

Explicit Flow Measurements IETF Hackathon

IETF 115
November 5-6, 2022
London



What got done

- Understand if Spinbit technique is supported on Internet
 - Implementation of Quic Spin Bit inside an open source browser, i.e. Chromium
- Tests versus OTT Web Servers: they don't support Spinbit
- Tests versus an Open Litespeed Web Server: successful!
We got the spinbit running and delay measurements.

SPINDUMP

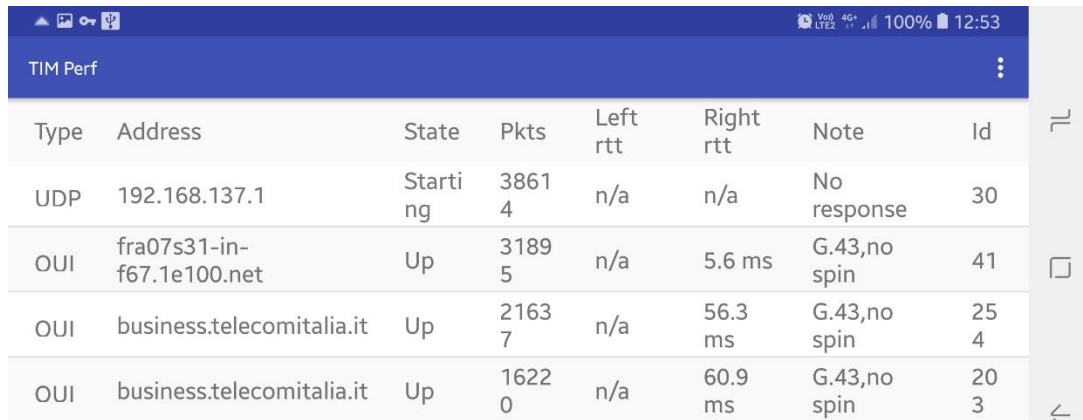
3 connections 194 packets 78.8K bytes (showing latest RTTs, not showing UDP, showing addresses)

TYPE	ADDRESSES	Nome	SESSION	Dimensioni	Tipi	STATE	PAKS	LEFT RTT	RIGHT RTT	NOTE
QUIC	31.133.130.245 <-> 18.198.129.171	ChromePublic 103.0.5047.apk	1 agosto 2022, 16:17	198 MB	Docun	Up	67	547 us	37,7 ms	RFC,spinning
QUIC	31.133.130.245 <-> 18.198.129.171		null-086afda5e826e9f5 (53209:443)	ocun		Up	36	1,2 ms	33,6 ms	RFC,spinning
TCP	31.133.130.245 <-> 18.198.129.171		null-087ace026c084fcc (50225:443)	ocun		Up	13	63 us	61,0 ms	

What got done

- New Delay Measurement Technique
 - We implemented a new experimental technique which require only client support.
 - It relies on internal protocol RTT evaluation and uses the same square wave mechanism of SpinBit.
 - Some preliminary tests have been done with good results.
 - Differently from other delay techniques, this does not require server reflections or interactions.

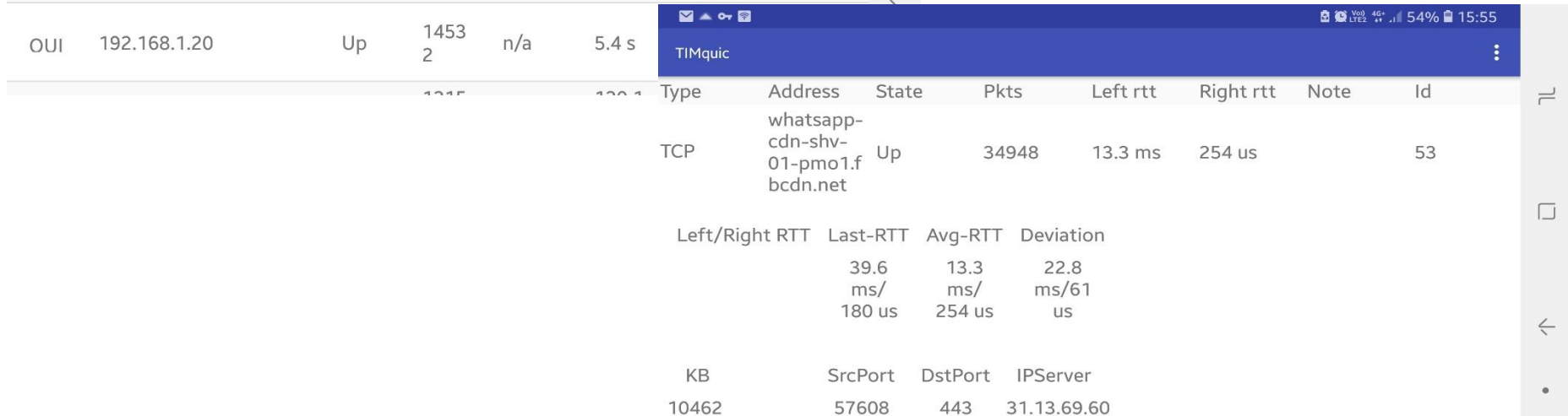
User device explicit monitoring App



The screenshot shows the TIM Perf app interface. At the top, there's a status bar with icons for signal, Wi-Fi, battery, and time (12:53). Below it is a blue header bar labeled 'TIM Perf'. The main content is a table with the following columns: Type, Address, State, Pkts, Left rtt, Right rtt, Note, and Id. The table contains five rows of data.

Type	Address	State	Pkts	Left rtt	Right rtt	Note	Id
UDP	192.168.137.1	Starting	38614	n/a	n/a	No response	30
OUI	fra07s31-in-f67.1e100.net	Up	31895	n/a	5.6 ms	G.43,no spin	41
OUI	business.telecomitalia.it	Up	21637	n/a	56.3 ms	G.43,no spin	254
OUI	business.telecomitalia.it	Up	16220	n/a	60.9 ms	G.43,no spin	203

Demo Screenshots



The screenshot shows the TIMquic app interface. At the top, there's a status bar with icons for signal, Wi-Fi, battery, and time (15:55). Below it is a blue header bar labeled 'TIMquic'. The main content is a table with the following columns: Type, Address, State, Pkts, Left rtt, Right rtt, Note, and Id. The table contains one row of data. Below the table, there are summary statistics for Left/Right RTT, Last-RTT, Avg-RTT, and Deviation. At the bottom, there are summary statistics for KB, SrcPort, DstPort, and IPServer.

Type	Address	State	Pkts	Left rtt	Right rtt	Note	Id
TCP	whatsapp-cdn-shv-01-pmo1.fbcdn.net	Up	34948	13.3 ms	254 us		53

Left/Right RTT Last-RTT Avg-RTT Deviation

39.6 ms/180 us 13.3 ms/254 us 22.8 ms/61 us

KB SrcPort DstPort IPServer

10462 57608 443 31.13.69.60

Wrap Up

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