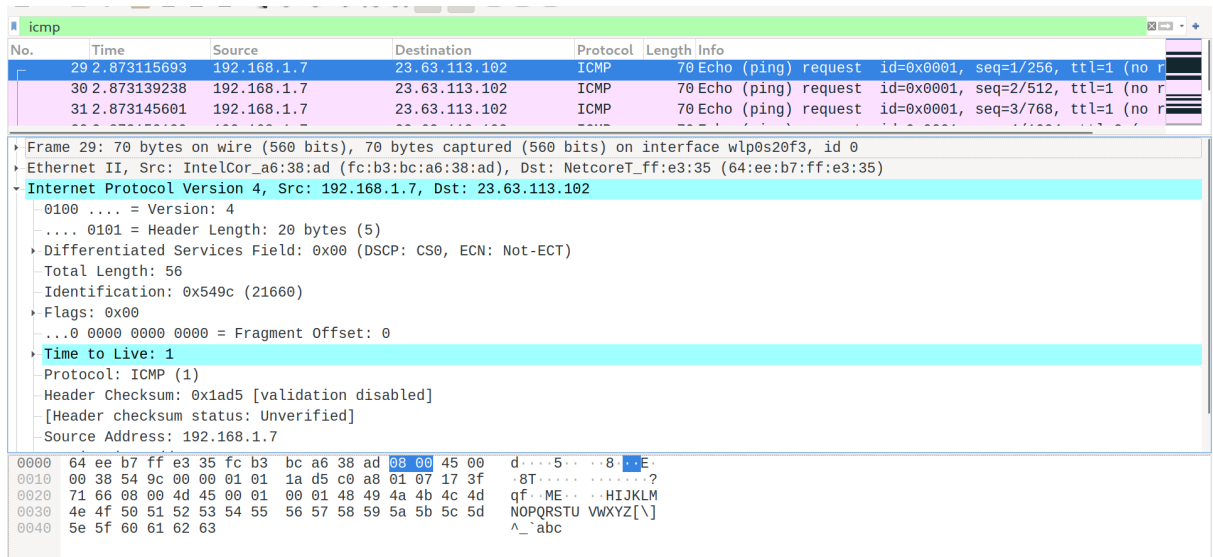


1. Wireshark. IP (8 баллов)

1.



IP-адрес моего компьютера – 192.168.1.7

2. Protocol: ICMP (1)

3. В заголовке 20 байт (смотрим на Header Length: 20 bytes (5)). Полезная нагрузка = 56 байт - 20 байт = 36 байт

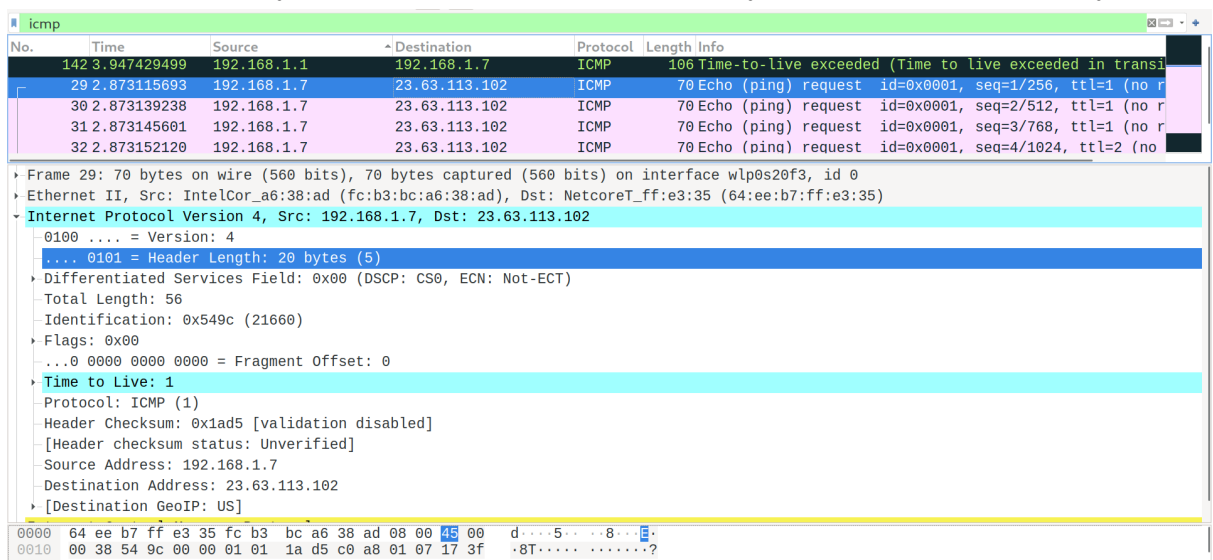
4. a. Identification, Header Checksum, Time to Live, Source Address, Destination Address

b. Не меняются все остальные поля.

Должны оставаться неизменными поля: Version, Header Length, Total Length, Flags, Protocol.

Должны изменяться поля: Identification, Header Checksum

c. С каждым последующим эхо-запросом Identification увеличивается на единицу



5. Identification: 0x549c (21660), Time to Live: 1

6.

No.	Time	Source	Destination	Protocol	Length	Info
58	2.876662448	10.1.65.138	192.168.1.7	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
59	2.876662608	10.1.65.138	192.168.1.7	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
60	2.876662655	10.1.65.138	192.168.1.7	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
61	2.876853133	10.1.65.193	192.168.1.7	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
65	2.877732364	10.1.65.193	192.168.1.7	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
66	2.877732461	10.1.65.193	192.168.1.7	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
62	2.877147677	10.1.84.17	192.168.1.7	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)
63	2.877147827	10.1.84.17	192.168.1.7	ICMP	70	Time-to-live exceeded (Time to live exceeded in transit)

Frame 58: 70 bytes on wire (560 bits), 70 bytes captured (560 bits) on interface wlp0s20f3, id 0
 Ethernet II, Src: NetcoreT_ff:e3:35 (64:ee:b7:ff:e3:35), Dst: IntelCor_a6:38:ad (fc:b3:bc:a6:38:ad)
 Internet Protocol Version 4, Src: 10.1.65.138, Dst: 192.168.1.7
 0100 = Version: 4
 0101 = Header Length: 20 bytes (5)
 Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
 Total Length: 56
 Identification: 0x0282 (642)
 Flags: 0x00
 ...0 0000 0000 0000 = Fragment Offset: 0
 Time to Live: 252
 Protocol: ICMP (1)
 Header Checksum: 0xaf08 [validation disabled]
 [Header checksum status: Unverified]

0000 fc b3 bc a6 38 ad 64 ee b7 ff e3 35 08 00 45 008.d...5..
 0010 00 38 02 02 00 00 fc 01 af 08 0a 01 41 8a c0 a8 .8.....A...

Значения полей TTL и Identification не остаются неизменными.

7. Выберем первый такой пакет (No. 58).

Identification: 0x0282 (642), Time to Live: 252 (см. скрин выше).

8. а. Да, 3 фрагмента

б. Header Checksum, Fragment Offset, Total Length, Flags

No.	Time	Source	Destination	Protocol	Length	Info
514	3.906416605	192.168.1.7	23.63.113.102	ICMP	554	Echo (ping) request id=0x0003, seq=1/256, ttl=1 (no r
517	3.906436030	192.168.1.7	23.63.113.102	ICMP	554	Echo (ping) request id=0x0003, seq=2/512, ttl=1 (no r
520	3.906450734	192.168.1.7	23.63.113.102	ICMP	554	Echo (ping) request id=0x0003, seq=3/768, ttl=1 (no r
523	3.906465636	192.168.1.7	23.63.113.102	ICMP	554	Echo (ping) request id=0x0003, seq=4/1024, ttl=2 (no

Destination Address: 23.63.113.102
 [Destination GeoIP: US]
 [3 IPv4 Fragments (3480 bytes): #512(1480), #513(1480), #514(520)]
 [Frame: 512, payload: 0-1479 (1480 bytes)]
 [Frame: 513, payload: 1480-2959 (1480 bytes)]
 [Frame: 514, payload: 2960-3479 (520 bytes)]
 [Fragment count: 3]
 [Reassembled IPv4 length: 3480]
 [Reassembled IPv4 data: 0800b2f50003000148494a4b4c4d4e4f505152535455565758595a5b5c5d5e5f60616263...]
 Internet Control Message Protocol

0000 08 00 b2 f5 00 03 00 01 48 49 4a 4b 4c 4d 4e 4f HIJKLMNO
 0010 50 51 52 53 54 55 56 57 58 59 5a 5b 5c 5d 5e 5f PQRSTUWV XYZ[\]^
 0020 60 61 62 63 64 65 66 67 68 69 6a 6b 6c 6d 6e 6f `abcdefg hijklmno
 0030 70 71 72 73 74 75 76 77 78 79 7a 7b 7c 7d 7e 7f pqrstuvw xyz{ }~.
 0040 40 41 42 43 44 45 46 47 48 49 4a 4b 4c 4d 4e 4f @ABCDEFGH IJKLMNO
 0050 50 51 52 53 54 55 56 57 58 59 5a 5b 5c 5d 5e 5f PQRSTUWV XYZ[\]^
 0060 60 61 62 63 64 65 66 67 68 69 6a 6b 6c 6d 6e 6f `abcdefg hijklmno
 0070 70 71 72 73 74 75 76 77 78 79 7a 7b 7c 7d 7e 7f pqrstuvw xyz{ }~.
 0080 40 41 42 43 44 45 46 47 48 49 4a 4b 4c 4d 4e 4f @ABCDEFGH IJKLMNO
 0090 50 51 52 53 54 55 56 57 58 59 5a 5b 5c 5d 5e 5f PQRSTUWV XYZ[\]^

Frame (554 bytes) Reassembled IPv4 (3480 bytes)