

1) a) Got the wireshark trace working.

**Please use “udp.port == 12000” Filter** to display all the packets related to this particular “GET file2.txt” transfer.

In this we can clearly see the ACK being sent by receiver to sender over every 100bytes of packets delivered.

Every packet of length 35 in the screenshot below is an ACK packet.

The ones with length of 1032 are file data packets.

The first 2 packets of length , 46 and 41 are “GET file2.txt” and “LEN: <size>” packets respectively .

Followed by the 3rd packet of length 39 which is “ACK\_LEN” packet.

No.	Time	Source	Destination	Protocol	Length	Info
793	2025-10-23 23:15:08.536563	169.226.237.49	169.226.237.49	LLC	46	I, N(R)=16, N(S)=42; DSAP 0x46 Group, SSAP 0x44 Response
794	2025-10-23 23:15:08.537081	169.226.237.49	169.226.237.49	LLC	41	I, N(R)=29, N(S)=39; DSAP 0x4c Individual, SSAP 0x44 Response
795	2025-10-23 23:15:08.537195	169.226.237.49	169.226.237.49	LLC	39	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
796	2025-10-23 23:15:08.537425	169.226.237.49	169.226.237.49	LLC	1032	S, func=RRR, N(R)=16; DSAP ISO Network Layer (OSLAN 2) Individual, SSAP 0x68 Command
797	2025-10-23 23:15:08.537794	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
798	2025-10-23 23:15:08.537850	169.226.237.49	169.226.237.49	LLC	1032	S, func=REJ, N(R)=16; DSAP 0x6a Individual, SSAP 0x62 Command
799	2025-10-23 23:15:08.537887	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
800	2025-10-23 23:15:08.537972	169.226.237.49	169.226.237.49	LLC	1032	S F, func=REJ, N(R)=55; DSAP 0x64 Group, SSAP 0x66 Response
801	2025-10-23 23:15:08.537998	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
802	2025-10-23 23:15:08.538112	169.226.237.49	169.226.237.49	LLC	1032	S F, func=RRR, N(R)=57; DSAP 0x68 Individual, SSAP 0x6e Response
803	2025-10-23 23:15:08.538151	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
804	2025-10-23 23:15:08.538251	169.226.237.49	169.226.237.49	LLC	1032	I P, N(R)=59, N(S)=16; DSAP 0x74 Individual, SSAP 0x68 Command
805	2025-10-23 23:15:08.538289	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
806	2025-10-23 23:15:08.538328	169.226.237.49	169.226.237.49	LLC	1032	S F, func=REJ, N(R)=55; DSAP 0x74 Group, SSAP 0x72 Response
807	2025-10-23 23:15:08.538371	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
808	2025-10-23 23:15:08.538426	169.226.237.49	169.226.237.49	LLC	1032	I, N(R)=16, N(S)=58; DSAP 0x66 Group, SSAP 0x68 Command
809	2025-10-23 23:15:08.538494	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
810	2025-10-23 23:15:08.538553	169.226.237.49	169.226.237.49	LLC	1032	U, func=UA; DSAP 0x74 Group, SSAP 0x68 Response
811	2025-10-23 23:15:08.538587	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
812	2025-10-23 23:15:08.538636	169.226.237.49	169.226.237.49	LLC	1032	U P, func=UA; DSAP 0x6c Individual, SSAP ISO Network Layer (unofficial?) Command
813	2025-10-23 23:15:08.538747	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
814	2025-10-23 23:15:08.538797	169.226.237.49	169.226.237.49	LLC	1032	I, N(R)=22, N(S)=57; DSAP 0x70 Individual, SSAP 0x64 Response
815	2025-10-23 23:15:08.538817	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
816	2025-10-23 23:15:08.538849	169.226.237.49	169.226.237.49	LLC	1032	S, func=RR, N(R)=58; DSAP 0x74 Individual, SSAP 0x68 Command
817	2025-10-23 23:15:08.538875	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
818	2025-10-23 23:15:08.538909	169.226.237.49	169.226.237.49	LLC	1032	I P, N(R)=57, N(S)=57; DSAP 0x66 Individual, SSAP 0x68 Response
819	2025-10-23 23:15:08.538928	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
820	2025-10-23 23:15:08.538956	169.226.237.49	169.226.237.49	LLC	1032	S, func=REJ, N(R)=23; DSAP 0x6e Group, SSAP 0x72 Command
821	2025-10-23 23:15:08.538973	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
822	2025-10-23 23:15:08.539000	169.226.237.49	169.226.237.49	LLC	1032	S F, func=RRR, N(R)=52; DSAP ISO Network Layer (unofficial?) Individual, SSAP 0x70 Response
823	2025-10-23 23:15:08.539092	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
824	2025-10-23 23:15:08.539144	169.226.237.49	169.226.237.49	LLC	1032	I P, N(R)=54, N(S)=16; DSAP 0x74 Individual, SSAP 0x6e Response
825	2025-10-23 23:15:08.539164	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
826	2025-10-23 23:15:08.539223	169.226.237.49	169.226.237.49	LLC	1032	I, N(R)=56, N(S)=16; DSAP 0x6e Group, SSAP 0x6e Command
827	2025-10-23 23:15:08.539242	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response

b) It took roughly 0.01sec to send the first packet of data after initial connection.

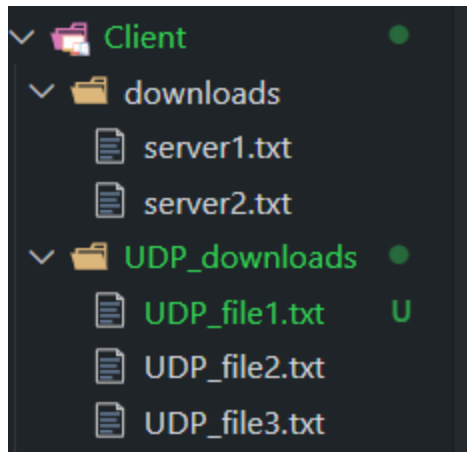
793	2025-10-23 23:15:08.536563	169.226.237.49	169.226.237.49	LLC	46	I, N(R)=16, N(S)=42; DSAP 0x46 Group, SSAP 0x44 Response
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797	2025-10-23 23:15:08.537794	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response

The last “FIN” packed was sent roughly 0.1 seconds after initial connection.

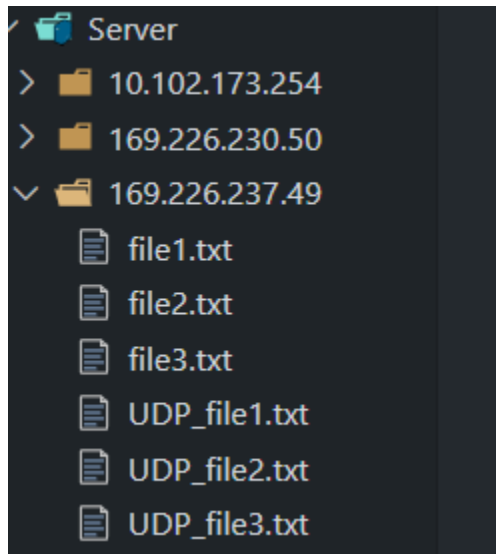
Hence, that’s how long it took to send whole file.

861	2025-10-23 23:15:08.541381	169.226.237.49	169.226.237.49	LLC	35	U, func=Unknown; DSAP 0x40 Group, SSAP Spanning Tree BPDU Response
862	2025-10-23 23:15:08.541633	169.226.237.49	169.226.237.49	LLC	35	[Malformed Packet]

2) I am using name “Downloads” for the directory to specify the files downloaded using TCP and “UDP\_downloads” to specify the file download using UDP.



In server I used naming file1.txt to specify files uploaded using TCP connection.  
And I am using “UDP\_file1.txt” naming to specify files uploaded using UDP connection.



**I did this to keep files uploaded / downloaded using UDP and TCP differently.**