FACULTÉ DES SCIENCES ET DES TECHNOLOGIES

(FST)

<u>**Troisième année**</u>

RAPPORT

Sur le Travail de Laboratoire N°_2

COURS

Réseaux

Professeur
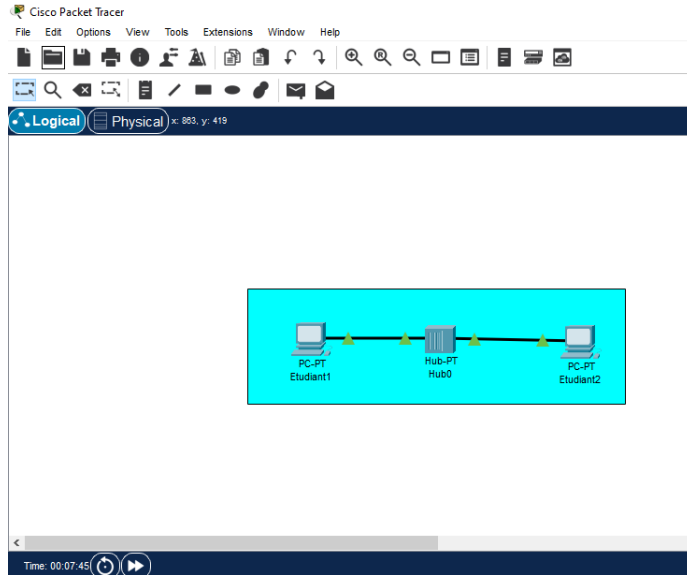
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PRÉPARÉ PAR

Peterson CHERY

SEMESTRE

I

Le 01/11/2024

1. La reproduction de cette topologie, Configuration les adresses IP, Observation des tables ARP, Analysons 3 des paquets en simulation.

- Il y a qu'un seul paquet ICMP à analyser

Simulation Panel — Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	---	Etudiant1	ICMP
	0.001	Etudiant1	Hub0	ICMP
	0.002	Hub0	Etudiant2	ICMP
	0.003	Etudiant2	Hub0	ICMP
	0.004	Hub0	Etudiant1	ICMP

PDU Information at Device: Etudiant1 — OSI Model / Outbound PDU Details

At Device: Etudiant1
Source: Etudiant1
Destination: Etudiant2

In Layers / Out Layers

Layer 3: IP Header Src. IP: 192.168.1.5, Dest. IP: 192.168.1.6 ICMP Message Type: 8
Layer 2: Ethernet II Header 000B.BE18.BDC1 >> 0001.C9A6.95D4
Layer 1: Port(s): FastEthernet0

1. The Ping process starts the next ping request.
2. The Ping process creates an ICMP Echo Request message and sends it to the lower process.
3. The source IP address is not specified. The device sets it to the port's IP address.
4. The device sets TTL in the packet header.
5. The destination IP address is in the same subnet. The device sets the next-hop to destination.

PDU Information at Device: Etudiant1 — OSI Model / Outbound PDU Details

At Device: Etudiant1
Source: Etudiant1
Destination: Etudiant2

Layer 3: IP Header Src. IP: 192.168.1.5, Dest. IP: 192.168.1.6 ICMP Message Type: 8
Layer 2: Ethernet II Header 000B.BE18.BDC1 >> 0001.C9A6.95D4
Layer 1: Port(s): FastEthernet0

1. The next-hop IP address is a unicast. The ARP process looks it up in the ARP table.
2. The next-hop IP address is in the ARP table. The ARP process sets the frame's destination MAC address to the one found in the table.
3. The device encapsulates the PDU into an Ethernet frame.

PDU Information at Device: Etudiant1 — OSI Model / Outbound PDU Details

At Device: Etudiant1
Source: Etudiant1
Destination: Etudiant2

Layer 3: IP Header Src. IP: 192.168.1.5, Dest. IP: 192.168.1.6 ICMP Message Type: 8
Layer 2: Ethernet II Header 000B.BE18.BDC1 >> 0001.C9A6.95D4
Layer 1: Port(s): FastEthernet0

1. FastEthernet0 sends out the frame.

PDU Information at Device: Etudiant1 — Outbound PDU Details — PDU Formats

EthernetII

| PREAMBLE: 101010..10 | SF | DEST ADDR:0001.C9A6.95D4 | |
| SRC ADDR:000B.BE18.BDC1 | TYPE:0x 0800 | DATA (VARIABLE LENGTH) | FCS:0x00000000 |

IP

VER:4	IHL:5	DSCP:0x00	TL:28
ID:0x000a		FLAGS:0x 0	FRAG OFFSET:0x000
TTL:255		PRO:0x01	CHKSUM
SRC IP:192.168.1.5			
DST IP:192.168.1.6			
DATA (VARIABLE LENGTH)			

ICMP

| TYPE:0x08 | CODE:0x00 | CHECKSUM |

2. La reproduction de cette topologie, Configuration des adresses IP, Observation des tables ARP, Analysons 2 des paquets en simulation.

PC6

Physical | Config | Desktop | Programming | Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration
- DHCP / ● Static
- IPv4 Address: 192.168.1.8
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

IPv6 Configuration
- Automatic / ● Static
- IPv6 Address: /
- Link Local Address: FE80::260:2FFF:FE12:1DEE
- Default Gateway:
- DNS Server:

802.1X
- ☐ Use 802.1X Security
- Authentication: MD5
- Username:
- Password:

Server0

Physical | Config | Services | Desktop | Programming | Attributes

IP Configuration [X]

IP Configuration
- DHCP / ● Static
- IPv4 Address: 192.168.1.10
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

IPv6 Configuration
- Automatic / ● Static
- IPv6 Address: /
- Link Local Address: FE80::201:43FF:FE71:B8E
- Default Gateway:
- DNS Server:

802.1X
- ☐ Use 802.1X Security
- Authentication: MD5
- Username:
- Password:

Meraki Server0

Physical | Config | Attributes

GLOBAL
- Settings
- Algorithm Settings

INTERFACE
- FastEthernet0

Global Settings

Display Name: Meraki Server0

Gateway/DNS IPv4
- DHCP
- ● Static
- Default Gateway: 192.168.1.11
- DNS Server: 250.250.250.0

Gateway/DNS IPv6
- Automatic
- ● Static
- Default Gateway:
- DNS Server:

PC1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

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

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::240:BFF:FEDA:85E8
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.1
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

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<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=19ms TTL=128
Reply from 192.168.1.2: bytes=32 time=18ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms 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 = 0ms, Maximum = 19ms, Average = 9ms

C:\>arp -a
   Internet Address       Physical Address       Type
   192.168.1.2            0009.7c21.9cb7         dynamic
```
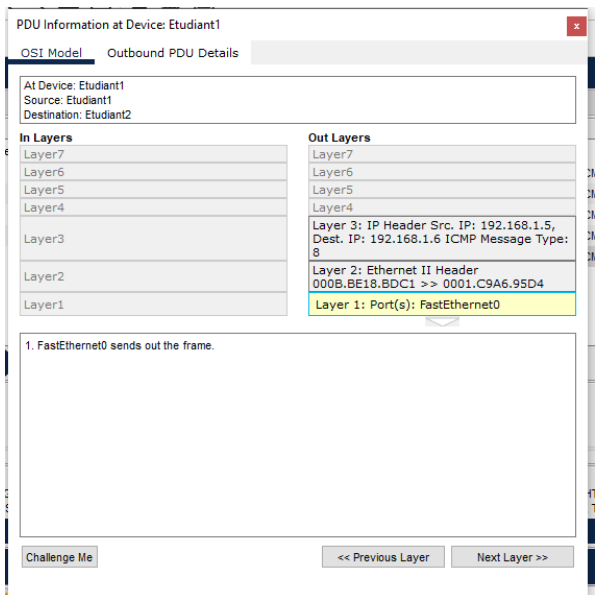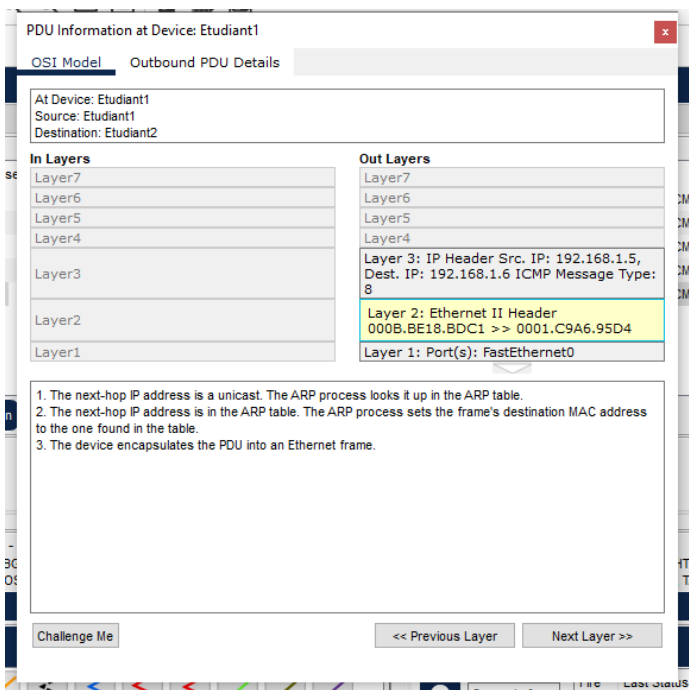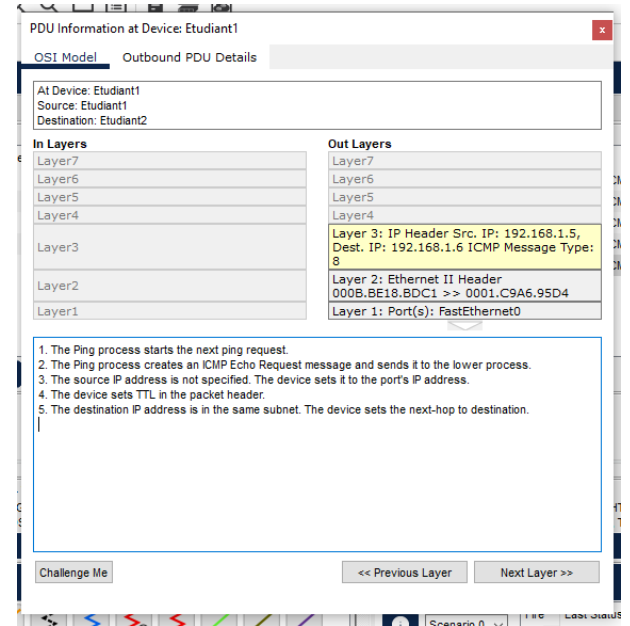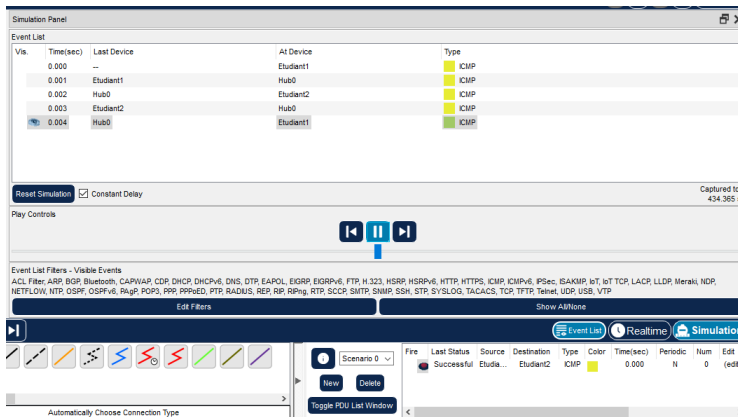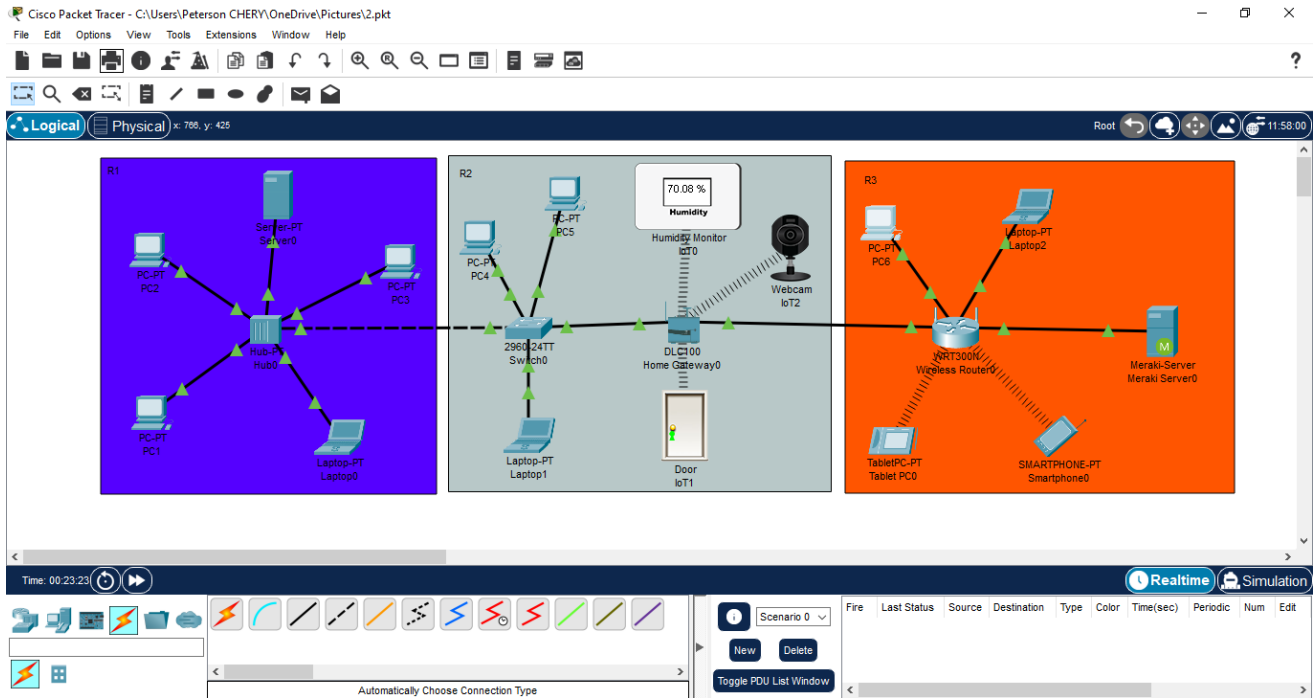

PC1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::240:BFF:FEDA:85E8
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.1
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

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=1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms 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 = 1ms, Average = 0ms

C:\>arp -a
   Internet Address       Physical Address       Type
   192.168.1.2            0009.7c21.9cb7         dynamic
   192.168.1.3            0090.2b15.a3e4         dynamic
```

PC1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::240:BFF:FEDA:85E8
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.1
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

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<1ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms 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 = 0ms, Average = 0ms

C:\>arp -a
   Internet Address       Physical Address       Type
   192.168.1.2            0009.7c21.9cb7         dynamic
   192.168.1.3            0090.2b15.a3e4         dynamic
   192.168.1.4            0009.7cb8.a0be         dynamic
```

PC1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::240:BFF:FEDA:85E8
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.1
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.1.2           0009.7c21.9cb7        dynamic
  192.168.1.3           0090.2b15.a3e4        dynamic
  192.168.1.4           0009.7cb8.a0be        dynamic
  192.168.1.10          0001.4371.0b8e        dynamic
```

- Le Réseau 1 est en relation avec le Réseau 2 tandis que le Réseau 1 n'est pas connecté avec le Réseau 3

PC2

Physical | Config | Desktop | Programming | Attributes

Command Prompt

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

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::209:7CFF:FE21:9CB7
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.2
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

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<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms TTL=128
Reply from 192.168.1.5: bytes=32 time<1ms 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 = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.1.1           0040.0bda.85e8        dynamic
  192.168.1.5           0006.2a4e.e40d        dynamic
```


Laptop0

Physical | Config | Desktop | Programming | Attributes

Command Prompt

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

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::209:7CFF:FEB8:A0BE
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.4
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>ping 192.168.1.9

Pinging 192.168.1.9 with 32 bytes of data:

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

Ping statistics for 192.168.1.9:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.1.1           0040.0bda.85e8        dynamic

C:\>
```

- Analysons les deux paquets (ICMP, STP)

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ICMP
	0.001	PC1	Hub0	ICMP
	0.002	Hub0	PC2	ICMP
	0.002	Hub0	Server0	ICMP
	0.002	Hub0	PC3	ICMP
	0.002	Hub0	Laptop0	ICMP
	0.002	Hub0	Switch0	ICMP
	0.003	PC3	Hub0	ICMP
	0.004	Hub0	PC1	ICMP
	0.004	Hub0	PC2	ICMP

Reset Simulation ☑ Constant Delay

Captured to:
13.252 s

PDU Information at Device: PC1

OSI Model | Outbound PDU Details

At Device: PC1
Source: PC1
Destination: PC3

In Layers | Out Layers

Layer7 | Layer7
Layer6 | Layer6
Layer5 | Layer5
Layer4 | Layer4
Layer3 | Layer 3: IP Header Src. IP: 192.168.1.1, Dest. IP: 192.168.1.3 ICMP Message Type: 8
Layer2 | Layer 2: Ethernet II Header 0040.0BDA.85E8 >> 0090.2B15.A3E4
Layer1 | Layer 1: Port(s): FastEthernet0

1. The Ping process starts the next ping request.
2. The Ping process creates an ICMP Echo Request message and sends it to the lower process.
3. The source IP address is not specified. The device sets it to the port's IP address.
4. The device sets TTL in the packet header.
5. The destination IP address is in the same subnet. The device sets the next-hop to destination.

Challenge Me | << Previous Layer | Next Layer >>

PDU Information at Device: PC1

OSI Model | Outbound PDU Details

PDU Formats

EthernetII
| PREAMBLE: 101010..10 | DEST ADDR:0090.2B15.A3E4 |
| SRC ADDR:0040.0BDA.85E8 | TYPE:0x | DATA (VARIABLE LENGTH) | FCS:0x00000000 |

IP
VER:4	IHL:5	DSCP:0x00	TL:28
ID:0x0012		FLAGS:0	FRAG OFFSET:0x000
TTL:255	PRO:0x01		CHKSUM
SRC IP:192.168.1.1
DST IP:192.168.1.3
DATA (VARIABLE LENGTH)

ICMP
| TYPE:0x08 | CODE:0x00 | CHECKSUM |

PDU Information at Device: Meraki Server0

OSI Model | Inbound PDU Details

At Device: Meraki Server0
Source: Wireless Router0
Destination: STP Multicast Address

In Layers | Out Layers

Layer7 | Layer7
Layer6 | Layer6
Layer5 | Layer5
Layer4 | Layer4
Layer3 | Layer3
Layer 2: IEEE 802.3 Header 00E0.B06C.C202 >> 0180.C200.0000 LLC STP BPDU | Layer2
Layer 1: Port FastEthernet0 | Layer1

1. The frame's destination MAC address matches the receiving port's MAC address, the broadcast address, or a multicast address.
2. The device does not have a service that accepts this frame. It drops the frame.

Challenge Me | << Previous Layer | Next Layer >>

PDU Information at Device: Meraki Server0

OSI Model | Inbound PDU Details

PDU Formats

Ethernet 802.3
PREAMBLE: 101010..10	DEST ADDR:0180.C200.0000
SRC ADDR:00E0.B06C.C202	LEN:3	DATA (VARIABLE LENGTH)
	FCS:0x00000000

LLC
| DSAP:0x42 | SSAP :0x42 | CONTROL BYTE:3 |

STP BPDU
| PROTOCOL ID:0 | VERSION:0 | MESSAGE TYPE:0 |
| | | |
| ROOT ID:32769 / 0040.0BB8.4A80 |
| ROOT PATH COST:0 |

3. Création d'un réseau, Configuration des adresses IP, Observation des tables ARP, et Analysons 2 des paquets en simulation.

PC5

Physical | Config | Desktop | Programming | Attributes

IP Configuration X

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.2.2
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

IPv6 Configuration
- ○ Automatic   ● Static
- IPv6 Address: ___ / ___
- Link Local Address: FE80::260:3EFF:FEA1:68C6
- Default Gateway: ___
- DNS Server: ___

802.1X
- ☐ Use 802.1X Security
- Authentication: MD5
- Username: ___
- Password: ___

PC6

Physical | Config | Desktop | Programming | Attributes

IP Configuration X

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.3.1
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

IPv6 Configuration
- ○ Automatic   ● Static
- IPv6 Address: ___ / ___
- Link Local Address: FE80::20C:CFFF:FE16:A0AA
- Default Gateway: ___
- DNS Server: ___

802.1X
- ☐ Use 802.1X Security
- Authentication: MD5
- Username: ___
- Password: ___

Laptop1

Physical | Config | Desktop | Programming | Attributes

IP Configuration X

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.1.8
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

IPv6 Configuration
- ○ Automatic   ● Static
- IPv6 Address: ___ / ___
- Link Local Address: FE80::260:47FF:FE6A:BBD8
- Default Gateway: ___
- DNS Server: ___

802.1X
- ☐ Use 802.1X Security
- Authentication: MD5
- Username: ___
- Password: ___

Laptop2

Physical | Config | Desktop | Programming | Attributes

IP Configuration X

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.2.3
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

IPv6 Configuration
- ○ Automatic   ● Static
- IPv6 Address: ___ / ___
- Link Local Address: FE80::2D0:D3FF:FE5B:A00D
- Default Gateway: ___
- DNS Server: ___

802.1X
- ☐ Use 802.1X Security
- Authentication: MD5
- Username: ___
- Password: ___

Laptop3

Physical | Config | Desktop | Programming | Attributes

IP Configuration X

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.3.2
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

IPv6 Configuration
- ○ Automatic   ● Static
- IPv6 Address: ___ / ___
- Link Local Address: FE80::20D:BDFF:FE2D:9EE4
- Default Gateway: ___
- DNS Server: ___

802.1X
- ☐ Use 802.1X Security
- Authentication: MD5
- Username: ___
- Password: ___

Server0

Physical | Config | Services | Desktop | Programming | Attributes

IP Configuration X

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.1.10
- Subnet Mask: 255.255.255.0
- Default Gateway: 0.0.0.0
- DNS Server: 0.0.0.0

IPv6 Configuration
- ○ Automatic   ● Static
- IPv6 Address: ___ / ___
- Link Local Address: FE80::20B:BEFF:FE96:EAE2
- Default Gateway: ___
- DNS Server: ___

802.1X
- ☐ Use 802.1X Security
- Authentication: MD5
- Username: ___
- Password: ___

PC1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

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

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::230:A3FF:FEE8:88AD
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.2
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

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<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms TTL=128
Reply from 192.168.1.3: bytes=32 time<1ms 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 = 0ms, Average = 0ms

C:\>arp -a
  Internet Address      Physical Address       Type
  192.168.1.3           0090.0ce2.1e4b         dynamic
```

PC1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::230:A3FF:FEE8:88AD
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.2
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

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=10ms TTL=128
Reply from 192.168.1.4: bytes=32 time=17ms TTL=128
Reply from 192.168.1.4: bytes=32 time<1ms 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 = 17ms, Average = 6ms

C:\>arp -a
  Internet Address      Physical Address       Type
  192.168.1.3           0090.0ce2.1e4b         dynamic
  192.168.1.4           0030.a30b.a4cc         dynamic
```

PC1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
Request timed out.

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::230:A3FF:FEE8:88AD
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.2
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>192.168.2.3
Invalid Command.

C:\>ping 192.168.2.3

Pinging 192.168.2.3 with 32 bytes of data:

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

Ping statistics for 192.168.2.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

Laptop3

Physical | Config | Desktop | Programming | Attributes

Command Prompt

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

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::20D:BDFF:FE2D:9EE4
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.3.2
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>ping 192.168.3.1

Pinging 192.168.3.1 with 32 bytes of data:

Reply from 192.168.3.1: bytes=32 time<1ms TTL=128
Reply from 192.168.3.1: bytes=32 time<1ms TTL=128
Reply from 192.168.3.1: bytes=32 time<1ms TTL=128
Reply from 192.168.3.1: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.3.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address      Physical Address       Type
  192.168.3.1           000c.cf16.a0aa         dynamic
```

Laptop1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::260:47FF:FE6A:BBD8
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.8
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

Bluetooth Connection:

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: ::
   IPv6 Address....................: ::
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.1.10          000b.be96.eae2        dynamic
```

Server0

Physical | Config | Services | Desktop | Programming | Attributes

Command Prompt

```
C:\>ipconfig

FastEthernet0 Connection:(default port)

   Connection-specific DNS Suffix..:
   Link-local IPv6 Address.........: FE80::20B:BEFF:FE96:EAE2
   IPv6 Address....................: ::
   IPv4 Address....................: 192.168.1.10
   Subnet Mask.....................: 255.255.255.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

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

Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

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=10ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time=18ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms 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 = 0ms, Maximum = 18ms, Average = 7ms

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.1.2           0030.a3e8.88ad        dynamic
```

Laptop1

Physical | Config | Desktop | Programming | Attributes

Command Prompt

```
   IPv4 Address....................: 0.0.0.0
   Subnet Mask.....................: 0.0.0.0
   Default Gateway.................: ::
                                     0.0.0.0

C:\>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:

Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.1.10          000b.be96.eae2        dynamic

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=10ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms TTL=128
Reply from 192.168.1.2: bytes=32 time<1ms 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 = 0ms, Maximum = 10ms, Average = 2ms

C:\>arp -a
  Internet Address      Physical Address      Type
  192.168.1.2           0030.a3e8.88ad        dynamic
  192.168.1.10          000b.be96.eae2        dynamic
```
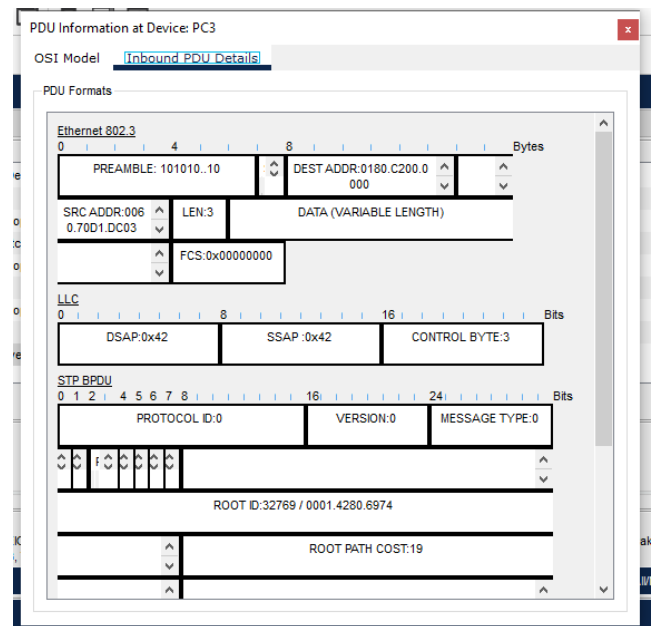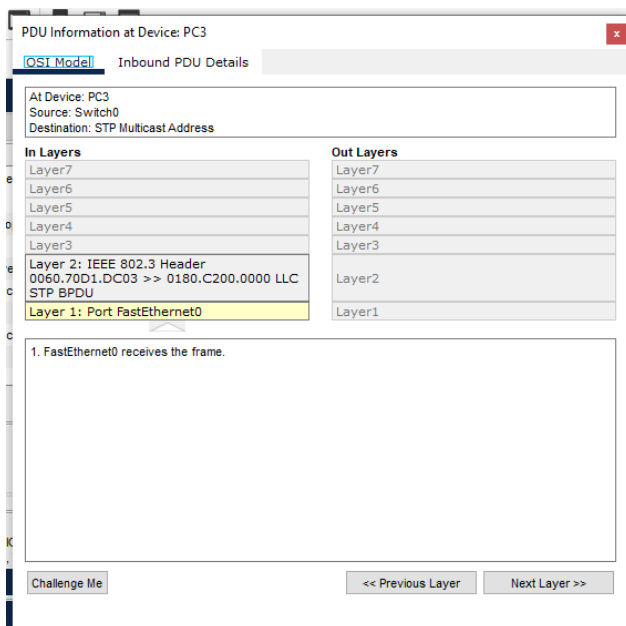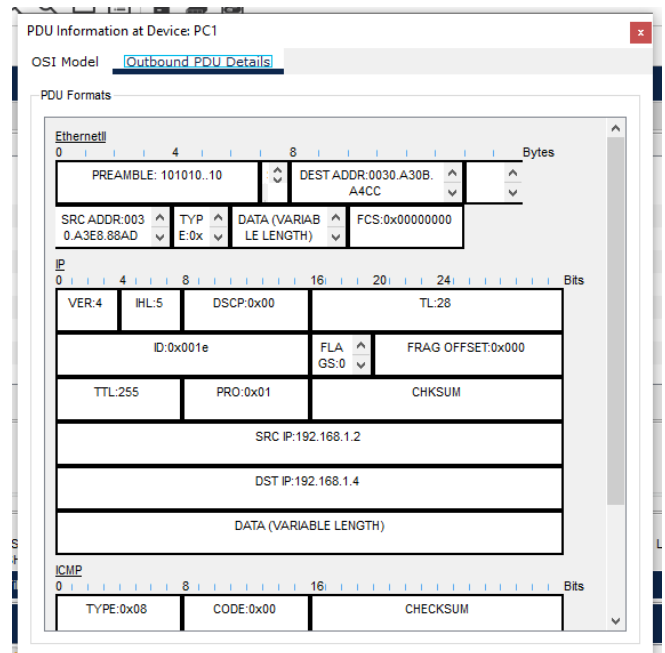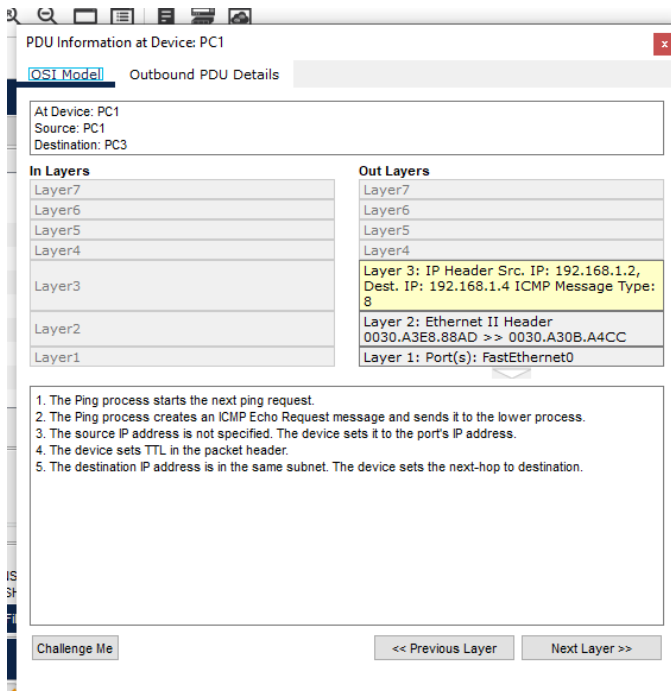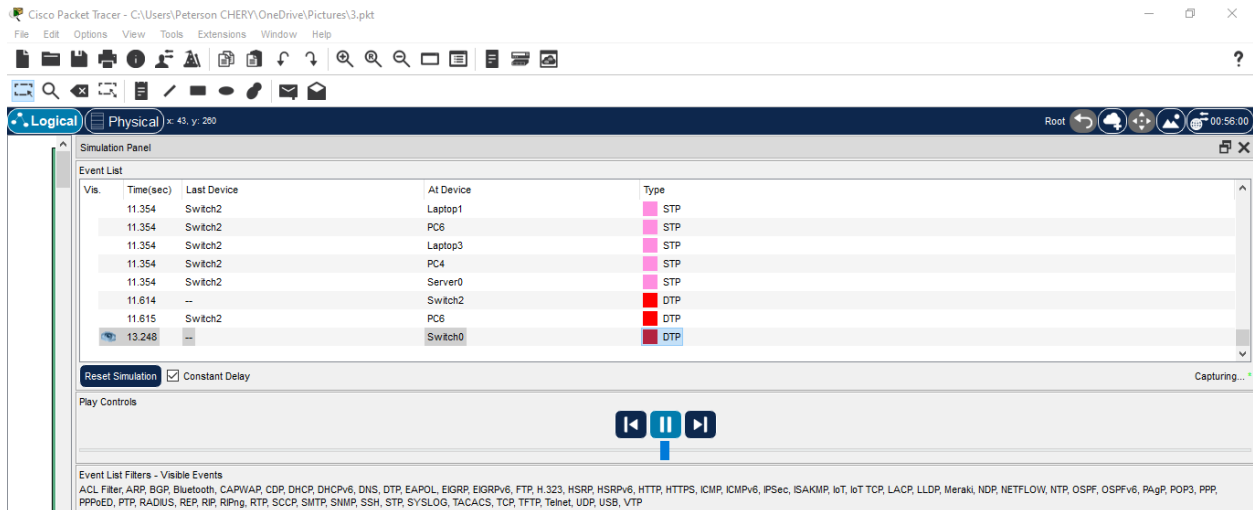
- Analysons les deux paquets (ICMP, STP)

CONCLUSION :

J'ai appris les compétences nécessaires pour Créer un réseau, puis configurer les adresses IP, observer les tables ARP et analyser 2 des paquets en simulation.