

In its simplest case:

Frame 4 really isn't an RTT ack of frame 3 (which contained no TCP data).

It is really simply a restatement of the ack value previously sent in frame 2 (which was interpreted as the ack of the data sent in frame 1.

The image shows a Wireshark capture of a file named `rttack.pcap`. The packet list on the left shows six packets. Packet 4 is selected, and its details are shown in the middle pane. The details pane shows the following information:

- Frame 4 (58 bytes on wire, 58 bytes captured)
- Ethernet II, Src: 00:1b:d5:e8:eb:79 (00:1b:d5:e8:eb:79), Dst: 00:00:0c:07:ac:01 (00:00:0c:07:ac:01)
- Internet Protocol, Src: 57.255.41.14 (57.255.41.14), Dst: 57.253.54.194 (57.253.54.194)
- Transmission Control Protocol, Src Port: 26537 (26537), Dst Port: 11012 (11012), Seq: 5, Ack: 5, Len: 4
  - Source port: 26537 (26537)
  - Destination port: 11012 (11012)
  - Sequence number: 5 (relative sequence number)
  - [Next sequence number: 9 (relative sequence number)]
  - Acknowledgement number: 5 (relative ack number)
  - Header length: 20 bytes
  - Flags: 0x18 (PSH, ACK)
  - Window size: 49680
  - Checksum: 0x3df7 [correct]
  - [SEQ/ACK analysis]
    - [This is an ACK to the segment in frame: 3]
    - [The RTT to ACK the segment was: 4.170081000 seconds]
  - [Timestamps]
  - Data (4 bytes)

The packet bytes pane on the right shows the raw data of the selected packet, which is a TCP segment. The status bar at the bottom indicates "Which previous segment is this an ACK for (tcp.analysis.acks\_frame)" and "Packets: 6 Displayed: 6 Marked: 0".

To make things a little stranger, even though frame 2 is noted as the RTT ack for frame 1, it does not generate an RTT ack delay measurement as part of it's analysis.

2 2008-12-19 15:45:12.728 0.000 57.255.41.14 57.253.54.194 TCP 26537 > 11012 [PSH, AC...

- Frame 2 (58 bytes on wire, 58 bytes captured)
- Ethernet II, Src: 00:1b:d5:e8:eb:79 (00:1b:d5:e8:eb:79), Dst: 00:00:0c:07:ac:01 (00:00:0c:07:ac:01)
- Internet Protocol, Src: 57.255.41.14 (57.255.41.14), Dst: 57.253.54.194 (57.253.54.194)
- Transmission Control Protocol, Src Port: 26537 (26537), Dst Port: 11012 (11012), Seq: 1, Ack: 5, Len: 4

Source port: 26537 (26537)  
Destination port: 11012 (11012)  
Sequence number: 1 (relative sequence number)  
[Next sequence number: 5 (relative sequence number)]  
Acknowledgement number: 5 (relative ack number)  
Header length: 20 bytes

- Flags: 0x18 (PSH, ACK)
- Window size: 49680
- Checksum: 0x2dfb [correct]
- [SEQ/ACK analysis]

[This is an ACK to the segment in frame: 1]

- [Timestamps]
  - [Time since first frame in this TCP stream: 0.000000000 seconds]
  - [Time since previous frame in this TCP stream: 0.000000000 seconds]

- Data (4 bytes)

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0000 00 00 0c 07 ac 01 00 1b d5 e8 eb 79 08 00 45 00 .....y..E.
0010 00 2c 62 63 40 00 3f 06 05 9d 39 ff 29 0e 39 fd .,bc@.?. ..9.).9.
0020 36 c2 67 a9 2b 04 6f 10 4e 4c 98 7e a3 63 50 18 6.g.+..q. NL.~.cP.
0030 c2 10 2d fb 00 00 60 00 00 04 ..-.... ..
```