Institut Universitaire des Sciences (IUS)

Faculté des Sciences et Technologies

(FST)

RAPPORT

SUR LE TRAVAIL DE LABORATOIRE № 2

Cours : Cisco Packet Tracer (Reseau 1)

Soumis au Chargé de cours : **Ismael SAINT AMOUR**

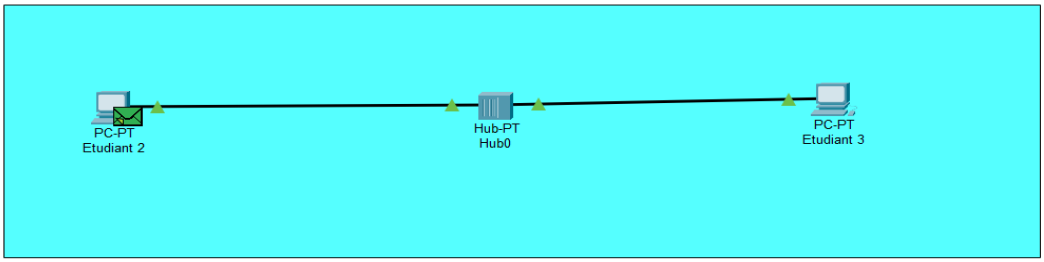
Niveau L3

Préparé par : **Robaldo BADIO**

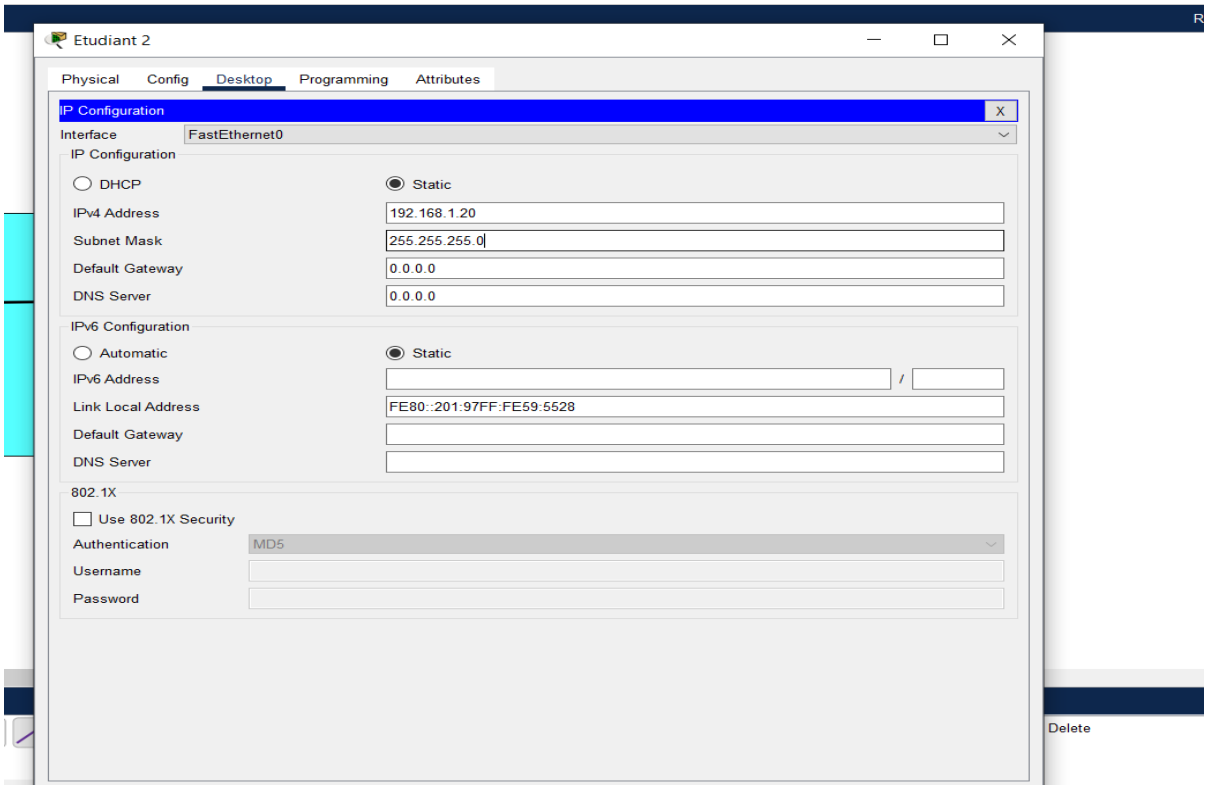
Date : Le 02 / 11 / 202

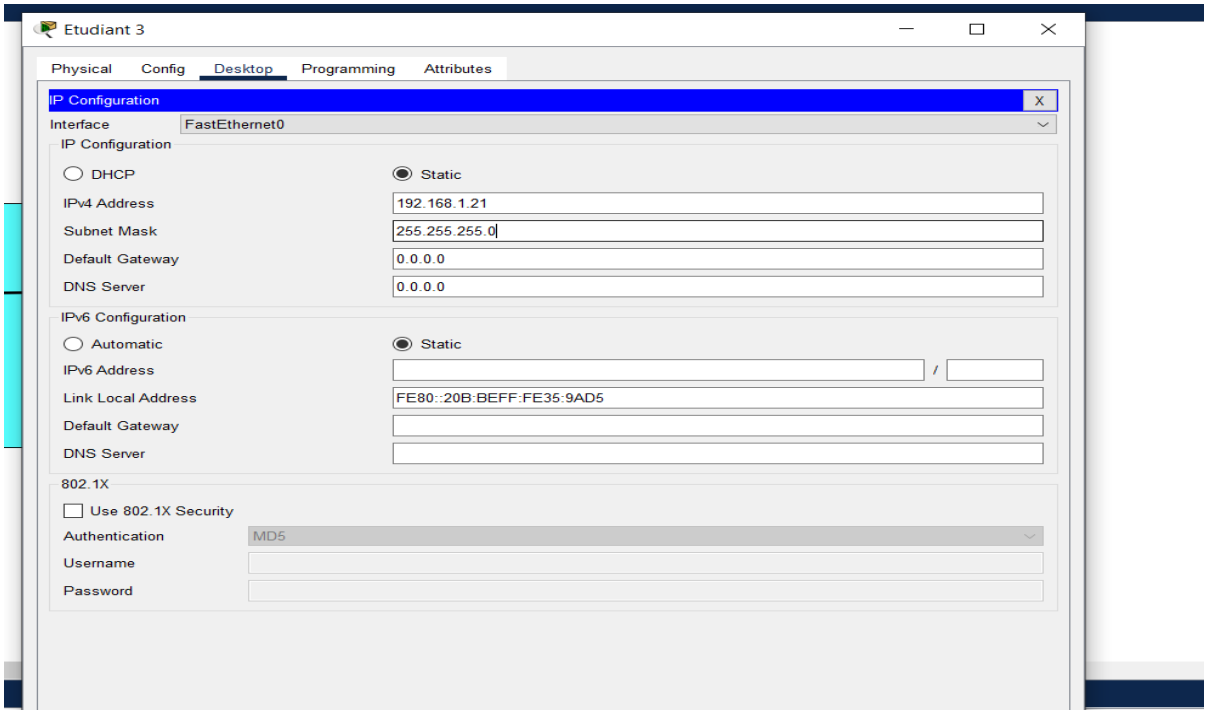
Exécution du TD

1. Reproduire l'exécution du Cisco Packet Tracer ;

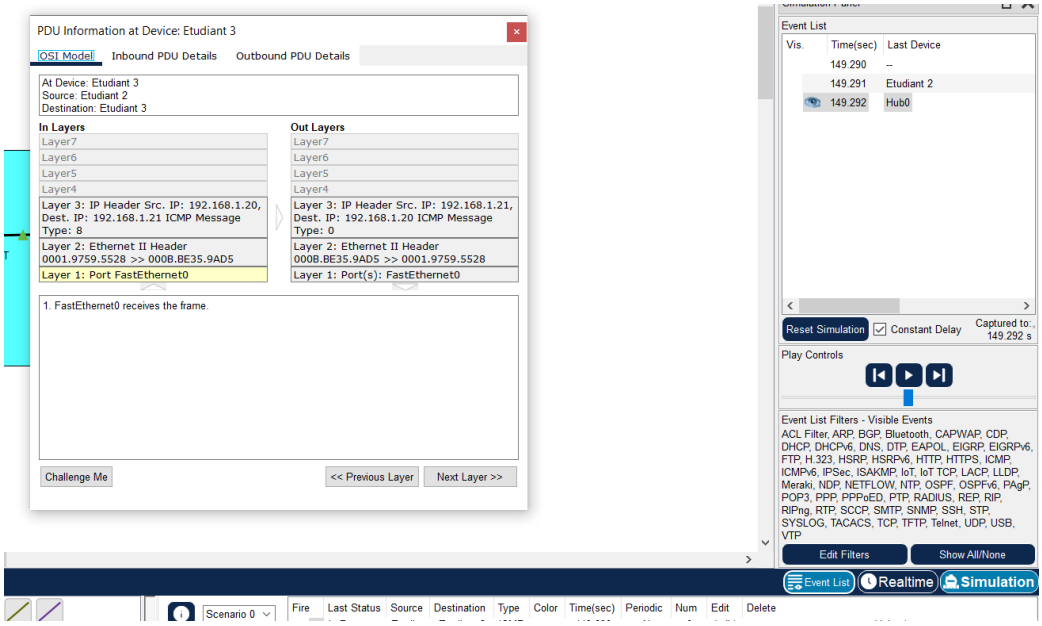


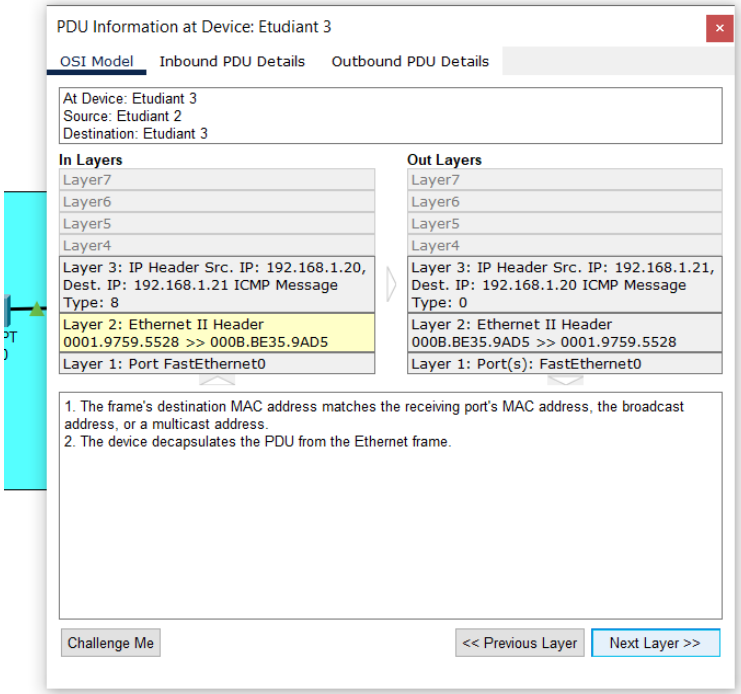
2. Configuration des adresses IP;

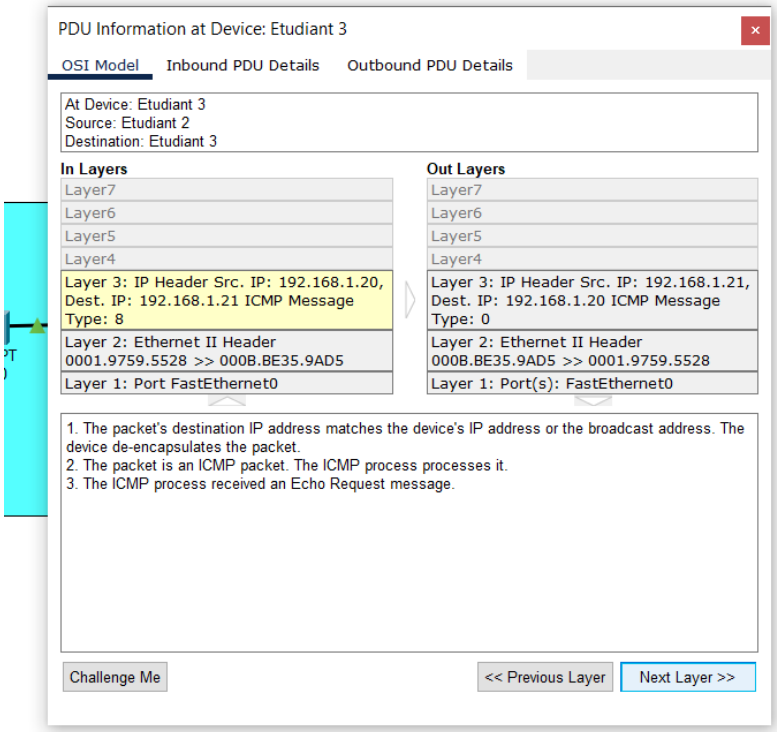




3. Observation des paquets en simulations ;




PDU Information at Device: Etudiant 3
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Etudiant 3
Source: Etudiant 2
Destination: Etudiant 3
In Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.20, Dest. IP: 192.168.1.21 ICMP Message Type: 8
Layer 2: Ethernet II Header 0001.9759.5528 >> 000B.BE35.9AD5
Layer 1: Port FastEthernet0
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.21, Dest. IP: 192.168.1.20 ICMP Message Type: 0
Layer 2: Ethernet II Header 000B.BE35.9AD5 >> 0001.9759.5528
Layer 1: Port(s): FastEthernet0
1. The frame's destination MAC address matches the receiving port's MAC address, the broadcast address, or a multicast address.
2. The device decapsulates the PDU from the Ethernet frame.
Challenge Me
<< Previous Layer
Next Layer >>


PDU Information at Device: Etudiant 3
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Etudiant 3
Source: Etudiant 2
Destination: Etudiant 3
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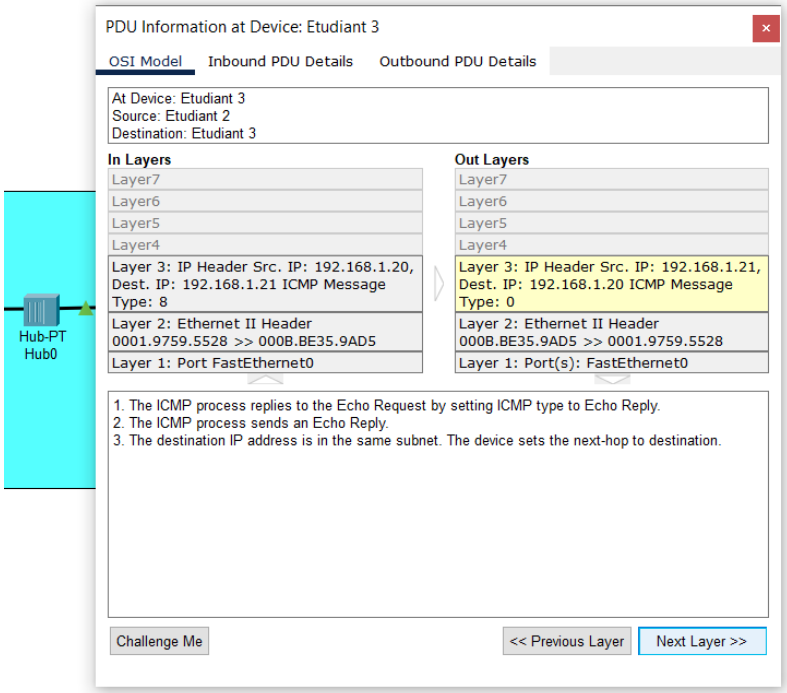
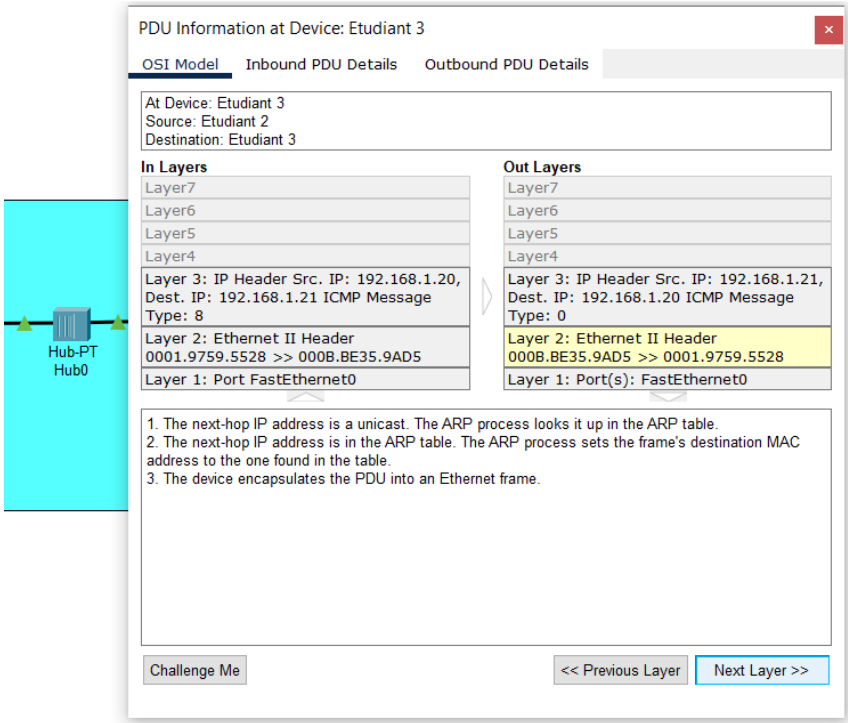
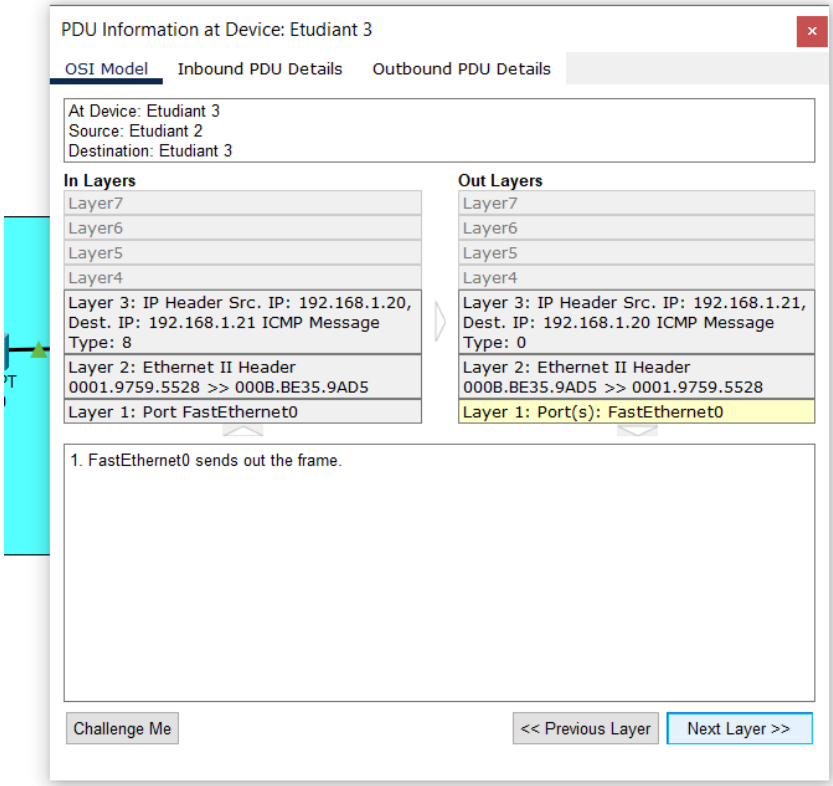
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.21, Dest. IP: 192.168.1.20 ICMP Message Type: 0
Layer 2: Ethernet II Header 000B.BE35.9AD5 >> 0001.9759.5528
Layer 1: Port(s): FastEthernet0
1. The packet's destination IP address matches the device's IP address or the broadcast address. The device de-encapsulates the packet.
2. The packet is an ICMP packet. The ICMP process processes it.
3. The ICMP process received an Echo Request message.
Challenge Me
<< Previous Layer
Next Layer >>


PDU Information at Device: Etudiant 3
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Etudiant 3
Source: Etudiant 2
Destination: Etudiant 3
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.20, Dest. IP: 192.168.1.21 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.21, Dest. IP: 192.168.1.20 ICMP Message Type: 0
Layer 2: Ethernet II Header 0001.9759.5528 >> 000B.BE35.9AD5
Layer 2: Ethernet II Header 000B.BE35.9AD5 >> 0001.9759.5528
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. The ICMP process replies to the Echo Request by setting ICMP type to Echo Reply.
2. The ICMP process sends an Echo Reply.
3. The destination IP address is in the same subnet. The device sets the next-hop to destination.
Challenge Me
<< Previous Layer
Next Layer >>
Hub-PT
Hub0


PDU Information at Device: Etudiant 3
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Etudiant 3
Source: Etudiant 2
Destination: Etudiant 3
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.20, Dest. IP: 192.168.1.21 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.21, Dest. IP: 192.168.1.20 ICMP Message Type: 0
Layer 2: Ethernet II Header 0001.9759.5528 >> 000B.BE35.9AD5
Layer 2: Ethernet II Header 000B.BE35.9AD5 >> 0001.9759.5528
Layer 1: Port FastEthernet0
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 >>
Hub-PT
Hub0


PDU Information at Device: Etudiant 3
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Etudiant 3
Source: Etudiant 2
Destination: Etudiant 3
In Layers
Out Layers
Layer7
Layer6
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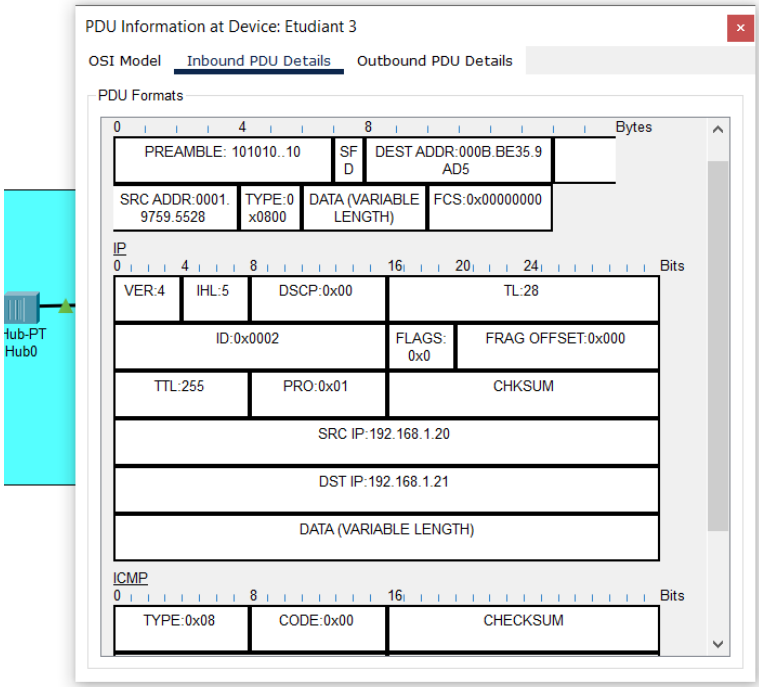
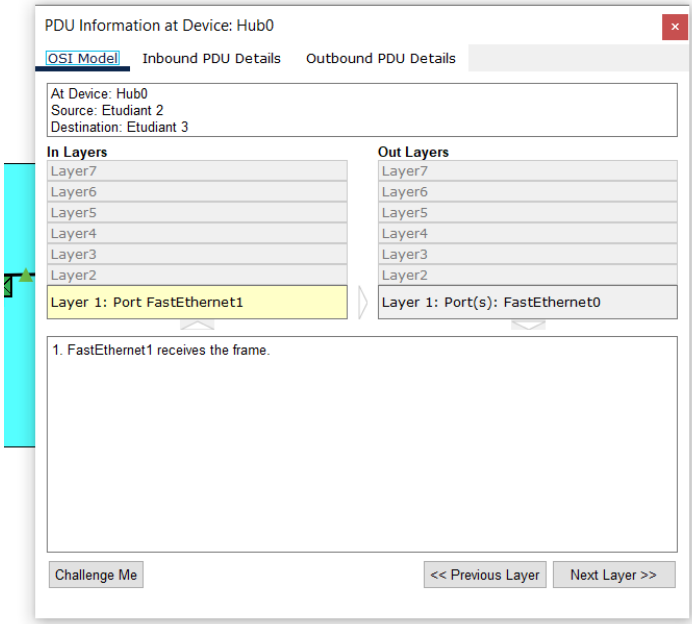
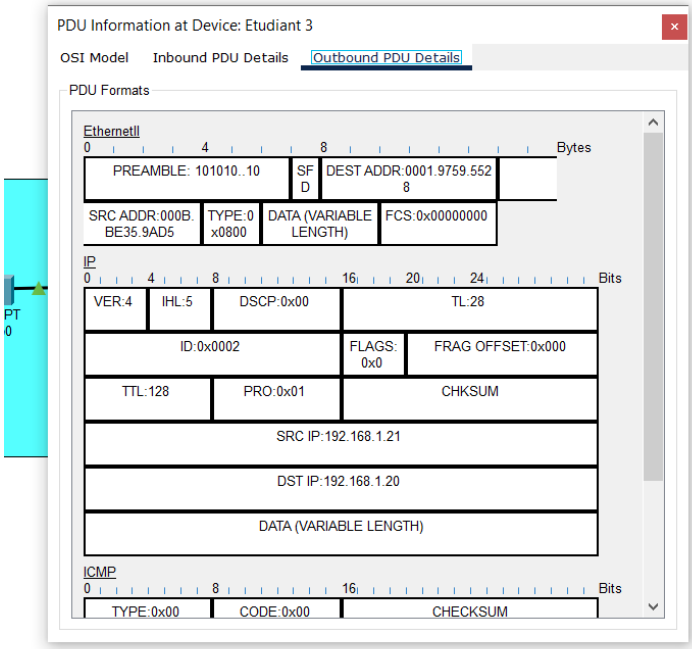
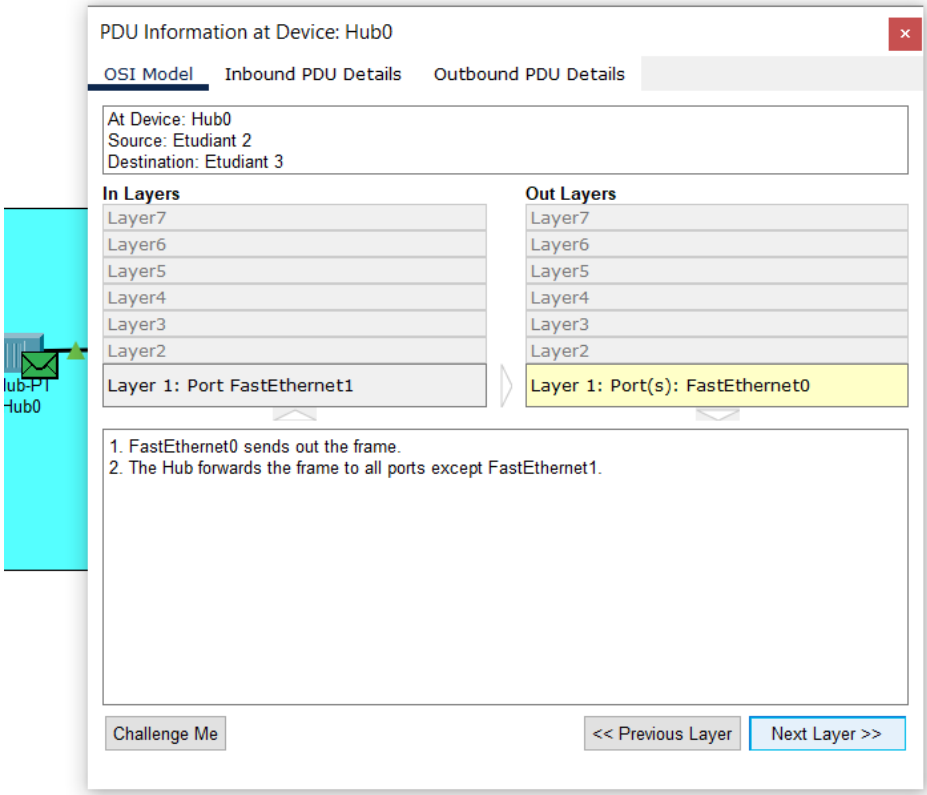
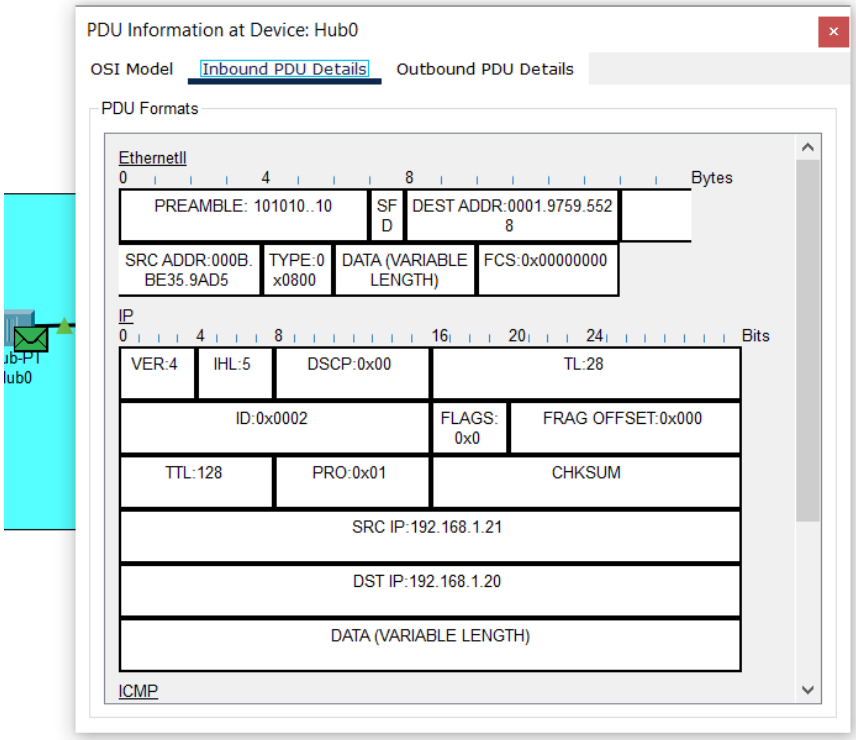
Layer 3: IP Header Src. IP: 192.168.1.21, Dest. IP: 192.168.1.20 ICMP Message Type: 0
Layer 2: Ethernet II Header 0001.9759.5528 >> 000B.BE35.9AD5
Layer 2: Ethernet II Header 000B.BE35.9AD5 >> 0001.9759.5528
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. FastEthernet0 sends out the frame.
Challenge Me
<< Previous Layer
Next Layer >>

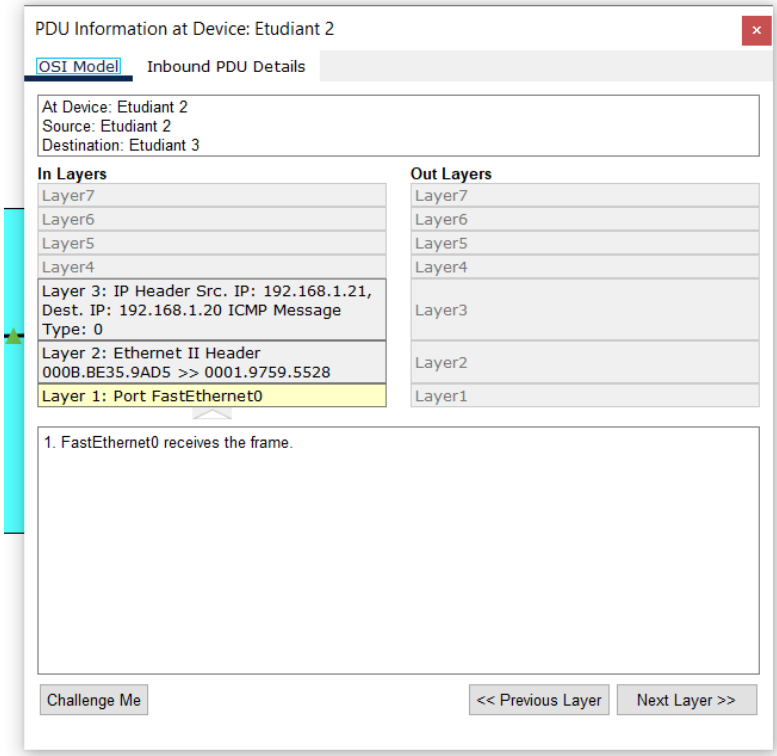

PDU Information at Device: Etudiant 3
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:000B.BE35.9AD5
SRC ADDR:0001.9759.5528
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0002
FLAGS:0x0
FRAG OFFSET:0x000
TTL:255
PRO:0x01
CHKSUM
SRC IP:192.168.1.20
DST IP:192.168.1.21
DATA (VARIABLE LENGTH)
ICMP
TYPE:0x08
CODE:0x00
CHECKSUM

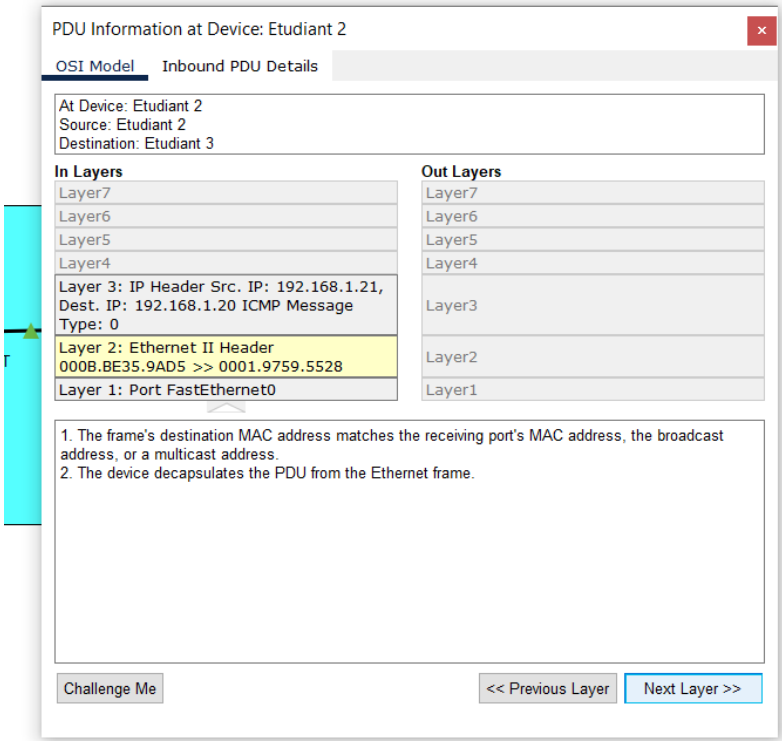

PDU Information at Device: Hub0
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Hub0
Source: Etudiant 2
Destination: Etudiant 3
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer3
Layer2
Layer 1: Port FastEthernet1
Layer 1: Port(s): FastEthernet0
1. FastEthernet1 receives the frame.
Challenge Me
<< Previous Layer
Next Layer >>

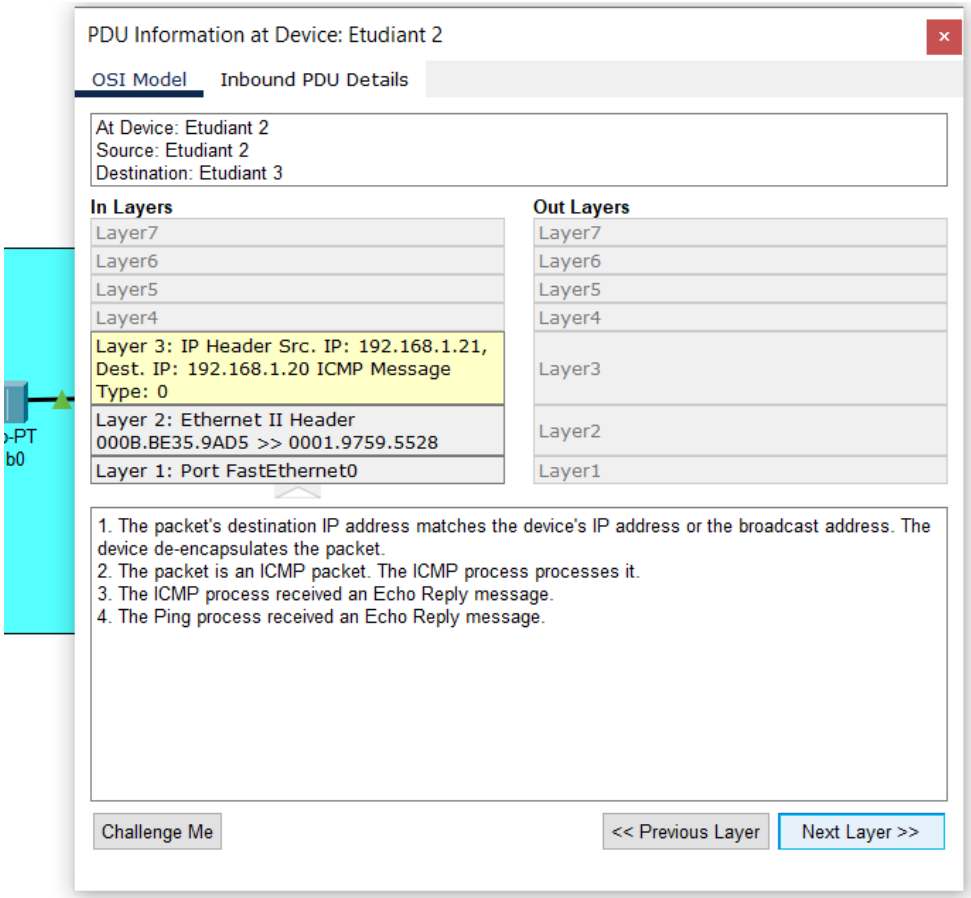

PDU Information at Device: Etudiant 3
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:0001.9759.5528
SRC ADDR:000B.BE35.9AD5
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0002
FLAGS:0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:192.168.1.21
DST IP:192.168.1.20
DATA (VARIABLE LENGTH)
ICMP
TYPE:0x00
CODE:0x00
CHECKSUM

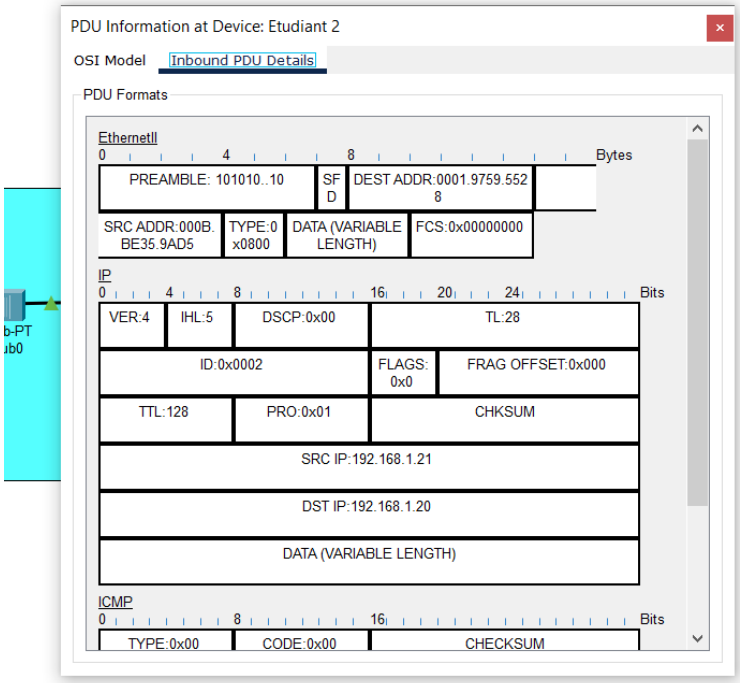

PDU Information at Device: Hub0
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Hub0
Source: Etudiant 2
Destination: Etudiant 3
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer3
Layer2
Layer 1: Port FastEthernet1
Layer 1: Port(s): FastEthernet0
1. FastEthernet0 sends out the frame.
2. The Hub forwards the frame to all ports except FastEthernet1.
Challenge Me
<< Previous Layer
Next Layer >>


PDU Information at Device: Hub0
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
0
4
8
Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:0001.9759.5528
SRC ADDR:000B.BE35.9AD5
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0
4
8
16
20
24
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0002
FLAGS:0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:192.168.1.21
DST IP:192.168.1.20
DATA (VARIABLE LENGTH)
ICMP

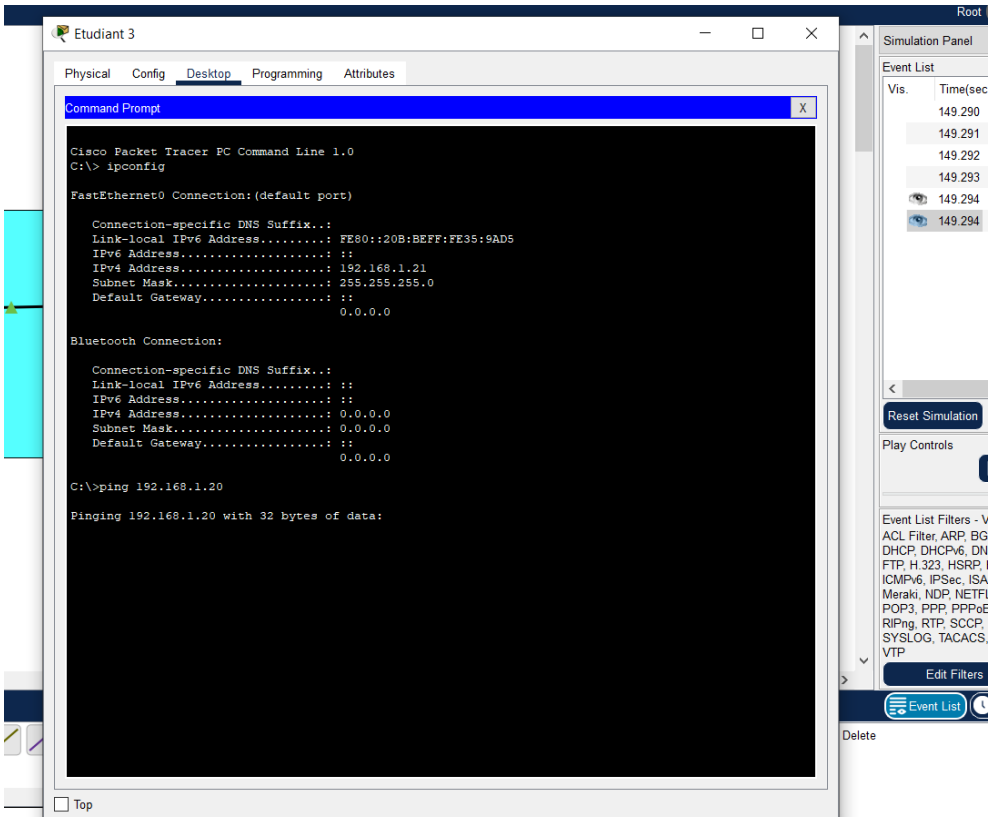

PDU Information at Device: Etudiant 2
OSI Model
Inbound PDU Details
At Device: Etudiant 2
Source: Etudiant 2
Destination: Etudiant 3
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.21, Dest. IP: 192.168.1.20 ICMP Message Type: 0
Layer3
Layer 2: Ethernet II Header 000B.BE35.9AD5 >> 0001.9759.5528
Layer2
Layer 1: Port FastEthernet0
Layer1
1. FastEthernet0 receives the frame.
Challenge Me
<< Previous Layer
Next Layer >>

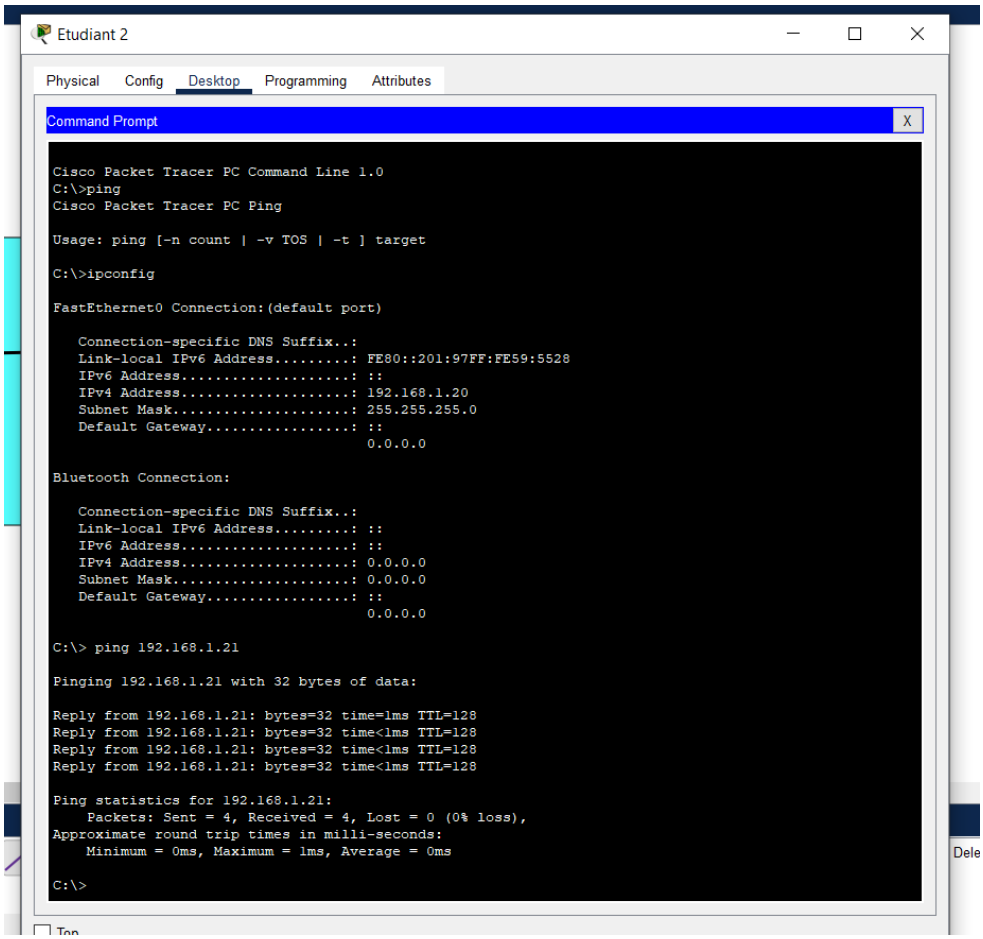

PDU Information at Device: Etudiant 2
OSI Model
Inbound PDU Details
At Device: Etudiant 2
Source: Etudiant 2
Destination: Etudiant 3
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.21, Dest. IP: 192.168.1.20 ICMP Message Type: 0
Layer3
Layer 2: Ethernet II Header 000B.BE35.9AD5 >> 0001.9759.5528
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 decapsulates the PDU from the Ethernet frame.
Challenge Me
<< Previous Layer
Next Layer >>

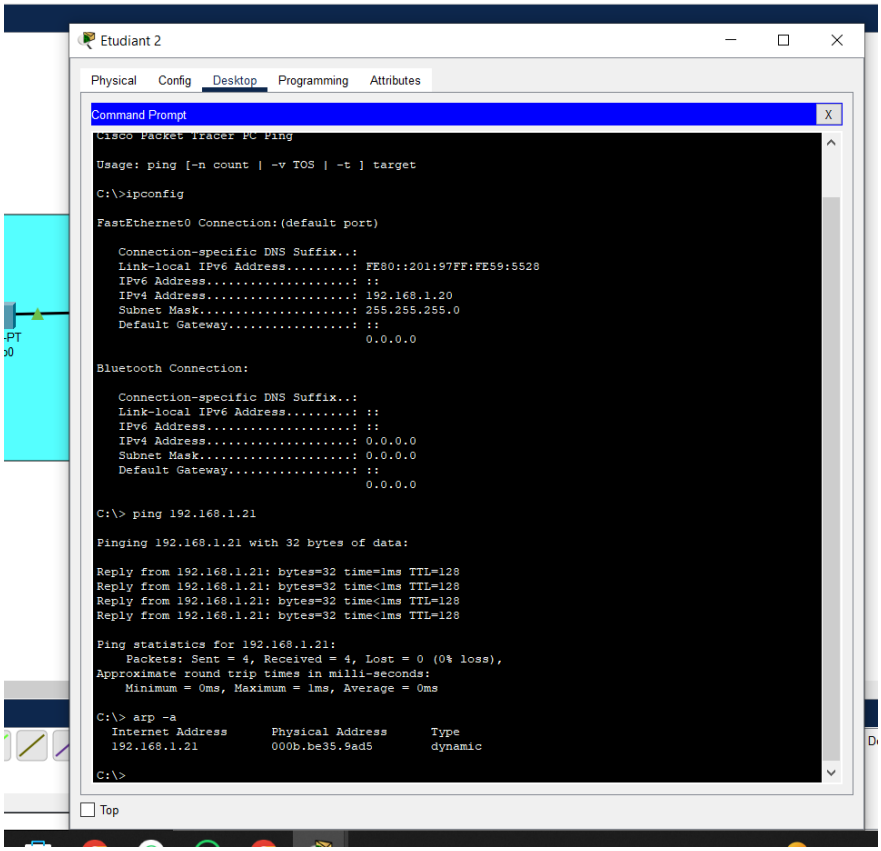

PDU Information at Device: Etudiant 2
OSI Model
Inbound PDU Details
At Device: Etudiant 2
Source: Etudiant 2
Destination: Etudiant 3
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.21, Dest. IP: 192.168.1.20 ICMP Message Type: 0
Layer3
Layer 2: Ethernet II Header 000B.BE35.9AD5 >> 0001.9759.5528
Layer2
Layer 1: Port FastEthernet0
Layer1
1. The packet's destination IP address matches the device's IP address or the broadcast address. The device de-encapsulates the packet.
2. The packet is an ICMP packet. The ICMP process processes it.
3. The ICMP process received an Echo Reply message.
4. The Ping process received an Echo Reply message.
Challenge Me
<< Previous Layer
Next Layer >>


PDU Information at Device: Etudiant 2
OSI Model
Inbound PDU Details
PDU Formats
EthernetII
Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:0001.9759.5528
SRC ADDR:000B.BE35.9AD5
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0002
FLAGS:0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:192.168.1.21
DST IP:192.168.1.20
DATA (VARIABLE LENGTH)
ICMP
TYPE:0x00
CODE:0x00
CHECKSUM

4. Observation des tables ARP ;

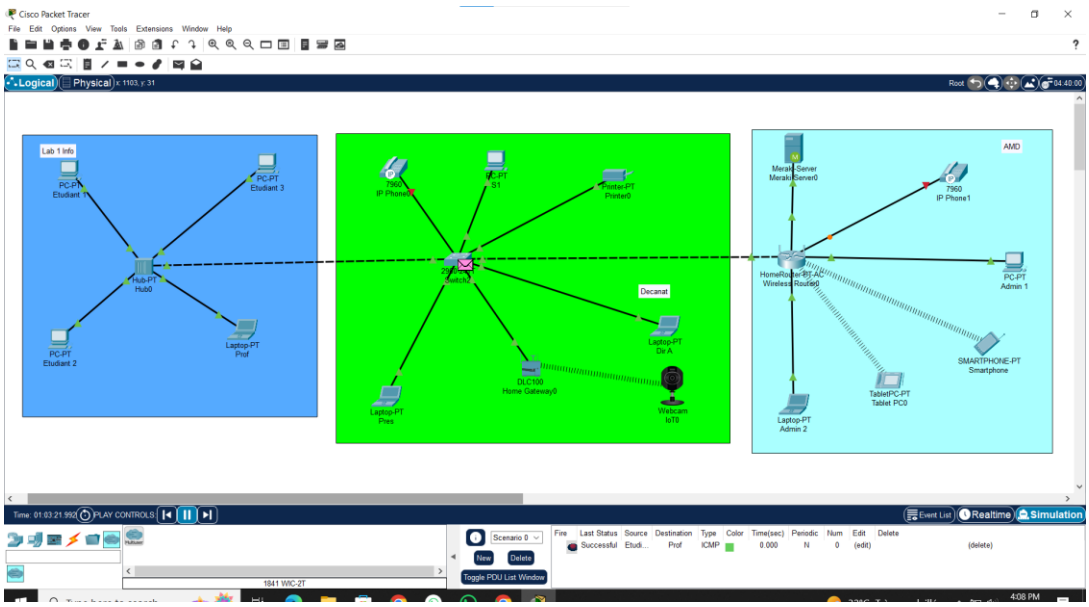




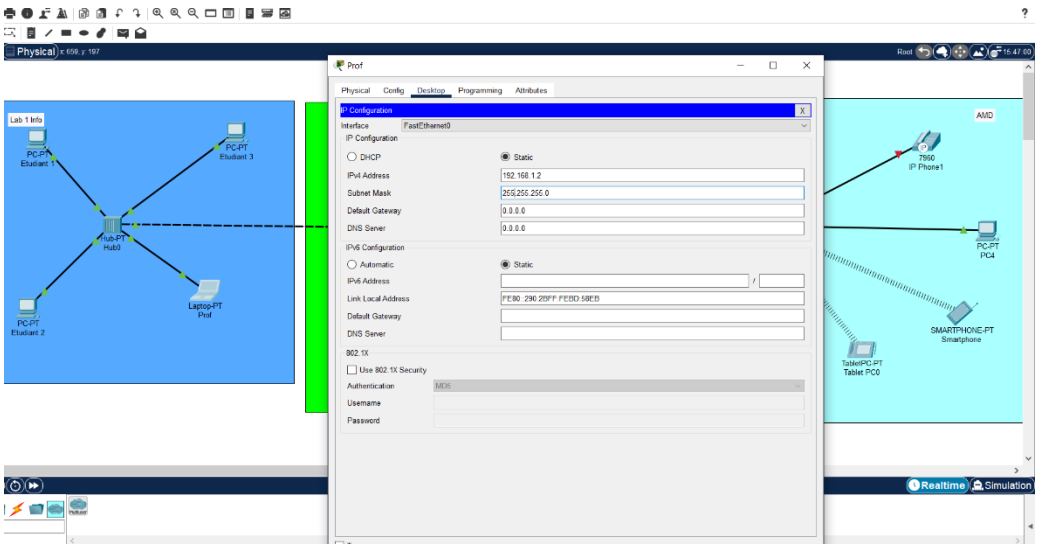

Etudiant 2
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Ping
Usage: ping [-n count | -v TOS | -t] target
C:\>ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::201:97FF:FE59:5528
IPv6 Address.....: ::
IPv4 Address.....: 192.168.1.20
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 192.168.1.21
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 = 1ms, Average = 0ms
C:\> arp -a
Internet Address
Physical Address
Type
192.168.1.21
000b.be35.9ad5
dynamic
C:\>
Top

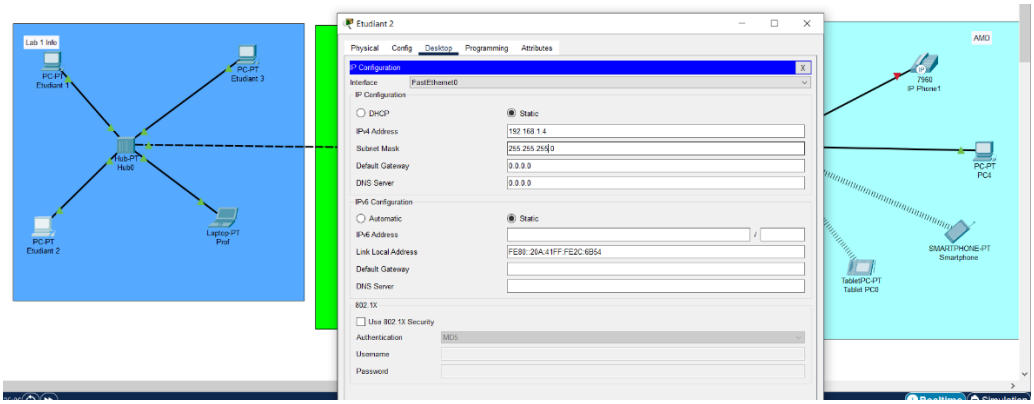
Exercice Supplémentaire

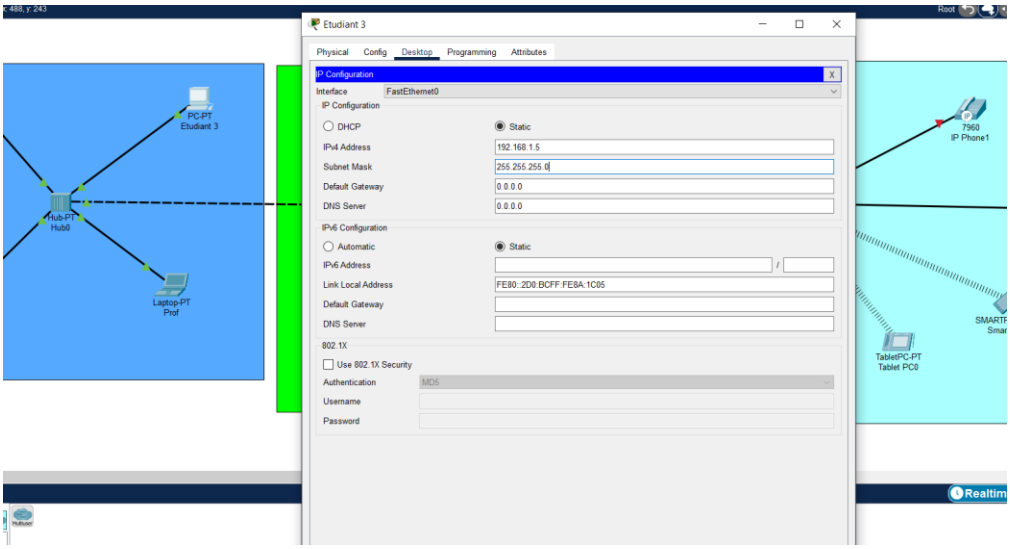
1. **Schéma ;**

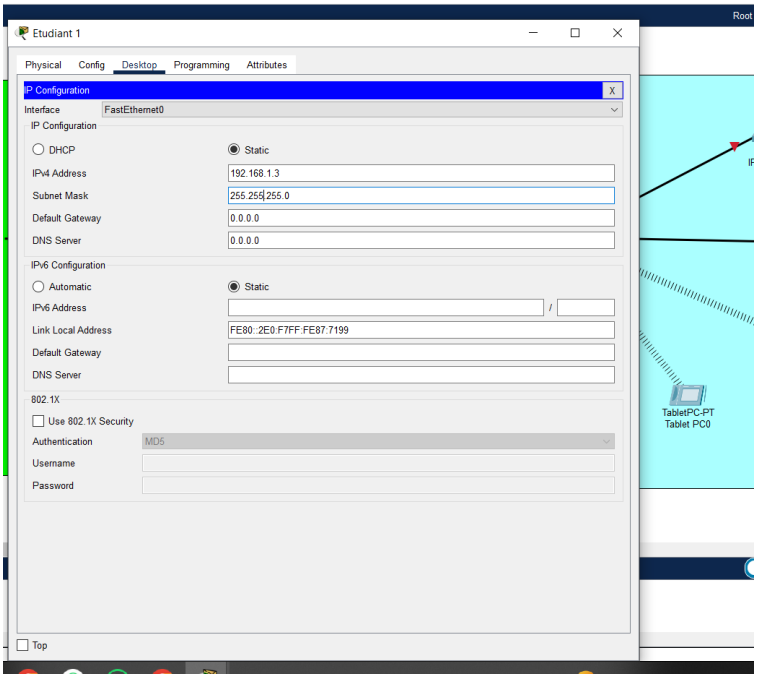


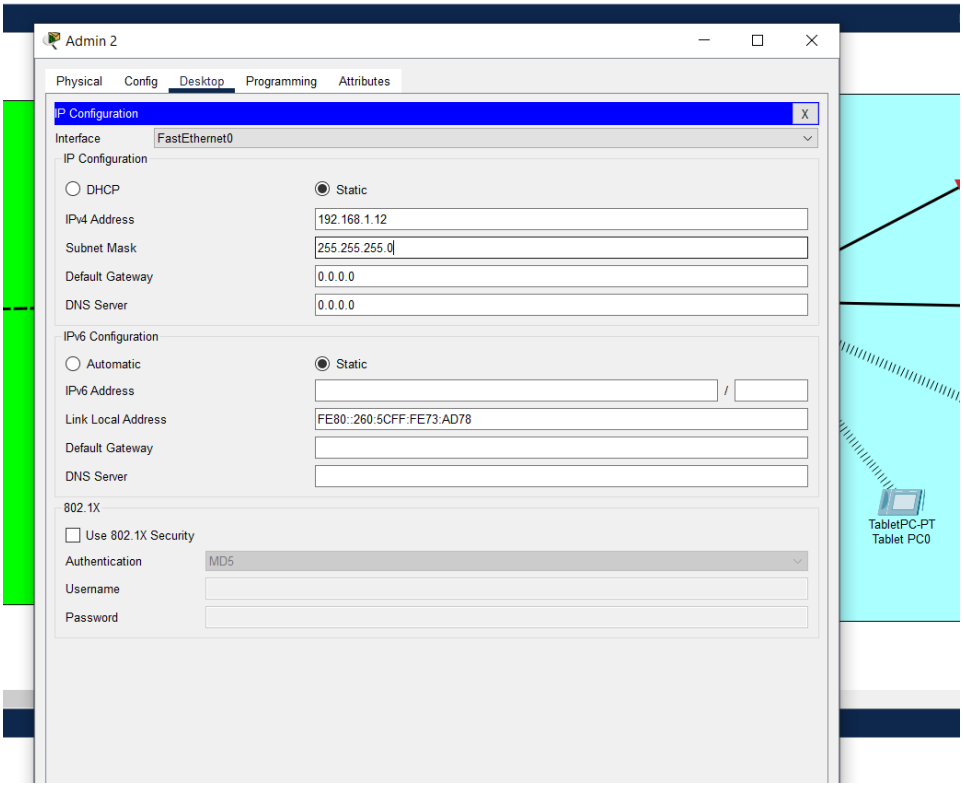
2. **Configuration des adresses IP ;**

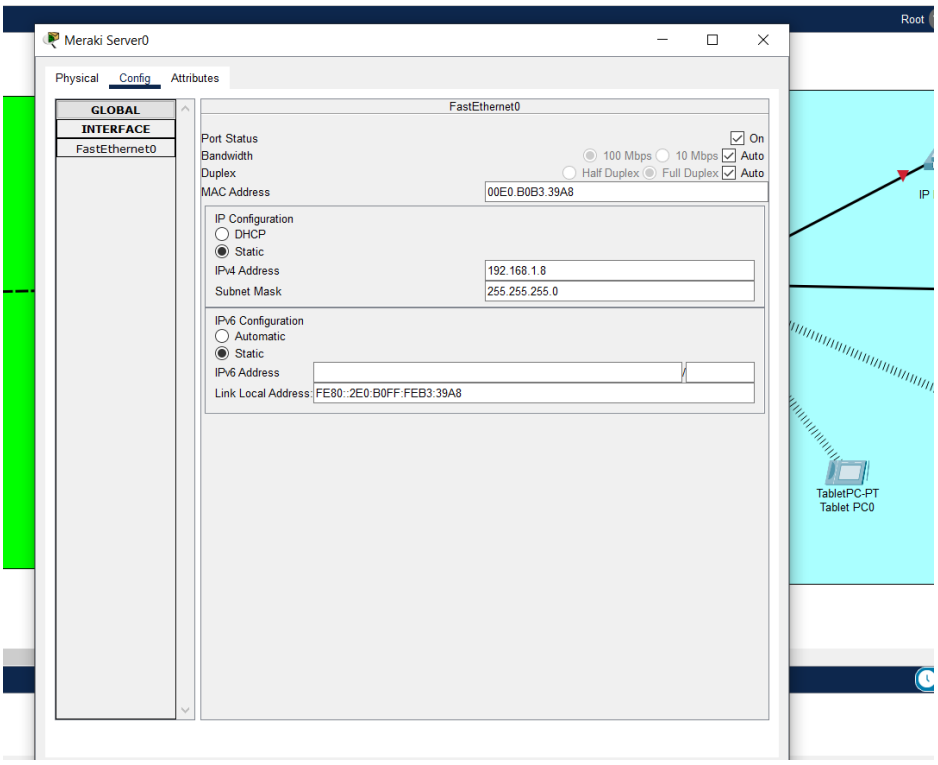


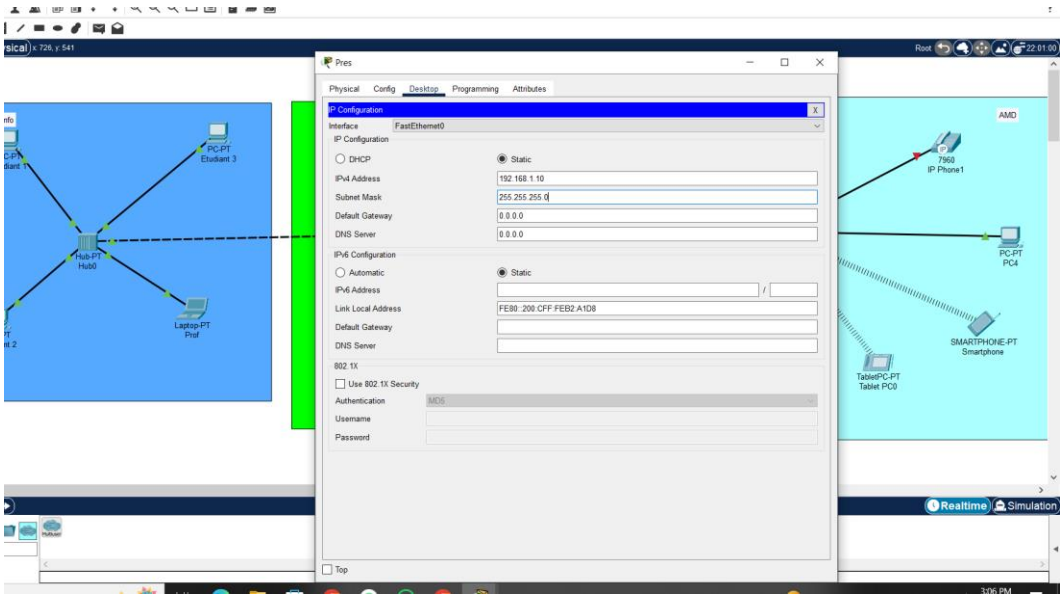

Etudiant 2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
DHCP
Static
IPv4 Address
192.168.1.4
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::20A:41FF:FE2C:6B54
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
PC-PT Etudiant 1
PC-PT Etudiant 3
Hub-PT Hub0
PC-PT Etudiant 2
Laptop-PT Prof
AMD
7960 IP Phone1
PC-PT PC4
SMARTPHONE-PT Smartphone
TabletPC-PT Tablet PC0

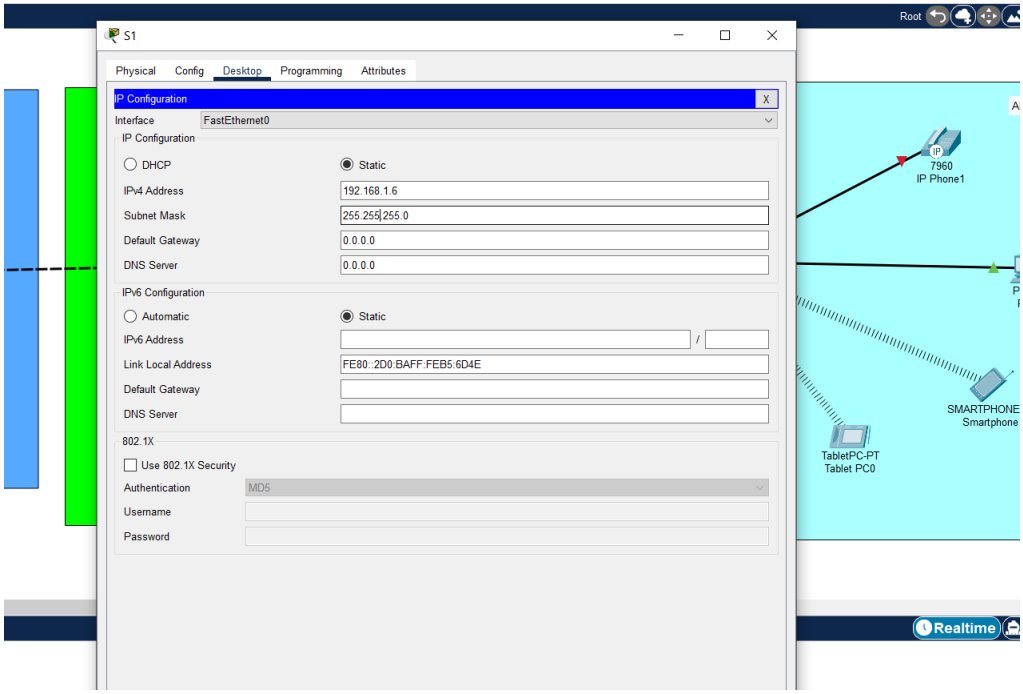

Etudiant 3
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
DHCP
Static
IPv4 Address
192.168.1.5
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::2D0:BCFF:FE8A:1C05
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
PC-PT Etudiant 3
Hub-PT Hub0
Laptop-PT Prof
7960 IP Phone1
TabletPC-PT Tablet PC0

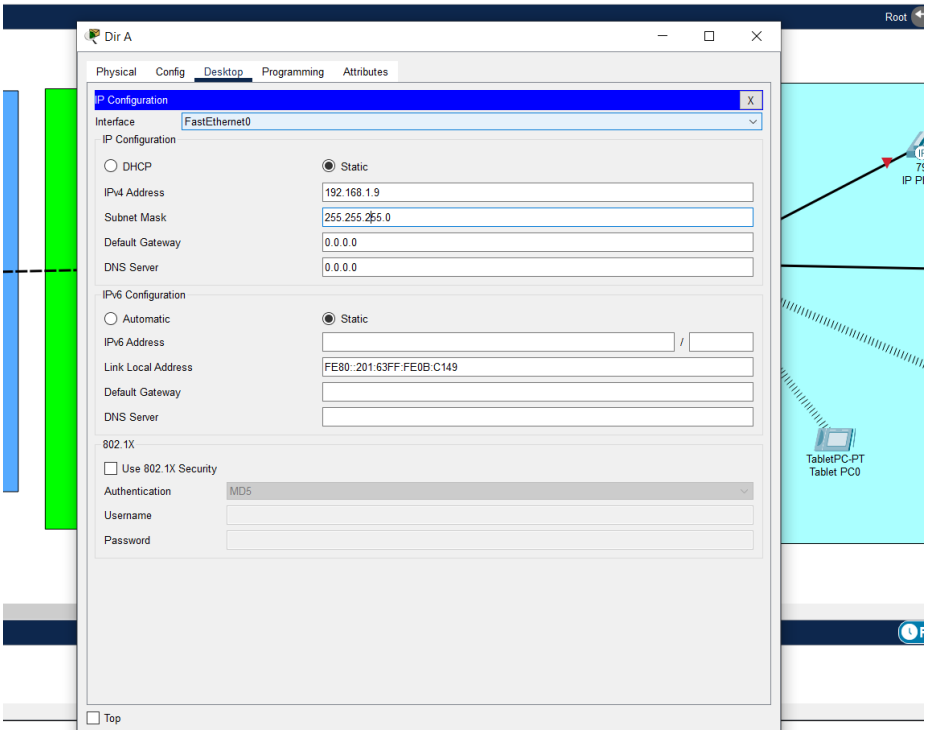

Etudiant 1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::2E0:F7FF:FE87:7199
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top
TabletPC-PT Tablet PC0

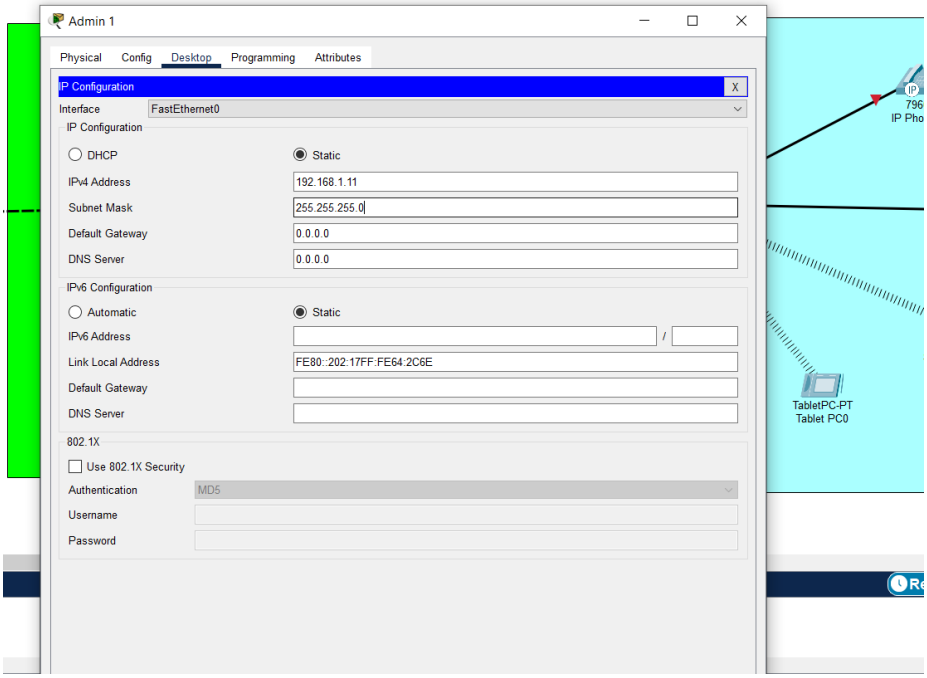

Admin 2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.12
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::260:5CFF:FE73:AD78
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
TabletPC-PT
Tablet PC0


Root
Meraki Server0
Physical
Config
Attributes
GLOBAL
INTERFACE
FastEthernet0
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
00E0.B0B3.39A8
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.8
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::2E0:B0FF:FEB3:39A8
TabletPC-PT
Tablet PC0

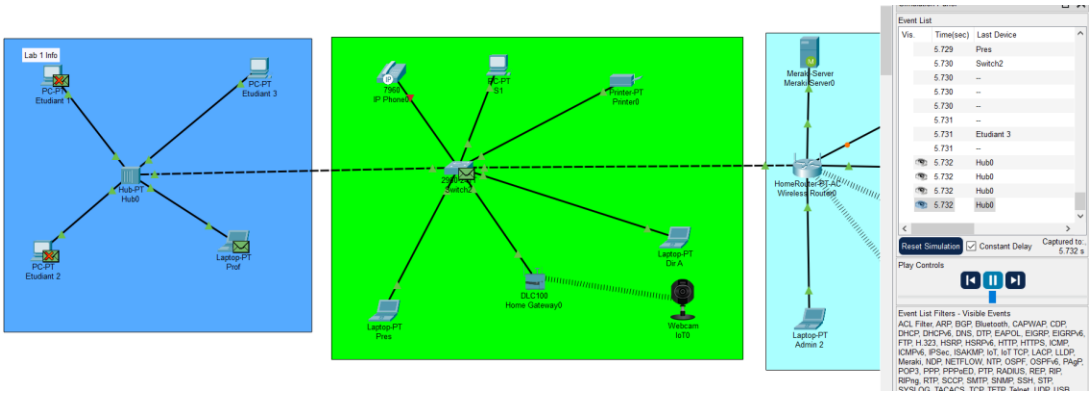

Pres
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
DHCP
Static
IPv4 Address
192.168.1.10
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::200:CFF:FEB2:A1D8
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top
PC-PT
Etudiant 3
Hub-PT
Hub0
Laptop-PT
Prof
AMD
7960
IP Phone1
PC-PT
PC4
SMARTPHONE-PT
Smartphone
TabletPC-PT
Tablet PC0
Realtime
Simulation

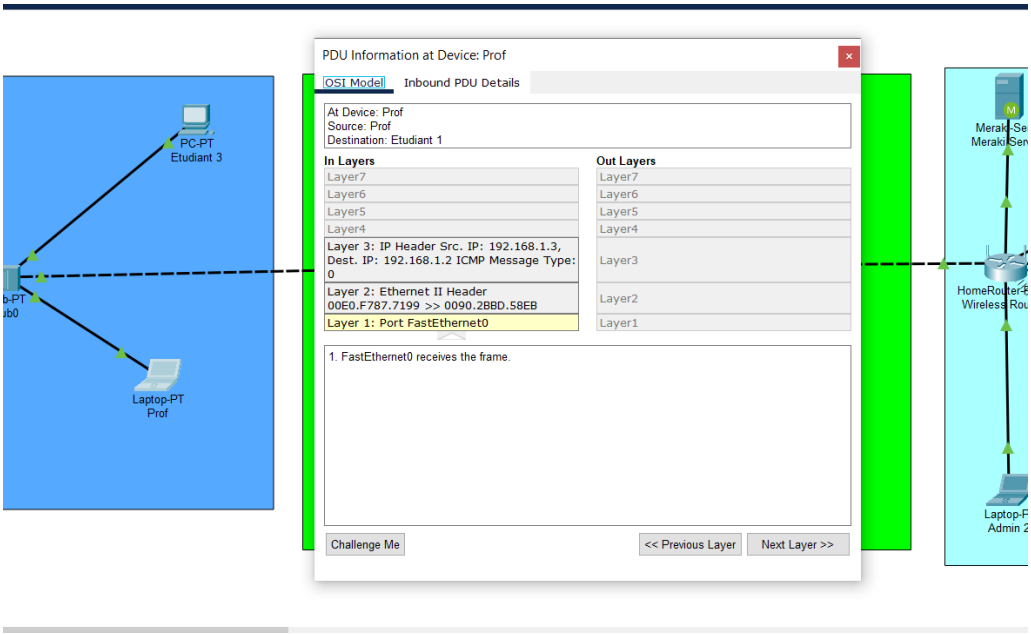

S1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
DHCP
Static
IPv4 Address
192.168.1.6
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::2D0:BAFF:FEB5:6D4E
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Root
7960
IP Phone1
SMARTPHONE
Smartphone
TabletPC-PT
Tablet PC0
Realtime

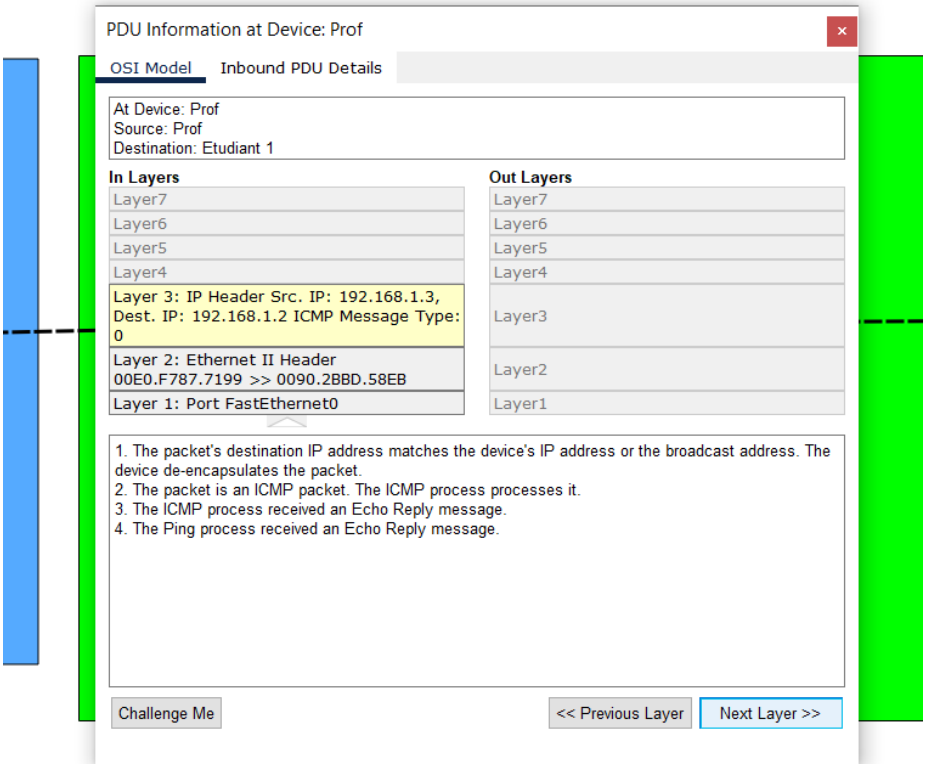

Root
Dir A
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.9
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::201:63FF:FE0B:C149
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top
TabletPC-PT
Tablet PC0

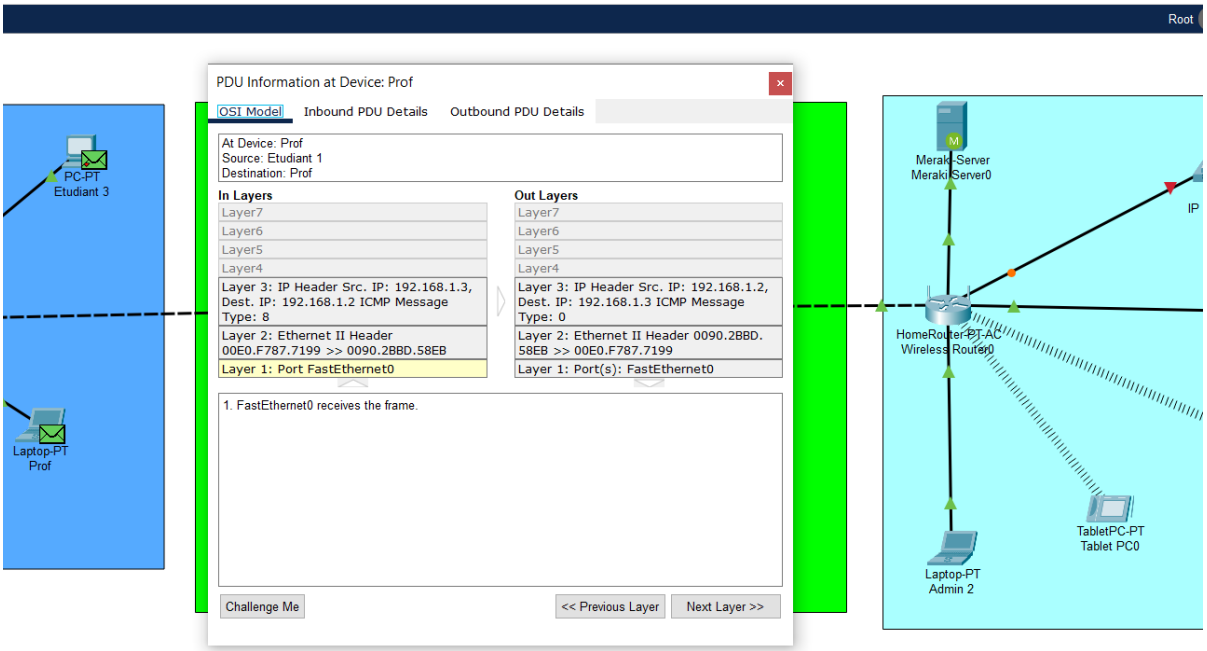

Admin 1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.11
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::202:17FF:FE64:2C6E
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
TabletPC-PT
Tablet PC0

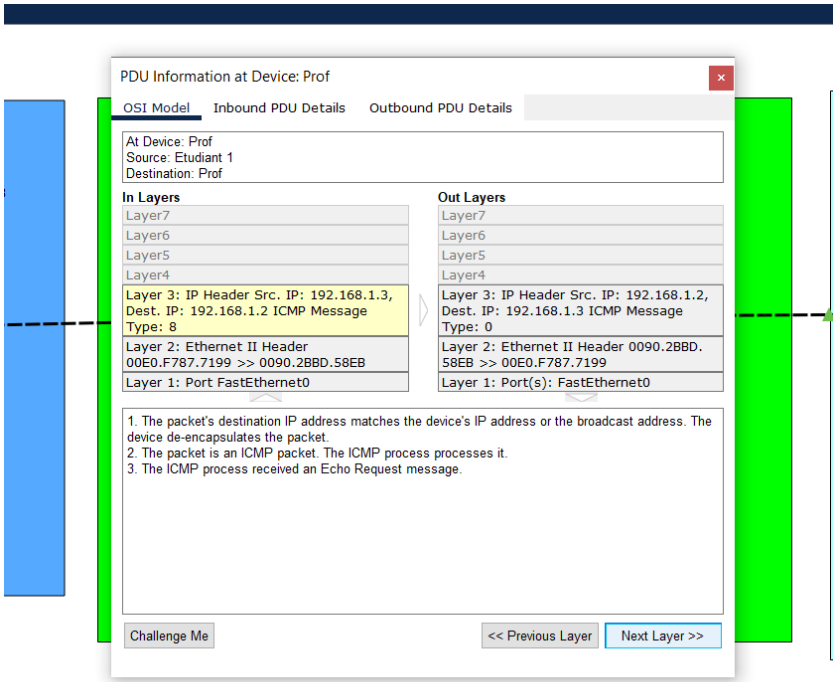
3. Observation des paquets en simulations ;

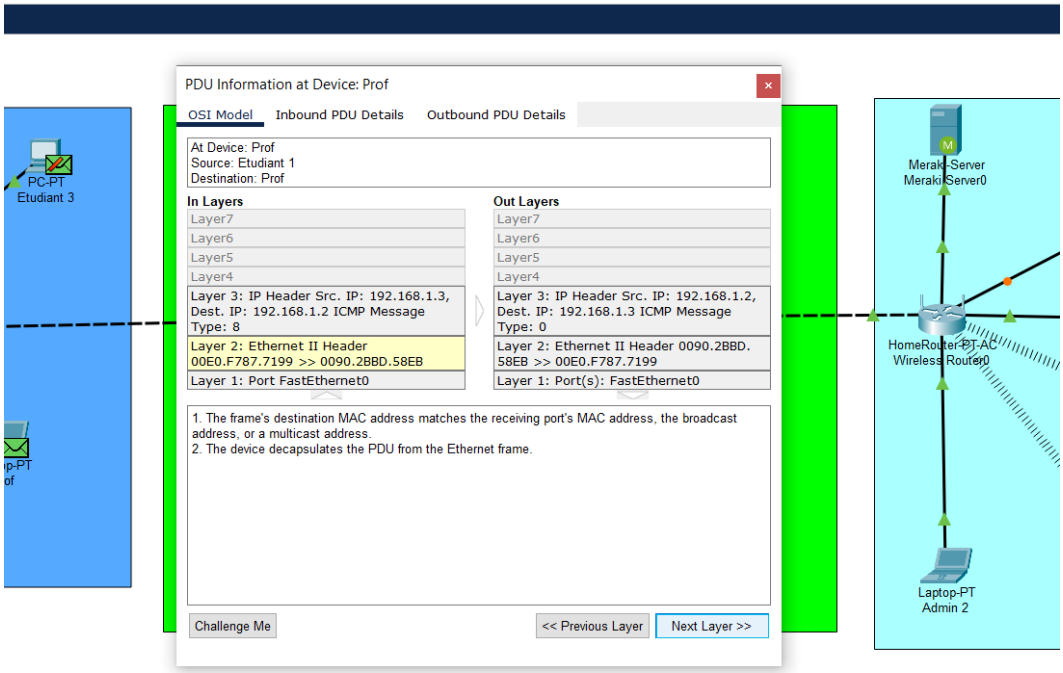


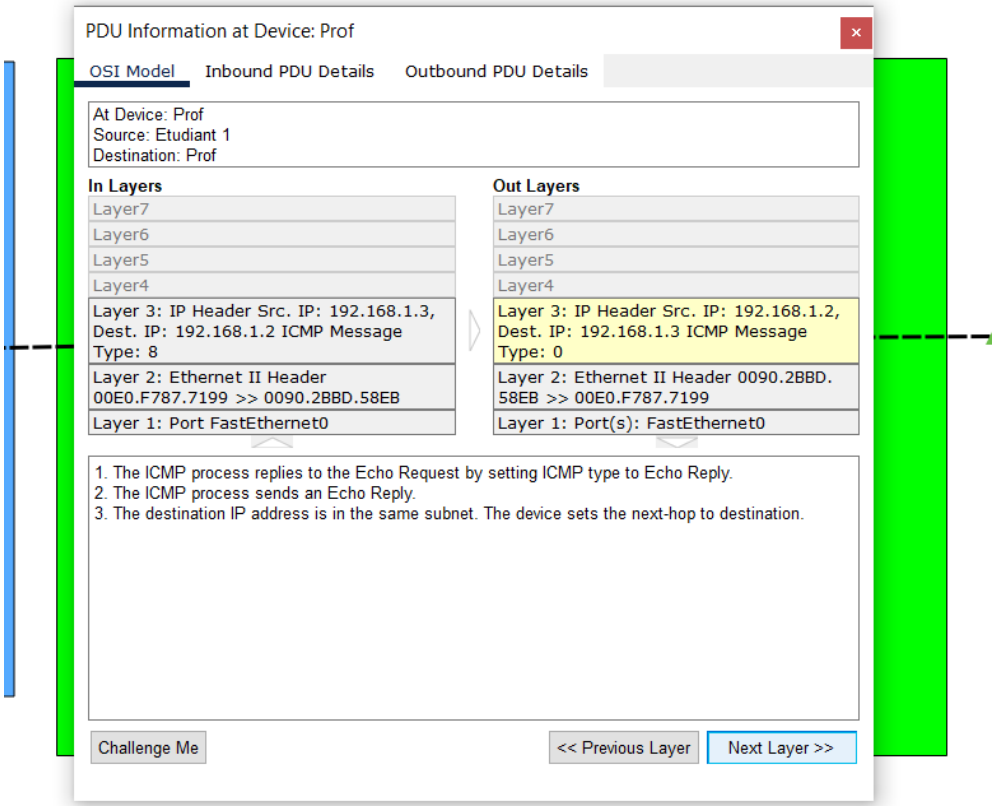


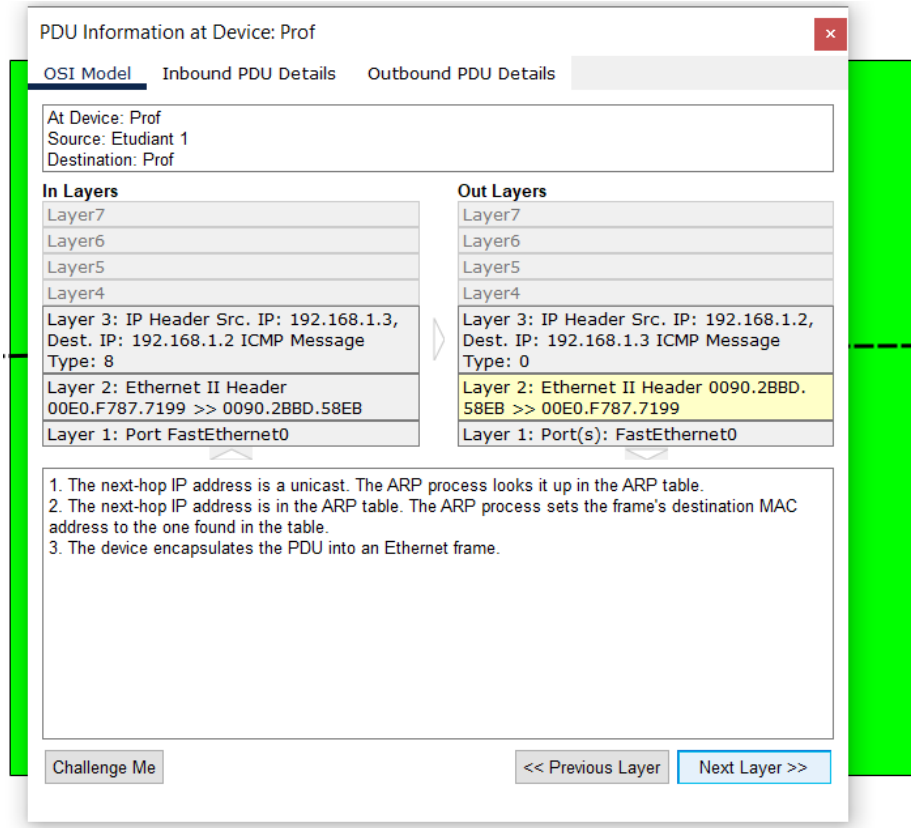

PDU Information at Device: Prof
OSI Model
Inbound PDU Details
At Device: Prof
Source: Prof
Destination: Etudiant 1
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.2 ICMP Message Type: 0
Layer3
Layer 2: Ethernet II Header 00E0.F787.7199 >> 0090.2BBD.58EB
Layer2
Layer 1: Port FastEthernet0
Layer1
1. The packet's destination IP address matches the device's IP address or the broadcast address. The device de-encapsulates the packet.
2. The packet is an ICMP packet. The ICMP process processes it.
3. The ICMP process received an Echo Reply message.
4. The Ping process received an Echo Reply message.
Challenge Me
<< Previous Layer
Next Layer >>

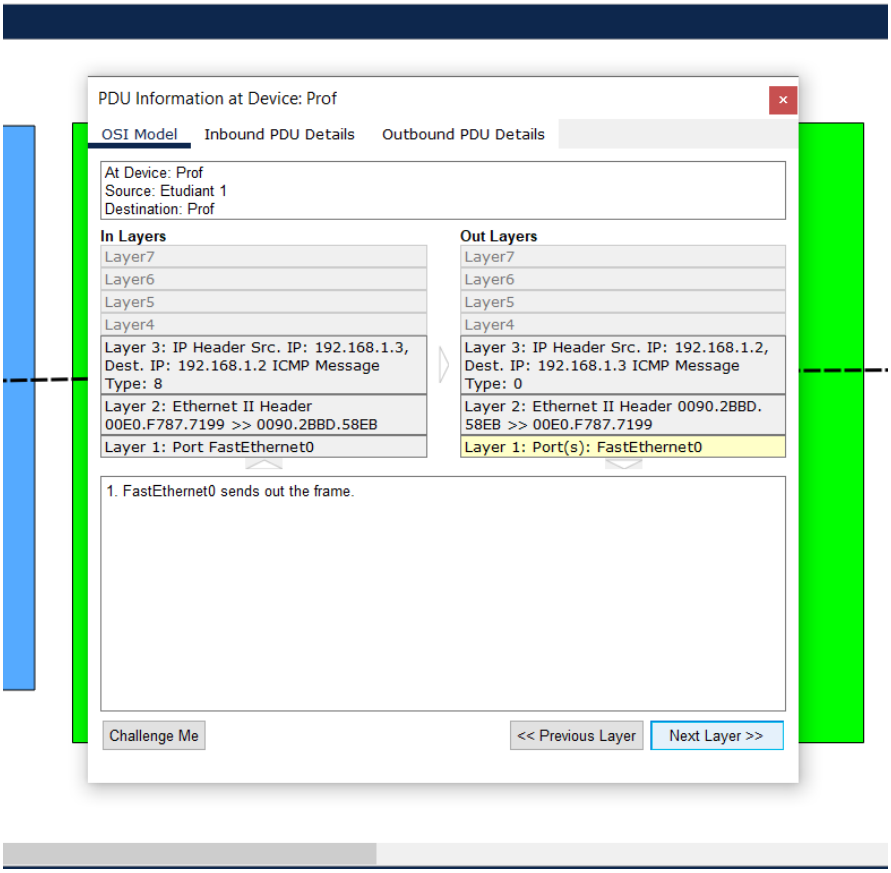

Root
PDU Information at Device: Prof
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Prof
Source: Etudiant 1
Destination: Prof
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.2 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3 ICMP Message Type: 0
Layer 2: Ethernet II Header 00E0.F787.7199 >> 0090.2BBD.58EB
Layer 2: Ethernet II Header 0090.2BBD.58EB >> 00E0.F787.7199
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. FastEthernet0 receives the frame.
Challenge Me
<< Previous Layer
Next Layer >>
PC-PT Etudiant 3
Laptop-PT Prof
Meraki-Server Meraki Server0
HomeRouter-PT-AC Wireless Router0
TabletPC-PT Tablet PC0
Laptop-PT Admin 2

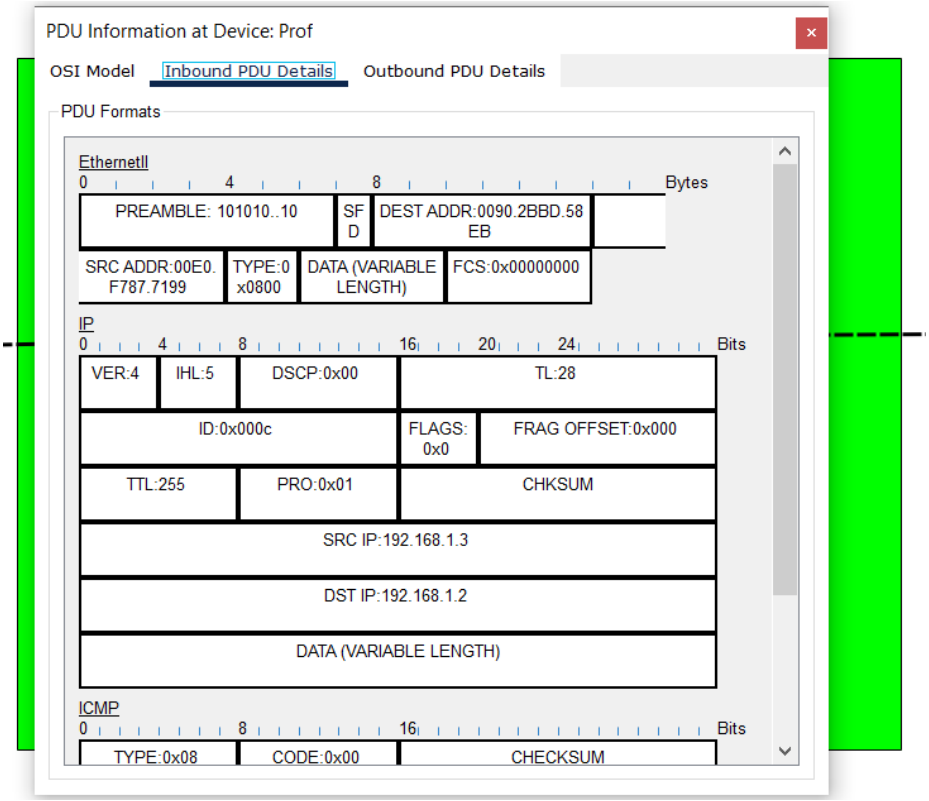

PDU Information at Device: Prof
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Prof
Source: Etudiant 1
Destination: Prof
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.2 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3 ICMP Message Type: 0
Layer 2: Ethernet II Header 00E0.F787.7199 >> 0090.2BBD.58EB
Layer 2: Ethernet II Header 0090.2BBD.58EB >> 00E0.F787.7199
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. The packet's destination IP address matches the device's IP address or the broadcast address. The device de-encapsulates the packet.
2. The packet is an ICMP packet. The ICMP process processes it.
3. The ICMP process received an Echo Request message.
Challenge Me
<< Previous Layer
Next Layer >>

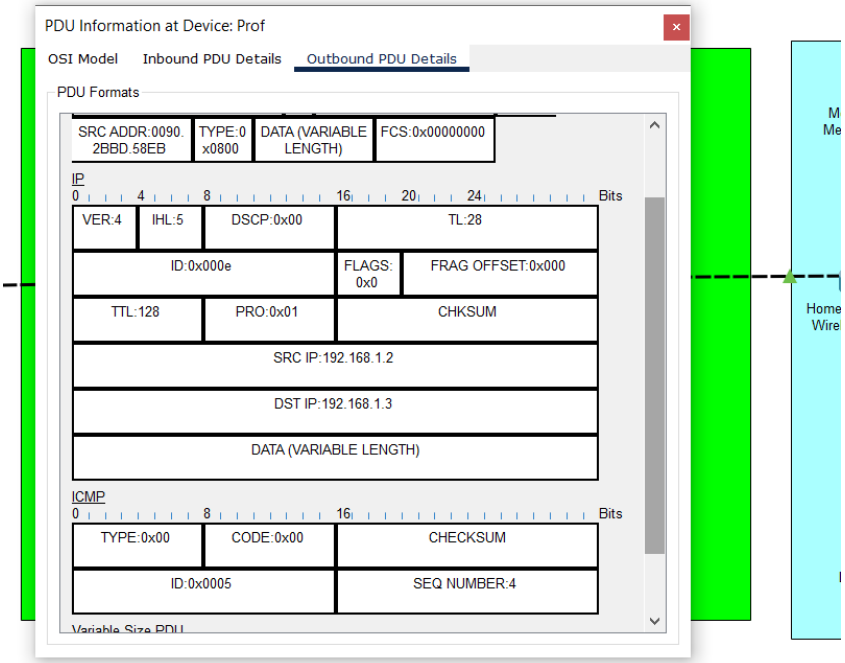

PDU Information at Device: Prof
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Prof
Source: Etudiant 1
Destination: Prof
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.2 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3 ICMP Message Type: 0
Layer 2: Ethernet II Header 00E0.F787.7199 >> 0090.2BBD.58EB
Layer 2: Ethernet II Header 0090.2BBD.58EB >> 00E0.F787.7199
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. The frame's destination MAC address matches the receiving port's MAC address, the broadcast address, or a multicast address.
2. The device decapsulates the PDU from the Ethernet frame.
Challenge Me
<< Previous Layer
Next Layer >>
PC-PT
Etudiant 3
Meraki-Server
Meraki-Server0
HomeRouter-PT-AC
Wireless Router0
Laptop-PT
Admin 2

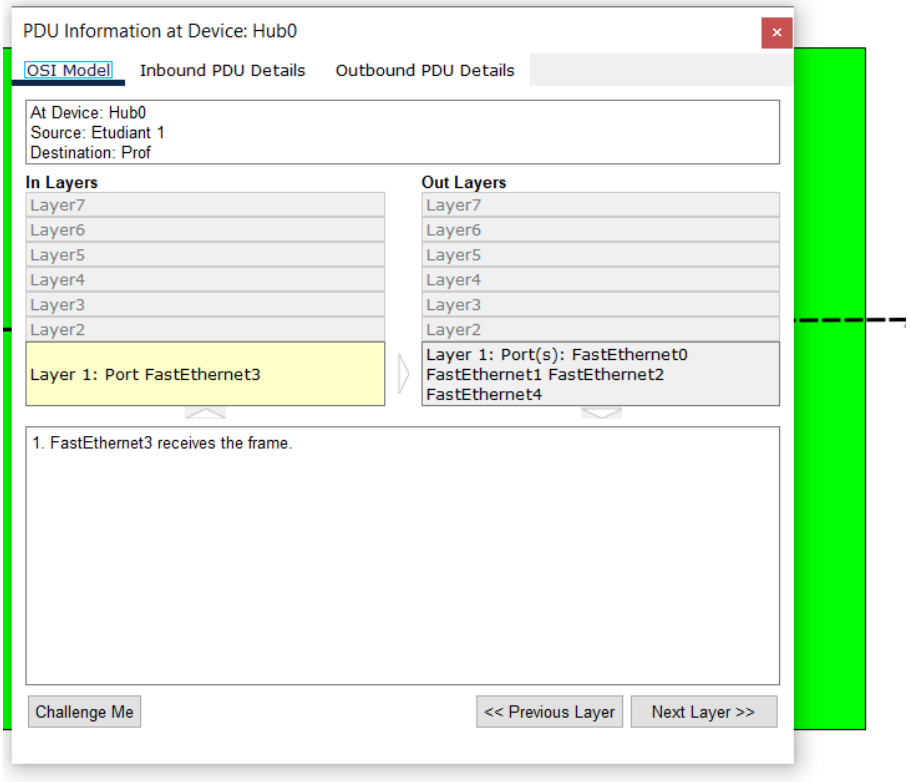

PDU Information at Device: Prof
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Prof
Source: Etudiant 1
Destination: Prof
In Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.2 ICMP Message Type: 8
Layer 2: Ethernet II Header 00E0.F787.7199 >> 0090.2BBD.58EB
Layer 1: Port FastEthernet0
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3 ICMP Message Type: 0
Layer 2: Ethernet II Header 0090.2BBD.58EB >> 00E0.F787.7199
Layer 1: Port(s): FastEthernet0
1. The ICMP process replies to the Echo Request by setting ICMP type to Echo Reply.
2. The ICMP process sends an Echo Reply.
3. The destination IP address is in the same subnet. The device sets the next-hop to destination.
Challenge Me
<< Previous Layer
Next Layer >>

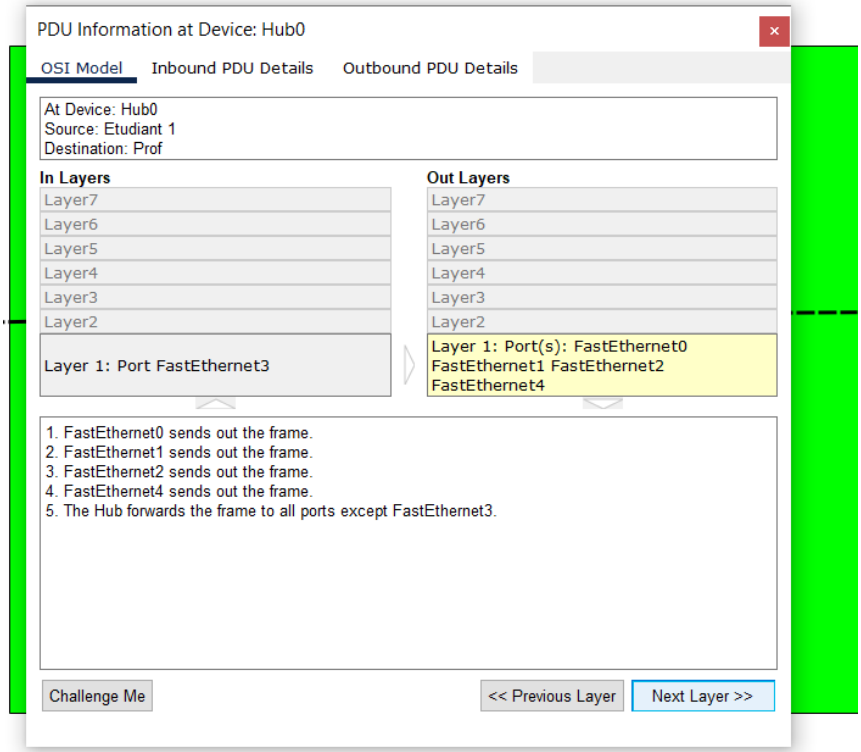

PDU Information at Device: Prof
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Prof
Source: Etudiant 1
Destination: Prof
In Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.2 ICMP Message Type: 8
Layer 2: Ethernet II Header 00E0.F787.7199 >> 0090.2BBD.58EB
Layer 1: Port FastEthernet0
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3 ICMP Message Type: 0
Layer 2: Ethernet II Header 0090.2BBD.58EB >> 00E0.F787.7199
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 >>

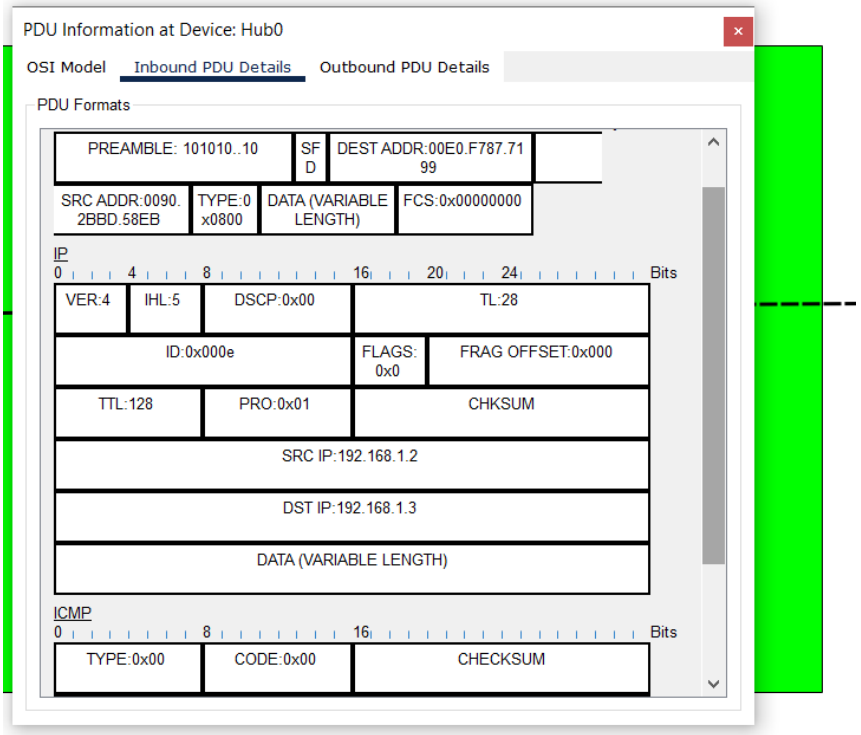

PDU Information at Device: Prof
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Prof
Source: Etudiant 1
Destination: Prof
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.2 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3 ICMP Message Type: 0
Layer 2: Ethernet II Header 00E0.F787.7199 >> 0090.2BBD.58EB
Layer 2: Ethernet II Header 0090.2BBD.58EB >> 00E0.F787.7199
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. FastEthernet0 sends out the frame.
Challenge Me
<< Previous Layer
Next Layer >>

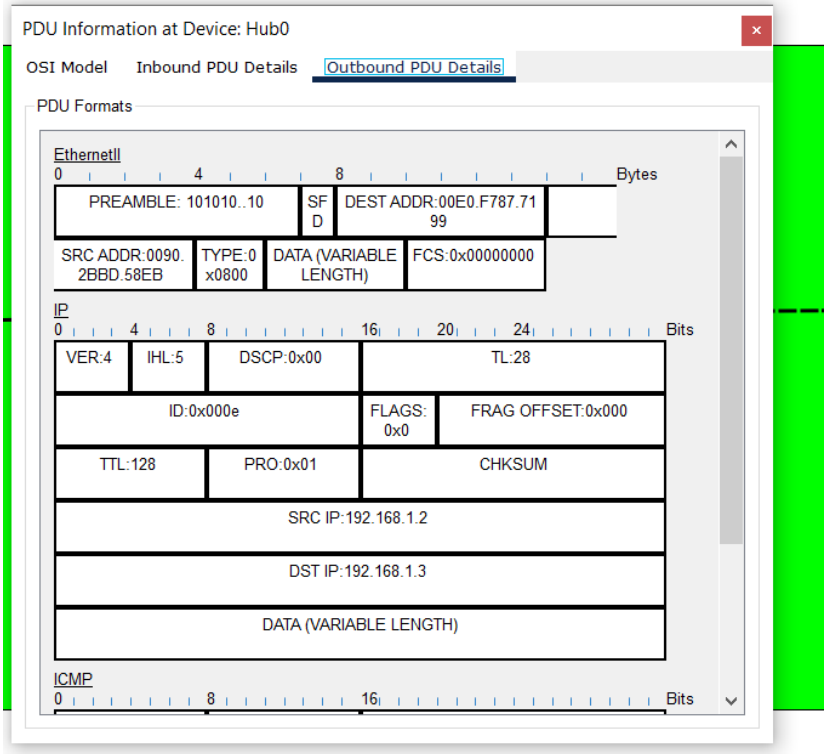

PDU Information at Device: Prof
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
0 4 8 Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:0090.2BBD.58EB
SRC ADDR:00E0.F787.7199
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0 4 8 16 20 24 Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x000c
FLAGS:0x0
FRAG OFFSET:0x000
TTL:255
PRO:0x01
CHKSUM
SRC IP:192.168.1.3
DST IP:192.168.1.2
DATA (VARIABLE LENGTH)
ICMP
0 8 16 Bits
TYPE:0x08
CODE:0x00
CHECKSUM

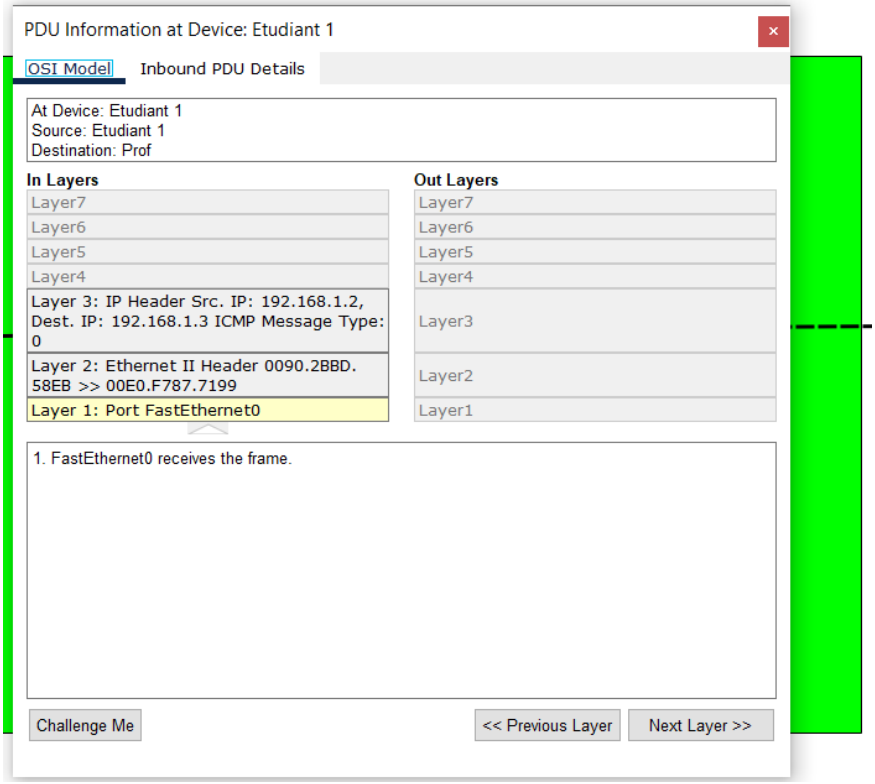

PDU Information at Device: Prof
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
SRC ADDR:0090 2BBD.58EB
TYPE:0 x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0 4 8 16 20 24 Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x000e
FLAGS: 0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:192.168.1.2
DST IP:192.168.1.3
DATA (VARIABLE LENGTH)
ICMP
0 8 16 Bits
TYPE:0x00
CODE:0x00
CHECKSUM
ID:0x0005
SEQ NUMBER:4
Variable Size PDU

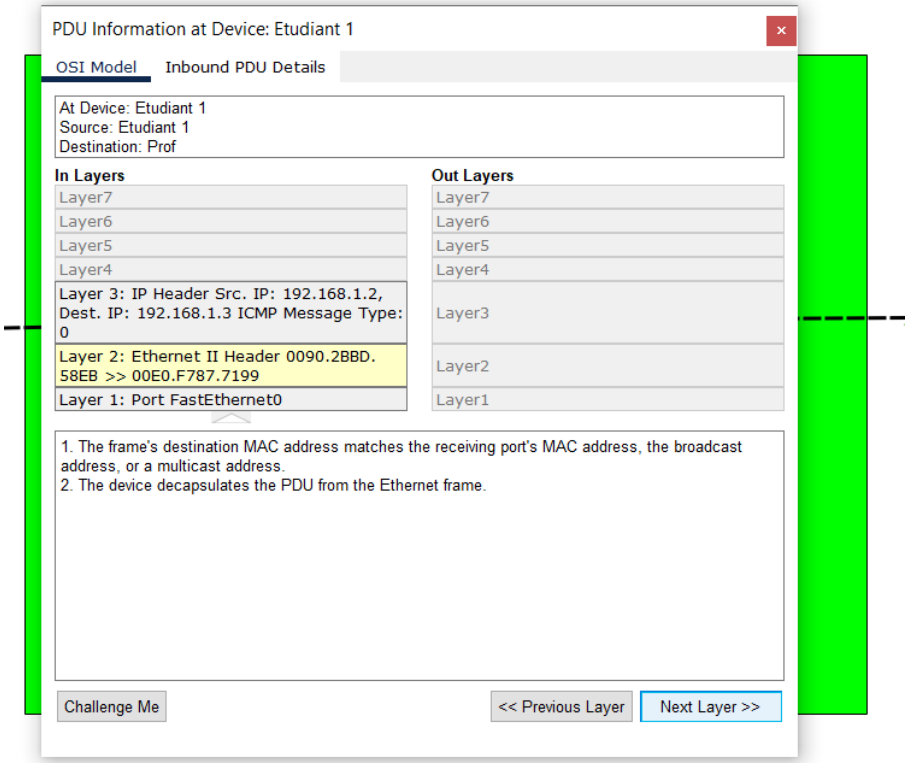

PDU Information at Device: Hub0
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Hub0
Source: Etudiant 1
Destination: Prof
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer3
Layer2
Layer 1: Port FastEthernet3
Layer 1: Port(s): FastEthernet0 FastEthernet1 FastEthernet2 FastEthernet4
1. FastEthernet3 receives the frame.
Challenge Me
<< Previous Layer
Next Layer >>

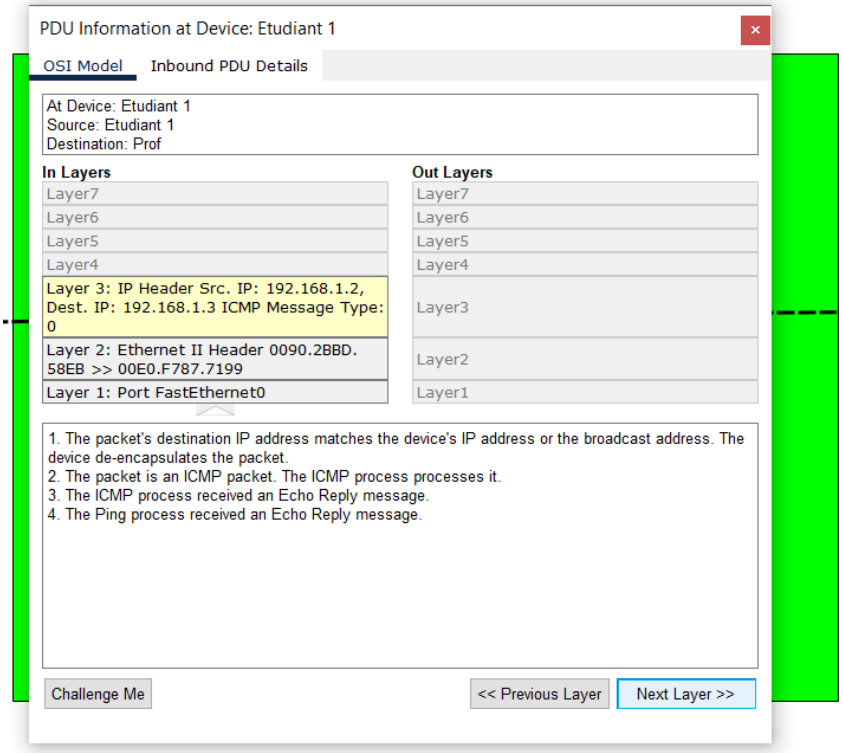

PDU Information at Device: Hub0
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Hub0
Source: Etudiant 1
Destination: Prof
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer3
Layer2
Layer 1: Port FastEthernet3
Layer 1: Port(s): FastEthernet0 FastEthernet1 FastEthernet2 FastEthernet4
1. FastEthernet0 sends out the frame.
2. FastEthernet1 sends out the frame.
3. FastEthernet2 sends out the frame.
4. FastEthernet4 sends out the frame.
5. The Hub forwards the frame to all ports except FastEthernet3.
Challenge Me
<< Previous Layer
Next Layer >>

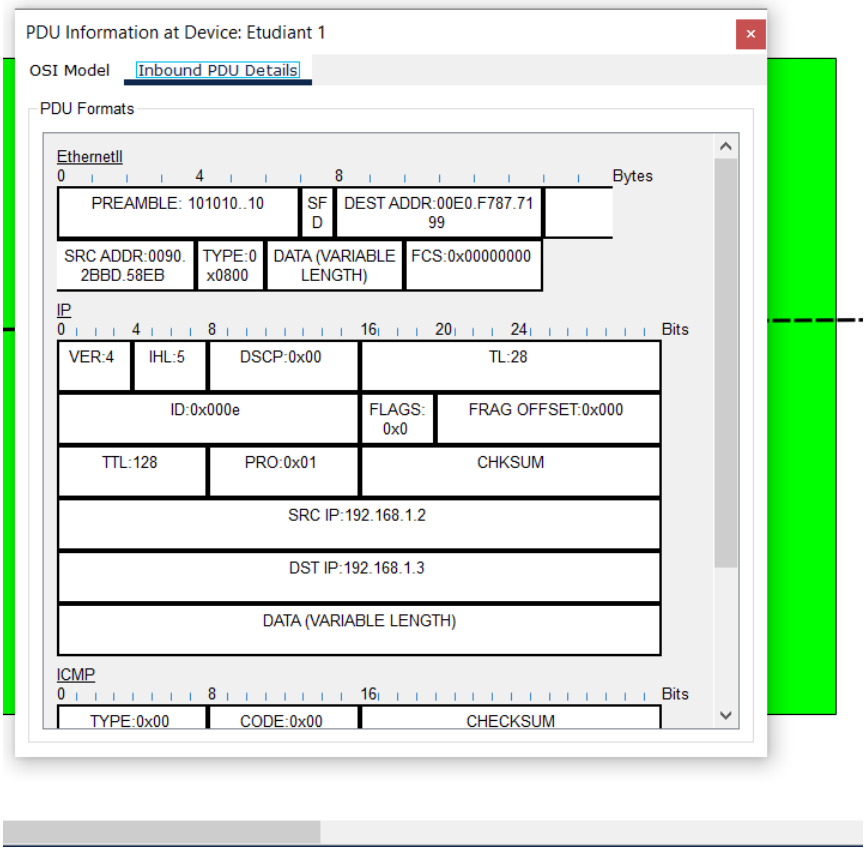

PDU Information at Device: Hub0
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
PREAMBLE: 101010..10
SFD
DEST ADDR:00E0.F787.7199
SRC ADDR:0090.2BBD.58EB
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0 4 8 16 20 24 Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x000e
FLAGS:0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:192.168.1.2
DST IP:192.168.1.3
DATA (VARIABLE LENGTH)
ICMP
0 8 16 Bits
TYPE:0x00
CODE:0x00
CHECKSUM


PDU Information at Device: Hub0
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
0
4
8
Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:00E0.F787.7199
SRC ADDR:0090.2BBD.58EB
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0
4
8
16
20
24
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x000e
FLAGS:0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:192.168.1.2
DST IP:192.168.1.3
DATA (VARIABLE LENGTH)
ICMP
0
8
16
Bits

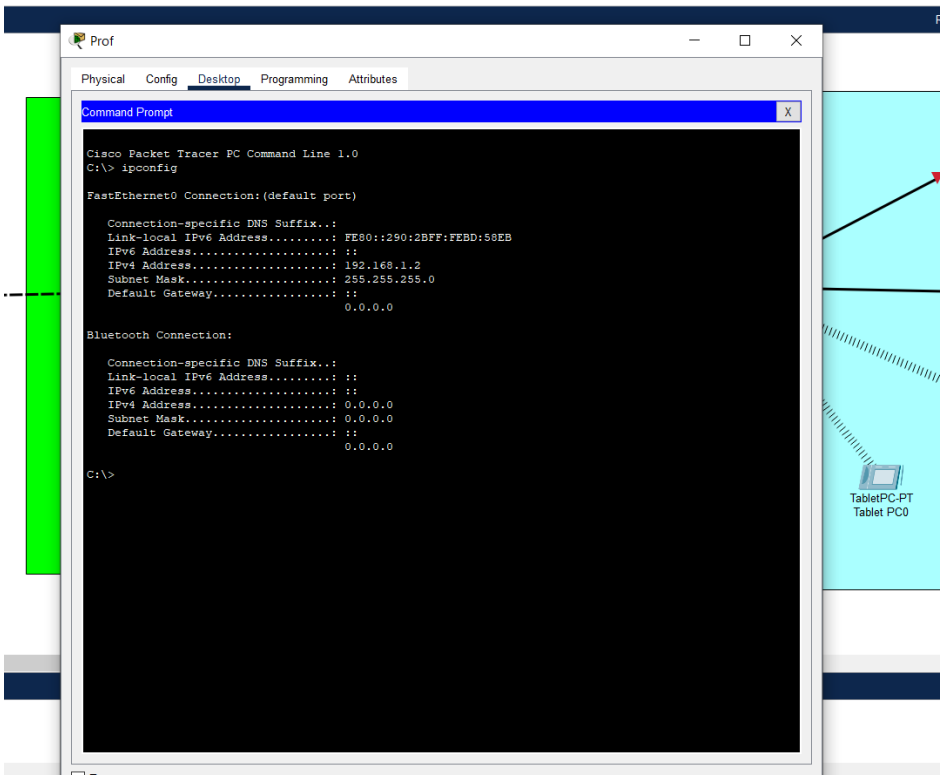

PDU Information at Device: Etudiant 1
OSI Model
Inbound PDU Details
At Device: Etudiant 1
Source: Etudiant 1
Destination: Prof
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3 ICMP Message Type: 0
Layer3
Layer 2: Ethernet II Header 0090.2BBD.58EB >> 00E0.F787.7199
Layer2
Layer 1: Port FastEthernet0
Layer1
1. FastEthernet0 receives the frame.
Challenge Me
<< Previous Layer
Next Layer >>

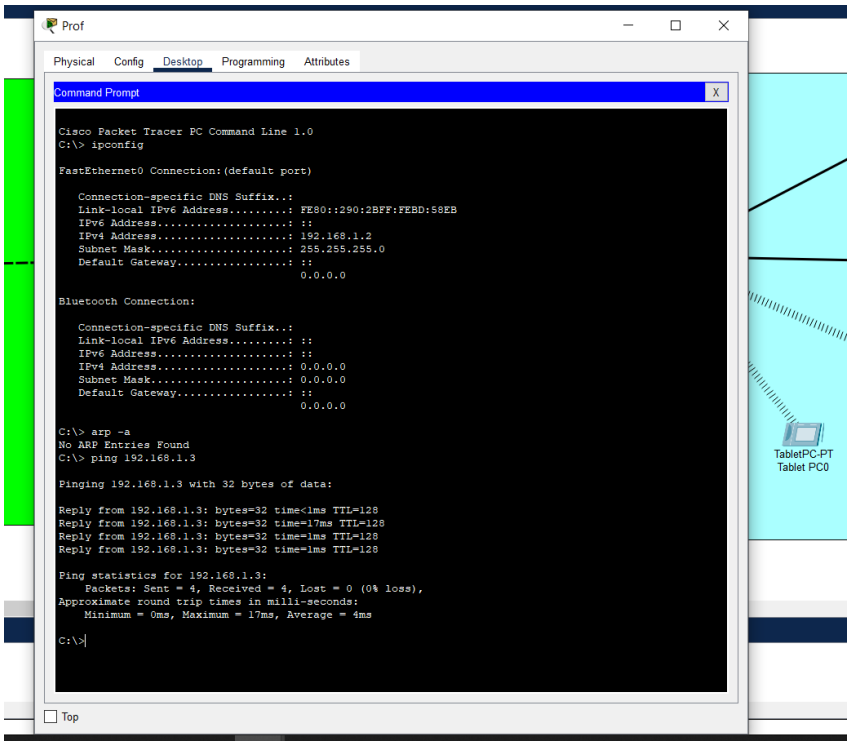

PDU Information at Device: Etudiant 1
OSI Model
Inbound PDU Details
At Device: Etudiant 1
Source: Etudiant 1
Destination: Prof
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3 ICMP Message Type: 0
Layer3
Layer 2: Ethernet II Header 0090.2BBD. 58EB >> 00E0.F787.7199
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 decapsulates the PDU from the Ethernet frame.
Challenge Me
<< Previous Layer
Next Layer >>

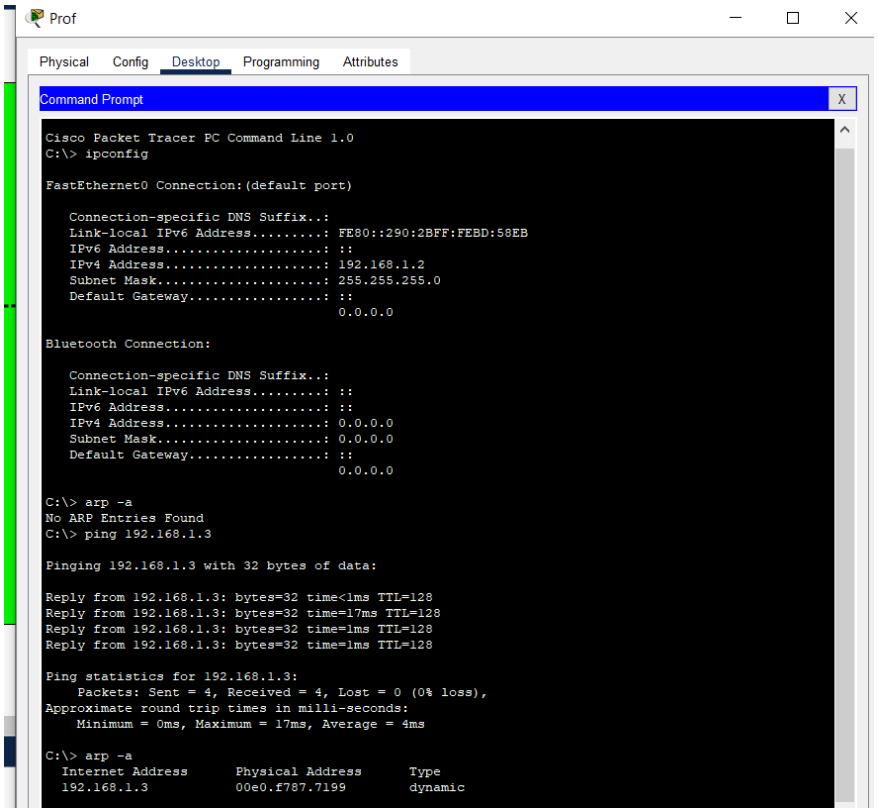

PDU Information at Device: Etudiant 1
OSI Model
Inbound PDU Details
At Device: Etudiant 1
Source: Etudiant 1
Destination: Prof
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3 ICMP Message Type: 0
Layer3
Layer 2: Ethernet II Header 0090.2BBD. 58EB >> 00E0.F787.7199
Layer2
Layer 1: Port FastEthernet0
Layer1
1. The packet's destination IP address matches the device's IP address or the broadcast address. The device de-encapsulates the packet.
2. The packet is an ICMP packet. The ICMP process processes it.
3. The ICMP process received an Echo Reply message.
4. The Ping process received an Echo Reply message.
Challenge Me
<< Previous Layer
Next Layer >>



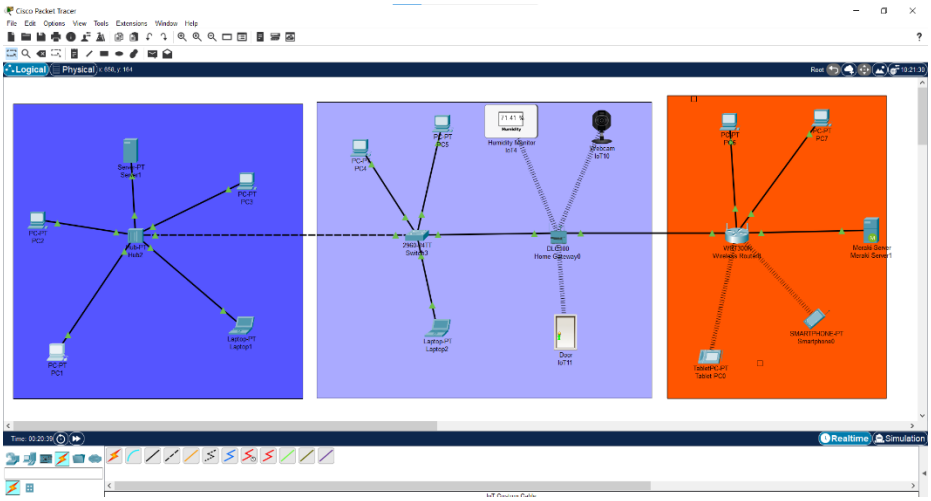
4. Observation des tables ARP.



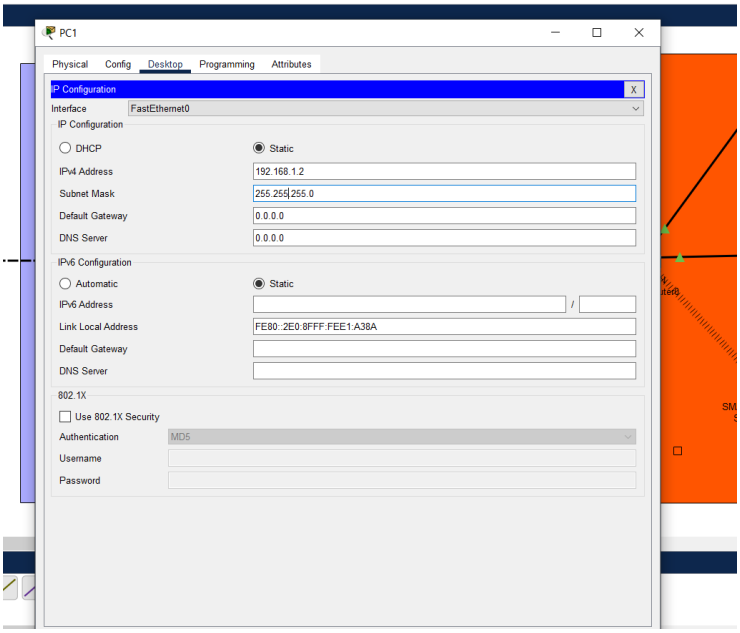

Prof
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\> ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::290:2BFF:FEBD:58EB
IPv6 Address.....: ::
IPv4 Address.....: 192.168.1.2
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:\> arp -a
No ARP Entries Found
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=17ms 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 = 17ms, Average = 4ms
C:\>
Top
TabletPC-PT
Tablet PC0

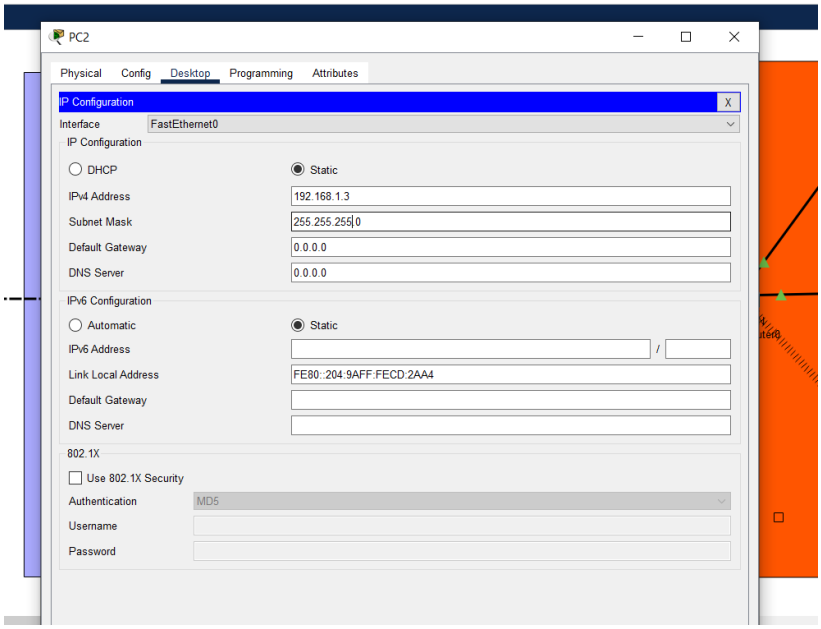

Prof
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\> ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::290:2BFF:FEBD:58EB
IPv6 Address.....: ::
IPv4 Address.....: 192.168.1.2
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:\> arp -a
No ARP Entries Found
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=17ms 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 = 17ms, Average = 4ms
C:\> arp -a
Internet Address Physical Address Type
192.168.1.3 00e0.f787.7199 dynamic

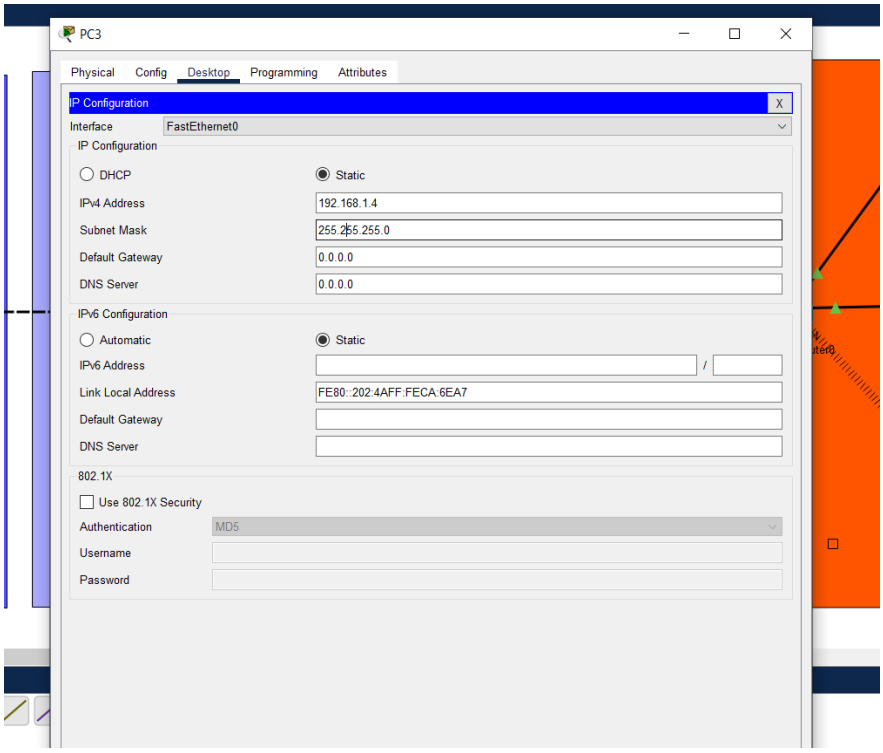
1. **Reproduire l'exécution du Cisco Packet Tracer ;**

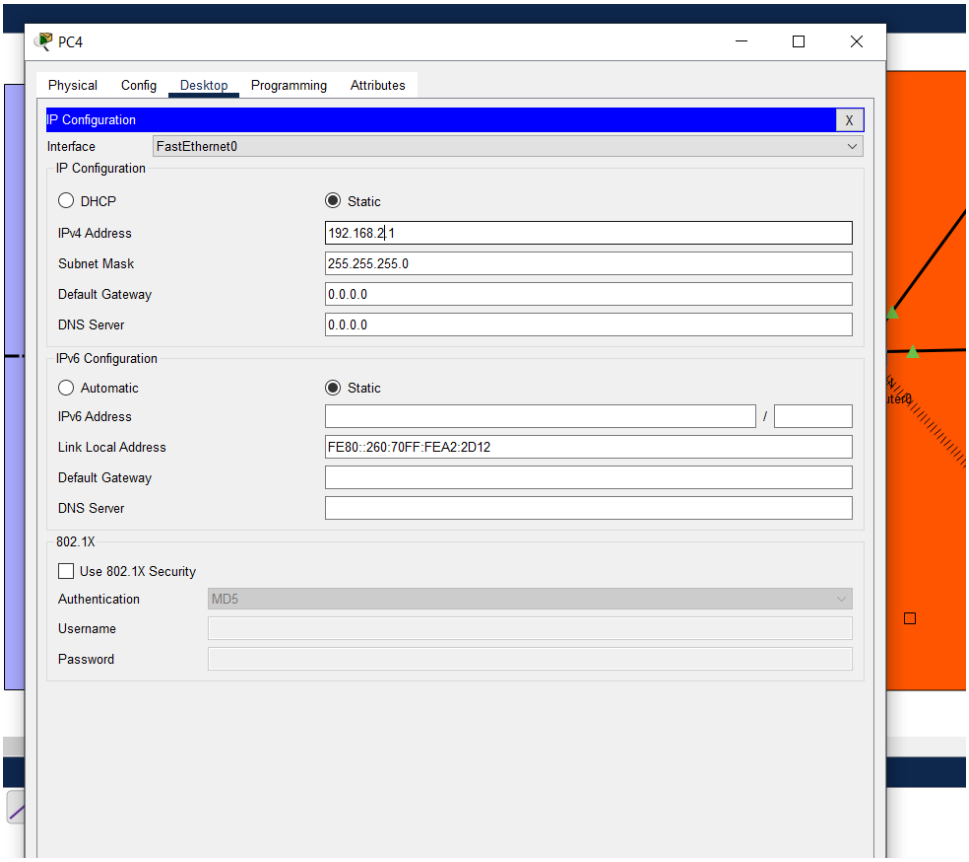


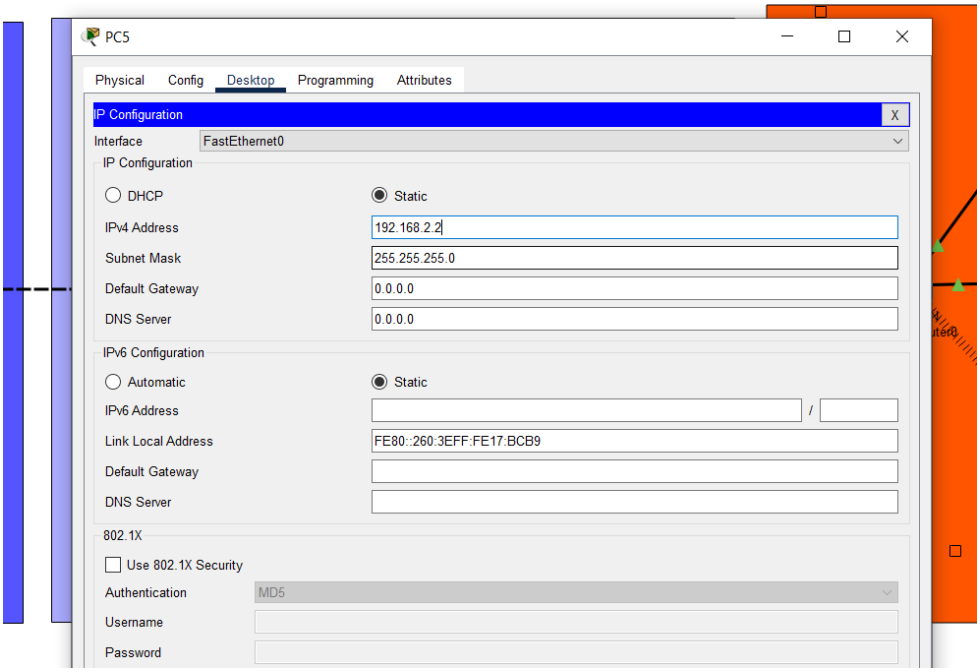
2. **Configuration des adresses IP;**

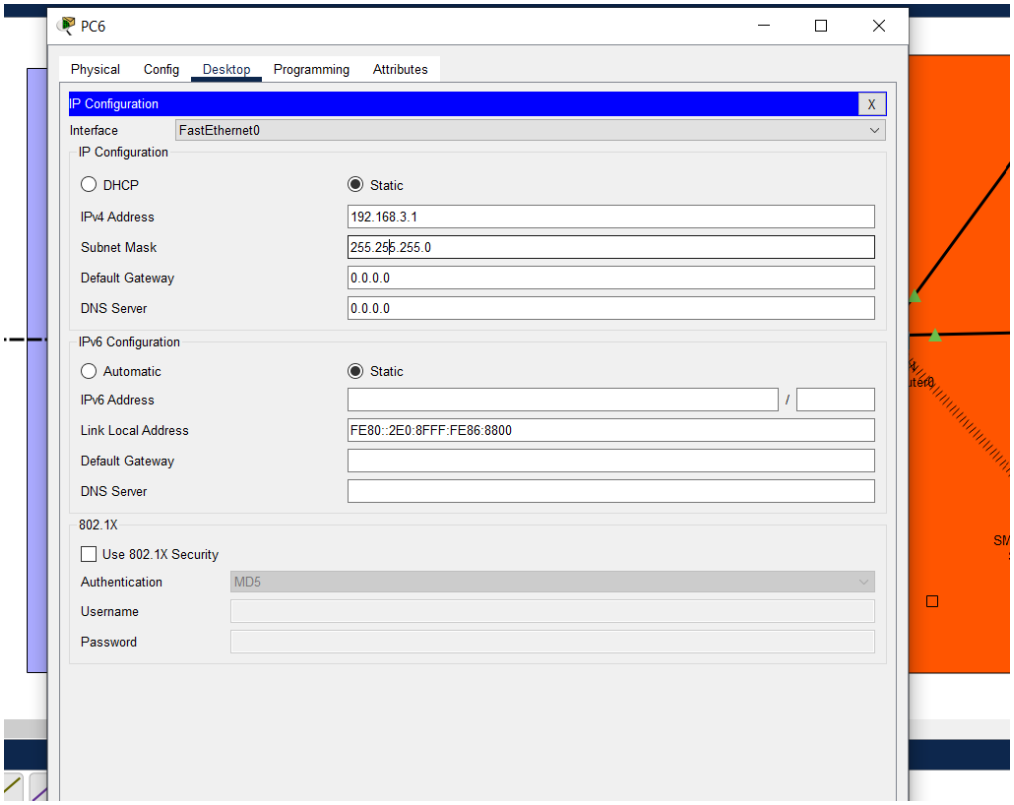


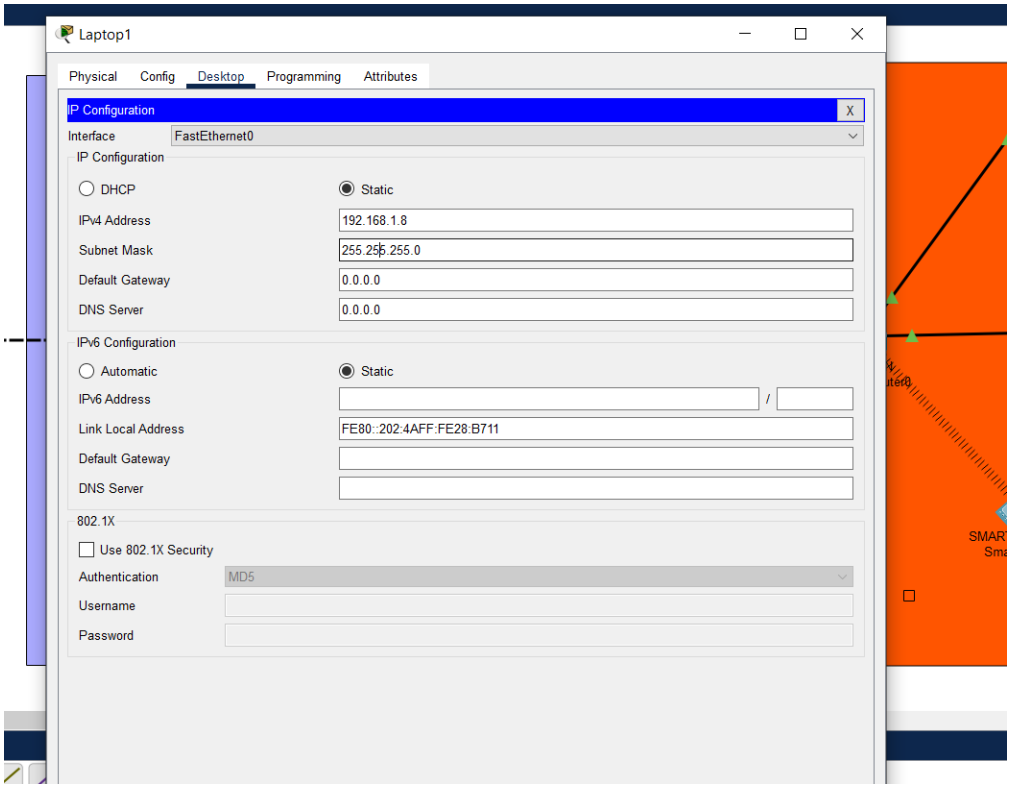

PC2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.3
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::204:9AFF:FECD:2AA4
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

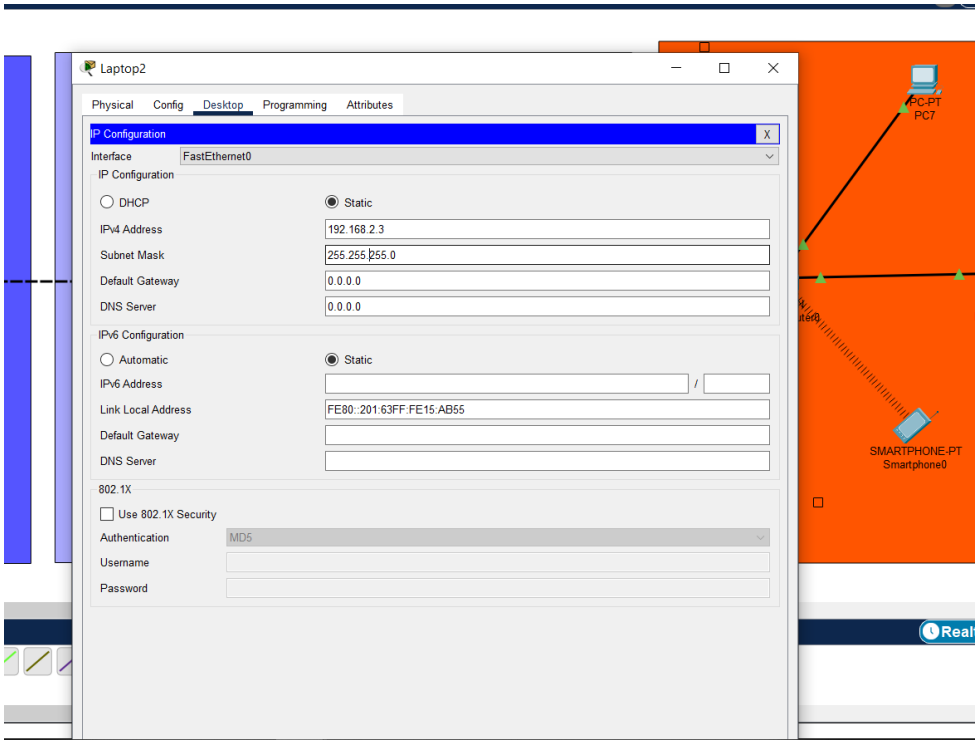

PC3
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.4
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::202:4AFF:FECA:6EA7
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

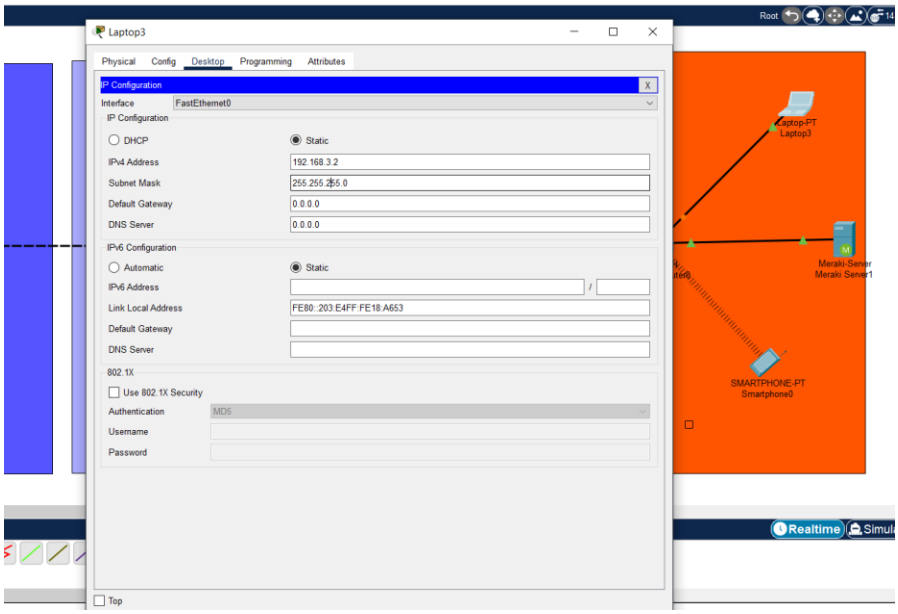

PC4
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.2.1
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::260:70FF:FEA2:2D12
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

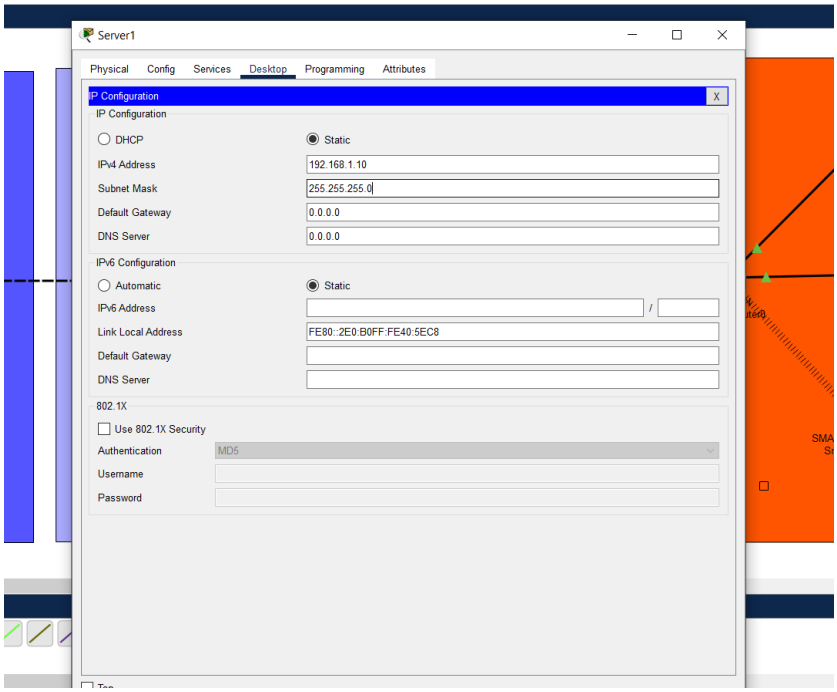

PC5
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.2.2
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::260:3EFF:FE17:BCB9
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::2E0:8FFF:FE86:8800
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

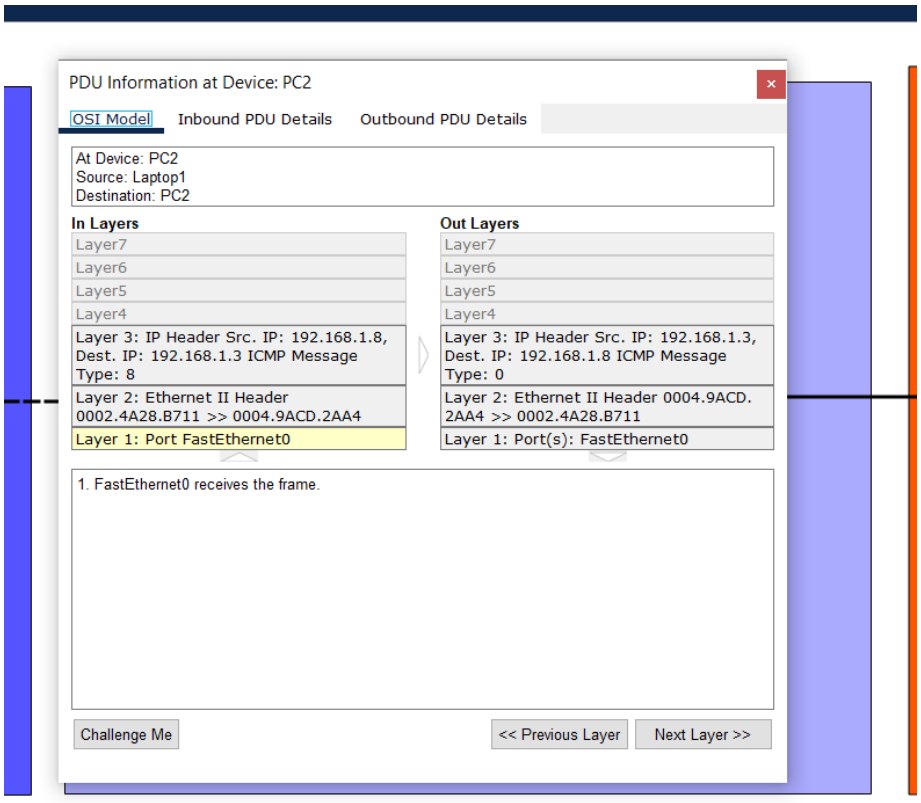

Laptop1
Physical
Config
Desktop
Programming
Attributes
IP Configuration
X
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.1.8
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::202:4AFF:FE28:B711
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password

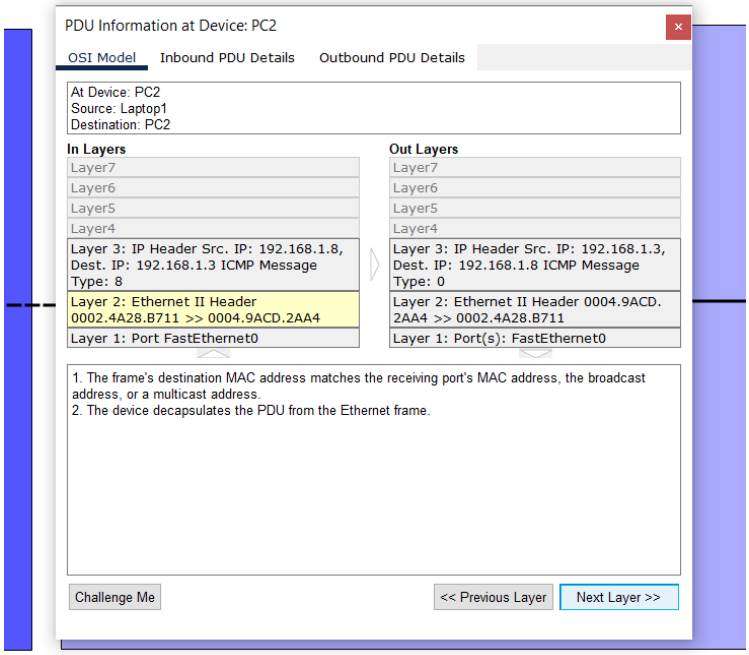

Laptop2
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.2.3
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::201:63FF:FE15:AB55
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
PC-PT
PC7
SMARTPHONE-PT
Smartphone0

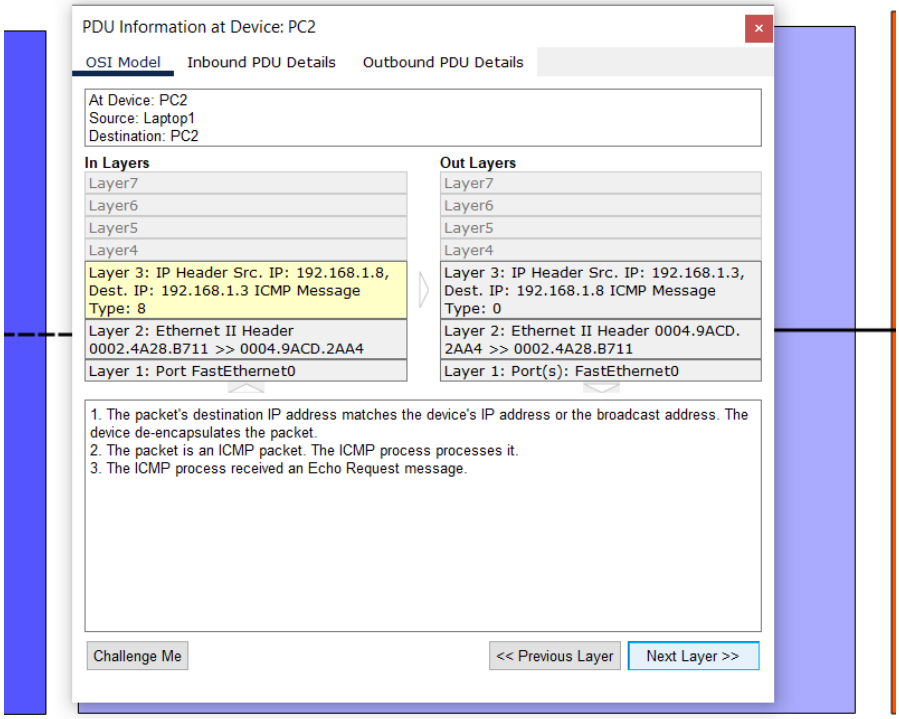

Laptop3
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
IPv4 Address
192.168.3.2
Subnet Mask
255.255.255.0
Default Gateway
0.0.0.0
DNS Server
0.0.0.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address
FE80::203:E4FF:FE18:A653
Default Gateway
DNS Server
802.1X
Use 802.1X Security
Authentication
MD5
Username
Password
Top
Laptop-PT
Laptop3
Meraki-Server
Meraki Server1
SMARTPHONE-PT
Smartphone0
Realtime

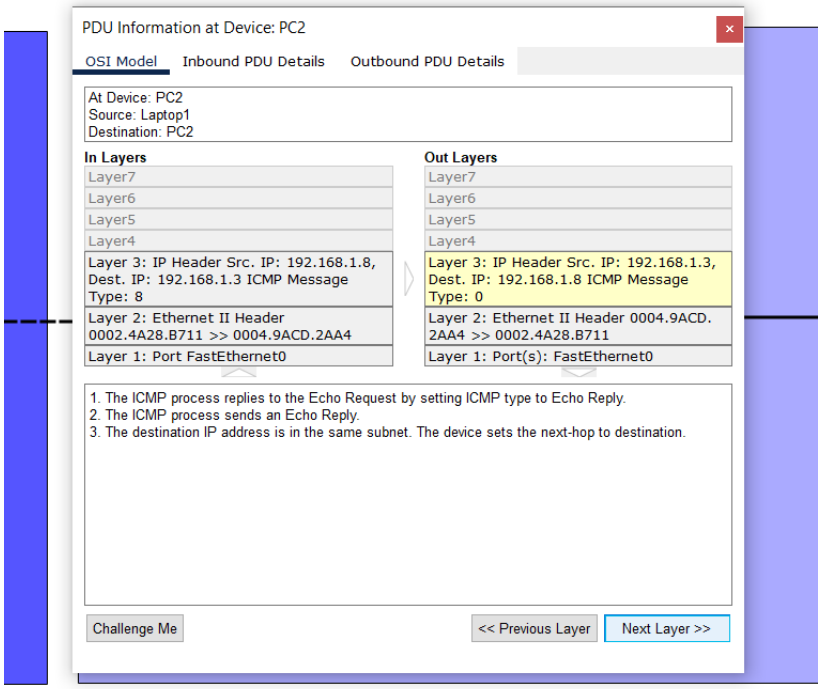


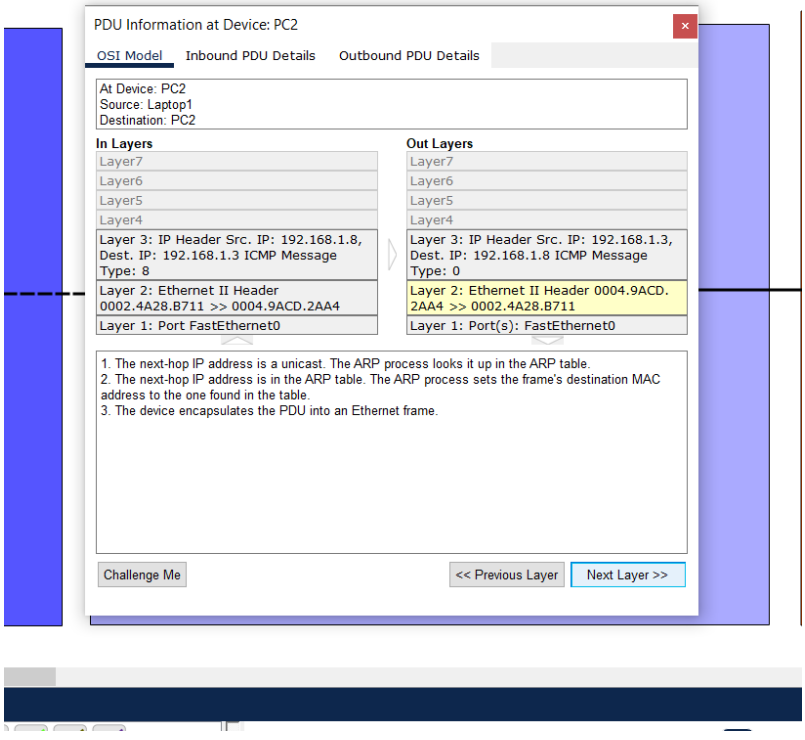
3. Observation des paquets en simulations ;

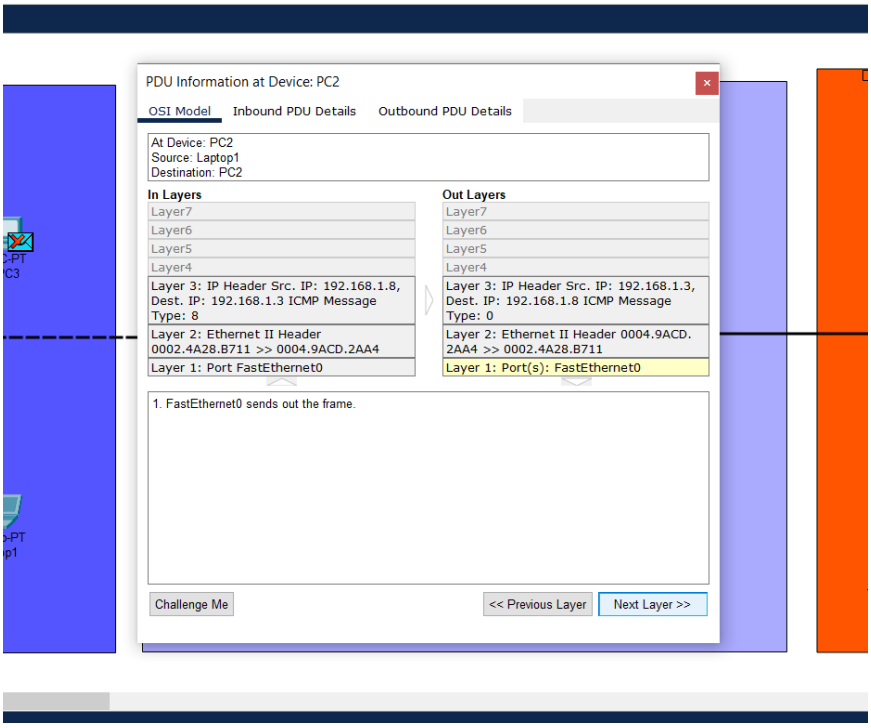


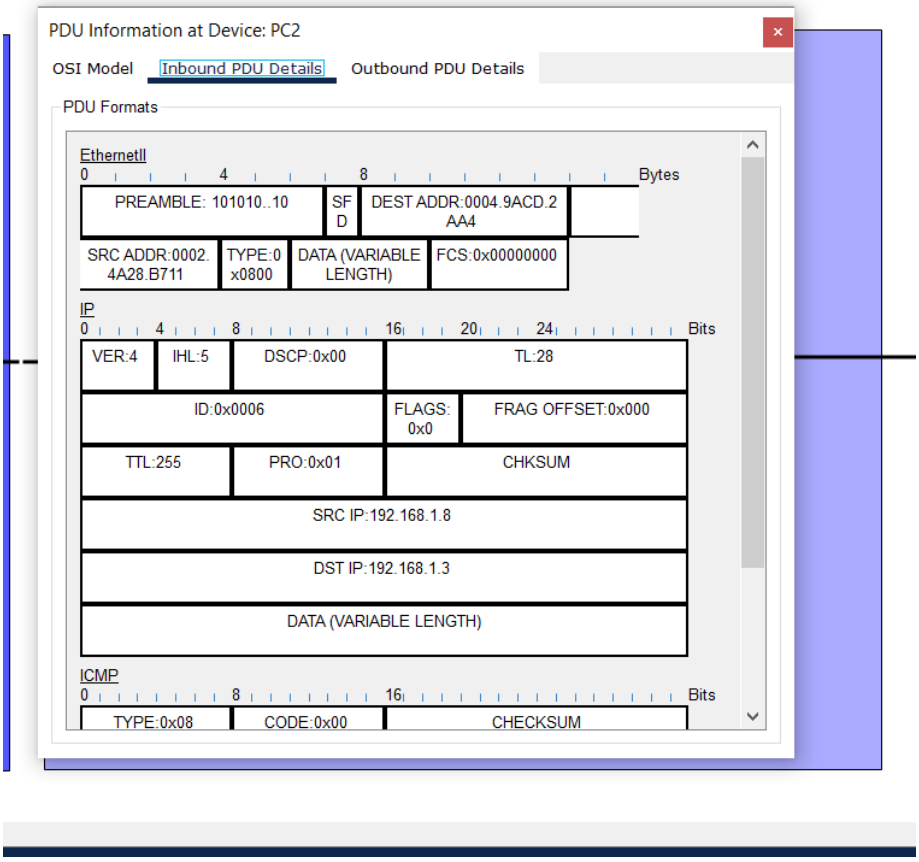

PDU Information at Device: PC2
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: PC2
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.8, Dest. IP: 192.168.1.3 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.8 ICMP Message Type: 0
Layer 2: Ethernet II Header 0002.4A28.B711 >> 0004.9ACD.2AA4
Layer 2: Ethernet II Header 0004.9ACD.2AA4 >> 0002.4A28.B711
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. The frame's destination MAC address matches the receiving port's MAC address, the broadcast address, or a multicast address.
2. The device decapsulates the PDU from the Ethernet frame.
Challenge Me
<< Previous Layer
Next Layer >>

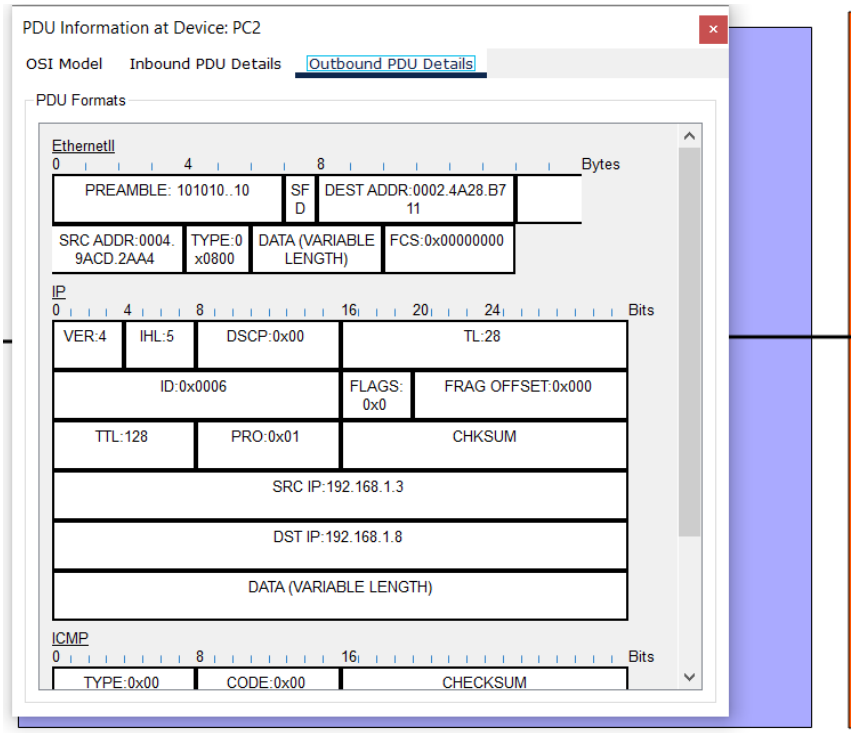

PDU Information at Device: PC2
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: PC2
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.8, Dest. IP: 192.168.1.3 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.8 ICMP Message Type: 0
Layer 2: Ethernet II Header 0002.4A28.B711 >> 0004.9ACD.2AA4
Layer 2: Ethernet II Header 0004.9ACD.2AA4 >> 0002.4A28.B711
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. The packet's destination IP address matches the device's IP address or the broadcast address. The device de-encapsulates the packet.
2. The packet is an ICMP packet. The ICMP process processes it.
3. The ICMP process received an Echo Request message.
Challenge Me
<< Previous Layer
Next Layer >>

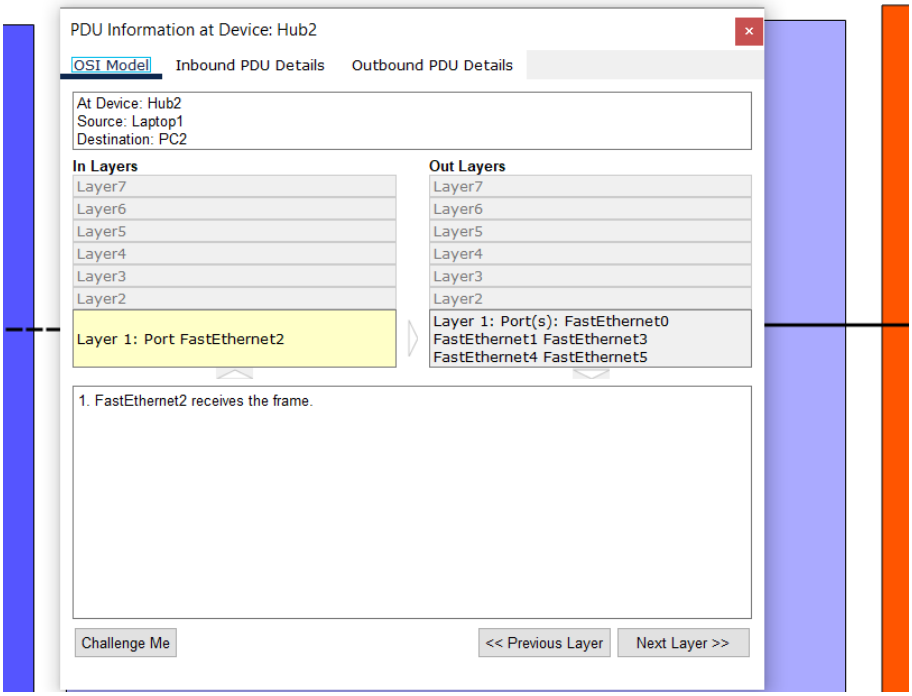

PDU Information at Device: PC2
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: PC2
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.8, Dest. IP: 192.168.1.3 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.8 ICMP Message Type: 0
Layer 2: Ethernet II Header 0002.4A28.B711 >> 0004.9ACD.2AA4
Layer 2: Ethernet II Header 0004.9ACD.2AA4 >> 0002.4A28.B711
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. The ICMP process replies to the Echo Request by setting ICMP type to Echo Reply.
2. The ICMP process sends an Echo Reply.
3. The destination IP address is in the same subnet. The device sets the next-hop to destination.
Challenge Me
<< Previous Layer
Next Layer >>

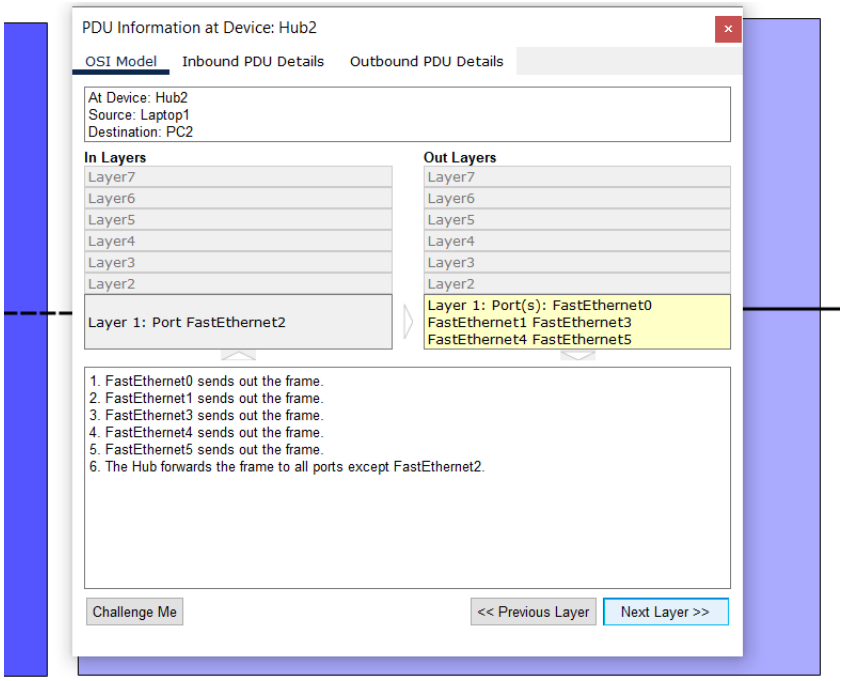

PDU Information at Device: PC2
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: PC2
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.8, Dest. IP: 192.168.1.3 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.8 ICMP Message Type: 0
Layer 2: Ethernet II Header 0002.4A28.B711 >> 0004.9ACD.2AA4
Layer 2: Ethernet II Header 0004.9ACD.2AA4 >> 0002.4A28.B711
Layer 1: Port FastEthernet0
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 >>

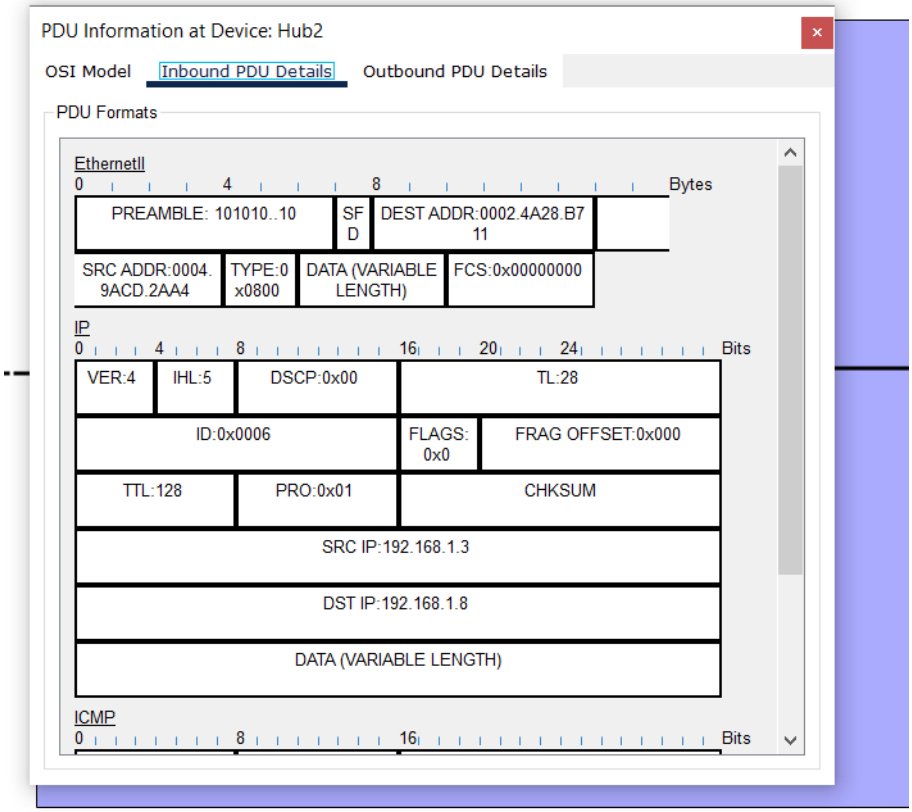

PDU Information at Device: PC2
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: PC2
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.8, Dest. IP: 192.168.1.3 ICMP Message Type: 8
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.8 ICMP Message Type: 0
Layer 2: Ethernet II Header 0002.4A28.B711 >> 0004.9ACD.2AA4
Layer 2: Ethernet II Header 0004.9ACD.2AA4 >> 0002.4A28.B711
Layer 1: Port FastEthernet0
Layer 1: Port(s): FastEthernet0
1. FastEthernet0 sends out the frame.
Challenge Me
<< Previous Layer
Next Layer >>

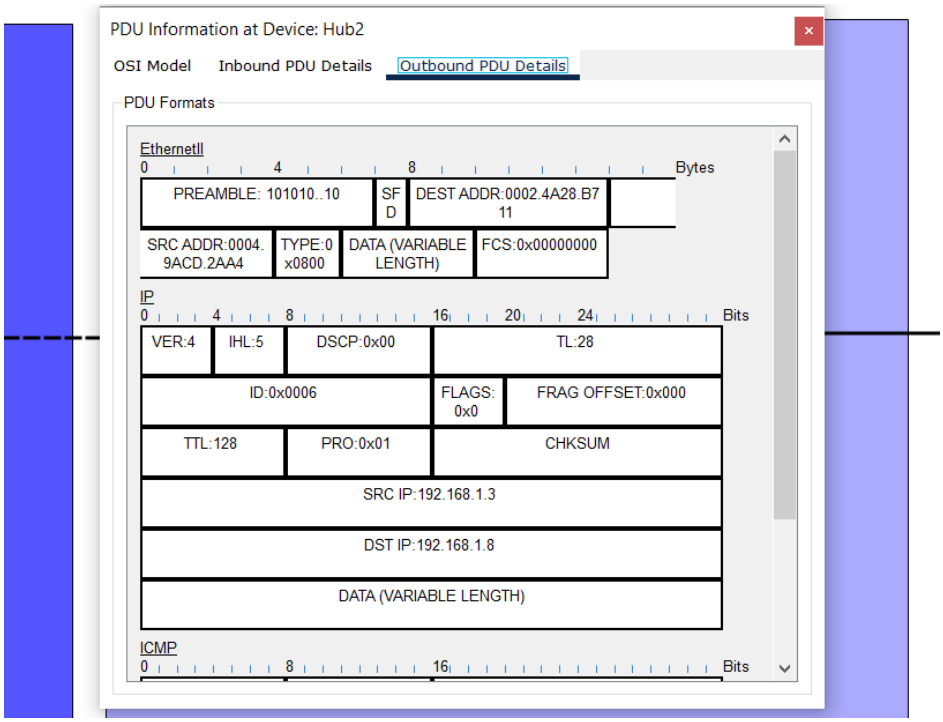

PDU Information at Device: PC2
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
0 4 8 Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:0004.9ACD.2AA4
SRC ADDR:0002.4A28.B711
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0 4 8 16 20 24 Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0006
FLAGS:0x0
FRAG OFFSET:0x000
TTL:255
PRO:0x01
CHKSUM
SRC IP:192.168.1.8
DST IP:192.168.1.3
DATA (VARIABLE LENGTH)
ICMP
0 8 16 Bits
TYPE:0x08
CODE:0x00
CHECKSUM

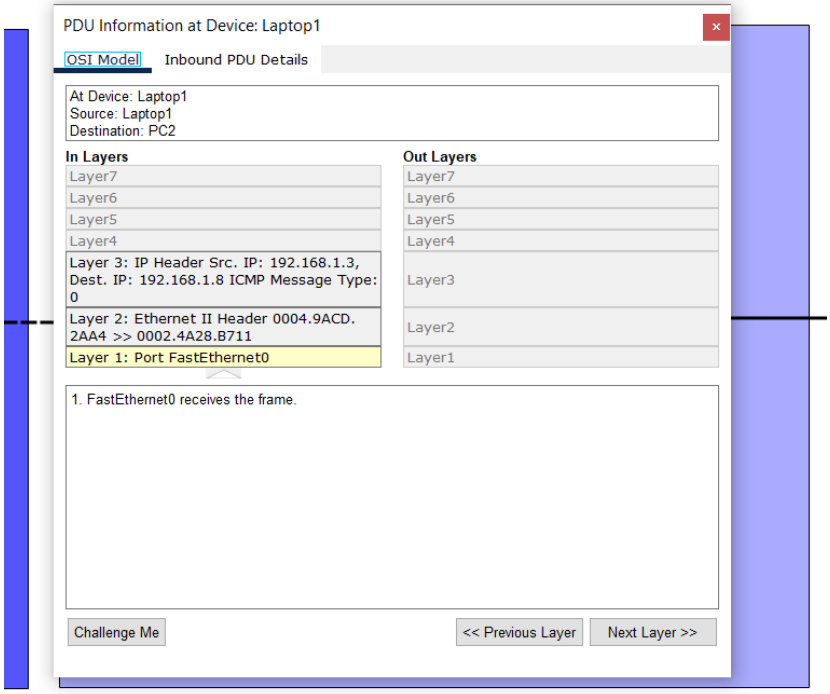

PDU Information at Device: PC2
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
Ethernetll
0
4
8
Bytes
PREAMBLE: 101010..10
SF D
DEST ADDR:0002.4A28.B7 11
SRC ADDR:0004. 9ACD.2AA4
TYPE:0 x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0
4
8
16
20
24
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0006
FLAGS: 0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:192.168.1.3
DST IP:192.168.1.8
DATA (VARIABLE LENGTH)
ICMP
0
8
16
Bits
TYPE:0x00
CODE:0x00
CHECKSUM

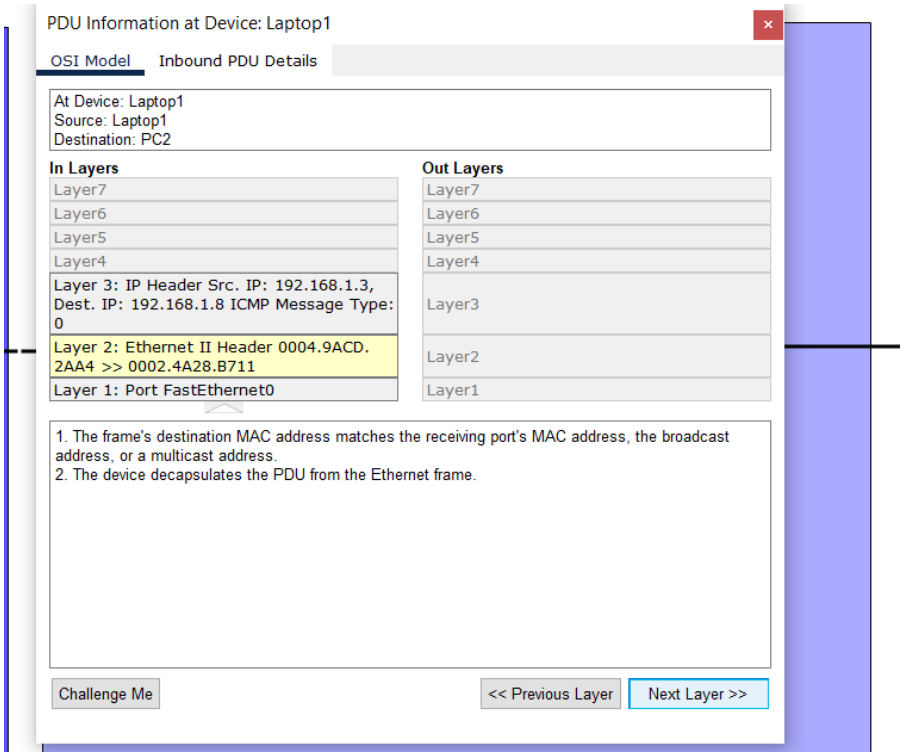

PDU Information at Device: Hub2
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Hub2
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer3
Layer2
Layer 1: Port FastEthernet2
Layer 1: Port(s): FastEthernet0 FastEthernet1 FastEthernet3 FastEthernet4 FastEthernet5
1. FastEthernet2 receives the frame.
Challenge Me
<< Previous Layer
Next Layer >>

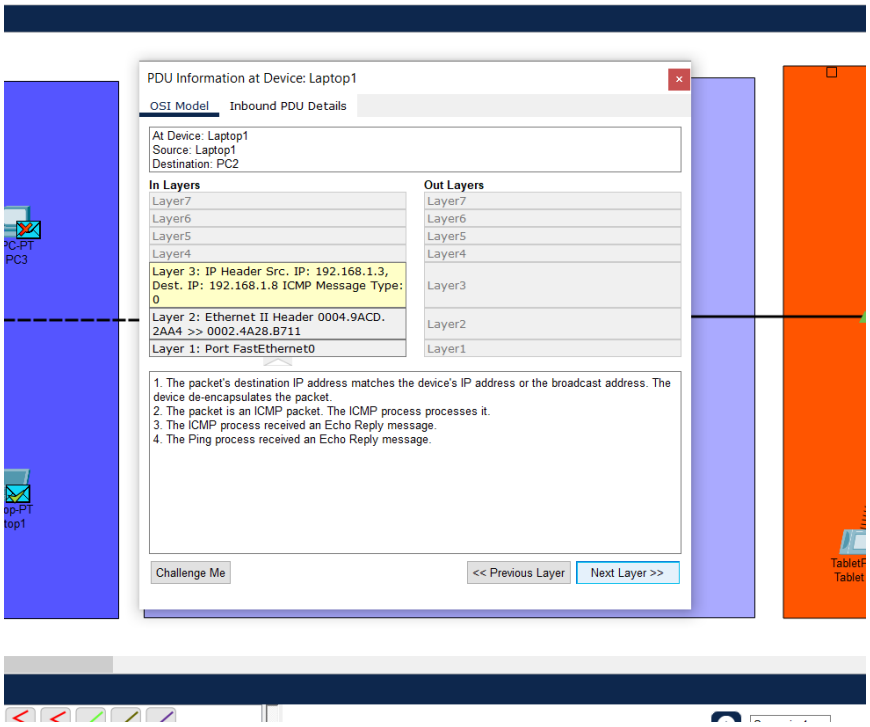

PDU Information at Device: Hub2
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Hub2
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer3
Layer2
Layer 1: Port FastEthernet2
Layer 1: Port(s): FastEthernet0 FastEthernet1 FastEthernet3 FastEthernet4 FastEthernet5
1. FastEthernet0 sends out the frame.
2. FastEthernet1 sends out the frame.
3. FastEthernet3 sends out the frame.
4. FastEthernet4 sends out the frame.
5. FastEthernet5 sends out the frame.
6. The Hub forwards the frame to all ports except FastEthernet2.
Challenge Me
<< Previous Layer
Next Layer >>

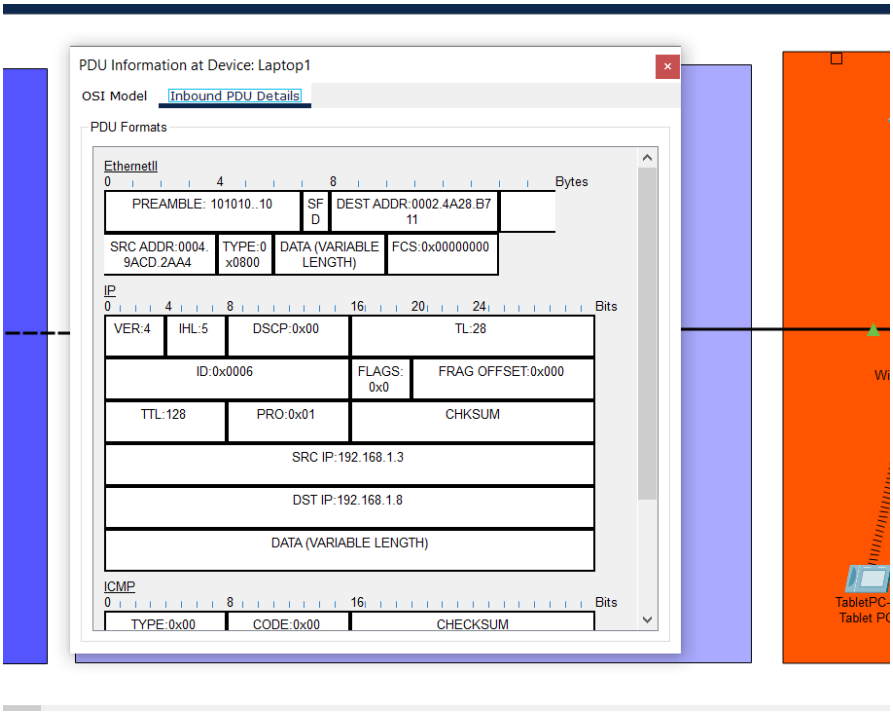

PDU Information at Device: Hub2
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:0002.4A28.B711
SRC ADDR:0004.9ACD.2AA4
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0006
FLAGS:0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:192.168.1.3
DST IP:192.168.1.8
DATA (VARIABLE LENGTH)
ICMP
Bits


PDU Information at Device: Hub2
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
0
4
8
Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:0002.4A28.B711
SRC ADDR:0004.9ACD.2AA4
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0
4
8
16
20
24
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0006
FLAGS:0x0
FRAG OFFSET:0x000
TTL:128
PRO:0x01
CHKSUM
SRC IP:192.168.1.3
DST IP:192.168.1.8
DATA (VARIABLE LENGTH)
ICMP
0
8
16
Bits

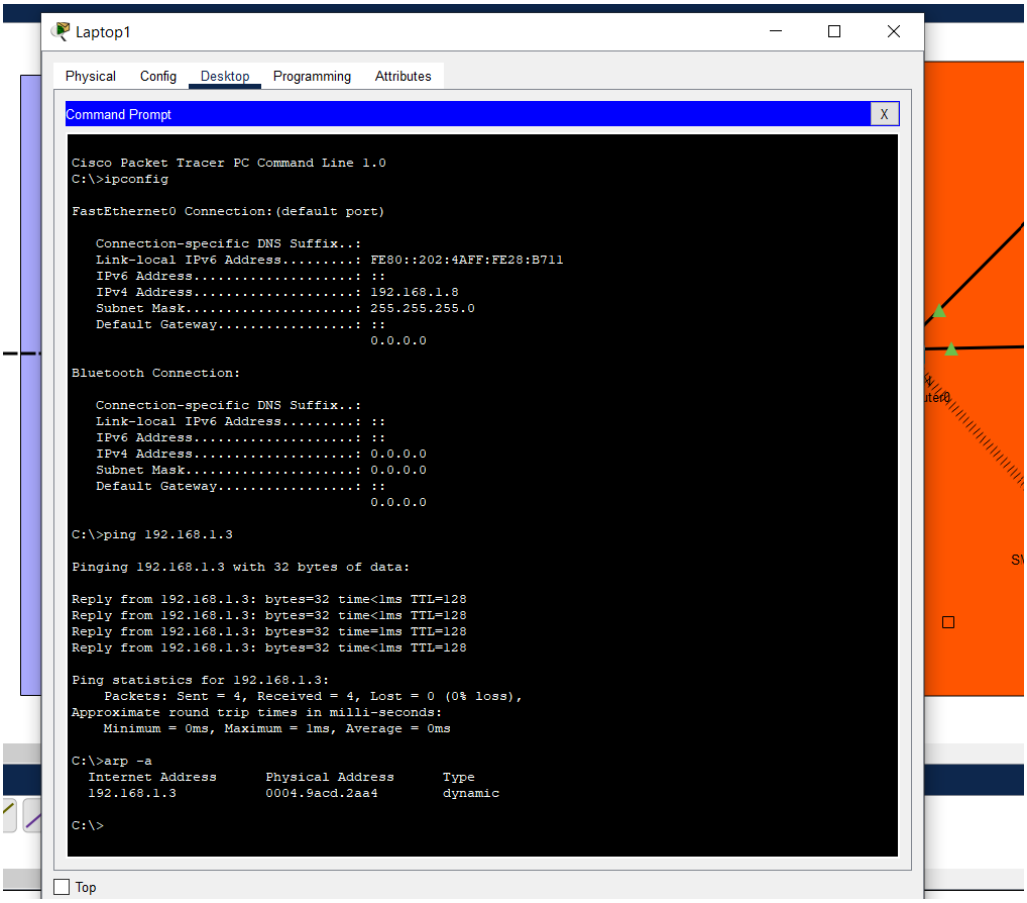

PDU Information at Device: Laptop1
OSI Model
Inbound PDU Details
At Device: Laptop1
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.8 ICMP Message Type: 0
Layer 2: Ethernet II Header 0004.9ACD.2AA4 >> 0002.4A28.B711
Layer 1: Port FastEthernet0
Layer3
Layer2
Layer1
1. FastEthernet0 receives the frame.
Challenge Me
<< Previous Layer
Next Layer >>

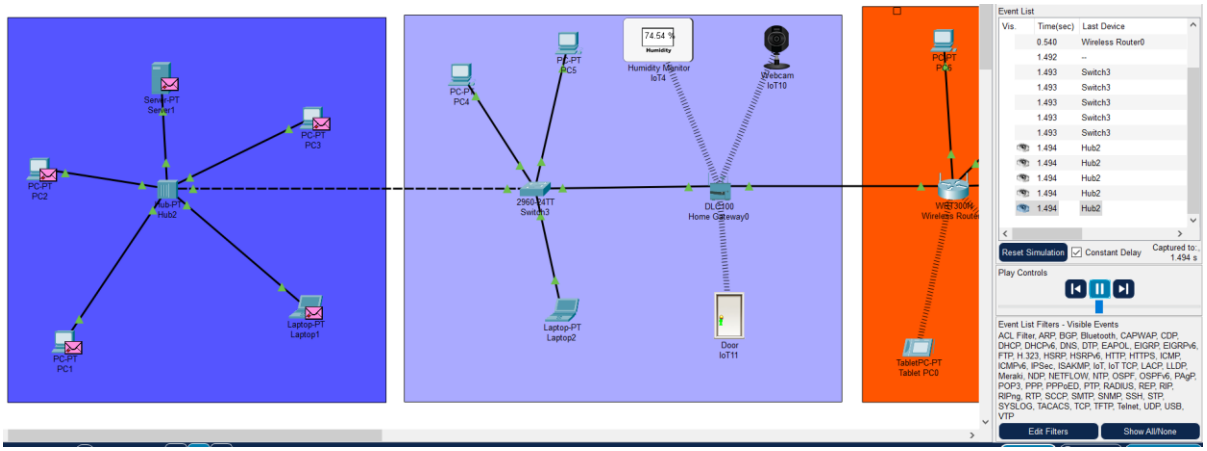

PDU Information at Device: Laptop1
OSI Model
Inbound PDU Details
At Device: Laptop1
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.8 ICMP Message Type: 0
Layer3
Layer 2: Ethernet II Header 0004.9ACD. 2AA4 >> 0002.4A28.B711
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 decapsulates the PDU from the Ethernet frame.
Challenge Me
<< Previous Layer
Next Layer >>

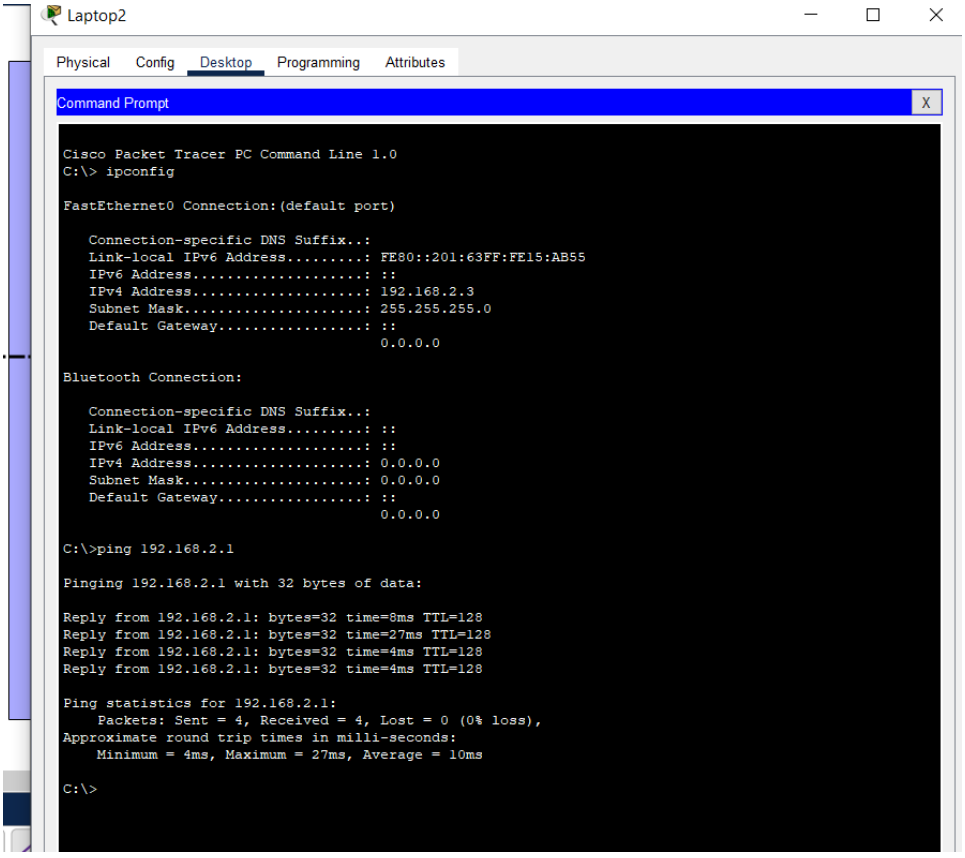

PDU Information at Device: Laptop1
OSI Model
Inbound PDU Details
At Device: Laptop1
Source: Laptop1
Destination: PC2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.1.3, Dest. IP: 192.168.1.8 ICMP Message Type: 0
Layer3
Layer 2: Ethernet II Header 0004.9ACD. 2AA4 >> 0002.4A28.B711
Layer2
Layer 1: Port FastEthernet0
Layer1
1. The packet's destination IP address matches the device's IP address or the broadcast address. The device de-encapsulates the packet.
2. The packet is an ICMP packet. The ICMP process processes it.
3. The ICMP process received an Echo Reply message.
4. The Ping process received an Echo Reply message.
Challenge Me
<< Previous Layer
Next Layer >>



4. Observation des tables ARP.




Server-PT Server1
PC-PT PC3
PC-PT PC2
Hub-PT Hub2
PC-PT PC1
Laptop-PT Laptop1
PC-PT PC5
PC-PT PC4
74.54 %
Humidity
Humidity Monitor IoT4
Webcam IoT10
2968-24TT Switch3
DLC100 Home Gateway0
Laptop-PT Laptop2
Door IoT11
PC-PT PC6
WRT300N Wireless Router
TabletPC-PT Tablet PC0
Event List
Vis.
Time(sec)
Last Device
0.540 Wireless Router0
1.492 --
1.493 Switch3
1.494 Hub2
Reset Simulation
Constant Delay
Captured to: 1.494 s
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
Edit Filters
Show All/None


Laptop2
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\> ipconfig
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Link-local IPv6 Address.....: FE80::201:63FF:FE15:AB55
IPv6 Address.....: ::
IPv4 Address.....: 192.168.2.3
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 192.168.2.1
Pinging 192.168.2.1 with 32 bytes of data:
Reply from 192.168.2.1: bytes=32 time=8ms TTL=128
Reply from 192.168.2.1: bytes=32 time=27ms TTL=128
Reply from 192.168.2.1: bytes=32 time=4ms TTL=128
Reply from 192.168.2.1: bytes=32 time=4ms TTL=128
Ping statistics for 192.168.2.1:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 4ms, Maximum = 27ms, Average = 10ms
C:\>

En conclusion, je peux dire que Cisco Packet Tracer est vraiment un outil précieux pour ceux qui veulent maitriser la mise en réseau sans avoir besoin de matériel couteux.