

Android Explicit Monitoring App

HotRFC - IETF 109
November 13, 2020

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Android Explicit Monitoring App: Goals

- Provide a mobile tool for traffic performance monitoring in the era of encrypted transport protocols also using Explicit Flow Measurements (EFM)

Explicit Flow Measurements employ few marking bits, inside the header of each packet, for loss and delay measurement (protocol independent and valuable for encrypted headers: e.g. QUIC)

TIMquic APP

- Giving the monitoring power to customers:
 - Android Explicit Monitoring App based on Ericsson Spindump open-source code: **TIMquic**
 - Presentation and PoC App live Demo at **Hackathon IETF 109**
- First idea introduced in HotRFC 108:
 - **“How to measure Network Performances with user devices”**
 - <https://www.youtube.com/watch?v=YYTPVNGpUog>
- Related drafts:
 - Explicit Flow Measurements ([draft-mdt-ippm-explicit-flow-measurements](#))
 - User Devices Explicit Monitoring ([draft-cnbf-ippm-user-devices-explicit-monitoring](#))
- Spindump library: github.com/EricssonResearch/spindump

Android Explicit Monitoring App

Placing the Explicit Performance Observer on user devices gives many advantages in terms of scalability, measurement precision and savings in hardware deployment

Type	Address	State	Pkts	Left rtt	Right rtt	Note	Id
QUIC	edge-star-s hv-01-any2.facebook.com	Up	141	n/a	22.9 ms	V.fbm, no spin	63
QUIC	lhr35s11-inf14.1e100.net	Up	37	n/a	27.9 ms	G.50, no spin	66
QUIC	business.telecomitalia.it	Up	2597	n/a	12.7 ms	G.50, no spin	67
QUIC	edge-star-s hv-01-any2.facebook.com	Up	103	n/a	36.5 ms	V.fbm, no spin	

Type	Address	State	Pkts	Left rtt	Right rtt	Note	Id
QUIC	business.telecomitalia.it	Up	2597	n/a	12.7 ms	G.50, no spin	67
Left/Right RTT				Last-RTT	Avg-RTT	Deviation	
				n/a/12.7 ms	n/a/12.7 ms	0 us/0 us	
KB		SrcPort	DstPort	IPServer			
2879		58627	443	151.99.51.206			

Real time mobile traffic monitoring!

Android Explicit Monitoring App

We can see our connections performance while enjoying the service



Operators, with the customer's permission, may use this information to identify network problems and improve the customer experience

16:05 VoLTE 34%

m.youtube.com

YouTube

25:19 / 1:15:05

Send

TIMquic

Type	Address	State	Pkts	Left rtt	Right rtt	Note	Id
QUIC	business.telecomitalia.it	Up	16251	n/a	79.2ms	G.50, no spin	119
		Left/Right RTT	Last-RTT	Avg-RTT	Deviation		
			n/a/79.2ms	n/a/79.2ms	0 us/0 us		
		KB	SrcPort	DstPort	IPServer		
		16622	53652	443	151.99.51.200		

Android App Main Features

- The customer chooses whether to mark his mobile traffic making it monitorable by the Android App and network probes.
- The customer chooses whether to share the performance data that the App on his mobile phone has collected.
- The App can put performance thresholds on the probe in order to signal connections with problems to the network operator. Thus the network probes will primarily monitor impaired connections and help to localize problems.

How to know more

- ▶ **Drafts presentation:**

IETF 109 IPPM WG meeting, 12:00-14:00, Monday Session I, Room 8

- ▶ **Hackathon IETF 109 – QUIC Measurements Project.**

- ▶ **Contact persons:**

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Thank you