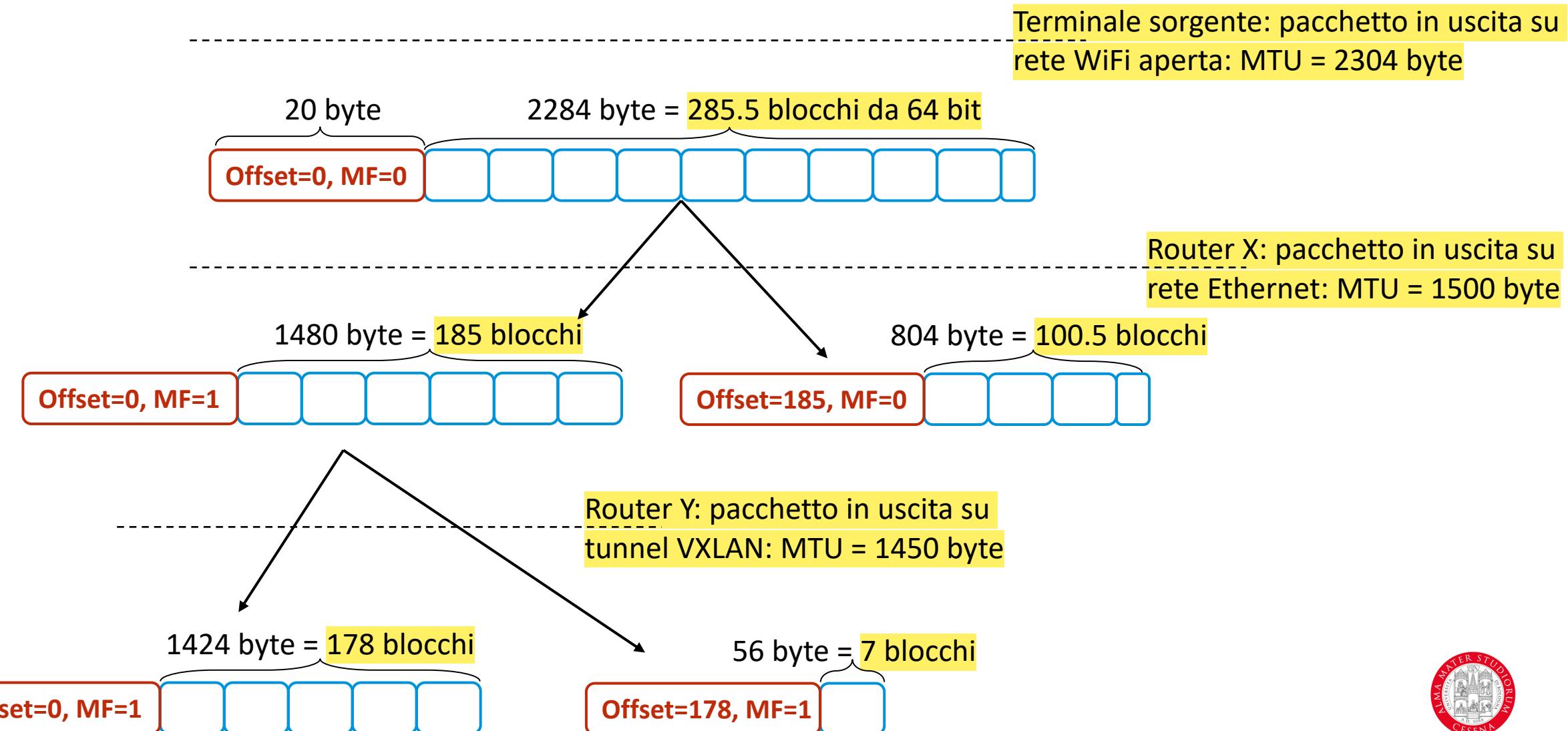
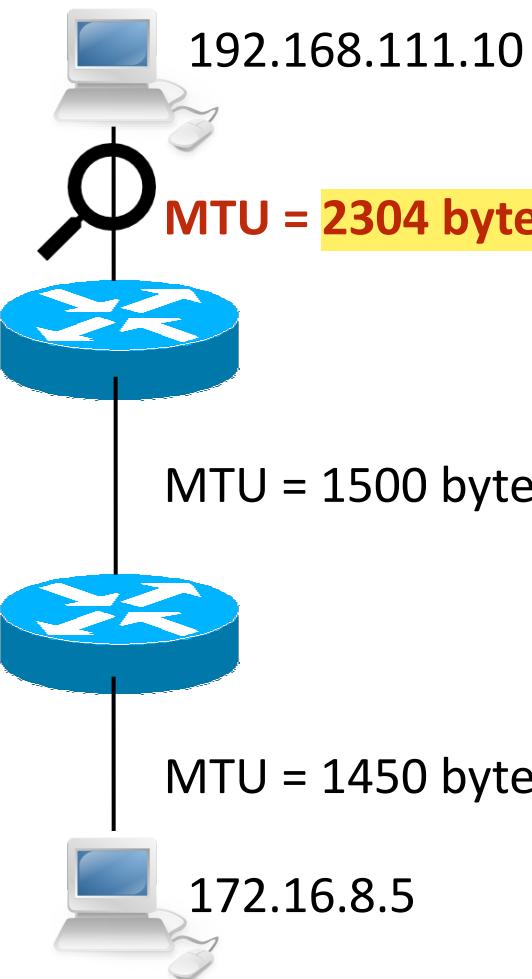


IPv4: esempio di calcolo del fragment offset



IPv4: catture di frammenti

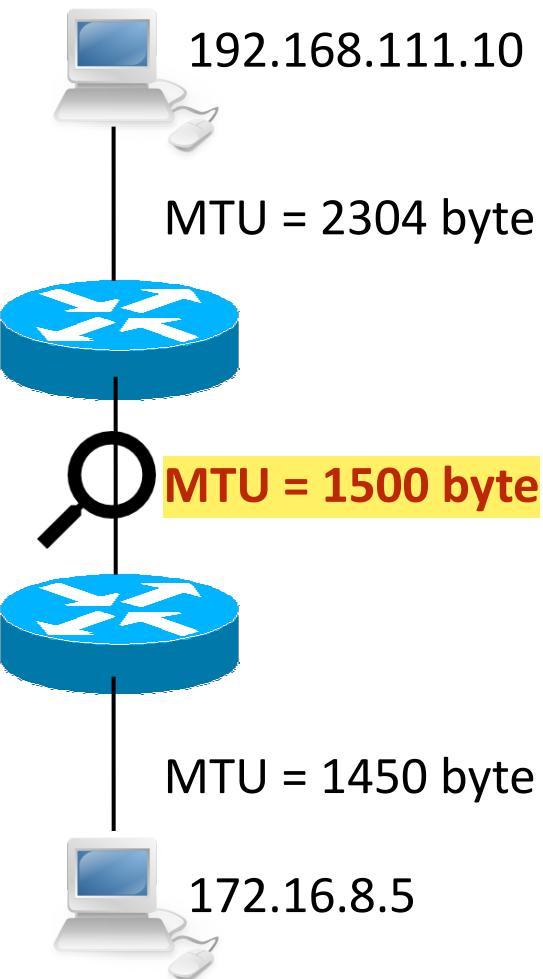


No.	Time	Source	Destination	Protocol	Info
1	0.0000...	192.168.111.10	172.16.8.5	IPv4	ICMP (1)
2	0.0012...	172.16.8.5	192.168.111...	IPv4	ICMP (1)
3	0.0012...	172.16.8.5	192.168.111...	IPv4	Fragmented IP protocol

Frame 1: 2318 bytes on wire (18544 bits), 2318 bytes captured (18544 b...
Ethernet II, Src: 26:4b:3d:c7:6a:0b (26:4b:3d:c7:6a:0b), Dst: 6e:3e:c2...
Internet Protocol Version 4, Src: 192.168.111.10, Dst: 172.16.8.5
 0100 = Version: 4
 0101 = Header Length: 20 bytes (5)
 Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
 Total Length: 2304
 Identification: 0x2ae7 (10983)
 000. = Flags: 0x0
 0.... = Reserved bit: Not set
 .0.... = Don't fragment: Not set
 ..0. = More fragments: Not set
 ...0 0000 0000 0000 = Fragment Offset: 0
 Time to Live: 64
 Protocol: ICMP (1)
 Header Checksum: 0x634e [correct]
 [Header checksum status: Good]
 [Calculated Checksum: 0x634e]
 Source Address: 192.168.111.10
 Destination Address: 172.16.8.5
 Data (2284 bytes)



IPv4: catture di frammenti



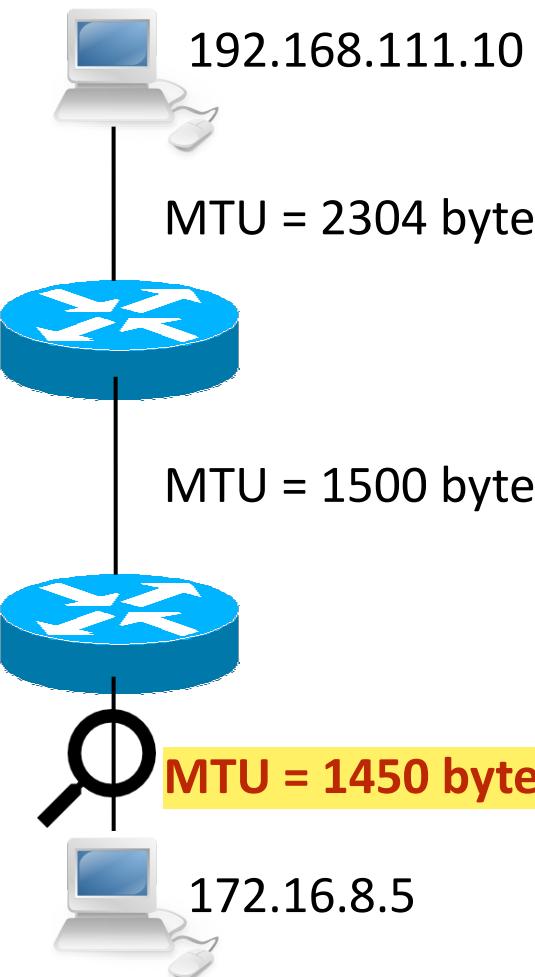
No.	Time	Source	Destination	Protocol
1	0.0000...	192.168.111.10	172.16.8.5	IP
2	0.0000...	192.168.111.10	172.16.8.5	IP
3	0.0011...	172.16.8.5	192.168.111.10	IP
4	0.0012...	172.16.8.5	192.168.111.10	TCP

Frame 1: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits) on interface
Ethernet II, Src: FujitsuT_5c:3d:54 (90:1b:0e:5c:3d:54), Dst: Cisco WS-C3750G-12S (00:0c:29:00:00:05)
Internet Protocol Version 4, Src: 192.168.111.10 (192.168.111.10), Dst: 172.16.8.5 (172.16.8.5)
Version: 4, Header Length: 20 bytes (5), Total Length: 1500
Identification: 0x43ec (17388)
Flags: 0x01 (More fragments), Reserved bit: Not set, Don't fragment: Not set, More fragments: Set
Fragment Offset: 0
Time to Live: 63
Protocol: ICMP (1)
Header Checksum: 0x2e6d [correct]
[Header checksum status: Good]
[Calculated Checksum: 0x2e6d]
Source Address: 192.168.111.10
Destination Address: 172.16.8.5
Data (1480 bytes)

No.	Time	Source	Destination	Protocol
1	0.0000...	192.168.111.10	172.16.8.5	IPv4
2	0.0000...	192.168.111.10	172.16.8.5	IPv4
3	0.0011...	172.16.8.5	192.168.111.10	IPv4
4	0.0012...	172.16.8.5	192.168.111.10	TPV4

Frame 2: 838 bytes on wire (6704 bits), 838 bytes captured (6704 bits) on interface
Ethernet II, Src: FujitsuT_5c:3d:54 (90:1b:0e:5c:3d:54), Dst: Cisco WS-C3750G-12S (00:0c:29:00:00:05)
Internet Protocol Version 4, Src: 192.168.111.10 (192.168.111.10), Dst: 172.16.8.5 (172.16.8.5)
Version: 4, Header Length: 20 bytes (5), Total Length: 824
Identification: 0x43ec (17388)
Flags: 0x00 (Not fragmntable), Reserved bit: Not set, Don't fragment: Not set, More fragments: Not set
Fragment Offset: 1480
Time to Live: 63
Protocol: ICMP (1)
Header Checksum: 0x5058 [correct]
[Header checksum status: Good]
[Calculated Checksum: 0x5058]
Source Address: 192.168.111.10
Destination Address: 172.16.8.5
Data (804 bytes)

IPv4: catture di frammenti



No.	Time	Source	Destination	Protocol
1	0.0000...	192.168.111.10	172.16.8.5	IP
2	0.0000...	192.168.111.10	172.16.8.5	IP
3	0.0000...	192.168.111.10	172.16.8.5	IP
4	0.0000...	172.16.8.5	192.168.111.10	TCP

```

▶ Frame 1: 1458 bytes on wire (11664 bits), 1458 bytes captured (11664 bits) on interface en0
▶ Ethernet II, Src: Cisco_3e:fb:71 (00:24:97:3e:fb:71), Dst: Cisco_3e:fb:71 (00:24:97:3e:fb:71)
└ Internet Protocol Version 4, Src: 192.168.111.10, Dst: 172.16.8.5
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
    Differentiated Services Field: 0x00 (DSCP: Default; ECN: Not ECN-eligible)
    Total Length: 1444
    Identification: 0x73d3 (29651)
    001. .... = Flags: 0x1, More fragments
        0.... .... = Reserved bit: Not set
        .0.... .... = Don't fragment: Not set
        ..1.... .... = More fragments: Set
    ...0 0000 0000 0000 = Fragment Offset: 0
    Time to Live: 62
    Protocol: ICMP (1)
    Header Checksum: 0xffbd [correct]
        [Header checksum status: Good]
        [Calculated Checksum: 0xffbd]
    Source Address: 192.168.111.10
    Destination Address: 172.16.8.5
    Data (1424 bytes)

```

No.	Time	Source	Destination	Protocol
1	0.0000...	192.168.111.10	172.16.8.5	IP
2	0.0000...	192.168.111.10	172.16.8.5	IP
3	0.0000...	192.168.111.10	172.16.8.5	IP
4	0.0000...	172.16.8.5	192.168.111.10	TCP

```

▶ Frame 2: 90 bytes on wire (720 bits), 90 bytes captured (720 bits) on interface en0
▶ Ethernet II, Src: Cisco_3e:fb:71 (00:24:97:3e:fb:71), Dst: Cisco_3e:fb:71 (00:24:97:3e:fb:71)
└ Internet Protocol Version 4, Src: 192.168.111.10, Dst: 172.16.8.5
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
    Differentiated Services Field: 0x00 (DSCP: Default; ECN: Not ECN-eligible)
    Total Length: 76
    Identification: 0x73d3 (29651)
    001. .... = Flags: 0x1, More fragments
        0.... .... = Reserved bit: Not set
        .0.... .... = Don't fragment: Not set
        ..1.... .... = More fragments: Set
    ...0 0000 1011 0001 = Fragment Offset: 1424
    Time to Live: 62
    Protocol: ICMP (1)
    Header Checksum: 0x0464 [correct]
        [Header checksum status: Good]
        [Calculated Checksum: 0x0464]
    Source Address: 192.168.111.10
    Destination Address: 172.16.8.5
    Data (56 bytes)

```

No.	Time	Source	Destination	Protocol
1	0.0000...	192.168.111.10	172.16.8.5	IP
2	0.0000...	192.168.111.10	172.16.8.5	IP
3	0.0000...	192.168.111.10	172.16.8.5	IP
4	0.0000...	172.16.8.5	192.168.111.10	TCP

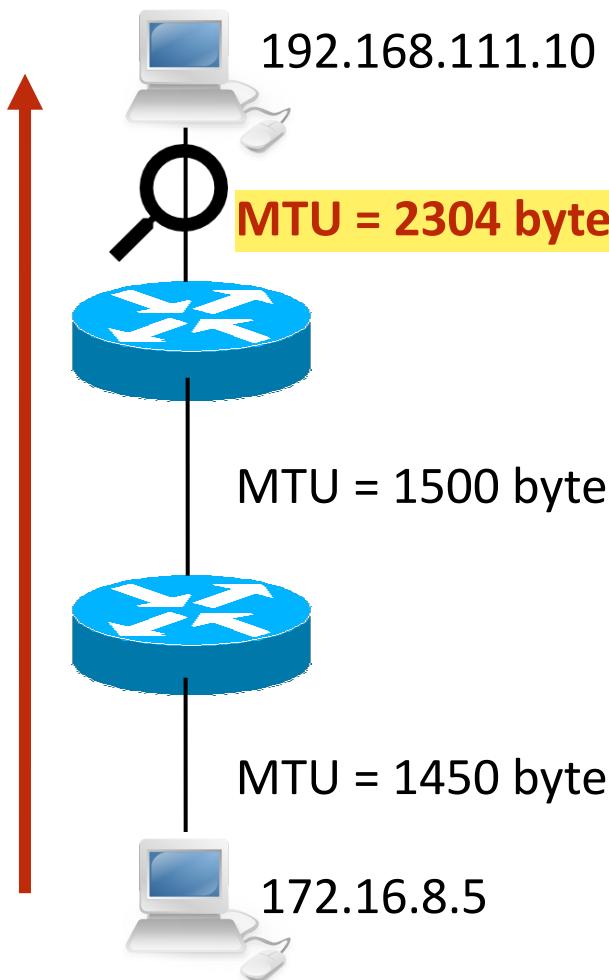
```

▶ Frame 3: 838 bytes on wire (6704 bits), 838 bytes captured (6704 bits) on interface en0
▶ Ethernet II, Src: Cisco_3e:fb:71 (00:24:97:3e:fb:71), Dst: Cisco_3e:fb:71 (00:24:97:3e:fb:71)
└ Internet Protocol Version 4, Src: 192.168.111.10, Dst: 172.16.8.5
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
    Differentiated Services Field: 0x00 (DSCP: Default; ECN: Not ECN-eligible)
    Total Length: 824
    Identification: 0x73d3 (29651)
    000. .... = Flags: 0x0
        0.... .... = Reserved bit: Not set
        .0.... .... = Don't fragment: Not set
        ..0.... .... = More fragments: Not set
    ...0 0000 1011 1001 = Fragment Offset: 1480
    Time to Live: 62
    Protocol: ICMP (1)
    Header Checksum: 0x2171 [correct]
        [Header checksum status: Good]
        [Calculated Checksum: 0x2171]
    Source Address: 192.168.111.10
    Destination Address: 172.16.8.5
    Data (804 bytes)

```



IPv4: catture di frammenti



No.	Time	Source	Destination	Protocol
1	0.0000...	192.168.111.10	172.16.8.5	IP
2	0.0012...	172.16.8.5	192.168.111.10	IP
3	0.0012...	172.16.8.5	192.168.111.10	IP

Frame 2: 1458 bytes on wire (11664 bits), 1458 bytes captured (11664 bits) on interface
Ethernet II, Src: 6e:3e:c2:b9:35:54 (6e:3e:c2:b9:35:54), Dst: 192.168.111.10 (0a:00:27:04:0d:0a)
Internet Protocol Version 4, Src: 172.16.8.5, Dst: 192.168.111.10
 0100 = Version: 4
 0101 = Header Length: 20 bytes (5)
 Differentiated Services Field: 0x00 (DSCP: CS0)
 Total Length: 1444
 Identification: 0x91fd (37373)
 001. = Flags: 0x1, More fragments
 0.... = Reserved bit: Not set
 .0... = Don't fragment: Not set
 ..1. = More fragments: Set
 ...0 0000 0000 0000 = Fragment Offset: 0
 Time to Live: 62
 Protocol: ICMP (1)
 Header Checksum: 0xe193 [correct]
 [Header checksum status: Good]
 [Calculated Checksum: 0xe193]
 Source Address: 172.16.8.5
 Destination Address: 192.168.111.10
 Data (1424 bytes)

No.	Time	Source	Destination	Protocol
1	0.0000...	192.168.111.10	172.16.8.5	IP
2	0.0012...	172.16.8.5	192.168.111.10	IP
3	0.0012...	172.16.8.5	192.168.111.10	IP

Frame 3: 894 bytes on wire (7152 bits), 894 bytes captured (7152 bits) on interface
Ethernet II, Src: 6e:3e:c2:b9:35:54 (6e:3e:c2:b9:35:54), Dst: 192.168.111.10 (0a:00:27:04:0d:0a)
Internet Protocol Version 4, Src: 172.16.8.5, Dst: 192.168.111.10
 0100 = Version: 4
 0101 = Header Length: 20 bytes (5)
 Differentiated Services Field: 0x00 (DSCP: CS0)
 Total Length: 880
 Identification: 0x91fd (37373)
 000. = Flags: 0x0
 0.... = Reserved bit: Not set
 .0... = Don't fragment: Not set
 ..0. = More fragments: Not set
 ...0 0000 1011 0010 = Fragment Offset: 1424
 Time to Live: 62
 Protocol: ICMP (1)
 Header Checksum: 0x0316 [correct]
 [Header checksum status: Good]
 [Calculated Checksum: 0x0316]
 Source Address: 172.16.8.5
 Destination Address: 192.168.111.10
 Data (860 bytes)