1ms

C:\> ping 192.168.1.32

Pinging 192.168.1.32 with 32 bytes of data:

Reply from 192.168.1.32: bytes=32 time=1ms TTL=128
Reply from 192.168.1.32: bytes=32 time=1ms TTL=128
Reply from 192.168.1.32: bytes=32 time=1ms TTL=128
Reply from 192.168.1.32: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.32:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
```



```
Client 12
Physical Config Desktop Programming Attributes

Command Prompt
C:\> ping 192.168.1.33

Pinging 192.168.1.33 with 32 bytes of data:

Reply from 192.168.1.33: bytes=32 time=1ms TTL=128
Reply from 192.168.1.33: bytes=32 time=1ms TTL=128
Reply from 192.168.1.33: bytes=32 time=1ms TTL=128
Reply from 192.168.1.33: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.33:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\> ping 192.168.1.34

Pinging 192.168.1.34 with 32 bytes of data:

Reply from 192.168.1.34: bytes=32 time=1ms TTL=128
Reply from 192.168.1.34: bytes=32 time=1ms TTL=128
Reply from 192.168.1.34: bytes=32 time=1ms TTL=128
Reply from 192.168.1.34: bytes=32 time=1ms TTL=128

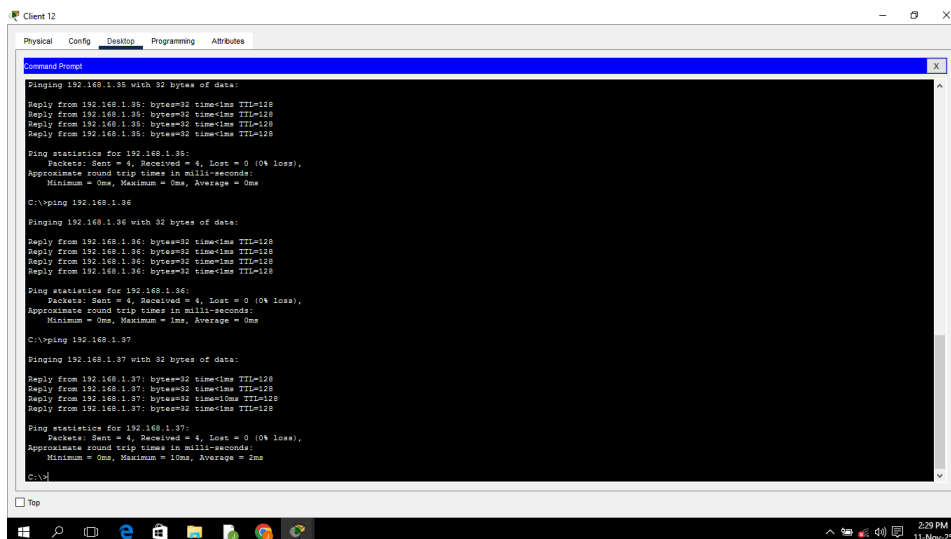
Ping statistics for 192.168.1.34:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\> ping 192.168.1.35

Pinging 192.168.1.35 with 32 bytes of data:

Reply from 192.168.1.35: bytes=32 time=1ms TTL=128
Reply from 192.168.1.35: bytes=32 time=1ms TTL=128
Reply from 192.168.1.35: bytes=32 time=1ms TTL=128
Reply from 192.168.1.35: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.35:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
```



```
Client 12
Physical Config Desktop Programming Attributes

Command Prompt
Pinging 192.168.1.35 with 32 bytes of data:

Reply from 192.168.1.35: bytes=32 time=1ms TTL=128
Reply from 192.168.1.35: bytes=32 time=1ms TTL=128
Reply from 192.168.1.35: bytes=32 time=1ms TTL=128
Reply from 192.168.1.35: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.35:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\> ping 192.168.1.36

Pinging 192.168.1.36 with 32 bytes of data:

Reply from 192.168.1.36: bytes=32 time=1ms TTL=128
Reply from 192.168.1.36: bytes=32 time=1ms TTL=128
Reply from 192.168.1.36: bytes=32 time=1ms TTL=128
Reply from 192.168.1.36: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.36:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\> ping 192.168.1.37

Pinging 192.168.1.37 with 32 bytes of data:

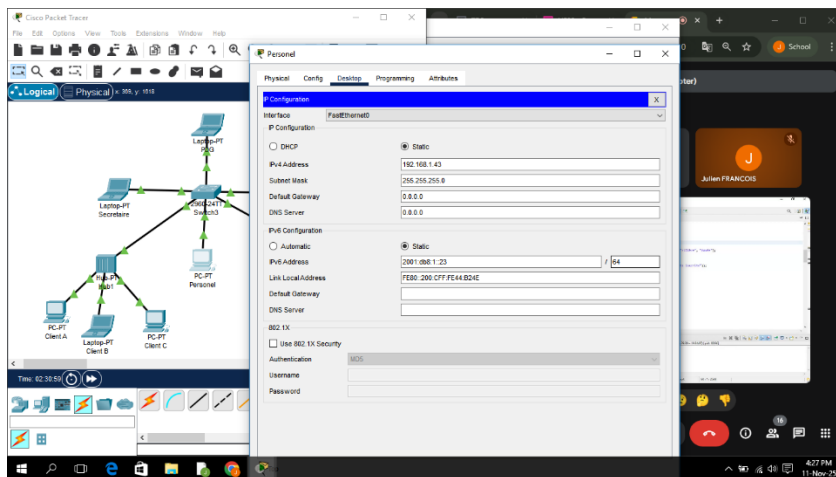
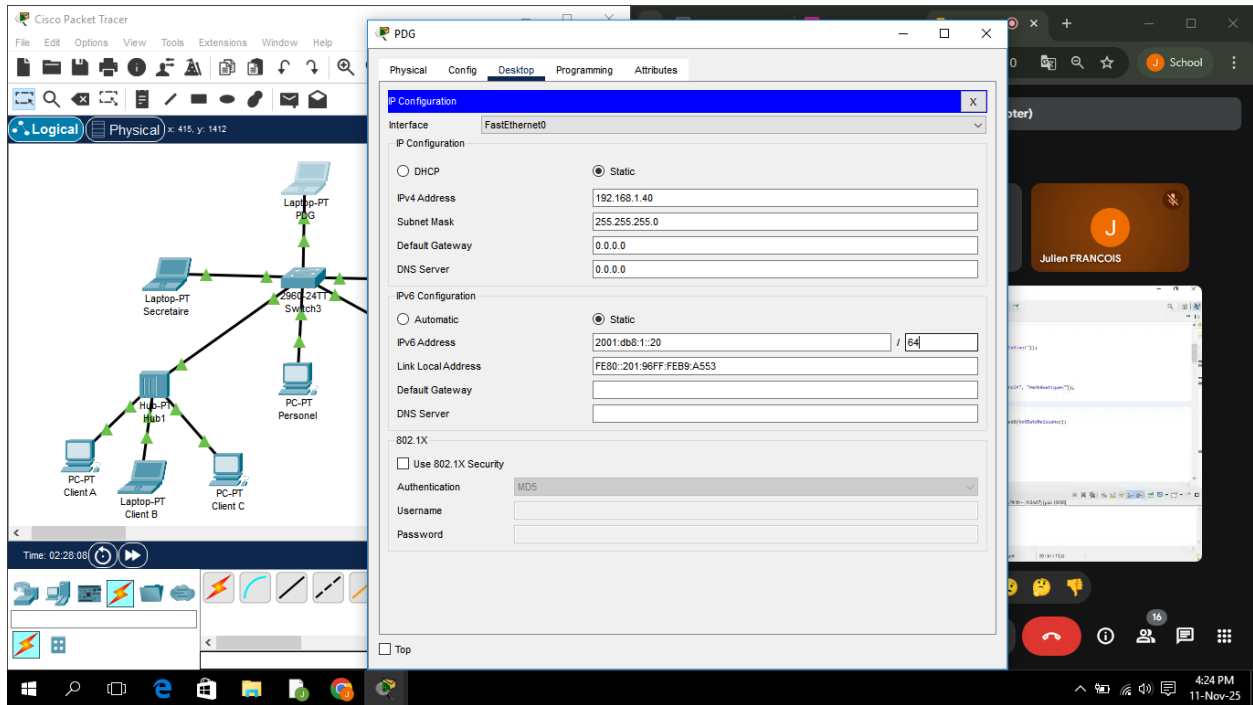
Reply from 192.168.1.37: bytes=32 time=1ms TTL=128
Reply from 192.168.1.37: bytes=32 time=1ms TTL=128
Reply from 192.168.1.37: bytes=32 time=1ms TTL=128
Reply from 192.168.1.37: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.37:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 10ms, Average = 2ms

C:\>
```

### 3) Reproduction de la topologie Hybride (IPv4)

#### Configuration des Adresses IPv4



#### Verification de la connexion

PDG

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>ping 192.168.1.43

Pinging 192.168.1.43 with 32 bytes of data:

Reply from 192.168.1.43: bytes=32 time=1ms TTL=128
Reply from 192.168.1.43: bytes=32 time=1ms TTL=128
Reply from 192.168.1.43: bytes=32 time=1ms TTL=128
Reply from 192.168.1.43: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.43:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.44

Pinging 192.168.1.44 with 32 bytes of data:

Reply from 192.168.1.44: bytes=32 time=1ms TTL=128
Reply from 192.168.1.44: bytes=32 time=1ms TTL=128
Reply from 192.168.1.44: bytes=32 time=1ms TTL=128
Reply from 192.168.1.44: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.44:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.45

Pinging 192.168.1.45 with 32 bytes of data:

Reply from 192.168.1.45: bytes=32 time=1ms TTL=128
Reply from 192.168.1.45: bytes=32 time=1ms TTL=128
Reply from 192.168.1.45: bytes=32 time=1ms TTL=128
Reply from 192.168.1.45: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.45:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
```

☐ Top

3:55 PM 11-Nov-25

PDG

Physical Config Desktop Programming Attributes

Command Prompt

```
C:\>ping 192.168.1.43

Pinging 192.168.1.43 with 32 bytes of data:

Reply from 192.168.1.43: bytes=32 time=1ms TTL=128
Reply from 192.168.1.43: bytes=32 time=1ms TTL=128
Reply from 192.168.1.43: bytes=32 time=1ms TTL=128
Reply from 192.168.1.43: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.43:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.44

Pinging 192.168.1.44 with 32 bytes of data:

Reply from 192.168.1.44: bytes=32 time=1ms TTL=128
Reply from 192.168.1.44: bytes=32 time=1ms TTL=128
Reply from 192.168.1.44: bytes=32 time=1ms TTL=128
Reply from 192.168.1.44: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.44:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.1.45

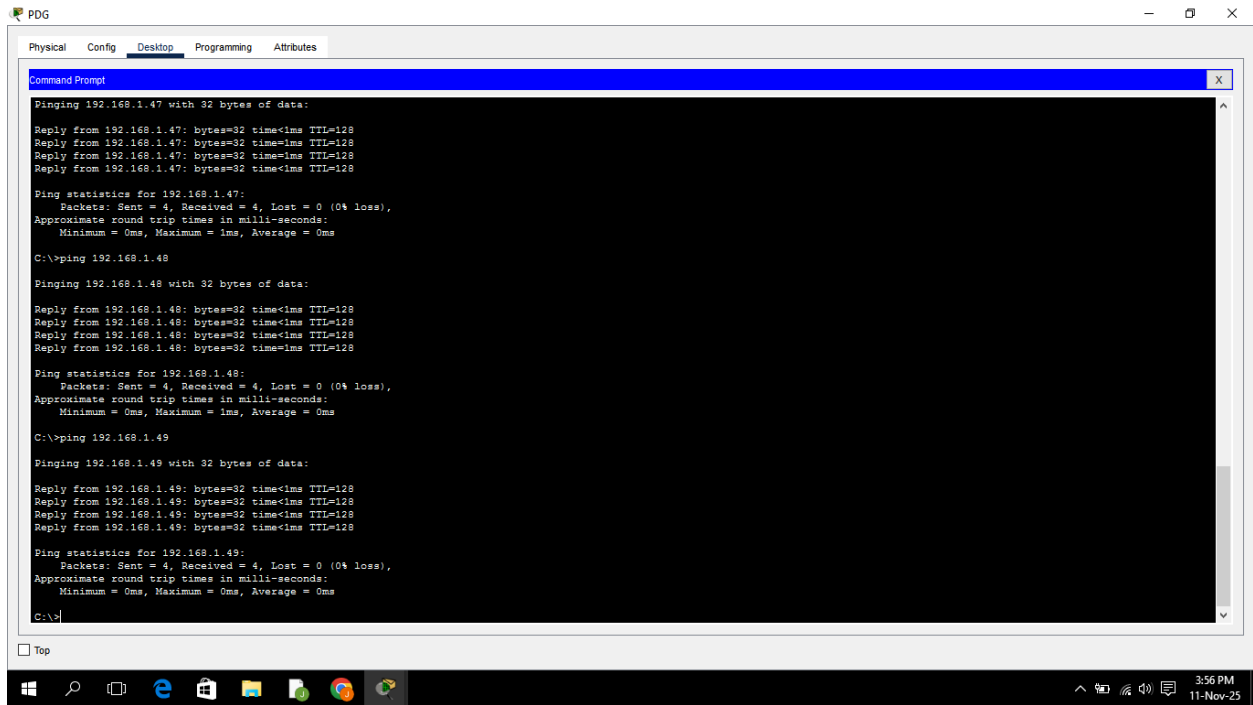
Pinging 192.168.1.45 with 32 bytes of data:

Reply from 192.168.1.45: bytes=32 time=1ms TTL=128
Reply from 192.168.1.45: bytes=32 time=1ms TTL=128
Reply from 192.168.1.45: bytes=32 time=1ms TTL=128
Reply from 192.168.1.45: bytes=32 time=1ms TTL=128

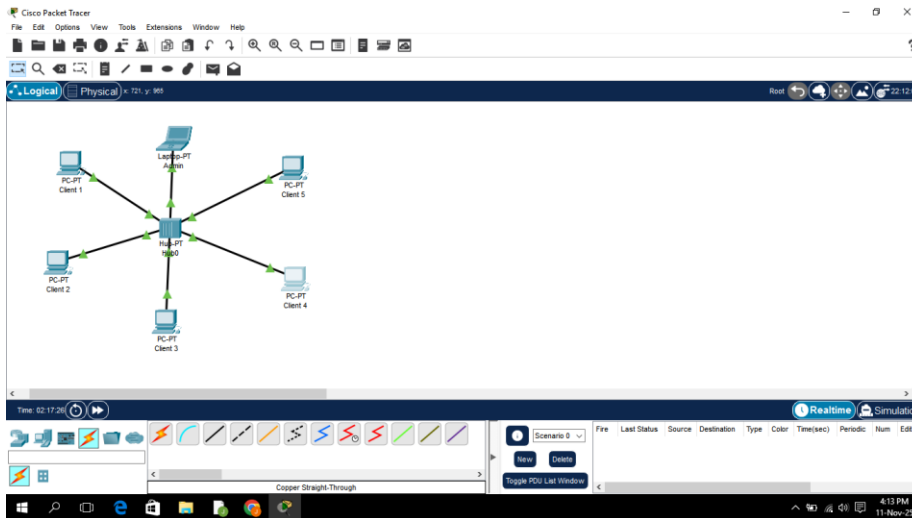
Ping statistics for 192.168.1.45:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
```

☐ Top

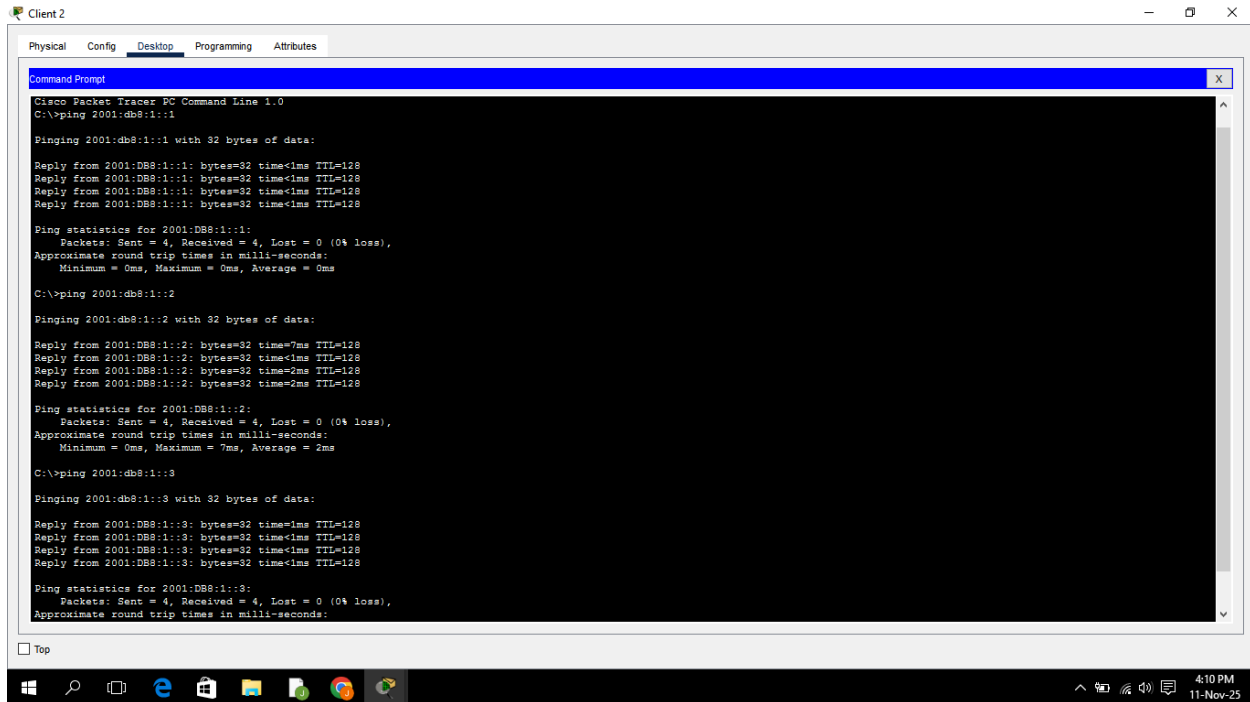
3:55 PM 11-Nov-25



#### 4) Reproduction de la topologie Etoile dans le TD (IPv6)



## Configuration des adresses IPv6 et verification de la connection



The screenshot shows the 'Client 2' window in Cisco Packet Tracer. The 'Desktop' tab is active, displaying a 'Command Prompt' window. The command prompt shows the execution of three ping commands to different IPv6 addresses: 2001:db8:1::1, 2001:db8:1::2, and 2001:db8:1::3. Each command is followed by a successful response from the destination, indicating connectivity.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 2001:db8:1::1

Pinging 2001:db8:1::1 with 32 bytes of data:

Reply from 2001:DB8:1::1: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::1: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::1: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::1: bytes=32 time<1ms TTL=128

Ping statistics for 2001:DB8:1::1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 2001:db8:1::2

Pinging 2001:db8:1::2 with 32 bytes of data:

Reply from 2001:DB8:1::2: bytes=32 time=7ms TTL=128
Reply from 2001:DB8:1::2: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::2: bytes=32 time=2ms TTL=128
Reply from 2001:DB8:1::2: bytes=32 time=2ms TTL=128

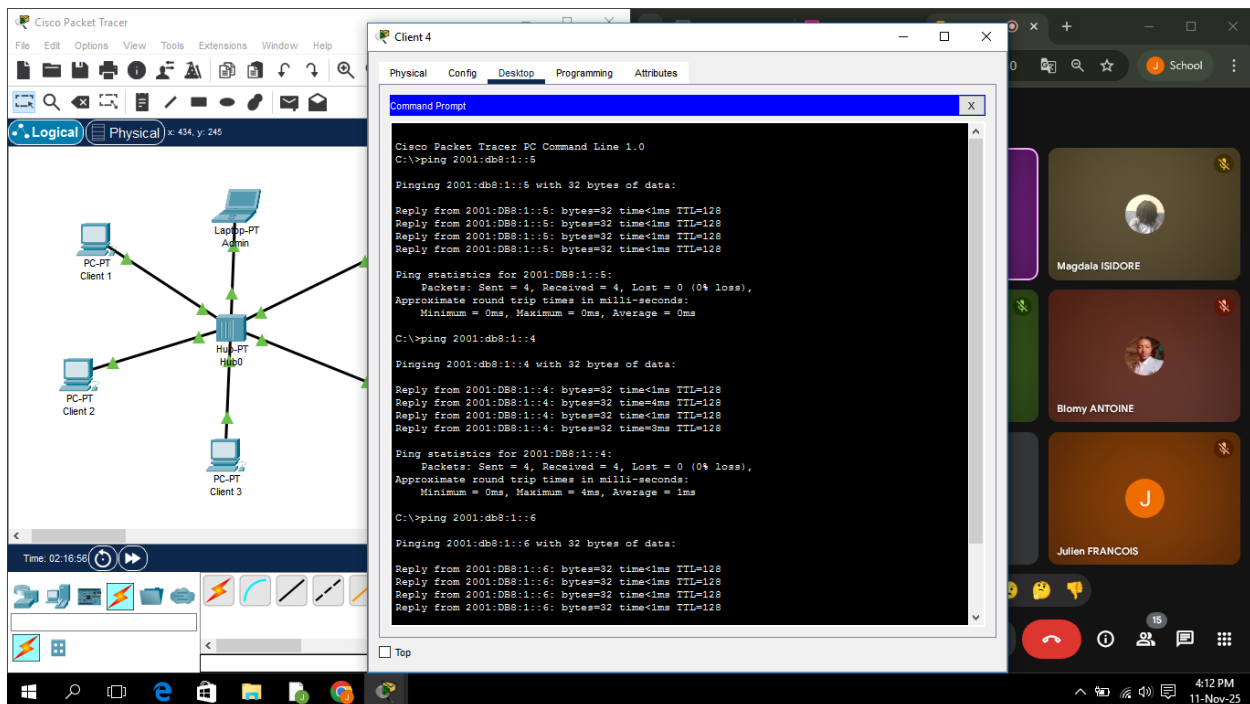
Ping statistics for 2001:DB8:1::2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 7ms, Average = 2ms

C:\>ping 2001:db8:1::3

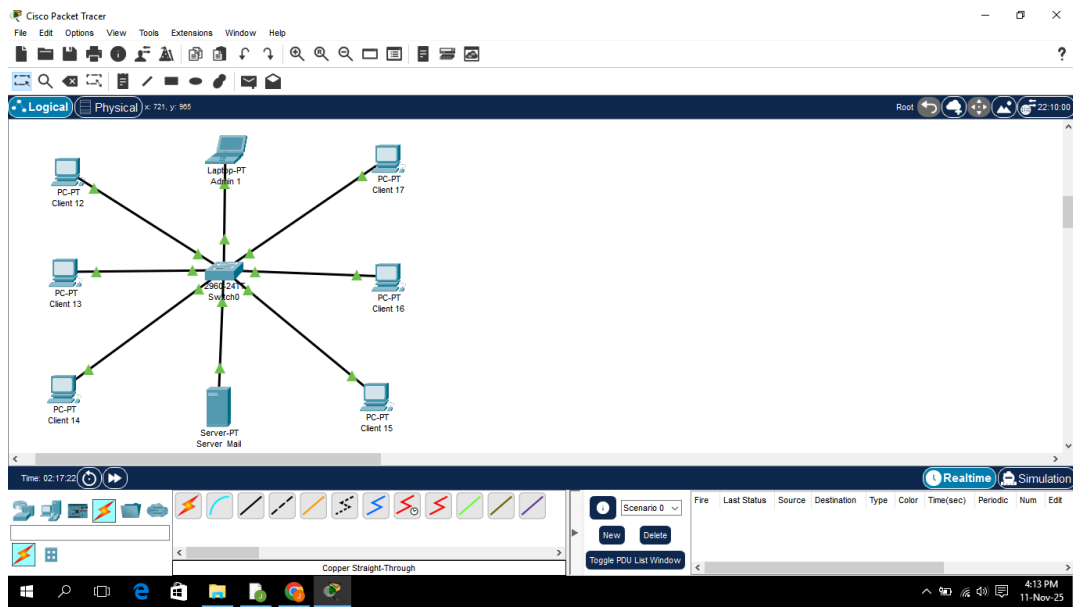
Pinging 2001:db8:1::3 with 32 bytes of data:

Reply from 2001:DB8:1::3: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::3: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::3: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::3: bytes=32 time<1ms TTL=128

Ping statistics for 2001:DB8:1::3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
```



### 5) Reproduction de la topologie Etoile dans le TD (IPv6)



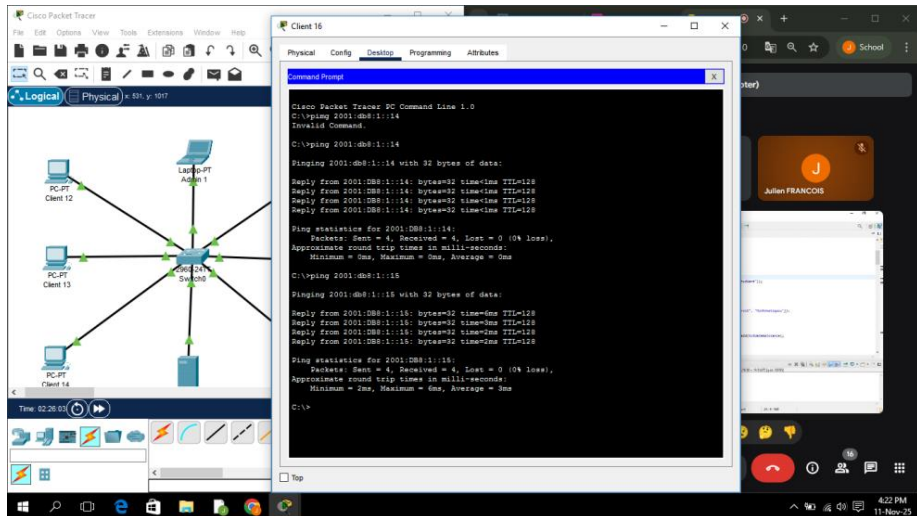
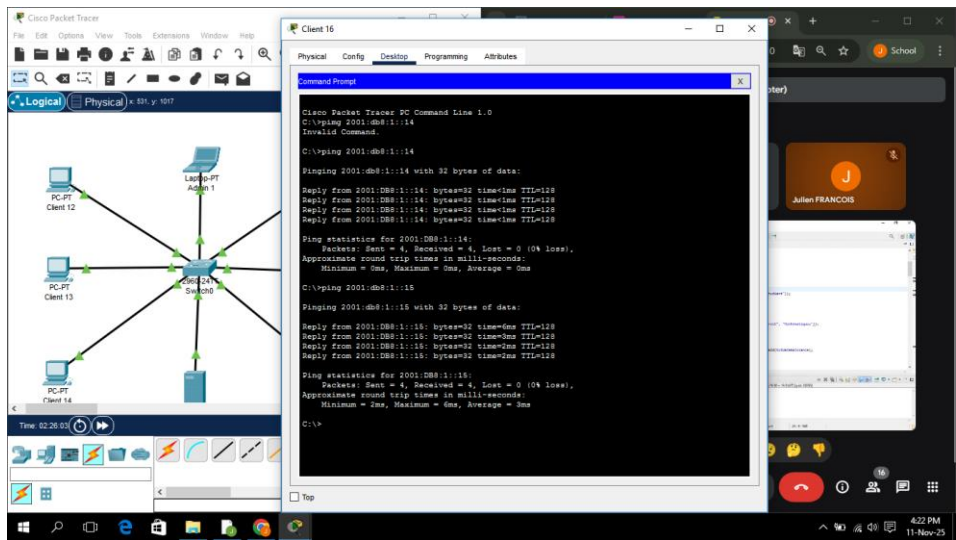
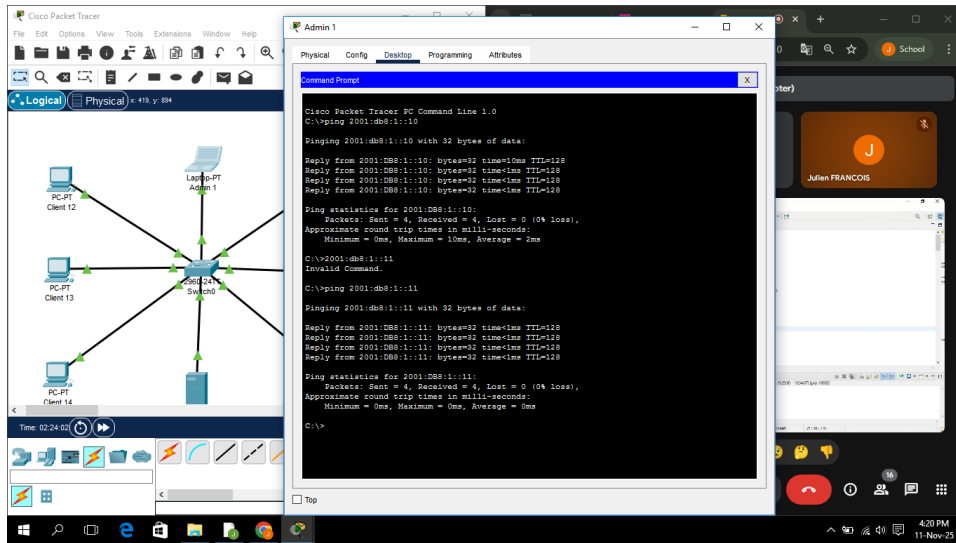
## Configuration des addresses IPv6

The screenshot shows the 'Client 13' configuration window in Cisco Packet Tracer. The 'Config' tab is active, and the 'IP Configuration' section is expanded. The configuration is as follows:

Section	Option	Value
IP Configuration	Interface	FastEthernet0
	Configuration	Static
	IPv4 Address	192.168.1.31
	Subnet Mask	255.255.255.0
	Default Gateway	0.0.0.0
IPv6 Configuration	Configuration	Static
	IPv6 Address	2001:db8:1::11
	Link Local Address	FE80::20A:F3FF:FEDB:110
	Default Gateway	
	DNS Server	
802.1X	Use 802.1X Security	<input type="checkbox"/>
	Authentication	MDS
	Username	
	Password	

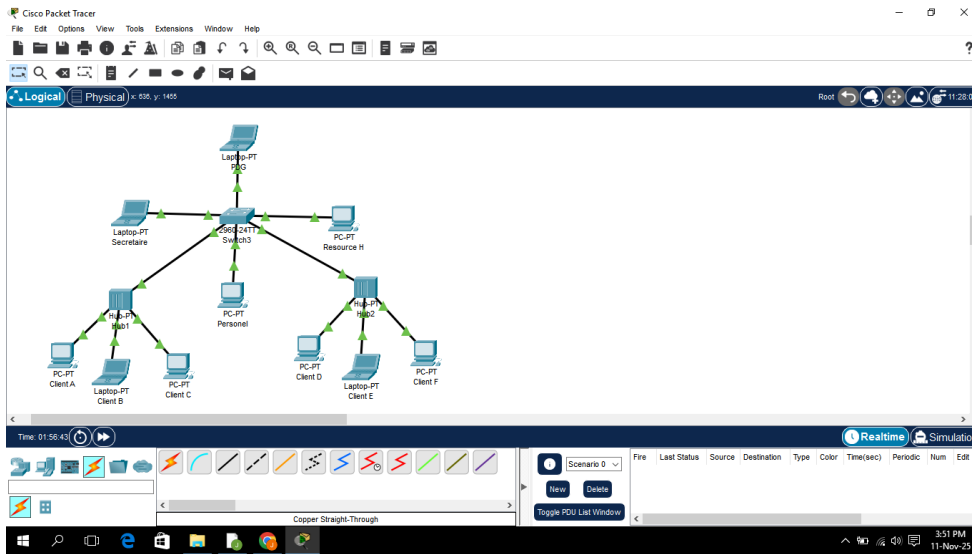
The background shows the same network diagram as the first image, but with a different zoom level. The bottom status bar shows 'Time: 02:19:02'.

## Verification des connections

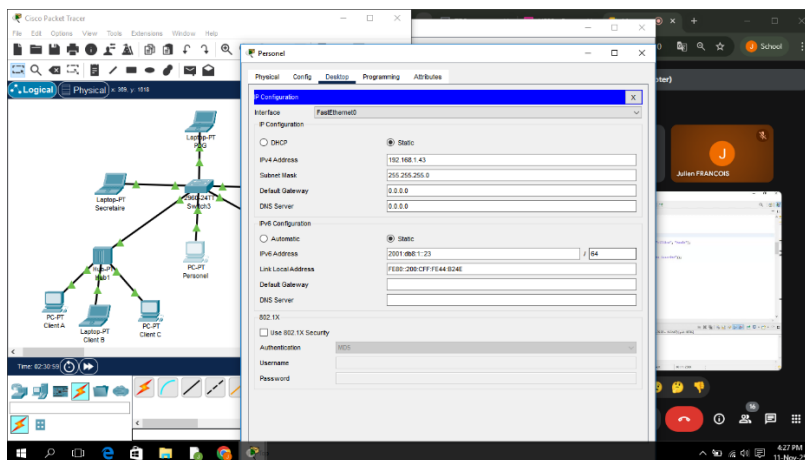
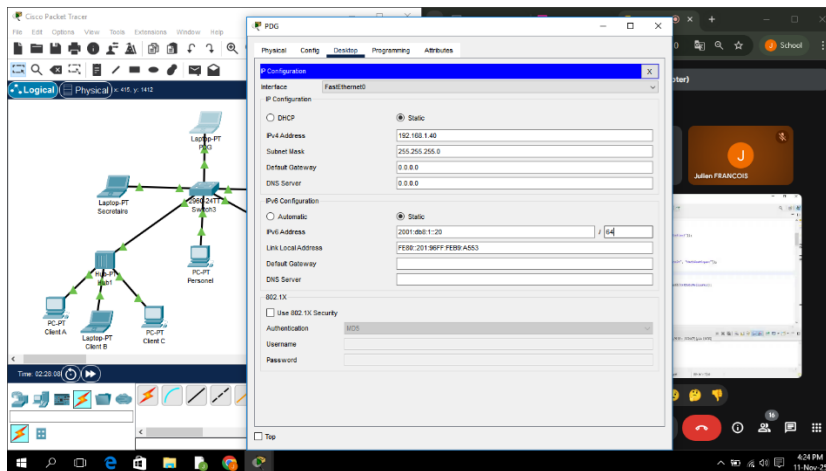




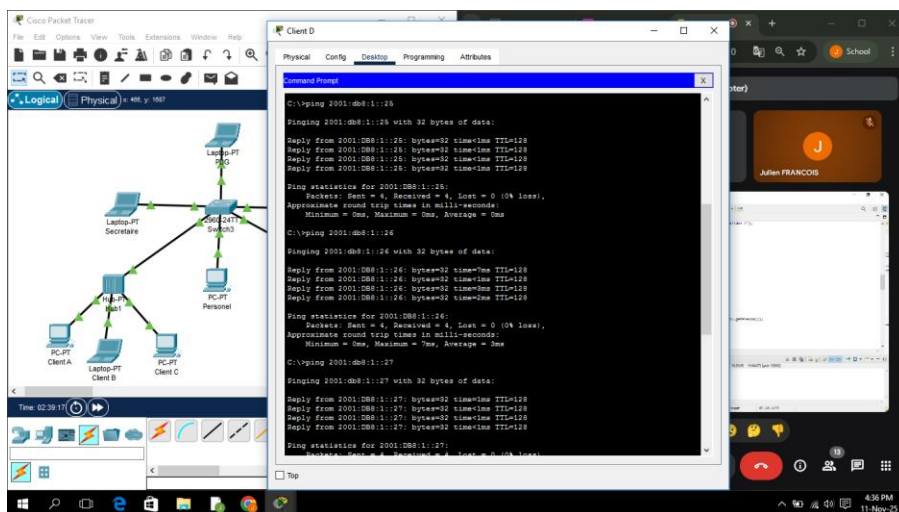
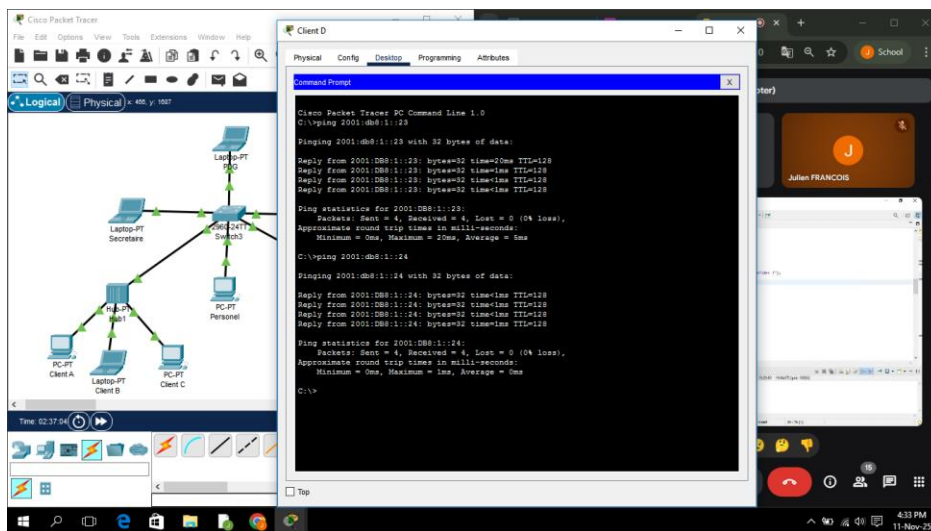
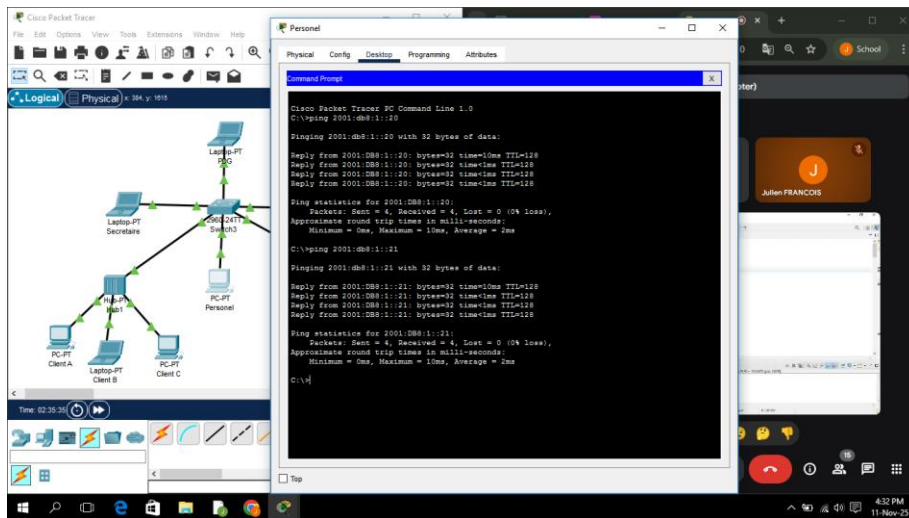
## 6) Reproduction de la topologie Hybride (IPv6)

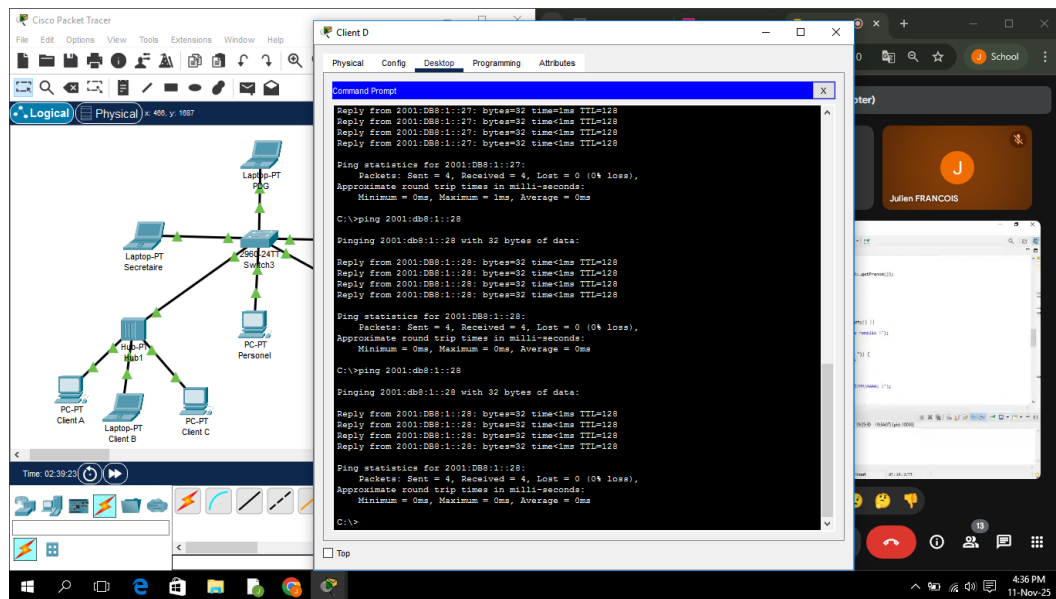


## Configuration des addresses IPv6



## Verication de la connection





En conclusion ce TD nous apprend a comprendre l'importance des adresses IP car elles renforcent la securite de votre appareil. Ce TD nous apprend aussi a configurer les adresses IP sur les appareils et a verifie les connections