Institut Universitaire des Sciences (IUS)

FACULTÉ DES SCIENCES ET DES TECHNOLOGIES (FST)

RAPPORT

SUR LE TRAVAIL DE LABORATOIRE № 2

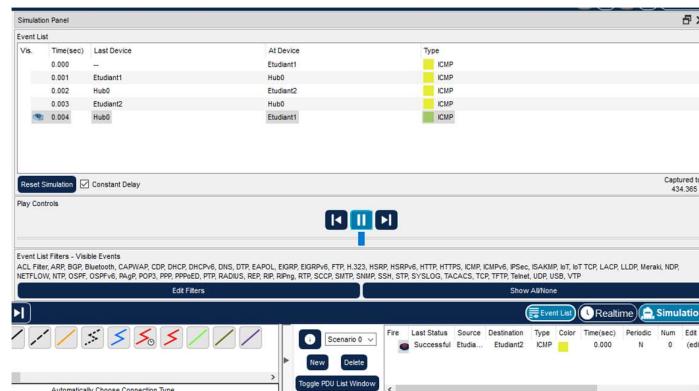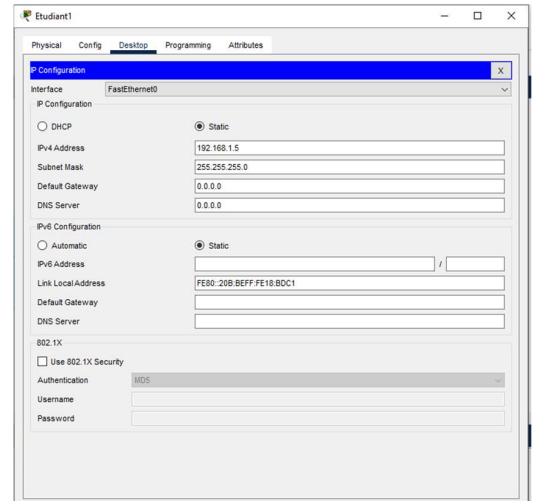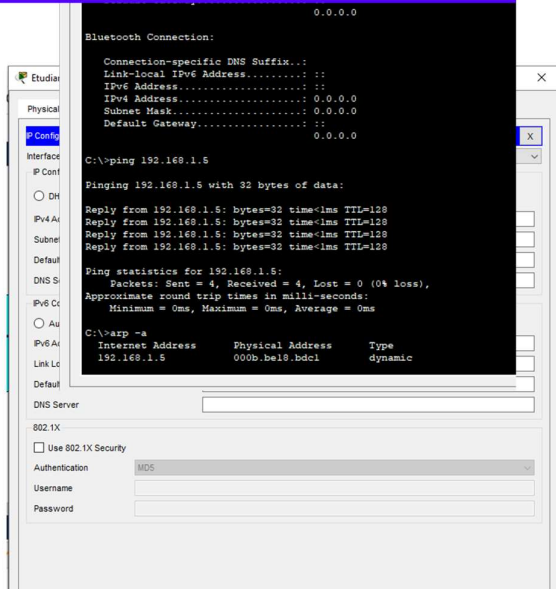*Cours : Réseaux 1*

Étudiant : Wendy Colas
Niveau : L3

2024

1. Reproduisons cette topologie, configurons les adresses IP, observons des tables ARP, et analysons 3 des paquets en simulation.

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
   192.168.1.5           000b.be18.bdc1        dynamic
```

PDU Information at Device: Etudiant1

OSI Model | Outbound PDU Details

At Device: Etudiant1
Source: Etudiant1
Destination: Etudiant2

In Layers | **Out Layers**

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer3	Layer 3: IP Header Src. IP: 192.168.1.5, Dest. IP: 192.168.1.6 ICMP Message Type: 8
Layer2	Layer 2: Ethernet II Header 000B.BE18.BDC1 >> 0001.C9A6.95D4
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: Etudiant1

OSI Model | Outbound PDU Details

At Device: Etudiant1
Source: Etudiant1
Destination: Etudiant2

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer3	Layer 3: IP Header Src. IP: 192.168.1.5, Dest. IP: 192.168.1.6 ICMP Message Type: 8
Layer2	Layer 2: Ethernet II Header 000B.BE18.BDC1 >> 0001.C9A6.95D4
Layer1	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.

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

PDU Information at Device: Etudiant1

OSI Model | Outbound PDU Details

At Device: Etudiant1
Source: Etudiant1
Destination: Etudiant2

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer3	Layer 3: IP Header Src. IP: 192.168.1.5, Dest. IP: 192.168.1.6 ICMP Message Type: 8
Layer2	Layer 2: Ethernet II Header 000B.BE18.BDC1 >> 0001.C9A6.95D4
Layer1	Layer 1: Port(s): FastEthernet0

1. FastEthernet0 sends out the frame.

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

PDU Information at Device: Etudiant1

OSI Model | **Outbound PDU Details**

PDU Formats

EthernetII

| 0	4	8	Bytes
PREAMBLE: 101010..10	S F	DEST ADDR:0001.C9A6.95D4	
SRC ADDR:000B.BE18.BDC1	TYPE:0x 0800	DATA (VARIABLE LENGTH)	FCS:0x00000000

IP

0	4	8	16	20	24	Bits
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

0	8	16	Bits
TYPE:0x08	CODE:0x00	CHECKSUM	

2. Reproduisons cette topologie, Configurons les adresses IP, observons les tables ARP, et analysons 2 des paquets en simulation.
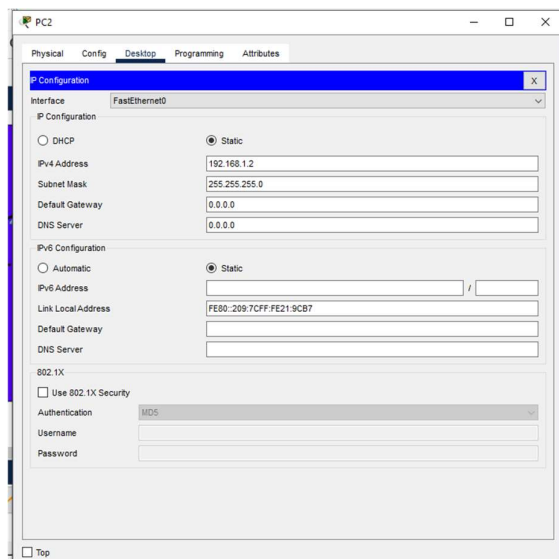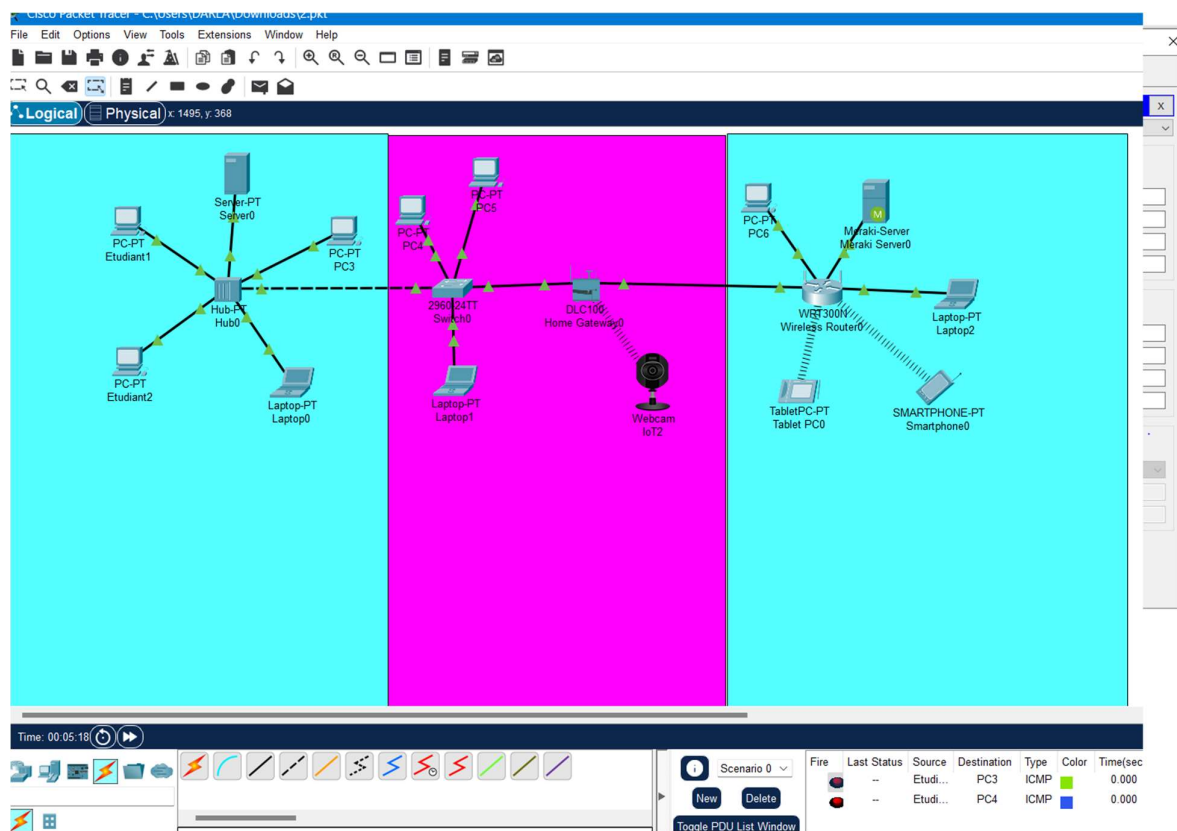
PC3 — IP Configuration

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.1.3
- 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::290:2BFF:FE15:A3E4
- Default Gateway:
- DNS Server:

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

Laptop2 — IP Configuration

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.1.9
- 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::201:64FF:FE25:5ADC
- Default Gateway:
- DNS Server:

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

PC6 — IP Configuration

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 — IP Configuration

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
```

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:\>
```

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

0	4	8	Bytes

PREAMBLE: 101010..10 | DEST ADDR:0090.2B15.A3E4

SRC ADDR:0040.0BDA.85E8 | TYPE:0x | DATA (VARIABLE LENGTH) | FCS:0x00000000

IP

0	4	8	16	20	24	Bits

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

0	8	16	Bits

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.C200.0 000 | |
SRC ADDR:00E 0.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. Créons un réseau, configurons les adresses IP, observons les tables ARP, et analysons 2 des paquets en simulation.

PC1
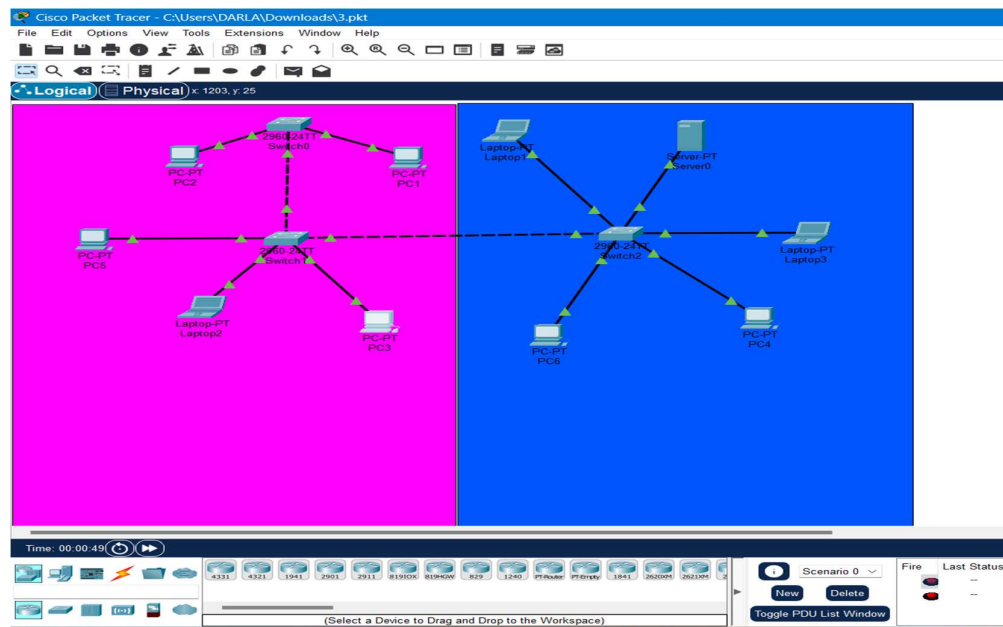
Physical | Config | Desktop | Programming | Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.1.2
- 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::230:A3FF:FEE8:88AD
- Default Gateway:
- DNS Server:

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

PC2

Physical | Config | Desktop | Programming | Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.1.3
- 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::290:CFF:FEE2:1E4B
- Default Gateway:
- DNS Server:

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

PC3

Physical | Config | Desktop | Programming | Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static   This address is already used in the network.
- IPv4 Address: 192.168.1.4
- 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::230:A3FF:FE0B:A4CC
- Default Gateway:
- DNS Server:

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

PC4

Physical | Config | Desktop | Programming | Attributes

IP Configuration

Interface: FastEthernet0

IP Configuration
- ○ DHCP   ● Static
- IPv4 Address: 192.168.2.1
- 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::202:17FF:FE89:B048
- Default Gateway:
- DNS Server:

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

PC1 — 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 — 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
```

Cisco Packet Tracer - C:\Users\Peterson CHERY\OneDrive\Pictures\3.pkt

File   Edit   Options   View   Tools   Extensions   Window   Help

Logical   Physical   x: 43, y: 260   Root   00:56:00

Simulation Panel

Event List

Vis.	Time(sec)	Last Device	At Device	Type
	11.354	Switch2	Laptop1	STP
	11.354	Switch2	PC6	STP
	11.354	Switch2	Laptop3	STP
	11.354	Switch2	PC4	STP
	11.354	Switch2	Server0	STP
	11.614	--	Switch2	DTP
	11.615	Switch2	PC6	DTP
	13.248	--	Switch0	DTP

Reset Simulation   ☑ Constant Delay   Capturing...

Play Controls

Event List Filters - Visible Events

ACL Filter, ARP, BGP, Bluetooth, CAPWAP, CDP, DHCP, DHCPv6, DNS, DTP, EAPOL, EIGRP, EIGRPv6, FTP, H.323, HSRP, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPF, OSPFv6, PAgP, POP3, PPP, PPPoED, PTP, RADIUS, REP, RIP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

PDU Information at Device: PC1 — OSI Model

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: 192.168.1.2, Dest. IP: 192.168.1.4 ICMP Message Type: 8
Layer2	Layer 2: Ethernet II Header 0030.A3E8.88AD >> 0030.A30B.A4CC
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 — Outbound PDU Details

PDU Formats

EthernetII

0	4	8	Bytes
PREAMBLE: 101010..10	DEST ADDR:0030.A30B.A4CC		
SRC ADDR:0030.A3E8.88AD	TYPE:0x	DATA (VARIABLE LENGTH)	FCS:0x00000000

IP

0	4	8	16	20	24	Bits
VER:4	IHL:5	DSCP:0x00		TL:28		
ID:0x001e			FLAGS:0	FRAG OFFSET:0x000		
TTL:255		PRO:0x01		CHKSUM		
SRC IP:192.168.1.2						
DST IP:192.168.1.4						
DATA (VARIABLE LENGTH)						

ICMP

0	8	16	Bits
TYPE:0x08	CODE:0x00	CHECKSUM	

PDU Information at Device: PC3 — OSI Model

At Device: PC3
Source: Switch0
Destination: STP Multicast Address

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer3	Layer3
Layer 2: IEEE 802.3 Header 0060.70D1.DC03 >> 0180.C200.0000 LLC STP BPDU	Layer2
Layer 1: Port FastEthernet0	Layer1

1. FastEthernet0 receives the frame.

[Challenge Me]   [<< Previous Layer]   [Next Layer >>]

PDU Information at Device: PC3 — Inbound PDU Details

PDU Formats

Ethernet 802.3

0	4	8	Bytes
PREAMBLE: 101010..10	DEST ADDR:0180.C200.0000		
SRC ADDR:0060.70D1.DC03	LEN:3	DATA (VARIABLE LENGTH)	
FCS:0x00000000			

LLC

0	8	16	Bits
DSAP:0x42	SSAP :0x42	CONTROL BYTE:3	

STP BPDU

0 1 2	4 5 6 7 8	16	24	Bits
PROTOCOL ID:0		VERSION:0	MESSAGE TYPE:0	
ROOT ID:32769 / 0001.4280.6974				
ROOT PATH COST:19				

CONCLUSION :

J'ai fait la connaissance et j'ai maitrisé les théories nécessaires à la création d'un réseau, la configuration des adresses IP, l'observation des tabl