

Franklin Nuth
Professor Ronny Bull
CSC323-A
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ICMP

- 1) The IP address of my host is 192.168.2.101, and the IP address of my destination host is 143.89.14.34.
- 2) An ICMP packet does not have source and destination port because it is network layer data, so no ports needed.
- 3) The ICMP type and code numbers are 8 and 0. The bytes of the checksum, sequence number, and identifier fields are two bytes each.
- 4) The ICMP type and code number are 8 and 0. The bytes of the checksum, sequence number, and identifier fields are two bytes each.
- 5) The IP address of my host is 192.168.1.101, and the IP address of the target destination host is 138.96.146.2.
- 6) No, the IP protocol number would change to 0x11.
- 7) Yes, the ICMP echo packet in my screenshot has the same fields as the ping packet.
- 8) No, the IP header and the first 8 bytes of the original ICMP packet is not there.
- 9) They are different in that their type codes are 0. They are different because they made it to their destination before their TTL expired.
- 10) There is a significant delay between lines 8 and 9. My guess between the two routers on the end of the link are New York and Hong Kong.

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3 0.001656      192.168.1.101      143.89.14.34      ICMP      74      Echo (ping) request      id=0x0200, seq=26369/359,
ttl=128 (reply in 4)
Frame 3: 74 bytes on wire (592 bits), 74 bytes captured (592 bits)
  Encapsulation type: Ethernet (1)
  Arrival Time: Aug 29, 2004 14:28:40.830479000 Eastern Daylight Time
  [Time shift for this packet: 0.000000000 seconds]
  Epoch Time: 1093804120.830479000 seconds
  [Time delta from previous captured frame: 0.000007000 seconds]
  [Time delta from previous displayed frame: 0.000007000 seconds]
  [Time since reference or first frame: 0.001656000 seconds]
  Frame Number: 3
  Frame Length: 74 bytes (592 bits)
  Capture Length: 74 bytes (592 bits)
  [Frame is marked: False]
  [Frame is ignored: False]
  [Protocols in frame: eth:ethertype:ip:icmp:data]
  [Coloring Rule Name: ICMP]
  [Coloring Rule String: icmp || icmpv6]
Ethernet II, Src: Dell_4f:36:23 (00:08:74:4f:36:23), Dst: LinksysG_da:af:73 (00:06:25:da:af:73)
  Destination: LinksysG_da:af:73 (00:06:25:da:af:73)
    Address: LinksysG_da:af:73 (00:06:25:da:af:73)
      .... 0. .... = LG bit: Globally unique address (factory default)
      .... 0. .... = IG bit: Individual address (unicast)
  Source: Dell_4f:36:23 (00:08:74:4f:36:23)
    Address: Dell_4f:36:23 (00:08:74:4f:36:23)
      .... 0. .... = LG bit: Globally unique address (factory default)
      .... 0. .... = IG bit: Individual address (unicast)
  Type: IPv4 (0x0800)
Internet Protocol Version 4, Src: 192.168.1.101, Dst: 143.89.14.34
  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: 60
  Identification: 0xd1fd (53757)
  Flags: 0x00
    0... .... = Reserved bit: Not set
    .0.. .... = Don't fragment: Not set
    ..0. .... = More fragments: Not set
  Fragment offset: 0
  Time to live: 128
  Protocol: ICMP (1)
  Header checksum: 0x093b [validation disabled]
  [Header checksum status: Unverified]
  Source: 192.168.1.101
  Destination: 143.89.14.34
  [Source GeoIP: Unknown]
  [Destination GeoIP: Unknown]
Internet Control Message Protocol
  Type: 8 (Echo (ping) request)
  Code: 0
  Checksum: 0xe45a [correct]
  [Checksum Status: Good]
  Identifier (BE): 512 (0x0200)
  Identifier (LE): 2 (0x0002)
  Sequence number (BE): 26369 (0x6701)
  Sequence number (LE): 359 (0x0167)
  [Response frame: 4]
  Data (32 bytes)
0000  61 62 63 64 65 66 67 68 69 6a 6b 6c 6d 6e 6f 70  abcdefghijklmnop
0010  71 72 73 74 75 76 77 61 62 63 64 65 66 67 68 69  qrstuvwabcdefghi
      Data: 6162636465666768696a6b6c6d6e6f707172737475767761...
      [Length: 32]

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[illegible]

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2 0.013151      10.216.228.1      192.168.1.101      ICMP      70      Time-to-live exceeded (Time to live exceeded in
transit)
Frame 2: 70 bytes on wire (560 bits), 70 bytes captured (560 bits)
  Encapsulation type: Ethernet (1)
  Arrival Time: Aug 29, 2004 14:47:39.277932000 Eastern Daylight Time
  [Time shift for this packet: 0.000000000 seconds]
  Epoch Time: 1093805259.277932000 seconds
  [Time delta from previous captured frame: 0.013151000 seconds]
  [Time delta from previous displayed frame: 0.013151000 seconds]
  [Time since reference or first frame: 0.013151000 seconds]
  Frame Number: 2
  Frame Length: 70 bytes (560 bits)
  Capture Length: 70 bytes (560 bits)
  [Frame is marked: False]
  [Frame is ignored: False]
  [Protocols in frame: eth:ethertype:ip:icmp:ip:icmp]
  [Coloring Rule Name: ICMP errors]
  [Coloring Rule String: icmp.type eq 3 || icmp.type eq 4 || icmp.type eq 5 || icmp.type eq 11 || icmpv6.type eq 1 || icmpv6.type eq 2
|| icmpv6.type eq 3 || icmpv6.type eq 4]
Ethernet II, Src: LinksysG_da:af:73 (00:06:25:da:af:73), Dst: Dell_4f:36:23 (00:08:74:4f:36:23)
  Destination: Dell_4f:36:23 (00:08:74:4f:36:23)
    Address: Dell_4f:36:23 (00:08:74:4f:36:23)
      .... 0. .... = LG bit: Globally unique address (factory default)
      .... 0. .... = IG bit: Individual address (unicast)
  Source: LinksysG_da:af:73 (00:06:25:da:af:73)
    Address: LinksysG_da:af:73 (00:06:25:da:af:73)
      .... 0. .... = LG bit: Globally unique address (factory default)
      .... 0. .... = IG bit: Individual address (unicast)
  Type: IPv4 (0x0800)
Internet Protocol Version 4, Src: 10.216.228.1, Dst: 192.168.1.101
  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: 0x9d45 (40261)
  Flags: 0x00
    0... .... = Reserved bit: Not set
    .0.. .... = Don't fragment: Not set
    ..0. .... = More fragments: Not set
  Fragment offset: 0
  Time to live: 255
  Protocol: ICMP (1)
  Header checksum: 0x6cd8 [validation disabled]
  [Header checksum status: Unverified]
  Source: 10.216.228.1
  Destination: 192.168.1.101
  [Source GeoIP: Unknown]
  [Destination GeoIP: Unknown]
Internet Control Message Protocol
  Type: 11 (Time-to-live exceeded)
  Code: 0 (Time to live exceeded in transit)
  Checksum: 0x2c16 [correct]
  [Checksum Status: Good]
Internet Protocol Version 4, Src: 192.168.1.101, Dst: 138.96.146.2
  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: 92
  Identification: 0xd2d5 (53973)
  Flags: 0x00
    0... .... = Reserved bit: Not set
    .0.. .... = Don't fragment: Not set
    ..0. .... = More fragments: Not set
  Fragment offset: 0
  Time to live: 1
    [Expert Info (Note/Sequence): "Time To Live" only 1]
      ["Time To Live" only 1]
      [Severity level: Note]
      [Group: Sequence]
  Protocol: ICMP (1)
  Header checksum: 0xd145 [validation disabled]
  [Header checksum status: Unverified]
  Source: 192.168.1.101
  Destination: 138.96.146.2
  [Source GeoIP: Unknown]
  [Destination GeoIP: Unknown]

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Internet Control Message Protocol
Type: 8 (Echo (ping) request)
Code: 0
Checksum: 0x51fe [unverified] [in ICMP error packet]
[Checksum Status: Unverified]
Identifier (BE): 512 (0x0200)
Identifier (LE): 2 (0x0002)
Sequence number (BE): 41985 (0xa401)
Sequence number (LE): 420 (0x01a4)

[illegible]

[illegible]

[illegible]

operable program or batch file.

C:\Users\Owner>tracert www.ust.hk

Tracing route to www.ust.hk [143.89.14.1]
over a maximum of 30 hops:

1	<1 ms	<1 ms	<1 ms	192.168.0.1
2	19 ms	8 ms	8 ms	142.254.213.121
3	23 ms	17 ms	18 ms	agg59.drfdnyad01h.northeast.rr.com [24.58.241.13]
4	12 ms	11 ms	12 ms	agg93.esyrnydr02r.northeast.rr.com [24.58.52.194]
5	18 ms	23 ms	24 ms	agg27.albnyyyf01r.northeast.rr.com [24.58.32.80]
6	37 ms	32 ms	30 ms	bu-ether46.nycmny837aw-bcr00.tbone.rr.com [107.14.19.102]
7	24 ms	24 ms	25 ms	0.ae2.pr0.nyc20.tbone.rr.com [107.14.19.147]
8	28 ms	25 ms	25 ms	ix-ae-10-0.tcore1.N75-New-York.as6453.net [66.110.96.131]
9	333 ms	299 ms	255 ms	if-ae-9-2.tcore1.NT0-New-York.as6453.net [63.243.128.121]
10	*	*	*	Request timed out.
11	254 ms	250 ms	250 ms	if-ae-18-2.tcore2.SU1-Santa-Clara.as6453.net [63.243.205.73]
12	189 ms	185 ms	184 ms	if-et-5-2.hcore1.KU8-Chiba.as6453.net [209.58.86.143]
13	247 ms	246 ms	246 ms	if-ae-17-2.tcore1.HK2-Hong-Kong.as6453.net [116.0.67.61]
14	235 ms	235 ms	236 ms	if-ae-7-2.thar1.HK2-Hong-Kong.as6453.net [180.87.112.142]
15	236 ms	238 ms	238 ms	116.0.67.166
16	245 ms	239 ms	238 ms	014136142013.ctinets.com [14.136.142.13]
17	235 ms	236 ms	235 ms	014136128038.ctinets.com [14.136.128.38]
18	237 ms	236 ms	236 ms	014136204186.static.ctinets.com [14.136.204.186]
19	237 ms	237 ms	237 ms	165084185138.ctinets.com [165.84.185.138]
20	228 ms	226 ms	228 ms	203.188.117.130
21	244 ms	235 ms	229 ms	202.14.80.153
22	*	*	*	Request timed out.
23	*	*	*	Request timed out.
24	*	*	*	Request timed out.
25	*	*	*	Request timed out.
26	*	*	*	Request timed out.
27	*	*	*	Request timed out.
28	*	*	*	Request timed out.
29	*	*	*	Request timed out.
30	*	*	*	Request timed out.

Trace complete.

C:\Users\Owner>