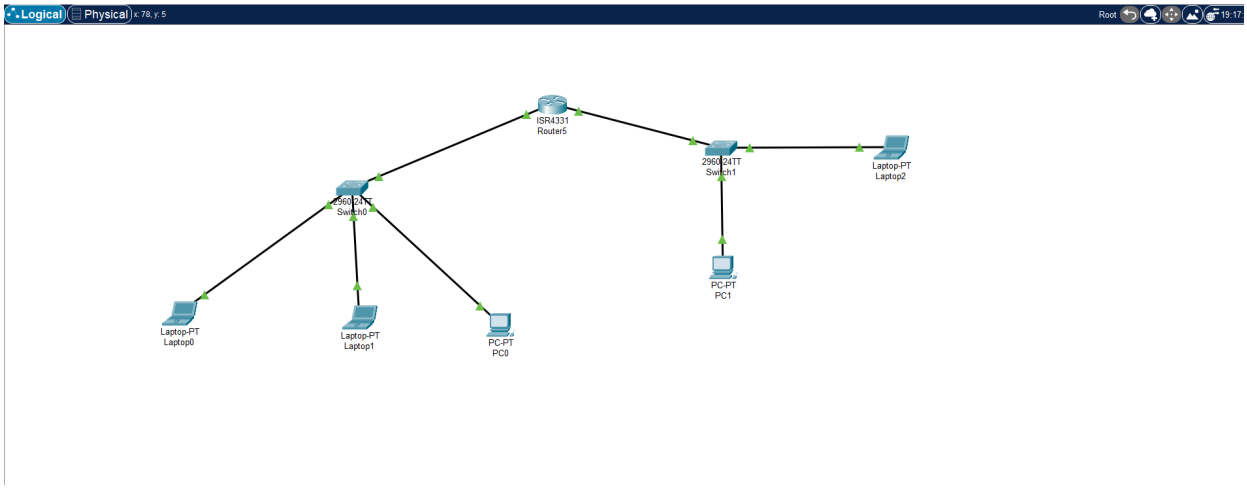
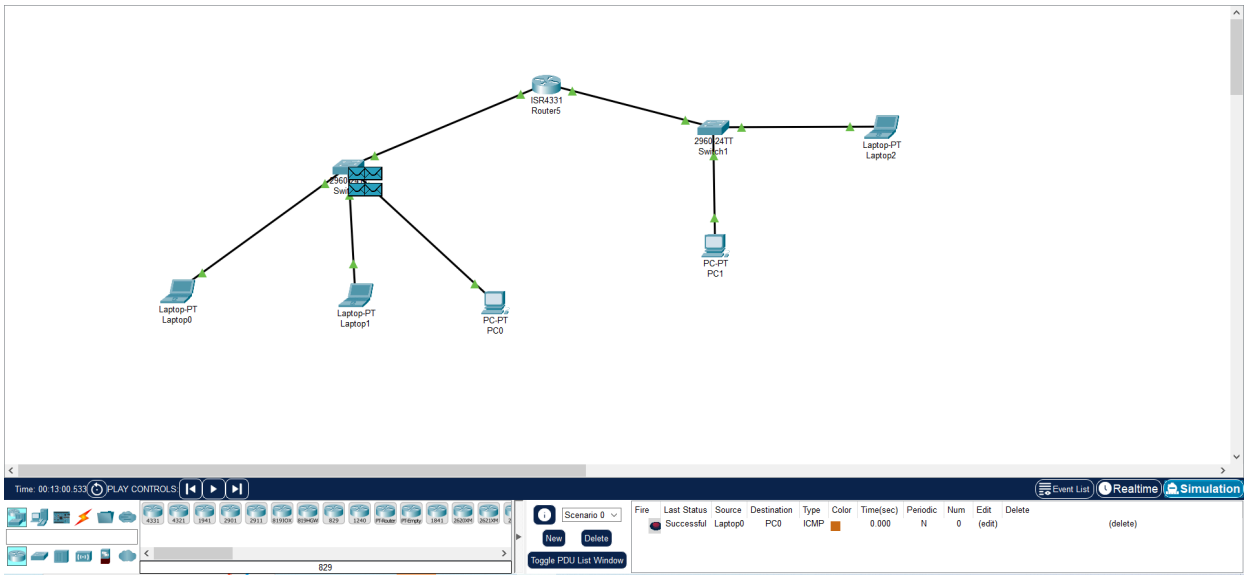
Configurazione di una rete di calcolatori con il tool Cisco Packet Tracer



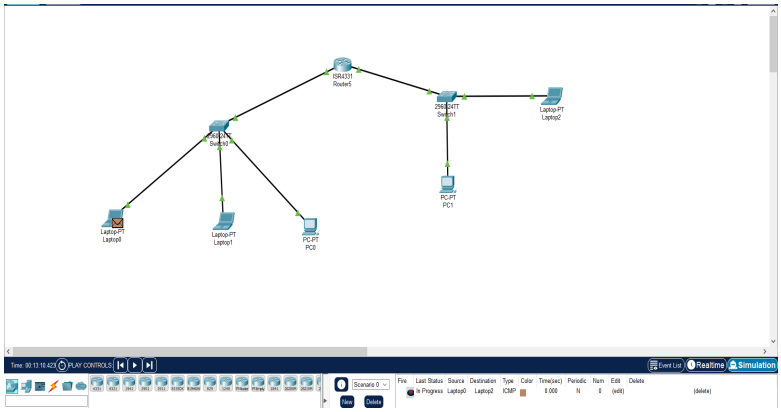
Comunicazione tra laptop-PT0 con IP 192.168.100.100 e il PC-PT-PC0 con IP 192.168.100.103

```
C:\>ping 192.168.100.103

Pinging 192.168.100.103 with 32 bytes of data:

Reply from 192.168.100.103: bytes=32 time<1ms TTL=128
Reply from 192.168.100.103: bytes=32 time<1ms TTL=128
Reply from 192.168.100.103: bytes=32 time=1ms TTL=128
Reply from 192.168.100.103: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.100.103:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms
```



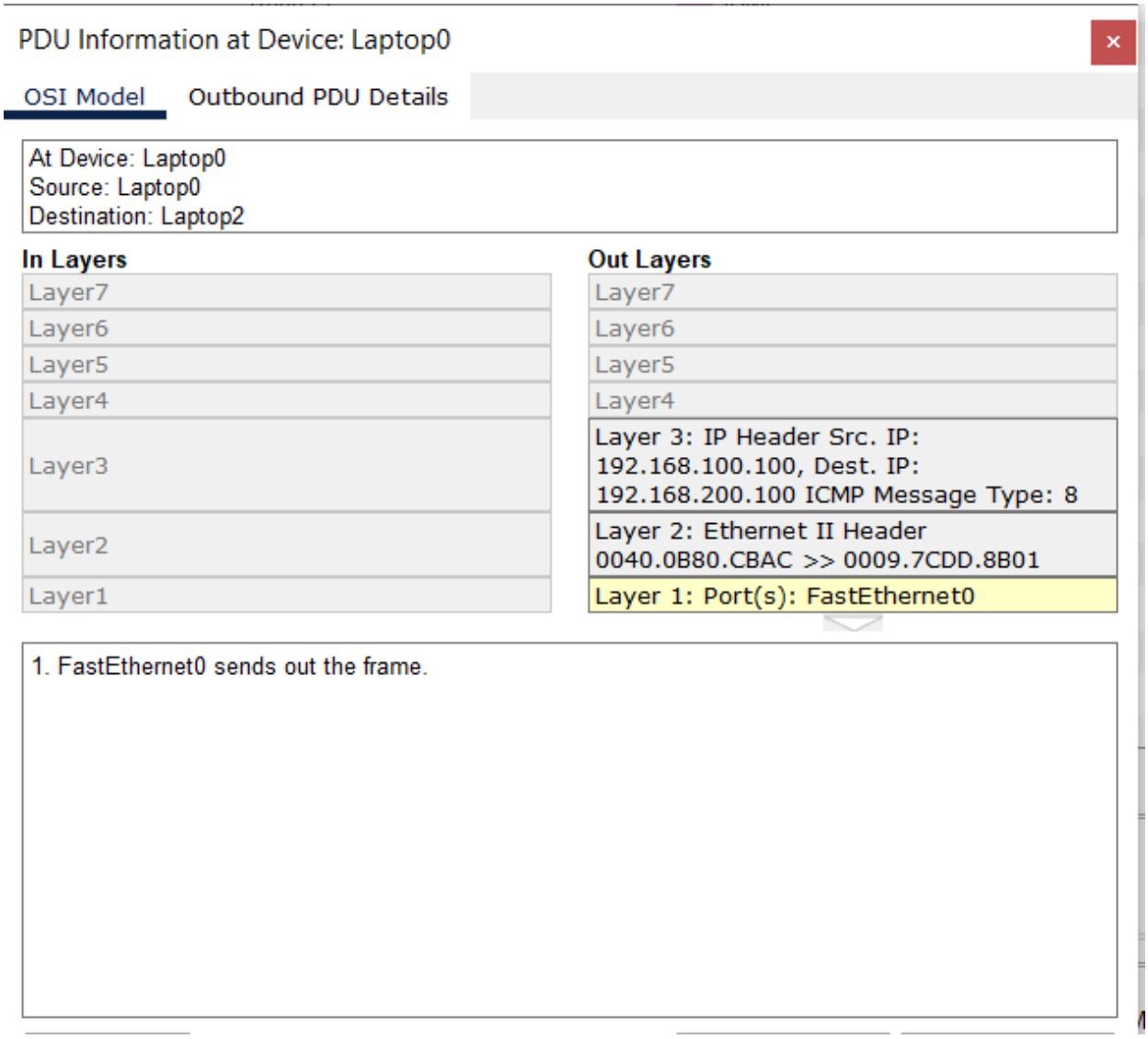
Comunicazione tra laptop-PT0 con IP 192.168.100.100 e il laptop-PT2 con IP 192.168.200.100

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.200.100

Pinging 192.168.200.100 with 32 bytes of data:

Reply from 192.168.200.100: bytes=32 time<1ms TTL=127
Reply from 192.168.200.100: bytes=32 time<1ms TTL=127
Reply from 192.168.200.100: bytes=32 time<1ms TTL=127
Reply from 192.168.200.100: bytes=32 time<1ms TTL=127

Ping statistics for 192.168.200.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```



Evidenza cambio di «source MAC e destination MAC» al Router e di «source IP & destination IP» quando un pacchetto viene inviato dal Laptop-PT-Laptop0 verso Laptop-PT-Laptop2

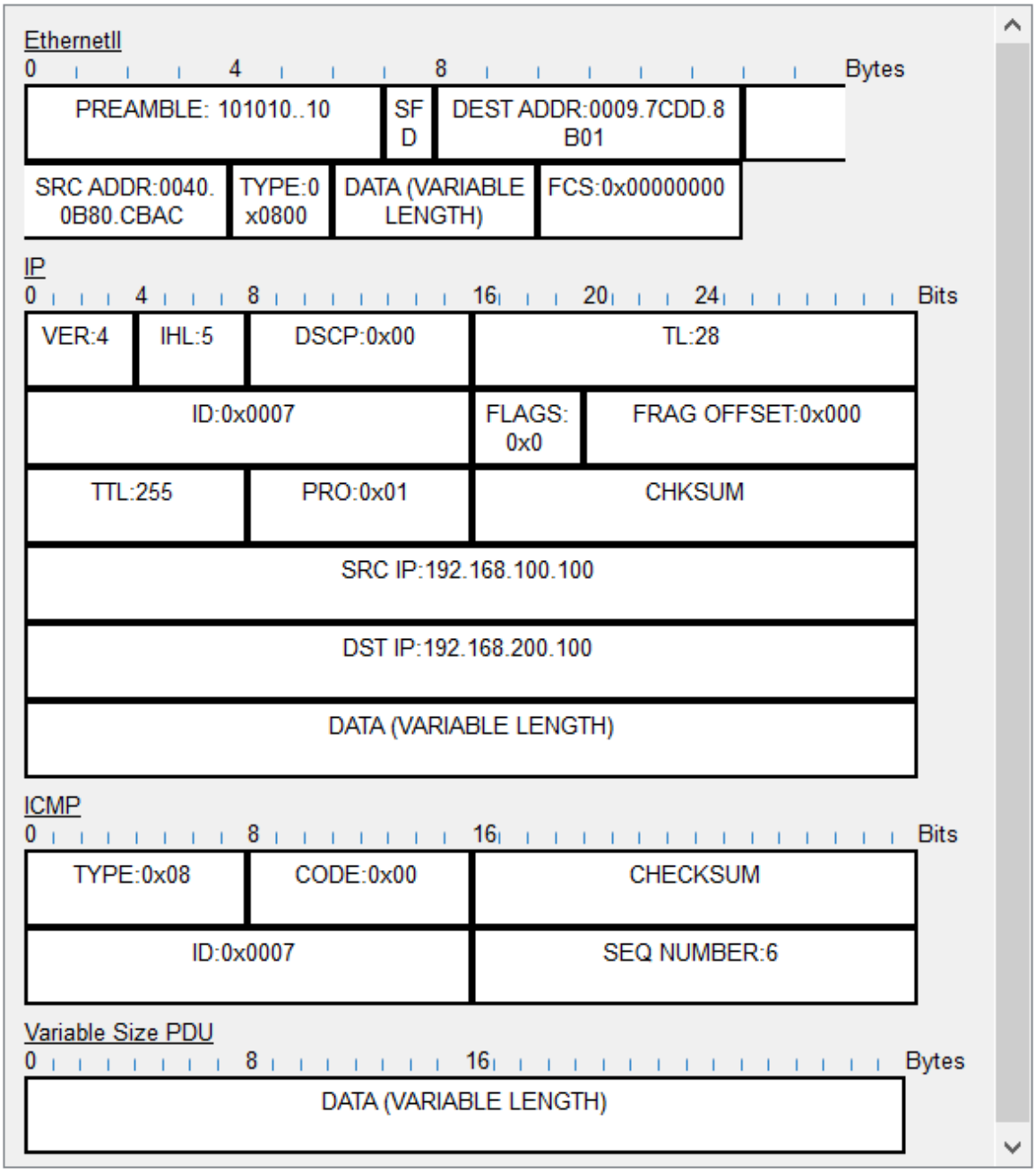
At Device	Dest. MAC	Src MAC	Src IPv4	Dest. IPv4
Laptop0	0009.7CDD.8B01	0040.0B80.CBAC	192.168.100.100	192.168.200.100
Switch0	0009.7CDD.8B01	0040.0B80.CBAC	192.168.100.100	192.168.200.100
Router	00D0.BCC9.C106	0009.7CDD.8B02	192.168.100.100	192.168.200.100
Switch1	00D0.BCC9.C106	0009.7CDD.8B02	192.168.100.100	192.168.200.100
Laptop2	0009.7CDD.8B02	00D0.BCC9.C106	192.168.200.100	192.168.100.100

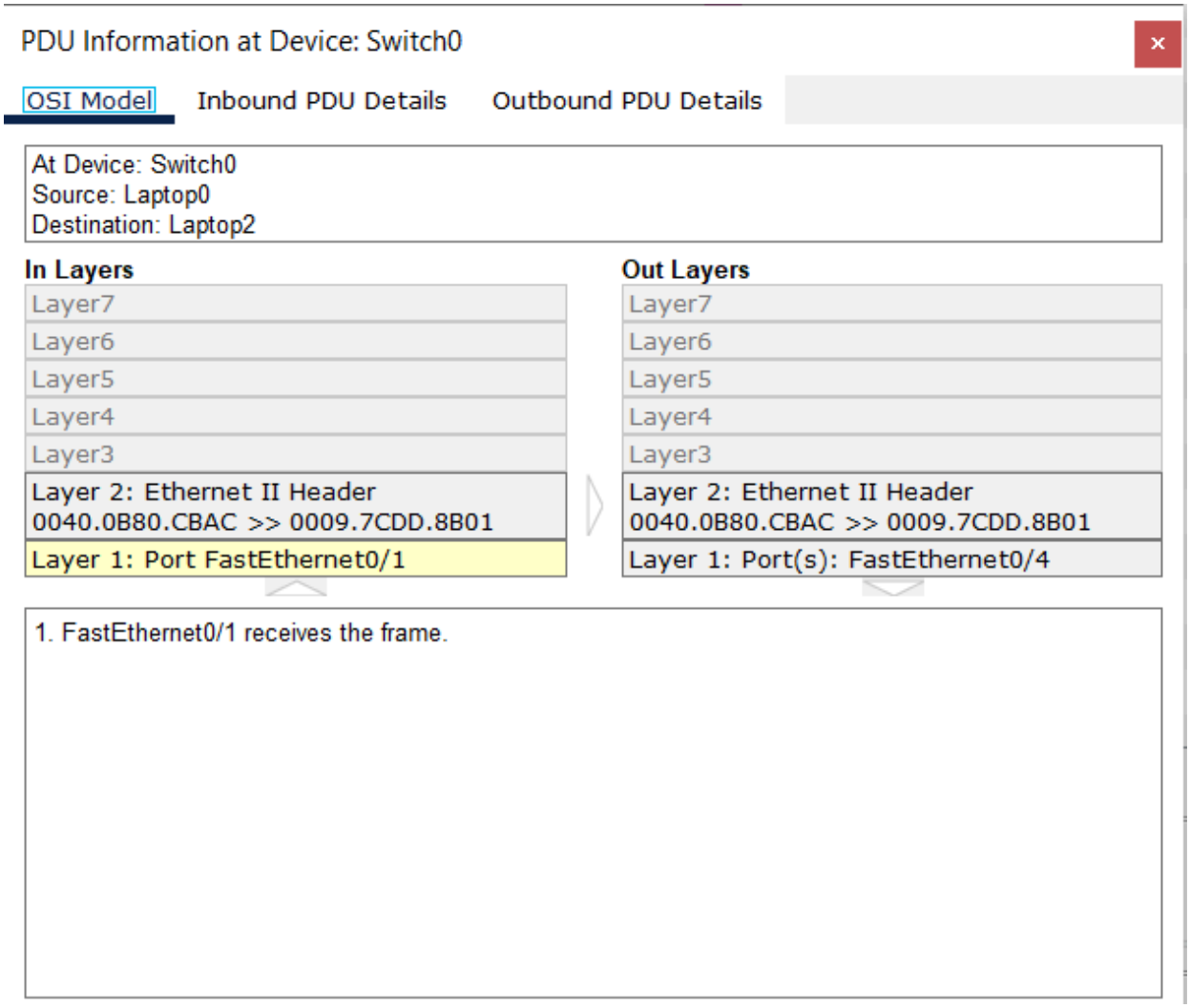

PDU Information at Device: Laptop0
OSI Model
Outbound PDU Details
At Device: Laptop0
Source: Laptop0
Destination: Laptop2
In Layers
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer3
Layer2
Layer1
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.100.100, Dest. IP: 192.168.200.100 ICMP Message Type: 8
Layer 2: Ethernet II Header 0040.0B80.CBAC >> 0009.7CDD.8B01
Layer 1: Port(s): FastEthernet0
1. FastEthernet0 sends out the frame.

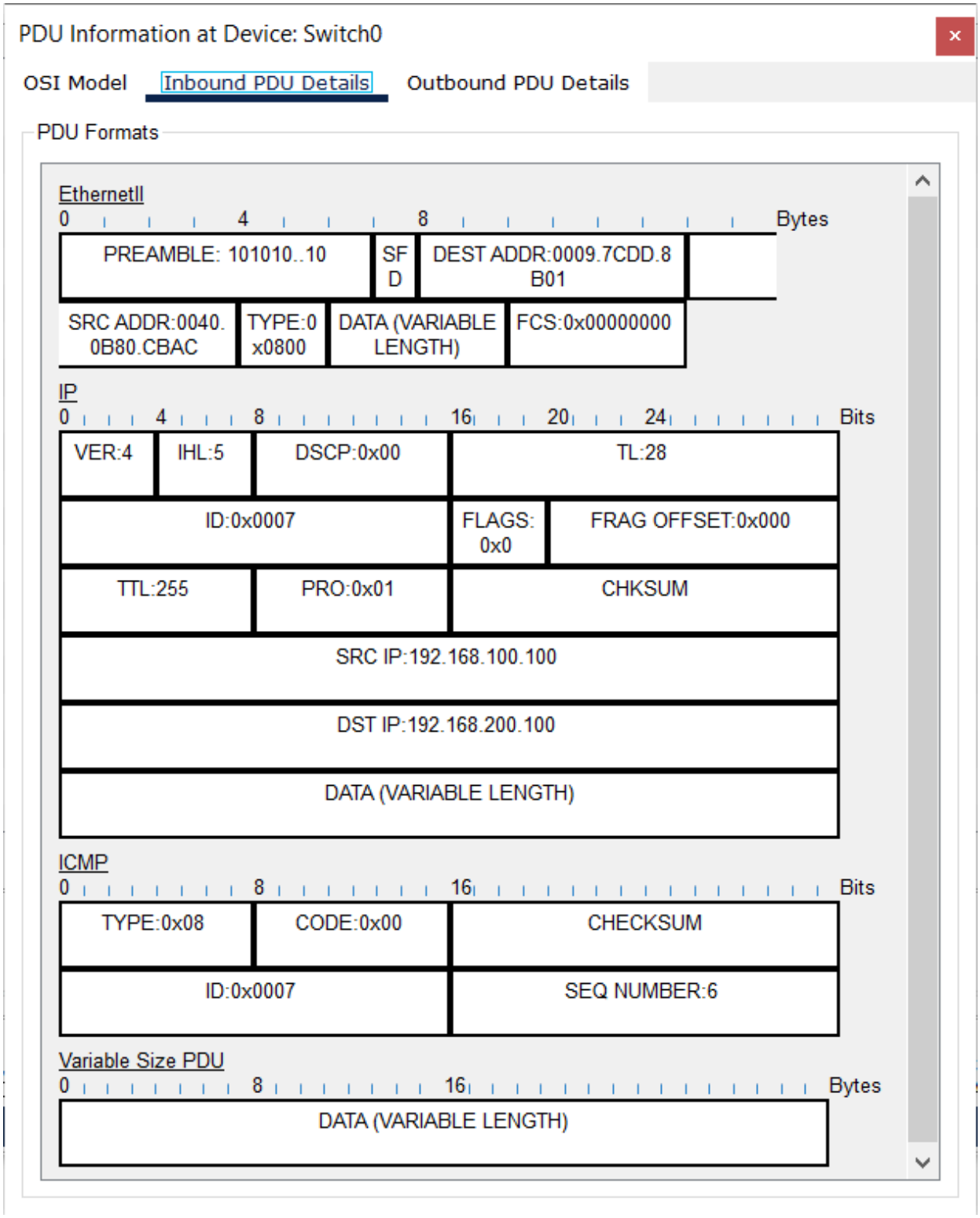
PDU Information at Device: Laptop0

OSI Model | Outbound PDU Details

PDU Formats



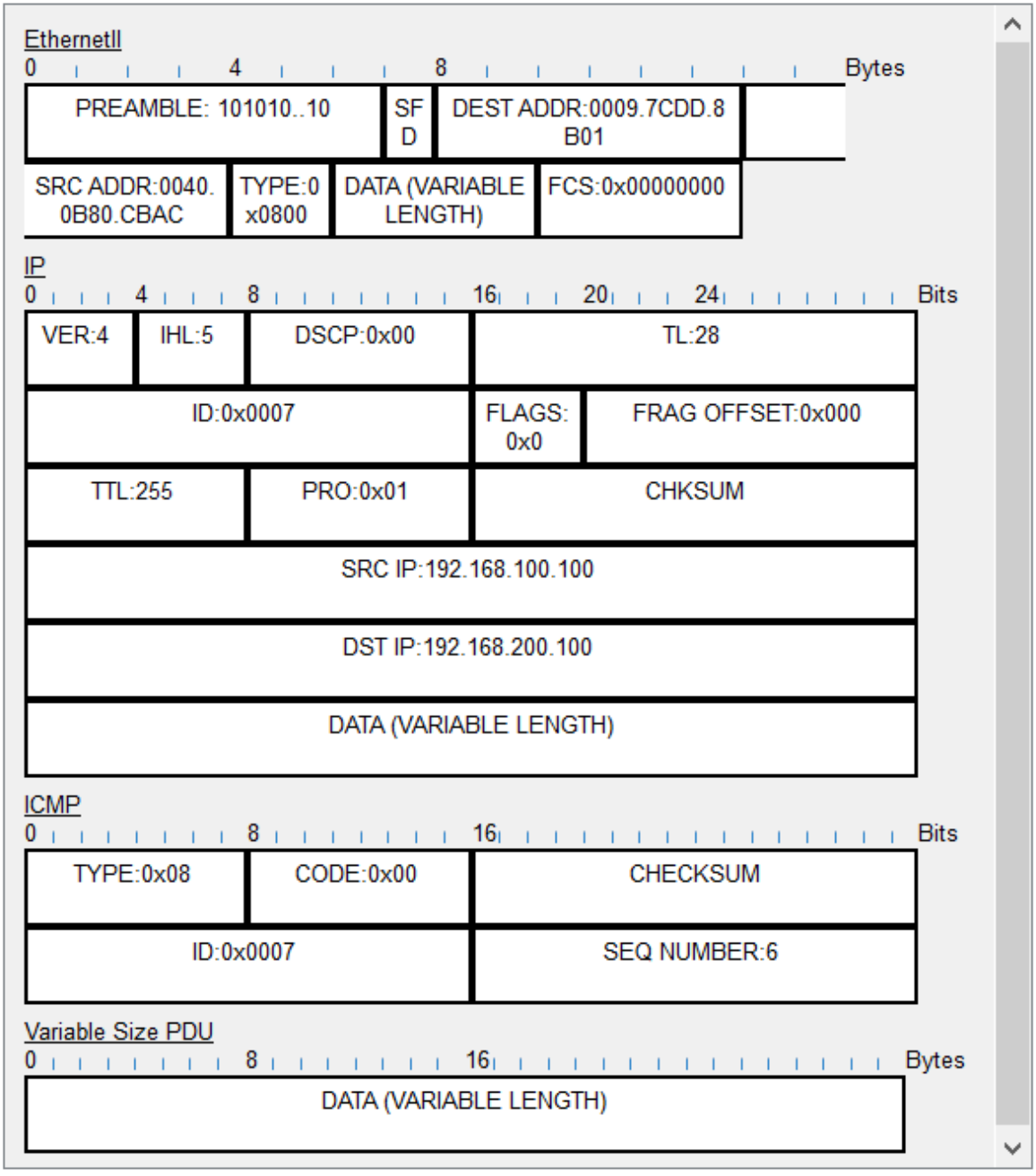

PDU Information at Device: Switch0
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Switch0
Source: Laptop0
Destination: Laptop2
In Layers
Layer7
Layer6
Layer5
Layer4
Layer3
Layer 2: Ethernet II Header
0040.0B80.CBAC >> 0009.7CDD.8B01
Layer 1: Port FastEthernet0/1
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer3
Layer 2: Ethernet II Header
0040.0B80.CBAC >> 0009.7CDD.8B01
Layer 1: Port(s): FastEthernet0/4
1. FastEthernet0/1 receives the frame.

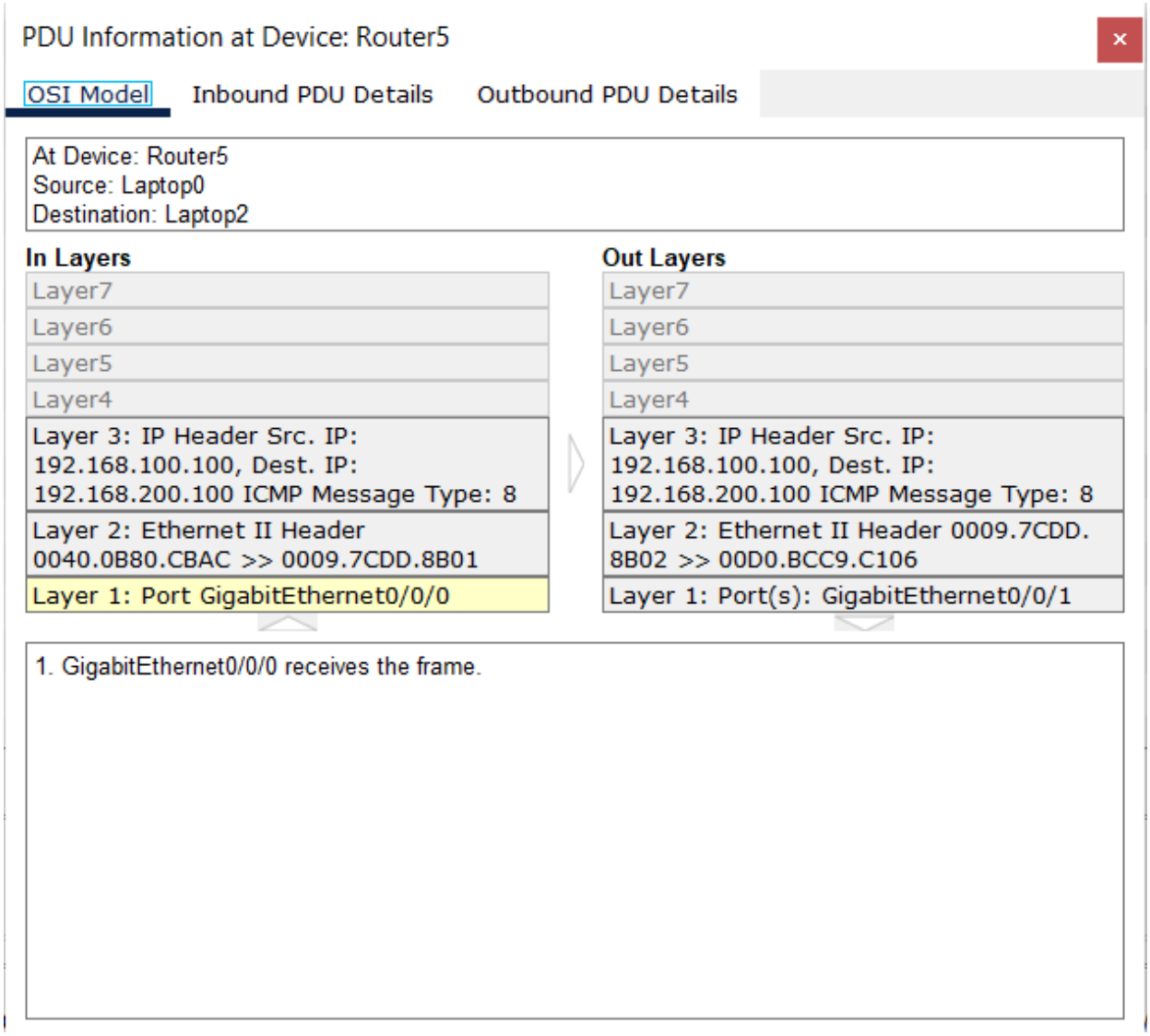

PDU Information at Device: Switch0
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
0
4
8
Bytes
PREAMBLE: 101010..10
SFD
DEST ADDR:0009.7CDD.8B01
SRC ADDR:0040.0B80.CBAC
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0
4
8
16
20
24
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0007
FLAGS:0x0
FRAG OFFSET:0x000
TTL:255
PRO:0x01
CHKSUM
SRC IP:192.168.100.100
DST IP:192.168.200.100
DATA (VARIABLE LENGTH)
ICMP
0
8
16
Bits
TYPE:0x08
CODE:0x00
CHECKSUM
ID:0x0007
SEQ NUMBER:6
Variable Size PDU
0
8
16
Bytes
DATA (VARIABLE LENGTH)

PDU Information at Device: Switch0

OSI Model | Inbound PDU Details | Outbound PDU Details

PDU Formats

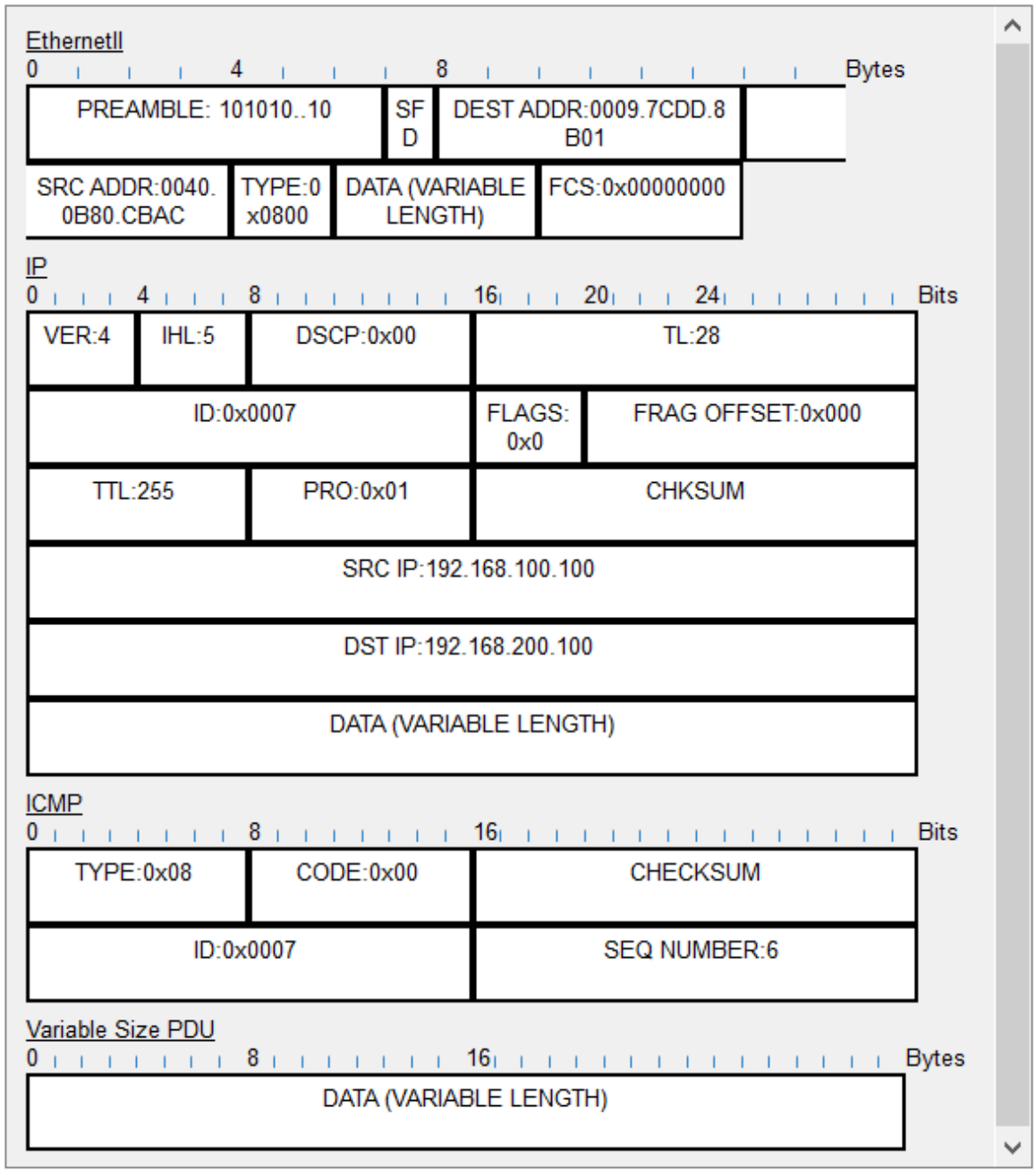



PDU Information at Device: Router5
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Router5
Source: Laptop0
Destination: Laptop2
In Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.100.100, Dest. IP: 192.168.200.100 ICMP Message Type: 8
Layer 2: Ethernet II Header 0040.0B80.CBAC >> 0009.7CDD.8B01
Layer 1: Port GigabitEthernet0/0/0
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.100.100, Dest. IP: 192.168.200.100 ICMP Message Type: 8
Layer 2: Ethernet II Header 0009.7CDD.8B02 >> 00D0.BCC9.C106
Layer 1: Port(s): GigabitEthernet0/0/1
1. GigabitEthernet0/0/0 receives the frame.

PDU Information at Device: Router5

OSI Model | Inbound PDU Details | Outbound PDU Details

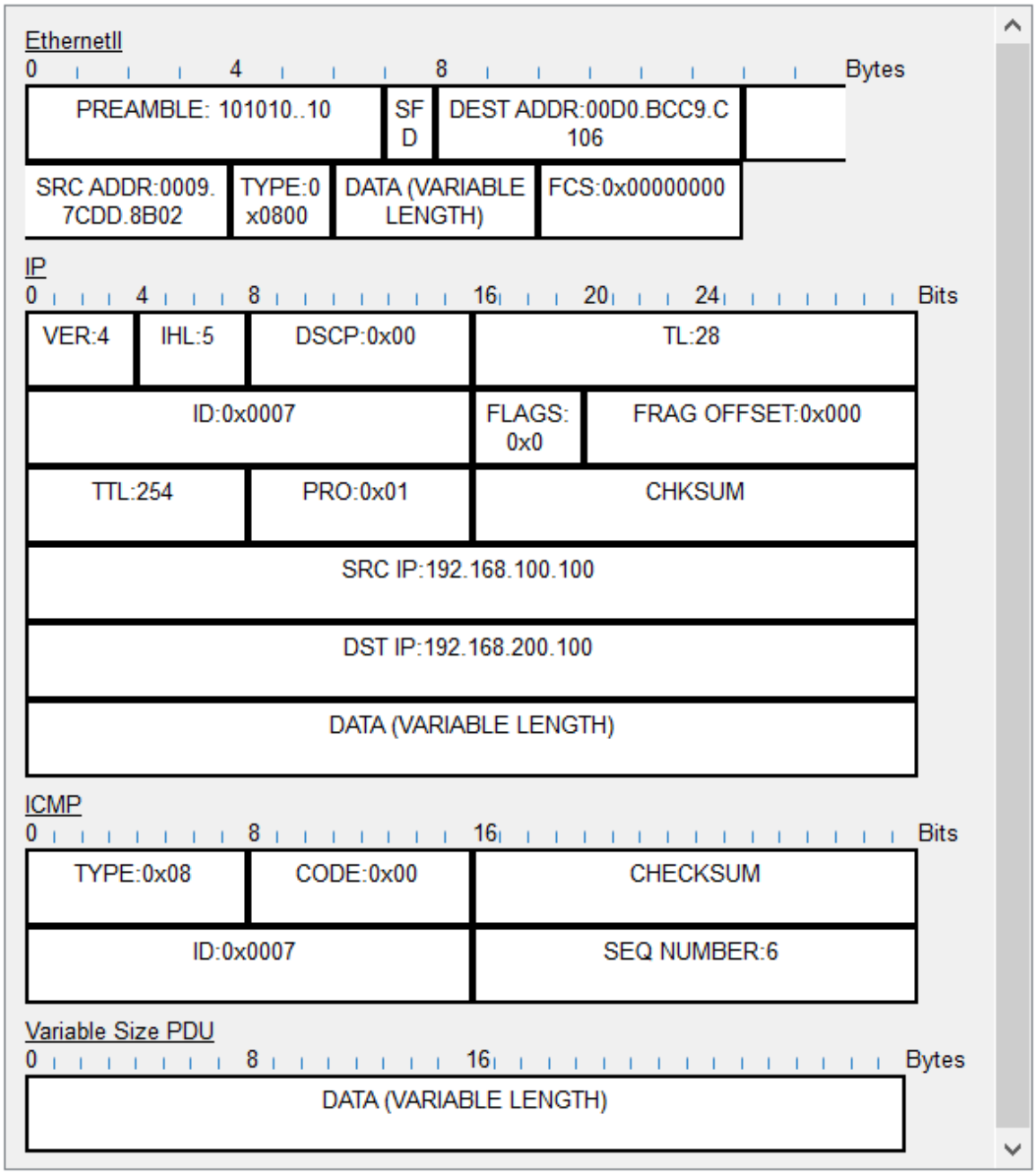
PDU Formats



PDU Information at Device: Router5

OSI Model | Inbound PDU Details | Outbound PDU Details

PDU Formats



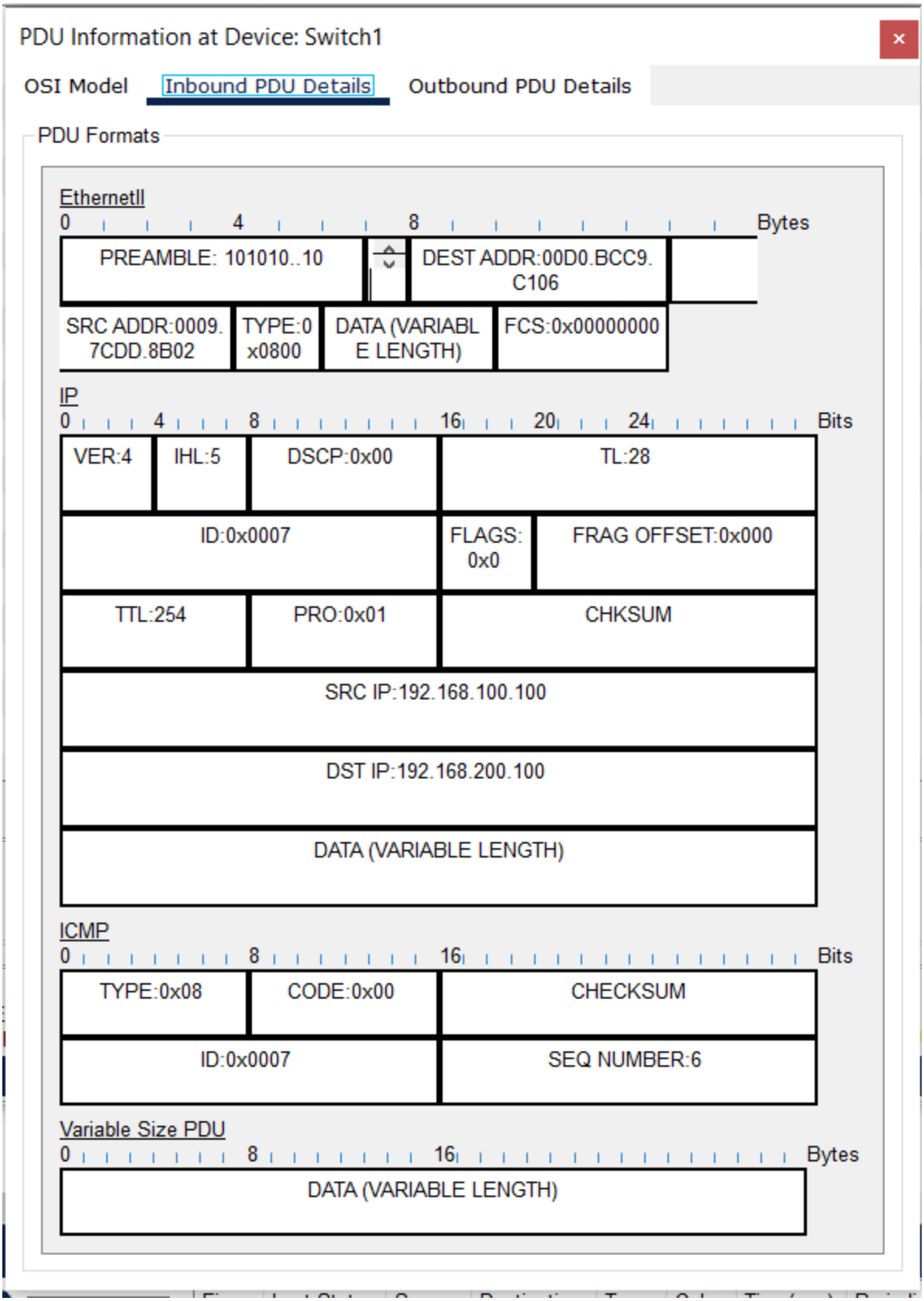
PDU Information at Device: Switch1

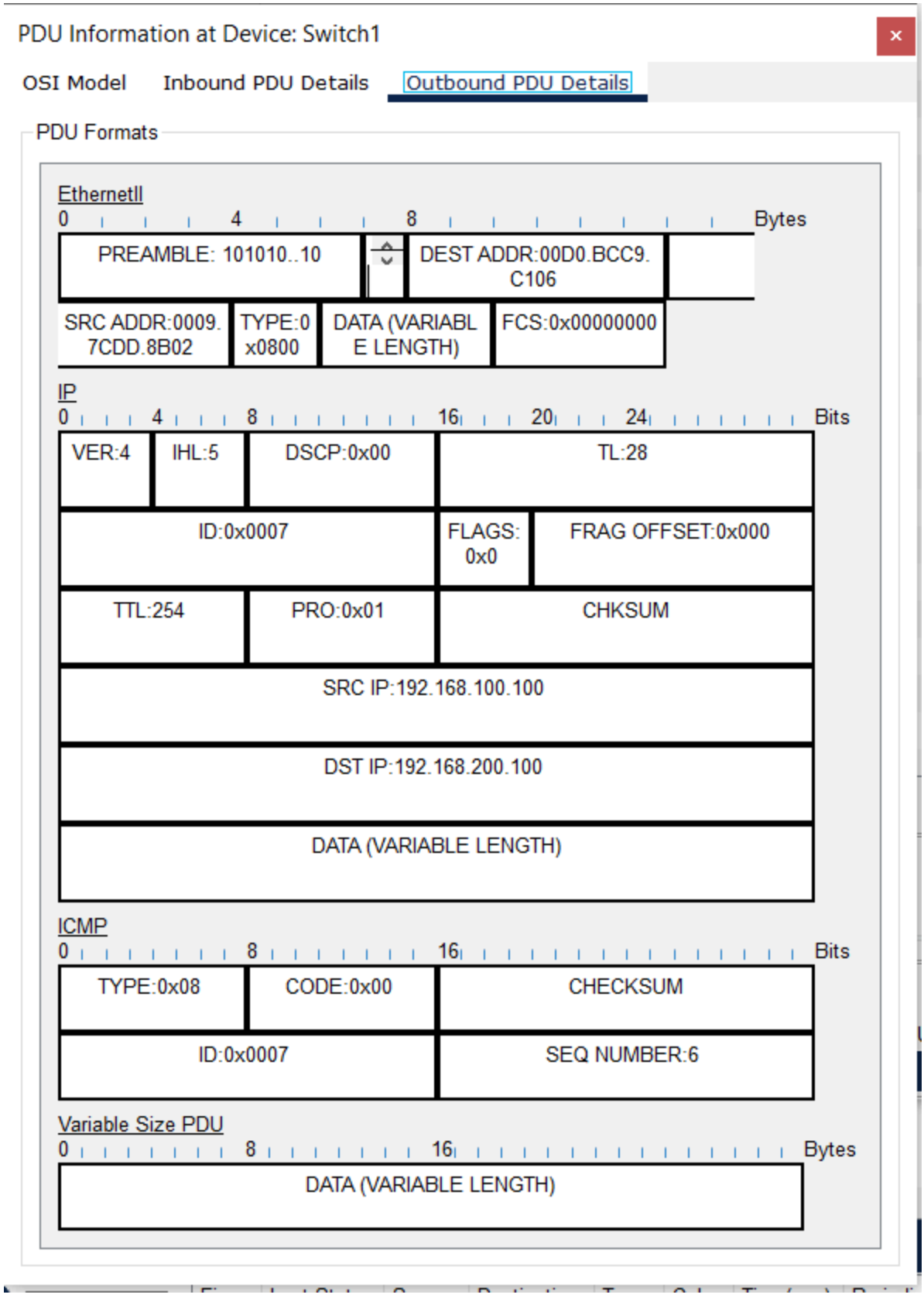
OSI Model | Inbound PDU Details | Outbound PDU Details

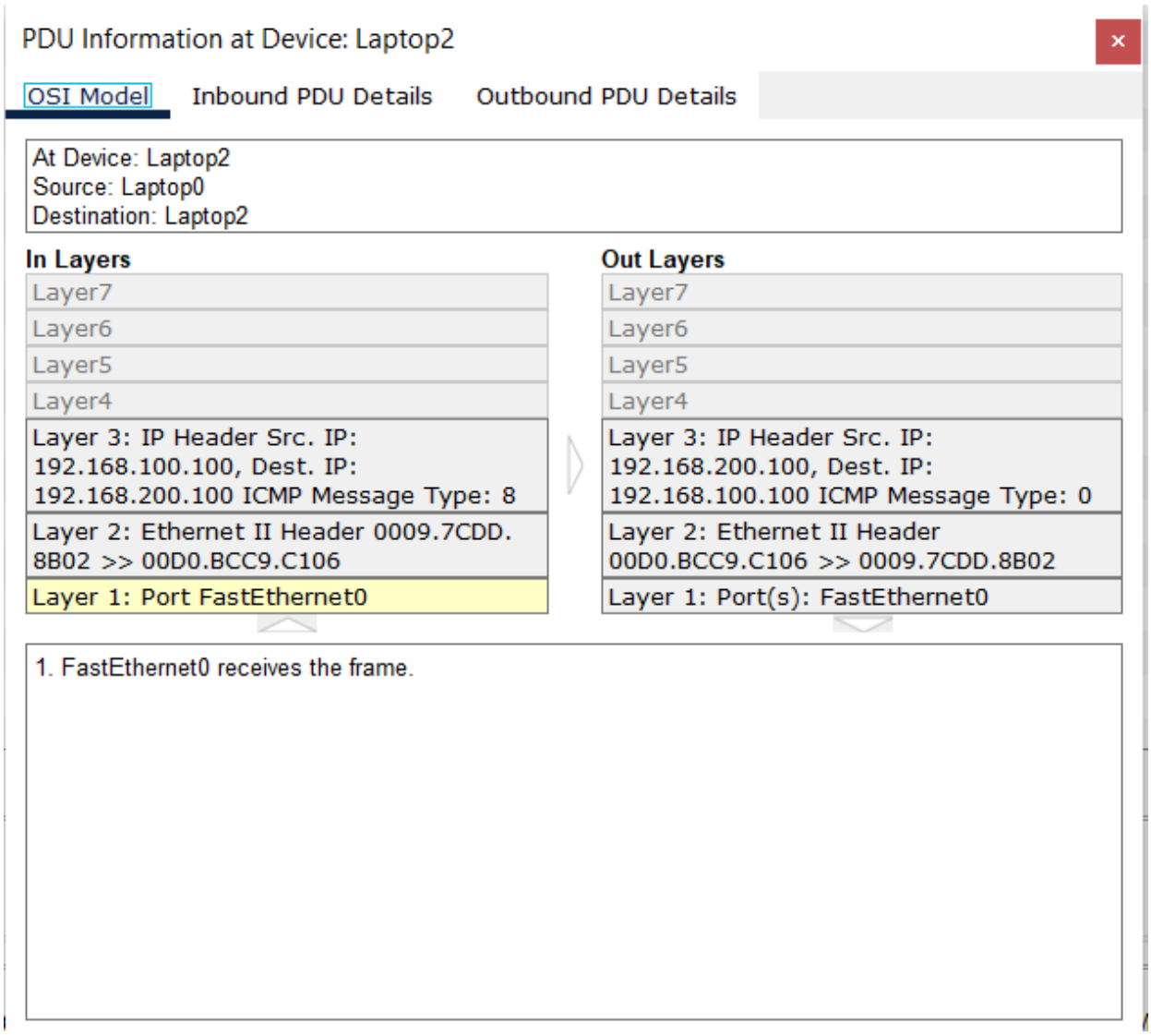
At Device: Switch1
Source: Laptop0
Destination: Laptop2

In Layers	Out Layers
Layer7	Layer7
Layer6	Layer6
Layer5	Layer5
Layer4	Layer4
Layer3	Layer3
Layer 2: Ethernet II Header 0009.7CDD.8B02 >> 00D0.BCC9.C106	Layer 2: Ethernet II Header 0009.7CDD.8B02 >> 00D0.BCC9.C106
Layer 1: Port FastEthernet0/1	Layer 1: Port(s): FastEthernet0/2

1. FastEthernet0/1 receives the frame.


PDU Information at Device: Switch1
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
0
4
8
Bytes
PREAMBLE: 101010..10
DEST ADDR:00D0.BCC9.C106
SRC ADDR:0009.7CDD.8B02
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0
4
8
16
20
24
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0007
FLAGS:0x0
FRAG OFFSET:0x000
TTL:254
PRO:0x01
CHKSUM
SRC IP:192.168.100.100
DST IP:192.168.200.100
DATA (VARIABLE LENGTH)
ICMP
0
8
16
Bits
TYPE:0x08
CODE:0x00
CHECKSUM
ID:0x0007
SEQ NUMBER:6
Variable Size PDU
0
8
16
Bytes
DATA (VARIABLE LENGTH)

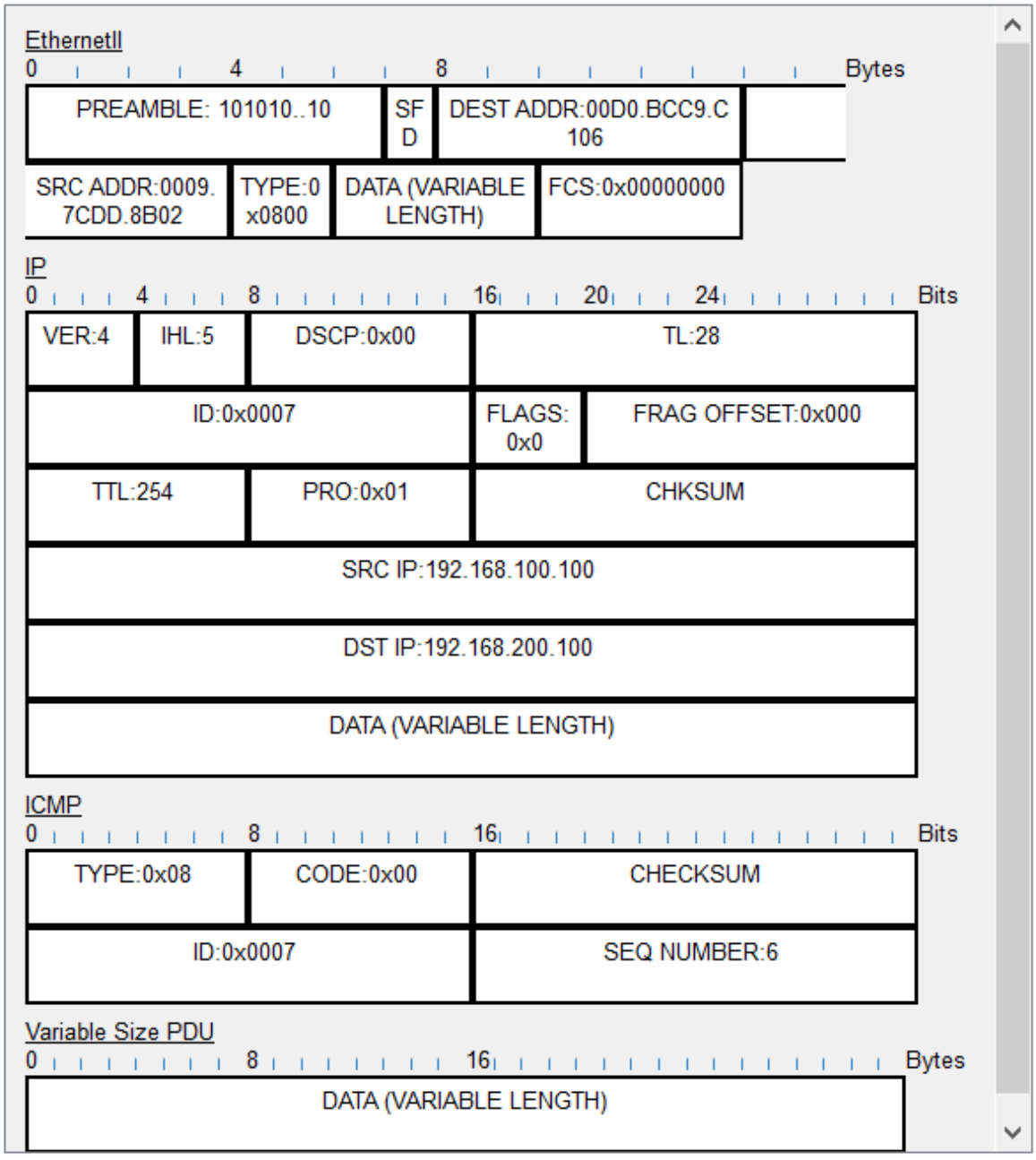

PDU Information at Device: Switch1
OSI Model
Inbound PDU Details
Outbound PDU Details
PDU Formats
EthernetII
0
4
8
Bytes
PREAMBLE: 101010..10
DEST ADDR:00D0.BCC9.C106
SRC ADDR:0009.7CDD.8B02
TYPE:0x0800
DATA (VARIABLE LENGTH)
FCS:0x00000000
IP
0
4
8
16
20
24
Bits
VER:4
IHL:5
DSCP:0x00
TL:28
ID:0x0007
FLAGS:0x0
FRAG OFFSET:0x000
TTL:254
PRO:0x01
CHKSUM
SRC IP:192.168.100.100
DST IP:192.168.200.100
DATA (VARIABLE LENGTH)
ICMP
0
8
16
Bits
TYPE:0x08
CODE:0x00
CHECKSUM
ID:0x0007
SEQ NUMBER:6
Variable Size PDU
0
8
16
Bytes
DATA (VARIABLE LENGTH)


PDU Information at Device: Laptop2
OSI Model
Inbound PDU Details
Outbound PDU Details
At Device: Laptop2
Source: Laptop0
Destination: Laptop2
In Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.100.100, Dest. IP: 192.168.200.100 ICMP Message Type: 8
Layer 2: Ethernet II Header 0009.7CDD.8B02 >> 00D0.BCC9.C106
Layer 1: Port FastEthernet0
Out Layers
Layer7
Layer6
Layer5
Layer4
Layer 3: IP Header Src. IP: 192.168.200.100, Dest. IP: 192.168.100.100 ICMP Message Type: 0
Layer 2: Ethernet II Header 00D0.BCC9.C106 >> 0009.7CDD.8B02
Layer 1: Port(s): FastEthernet0
1. FastEthernet0 receives the frame.

PDU Information at Device: Laptop2

OSI Model | Inbound PDU Details | Outbound PDU Details

PDU Formats



PDU Information at Device: Laptop2

OSI Model | Inbound PDU Details | Outbound PDU Details

PDU Formats