



МИНОБРНАУКИ РОССИИ

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«САНКТ-ПЕТЕРБУРГСКИЙ ГОСУДАРСТВЕННЫЙ
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**Факультет информатики и прикладной математики
Кафедра прикладной математики и экономико-математических методов**

ОТЧЁТ

по дисциплине:

«Сети передачи данных и информационная безопасность»

на тему:

«Перехват ответов хостов Wireshark»

Направление (специальность) _____ 01.03.02 _____
(код, наименование)

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(номер группы)

Санкт-Петербург
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Задание

Приложить скриншот tracert и файл Wireshark. Дать текстовое пояснение по одному из пакетов.

С помощью утилиты «*tracert*» можно посмотреть сколько хостов прошёл пакет который мы отправляем с нашего хоста до конечного хоста получателя.

```
[~]
λ traceroute ya.ru
traceroute to ya.ru (87.250.250.242), 30 hops max, 60 byte packets
 1 _gateway (192.168.1.1)  0.418 ms  0.390 ms  0.407 ms
 2 91.201.231.181 (91.201.231.181)  1.857 ms  1.952 ms  1.931 ms
 3 core-v625.xtrim.ru (91.201.231.234)  1.973 ms  2.173 ms  1.929 ms
 4 nat2-c1.xtrim.ru (91.201.230.169)  2.396 ms  2.131 ms  2.043 ms
 5 nat2-j-45-gw.xtrim.ru (91.201.230.173)  2.563 ms  2.479 ms  2.386 ms
 6 spb.piter-ix.yandex.ru (185.1.152.57)  3.104 ms  2.831 ms  2.633 ms
 7 * 10.4.8.1 (10.4.8.1)  16.165 ms  10.3.3.1 (10.3.3.1)  18.307 ms
 8 ya.ru (87.250.250.242)  13.230 ms  12.545 ms  12.583 ms
```

Рисунок 1. Результат работы утилиты traceroute на примере ya.ru

Из результата работы утилиты «*tracert*» видно, что пакет проходит через 8 хостов прежде чем достигнет итогового хоста получателя.

Далее при помощи фильтра Wireshark перехватим ответы хостов.



Рисунок 2. Фильтр захвата Wireshark

Таким образом, после запуска захвата, мы получили, следующие записи:

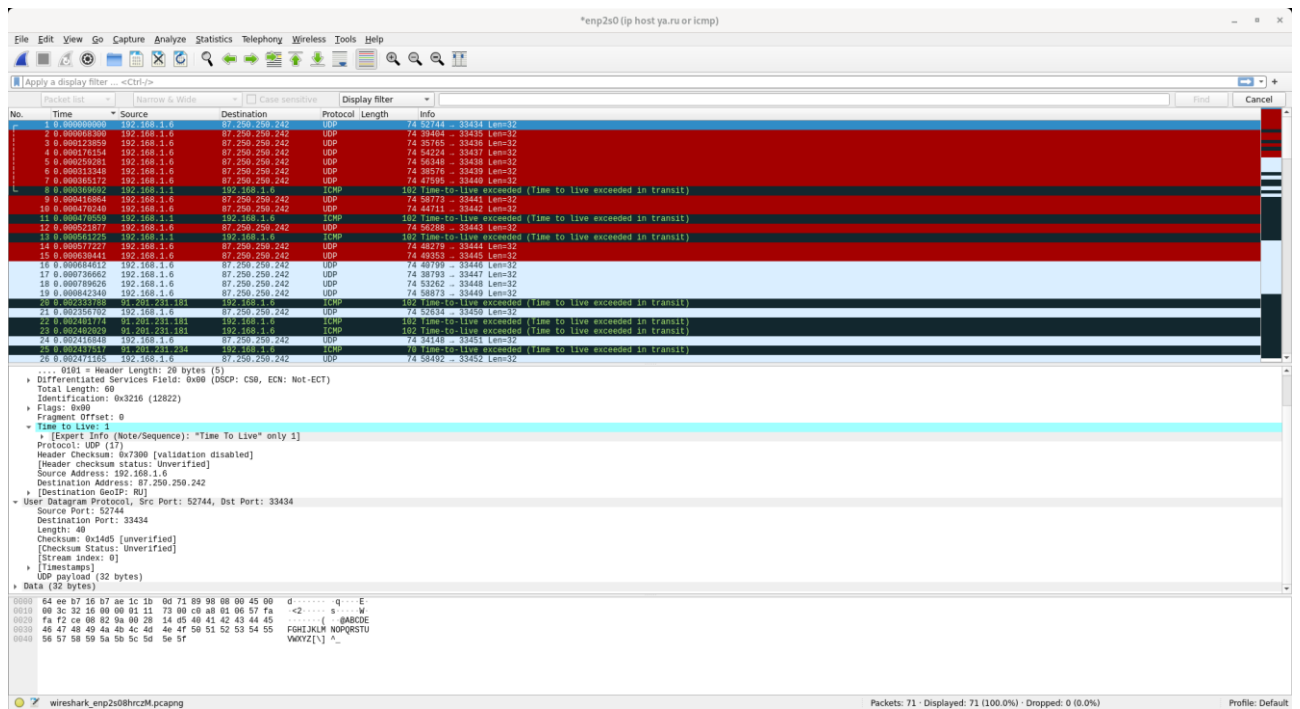
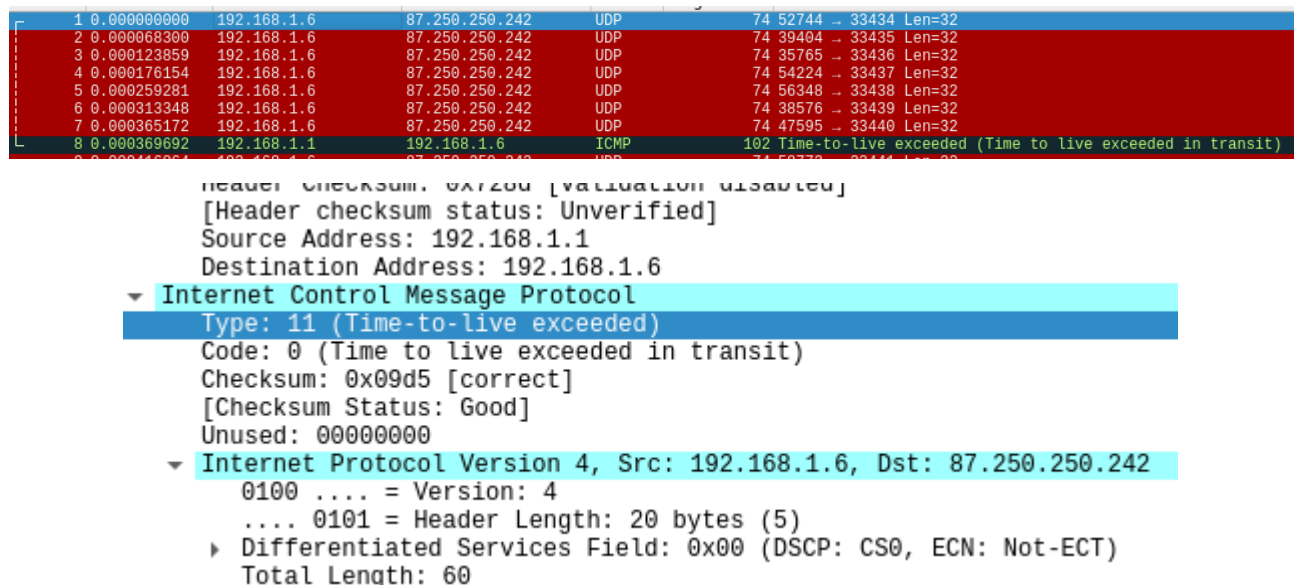


Рисунок 3. Результат захвата

Сначала мы отправляем UDP пакет от нашего хоста 192.168.1.6 до первого роутера 192.168.1.1 с TTL=1. Роутер дропает пакет и сообщает нам о том, что “Time to live exceeded in transit” (Type=11).



Всё это происходит 3 раза до того, как источник отправит следующий пакет с увеличением значения TTL на 1, то есть TTL=2.

Снова отправляем UDP пакет, но уже с TTL=2. В результате уже от 2 хоста – 91.201.231.181, мы получили ICMP ответ, что опять нам не хватило TTL – “Time to live exceeded in transit” (Type 11).

4	0.000176154	192.168.1.6	87.250.250.242	UDP	74 54224 → 33437 Len=32
5	0.000259281	192.168.1.6	87.250.250.242	UDP	74 56348 → 33438 Len=32
6	0.000313348	192.168.1.6	87.250.250.242	UDP	74 38576 → 33439 Len=32
7	0.000365172	192.168.1.6	87.250.250.242	UDP	74 47595 → 33440 Len=32
8	0.000369692	192.168.1.1	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
9	0.000416864	192.168.1.6	87.250.250.242	UDP	74 58773 → 33441 Len=32
10	0.000470240	192.168.1.6	87.250.250.242	UDP	74 44711 → 33442 Len=32
11	0.000470559	192.168.1.1	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
12	0.000521877	192.168.1.6	87.250.250.242	UDP	74 56288 → 33443 Len=32
13	0.000561225	192.168.1.1	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
14	0.000577227	192.168.1.6	87.250.250.242	UDP	74 48279 → 33444 Len=32
15	0.000630441	192.168.1.6	87.250.250.242	UDP	74 49353 → 33445 Len=32
16	0.000684612	192.168.1.6	87.250.250.242	UDP	74 40799 → 33446 Len=32
17	0.000736662	192.168.1.6	87.250.250.242	UDP	74 38793 → 33447 Len=32
18	0.000789626	192.168.1.6	87.250.250.242	UDP	74 53262 → 33448 Len=32
19	0.000842340	192.168.1.6	87.250.250.242	UDP	74 58873 → 33449 Len=32
20	0.002333788	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
21	0.002356702	192.168.1.6	87.250.250.242	UDP	74 52634 → 33450 Len=32
22	0.002401774	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
23	0.002402029	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
24	0.002416848	192.168.1.6	87.250.250.242	UDP	74 34148 → 33451 Len=32
25	0.002437517	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
26	0.002471165	192.168.1.6	87.250.250.242	UDP	74 58492 → 33452 Len=32
27	0.002626268	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
28	0.002894674	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
29	0.002953625	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)

0100 = Version: 4
.... 0101 = Header Length: 20 bytes (5)
▶ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
Total Length: 60
Identification: 0x3219 (12825)
▶ Flags: 0x00
Fragment Offset: 0
▼ Time to Live: 2

Опять-таки проделываем это 3 раза, после чего увеличиваем TTL на 1, то есть TTL=3. Снова отправляем UDP пакет, но уже с TTL=3. В результате уже от 3 хоста – 91.201.231.234, мы получили ICMP ответ, что опять нам не хватило TTL – “Time to live exceeded in transit” (Type 11).

7	0.000365172	192.168.1.6	87.250.250.242	UDP	74 47595 → 33440 Len=32
8	0.000369692	192.168.1.1	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
9	0.000416864	192.168.1.6	87.250.250.242	UDP	74 58773 → 33441 Len=32
10	0.000470240	192.168.1.6	87.250.250.242	UDP	74 44711 → 33442 Len=32
11	0.000470559	192.168.1.1	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
12	0.000521877	192.168.1.6	87.250.250.242	UDP	74 56288 → 33443 Len=32
13	0.000561225	192.168.1.1	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
14	0.000577227	192.168.1.6	87.250.250.242	UDP	74 48279 → 33444 Len=32
15	0.000630441	192.168.1.6	87.250.250.242	UDP	74 49353 → 33445 Len=32
16	0.000684612	192.168.1.6	87.250.250.242	UDP	74 40799 → 33446 Len=32
17	0.000736662	192.168.1.6	87.250.250.242	UDP	74 38793 → 33447 Len=32
18	0.000789626	192.168.1.6	87.250.250.242	UDP	74 53262 → 33448 Len=32
19	0.000842340	192.168.1.6	87.250.250.242	UDP	74 58873 → 33449 Len=32
20	0.002333788	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
21	0.002356702	192.168.1.6	87.250.250.242	UDP	74 52634 → 33450 Len=32
22	0.002401774	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
23	0.002402029	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
24	0.002416848	192.168.1.6	87.250.250.242	UDP	74 34148 → 33451 Len=32
25	0.002437517	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
26	0.002471165	192.168.1.6	87.250.250.242	UDP	74 58492 → 33452 Len=32
27	0.002626268	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
28	0.002894674	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
29	0.002953625	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
30	0.002988902	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
31	0.003020709	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
32	0.003626139	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)

0100 = Version: 4
.... 0101 = Header Length: 20 bytes (5)
▶ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
Total Length: 60
Identification: 0x321c (12828)
▶ Flags: 0x00
Fragment Offset: 0
▼ Time to Live: 3

Продельываем это 3 раза. Увеличиваем TTL на 1, то есть TTL=4. Снова отправляем UDP пакет, но уже с TTL=4. В результате уже от 4 хоста – 91.201.230.169, мы получили ICMP ответ, что опять нам не хватило TTL – “Time to live exceeded in transit” (Type 11).

12	0.000521877	192.168.1.6	87.250.250.242	UDP	74 56288 → 33443 Len=32
13	0.000561225	192.168.1.1	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
14	0.000577227	192.168.1.6	87.250.250.242	UDP	74 48279 → 33444 Len=32
15	0.000630441	192.168.1.6	87.250.250.242	UDP	74 49353 → 33445 Len=32
16	0.000684612	192.168.1.6	87.250.250.242	UDP	74 40799 → 33446 Len=32
17	0.000736662	192.168.1.6	87.250.250.242	UDP	74 38793 → 33447 Len=32
18	0.000789626	192.168.1.6	87.250.250.242	UDP	74 53262 → 33448 Len=32
19	0.000842340	192.168.1.6	87.250.250.242	UDP	74 58873 → 33449 Len=32
20	0.002333788	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
21	0.002356702	192.168.1.6	87.250.250.242	UDP	74 52634 → 33450 Len=32
22	0.002401774	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
23	0.002402029	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
24	0.002416848	192.168.1.6	87.250.250.242	UDP	74 34148 → 33451 Len=32
25	0.002437517	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
26	0.002471165	192.168.1.6	87.250.250.242	UDP	74 58492 → 33452 Len=32
27	0.002626268	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
28	0.002894674	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
29	0.002953625	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
30	0.002988902	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
31	0.003020709	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
32	0.003626139	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
33	0.003626551	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
34	0.003693863	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
35	0.004546062	185.1.152.57	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
36	0.004546520	185.1.152.57	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
37	0.004614730	185.1.152.57	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
38	0.158694939	192.168.1.1	192.168.1.6	ICMP	106 Time-to-live exceeded (Time to live exceeded in transit)

0100 = Version: 4
 0101 = Header Length: 20 bytes (5)
 ▶ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
 Total Length: 60
 Identification: 0x321f (12831)
 ▶ Flags: 0x00
 Fragment Offset: 0
 Time to Live: 4

Продельываем это 3 раза. Увеличиваем TTL на 1, то есть TTL=5. Снова отправляем UDP пакет, но уже с TTL=5. В результате уже от 5 хоста – 91.201.230.173, мы получили ICMP ответ, что опять нам не хватило TTL – “Time to live exceeded in transit” (Type 11).

16	0.000684612	192.168.1.6	87.250.250.242	UDP	74 40799 → 33446 Len=32
17	0.000736662	192.168.1.6	87.250.250.242	UDP	74 38793 → 33447 Len=32
18	0.000789626	192.168.1.6	87.250.250.242	UDP	74 53262 → 33448 Len=32
19	0.000842340	192.168.1.6	87.250.250.242	UDP	74 58873 → 33449 Len=32
20	0.002333788	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
21	0.002356702	192.168.1.6	87.250.250.242	UDP	74 52634 → 33450 Len=32
22	0.002401774	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
23	0.002402029	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
24	0.002416848	192.168.1.6	87.250.250.242	UDP	74 34148 → 33451 Len=32
25	0.002437517	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
26	0.002471165	192.168.1.6	87.250.250.242	UDP	74 58492 → 33452 Len=32
27	0.002626268	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
28	0.002894674	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
29	0.002953625	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
30	0.002988902	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
31	0.003020709	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
32	0.003626139	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
33	0.003626551	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
34	0.003693863	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
35	0.004546062	185.1.152.57	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
36	0.004546520	185.1.152.57	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
37	0.004614730	185.1.152.57	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
38	0.158694939	192.168.1.1	192.168.1.6	ICMP	106 Time-to-live exceeded (Time to live exceeded in transit)
39	0.161068510	192.168.1.6	87.250.250.242	UDP	74 42390 → 33453 Len=32
40	0.161139748	192.168.1.6	87.250.250.242	UDP	74 44570 → 33454 Len=32
41	0.161218569	192.168.1.6	87.250.250.242	UDP	74 53592 → 33455 Len=32

0100 = Version: 4
 0101 = Header Length: 20 bytes (5)
 ▶ Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
 Total Length: 60
 Identification: 0x3222 (12834)
 ▶ Flags: 0x00
 Fragment Offset: 0
 Time to Live: 5
 Protocol: UDP (17)
 Header Checksum: 0x6ef4 [validation disabled]
 [Header checksum status: Unverified]
 Source Address: 192.168.1.6
 Destination Address: 87.250.250.242
 ▶ [Destination GeoIP: RU]
 ▶ User Datagram Protocol, Src Port: 40799, Dst Port: 33446
 Source Port: 40799
 Destination Port: 33446
 ▶ [Fragment Info (Out/Sequence): Possible fragments: len 41, attempt 42]

Продельываем это 3 раза. Увеличиваем TTL на 1, то есть TTL=6. Снова отправляем UDP пакет, но уже с TTL=6. В результате уже от 6 хоста – 185.1.152.57, мы получили ICMP ответ, что опять нам не хватило TTL – “Time to live exceeded in transit” (Type 11).

19	0.000842340	192.168.1.6	87.250.250.242	UDP	74 58873 → 33449 Len=32
20	0.002333788	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
21	0.002356702	192.168.1.6	87.250.250.242	UDP	74 52634 → 33450 Len=32
22	0.002401774	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
23	0.002402029	91.201.231.181	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
24	0.002416848	192.168.1.6	87.250.250.242	UDP	74 34148 → 33451 Len=32
25	0.002437517	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
26	0.002471165	192.168.1.6	87.250.250.242	UDP	74 58492 → 33452 Len=32
27	0.002626268	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
28	0.002894674	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
29	0.002953625	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
30	0.002988902	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
31	0.003020709	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
32	0.003626139	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
33	0.003626551	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
34	0.003693863	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
35	0.004546062	185.1.152.57	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
36	0.004546520	185.1.152.57	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
37	0.004614730	185.1.152.57	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
38	0.158694939	192.168.1.1	192.168.1.6	ICMP	106 Time-to-live exceeded (Time to live exceeded in transit)
39	0.161068510	192.168.1.6	87.250.250.242	UDP	74 42390 → 33453 Len=32
40	0.161139748	192.168.1.6	87.250.250.242	UDP	74 44570 → 33454 Len=32
41	0.161218569	192.168.1.6	87.250.250.242	UDP	74 53592 → 33455 Len=32
42	0.161277700	192.168.1.6	87.250.250.242	UDP	74 60566 → 33456 Len=32
43	0.165232580	192.168.1.6	87.250.250.242	UDP	74 33018 → 33457 Len=32
44	0.165307684	192.168.1.6	87.250.250.242	UDP	74 39353 → 33458 Len=32

```

0100 .... = Version: 4
.... 0101 = Header Length: 20 bytes (5)
  Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    Total Length: 60
    Identification: 0x3225 (12837)
    Flags: 0x00
    Fragment Offset: 0
    Time to Live: 6
    Protocol: UDP (17)
    Header Checksum: 0x6df1 [validation disabled]
    [Header checksum status: Unverified]
    Source Address: 192.168.1.6
    Destination Address: 87.250.250.242
    [Destination GeoIP: RU]
  User Datagram Protocol, Src Port: 58873, Dst Port: 33449

```

Продельываем это 3 раза. Увеличиваем TTL на 1, то есть TTL=7. Снова отправляем UDP пакет, но уже с TTL=7. В результате этот товарищ нам решил ничего не отвечать и просто проигнорировать. (ну и не хотелось ☹)

26	0.002471165	192.168.1.6	87.250.250.242	UDP	74 58492 → 33452 Len=32
27	0.002626268	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
28	0.002894674	91.201.231.234	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
29	0.002953625	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
30	0.002988902	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
31	0.003020709	91.201.230.169	192.168.1.6	ICMP	102 Time-to-live exceeded (Time to live exceeded in transit)
32	0.003626139	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
33	0.003626551	91.201.230.173	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)

```

0100 .... = Version: 4
.... 0101 = Header Length: 20 bytes (5)
  Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    Total Length: 60
    Identification: 0x3228 (12840)
    Flags: 0x00
    Fragment Offset: 0
    Time to Live: 7
    Protocol: UDP (17)
    Header Checksum: 0x6cee [validation disabled]
    [Header checksum status: Unverified]
    Source Address: 192.168.1.6
    Destination Address: 87.250.250.242
    [Destination GeoIP: RU]

```

Отправляем ещё раз UDP пакет с TTL=7 и всё-таки уже от 7 хоста – 10.4.7.1, мы получили ICMP ответ, что опять нам не хватило TTL – “Time to live exceeded in transit” (Type 11).

39	0.161068510	192.168.1.6	87.250.250.242	UDP	74 42390 → 33453 Len=32
40	0.161139748	192.168.1.6	87.250.250.242	UDP	74 44570 → 33454 Len=32
41	0.161218569	192.168.1.6	87.250.250.242	UDP	74 53592 → 33455 Len=32
42	0.161277700	192.168.1.6	87.250.250.242	UDP	74 60566 → 33456 Len=32
43	0.165232580	192.168.1.6	87.250.250.242	UDP	74 33018 → 33457 Len=32
44	0.165307684	192.168.1.6	87.250.250.242	UDP	74 39353 → 33458 Len=32
45	0.165362423	192.168.1.6	87.250.250.242	UDP	74 38412 → 33459 Len=32
46	0.165414661	192.168.1.6	87.250.250.242	UDP	74 56342 → 33460 Len=32
47	0.165467417	192.168.1.6	87.250.250.242	UDP	74 43242 → 33461 Len=32
48	0.165519370	192.168.1.6	87.250.250.242	UDP	74 52167 → 33462 Len=32
49	0.165570814	192.168.1.6	87.250.250.242	UDP	74 45110 → 33463 Len=32
50	0.165622597	192.168.1.6	87.250.250.242	UDP	74 35493 → 33464 Len=32
51	0.165674679	192.168.1.6	87.250.250.242	UDP	74 45672 → 33465 Len=32
52	0.165727587	192.168.1.6	87.250.250.242	UDP	74 52289 → 33466 Len=32
53	0.165779030	192.168.1.6	87.250.250.242	UDP	74 50172 → 33467 Len=32
54	0.177478560	87.250.239.183	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
55	0.177577204	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
56	0.178260909	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
57	0.178349898	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
58	0.178389414	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
59	0.178445280	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
60	0.179235186	10.4.7.1	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
61	0.180316509	10.4.2.1	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
62	0.181428571	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
63	0.181467863	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
64	0.182095525	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
65	0.182146634	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)

Flags: 0x00
 Fragment Offset: 0
 Time to Live: 7
 Protocol: UDP (17)
 Header Checksum: 0x6cbc [validation disabled]
 [Header checksum status: Unverified]
 Source Address: 192.168.1.6

Отправляем ещё раз UDP пакет с TTL=7 и уже от другого хоста – 87.250.239.183, мы получили ICMP ответ, что опять нам не хватило TTL – “Time to live exceeded in transit” (Type 11).

40	0.161139748	192.168.1.6	87.250.250.242	UDP	74 44570 → 33454 Len=32
41	0.161218569	192.168.1.6	87.250.250.242	UDP	74 53592 → 33455 Len=32
42	0.161277700	192.168.1.6	87.250.250.242	UDP	74 60566 → 33456 Len=32
43	0.165232580	192.168.1.6	87.250.250.242	UDP	74 33018 → 33457 Len=32
44	0.165307684	192.168.1.6	87.250.250.242	UDP	74 39353 → 33458 Len=32
45	0.165362423	192.168.1.6	87.250.250.242	UDP	74 38412 → 33459 Len=32
46	0.165414661	192.168.1.6	87.250.250.242	UDP	74 56342 → 33460 Len=32
47	0.165467417	192.168.1.6	87.250.250.242	UDP	74 43242 → 33461 Len=32
48	0.165519370	192.168.1.6	87.250.250.242	UDP	74 52167 → 33462 Len=32
49	0.165570814	192.168.1.6	87.250.250.242	UDP	74 45110 → 33463 Len=32
50	0.165622597	192.168.1.6	87.250.250.242	UDP	74 35493 → 33464 Len=32
51	0.165674679	192.168.1.6	87.250.250.242	UDP	74 45672 → 33465 Len=32
52	0.165727587	192.168.1.6	87.250.250.242	UDP	74 52289 → 33466 Len=32
53	0.165779030	192.168.1.6	87.250.250.242	UDP	74 50172 → 33467 Len=32
54	0.177478560	87.250.239.183	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
55	0.177577204	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)

Отправляем ещё раз UDP пакет с TTL=7 и уже от другого хоста – 10.4.2.1, мы получили ICMP ответ, что опять нам не хватило TTL – “Time to live exceeded in transit” (Type 11).

41	0.161218569	192.168.1.6	87.250.250.242	UDP	74 53592 → 33455 Len=32
42	0.161277700	192.168.1.6	87.250.250.242	UDP	74 60566 → 33456 Len=32
43	0.165232580	192.168.1.6	87.250.250.242	UDP	74 33018 → 33457 Len=32
44	0.165307684	192.168.1.6	87.250.250.242	UDP	74 39353 → 33458 Len=32
45	0.165362423	192.168.1.6	87.250.250.242	UDP	74 38412 → 33459 Len=32
46	0.165414661	192.168.1.6	87.250.250.242	UDP	74 56342 → 33460 Len=32
47	0.165467417	192.168.1.6	87.250.250.242	UDP	74 43242 → 33461 Len=32
48	0.165519370	192.168.1.6	87.250.250.242	UDP	74 52167 → 33462 Len=32
49	0.165570814	192.168.1.6	87.250.250.242	UDP	74 45110 → 33463 Len=32
50	0.165622597	192.168.1.6	87.250.250.242	UDP	74 35493 → 33464 Len=32
51	0.165674679	192.168.1.6	87.250.250.242	UDP	74 45672 → 33465 Len=32
52	0.165727587	192.168.1.6	87.250.250.242	UDP	74 52289 → 33466 Len=32
53	0.165779030	192.168.1.6	87.250.250.242	UDP	74 50172 → 33467 Len=32
54	0.177478560	87.250.239.183	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
55	0.177577204	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
56	0.178260909	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
57	0.178349898	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
58	0.178389414	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
59	0.178445280	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
60	0.179235186	10.4.7.1	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
61	0.180316509	10.4.2.1	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)

Увеличиваем TTL на 1, то есть TTL=8. Снова отправляем UDP пакет, но уже с TTL=8. В результате этот товарищ нам решил ничего не отвечать и просто проигнорировать. (ну и не хотелось ☹)

42	0.161277700	192.168.1.6	87.250.250.242	UDP	74 60566 → 33456 Len=32
43	0.165232580	192.168.1.6	87.250.250.242	UDP	74 33018 → 33457 Len=32
44	0.165307684	192.168.1.6	87.250.250.242	UDP	74 39353 → 33458 Len=32
45	0.165362423	192.168.1.6	87.250.250.242	UDP	74 38412 → 33459 Len=32
46	0.165414661	192.168.1.6	87.250.250.242	UDP	74 56342 → 33460 Len=32
47	0.165467417	192.168.1.6	87.250.250.242	UDP	74 43242 → 33461 Len=32
48	0.165519370	192.168.1.6	87.250.250.242	UDP	74 52167 → 33462 Len=32
49	0.165570814	192.168.1.6	87.250.250.242	UDP	74 45110 → 33463 Len=32
50	0.165622597	192.168.1.6	87.250.250.242	UDP	74 35493 → 33464 Len=32
51	0.165674679	192.168.1.6	87.250.250.242	UDP	74 45672 → 33465 Len=32
52	0.165727587	192.168.1.6	87.250.250.242	UDP	74 52289 → 33466 Len=32
53	0.165779030	192.168.1.6	87.250.250.242	UDP	74 50172 → 33467 Len=32
54	0.177478560	87.250.239.183	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
55	0.177577204	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
56	0.178260909	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
57	0.178349898	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
58	0.178389414	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
59	0.178445280	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
60	0.179235186	10.4.7.1	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
61	0.180316509	10.4.2.1	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
62	0.181428571	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
63	0.181467863	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
64	0.182095525	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
65	0.182146634	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)

Flags: 0x00
Fragment Offset: 0
Time to Live: 8
Protocol: UDP (17)
Header Checksum: 0x6bb9 [validation disabled]
Payload checksum status: Unverified

Отправляем ещё раз UDP пакет с TTL=8 и уже от другого хоста – 87.250.239.183, мы получили ICMP ответ – “Destination unreachable” (Type 3). (правда непонятно почему)

43	0.165232580	192.168.1.6	87.250.250.242	UDP	74 33018 → 33457 Len=32
44	0.165307684	192.168.1.6	87.250.250.242	UDP	74 39353 → 33458 Len=32
45	0.165362423	192.168.1.6	87.250.250.242	UDP	74 38412 → 33459 Len=32
46	0.165414661	192.168.1.6	87.250.250.242	UDP	74 56342 → 33460 Len=32
47	0.165467417	192.168.1.6	87.250.250.242	UDP	74 43242 → 33461 Len=32
48	0.165519370	192.168.1.6	87.250.250.242	UDP	74 52167 → 33462 Len=32
49	0.165570814	192.168.1.6	87.250.250.242	UDP	74 45110 → 33463 Len=32
50	0.165622597	192.168.1.6	87.250.250.242	UDP	74 35493 → 33464 Len=32
51	0.165674679	192.168.1.6	87.250.250.242	UDP	74 45672 → 33465 Len=32
52	0.165727587	192.168.1.6	87.250.250.242	UDP	74 52289 → 33466 Len=32
53	0.165779030	192.168.1.6	87.250.250.242	UDP	74 50172 → 33467 Len=32
54	0.177478560	87.250.239.183	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
55	0.177577204	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
56	0.178260909	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)

Далее мы наращиваем TTL последовательно до 12, то есть TTL=12, но каждый раз получаем получили ICMP ответ – “Destination unreachable” (Type 3). (правда непонятно почему)

53	0.165779030	192.168.1.6	87.250.250.242	UDP	74 50172 → 33467 Len=32
54	0.177478560	87.250.239.183	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
55	0.177577204	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
56	0.178260909	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
57	0.178349898	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
58	0.178389414	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
59	0.178445280	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
60	0.179235186	10.4.7.1	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
61	0.180316509	10.4.2.1	192.168.1.6	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)
62	0.181428571	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
63	0.181467863	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
64	0.182095525	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
65	0.182146634	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
66	0.182167512	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
67	0.182187830	87.250.250.242	192.168.1.6	ICMP	102 Destination unreachable (Port unreachable)
68	0.234770410	192.168.1.1	192.168.1.6	ICMP	106 Time-to-live exceeded (Time to live exceeded in transit)

Identification: 0x3269 (12905)
 Flags: 0x00
 Fragment Offset: 0
 Time to Live: 12
 Protocol: UDP (17)

Получилось немного странно, не то что я ожидал, но я пытался несколько раз перезапускать «tracert ya.ru», но получал всегда один и тот же ответ +-.