

# UDP - Laboratório

Luiza Ávila

01-

Apply a display filter ... <Ctrl-F>

No.	Time	Source	Destination	Protocol	Length	Info
10	2020-09-03 16:24:18,652105	127.0.0.1	127.0.0.1	UDP	142	6000 → 6001 Len=110
9	2020-09-03 16:24:18,610323	127.0.0.1	127.0.0.1	UDP	46	6001 → 6000 Len=14

Encapsulation type: NULL/Loopback (15)

Arrival Time: Sep 3, 2020 16:24:18.610323000 Hora oficial do Brasil

[Time shift for this packet: 0.000000000 seconds]

Epoch Time: 1599161058.610323000 seconds

[Time delta from previous captured frame: 22.334087000 seconds]

[Time delta from previous displayed frame: 22.334087000 seconds]

[Time since reference or first frame: 25.366045000 seconds]

Frame Number: 9

Frame Length: 46 bytes (368 bits)

Capture Length: 46 bytes (368 bits)

[Frame is marked: False]

[Frame is ignored: False]

[Protocols in frame: null:ip:udp:data]

[Coloring Rule Name: UDP]

[Coloring Rule String: udp]

> Null/Loopback

> Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1

0100 .... = Version: 4

.... 0101 = Header Length: 20 bytes (5)

> Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)

Total Length: 42

Identification: 0x819e (33182)

> Flags: 0x0000

Fragment offset: 0

Time to live: 128

Protocol: UDP (17)

Header checksum: 0x0000 [validation disabled]

[Header checksum status: Unverified]

Source: 127.0.0.1

Destination: 127.0.0.1

> User Datagram Protocol, Src Port: 6001, Dst Port: 6000

0000 02 00 00 00 45 00 00 2a 81 9e 00 00 00 11 00 00 ....E..\*

0010 7f 00 00 01 7f 00 00 01 17 71 17 70 00 16 f6 c4 .....q.p....

0020 4d 45 53 41 47 45 4d 20 54 45 53 54 45 MENSAGEM TESTE

02-

No.	Time	Source	Destination	Protocol	Length	Info
10	2020-09-03 16:24:18,652105	127.0.0.1	127.0.0.1	UDP	142	6000 → 6001 Len=110
63	2020-09-03 16:32:01,746052	192.168.0.24	192.168.0.24	UDP	142	6000 → 6001 Len=110
9	2020-09-03 16:24:18,610323	127.0.0.1	127.0.0.1	UDP	46	6001 → 6000 Len=14
62	2020-09-03 16:32:01,705111	192.168.0.24	192.168.0.24	UDP	46	6001 → 6000 Len=14
36	2020-09-03 16:29:29,631062	192.168.0.24	192.168.0.24	ICMP	74	Destination unreachable (Host unreachable)
1	2020-09-03 16:23:53,244278	192.168.56.1	239.255.255.250	SSDP	205	M-SEARCH * HTTP/1.1
2	2020-09-03 16:23:53,244388	192.168.0.24	239.255.255.250	SSDP	205	M-SEARCH * HTTP/1.1
3	2020-09-03 16:23:54,254570	192.168.56.1	239.255.255.250	SSDP	205	M-SEARCH * HTTP/1.1

Encapsulation type: NULL/Loopback (15)

Arrival Time: Sep 3, 2020 16:32:01.746052000 Hora oficial do Brasil

[Time shift for this packet: 0.000000000 seconds]

Epoch Time: 1599161521.746052000 seconds

[Time delta from previous captured frame: 0.040941000 seconds]

[Time delta from previous displayed frame: 0.040941000 seconds]

[Time since reference or first frame: 488.501774000 seconds]

Frame Number: 63

Frame Length: 142 bytes (1136 bits)

Capture Length: 142 bytes (1136 bits)

[Frame is marked: False]

[Frame is ignored: False]

[Protocols in frame: null:ip:udp:data]

[Coloring Rule Name: UDP]

[Coloring Rule String: udp]

> Null/Loopback

> Internet Protocol Version 4, Src: 192.168.0.24, Dst: 192.168.0.24

0100 .... = Version: 4

.... 0101 = Header Length: 20 bytes (5)

> Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)

Total Length: 138

Identification: 0x857e (34174)

> Flags: 0x0000

Fragment offset: 0

Time to live: 128

Protocol: UDP (17)

0000 02 00 00 00 45 00 00 8a 85 7e 00 00 00 11 00 00 ....E..\*

0010 c0 a8 00 18 c0 a8 00 18 17 70 17 71 00 76 fd 62 .....p.q.v.b

0020 52 45 54 4f 52 4e 4f 20 2d 20 4d 45 4e 53 41 47 RETORNO - MENSAG

0030 45 4d 20 54 45 53 54 45 00 00 00 00 00 00 00 00 EM TESTE .....

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	Time	Source	Destination	Protocol	Length	Info
1	2020-09-03 19:15:08,582080	192.168.0.24	192.168.0.24	UDP	46	6001 → 6000 Len=14
2	2020-09-03 19:15:08,629892	192.168.0.24	192.168.0.24	UDP	142	6000 → 6001 Len=110
3	2020-09-03 19:15:10,543417	192.168.0.24	192.168.0.24	UDP	46	6001 → 6000 Len=14
4	2020-09-03 19:15:10,543445	192.168.0.24	192.168.0.24	ICMP	74	Destination unreachable (Port unreachable)

```
[Time shift for this packet: 0.00000000 seconds]
Epoch Time: 1599171310.543445000 seconds
[Time delta from previous captured frame: 0.000028000 seconds]
[Time delta from previous displayed frame: 0.000028000 seconds]
[Time since reference or first frame: 1.961365000 seconds]
Frame Number: 4
Frame Length: 74 bytes (592 bits)
Capture Length: 74 bytes (592 bits)
[Frame is marked: False]
[Frame is ignored: False]
[Protocols in frame: null:ip:icmp:ip:udp:data]
[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]
```

### Null/Loopback

Internet Protocol Version 4, Src: 192.168.0.24, Dst: 192.168.0.24

```
0100 .... = Version: 4
      .... 0101 = Header Length: 20 bytes (5)
> Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
  Total Length: 70
  Identification: 0xf54c (62796)
> Flags: 0x0000
  Fragment offset: 0
  Time to live: 128
  Protocol: ICMP (1)
  Header checksum: 0x0000 [validation disabled]
  [Header checksum status: Unverified]
  Source: 192.168.0.24
  Destination: 192.168.0.24
```

## Internet Control Message Protocol

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No.	Time	Source	Destination	Protocol	Length	Info
4	2020-09-03 16:40:07,640363	192.168.0.24	192.168.0.24	UDP	46	6001 → 6000 Len=14
5	2020-09-03 16:40:07,677088	192.168.0.24	192.168.0.24	UDP	142	6000 → 6001 Len=110

```

Arrival Time: Sep  3, 2020 16:40:07.640363000 Hora oficial do Brasil
[Time shift for this packet: 0.000000000 seconds]
Epoch Time: 1599162007.640363000 seconds
[Time delta from previous captured frame: 0.511921000 seconds]
[Time delta from previous displayed frame: 0.000000000 seconds]
[Time since reference or first frame: 6.012509000 seconds]
Frame Number: 4
Frame Length: 46 bytes (368 bits)
Capture Length: 46 bytes (368 bits)
[Frame is marked: False]
[Frame is ignored: False]
[Protocols in frame: null:ip:udp:data]
[Coloring Rule Name: UDP]
[Coloring Rule String: udp]

```

- > Null/Loopback

- Internet Protocol Version 4, Src: 192.168.0.24, Dst: 192.168.0.24

```
0100 .... = Version: 4
.... 0101 = Header Length: 20 bytes (5)
> Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
Total Length: 42
Identification: 0x8587 (34183)
> Flags: 0x0000
Fragment offset: 0
Time to live: 128
Protocol: UDP (17)
Header checksum: 0x0000 [validation disabled]
[Header checksum status: Unverified]
Source: 192.168.0.24
Destination: 192.168.0.24
```

```
> User Datagram Protocol, Src Port: 6001, Dst Port: 6000
```

> Data (14 bytes)

0000	02 00 00 00 45 00 00 2a	85 87 00 00 80 11 00 00	....E.*....
0010	c0 a8 00 18 c0 a8 00 18	17 71 17 70 00 16 73 46	.....q.p.sF
0020	4d 45 4e 53 41 47 45 4d	20 54 45 53 54 45	MENSAGEM TESTE

7 2020-09-03 16:41:17.932206 192.168.0.24192.168.0.24ICMP74 Destination unreachable (Port unreachable)

>

Frame 7: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface \Device\NPF\_{Loopback, id 0

> Interface id: 0 (\Device\NPF\_{Loopback)  
Encapsulation type: NULL/Loopback (15)  
Arrival Time: Sep 3, 2020 16:41:17.932206000 Hora oficial do Brasil  
[Time shift for this packet: 0.000000000 seconds]  
Epoch Time: 1599162077.932206000 seconds  
[Time delta from previous captured frame: 0.000030000 seconds]  
[Time delta from previous displayed frame: 0.000030000 seconds]  
[Time since reference or first frame: 76.304352000 seconds]  
Frame Number: 7  
Frame Length: 74 bytes (592 bits)  
Capture Length: 74 bytes (592 bits)  
[Frame is marked: False]  
[Frame is ignored: False]  
[Protocols in frame: null:ip:icmp:ip:udp:data]  
[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]

Null/Loopback

Internet Protocol Version 4, Src: 192.168.0.24, Dst: 192.168.0.24

Internet Control Message Protocol  
Type: 3 (Destination unreachable)  
Code: 3 (Port unreachable)  
Checksum: 0xb25e [correct]  
[Checksum Status: Good]  
Unused: 00000000

Internet Protocol Version 4, Src: 192.168.0.24, Dst: 192.168.0.24

User Datagram Protocol, Src Port: 6001, Dst Port: 6000

Data (14 bytes)

000032 00 00 00 45 00 00 46 85 8a 00 00 80 01 00 00E--F .....

0010c0 a8 00 18 c0 a8 00 18 03 03 b2 5e 00 00 00 00..... ^.....

002045 00 00 2a 85 89 00 00 80 11 00 00 c0 a8 00 18E:\*.....

0030c0 a8 00 18 17 71 17 70 00 16 73 46 4d 45 4e 53.....q-p --sFMENS

004041 47 45 4d 20 54 45 53 54 45AGEM TES TE

# TCP -Laboratório

Luiza Ávila

01-

12	2020-09-03 17:26:17,011348	127.0.0.1	TCP	56 52608 → 7000 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
13	2020-09-03 17:26:17,011446	127.0.0.1	TCP	56 7000 → 52608 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
14	2020-09-03 17:26:17,011561	127.0.0.1	TCP	44 52608 → 7000 [ACK] Seq=1 Ack=1 Win=2619648 Len=0
15	2020-09-03 17:26:17,062191	127.0.0.1	TCP	48 52608 → 7000 [PSH, ACK] Seq=1 Ack=1 Win=2619648 Len=4 [TCP segment of a retransmission] Seq=1
16	2020-09-03 17:26:17,062234	127.0.0.1	TCP	44 7000 → 52608 [ACK] Seq=1 Ack=5 Win=2619648 Len=0
17	2020-09-03 17:26:17,167186	127.0.0.1	TCP	61 52608 → 7000 [PSH, ACK] Seq=5 Ack=1 Win=2619648 Len=17 [TCP segment of a retransmission] Seq=1
18	2020-09-03 17:26:17,167243	127.0.0.1	TCP	44 7000 → 52608 [ACK] Seq=1 Ack=22 Win=2619648 Len=0
19	2020-09-03 17:26:17,171480	127.0.0.1	TCP	48 7000 → 52608 [PSH, ACK] Seq=1 Ack=22 Win=2619648 Len=4 [TCP segment of a retransmission] Seq=1
20	2020-09-03 17:26:17,171527	127.0.0.1	TCP	44 52608 → 7000 [ACK] Seq=22 Ack=5 Win=2619648 Len=0
21	2020-09-03 17:26:17,214607	127.0.0.1	TCP	75 7000 → 52608 [PSH, ACK] Seq=5 Ack=22 Win=2619648 Len=31 [TCP segment of a retransmission] Seq=1
22	2020-09-03 17:26:17,214672	127.0.0.1	TCP	44 52608 → 7000 [ACK] Seq=22 Ack=36 Win=2619648 Len=0
23	2020-09-03 17:26:17,241736	127.0.0.1	TCP	44 52608 → 7000 [FIN, ACK] Seq=22 Ack=36 Win=2619648 Len=0

Arrival Time: Sep 3, 2020 17:26:17.011446000 Hora oficial do Brasil  
[Time shift for this packet: 0.000000000 seconds]  
Epoch Time: 1599164777.011446000 seconds  
[Time delta from previous captured frame: 0.000098000 seconds]  
[Time delta from previous displayed frame: 0.000098000 seconds]  
[Time since reference or first frame: 29.689525000 seconds]  
Frame Number: 13  
Frame Length: 56 bytes (448 bits)  
Capture Length: 56 bytes (448 bits)  
[Frame is marked: False]  
[Frame is ignored: False]  
[Protocols in frame: null:ip:tcp]  
[Coloring Rule Name: TCP SYN/FIN]  
[Coloring Rule String: tcp.flags & 0x02 || tcp.flags.fin == 1]  
1/Loopback  
Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1  
3100 .... = Version: 4  
.... 0101 = Header Length: 20 bytes (5)  
Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)  
Total Length: 52

02 00 00 00 45 00 00 34 81 a1 40 00 80 06 00 00 ...E--4 --@-----  
7f 00 00 01 7f 00 00 01 1b 58 cd 80 09 55 08 91 .....X---U--  
a4 28 c3 67 80 12 ff ff 14 8b 00 00 02 04 ff d7 ..(g-----  
01 03 03 05 01 01 04 02 ....I-----

02-

1	2020-09-03 19:28:05,910983	127.0.0.1	TCP	56 64246 → 7000 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
2	2020-09-03 19:28:05,911018	127.0.0.1	TCP	56 7000 → 64246 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
3	2020-09-03 19:28:05,911038	127.0.0.1	TCP	44 64246 → 7000 [ACK] Seq=1 Ack=1 Win=2619648 Len=0
4	2020-09-03 19:28:05,913669	127.0.0.1	TCP	48 64246 → 7000 [PSH, ACK] Seq=1 Ack=1 Win=2619648 Len=4 [TCP segment of a retransmission] Seq=1
5	2020-09-03 19:28:05,913685	127.0.0.1	TCP	44 7000 → 64246 [ACK] Seq=1 Ack=5 Win=2619648 Len=0
6	2020-09-03 19:28:05,919769	127.0.0.1	TCP	61 64246 → 7000 [PSH, ACK] Seq=5 Ack=1 Win=2619648 Len=17 [TCP segment of a retransmission] Seq=1
7	2020-09-03 19:28:05,919784	127.0.0.1	TCP	44 7000 → 64246 [ACK] Seq=1 Ack=22 Win=2619648 Len=0
8	2020-09-03 19:28:05,920929	127.0.0.1	TCP	48 7000 → 64246 [PSH, ACK] Seq=1 Ack=22 Win=2619648 Len=4 [TCP segment of a retransmission] Seq=1
9	2020-09-03 19:28:05,920937	127.0.0.1	TCP	44 64246 → 7000 [ACK] Seq=22 Ack=5 Win=2619648 Len=0
10	2020-09-03 19:28:05,929525	127.0.0.1	TCP	75 7000 → 64246 [PSH, ACK] Seq=5 Ack=22 Win=2619648 Len=31 [TCP segment of a retransmission] Seq=1
11	2020-09-03 19:28:05,929542	127.0.0.1	TCP	44 64246 → 7000 [ACK] Seq=22 Ack=36 Win=2619648 Len=0
12	2020-09-03 19:28:05,930226	127.0.0.1	TCP	44 7000 → 64246 [FIN, ACK] Seq=36 Ack=22 Win=2619648 Len=0
13	2020-09-03 19:28:05,930234	127.0.0.1	TCP	44 64246 → 7000 [ACK] Seq=22 Ack=37 Win=2619648 Len=0
14	2020-09-03 19:28:05,930329	127.0.0.1	TCP	44 64246 → 7000 [FIN, ACK] Seq=22 Ack=37 Win=2619648 Len=0
15	2020-09-03 19:28:05,930338	127.0.0.1	TCP	44 7000 → 64246 [ACK] Seq=37 Ack=23 Win=2619648 Len=0

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589	2020-09-03	19:23:23,516410	127.0.0.1	127.0.0.1	TCP	56	64204 → 7000	[SYN]	Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
590	2020-09-03	19:23:23,516480	127.0.0.1	127.0.0.1	TCP	56	7000 → 64204	[SYN, ACK]	Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
591	2020-09-03	19:23:23,516534	127.0.0.1	127.0.0.1	TCP	44	64204 → 7000	[ACK]	Seq=1 Ack=1 Win=2619648 Len=0
592	2020-09-03	19:23:23,522286	127.0.0.1	127.0.0.1	TCP	48	64204 → 7000	[PSH, ACK]	Seq=1 Ack=1 Win=2619648 Len=4 [TCP segment of a reassembled PDU]
593	2020-09-03	19:23:23,522323	127.0.0.1	127.0.0.1	TCP	44	7000 → 64204	[ACK]	Seq=1 Ack=5 Win=2619648 Len=0
594	2020-09-03	19:23:23,537943	127.0.0.1	127.0.0.1	TCP	61	64204 → 7000	[PSH, ACK]	Seq=5 Ack=1 Win=2619648 Len=17 [TCP segment of a reassembled PDU]
595	2020-09-03	19:23:23,537974	127.0.0.1	127.0.0.1	TCP	44	7000 → 64204	[ACK]	Seq=1 Ack=22 Win=2619648 Len=0
596	2020-09-03	19:23:23,541218	127.0.0.1	127.0.0.1	TCP	48	7000 → 64204	[PSH, ACK]	Seq=1 Ack=22 Win=2619648 Len=4 [TCP segment of a reassembled PDU]
597	2020-09-03	19:23:23,541246	127.0.0.1	127.0.0.1	TCP	44	64204 → 7000	[ACK]	Seq=22 Ack=5 Win=2619648 Len=0
598	2020-09-03	19:23:23,569503	127.0.0.1	127.0.0.1	TCP	75	7000 → 64204	[PSH, ACK]	Seq=5 Ack=22 Win=2619648 Len=31 [TCP segment of a reassembled PDU]
599	2020-09-03	19:23:23,569554	127.0.0.1	127.0.0.1	TCP	44	64204 → 7000	[ACK]	Seq=22 Ack=36 Win=2619648 Len=0
600	2020-09-03	19:23:23,571220	127.0.0.1	127.0.0.1	TCP	44	7000 → 64204	[FIN, ACK]	Seq=36 Ack=22 Win=2619648 Len=0
601	2020-09-03	19:23:23,571243	127.0.0.1	127.0.0.1	TCP	44	64204 → 7000	[ACK]	Seq=22 Ack=37 Win=2619648 Len=0
602	2020-09-03	19:23:23,571339	127.0.0.1	127.0.0.1	TCP	44	64204 → 7000	[FIN, ACK]	Seq=22 Ack=37 Win=2619648 Len=0
603	2020-09-03	19:23:23,571381	127.0.0.1	127.0.0.1	TCP	44	7000 → 64204	[ACK]	Seq=37 Ack=23 Win=2619648 Len=0
604	2020-09-03	19:23:24,880714	127.0.0.1	127.0.0.1	TCP	56	64205 → 7000	[SYN]	Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
605	2020-09-03	19:23:24,880743	127.0.0.1	127.0.0.1	TCP	44	7000 → 64205	[RST, ACK]	Seq=1 Ack=1 Win=0 Len=0
606	2020-09-03	19:23:25,394768	127.0.0.1	127.0.0.1	TCP	56	[TCP Retransmission] 64205 → 7000	[SYN]	Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
607	2020-09-03	19:23:25,394815	127.0.0.1	127.0.0.1	TCP	44	7000 → 64205	[RST, ACK]	Seq=1 Ack=1 Win=0 Len=0
608	2020-09-03	19:23:25,901501	127.0.0.1	127.0.0.1	TCP	56	[TCP Retransmission] 64205 → 7000	[SYN]	Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
609	2020-09-03	19:23:25,901531	127.0.0.1	127.0.0.1	TCP	44	7000 → 64205	[RST, ACK]	Seq=1 Ack=1 Win=0 Len=0
610	2020-09-03	19:23:26,407772	127.0.0.1	127.0.0.1	TCP	56	[TCP Retransmission] 64205 → 7000	[SYN]	Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
611	2020-09-03	19:23:26,407810	127.0.0.1	127.0.0.1	TCP	44	7000 → 64205	[RST, ACK]	Seq=1 Ack=1 Win=0 Len=0
612	2020-09-03	19:23:26,922762	127.0.0.1	127.0.0.1	TCP	56	[TCP Retransmission] 64205 → 7000	[SYN]	Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
613	2020-09-03	19:23:26,922804	127.0.0.1	127.0.0.1	TCP	44	7000 → 64205	[RST, ACK]	Seq=1 Ack=1 Win=0 Len=0

Destination: 127.0.0.1

▼ Transmission Control Protocol, Src Port: 64205, Dst Port: 7000, Seq: 0, Len: 0

Source Port: 64205

Destination Port: 7000

[Stream index: 2]

[TCP Segment Len: 0]

Sequence number: 0 (relative sequence number)

Sequence number (raw): 1851356975

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17:26:17,011348	127.0.0.1	127.0.0.1	TCP	56	52608 → 7000	[SYN]	Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
17:26:17,011446	127.0.0.1	127.0.0.1	TCP	56	7000 → 52608	[SYN, ACK]	Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=1
17:26:17,011561	127.0.0.1	127.0.0.1	TCP	44	52608 → 7000	[ACK]	Seq=1 Ack=1 Win=2619648 Len=0
17:26:17,062191	127.0.0.1	127.0.0.1	TCP	48	52608 → 7000	[PSH, ACK]	Seq=1 Ack=1 Win=2619648 Len=4 [TCP segment of a reassembled PDU]
17:26:17,062234	127.0.0.1	127.0.0.1	TCP	44	7000 → 52608	[ACK]	Seq=1 Ack=5 Win=2619648 Len=0
17:26:17,167186	127.0.0.1	127.0.0.1	TCP	61	52608 → 7000	[PSH, ACK]	Seq=5 Ack=1 Win=2619648 Len=17 [TCP segment of a reassembled PDU]
17:26:17,167243	127.0.0.1	127.0.0.1	TCP	44	7000 → 52608	[ACK]	Seq=1 Ack=22 Win=2619648 Len=0
17:26:17,171480	127.0.0.1	127.0.0.1	TCP	48	7000 → 52608	[PSH, ACK]	Seq=1 Ack=22 Win=2619648 Len=4 [TCP segment of a reassembled PDU]
17:26:17,171527	127.0.0.1	127.0.0.1	TCP	44	52608 → 7000	[ACK]	Seq=22 Ack=5 Win=2619648 Len=0
17:26:17,214607	127.0.0.1	127.0.0.1	TCP	75	7000 → 52608	[PSH, ACK]	Seq=5 Ack=22 Win=2619648 Len=31 [TCP segment of a reassembled PDU]
17:26:17,214672	127.0.0.1	127.0.0.1	TCP	44	52608 → 7000	[ACK]	Seq=22 Ack=36 Win=2619648 Len=0
17:26:17,241736	127.0.0.1	127.0.0.1	TCP	44	52608 → 7000	[FIN, ACK]	Seq=22 Ack=36 Win=2619648 Len=0
17:26:17,241782	127.0.0.1	127.0.0.1	TCP	44	7000 → 52608	[ACK]	Seq=36 Ack=23 Win=2619648 Len=0
17:26:17,256602	127.0.0.1	127.0.0.1	TCP	44	7000 → 52608	[FIN, ACK]	Seq=36 Ack=23 Win=2619648 Len=0
17:26:17,256674	127.0.0.1	127.0.0.1	TCP	44	52608 → 7000	[ACK]	Seq=23 Ack=37 Win=2619648 Len=0

05-

```
-C- Conectando ao servidor ->127.0.0.1:7000
-C- O seguinte problema ocorreu :
java.net.ConnectException: Connection refused: connect
```

Time	Source IP	Destination IP	Protocol	Source Port	Destination Port	Sequence	Window	Length	Options
2020-09-03 17:36:36,460782	127.0.0.1	127.0.0.1	TCP	56	7000	[SYN]	Seq=0	Win=65535	Len=0 MSS=65495 WS=256 SACK_PERM=1
2020-09-03 17:36:36,460814	127.0.0.1	127.0.0.1	TCP	44	7000	[RST, ACK]	Seq=1 Ack=1	Win=0	Len=0
2020-09-03 17:36:36,962757	127.0.0.1	127.0.0.1	TCP	56	7000	[TCP Retransmission]	Seq=0	Win=65535	Len=0 MSS=65495 WS=256 SACK
2020-09-03 17:36:36,962798	127.0.0.1	127.0.0.1	TCP	44	7000	[RST, ACK]	Seq=1 Ack=1	Win=0	Len=0
2020-09-03 17:36:37,468884	127.0.0.1	127.0.0.1	TCP	56	7000	[TCP Retransmission]	Seq=0	Win=65535	Len=0 MSS=65495 WS=256 SACK
2020-09-03 17:36:37,468916	127.0.0.1	127.0.0.1	TCP	44	7000	[RST, ACK]	Seq=1 Ack=1	Win=0	Len=0
2020-09-03 17:36:37,972855	127.0.0.1	127.0.0.1	TCP	56	7000	[TCP Retransmission]	Seq=0	Win=65535	Len=0 MSS=65495 WS=256 SACK
2020-09-03 17:36:37,972893	127.0.0.1	127.0.0.1	TCP	44	7000	[RST, ACK]	Seq=1 Ack=1	Win=0	Len=0
2020-09-03 17:36:38,479340	127.0.0.1	127.0.0.1	TCP	56	7000	[TCP Retransmission]	Seq=0	Win=65535	Len=0 MSS=65495 WS=256 SACK
2020-09-03 17:36:38,479377	127.0.0.1	127.0.0.1	TCP	44	7000	[RST, ACK]	Seq=1 Ack=1	Win=0	Len=0

  

```
> Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1
> Transmission Control Protocol, Src Port: 52699, Dst Port: 7000, Seq: 0, Len: 0
  Source Port: 52699
  Destination Port: 7000
  [Stream index: 0]
  [TCP Segment Len: 0]
  Sequence number: 0 (relative sequence number)
  Sequence number (raw): 1449729710
  [Next sequence number: 1 (relative sequence number)]
  Acknowledgment number: 0
  Acknowledgment number (raw): 0
  1000 .... = Header Length: 32 bytes (8)
  > Flags: 0x002 (SYN)
  Window size value: 65535
  [Calculated window size: 65535]
  Checksum: 0x189f [unverified]
  [Checksum Status: Unverified]
  Urgent pointer: 0
  > Options: (12 bytes), Maximum segment size, No-Operation (NOP), Window scale, No-Operation (NOP), No-Operation (NOP), SACK permitted
  > [SEQ/ACK analysis]
  > [Timestamps]
```

  

```
0000  02 00 00 00 45 00 00 34 81 b3 40 00 80 06 00 00  ....E..4..0...
0010  7f 00 00 01 7f 00 00 01 cd db 1b 58 56 69 1e ae  ....XVi...
0020  00 00 00 00 80 02 ff ff 18 9f 00 00 02 04 ff d7  ....
0030  01 03 03 08 01 01 04 02  ....
```

06-

```
try
{
    int PortaServidor = 7000;
    int n = 0;
    //INICIALIZA UM SERVIÇO DE ESCUTA POR CONEXÕES NA PORTA ESPECIFICADA
    System.out.println(" -S- Aguardando conexao (P:"+PortaServidor+"...)");
    ServerSocket socktServ = new ServerSocket(PortaServidor);
    while(n<3){
        //ESPERA (BLOQUEADO) POR CONEXÕES
        Socket conSer = socktServ.accept(); //RECEBE CONEXÃO E CRIA UM NOVO CANAL (p) NO SENTIDO CONTRÁRIO (SERVIDOR -> CLIENTE)
        System.out.println(" -S- Conectado ao cliente ->" + conSer.toString());

        //CRIA UM PACOTE DE ENTRADA PARA RECEBER MENSAGENS, ASSOCIADO À CONEXÃO (p)
        ObjectInputStream sServIn = new ObjectInputStream(conSer.getInputStream());
        System.out.println(" -S- Recebendo mensagem...");
        Object msgIn = sServIn.readObject(); //ESPERA (BLOQUEADO) POR UM PACOTE
        System.out.println(" -S- Recebido: " + msgIn.toString());

        //CRIA UM PACOTE DE SAÍDA PARA ENVIAR MENSAGENS, ASSOCIANDO-O À CONEXÃO (p)
        ObjectOutputStream sSerOut = new ObjectOutputStream(conSer.getOutputStream());
        sSerOut.writeObject("RETORNO " + msgIn.toString() + " - TCP"); //ESCREVE NO PACOTE
        System.out.println(" -S- Enviando mensagem resposta...");
        sSerOut.flush(); //ENVIA O PACOTE

        //FINALIZA A CONEXÃO

        conSer.close();
        System.out.println(" -S- Conexao finalizada...");
        n++;
    }
    socktServ.close();
}
catch(Exception e) //SE OCORRER ALGUMA EXCESSÃO, ENTÃO DEVE SER TRATADA (AMIGAVELMENTE)
{
    System.out.println(" -S- O seguinte problema ocorreu : \n" + e.toString());
}
```

No.	Time	Source	Destination	Protocol	Length	Info
1	2020-09-03 18:40:00,671773	127.0.0.1	127.0.0.1	TCP	56	53790 → 7000 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=
2	2020-09-03 18:40:00,671818	127.0.0.1	127.0.0.1	TCP	56	7000 → 53790 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256
3	2020-09-03 18:40:00,671842	127.0.0.1	127.0.0.1	TCP	44	53790 → 7000 [ACK] Seq=1 Ack=1 Win=2619648 Len=0
4	2020-09-03 18:40:00,675795	127.0.0.1	127.0.0.1	TCP	48	53790 → 7000 [PSH, ACK] Seq=1 Ack=1 Win=2619648 Len=4 [TCP segment of
5	2020-09-03 18:40:00,675815	127.0.0.1	127.0.0.1	TCP	44	7000 → 53790 [ACK] Seq=1 Ack=5 Win=2619648 Len=0
6	2020-09-03 18:40:00,686234	127.0.0.1	127.0.0.1	TCP	61	53790 → 7000 [PSH, ACK] Seq=5 Ack=1 Win=2619648 Len=17 [TCP segment c
7	2020-09-03 18:40:00,686257	127.0.0.1	127.0.0.1	TCP	44	7000 → 53790 [ACK] Seq=1 Ack=22 Win=2619648 Len=0
8	2020-09-03 18:40:00,687965	127.0.0.1	127.0.0.1	TCP	48	7000 → 53790 [PSH, ACK] Seq=1 Ack=22 Win=2619648 Len=4 [TCP segment c
9	2020-09-03 18:40:00,687981	127.0.0.1	127.0.0.1	TCP	44	53790 → 7000 [ACK] Seq=22 Ack=5 Win=2619648 Len=0
10	2020-09-03 18:40:00,706863	127.0.0.1	127.0.0.1	TCP	75	7000 → 53790 [PSH, ACK] Seq=5 Ack=22 Win=2619648 Len=31 [TCP segment
11	2020-09-03 18:40:00,706890	127.0.0.1	127.0.0.1	TCP	44	53790 → 7000 [ACK] Seq=22 Ack=36 Win=2619648 Len=0
12	2020-09-03 18:40:00,707865	127.0.0.1	127.0.0.1	TCP	44	7000 → 53790 [FIN, ACK] Seq=36 Ack=22 Win=2619648 Len=0
13	2020-09-03 18:40:00,707879	127.0.0.1	127.0.0.1	TCP	44	53790 → 7000 [ACK] Seq=22 Ack=37 Win=2619648 Len=0
14	2020-09-03 18:40:00,708075	127.0.0.1	127.0.0.1	TCP	44	53790 → 7000 [FIN, ACK] Seq=22 Ack=37 Win=2619648 Len=0
15	2020-09-03 18:40:00,708112	127.0.0.1	127.0.0.1	TCP	44	7000 → 53790 [ACK] Seq=37 Ack=23 Win=2619648 Len=0
16	2020-09-03 18:40:03,100133	127.0.0.1	127.0.0.1	TCP	56	53792 → 7000 [SYN] Seq=0 Win=65535 Len=0 MSS=65495 WS=256 SACK_PERM=
17	2020-09-03 18:40:03,100176	127.0.0.1	127.0.0.1	TCP	56	7000 → 53792 [SYN, ACK] Seq=0 Ack=1 Win=65535 Len=0 MSS=65495 WS=256
18	2020-09-03 18:40:03,100246	127.0.0.1	127.0.0.1	TCP	44	53792 → 7000 [ACK] Seq=1 Ack=1 Win=2619648 Len=0
19	2020-09-03 18:40:03,103519	127.0.0.1	127.0.0.1	TCP	48	53792 → 7000 [PSH, ACK] Seq=1 Ack=1 Win=2619648 Len=4 [TCP segment of
20	2020-09-03 18:40:03,103546	127.0.0.1	127.0.0.1	TCP	44	7000 → 53792 [ACK] Seq=1 Ack=5 Win=2619648 Len=0
21	2020-09-03 18:40:03,114366	127.0.0.1	127.0.0.1	TCP	61	53792 → 7000 [PSH, ACK] Seq=5 Ack=1 Win=2619648 Len=17 [TCP segment c
22	2020-09-03 18:40:03,114391	127.0.0.1	127.0.0.1	TCP	44	7000 → 53792 [ACK] Seq=1 Ack=22 Win=2619648 Len=0
23	2020-09-03 18:40:03,114748	127.0.0.1	127.0.0.1	TCP	48	7000 → 53792 [PSH, ACK] Seq=1 Ack=22 Win=2619648 Len=4 [TCP segment c
24	2020-09-03 18:40:03,114768	127.0.0.1	127.0.0.1	TCP	44	53792 → 7000 [ACK] Seq=22 Ack=5 Win=2619648 Len=0
25	2020-09-03 18:40:03,114879	127.0.0.1	127.0.0.1	TCP	75	7000 → 53792 [PSH, ACK] Seq=5 Ack=22 Win=2619648 Len=31 [TCP segment
26	2020-09-03 18:40:03,114893	127.0.0.1	127.0.0.1	TCP	44	53792 → 7000 [ACK] Seq=22 Ack=36 Win=2619648 Len=0
27	2020-09-03 18:40:03,115179	127.0.0.1	127.0.0.1	TCP	44	7000 → 53792 [FIN, ACK] Seq=36 Ack=22 Win=2619648 Len=0
28	2020-09-03 18:40:03,115194	127.0.0.1	127.0.0.1	TCP	44	53792 → 7000 [ACK] Seq=22 Ack=37 Win=2619648 Len=0
29	2020-09-03 18:40:03,121697	127.0.0.1	127.0.0.1	TCP	44	53792 → 7000 [FIN, ACK] Seq=22 Ack=37 Win=2619648 Len=0
30	2020-09-03 18:40:03,121729	127.0.0.1	127.0.0.1	TCP	44	7000 → 53792 [ACK] Seq=37 Ack=23 Win=2619648 Len=0

▼ Frame 12: 44 bytes on wire (352 bits), 44 bytes captured (352 bits) on interface \Device\NPF\_{Loopback}, id 0

► Interface id: 0 (\Device\NPF\_{Loopback})

Encapsulation type: NULL/Loopback (15)

Arrival Time: Sep 3, 2020 18:40:00.707865000 Hora oficial do Brasil

[Time shift for this packet: 0.000000000 seconds]

Epoch Time: 1599169200.707865000 seconds