CS372 Lab 4
Hudson Dean

A look at the captured trace

1. The IP address is 192.168.1.102

2. ICMP (1)

3. IP header = 20 bytes   Payload = 64 bytes
   Payload was calculated by taking the length of the message (84 bytes) and subtracting the IP header (84 - 20 = 64)

4. The fragment flag bit is 0. Therefore the IP datagram has not been fragmented.

5. Fields that change = Identification, Time to live, Header Checksum

6. Fields that must be and are constant =
   - Version: IP is using IPv4 for all messages
   - Source IP: Sending from same computer
   - Destination IP: Sending to same machine
   - Upper Layer Protocol: They are all ICMP packets
   - Header Length: All ICMP packets have the same header size
   Fields that must be changed =
   - Identification: Different packets have different identifiers
   - Time to live: traceroute increases TTL
   - Header Checksum: Header data is variable with the two above fields, different checksums are required to account for this

7. The identification field increases by one, Time to live increases by one

8. The Identification field = 0x9d7c (40316), Time to live field = 255

9. Only the Time to live remains unchanged since the time to live from the first hop router should not (and does not) change. The Identification field does change since a each request must have a unique identification.

Time	Source	Destination	Protocol	Length	Info
0.000000	CnetTech_73:8d:ce	Broadcast	ARP	60	Who has 192.168.1.117? Tell 192.168.1.104
4.866867	192.168.1.100	192.168.1.1	SSDP	174	M-SEARCH * HTTP/1.1
4.868147	192.168.1.100	192.168.1.1	SSDP	175	M-SEARCH * HTTP/1.1
5.363536	192.168.1.100	192.168.1.1	SSDP	174	M-SEARCH * HTTP/1.1
5.364799	192.168.1.100	192.168.1.1	SSDP	175	M-SEARCH * HTTP/1.1
5.864428	192.168.1.100	192.168.1.1	SSDP	174	M-SEARCH * HTTP/1.1
5.865461	192.168.1.100	192.168.1.1	SSDP	175	M-SEARCH * HTTP/1.1
6.163045	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=20483/848, ttl=1 (no resp…
6.176826	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
6.188629	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=20739/849, ttl=2 (no resp…
6.202957	24.218.0.153	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
6.208597	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=20995/850, ttl=3 (no resp…
6.234505	24.128.190.197	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
6.238695	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=21251/851, ttl=4 (no resp…
6.257672	24.128.0.101	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
6.258750	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=21507/852, ttl=5 (no resp…

> Frame 8: 98 bytes on wire (784 bits), 98 bytes captured (784 bits)
> Ethernet II, Src: Actionte_8a:70:1a (00:20:e0:8a:70:1a), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.59.23.100
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
    ∨ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
        0000 00.. = Differentiated Services Codepoint: Default (0)
        .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
    Total Length: 84
    Identification: 0x32d0 (13008)
    ∨ Flags: 0x0000
        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: 1
    Protocol: ICMP (1)
    Header checksum: 0x2d2c [validation disabled]
    [Header checksum status: Unverified]
    Source: 192.168.1.102
    Destination: 128.59.23.100
∨ Internet Control Message Protocol
    Type: 8 (Echo (ping) request)

No.	Time	Source	Destination	Protocol	Length	Info
23	6.358888	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=22531/856, ttl=9 (r
22	6.338804	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=22275/855, ttl=8 (r
20	6.308748	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=22019/854, ttl=7 (r
18	6.288750	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=21763/853, ttl=6 (r
16	6.258750	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=21507/852, ttl=5 (r
14	6.238695	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=21251/851, ttl=4 (r
12	6.208597	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=20995/850, ttl=3 (r
10	6.188629	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=20739/849, ttl=2 (r
8	6.163045	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=20483/848, ttl=1 (r
37	6.866859	192.168.1.100	192.168.1.1	SSDP	175	M-SEARCH * HTTP/1.1
36	6.865806	192.168.1.100	192.168.1.1	SSDP	174	M-SEARCH * HTTP/1.1
26	6.372083	192.168.1.100	192.168.1.1	SSDP	175	M-SEARCH * HTTP/1.1
25	6.370907	192.168.1.100	192.168.1.1	SSDP	174	M-SEARCH * HTTP/1.1
7	5.865461	192.168.1.100	192.168.1.1	SSDP	175	M-SEARCH * HTTP/1.1
6	5.864428	192.168.1.100	192.168.1.1	SSDP	174	M-SEARCH * HTTP/1.1
5	5.364799	192.168.1.100	192.168.1.1	SSDP	175	M-SEARCH * HTTP/1.1

> Frame 8: 98 bytes on wire (784 bits), 98 bytes captured (784 bits)
> Ethernet II, Src: Actionte_8a:70:1a (00:20:e0:8a:70:1a), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.59.23.100
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
    ∨ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
        0000 00.. = Differentiated Services Codepoint: Default (0)
        .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
    Total Length: 84
    Identification: 0x32d0 (13008)
    ∨ Flags: 0x0000
        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: 1
    Protocol: ICMP (1)
    Header checksum: 0x2d2c [validation disabled]
    [Header checksum status: Unverified]
    Source: 192.168.1.102
    Destination: 128.59.23.100
∨ Internet Control Message Protocol
    Type: 8 (Echo (ping) request)

No.	Time	Source	Destination	Protocol	Length	Info
32	6.439037	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=23299/859, ttl=12 (
29	6.408895	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=23043/858, ttl=11 (
28	6.388921	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=22787/857, ttl=10 (
23	6.358888	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=22531/856, ttl=9 (r
22	6.338804	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=22275/855, ttl=8 (r
20	6.308748	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=22019/854, ttl=7 (r
18	6.288750	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=21763/853, ttl=6 (r
16	6.258750	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=21507/852, ttl=5 (r
14	6.238695	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=21251/851, ttl=4 (r
12	6.208597	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=20995/850, ttl=3 (r
10	6.188629	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=20739/849, ttl=2 (r
8	6.163045	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request	id=0x0300, seq=20483/848, ttl=1 (r
37	6.866859	192.168.1.100	192.168.1.1	SSDP	175	M-SEARCH * HTTP/1.1
36	6.865806	192.168.1.100	192.168.1.1	SSDP	174	M-SEARCH * HTTP/1.1
26	6.372083	192.168.1.100	192.168.1.1	SSDP	175	M-SEARCH * HTTP/1.1
25	6.370907	192.168.1.100	192.168.1.1	SSDP	174	M-SEARCH * HTTP/1.1

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> Frame 10: 98 bytes on wire (784 bits), 98 bytes captured (784 bits)
> Ethernet II, Src: Actionte_8a:70:1a (00:20:e0:8a:70:1a), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.59.23.100
     0100 .... = Version: 4
     .... 0101 = Header Length: 20 bytes (5)
  ∨ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
       0000 00.. = Differentiated Services Codepoint: Default (0)
       .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
     Total Length: 84
     Identification: 0x32d1 (13009)
  ∨ Flags: 0x0000
       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: 2
     Protocol: ICMP (1)
     Header checksum: 0x2c2b [validation disabled]
     [Header checksum status: Unverified]
     Source: 192.168.1.102
     Destination: 128.59.23.100
∨ Internet Control Message Protocol
     Type: 8 (Echo (ping) request)
```

No.	Time	Source	Destination	Protocol	Length	Info
261	44.191118	12.122.10.22	192.168.1.102	IPv4	554	Fragmented IP protocol (proto=ICMP 1, off=0, ID=0000)
207	38.892734	12.122.10.22	192.168.1.102	IPv4	554	Fragmented IP protocol (proto=ICMP 1, off=0, ID=0000)
165	33.885853	12.122.10.22	192.168.1.102	IPv4	554	Fragmented IP protocol (proto=ICMP 1, off=0, ID=0000)
124	28.871954	12.122.10.22	192.168.1.102	IPv4	554	Fragmented IP protocol (proto=ICMP 1, off=0, ID=0000)
77	16.338078	12.122.10.22	192.168.1.102	ICMP	126	Time-to-live exceeded (Time to live exceeded in transit
52	11.332109	12.122.10.22	192.168.1.102	ICMP	126	Time-to-live exceeded (Time to live exceeded in transit
21	6.334320	12.122.10.22	192.168.1.102	ICMP	126	Time-to-live exceeded (Time to live exceeded in transit
330	53.501082	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
274	48.493073	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
219	43.485786	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
179	38.491817	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
135	33.470548	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
94	28.462264	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
65	16.179649	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
40	11.174495	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
9	6.176826	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit

```
0100 .... = Version: 4
.... 0101 = Header Length: 20 bytes (5)
∨ Differentiated Services Field: 0xc0 (DSCP: CS6, ECN: Not-ECT)
    1100 00.. = Differentiated Services Codepoint: Class Selector 6 (48)
    .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
  Total Length: 56
  Identification: 0x9d7c (40316)
∨ Flags: 0x0000
    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: 255
  Protocol: ICMP (1)
  Header checksum: 0x6ca0 [validation disabled]
  [Header checksum status: Unverified]
  Source: 10.216.228.1
  Destination: 192.168.1.102
∨ Internet Control Message Protocol
  Type: 11 (Time-to-live exceeded)
  Code: 0 (Time to live exceeded in transit)
  Checksum: 0xd946 [correct]
  [Checksum Status: Good]
```

```
0100 .... = Version: 4
.... 0101 = Header Length: 20 bytes (5)
∨ Differentiated Services Field: 0xc0 (DSCP: CS6, ECN: Not-ECT)
    1100 00.. = Differentiated Services Codepoint: Class Selector 6 (48)
    .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
  Total Length: 56
  Identification: 0x9d98 (40344)
∨ Flags: 0x0000
    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: 255
  Protocol: ICMP (1)
  Header checksum: 0x6c84 [validation disabled]
  [Header checksum status: Unverified]
  Source: 10.216.228.1
  Destination: 192.168.1.102
∨ Internet Control Message Protocol
  Type: 11 (Time-to-live exceeded)
  Code: 0 (Time to live exceeded in transit)
  Checksum: 0xd947 [correct]
  [Checksum Status: Good]
```

Fragmentation

10. Yes the message has been fragmented.

11. The "More fragments" flag bit has been set, this tells us that the data has been fragmented. The fragment offset flag field is currently set to 0. This indicates that this is the first fragment to be sent. The total length of the IP datagram is 1500 bytes.

12. The fragment offset flag field is currently set to 185. This indicates that this is not the first fragment that has been sent.The "More fragments" flag bit has not been set, this tells us that this is the last fragment.

13. The following fields changed from the first fragment to the second fragment:
    - Total Length
    - More Fragments flag
    - Fragment Offset flag
    - Checksum

14. The original datagram created 3 fragments.
15. The following fields changed between fragments:
    - Checksum
    - Fragment offset flag
    - More fragments flag (fragments 1 & 2 had the flag set, fragment 3 did not)
    - Total length (Fragments 1 & 2 had length set to 1500 bytes while fragment 3 had a length of 568 bytes)

86 16.443310	192.168.1.102	128.59.23.100	ICMP	98 Echo (ping) request id=0x0300, seq=29955/885, ttl=12
87 16.463382	192.168.1.102	128.59.23.100	ICMP	98 Echo (ping) request id=0x0300, seq=30211/886, ttl=13
88 16.468603	128.59.1.41	192.168.1.102	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit
89 16.499919	128.59.23.100	192.168.1.102	ICMP	98 Echo (ping) reply id=0x0300, seq=30211/886, ttl=242
90 22.928093	192.168.1.102	128.119.245.12	SSH	74 Client: Encrypted packet (len=20)
91 22.952738	128.119.245.12	192.168.1.102	TCP	60 22 → 1170 [ACK] Seq=1 Ack=21 Win=35040 Len=0
92 28.441511	192.168.1.102	128.59.23.100	IPv4	1514 Fragmented IP protocol (proto=ICMP 1, off=0, ID=32f9)
93 28.442185	192.168.1.102	128.59.23.100	ICMP	562 Echo (ping) request id=0x0300, seq=30467/887, ttl=1
94 28.462264	10.216.228.1	192.168.1.102	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit
95 28.470668	192.168.1.102	128.59.23.100	IPv4	1514 Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fa)
96 28.471338	192.168.1.102	128.59.23.100	ICMP	562 Echo (ping) request id=0x0300, seq=30723/888, ttl=2
97 28.490663	192.168.1.102	128.59.23.100	IPv4	1514 Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fb)
98 28.491323	192.168.1.102	128.59.23.100	ICMP	562 Echo (ping) request id=0x0300, seq=30979/889, ttl=3
99 28.520729	192.168.1.102	128.59.23.100	IPv4	1514 Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fc)
100 28.521393	192.168.1.102	128.59.23.100	ICMP	562 Echo (ping) request id=0x0300, seq=31235/890, ttl=4

> Frame 93: 562 bytes on wire (4496 bits), 562 bytes captured (4496 bits)
> Ethernet II, Src: Actionte_8a:70:1a (00:20:e0:8a:70:1a), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.59.23.100
     0100 .... = Version: 4
     .... 0101 = Header Length: 20 bytes (5)
   ∨ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
       0000 00.. = Differentiated Services Codepoint: Default (0)
       .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
     Total Length: 548
     Identification: 0x32f9 (13049)
   ∨ Flags: 0x00b9
       0... .... = Reserved bit: Not set
       .0.. .... = Don't fragment: Not set
       ..0. .... = More fragments: Not set
       ...0 0000 1011 1001 = Fragment offset: 185
   > Time to live: 1
     Protocol: ICMP (1)
     Header checksum: 0x2a7a [validation disabled]
     [Header checksum status: Unverified]
     Source: 192.168.1.102
     Destination: 128.59.23.100
   > [2 IPv4 Fragments (2008 bytes): #92(1480), #93(528)]
∨ Internet Control Message Protocol

No.	Time	Source	Destination	Protocol	Length	Info
85	16.438258	67.99.58.194	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
86	16.443310	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=29955/885, ttl=12 (
87	16.463382	192.168.1.102	128.59.23.100	ICMP	98	Echo (ping) request id=0x0300, seq=30211/886, ttl=13 (
88	16.468603	128.59.1.41	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
89	16.499919	128.59.23.100	192.168.1.102	ICMP	98	Echo (ping) reply id=0x0300, seq=30211/886, ttl=242
90	22.928093	192.168.1.102	128.119.245.12	SSH	74	Client: Encrypted packet (len=20)
91	22.952738	128.119.245.12	192.168.1.102	TCP	60	22 → 1170 [ACK] Seq=1 Ack=21 Win=35040 Len=0
92	28.441511	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=32f9) [
93	28.442185	192.168.1.102	128.59.23.100	ICMP	562	Echo (ping) request id=0x0300, seq=30467/887, ttl=1 (r
94	28.462264	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
95	28.470668	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fa) [
96	28.471338	192.168.1.102	128.59.23.100	ICMP	562	Echo (ping) request id=0x0300, seq=30723/888, ttl=2 (r
97	28.490663	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fb) [
98	28.491323	192.168.1.102	128.59.23.100	ICMP	562	Echo (ping) request id=0x0300, seq=30979/889, ttl=3 (r
99	28.520729	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fc) [
100	28.521393	192.168.1.102	128.59.23.100	ICMP	562	Echo (ping) request id=0x0300, seq=31235/890, ttl=4 (r

> Frame 92: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits)
> Ethernet II, Src: Actionte_8a:70:1a (00:20:e0:8a:70:1a), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.59.23.100
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
    ∨ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
        0000 00.. = Differentiated Services Codepoint: Default (0)
        .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
    Total Length: 1500
    Identification: 0x32f9 (13049)
    ∨ Flags: 0x2000, 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: 1
    Protocol: ICMP (1)
    Header checksum: 0x077b [validation disabled]
    [Header checksum status: Unverified]
    Source: 192.168.1.102
    Destination: 128.59.23.100
    Reassembled IPv4 in frame: 93
> Data (1480 bytes)

```
0000  00 06 25 da af 73 00 20  e0 8a 70 1a 08 00 45 00   ··%··s·  ··p···E·
0010  05 dc 32 f9 20 00 01 01  07 7b c0 a8 01 66 80 3b   ··2·· ···{···f·;
0020  17 64 08 00 d0 c6 03 00  77 03 37 36 20 aa aa aa   ·d······w·76 ···
0030  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
0040  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
0050  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
0060  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
0070  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
0080  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
0090  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
00a0  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
00b0  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
00c0  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa   ········ ········
```

No.	Time	Source	Destination	Protocol	Length	Info
88	16.468603	128.59.1.41	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
89	16.499919	128.59.23.100	192.168.1.102	ICMP	98	Echo (ping) reply id=0x0300, seq=30211/886, ttl=242
90	22.928093	192.168.1.102	128.119.245.12	SSH	74	Client: Encrypted packet (len=20)
91	22.952738	128.119.245.12	192.168.1.102	TCP	60	22 → 1170 [ACK] Seq=1 Ack=21 Win=35040 Len=0
92	28.441511	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=32f9) [
93	28.442185	192.168.1.102	128.59.23.100	ICMP	562	Echo (ping) request id=0x0300, seq=30467/887, ttl=1 (r
94	28.462264	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
95	28.470668	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fa) [
96	28.471338	192.168.1.102	128.59.23.100	ICMP	562	Echo (ping) request id=0x0300, seq=30723/888, ttl=2 (r
97	28.490663	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fb) [
98	28.491323	192.168.1.102	128.59.23.100	ICMP	562	Echo (ping) request id=0x0300, seq=30979/889, ttl=3 (r
99	28.520729	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fc) [
100	28.521393	192.168.1.102	128.59.23.100	ICMP	562	Echo (ping) request id=0x0300, seq=31235/890, ttl=4 (r
101	28.530213	24.218.0.153	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
102	28.540758	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=32fd) [
103	28.541476	192.168.1.102	128.59.23.100	ICMP	562	Echo (ping) request id=0x0300, seq=31491/891, ttl=5 (r

```
> Frame 93: 562 bytes on wire (4496 bits), 562 bytes captured (4496 bits)
> Ethernet II, Src: Actionte_8a:70:1a (00:20:e0:8a:70:1a), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.59.23.100
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
  ∨ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
      0000 00.. = Differentiated Services Codepoint: Default (0)
      .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
    Total Length: 548
    Identification: 0x32f9 (13049)
  ∨ Flags: 0x00b9
      0... .... .... .... = Reserved bit: Not set
      .0.. .... .... .... = Don't fragment: Not set
      ..0. .... .... .... = More fragments: Not set
      ...0 0000 1011 1001 = Fragment offset: 185
  > Time to live: 1
    Protocol: ICMP (1)
    Header checksum: 0x2a7a [validation disabled]
    [Header checksum status: Unverified]
    Source: 192.168.1.102
    Destination: 128.59.23.100
  > [2 IPv4 Fragments (2008 bytes): #92(1480), #93(528)]
∨ Internet Control Message Protocol
```
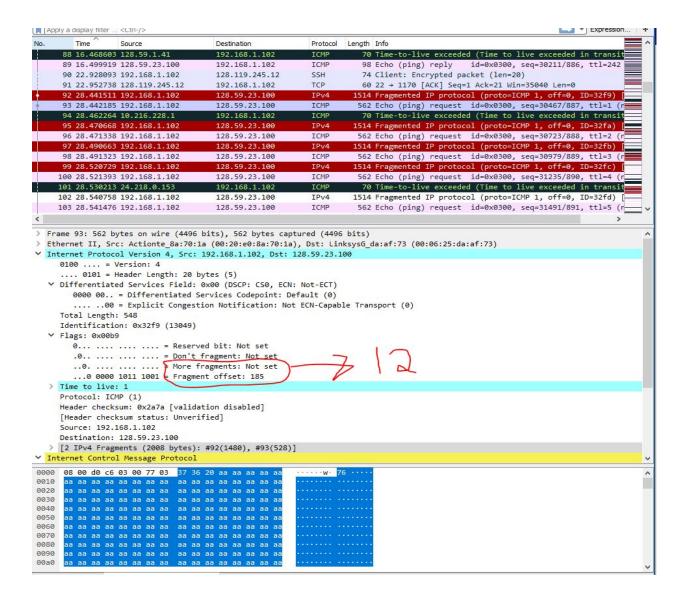
```
0000  08 00 d0 c6 03 00 77 03  37 36 20 aa aa aa aa aa      ······w· 76 ·····
0010  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
0020  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
0030  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
0040  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
0050  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
0060  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
0070  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
0080  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
0090  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
00a0  aa aa aa aa aa aa aa aa  aa aa aa aa aa aa aa aa      ········ ········
```

No.	Time	Source	Destination	Protocol	Length	Info
211	39.164169	67.99.58.194	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
212	39.227649	128.59.1.41	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
213	39.314263	128.59.23.100	192.168.1.102	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=0956) [
214	39.322566	128.59.23.100	192.168.1.102	ICMP	562	Echo (ping) reply id=0x0300, seq=40195/925, ttl=242
215	41.038658	192.168.1.102	199.2.53.206	TCP	62	[TCP Retransmission] 1483 → 631 [SYN] Seq=0 Win=16384
216	43.466136	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=3323) [
217	43.466808	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=1480, ID=332
218	43.467629	192.168.1.102	128.59.23.100	ICMP	582	Echo (ping) request id=0x0300, seq=40451/926, ttl=1 (r
219	43.485786	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
220	43.492284	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=3324) [
221	43.492953	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=1480, ID=332
222	43.493901	192.168.1.102	128.59.23.100	ICMP	582	Echo (ping) request id=0x0300, seq=40707/927, ttl=2 (r
223	43.512145	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=3325) [
224	43.512818	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=1480, ID=332
225	43.513660	192.168.1.102	128.59.23.100	ICMP	582	Echo (ping) request id=0x0300, seq=40963/928, ttl=3 (r
226	43.542792	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=3326) [

> Frame 218: 582 bytes on wire (4656 bits), 582 bytes captured (4656 bits)
> Ethernet II, Src: Actionte_8a:70:1a (00:20:e0:8a:70:1a), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.59.23.100
      0100 .... = Version: 4
      .... 0101 = Header Length: 20 bytes (5)
   ∨ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
        0000 00.. = Differentiated Services Codepoint: Default (0)
        .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
      Total Length: 568
      Identification: 0x3323 (13091)
   ∨ Flags: 0x0172
        0... .... = Reserved bit: Not set
        .0.. .... = Don't fragment: Not set
        ..0. .... = More fragments: Not set
        ...0 0001 0111 0010 = Fragment offset: 370
   > Time to live: 1
      Protocol: ICMP (1)
      Header checksum: 0x2983 [validation disabled]
      [Header checksum status: Unverified]
      Source: 192.168.1.102
      Destination: 128.59.23.100
   ∨ [3 IPv4 Fragments (3508 bytes): #216(1480), #217(1480), #218(548)]
        [Frame: 216, payload: 0-1479 (1480 bytes)]

No.	Time	Source	Destination	Protocol	Length	Info
211	39.164169	67.99.58.194	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
212	39.227649	128.59.1.41	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
213	39.314263	128.59.23.100	192.168.1.102	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=0956) [
214	39.322566	128.59.23.100	192.168.1.102	ICMP	562	Echo (ping) reply id=0x0300, seq=40195/925, ttl=242
215	41.038658	192.168.1.102	199.2.53.206	TCP	62	[TCP Retransmission] 1483 → 631 [SYN] Seq=0 Win=16384
216	43.466136	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=3323)
217	43.466808	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=1480, ID=332
218	43.467629	192.168.1.102	128.59.23.100	ICMP	582	Echo (ping) request id=0x0300, seq=40451/926, ttl=1 (r
219	43.485786	10.216.228.1	192.168.1.102	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit
220	43.492284	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=3324)
221	43.492953	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=1480, ID=3324
222	43.493901	192.168.1.102	128.59.23.100	ICMP	582	Echo (ping) request id=0x0300, seq=40707/927, ttl=2 (r
223	43.512145	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=3325)
224	43.512818	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=1480, ID=332
225	43.513660	192.168.1.102	128.59.23.100	ICMP	582	Echo (ping) request id=0x0300, seq=40963/928, ttl=3 (r
226	43.542792	192.168.1.102	128.59.23.100	IPv4	1514	Fragmented IP protocol (proto=ICMP 1, off=0, ID=3326) [

> Frame 217: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits)
> Ethernet II, Src: Actionte_8a:70:1a (00:20:e0:8a:70:1a), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.59.23.100
      0100 .... = Version: 4
      .... 0101 = Header Length: 20 bytes (5)
    ∨ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
          0000 00.. = Differentiated Services Codepoint: Default (0)
          .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
      Total Length: 1500
      Identification: 0x3323 (13091)
    ∨ Flags: 0x20b9, More fragments
          0... .... = Reserved bit: Not set
          .0.. .... = Don't fragment: Not set
          ..1. .... = More fragments: Set
          ...0 0000 1011 1001 = Fragment offset: 185
    > Time to live: 1
      Protocol: ICMP (1)
      Header checksum: 0x0698 [validation disabled]
      [Header checksum status: Unverified]
      Source: 192.168.1.102
      Destination: 128.59.23.100
      Reassembled IPv4 in frame: 218
> Data (1480 bytes)

> Frame 216: 1514 bytes on wire (12112 bits), 1514 bytes captured (12112 bits)
> Ethernet II, Src: Actionte_8a:70:1a (00:20:e0:8a:70:1a), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
∨ Internet Protocol Version 4, Src: 192.168.1.102, Dst: 128.59.23.100
      0100 .... = Version: 4
      .... 0101 = Header Length: 20 bytes (5)
    ∨ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
          0000 00.. = Differentiated Services Codepoint: Default (0)
          .... ..00 = Explicit Congestion Notification: Not ECN-Capable Transport (0)
      Total Length: 1500
      Identification: 0x3323 (13091)
    ∨ Flags: 0x2000, 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: 1
      Protocol: ICMP (1)
      Header checksum: 0x0751 [validation disabled]
      [Header checksum status: Unverified]
      Source: 192.168.1.102
      Destination: 128.59.23.100
      Reassembled IPv4 in frame: 218
> Data (1480 bytes)