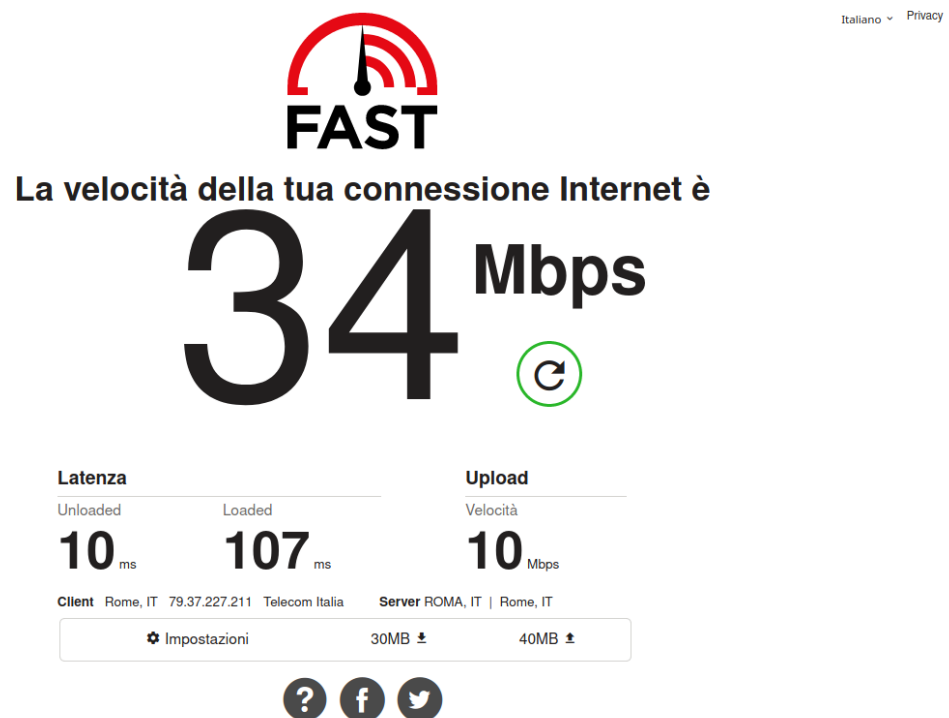


# Speedtest Analysis with wireshark (Group 1)

Since making an analysis into a local machine could lead to a bad evaluation of results due to other applications' network traffic noise, we made the analysis into an isolated environment like a virtual machine. For further accuracy in the capture we set the tcp filter option in wireshark and after we run the speedtest.

## Fast.com result



From this speedtest we focused into 2 informations: the download speed (34 Mbps) and the upload speed (8.1 Mbps).

## Wireshark analysis

During the speedtest we captured all traffic outgoing and ingoing from and to our machine including the one created by fast.com and it can be found in [this pcap file](#).

Edoardo Ermini (582198), Riccardo Luzi (579752), Luca G. Pinta (579458)

## Conversations:

We report below the conversations extracted from wireshark capture of fast.com speedtest:

Address A	Address B	Packets	Bytes	Packets A → B	Bytes A → B	Packets B → A	Bytes B → A
2.23.20.150	192.168.1.26	99	68 k	50	62 k	49	5.305
18.203.130.218	192.168.1.26	199	237 k	90	16 k	109	221 k
23.246.50.154	192.168.1.26	3.455	7.125 k	1.773	6.270 k	1.682	855 k
23.246.51.156	192.168.1.26	6.935	15 M	3.743	13 M	3.192	1.793 k
45.57.72.140	192.168.1.26	11.830	17 M	5.780	2.471 k	6.050	15 M
45.57.73.144	192.168.1.26	10.827	16 M	5.415	3.349 k	5.412	13 M
52.18.232.179	192.168.1.26	27	4.584	12	2.553	15	2.031
93.184.220.29	192.168.1.26	73	12 k	30	6.784	43	5.638
151.99.109.9	192.168.1.26	14.793	24 M	7.546	8.650 k	7.247	15 M
192.168.1.1	192.168.1.26	568	62 k	286	32 k	282	29 k
192.168.1.1	224.0.0.1	1	60	1	60	0	0
192.168.1.9	255.255.255.255	2	376	2	376	0	0
192.168.1.9	192.168.1.255	2	376	2	376	0	0
192.168.1.26	224.0.0.251	1	46	1	46	0	0

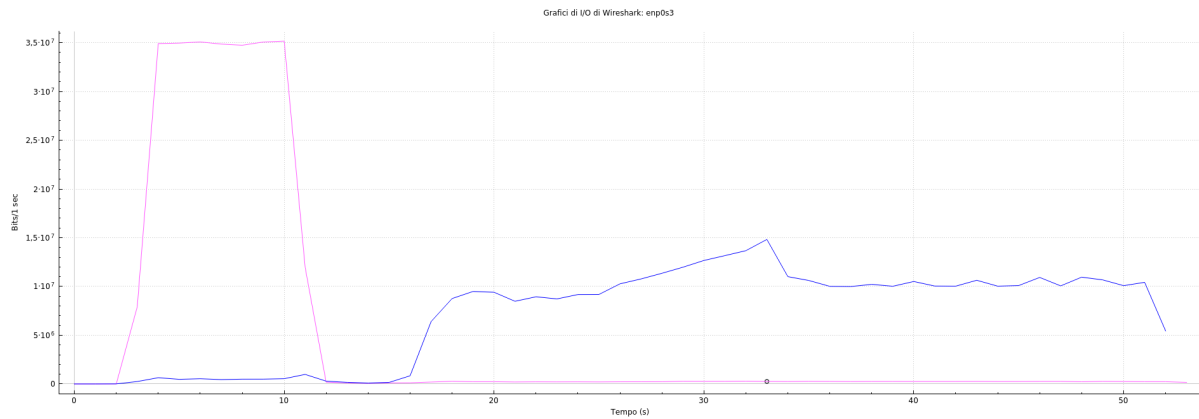
From this table we see that our machine exchanges a high number of packets with these 5 endpoints: 23.246.50.154, 23.246.51.156, 45.57.72.140, 45.57.73.144, 151.99.109.9. We suppose that fast.com opens 5 connections with these machines on the internet for the speedtest, in particular, analyzing the number of bytes exchanged in both directions between the local machine and these remote machines, the first two hosts (23.246.50.154, 23.246.51.156) are used to test the download speed, and the other three hosts (45.57.72.140, 45.57.73.144, 151.99.109.9) are used to test the upload speed. Making a whois request on the address 52.18.232.179 (seventh row first column) the result is that it belongs to amazon and since netflix relies on AWS for its services we suppose also that the 5 hosts used for the speedtest were sent by the host with ip 52.18.232.179.

## I/O Graph analysis

To analyze the speedtest we opened the I/O Graph window from statistics menu and we added two filters: one for filtering the download traffic `tcp.srcport == 443` (the pink curve) and one for filtering the upload

Edoardo Ermini (582198), Riccardo Luzi (579752), Luca G. Pinta (579458)

traffic tcp.dstport == 443 (the blue curve).



## Results

From the wireshark analysis the curves describe with a good accuracy what fast.com says, in fact the upload curve in the chart oscillates around 35 Mbps and the download around 9 Mbps. In conclusion the wireshark estimation is very close to the fast.com speedtest result.