

1. Good case (Wireshark)

CaptureOK.pcapng [Wireshark 1.8.5 (SVN Rev 47350 from /trunk-1.8)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filter: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
1	2015-11-16 10:26:35.770000000	192.168.1.12	192.168.1.2	TCP	66	50177 > 60001 [SYN, ACK] Seq=0 Win=8192 Len=0 MSS=1460 WS=236 SACK_PERM=1
2	2015-11-16 10:26:35.770304000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [SYN, ACK] Seq=0 Ack=1 Win=4096 Len=0 MSS=1460
3	2015-11-16 10:26:35.770428000	192.168.1.12	192.168.1.2	TCP	54	50177 > 60001 [ACK] Seq=1 Ack=1 Win=64240 Len=0
4	2015-11-16 10:26:35.770576000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=1 Ack=1 Win=64240 Len=7
5	2015-11-16 10:26:35.989573000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=1 Ack=8 Win=4089 Len=0
6	2015-11-16 10:26:35.989575000	192.168.1.2	192.168.1.12	TCP	66	60001 > 50177 [PSH, ACK] Seq=1 Ack=8 Win=4096 Len=12
7	2015-11-16 10:26:35.989849000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=8 Ack=13 Win=64228 Len=7
8	2015-11-16 10:26:35.990209000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=13 Ack=15 Win=4089 Len=0
9	2015-11-16 10:26:35.990210000	192.168.1.2	192.168.1.12	TCP	66	60001 > 50177 [PSH, ACK] Seq=13 Ack=15 Win=4096 Len=12
10	2015-11-16 10:26:35.990402000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=15 Ack=25 Win=64216 Len=7
11	2015-11-16 10:26:35.990770000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=25 Ack=22 Win=4089 Len=0
12	2015-11-16 10:26:35.990771000	192.168.1.2	192.168.1.12	TCP	66	60001 > 50177 [PSH, ACK] Seq=25 Ack=22 Win=4096 Len=12
13	2015-11-16 10:26:35.990941000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=22 Ack=37 Win=64204 Len=7
14	2015-11-16 10:26:35.991289000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=37 Ack=29 Win=4089 Len=0
15	2015-11-16 10:26:35.991291000	192.168.1.2	192.168.1.12	TCP	64	60001 > 50177 [PSH, ACK] Seq=37 Ack=29 Win=4096 Len=10
16	2015-11-16 10:26:35.991475000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=29 Ack=47 Win=64194 Len=7
17	2015-11-16 10:26:35.991832000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=47 Ack=36 Win=4089 Len=0
18	2015-11-16 10:26:35.991834000	192.168.1.2	192.168.1.12	TCP	63	60001 > 50177 [PSH, ACK] Seq=47 Ack=36 Win=4096 Len=9
19	2015-11-16 10:26:35.992017000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=36 Ack=56 Win=64185 Len=7
20	2015-11-16 10:26:35.992370000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=56 Ack=43 Win=4089 Len=0
21	2015-11-16 10:26:35.992372000	192.168.1.2	192.168.1.12	TCP	63	60001 > 50177 [PSH, ACK] Seq=56 Ack=43 Win=4096 Len=9
22	2015-11-16 10:26:36.000472000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=43 Ack=65 Win=64176 Len=7
23	2015-11-16 10:26:36.000866000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=65 Ack=50 Win=4089 Len=0
24	2015-11-16 10:26:36.000867000	192.168.1.2	192.168.1.12	TCP	63	60001 > 50177 [PSH, ACK] Seq=65 Ack=50 Win=4096 Len=9
25	2015-11-16 10:26:36.050313000	192.168.1.12	192.168.1.2	TCP	54	50177 > 60001 [ACK] Seq=50 Ack=74 Win=64167 Len=0
26	2015-11-16 10:26:36.709858000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=50 Ack=74 Win=64167 Len=7
27	2015-11-16 10:26:36.710264000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=74 Ack=57 Win=4089 Len=0
28	2015-11-16 10:26:36.710265000	192.168.1.2	192.168.1.12	TCP	66	60001 > 50177 [PSH, ACK] Seq=74 Ack=57 Win=4096 Len=12
29	2015-11-16 10:26:36.710471000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=57 Ack=86 Win=64155 Len=7
30	2015-11-16 10:26:36.710820000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=86 Ack=64 Win=4089 Len=0
31	2015-11-16 10:26:36.710821000	192.168.1.2	192.168.1.12	TCP	138	60001 > 50177 [PSH, ACK] Seq=86 Ack=64 Win=4096 Len=84
32	2015-11-16 10:26:36.728285000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=64 Ack=170 Win=64071 Len=7
33	2015-11-16 10:26:36.728286000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=170 Ack=71 Win=4089 Len=0
34	2015-11-16 10:26:36.728620000	192.168.1.2	192.168.1.12	TCP	63	60001 > 50177 [PSH, ACK] Seq=170 Ack=71 Win=4096 Len=9
35	2015-11-16 10:26:36.779638000	192.168.1.12	192.168.1.2	TCP	54	50177 > 60001 [ACK] Seq=71 Ack=179 Win=64062 Len=0
36	2015-11-16 10:26:37.222045000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=71 Ack=179 Win=64062 Len=7
37	2015-11-16 10:26:37.222615000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=179 Ack=78 Win=4089 Len=0
38	2015-11-16 10:26:37.222617000	192.168.1.2	192.168.1.12	TCP	66	60001 > 50177 [PSH, ACK] Seq=179 Ack=78 Win=4096 Len=12
39	2015-11-16 10:26:37.222820000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=78 Ack=191 Win=64050 Len=7
40	2015-11-16 10:26:37.223199000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=191 Ack=85 Win=4089 Len=0
41	2015-11-16 10:26:37.223201000	192.168.1.2	192.168.1.12	TCP	138	60001 > 50177 [PSH, ACK] Seq=191 Ack=85 Win=4096 Len=84
42	2015-11-16 10:26:37.223481000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=85 Ack=275 Win=63966 Len=7
43	2015-11-16 10:26:37.223853000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=275 Ack=92 Win=4089 Len=0
44	2015-11-16 10:26:37.223854000	192.168.1.2	192.168.1.12	TCP	63	60001 > 50177 [PSH, ACK] Seq=275 Ack=92 Win=4096 Len=9
45	2015-11-16 10:26:37.271804000	192.168.1.12	192.168.1.2	TCP	54	50177 > 60001 [ACK] Seq=92 Ack=284 Win=63957 Len=0
46	2015-11-16 10:26:37.724225000	192.168.1.12	192.168.1.2	TCP	61	50177 > 60001 [PSH, ACK] Seq=92 Ack=284 Win=63957 Len=7
47	2015-11-16 10:26:37.724401000	192.168.1.2	192.168.1.12	TCP	60	60001 > 50177 [ACK] Seq=284 Ack=99 Win=4089 Len=0
48	2015-11-16 10:26:37.724402000	192.168.1.2	192.168.1.12	TCP	66	60001 > 50177 [PSH, ACK] Seq=284 Ack=99 Win=4096 Len=12

Frame 24: 63 bytes on wire (504 bits), 63 bytes captured (504 bits) on interface 0

Ethernet II, Src: d0:ff:50:33:19:10 (d0:ff:50:33:19:10), Dst: Flextron_61:d5:1a (00:21:cc:61:d5:1a)

Internet Protocol version 4, Src: 192.168.1.2 (192.168.1.2), Dst: 192.168.1.12 (192.168.1.12)

Transmission Control Protocol, Src Port: 60001 (60001), Dst Port: 50177 (50177), Seq: 65, Ack: 50, Len: 9

Data (9 bytes)

```

0000 00 21 cc 61 d5 1a d0 ff 50 33 19 10 08 00 45 00  .!.a...P3...E.
0010 00 31 6a 4a 00 00 40 06 8d 1e c0 a8 01 02 c0 a8  .1jJ.0.....
0020 01 0c ea 61 c4 01 a7 d2 54 41 19 04 64 c8 50 18  ...a...TA..d.P.
0030 10 00 ea 44 00 00 08 c0 01 16 00 01 00 05 00  ...D.....

```

2. Bad case (Wireshark)

CaptureNOK.pcapng [Wireshark 1.8.5 (SVN Rev 47350 from /trunk-1.8)]

File Edit View Go Capture Analyze Statistics Telephony Tools Internals Help

Filters: Expression... Clear Apply Save

No.	Time	Source	Destination	Protocol	Length	Info
2	2015-11-16 10:14:07.61869000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [SYN, ACK] Seq=0 Ack=1 Win=4096 Len=0 MSS=1460
3	2015-11-16 10:14:07.76198000	192.168.1.10	192.168.1.2	TCP	54	49159 > 60001 [ACK] Seq=1 Ack=1 Win=64240 Len=0
4	2015-11-16 10:14:07.762423000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=1 Ack=1 Win=64240 Len=7
5	2015-11-16 10:14:08.07163000	192.168.1.10	192.168.1.2	TCP	61	[TCP Retransmission] 49159 > 60001 [PSH, ACK] Seq=1 Ack=1 Win=64240 Len=7
6	2015-11-16 10:14:08.265876000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=1 Ack=8 Win=4089 Len=0
7	2015-11-16 10:14:08.265876000	192.168.1.2	192.168.1.10	TCP	60	[TCP Dup ACK #1] 60001 > 49159 [ACK] Seq=1 Ack=8 Win=4089 Len=0
8	2015-11-16 10:14:08.265876000	192.168.1.2	192.168.1.10	TCP	66	60001 > 49159 [PSH, ACK] Seq=1 Ack=8 Win=4096 Len=12
9	2015-11-16 10:14:08.266350000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=8 Ack=13 Win=64228 Len=7
10	2015-11-16 10:14:08.266866000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=13 Ack=15 Win=4089 Len=0
11	2015-11-16 10:14:08.266866000	192.168.1.2	192.168.1.10	TCP	66	60001 > 49159 [PSH, ACK] Seq=13 Ack=15 Win=4096 Len=12
12	2015-11-16 10:14:08.267092000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=15 Ack=25 Win=64216 Len=7
13	2015-11-16 10:14:08.267548000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=25 Ack=22 Win=4089 Len=0
14	2015-11-16 10:14:08.267548000	192.168.1.2	192.168.1.10	TCP	66	60001 > 49159 [PSH, ACK] Seq=25 Ack=22 Win=4096 Len=12
15	2015-11-16 10:14:08.267787000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=22 Ack=37 Win=64204 Len=7
16	2015-11-16 10:14:08.268263000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=37 Ack=29 Win=4089 Len=0
17	2015-11-16 10:14:08.268263000	192.168.1.2	192.168.1.10	TCP	64	60001 > 49159 [PSH, ACK] Seq=37 Ack=29 Win=4096 Len=10
18	2015-11-16 10:14:08.268498000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=29 Ack=47 Win=64194 Len=7
19	2015-11-16 10:14:08.268819000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=47 Ack=36 Win=4089 Len=0
20	2015-11-16 10:14:08.268819000	192.168.1.2	192.168.1.10	TCP	63	60001 > 49159 [PSH, ACK] Seq=47 Ack=36 Win=4096 Len=9
21	2015-11-16 10:14:08.269077000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=36 Ack=56 Win=64185 Len=7
22	2015-11-16 10:14:08.269551000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=56 Ack=43 Win=4089 Len=0
23	2015-11-16 10:14:08.269551000	192.168.1.2	192.168.1.10	TCP	63	60001 > 49159 [PSH, ACK] Seq=56 Ack=43 Win=4096 Len=9
24	2015-11-16 10:14:08.280140000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=43 Ack=65 Win=64176 Len=7
25	2015-11-16 10:14:08.280590000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=65 Ack=50 Win=4089 Len=0
26	2015-11-16 10:14:08.280590000	192.168.1.2	192.168.1.10	TCP	63	60001 > 49159 [PSH, ACK] Seq=65 Ack=50 Win=4096 Len=9
27	2015-11-16 10:14:08.477662000	192.168.1.10	192.168.1.2	TCP	54	49159 > 60001 [ACK] Seq=50 Ack=74 Win=64167 Len=0
28	2015-11-16 10:14:08.482710000	192.168.1.2	192.168.1.10	TCP	63	[TCP Retransmission] 60001 > 49159 [PSH, ACK] Seq=65 Ack=50 Win=4096 Len=9
29	2015-11-16 10:14:08.482855000	192.168.1.10	192.168.1.2	TCP	54	[TCP Dup ACK #7#1] 49159 > 60001 [ACK] Seq=50 Ack=74 Win=64167 Len=0
30	2015-11-16 10:14:09.055074000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=50 Ack=74 Win=64167 Len=7
31	2015-11-16 10:14:09.055632000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=74 Ack=57 Win=4089 Len=0
32	2015-11-16 10:14:09.055632000	192.168.1.2	192.168.1.10	TCP	66	60001 > 49159 [PSH, ACK] Seq=74 Ack=57 Win=4096 Len=12
33	2015-11-16 10:14:09.056043000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=57 Ack=86 Win=64155 Len=7
34	2015-11-16 10:14:09.056533000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=86 Ack=64 Win=4089 Len=0
35	2015-11-16 10:14:09.056533000	192.168.1.2	192.168.1.10	TCP	138	60001 > 49159 [PSH, ACK] Seq=86 Ack=64 Win=4096 Len=84
36	2015-11-16 10:14:09.07421000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=64 Ack=170 Win=64071 Len=7
37	2015-11-16 10:14:09.077773000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=170 Ack=71 Win=4089 Len=0
38	2015-11-16 10:14:09.077774000	192.168.1.2	192.168.1.10	TCP	63	60001 > 49159 [PSH, ACK] Seq=170 Ack=71 Win=4096 Len=9
39	2015-11-16 10:14:09.237939000	192.168.1.2	192.168.1.10	TCP	63	[TCP Retransmission] 60001 > 49159 [PSH, ACK] Seq=170 Ack=71 Win=4096 Len=9
40	2015-11-16 10:14:09.238087000	192.168.1.10	192.168.1.2	TCP	54	49159 > 60001 [ACK] Seq=71 Ack=179 Win=64062 Len=0
41	2015-11-16 10:14:09.585284000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=71 Ack=179 Win=64062 Len=7
42	2015-11-16 10:14:09.58546000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=179 Ack=78 Win=4089 Len=0
43	2015-11-16 10:14:09.58546000	192.168.1.2	192.168.1.10	TCP	66	60001 > 49159 [PSH, ACK] Seq=179 Ack=78 Win=4096 Len=12
44	2015-11-16 10:14:09.585907000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=78 Ack=191 Win=64050 Len=7
45	2015-11-16 10:14:09.586462000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=191 Ack=85 Win=4089 Len=0
46	2015-11-16 10:14:09.586463000	192.168.1.2	192.168.1.10	TCP	138	60001 > 49159 [PSH, ACK] Seq=191 Ack=85 Win=4096 Len=84
47	2015-11-16 10:14:09.586843000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=85 Ack=275 Win=63966 Len=7
48	2015-11-16 10:14:09.587321000	192.168.1.2	192.168.1.10	TCP	60	60001 > 49159 [ACK] Seq=275 Ack=92 Win=4089 Len=0
49	2015-11-16 10:14:09.587321000	192.168.1.2	192.168.1.10	TCP	63	60001 > 49159 [PSH, ACK] Seq=275 Ack=92 Win=4096 Len=9
50	2015-11-16 10:14:09.78266000	192.168.1.10	192.168.1.2	TCP	54	49159 > 60001 [ACK] Seq=92 Ack=284 Win=63957 Len=0
51	2015-11-16 10:14:09.791491000	192.168.1.2	192.168.1.10	TCP	63	[TCP Retransmission] 60001 > 49159 [PSH, ACK] Seq=275 Ack=92 Win=4096 Len=9
52	2015-11-16 10:14:09.791593000	192.168.1.10	192.168.1.2	TCP	54	[TCP Dup ACK #0#1] 49159 > 60001 [ACK] Seq=92 Ack=284 Win=63957 Len=0
53	2015-11-16 10:14:10.100530000	192.168.1.10	192.168.1.2	TCP	61	49159 > 60001 [PSH, ACK] Seq=92 Ack=284 Win=63957 Len=7

Frame 28: 63 bytes on wire (504 bits), 63 bytes captured (504 bits) on interface 0

Ethernet II, Src: 00:ff:50:33:19:10 (00:ff:50:33:19:10), Dst: vmware_39:ad:b3 (00:50:56:39:ad:b3)

Internet Protocol version 4, Src: 192.168.1.2 (192.168.1.2), Dst: 192.168.1.10 (192.168.1.10)

Transmission Control Protocol, Src Port: 60001 (60001), Dst Port: 49159 (49159), Seq: 65, Ack: 50, Len: 9

```

0000 00 50 56 39 ad b3 d0 ff 50 33 19 10 08 00 45 00  .PV9....P3....E.
0010 00 31 69 47 00 00 40 06 8e 23 c0 a8 01 c2 c0 a8  .1G..@.#.....P.
0020 01 0a ea 61 c0 07 8b 5c 32 41 d0 69 ac f6 50 18  .a....)2A.i..P.
0030 10 00 2d 23 00 00 08 c0 01 16 00 01 00 05 00    ...#.....

```

3. CCS (6.1) with console output (tcptime.c from NDK-Stack)

```
*tcptime.c tcp.c
153     TcpDrop( pt, ETIMEDOUT );
154 }
155
156 /*----- */
157 /* TcpTimeoutRexmt */
158 /* Called when the TCP retransmit timer has expired */
159 /*----- */
160 void TcpTimeoutRexmt( TCPPROT *pt )
161 {
162     UINT32 Ticks;
163
164     DbgPrintf(DBG_INFO,"TcpTimeoutRexmt: Retransmit Timeout");
165
166     /* Message has not been acked within retransmit interval. */
167     /* Back off to a longer retransmit interval and retransmit one segment. */
168     if( ++pt->t_rtxindex > TCP_MAXBACKOFF )
169     {
170         /* Already at max - drop it like a bad habit */
171         pt->t_rtxindex = TCP_MAXBACKOFF;
172
173         /* Bump the drop stats */
174         tcps.TimeoutDrops++;
175
176         /* Set socket error and drop connection */
177         TcpDrop( pt, ETIMEDOUT );
178         return;
179     }

```

Console

```
AM3359.ccxml:CIO
01160.000 TcpTimeoutRexmt: Retransmit Timeout
01160.500 TcpTimeoutRexmt: Retransmit Timeout
01160.900 TcpTimeoutRexmt: Retransmit Timeout
01161.400 TcpTimeoutRexmt: Retransmit Timeout
01161.800 TcpTimeoutRexmt: Retransmit Timeout
01162.300 TcpTimeoutRexmt: Retransmit Timeout
01162.700 TcpTimeoutRexmt: Retransmit Timeout
01163.200 TcpTimeoutRexmt: Retransmit Timeout
01163.600 TcpTimeoutRexmt: Retransmit Timeout
01164.100 TcpTimeoutRexmt: Retransmit Timeout
01164.500 TcpTimeoutRexmt: Retransmit Timeout
01165.000 TcpTimeoutRexmt: Retransmit Timeout
01165.400 TcpTimeoutRexmt: Retransmit Timeout
01165.900 TcpTimeoutRexmt: Retransmit Timeout
01166.900 TcpTimeoutRexmt: Retransmit Timeout
01167.300 TcpTimeoutRexmt: Retransmit Timeout
01167.700 TcpTimeoutRexmt: Retransmit Timeout
```