

Assignment 1 ; Arka Sarkar 2018222

Q2.

Size of text file sent - 91 bytes

The image displays the Wireshark network protocol analyzer interface. At the top, the title bar reads "Activities | Wireshark". The main menu includes File, Edit, View, Go, Capture, Analyze, Statistics, Telephony, Wireless, Tools, and Help. Below the menu is a toolbar with various icons for file operations, capture control, packet selection, and zooming.

The status bar at the top indicates the current filter is "tcp.port == 9001". The main packet list pane shows several captured packets:

No.	Time	Source	Destination	Protocol	Length	Info
9	4.514881091	127.0.0.1	127.0.0.1	TCP	74	56332 → 9001 [SYN] Seq=0 Win=65495 Len=0 MSS=65495 SACK_PERM=1 TSval=900919188 TSecr=0 WS=128
10	4.514881443	127.0.0.1	127.0.0.1	TCP	74	9001 → 56332 [SYN, ACK] Seq=0 Ack=1 Win=65495 Len=0 MSS=65495 SACK_PERM=1 TSval=900919126 TSecr=900919188 WS=128
11	4.514881555	127.0.0.1	127.0.0.1	TCP	66	56332 → 9001 [ACK] Seq=1 Ack=1 Win=65536 Len=0 TSval=900919188 TSecr=900919126
30	16.149926827	127.0.0.1	127.0.0.1	TCP	322	56332 → 9001 [PSH, ACK] Seq=1 Ack=1 Win=65536 Len=256 TSval=900930825 TSecr=900919126
39	16.149902622	127.0.0.1	127.0.0.1	TCP	66	9001 → 56332 [ACK] Seq=1 Ack=257 Win=64384 Len=0 TSval=900930825 TSecr=900930825
40	16.149431091	127.0.0.1	127.0.0.1	TCP	157	9001 → 56332 [PSH, ACK] Seq=1 Ack=257 Win=64384 Len=91 TSval=900930826 TSecr=900930825
41	16.149454619	127.0.0.1	127.0.0.1	TCP	66	56332 → 9001 [ACK] Seq=257 Ack=92 Win=65536 Len=0 TSval=900930826 TSecr=900930825
42	16.149518253	127.0.0.1	127.0.0.1	TCP	78	9001 → 56332 [PSH, ACK] Seq=92 Ack=257 Win=64384 Len=12 TSval=900930826 TSecr=900930826
43	16.149539149	127.0.0.1	127.0.0.1	TCP	66	56332 → 9001 [ACK] Seq=257 Ack=104 Win=65536 Len=0 TSval=900930826 TSecr=900930825
44	16.149581972	127.0.0.1	127.0.0.1	TCP	66	9001 → 56332 [FIN, ACK] Seq=104 Ack=257 Win=64384 Len=0 TSval=900930826 TSecr=900930825
45	16.149773864	127.0.0.1	127.0.0.1	TCP	66	56332 → 9001 [FIN, ACK] Seq=257 Ack=105 Win=65536 Len=0 TSval=900930826 TSecr=900930826
46	16.149815457	127.0.0.1	127.0.0.1	TCP	66	9001 → 56332 [ACK] Seq=105 Ack=258 Win=64384 Len=0 TSval=900930825 TSecr=900930825

The bottom pane shows the selected packet's details:

- Frame 9: 74 bytes on wire (592 bits), 74 bytes captured (592 bits) on interface 0
- Ethernet II, Src: 00:00:00:00:00:00 (00:00:00:00:00:00), Dst: 00:00:00:00:00:00 (00:00:00:00:00:00)
- Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1
- Transmission Control Protocol, Src Port: 56332, Dst Port: 9001, Seq: 0, Len: 0

The packet bytes pane at the very bottom shows the raw hex and ASCII data for the selected frame, which appears to be a SYN packet header.

- (a) No of Tcp connections made - 1.
(b) Port Number of Client : 56332 ; Port Number of Server : 9001
(c) Total number of packets exchanged : 12
(d) Total time needed to download the file : $16.149815457 - 16.149026027 = 0.00078943$ secs