

FACULTÉ DES SCIENCES ET TECHNOLOGIES (FST)

TROISIÈME ANNÉE

Rapport du travail de Laboratoire N° 3

Cours : Réseaux I

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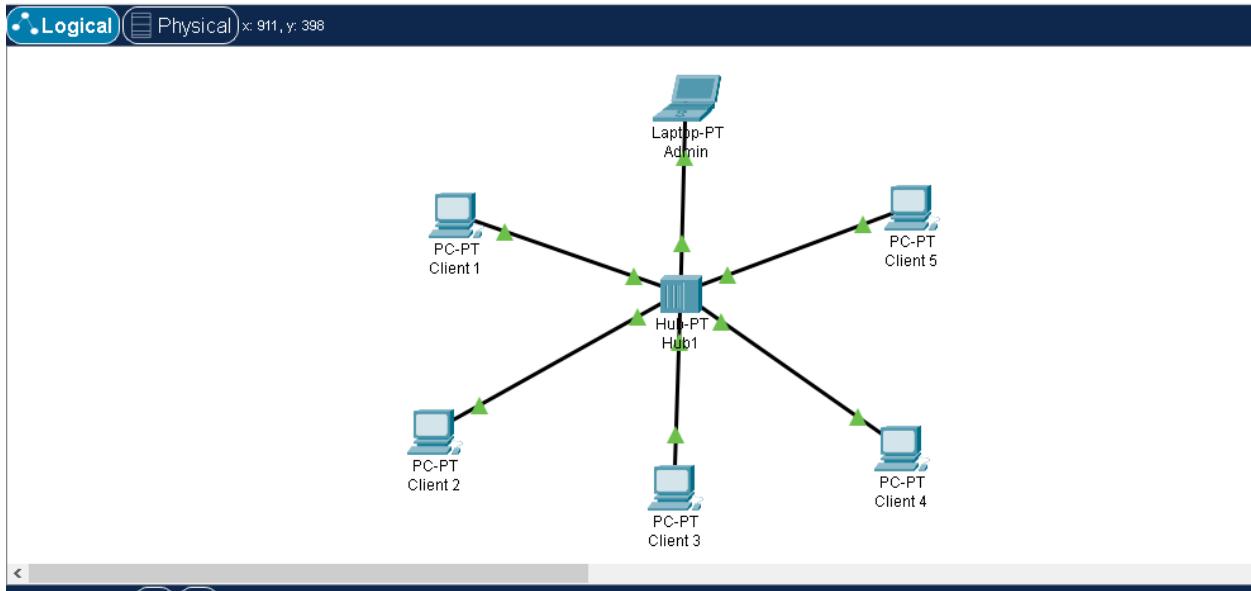
Professeur : Ismaël SAINT AMOUR

Le 14 Novembre 2025

OBJECTIF

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 ipv4 et ping ipv6.

1.a) Reproduction d'une topologie en étoile et configuration des adresses IPv4 et IPv6



1.b) Vérification de la connectivité

The screenshot shows a Cisco Packet Tracer interface with a Command Prompt window open. The window title is "Command Prompt". The command entered is "C:\>ping 192.168.1.1". The output shows four successful replies from the target IP address. Then, a ping to a IPv6 address "2001:db8:1::1" is performed, also showing four successful replies. The interface includes a toolbar with icons for Physical, Config, Desktop, Programming, and Attributes, and a status bar at the bottom.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=5ms TTL=128
Reply from 192.168.1.1: bytes=32 time=13ms TTL=128
Reply from 192.168.1.1: bytes=32 time=13ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 7ms

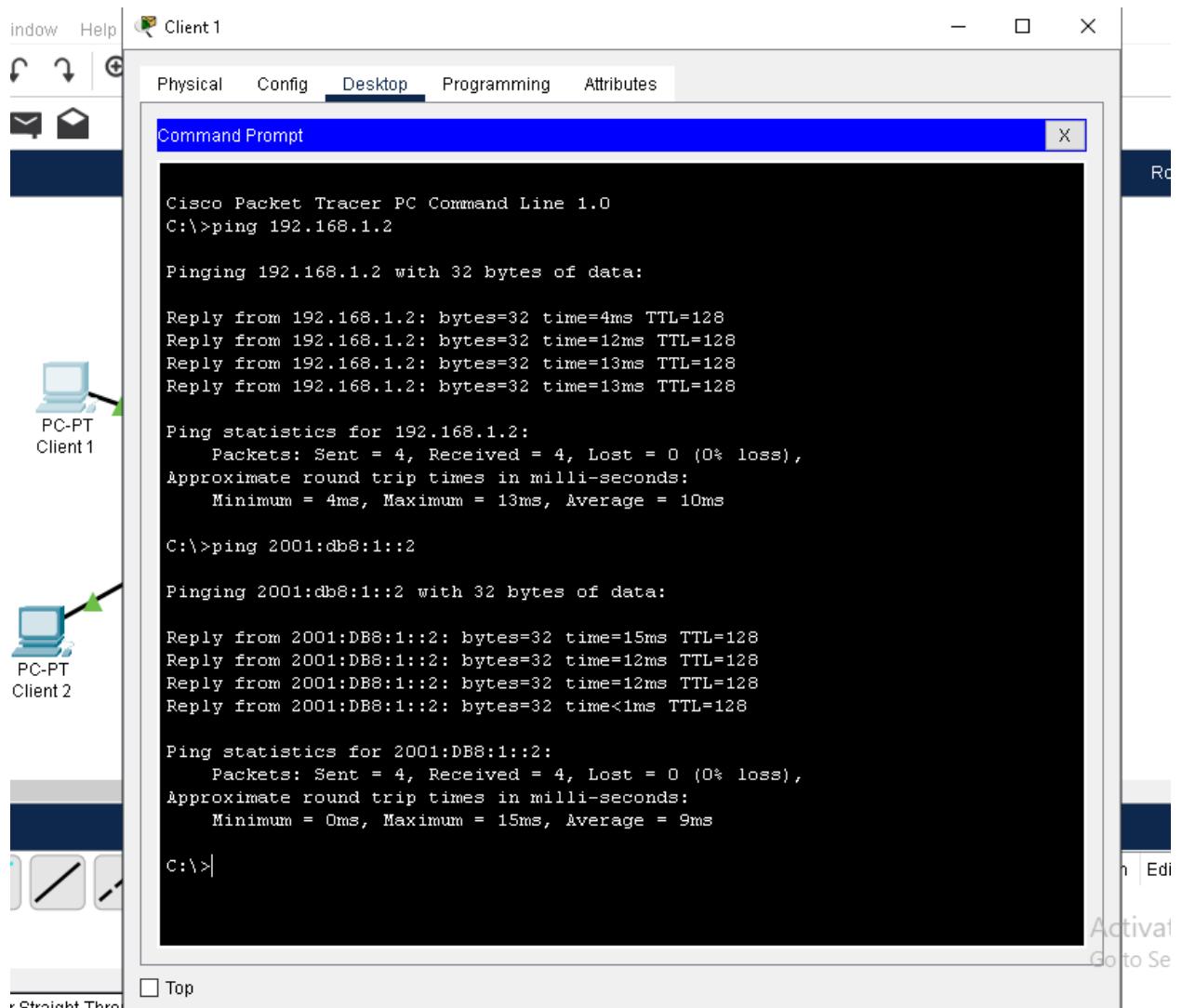
C:\>ping 2001:db8:1::1

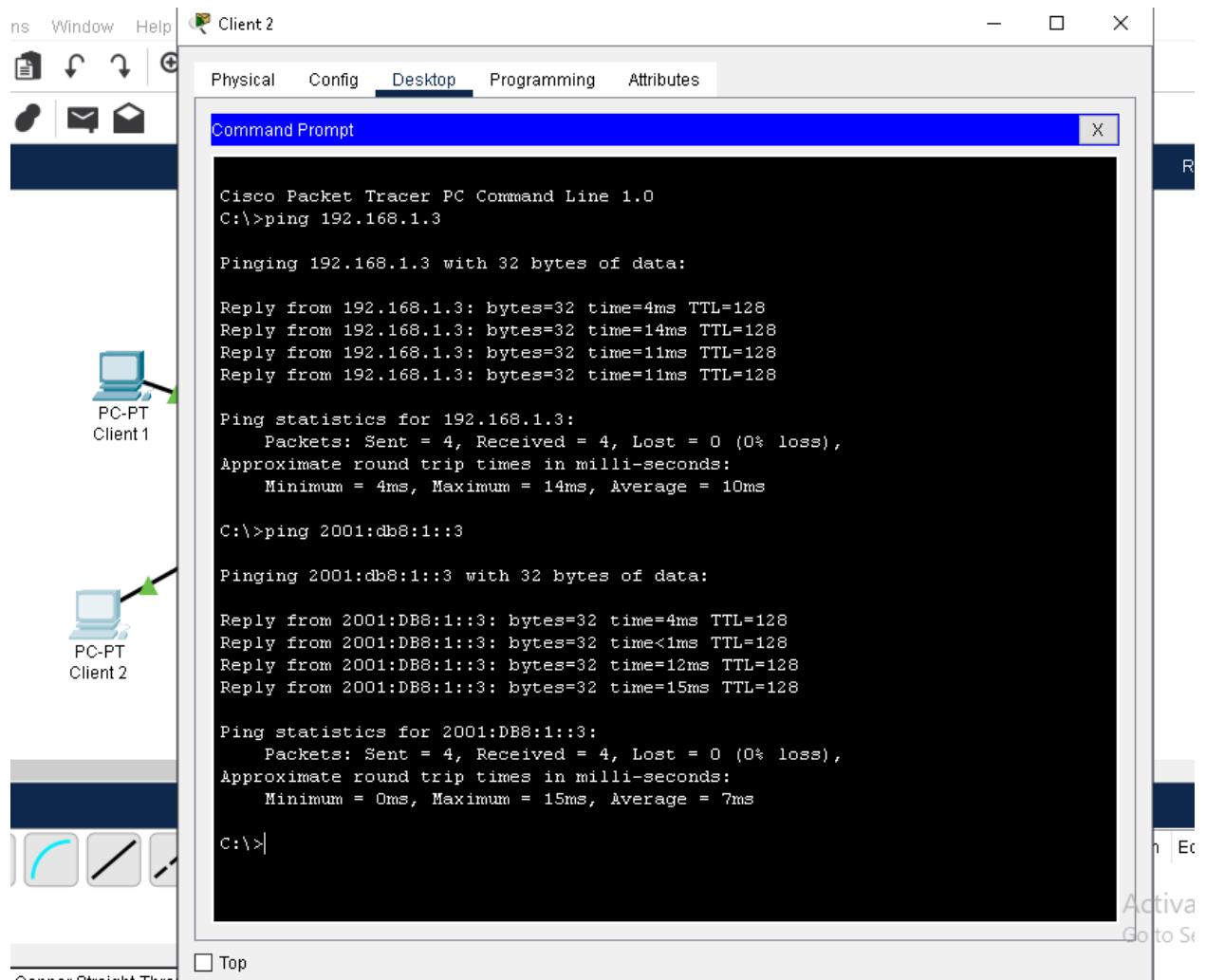
Pinging 2001:db8:1::1 with 32 bytes of data:

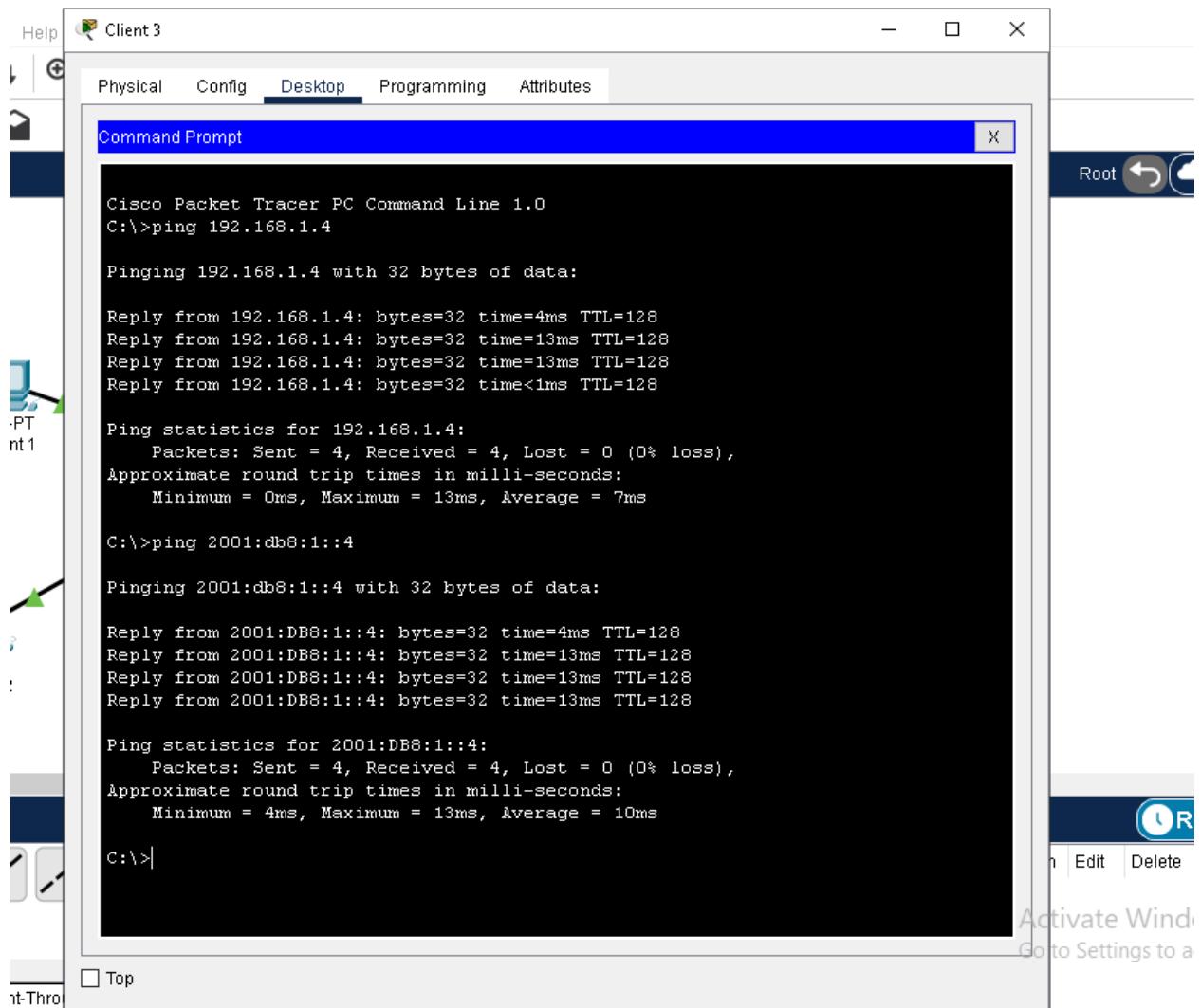
Reply from 2001:DB8:1::1: bytes=32 time=4ms TTL=128
Reply from 2001:DB8:1::1: bytes=32 time=13ms TTL=128
Reply from 2001:DB8:1::1: bytes=32 time=13ms TTL=128
Reply from 2001:DB8:1::1: bytes=32 time=13ms TTL=128

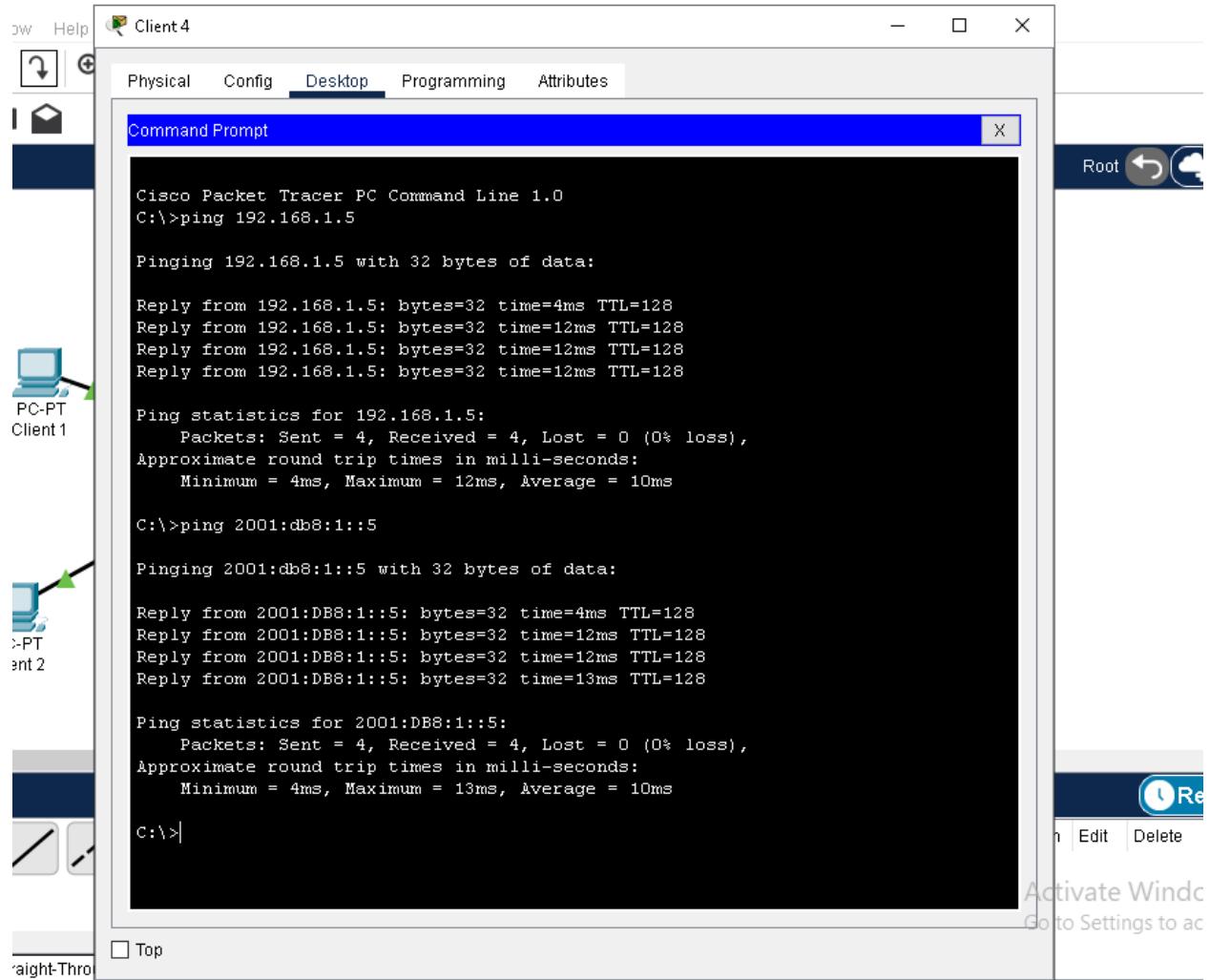
Ping statistics for 2001:DB8:1::1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 4ms, Maximum = 13ms, Average = 10ms

C:\>
```









Client 5

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.6

Pinging 192.168.1.6 with 32 bytes of data:

Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time=13ms TTL=128
Reply from 192.168.1.6: bytes=32 time=12ms TTL=128
Reply from 192.168.1.6: bytes=32 time=13ms TTL=128

Ping statistics for 192.168.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 13ms, Average = 9ms

C:\>ping 2001:db8:1::6

Pinging 2001:db8:1::6 with 32 bytes of data:

Reply from 2001:DB8:1::6: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::6: bytes=32 time=12ms TTL=128
Reply from 2001:DB8:1::6: bytes=32 time=12ms TTL=128
Reply from 2001:DB8:1::6: bytes=32 time=12ms TTL=128

Ping statistics for 2001:DB8:1::6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 12ms, Average = 9ms

C:\>
```

Root ↺ ⚙

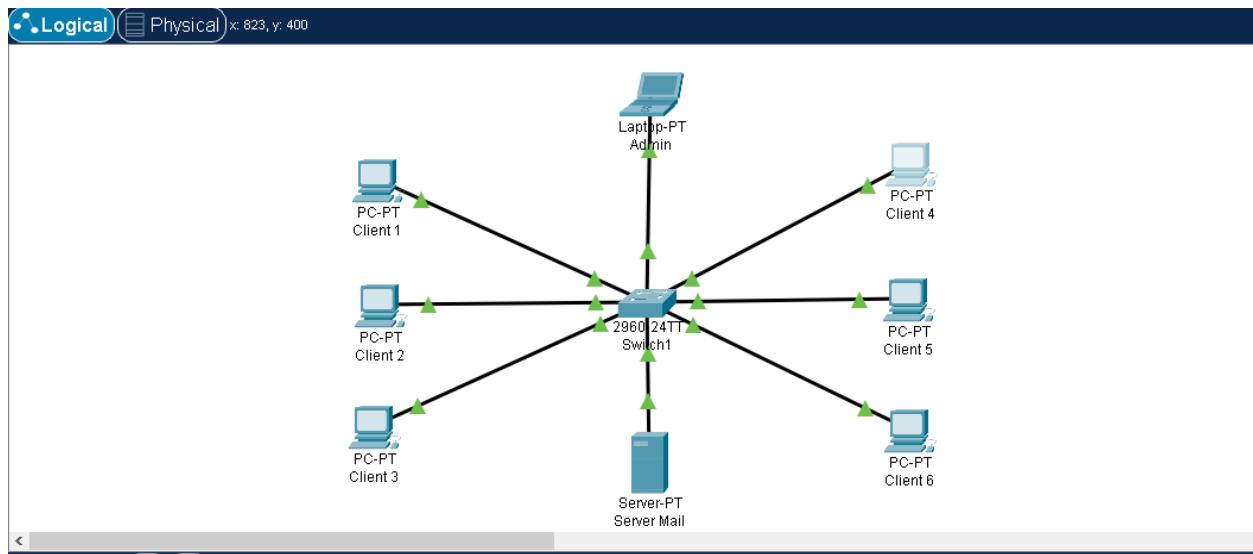
Edit Delete

Activate Windc Go to Settings to ac

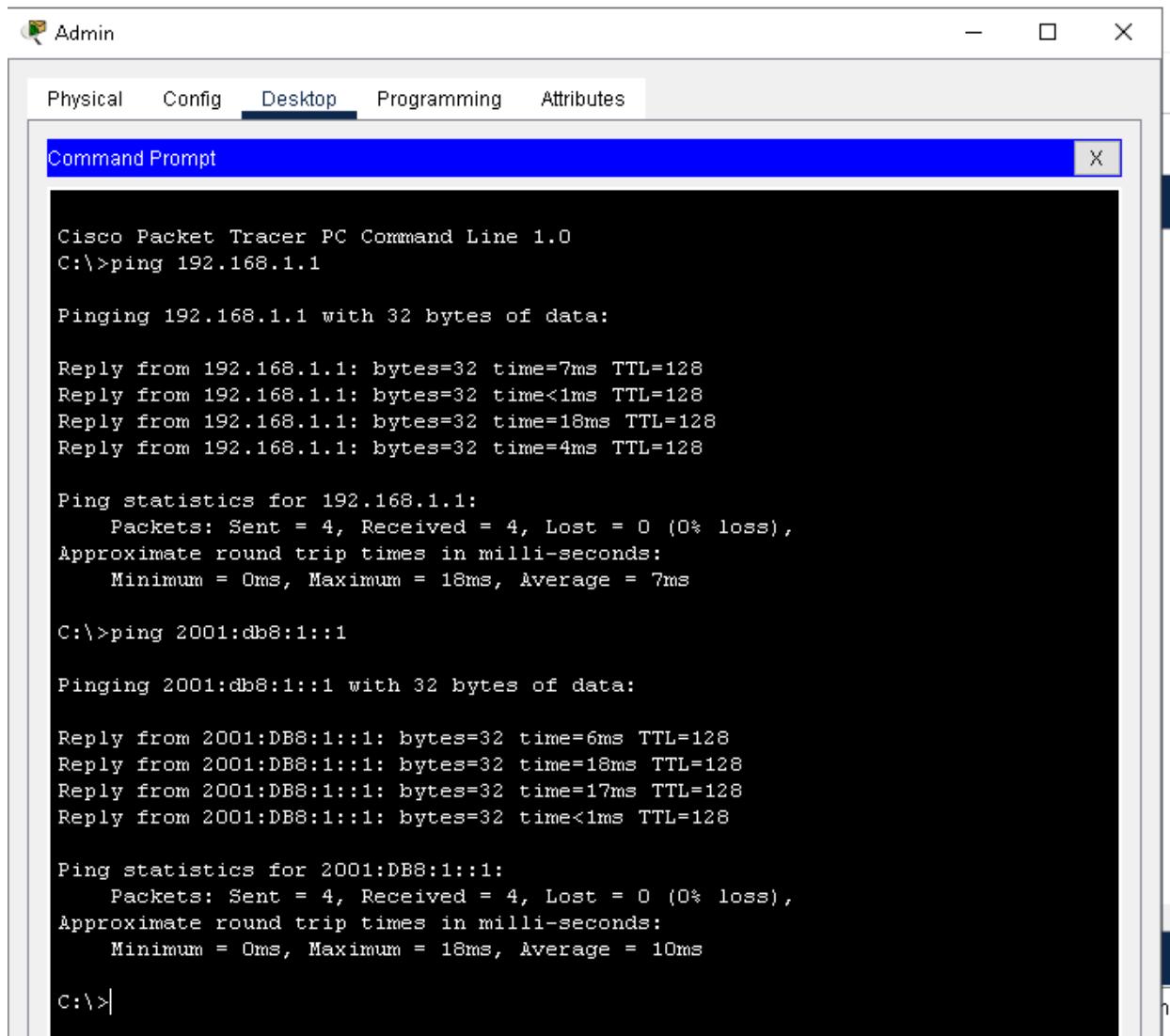
Top

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2.a Reproduction d'une topologie en étoile avec configuration de l'adresse IPv4



2.b Vérification de la connectivité



The screenshot shows a Windows-style application window titled "Admin". The tab bar at the top includes "Physical", "Config", "Desktop" (which is selected), "Programming", and "Attributes". Below the tabs is a "Command Prompt" window with a blue header bar and a white body. The command line shows several ping operations:

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:

Reply from 192.168.1.1: bytes=32 time=7ms TTL=128
Reply from 192.168.1.1: bytes=32 time<1ms TTL=128
Reply from 192.168.1.1: bytes=32 time=18ms TTL=128
Reply from 192.168.1.1: bytes=32 time=4ms TTL=128

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 18ms, Average = 7ms

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=6ms TTL=128
Reply from 2001:DB8:1::1: bytes=32 time=18ms TTL=128
Reply from 2001:DB8:1::1: bytes=32 time=17ms 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 = 18ms, Average = 10ms

C:\>

```

Client 1

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time=7ms TTL=128
Reply from 192.168.1.2: bytes=32 time=16ms TTL=128
Reply from 192.168.1.2: bytes=32 time=18ms TTL=128
Reply from 192.168.1.2: bytes=32 time=20ms TTL=128

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 7ms, Maximum = 20ms, Average = 15ms

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<1ms TTL=128
Reply from 2001:DB8:1::2: bytes=32 time=19ms TTL=128
Reply from 2001:DB8:1::2: bytes=32 time=19ms TTL=128
Reply from 2001:DB8:1::2: bytes=32 time=19ms 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 = 19ms, Average = 14ms

C:\>
```



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Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.3

Pinging 192.168.1.3 with 32 bytes of data:

Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time=18ms TTL=128
Reply from 192.168.1.3: bytes=32 time=20ms TTL=128
Reply from 192.168.1.3: bytes=32 time=20ms TTL=128

Ping statistics for 192.168.1.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 20ms, Average = 14ms

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=5ms TTL=128
Reply from 2001:DB8:1::3: bytes=32 time=19ms TTL=128
Reply from 2001:DB8:1::3: bytes=32 time=20ms 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:
        Minimum = 0ms, Maximum = 20ms, Average = 11ms

C:\>
```

Client 3

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.4

Pinging 192.168.1.4 with 32 bytes of data:

Reply from 192.168.1.4: bytes=32 time<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time=18ms TTL=128
Reply from 192.168.1.4: bytes=32 time=18ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 18ms, Average = 9ms

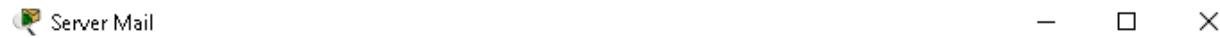
C:\>ping 2001:db8:1::4

Pinging 2001:db8:1::4 with 32 bytes of data:

Reply from 2001:DB8:1::4: bytes=32 time=2ms TTL=128
Reply from 2001:DB8:1::4: bytes=32 time=19ms TTL=128
Reply from 2001:DB8:1::4: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::4: bytes=32 time=19ms TTL=128

Ping statistics for 2001:DB8:1::4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 19ms, Average = 10ms

C:\>
```



```
Cisco Packet Tracer SERVER Command Line 1.0
C:\>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:

Reply from 192.168.1.5: bytes=32 time=6ms TTL=128
Reply from 192.168.1.5: bytes=32 time=16ms TTL=128
Reply from 192.168.1.5: bytes=32 time=19ms TTL=128
Reply from 192.168.1.5: bytes=32 time=18ms TTL=128

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 6ms, Maximum = 19ms, Average = 14ms

C:\>ping 2001:db8:1::5

Pinging 2001:db8:1::5 with 32 bytes of data:

Reply from 2001:DB8:1::5: bytes=32 time=18ms TTL=128
Reply from 2001:DB8:1::5: bytes=32 time=19ms TTL=128
Reply from 2001:DB8:1::5: bytes=32 time=12ms TTL=128
Reply from 2001:DB8:1::5: bytes=32 time=19ms TTL=128

Ping statistics for 2001:DB8:1::5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 12ms, Maximum = 19ms, Average = 17ms

C:\>
```

Client 4

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.8

Pinging 192.168.1.8 with 32 bytes of data:

Reply from 192.168.1.8: bytes=32 time=6ms TTL=128
Reply from 192.168.1.8: bytes=32 time=18ms TTL=128
Reply from 192.168.1.8: bytes=32 time=18ms TTL=128
Reply from 192.168.1.8: bytes=32 time=19ms TTL=128

Ping statistics for 192.168.1.8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 6ms, Maximum = 19ms, Average = 15ms

C:\>ping 2001:db8:1::6

Pinging 2001:db8:1::6 with 32 bytes of data:

Reply from 2001:DB8:1::6: bytes=32 time=7ms TTL=128
Reply from 2001:DB8:1::6: bytes=32 time=7ms TTL=128
Reply from 2001:DB8:1::6: bytes=32 time=21ms TTL=128
Reply from 2001:DB8:1::6: bytes=32 time<1ms TTL=128

Ping statistics for 2001:DB8:1::6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 21ms, Average = 8ms

C:\>
```

Client 5

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.7

Pinging 192.168.1.7 with 32 bytes of data:

Reply from 192.168.1.7: bytes=32 time=5ms TTL=128
Reply from 192.168.1.7: bytes=32 time=19ms TTL=128
Reply from 192.168.1.7: bytes=32 time=21ms TTL=128
Reply from 192.168.1.7: bytes=32 time=21ms TTL=128

Ping statistics for 192.168.1.7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 5ms, Maximum = 21ms, Average = 16ms

C:\>ping 2001:db8:1::7

Pinging 2001:db8:1::7 with 32 bytes of data:

Reply from 2001:DB8:1::7: bytes=32 time<1ms TTL=128
Reply from 2001:DB8:1::7: bytes=32 time=6ms TTL=128
Reply from 2001:DB8:1::7: bytes=32 time=18ms TTL=128
Reply from 2001:DB8:1::7: bytes=32 time<1ms TTL=128

Ping statistics for 2001:DB8:1::7:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 18ms, Average = 6ms

C:\>
```

Client 6

Physical Config Desktop Programming Attributes

Command Prompt X

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.1.6

Pinging 192.168.1.6 with 32 bytes of data:

Reply from 192.168.1.6: bytes=32 time=6ms TTL=128
Reply from 192.168.1.6: bytes=32 time=19ms TTL=128
Reply from 192.168.1.6: bytes=32 time<1ms TTL=128
Reply from 192.168.1.6: bytes=32 time=19ms TTL=128

Ping statistics for 192.168.1.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 19ms, Average = 11ms

C:\>2001:db8:1::8
Invalid Command.

C:\>ping 2001:db8:1::8

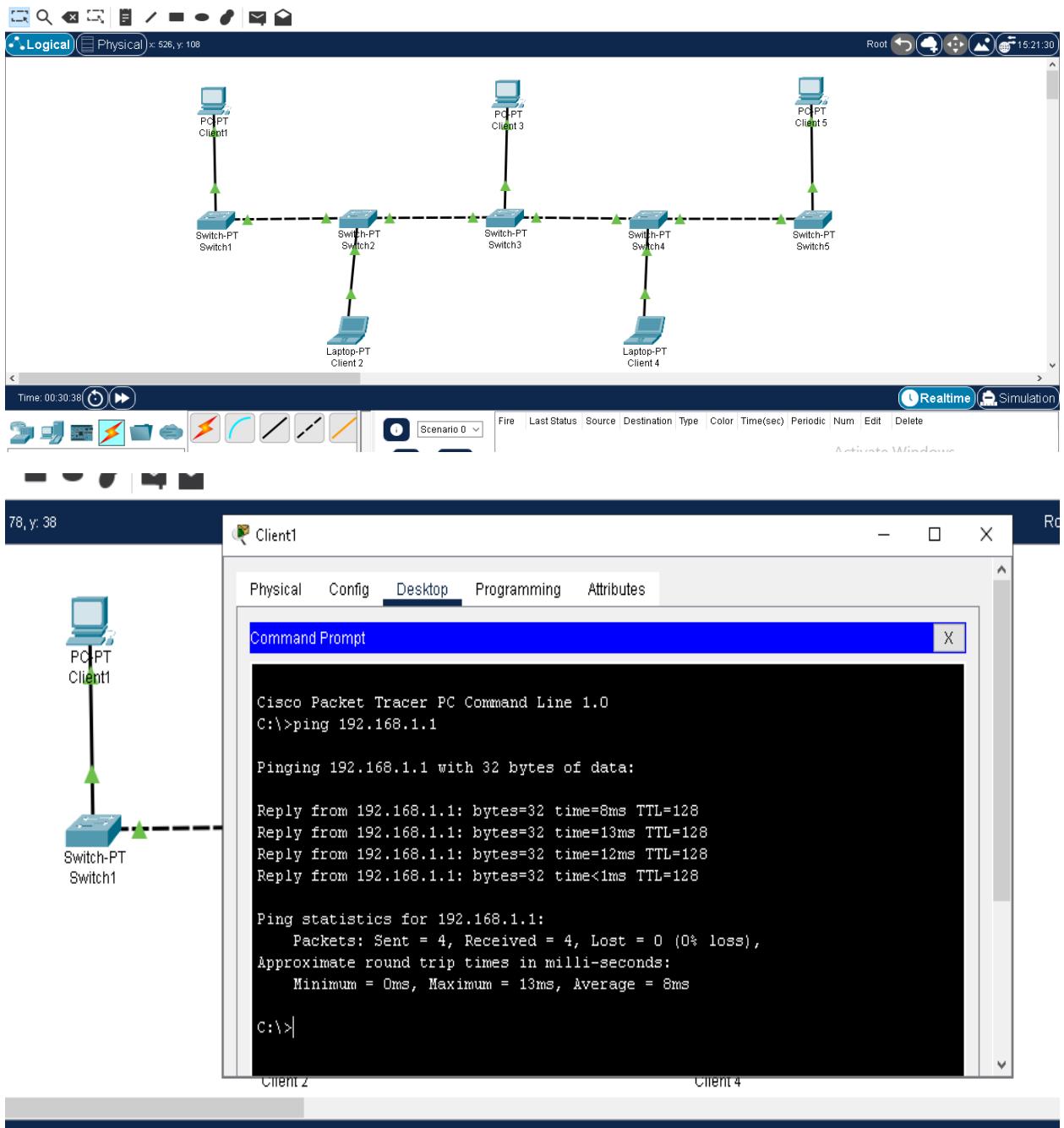
Pinging 2001:db8:1::8 with 32 bytes of data:

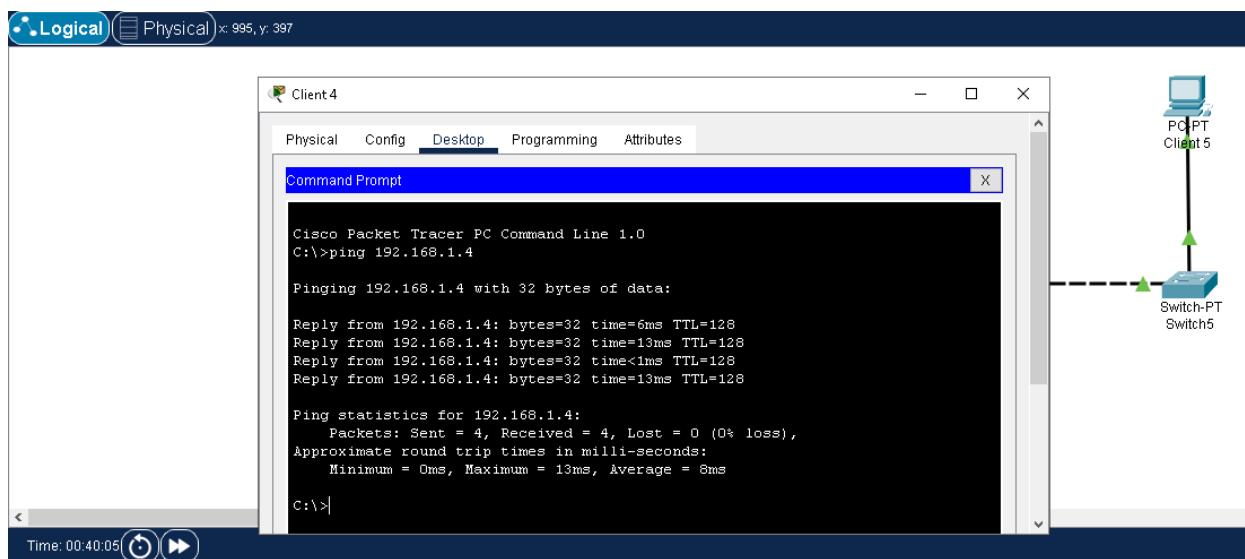
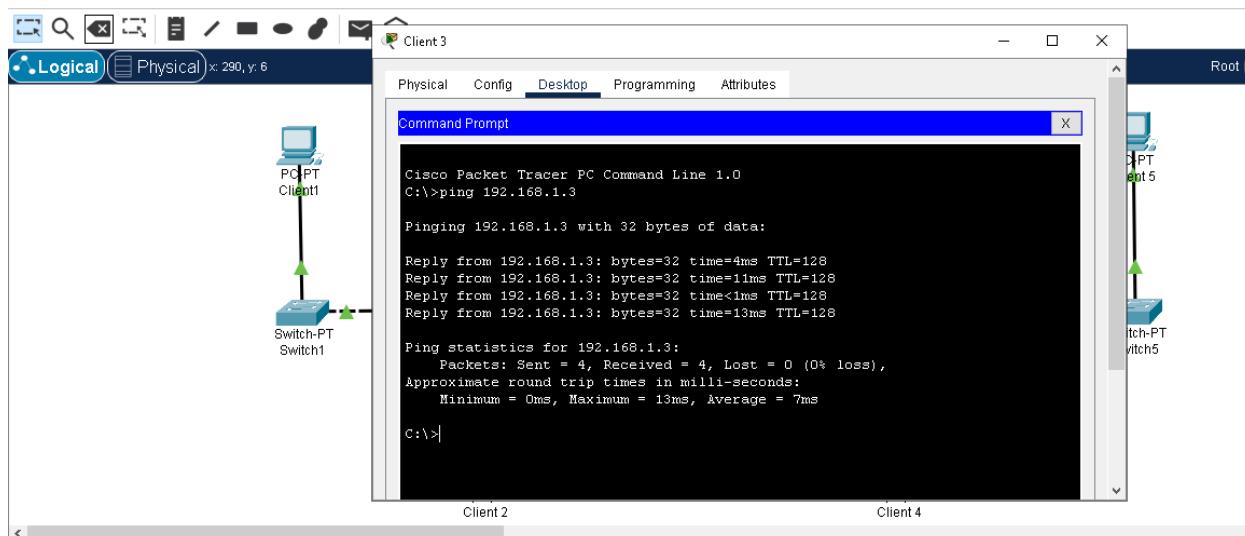
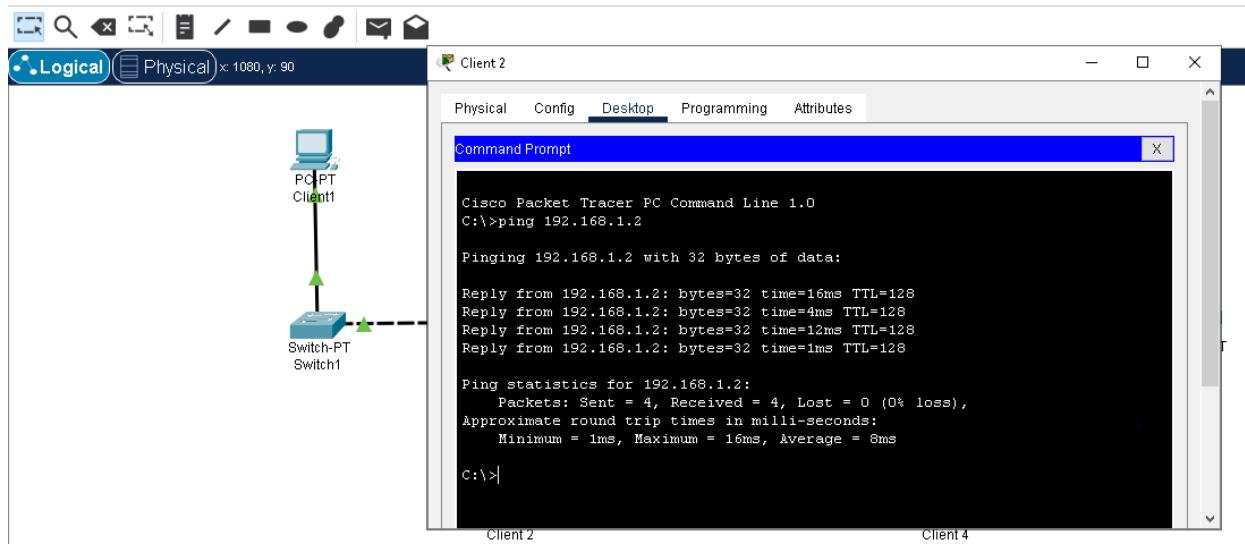
Reply from 2001:DB8:1::8: bytes=32 time=23ms TTL=128
Reply from 2001:DB8:1::8: bytes=32 time=2ms TTL=128
Reply from 2001:DB8:1::8: bytes=32 time=23ms TTL=128
Reply from 2001:DB8:1::8: bytes=32 time=20ms TTL=128

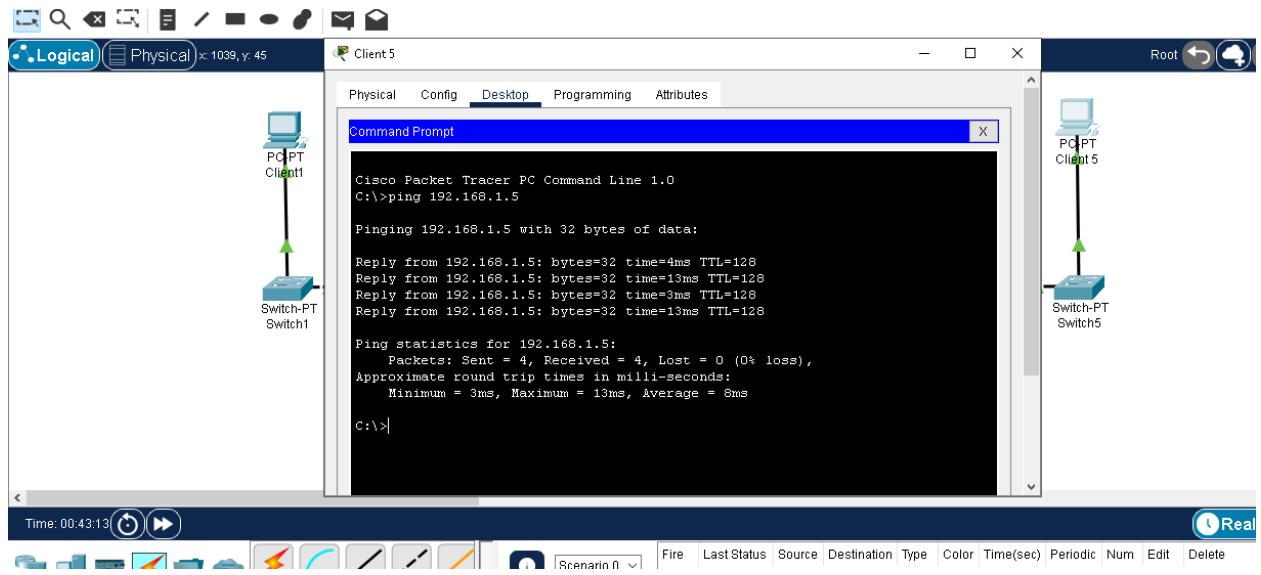
Ping statistics for 2001:DB8:1::8:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 23ms, Average = 17ms

C:\>
```

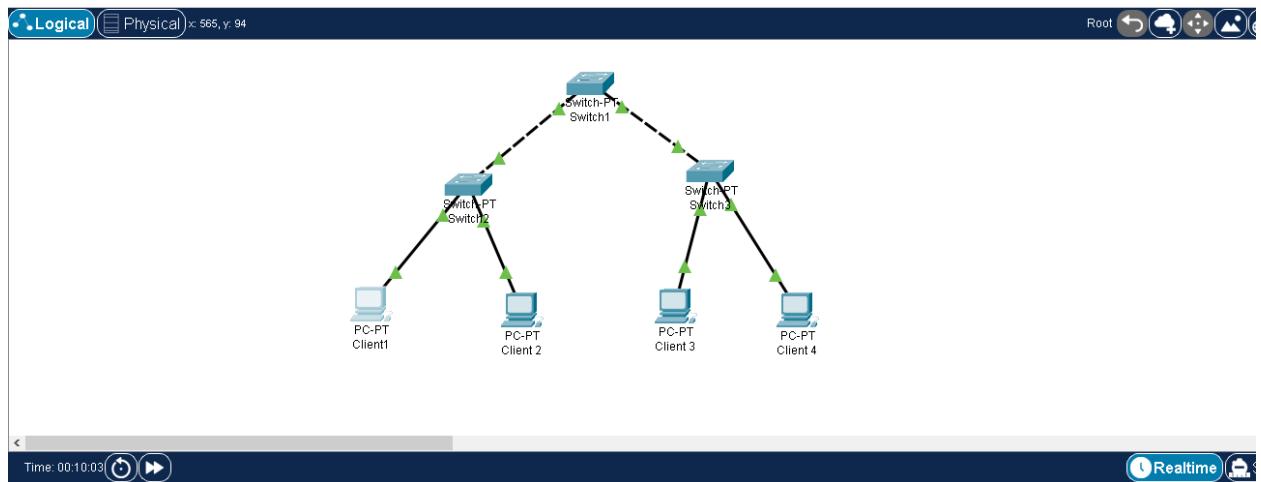
3) Configuration des adresses IPv4 d'une topologie en bus et test de la connectivité.

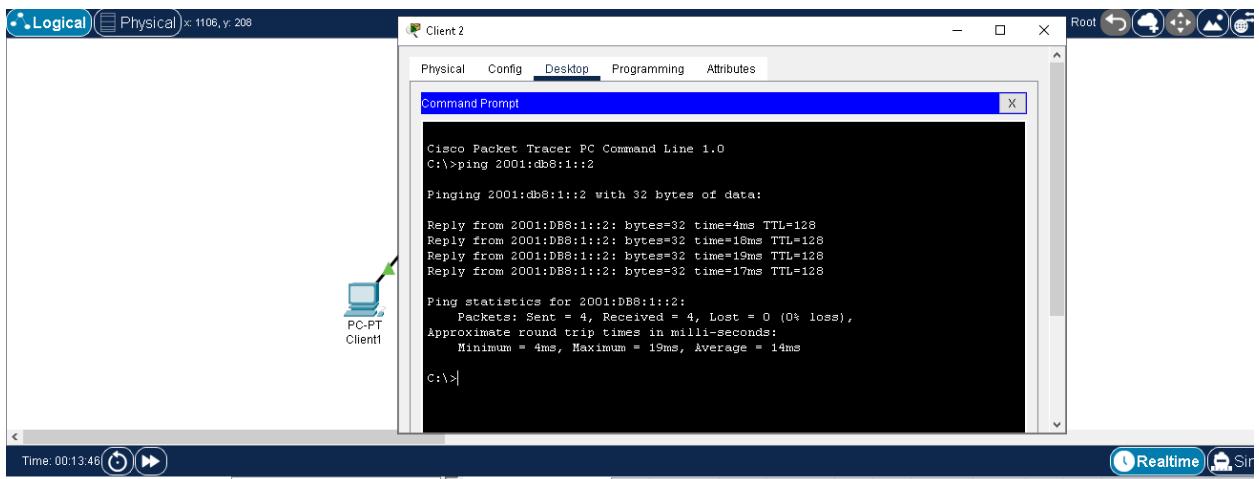
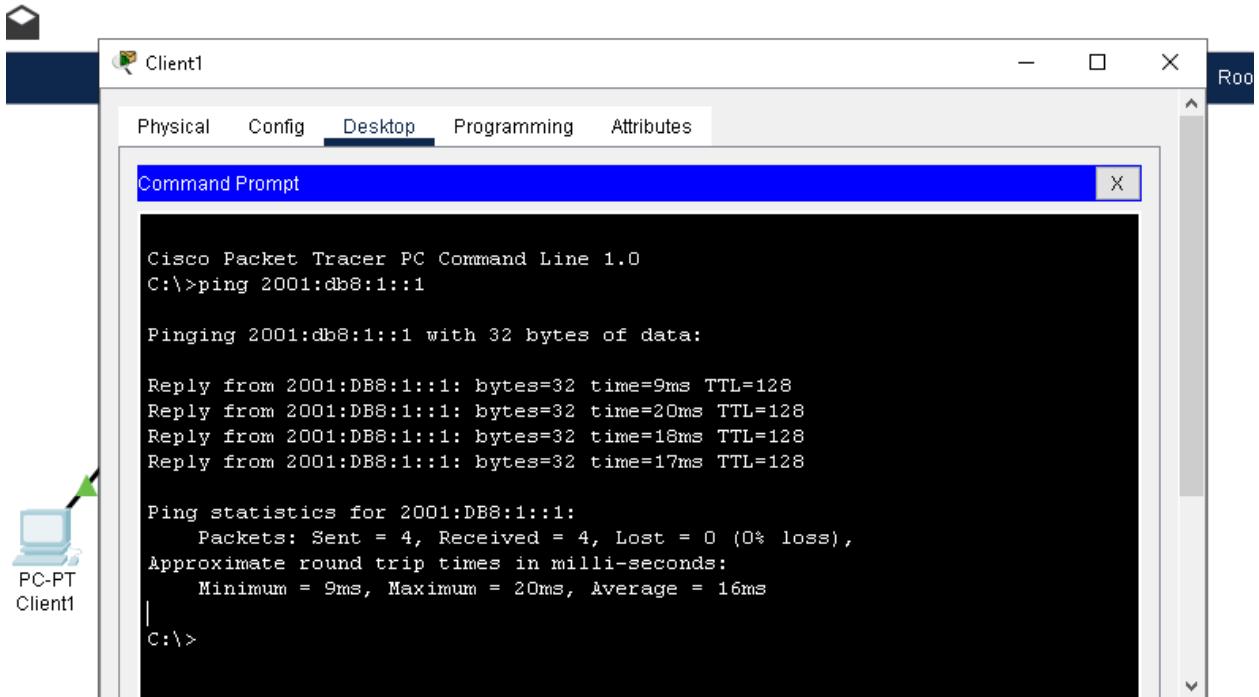


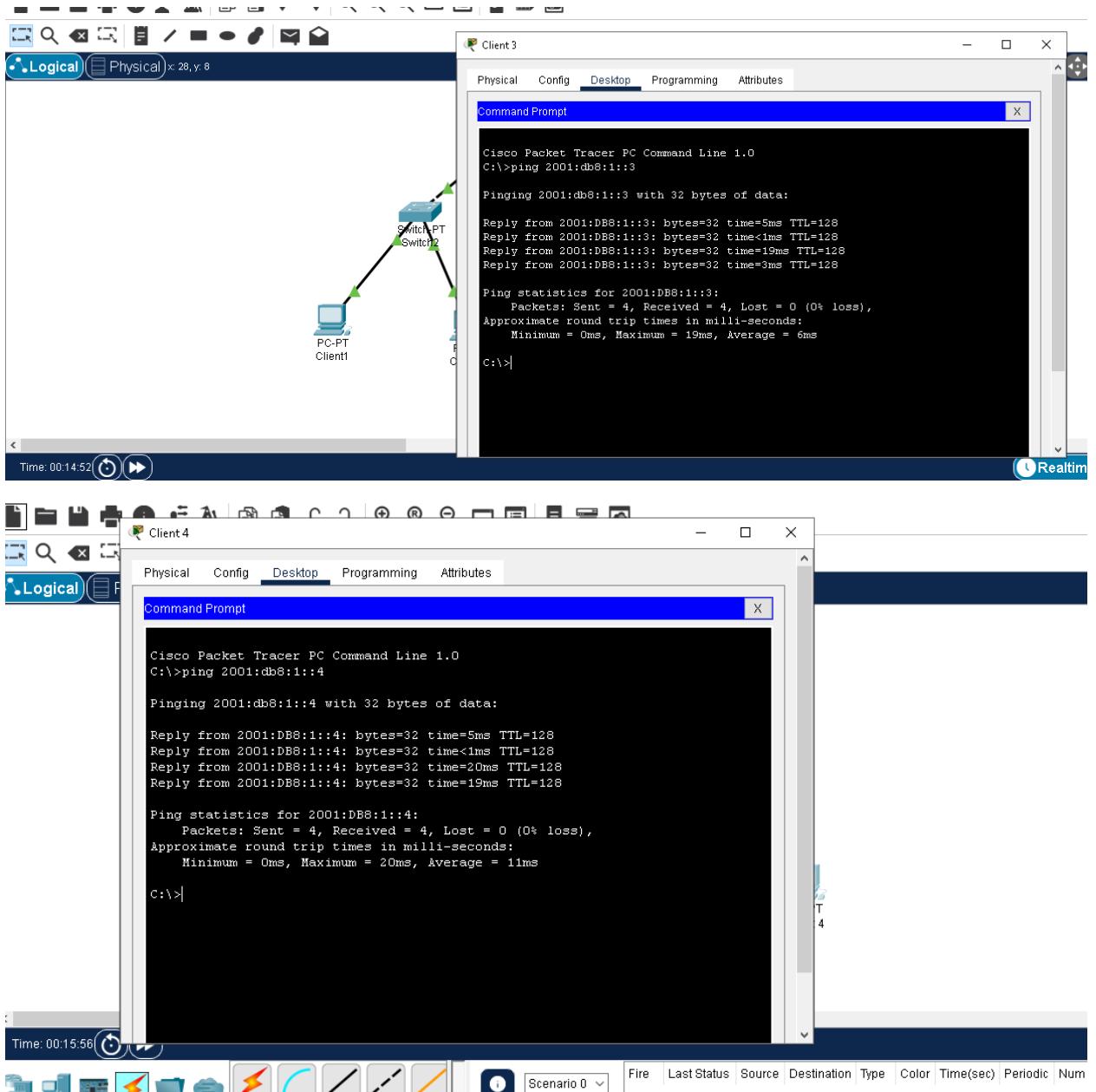




4) Configuration d'adresse IPv6 d'une topologie en arbre et test de connectivité.







Conclusion

L'adressage permet d'attribuer une adresse IP à une machine ce qui permet de pouvoir identifier chaque machine, cela évite toutes confusions entre les machines.