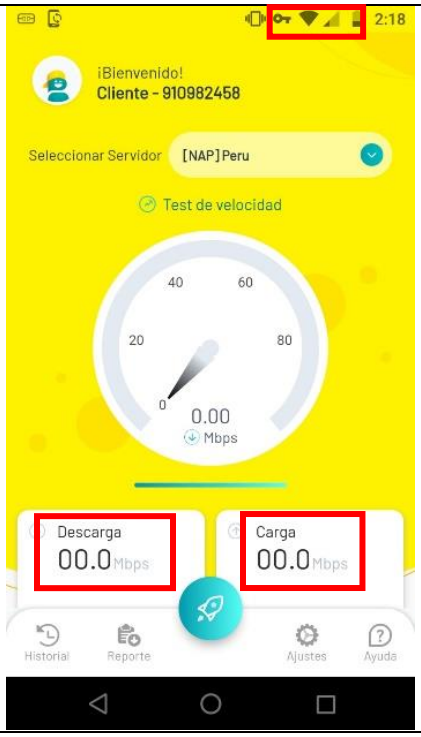
HERRAMIENTA DE MEDICIÓN PARA SMARTPHONE

PRUEBAS REALIZADAS PARA ANDROID:

OBSERVACIONES:

1. MEDICIONES EN WIFI

Escenario 1: Se abre app de medición con móvil conectado a la red BITEL (3G-4G). Luego móvil se conecta a una red WIFI (otro operador).
El aplicativo no realiza las mediciones en WIFI hacia el servidor Nacional (NAP) pero si realiza mediciones hacia el servidor Internacional (US).

<table>
<tr>
<td> 
</td>
<td>
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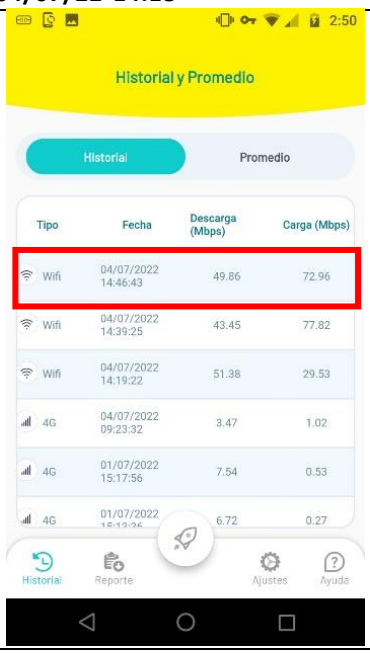
</tr>
<tr>
<td>Medición en el NAP. No mide valores DL/UL
Fecha: 04/07/22 14:18</td>
<td>Medición en el US. Mide valores de DL/UL
Fecha: 04/07/22 14:46</td>
</tr>
<tr>
<td> 
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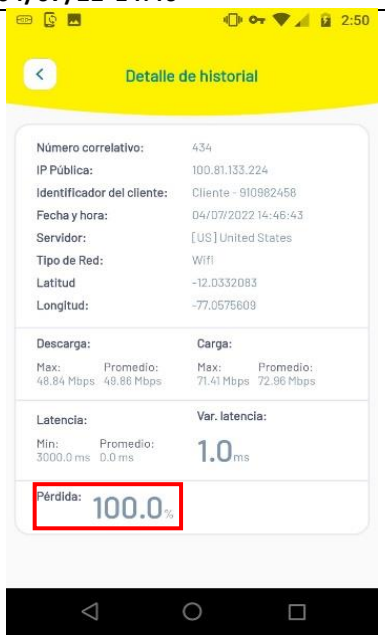
<td> 
</td>
</tr>
<tr>
<td>Medición realizada en servidor US, se registra en historial</td>
<td>Detalle del historial de la medición realizada en el servidor US. Se observa que la perdida de paquetes es el 100%</td>
</tr>
</table>

Escenario 2: Móvil conectado a una red WIFI (otro operador).

No permite abrir el App de medición.

2. CALCULO DE PARAMETROS

PARAMETRO TTD

De la captura de paquetes de la carga y descarga del volumen de información, usando el protocolo TCP, considerando aquellos paquetes con volumen de datos sean al menos el doble de la tasa de transmisión, se calcula el parámetro TTD (DL/UL) como el cociente entre la información transmitida y el tiempo correspondiente.

Donde se advierte que el resultado arrojado por la herramienta de medición no coincide con el resultado calculado efectuado a través de la captura de paquetes.

Medición 1:
Tecnología: 4G Servidor: NAP

Procedimiento: Del análisis de la captura de paquetes realizada con el software "Wireshark", teniendo en cuenta las conversaciones contra el servidor nacional (NAP) de IP 181.176.254.106 y tomando en cuenta la suma de las tasas de transferencia de datos.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Address A	Port A	Address B	Port B	Packets	Bytes	Packets A → B	Bytes A → B	Packets B → A	Bytes B → A	Rel Start	Duration	Bits/s A → B	Bits/s B → A
2	10.215.173.1	41417	181.176.254.106	8165	25020	53430066	10161	406621	14859	53023445	25.827559	108.74227	29914.47548	3900852.503
3	10.215.173.1	41419	181.176.254.106	8165	559	4776588	498	4774140	61	2448	61.159318	88.441802	431844.661	221.4337514
4								5180761		53025893		197.18407	461759.1365	3901073.937

Carga (Mbps)	Descarga (Mbps)
0.461759136	3.901073937

Diferencia	73%	66%

Calculo TTD Carga o Subida

Calculo de la Carga (bits/s)
((406621*8)/108.742271)+((4774140*8)/88.441802)=461759.135 bps

Calculo de la Carga (Mbits/s)
461759.135/1000000=0.461759136 Mbps

Calculo de la diferencia (%)
1-(0.461759136/1.69)=73%

Calculo TTD Descarga o Bajada

Calculo de la Descarga (bits/s)
((53023445*8)/108.742271)+((2448*8)/88.441802)=3901073.937 bps

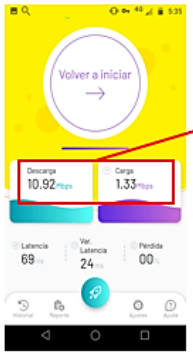
Calculo de la Descarga (Mbits/s)
3901073.937/1000000=3.901073937 Mbps

Calculo de la diferencia(%)
1-(3.901073937/11.54)=66%

Medición 2:
Tecnología: 4G Servidor: Internacional (US)

Procedimiento: Del análisis de la captura de paquetes realizada con el software "Wireshark", teniendo en cuenta las conversaciones contra el servidor Internacional (US) de IP 172.104.19.86 y tomando en cuenta la suma de las tasas de transferencia de datos.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Address A	Port A	Address B	Port B	Packets	Bytes	Packets A → B	Bytes A → B	Packets B → A	Bytes B → A	Rel Start	Duration	Bits/s A → B	Bits/s B → A
2	10.215.173.1	48057	172.104.19.86	8165	27457	5.4E+07	11196	448019	16261	53079589	25.85755	106.51911	33647.97329	3986484.04
3	10.215.173.1	48059	172.104.19.86	8165	431	3689424	382	3687456	49	1968	55.25462	87.142255	338522.89	180.6701009
4								4135475		53081557		193.66136	372170.8632	3986664.71



Procedimiento 1

Carga (Mbps)	Descarga (Mbps)
0.372170863	3.98666471

Diferencia	72%	63%

Calculo TTD Carga o Subida

Calculo de la Carga (bits/s)
((448019*8)/106.519105)+((3687456*8)/87.142255)=372170.8632 bps

Calculo de la Carga (Mbits/s)
372170.8632/1000000=0.372170863 Mbps

Calculo de la diferencia (%)
1-(0.372170863/1.33)=72%

Calculo TTD Descarga o Bajada

Calculo de la Descarga (bits/s)
((53079589*8)/106.519105)+((1968*8)/87.142255)=3986664.71 bps

Calculo de la Descarga (Mbits/s)
3986664.71/1000000=3.98666471 Mbps

Calculo de la diferencia(%)
1-(3.98666471/10.92)=63%

Medición 3:
Tecnología: 3G Servidor: Nacional (NAP)

Procedimiento: Del análisis de la captura de paquetes realizada con el software "Wireshark", teniendo en cuenta las conversaciones contra el servidor nacional (NAP) de IP 181.176.254.106 y tomando en cuenta la suma de las tasas de transferencia de datos.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Address A	Port A	Address B	Port B	Packets	Bytes	Packets A → B	Bytes A → B	Packets B → A	Bytes B → A	Rel Start	Duration	Bits/s A → B	Bits/s B → A
2	10.215.173.1	49498	181.176.254.10€	8165	26247	5.3E+07	10321	413021	15926	53066124	25.8333	123.76577	26696.94601	3430100.28
3	10.215.173.1	49500	181.176.254.10€	8165	475	3980198	412	3977670	63	2528	62.40976	87.189581	364967.461	231.9543203
4								4390691		53068652		210.95535	391664.407	3430332.234

Procedimiento 1

Carga (Mbps)	Descarga (Mbps)
0.391664407	3.430332234

Diferencia	73%	56%

Calculo TTD Carga o Subida

Calculo de la Carga (bits/s)
((413021*8)/123.765767)+((3977670*8)/87.189581)=391664.407 bps

Calculo de la Carga (Mbits/s)
391664.407/1000000=0.391664407 Mbps

Calculo de la diferencia (%)
1-(0.391664407/1.47)=73%

Calculo TTD Descarga o Bajada

Calculo de la Descarga (bits/s)
((53066124*8)/123.765767)+((2528*8)/87.189581)=3430332.234 bps

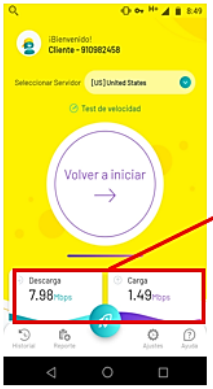
Calculo de la Descarga (Mbits/s)
3430332.234/1000000=3.430332234 Mbps

Calculo de la diferencia(%)
1-(3.430332234/7.86)=56%

Medición 4:
Tecnología: 3G Servidor: Internacional (US)

Procedimiento: Del análisis de la captura de paquetes realizada con el software "Wireshark", teniendo en cuenta las conversaciones contra el servidor Internacional (US) de IP 172.104.19.86 y tomando en cuenta la suma de las tasas de transferencia de datos.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Address A	Port A	Address B	Port B	Packets	Bytes	Packets A → B	Bytes A → B	Packets B → A	Bytes B → A	Rel Start	Duration	Bits/s A → B	Bits/s B → A
2	10.215.173.1	40640	172.104.19.86	8165	25835	53462727	10306	412419	15529	53050308	25.82149	115.52828	28558.82683	3673580.896
3	10.215.173.1	40642	172.104.19.86	8165	472	3975396	414	3973068	58	2328	55.84276	85.507185	371717.8153	217.806258
4								4385487		53052636		201.03546	400276.6421	3673798.702



Procedimiento 1

Carga (Mbps)	Descarga (Mbps)
0.400276642	3.673798702

Diferencia	73%	54%

Calculo TTD Carga o Subida

Calculo de la Carga (bits/s)
((412419*8)/115.528275)+((3973068*8)/85.507185)=400276.6421 bps

Calculo de la Carga (Mbits/s)
400276.6421/1000000=0.400276642 Mbps

Calculo de la diferencia (%)
1-(0.400276642 /1.49)=73%

Calculo TTD Descarga o Bajada

Calculo de la Descarga (bits/s)
((53050308*8)/115.528275)+((2328*8)/85.507185)=3673798.702 bps

Calculo de la Descarga (Mbits/s)
3673798.702/1000000=3.673798702 Mbps

Calculo de la diferencia(%)
1-(3.673798702/7.98)=54%

PARAMETRO LATENCIA, VARIACION LATENCIA, PERDIDA PAQUETES

De la captura de paquetes utilizando el software “Wireshark”, se observa los paquetes de datos transmitidos (UDP) en el tramo usuario – servidor – usuario.

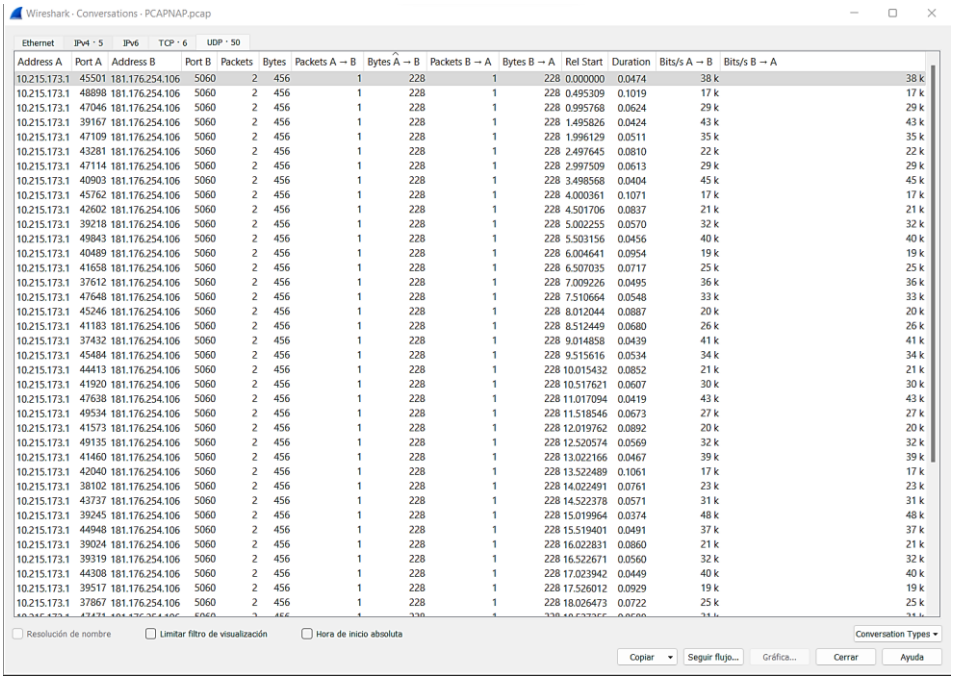
Teniendo en cuenta lo siguiente:

- Conjunto de 50 paquetes con carga útil de 200 Bytes
- Datos UDP en el puerto 5060
- Envío paquete cada 500ms
- Tiempo espera máximo de 3 segundos.

Donde se advierte que el resultado arrojado por la herramienta de medición tiene pequeño margen de error con el resultado calculado efectuado a través de la captura de paquetes.

Medición 1:
Tecnología: 4G Servidor: NAP

Paquetes de datos transmitidos (UDP) en el tramo usuario – servidor – usuario



Address A	Port A	Address B	Port B	Packets	Bytes	Packets A → B	Bytes A → B	Packets B → A	Bytes B → A	Rel Start	Duration	Bits/s A → B	Bits/s B → A
10.215.173.1	45501	181.176.254.106	5060	2	456	1	228	1	228	0.000000	0.0474	38 k	38 k
10.215.173.1	48898	181.176.254.106	5060	2	456	1	228	1	228	0.495309	0.1019	17 k	17 k
10.215.173.1	47046	181.176.254.106	5060	2	456	1	228	1	228	0.995768	0.0624	29 k	29 k
10.215.173.1	39167	181.176.254.106	5060	2	456	1	228	1	228	1.495826	0.0424	43 k	43 k
10.215.173.1	47109	181.176.254.106	5060	2	456	1	228	1	228	1.996129	0.0511	35 k	35 k
10.215.173.1	43281	181.176.254.106	5060	2	456	1	228	1	228	2.497645	0.0810	22 k	22 k
10.215.173.1	47114	181.176.254.106	5060	2	456	1	228	1	228	2.997509	0.0613	29 k	29 k
10.215.173.1	40903	181.176.254.106	5060	2	456	1	228	1	228	3.498568	0.0404	45 k	45 k
10.215.173.1	45762	181.176.254.106	5060	2	456	1	228	1	228	4.000361	0.1071	17 k	17 k
10.215.173.1	42602	181.176.254.106	5060	2	456	1	228	1	228	4.501706	0.0837	21 k	21 k
10.215.173.1	39218	181.176.254.106	5060	2	456	1	228	1	228	5.002255	0.0570	32 k	32 k
10.215.173.1	49843	181.176.254.106	5060	2	456	1	228	1	228	5.503156	0.0456	40 k	40 k
10.215.173.1	40489	181.176.254.106	5060	2	456	1	228	1	228	6.004641	0.0954	19 k	19 k
10.215.173.1	41658	181.176.254.106	5060	2	456	1	228	1	228	6.507035	0.0717	25 k	25 k
10.215.173.1	37612	181.176.254.106	5060	2	456	1	228	1	228	7.009226	0.0495	36 k	36 k
10.215.173.1	47648	181.176.254.106	5060	2	456	1	228	1	228	7.510664	0.0548	33 k	33 k
10.215.173.1	45246	181.176.254.106	5060	2	456	1	228	1	228	8.012044	0.0887	20 k	20 k
10.215.173.1	41183	181.176.254.106	5060	2	456	1	228	1	228	8.512449	0.0680	26 k	26 k
10.215.173.1	37432	181.176.254.106	5060	2	456	1	228	1	228	9.014858	0.0439	41 k	41 k
10.215.173.1	45484	181.176.254.106	5060	2	456	1	228	1	228	9.515616	0.0534	34 k	34 k
10.215.173.1	44413	181.176.254.106	5060	2	456	1	228	1	228	10.015432	0.0852	21 k	21 k
10.215.173.1	41920	181.176.254.106	5060	2	456	1	228	1	228	10.517621	0.0607	30 k	30 k
10.215.173.1	47638	181.176.254.106	5060	2	456	1	228	1	228	11.017094	0.0419	43 k	43 k
10.215.173.1	49534	181.176.254.106	5060	2	456	1	228	1	228	11.518546	0.0673	27 k	27 k
10.215.173.1	41573	181.176.254.106	5060	2	456	1	228	1	228	12.019762	0.0892	20 k	20 k
10.215.173.1	49135	181.176.254.106	5060	2	456	1	228	1	228	12.520574	0.0569	32 k	32 k
10.215.173.1	41460	181.176.254.106	5060	2	456	1	228	1	228	13.022166	0.0467	39 k	39 k
10.215.173.1	42040	181.176.254.106	5060	2	456	1	228	1	228	13.522489	0.1061	17 k	17 k
10.215.173.1	38102	181.176.254.106	5060	2	456	1	228	1	228	14.022491	0.0761	23 k	23 k
10.215.173.1	43737	181.176.254.106	5060	2	456	1	228	1	228	14.522378	0.0571	31 k	31 k
10.215.173.1	39245	181.176.254.106	5060	2	456	1	228	1	228	15.019964	0.0374	48 k	48 k
10.215.173.1	44948	181.176.254.106	5060	2	456	1	228	1	228	15.519401	0.0491	37 k	37 k
10.215.173.1	39024	181.176.254.106	5060	2	456	1	228	1	228	16.022831	0.0860	21 k	21 k
10.215.173.1	39319	181.176.254.106	5060	2	456	1	228	1	228	16.522671	0.0560	32 k	32 k
10.215.173.1	44308	181.176.254.106	5060	2	456	1	228	1	228	17.023942	0.0449	40 k	40 k
10.215.173.1	39517	181.176.254.106	5060	2	456	1	228	1	228	17.526012	0.0929	19 k	19 k
10.215.173.1	37867	181.176.254.106	5060	2	456	1	228	1	228	18.026473	0.0722	25 k	25 k

Datos del server B al Host A						Datos del Host A al server B						Diferencia entre paquetes max 500ms		Datos del calculo (L,VL,TPP)	
Time	Source	Destination	Protocol	Length	Info	Time	Source	Destination	Protocol	Length	Info	Tiempo entre paquetes B--> A	Tiempo entre paquetes A--> B	time(seg)	time (mseg)
0.047404	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	0	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	#¡VALOR!	#¡VALOR!	0.047404	47.404
0.597241	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	0.495309	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	549.837	495.309	0.101932	101.932
1.058184	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	0.995768	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	460.943	500.459	0.062416	62.416
1.53821	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	1.495826	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	480.026	500.058	0.042384	42.384
2.047276	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	1.996129	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	509.066	500.303	0.051147	51.147
2.578653	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	2.497645	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	531.377	501.516	0.081008	81.008
3.058831	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	2.997509	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	480.178	499.864	0.061322	61.322
3.538927	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	3.498568	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	480.096	501.059	0.040359	40.359
4.107506	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	4.000361	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	568.579	501.793	0.107145	107.145
4.585428	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	4.501706	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	477.922	501.345	0.083722	83.722
5.059223	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	5.002255	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	473.795	500.549	0.056968	56.968
5.548728	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	5.503156	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	489.505	500.901	0.045572	45.572
6.100071	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	6.004641	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	551.343	501.485	0.09543	95.43
6.578746	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	6.507035	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	478.675	502.394	0.071711	71.711
7.058768	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	7.009226	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	480.022	502.191	0.049542	49.542
7.565417	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	7.510664	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	506.649	501.438	0.054753	54.753
8.100773	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	8.012044	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	535.356	501.38	0.088729	88.729
8.580429	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	8.512449	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	479.656	500.405	0.06798	67.98
9.058757	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	9.014858	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	478.328	502.409	0.043899	43.899
9.569036	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	9.515616	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	510.279	500.758	0.05342	53.42
10.10066	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	10.01543	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	531.623	499.816	0.085227	85.227
10.57835	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	10.51762	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	477.686	502.189	0.060724	60.724
11.05896	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	11.01709	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	480.613	499.473	0.041864	41.864
11.58585	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	11.51855	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	526.895	501.452	0.067307	67.307
12.10895	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	12.01976	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	523.097	501.216	0.089188	89.188
12.57745	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	12.52057	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	468.501	500.812	0.056877	56.877
13.06886	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	13.02217	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	491.408	501.592	0.046693	46.693
13.62863	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	13.52249	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	559.773	500.323	0.106143	106.143
14.09862	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	14.02249	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	469.984	500.002	0.076125	76.125
14.57948	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	14.52238	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	480.862	499.887	0.0571	57.1
15.05739	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	15.01996	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	477.911	497.586	0.037425	37.425
15.56851	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	15.5194	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	511.12	499.437	0.049108	49.108
16.1088	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	16.02283	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	540.291	503.43	0.085969	85.969
16.57866	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	16.52267	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	469.861	499.84	0.05599	55.99
17.06883	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	17.02394	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	490.173	501.271	0.044892	44.892
17.61893	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	17.52601	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	550.092	502.07	0.092914	92.914
18.0987	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	18.02647	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	479.778	500.461	0.072231	72.231
18.58605	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	18.52726	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	487.347	500.782	0.058796	58.796
19.06892	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	19.02895	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	482.865	501.696	0.039965	39.965
19.62874	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	19.53025	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	559.822	501.298	0.098489	98.489
20.09786	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	20.03286	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	469.118	502.613	0.064994	64.994
20.58567	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	20.53335	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	487.818	500.489	0.052323	52.323
21.09622	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	21.03579	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	510.544	502.436	0.060431	60.431
21.62081	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	21.53692	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	524.593	501.137	0.083887	83.887
22.09867	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	22.03738	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	477.861	500.457	0.061291	61.291
22.57872	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	22.53855	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	480.045	501.164	0.040172	40.172
23.14117	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	23.03969	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	562.456	501.142	0.101486	101.486
23.61892	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	23.54122	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	477.749	501.532	0.077703	77.703
24.09905	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	24.04093	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	480.129	499.713	0.058119	58.119
24.59684	181.176.254.106	10.215.173.1	UDP	228	Source port: 5061	24.54161	10.215.173.1	181.176.254.106	UDP	228	Source port: 5061	497.792	500.68	0.055231	55.231

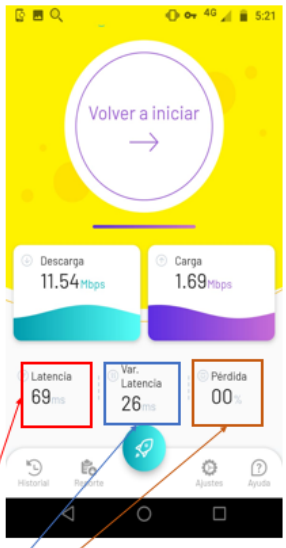
Data UDP (200 Bytes) + Cabecera

501.0089592	500.8492245
Envio de paquete UDP cada 500ms	

Latencia	65.7101
VL	19.73
TPP%	0%

Datos del calculo (L,VL,TPP)	
time(seg)	time (mseg)
0.047404	47.404
0.101932	101.932
0.062416	62.416
0.042384	42.384
0.051147	51.147
0.081008	81.008
0.061322	61.322
0.040359	40.359
0.107145	107.145
0.083722	83.722
0.056968	56.968
0.045572	45.572
0.09543	95.43
0.071711	71.711
0.049542	49.542
0.054753	54.753
0.088729	88.729
0.06798	67.98
0.043899	43.899
0.05342	53.42
0.085227	85.227
0.060724	60.724
0.041864	41.864
0.067307	67.307
0.089188	89.188
0.056877	56.877
0.046693	46.693
0.106143	106.143
0.076125	76.125
0.0571	57.1
0.037425	37.425
0.049108	49.108
0.085969	85.969
0.05599	55.99
0.044892	44.892
0.092914	92.914
0.072231	72.231
0.058796	58.796
0.039965	39.965
0.098489	98.489
0.064994	64.994
0.052323	52.323
0.060431	60.431
0.083887	83.887
0.061291	61.291
0.040172	40.172
0.101486	101.486
0.077703	77.703
0.058119	58.119
0.055231	55.231

Latencia	65.7101
VL	19.73
TPP%	0%



Margen de Error
4.77%
24.12%
0.00%

Medición 2:

Tecnología: 4G Servidor: Internacional (US)

Datos del server B al Host A						Datos del Host A al server B						Diferencia entre paquetes max 500ms		Datos del calculo (L,Vl,TPP)	
Time	Source	Destination	Protocol	Length	Info	Time	Source	Destination	Protocol	Length	Info	Tiempo entre paquetes A-->B	Tiempo entre paquetes B-->A	time(seg)	time (mseg)
0.080212	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	0	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	#¡VALOR!	#¡VALOR!	0.080212	80.212
0.542405	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	0.486716	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	462.193	486.716	0.055689	55.689
1.033447	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	0.98902	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	491.042	502.304	0.044427	44.427
1.541668	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	1.487085	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	508.221	498.065	0.054583	54.583
2.072178	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	1.98627	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	530.51	499.185	0.085908	85.908
2.551064	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	2.487551	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	478.886	501.281	0.063513	63.513
3.032323	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	2.987677	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	481.259	500.126	0.044646	44.646
3.583879	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	3.487785	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	551.556	500.108	0.096094	96.094
4.062594	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	3.989032	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	478.715	501.247	0.073562	73.562
4.542306	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	4.48968	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	479.712	500.648	0.052626	52.626
5.033311	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	4.991339	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	491.005	501.659	0.041972	41.972
5.58351	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	5.491167	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	550.199	499.828	0.092343	92.343
6.041312	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	5.992409	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	457.802	501.242	0.048903	48.903
6.543405	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	6.49327	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	502.093	500.861	0.050135	50.135
7.062225	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	6.994624	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	518.82	501.354	0.067601	67.601
7.584139	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	7.495296	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	521.914	500.672	0.088843	88.843
8.073415	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	7.996645	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	489.276	501.349	0.07677	76.77
8.543036	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	8.497451	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	469.621	500.806	0.045585	45.585
9.054187	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	8.99928	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	511.151	501.829	0.054907	54.907
9.584636	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	9.499194	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	530.449	499.914	0.085442	85.442
10.06425	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	9.999281	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	479.612	500.087	0.064967	64.967
10.54303	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	10.49924	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	478.78	499.959	0.043788	43.788
11.06073	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	10.99974	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	517.704	500.5	0.060992	60.992
11.55218	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	11.50141	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	491.451	501.671	0.050772	50.772
12.06343	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	12.00188	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	511.245	500.47	0.061547	61.547
12.54367	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	12.50205	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	480.244	500.166	0.041625	41.625
13.10595	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	13.00365	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	562.275	501.599	0.102301	102.301
13.55565	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	13.50411	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	449.705	500.46	0.051546	51.546
14.06167	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	14.00498	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	506.017	500.874	0.056689	56.689
14.56078	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	14.50637	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	499.113	501.392	0.05441	54.41
15.10409	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	15.00774	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	543.304	501.371	0.096343	96.343
15.57898	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	15.50934	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	474.892	501.593	0.069642	69.642
16.06337	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	16.01018	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	484.389	500.843	0.053188	53.188
16.55211	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	16.51107	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	488.74	500.895	0.041033	41.033
17.10431	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	17.01215	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	552.202	501.076	0.092159	92.159
17.56286	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	17.51479	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	458.549	502.636	0.048072	48.072
18.07042	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	18.016	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	507.56	501.211	0.054421	54.421
18.56298	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	18.51715	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	492.561	501.153	0.045829	45.829
19.11386	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	19.01856	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	550.88	501.408	0.095301	95.301
19.58362	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	19.52033	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	468.764	501.773	0.063292	63.292
20.07271	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	20.02066	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	489.088	500.324	0.052056	52.056
20.57392	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	20.52326	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	501.209	502.602	0.050663	50.663
21.1058	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	21.02426	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	531.878	501.004	0.081537	81.537
21.59312	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	21.5252	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	487.318	500.939	0.067916	67.916
22.09019	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	22.02539	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	497.071	500.192	0.064795	64.795
22.63315	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	22.52561	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	542.965	500.22	0.10754	107.54
23.12051	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	23.02833	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	487.356	502.72	0.092176	92.176
23.59924	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	23.52823	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	478.736	499.897	0.071015	71.015
24.07353	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	24.02626	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	474.281	498.03	0.047266	47.266
24.62518	181.176.254.106	10.215.173.1	UDP	228	Source port: 506	24.52957	10.215.173.1	181.176.254.106	UDP	228	Source port: 506	551.656	503.313	0.095609	95.609

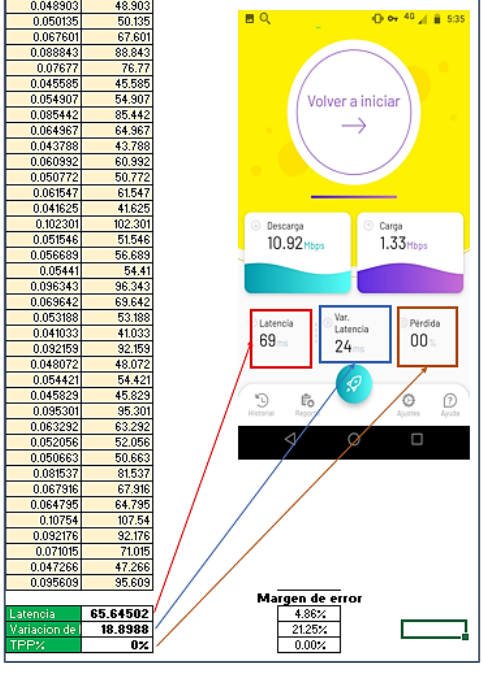
Data UDP (200 Bytes) + Cabecera

500.9177347	500.6035102
Envio de paquete UDP cada 500ms	

Latencia	65.64502
Variacion de	18.8988
TPP%	0%

Datos del calculo (L,Vl,TPP)	
time(seg)	time (mseg)
0.080212	80.212
0.055689	55.689
0.044427	44.427
0.054583	54.583
0.085908	85.908
0.063513	63.513
0.044646	44.646
0.096094	96.094
0.073562	73.562
0.052626	52.626
0.041972	41.972
0.092343	92.343
0.048903	48.903
0.050135	50.135
0.067601	67.601
0.088843	88.843
0.07677	76.77
0.045585	45.585
0.054907	54.907
0.085442	85.442
0.064967	64.967
0.043788	43.788
0.060992	60.992
0.050772	50.772
0.061547	61.547
0.041625	41.625
0.102301	102.301
0.051546	51.546
0.056689	56.689
0.05441	54.41
0.096343	96.343
0.069642	69.642
0.053188	53.188
0.041033	41.033
0.092159	92.159
0.048072	48.072
0.054421	54.421
0.045829	45.829
0.095301	95.301
0.063292	63.292
0.052056	52.056
0.050663	50.663
0.081537	81.537
0.067916	67.916
0.064795	64.795
0.10754	107.54
0.092176	92.176
0.071015	71.015
0.047266	47.266
0.095609	95.609

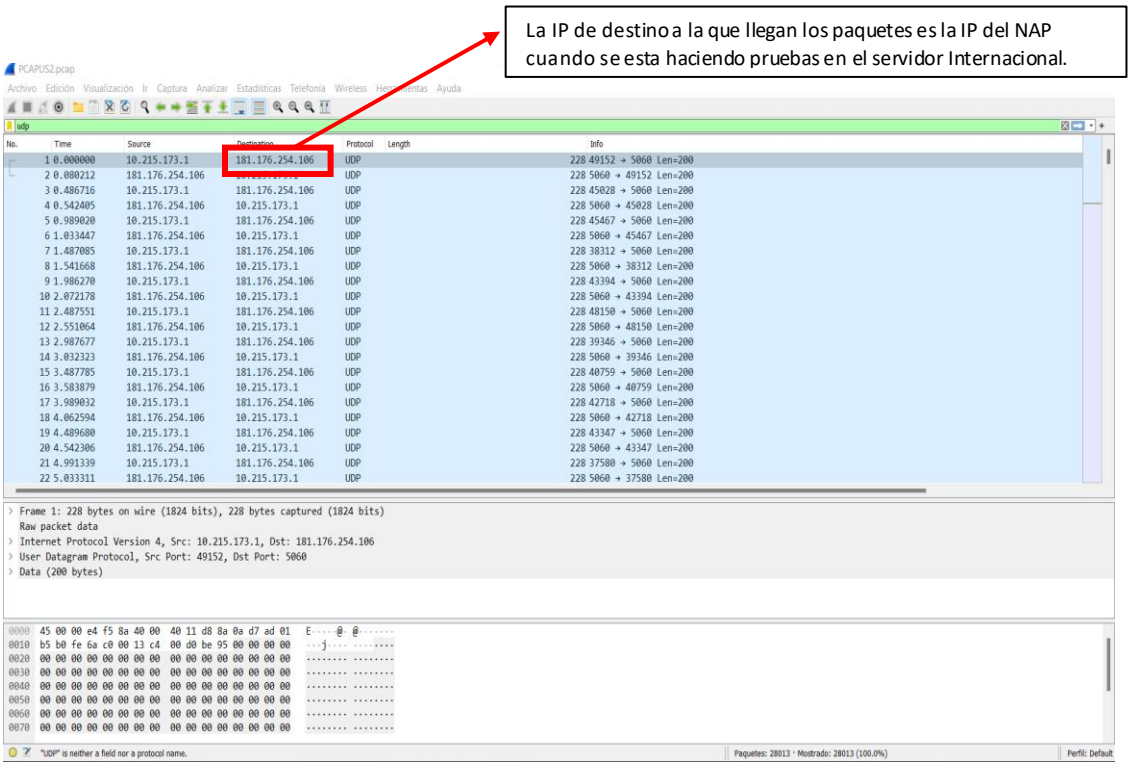
Latencia	65.64502
Variacion de	18.8988
TPP%	0%



Margen de error
4.86%
21.25%
0.00%

Sin embargo, se detecta lo siguiente:

*La IP de destino no va acorde a la IP que corresponde a la del servidor internacional en el protocolo UDP.



Medición 3:

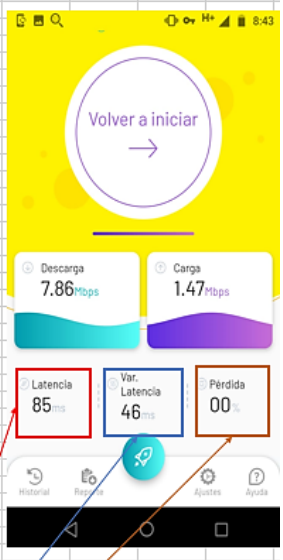
Tecnología: 3G Servidor: Nacional (NAP)

Datos del server B al Host A						Datos del Host A al server B						Diferencia entre paquetes max 500ms		Datos del calculo (L,VL,TPP)	
Time	Source	Destination	Protocol	Length	Info	Time	Source	Destination	Protocol	Length	Info	Tiempo entre paquetes B-->A	Tiempo entre paquetes A-->B	time(seg)	time(mseg)
0.061035	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46018	0	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46018	#¡VALOR!	#¡VALOR!	0.061035	61.035
0.568147	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46019	0.497466	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46019	507.112	497.466	0.070681	70.681
1.058397	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46020	0.997241	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46020	490.25	499.775	0.061156	61.156
1.568361	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46021	1.49707	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46021	509.964	499.829	0.071291	71.291
2.056346	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46022	1.997369	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46022	487.985	500.299	0.058977	58.977
2.622949	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46023	2.497323	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46023	566.603	500.564	0.125016	125.016
3.059585	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46024	3.002372	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46024	436.636	504.439	0.057213	57.213
3.621497	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46025	3.50425	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46025	561.912	501.878	0.117247	117.247
4.157386	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46026	4.005414	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46026	535.889	501.164	0.151972	151.972
4.559338	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46027	4.504531	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46027	401.952	499.117	0.054807	54.807
5.083257	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46028	5.007522	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46028	523.919	502.991	0.075735	75.735
5.567906	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46029	5.506889	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46029	484.649	499.367	0.061017	61.017
6.066316	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46030	6.008114	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46030	498.41	501.225	0.058202	58.202
6.582556	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46031	6.510959	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46031	516.24	502.845	0.071597	71.597
7.091763	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46032	7.009888	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46032	509.207	498.929	0.081875	81.875
7.576208	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46033	7.510319	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46033	484.445	500.431	0.065889	65.889
8.070023	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46034	8.013024	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46034	493.815	502.705	0.056999	56.999
8.570086	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46035	8.513386	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46035	500.063	500.362	0.0567	56.7
9.070056	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46036	9.014877	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46036	499.97	501.491	0.055179	55.179
9.596769	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46037	9.516189	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46037	526.713	501.312	0.08058	80.58
10.066955	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46038	10.016151	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46038	470.186	499.962	0.050804	50.804
10.58437	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46039	10.518615	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46039	517.415	502.464	0.065755	65.755
11.083481	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46040	11.019413	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46040	499.111	500.798	0.064068	64.068
11.591588	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46041	11.519964	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46041	508.107	500.551	0.071624	71.624
12.085529	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46042	12.021157	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46042	493.941	501.193	0.064372	64.372
12.538342	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46043	12.521621	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46043	512.813	500.464	0.076721	76.721
13.092191	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46044	13.021097	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46044	493.849	499.476	0.071094	71.094
13.596745	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46045	13.52166	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46045	504.554	500.563	0.075085	75.085
14.140672	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46046	14.021731	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46046	543.927	500.071	0.118941	118.941
14.648513	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46047	14.521932	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46047	507.841	500.201	0.126581	126.581
15.076732	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46048	15.022775	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46048	428.219	500.843	0.053957	53.957
15.64316	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46049	15.525037	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46049	566.428	502.262	0.118123	118.123
16.076145	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46050	16.025718	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46050	432.985	500.681	0.050427	50.427
16.802213	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46051	16.526738	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46051	726.068	501.02	0.275475	275.475
17.086557	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46052	17.027755	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46052	284.344	501.017	0.058802	58.802
17.780578	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46053	17.529318	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46053	694.021	501.563	0.25126	251.26
18.081745	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46054	18.029185	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46054	301.167	499.867	0.05256	52.56
18.583584	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46055	18.531003	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46055	501.839	501.818	0.052581	52.581
19.085457	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46056	19.033667	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46056	501.873	502.664	0.05179	51.79
19.580592	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46057	19.535787	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46057	495.135	502.12	0.044805	44.805
20.08008	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46058	20.036841	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46058	499.488	501.054	0.043239	43.239
20.591979	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46059	20.538569	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46059	511.899	501.728	0.05341	53.41
21.083164	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46060	21.035081	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46060	491.185	496.512	0.048083	48.083
21.590585	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46061	21.540607	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46061	507.421	505.526	0.049978	49.978
22.086887	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46062	22.03862	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46062	496.302	498.013	0.048267	48.267
22.730439	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46063	22.541815	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46063	643.552	503.195	0.188624	188.624
23.099184	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46064	23.043936	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46064	368.745	502.121	0.055248	55.248
23.730489	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46065	23.545549	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46065	631.305	501.613	0.18494	184.94
24.106254	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46066	24.047541	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46066	375.765	501.992	0.058713	58.713
24.599568	181.176.254.106	10.215.173.1	UDP	228	Source port: 5060 Destination port: 46067	24.548474	10.215.173.1	181.176.254.106	UDP	228	Source port: 5060 Destination port: 46067	493.314	500.933	0.051094	51.094

Data UDP (200 Bytes) + Cabecera

500.7863878	500.9892653	Latencia	81.39178
Envio de paquete UDP cada 500ms		Variacion de latencia	49.687639
		TPP%	0%

time(seg)	time(mseg)
0.061035	61.035
0.070681	70.681
0.061156	61.156
0.071291	71.291
0.058977	58.977
0.125016	125.016
0.057213	57.213
0.117247	117.247
0.151972	151.972
0.054807	54.807
0.075735	75.735
0.061017	61.017
0.058202	58.202
0.071597	71.597
0.081875	81.875
0.065889	65.889
0.056999	56.999
0.0567	56.7
0.055179	55.179
0.08058	80.58
0.050804	50.804
0.065755	65.755
0.064068	64.068
0.071624	71.624
0.064372	64.372
0.076721	76.721
0.071094	71.094
0.075085	75.085
0.118941	118.941
0.126581	126.581
0.053957	53.957
0.118123	118.123
0.050427	50.427
0.275475	275.475
0.058802	58.802
0.25126	251.26
0.05256	52.56
0.052581	52.581
0.05179	51.79
0.044805	44.805
0.043239	43.239
0.05341	53.41
0.048083	48.083
0.049978	49.978
0.048267	48.267
0.188624	188.624
0.055248	55.248
0.18494	184.94
0.058713	58.713
0.051094	51.094



Latencia	81.39178
Variacion de latencia	49.687639
TPP%	0%

Margen Error
4.24%
-8.02%
0.00%

Medición 4:

Tecnología: 3G Servidor: Internacional (US)

Datos del server B al Host A						Datos del Host A al server B						Diferencia entre paquetes max 500ms		Datos del calculo (L,VL,TPP)	
Time	Source	Destination	Protocol	Length	Info	Time	Source	Destination	Protocol	Length	Info	Tiempo entre paquetes A-->B	Tiempo entre paquetes B-->A	time(seg)	time(mseg)
0.073749	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	0	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	#¡VALOR!	#¡VALOR!	0.073749	73.749
0.55423	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	0.499551	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	480.481	499.551	0.054679	54.679
1.056062	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	1.001373	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	501.832	503.622	0.052889	52.889
1.553142	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	1.49782	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	497.08	494.647	0.055322	55.322
2.055412	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	1.996885	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	502.27	499.065	0.058527	58.527
2.555709	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	2.500736	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	500.297	503.851	0.054973	54.973
3.056721	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	3.001358	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	501.012	500.622	0.055363	55.363
3.556309	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	3.501907	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	499.588	500.549	0.054402	54.402
4.0564	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	4.002531	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	500.091	500.624	0.053869	53.869
4.555739	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	4.503318	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	499.339	500.787	0.052421	52.421
5.08109	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	5.005621	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	525.351	502.303	0.075469	75.469
5.576731	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	5.505561	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	495.641	499.96	0.07115	71.15
6.076886	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	6.007004	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	500.155	501.423	0.069882	69.882
6.591287	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	6.507667	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	514.401	500.663	0.08362	83.62
7.076311	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	7.00747	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	485.024	499.803	0.068841	68.841
7.589881	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	7.50824	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	513.57	500.77	0.081641	81.641
8.079259	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	8.007637	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	489.378	499.397	0.071622	71.622
8.575636	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	8.508417	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	496.377	500.78	0.067219	67.219
9.076547	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	9.010387	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	500.911	501.97	0.06616	66.16
9.576499	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	9.511297	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	499.952	500.91	0.065202	65.202
10.07541	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	10.01138	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	498.913	500.083	0.064032	64.032
10.57686	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	10.512382	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	501.245	501.002	0.064275	64.275
11.07659	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	11.013188	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	499.928	500.806	0.063397	63.397
11.57668	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	11.513746	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	500.098	500.558	0.062937	62.937
12.0892	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	12.014202	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	512.517	500.456	0.074998	74.998
12.59866	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	12.515246	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	509.461	501.044	0.083415	83.415
13.08685	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	13.014047	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	488.185	498.801	0.072799	72.799
13.59869	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	13.514268	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	511.847	500.221	0.084425	84.425
14.0869	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	14.014411	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	488.211	500.143	0.072493	72.493
14.5884	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	14.514751	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	501.492	500.34	0.073645	73.645
15.08825	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	15.01581	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	499.852	501.059	0.072438	72.438
15.58973	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	15.518989	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	501.481	503.179	0.07074	70.74
16.08686	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	16.017776	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	497.132	498.787	0.069085	69.085
16.58492	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	16.520397	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	498.062	502.621	0.064526	64.526
17.08739	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	17.021158	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	502.466	500.761	0.066231	66.231
17.58664	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	17.521927	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	499.248	500.769	0.06471	64.71
18.08703	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	18.022899	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	500.389	500.972	0.064127	64.127
18.58649	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	18.522997	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	499.463	500.098	0.063492	63.492
19.09909	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	19.023296	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	512.603	500.299	0.075796	75.796
19.58649	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	19.522974	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	487.402	499.678	0.06352	63.52
20.09985	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	20.024672	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	513.356	501.698	0.075178	75.178
20.59822	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	20.520189	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	498.374	495.517	0.078035	78.035
21.07844	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	21.020866	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	480.214	500.677	0.057572	57.572
21.77026	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	21.526211	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	691.82	505.345	0.244047	244.047
22.1098	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	22.027701	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	339.537	501.49	0.082094	82.094
22.59643	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	22.530508	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	486.634	502.807	0.065921	65.921
23.08595	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	23.030944	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	489.518	500.436	0.055003	55.003
23.58633	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	23.532583	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	500.382	501.639	0.053746	53.746
24.08681	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	24.033178	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	500.48	500.595	0.053631	53.631
24.58937	181.176.254.106	10.215.173.1	UDP	228	Source port: 5(	24.535285	10.215.173.1	181.176.254.106	UDP	228	Source port: 5(	502.565	502.107	0.054089	54.089

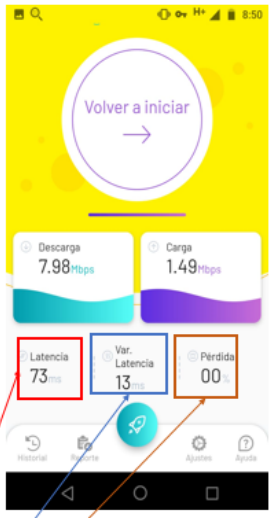
Data UDP (200 Bytes) + Cabecera

500.3188776	500.720102
Envio de paquete UDP cada 500ms	

Latencia	69.94794
VL	26.49085749
TPP%	0%

Datos del calculo (L,¥L,TPP)	
time(seg)	time(mseg)
0.073749	73.749
0.054679	54.679
0.052889	52.889
0.055322	55.322
0.058527	58.527
0.054973	54.973
0.055363	55.363
0.054402	54.402
0.053869	53.869
0.052421	52.421
0.075469	75.469
0.07115	71.15
0.069882	69.882
0.08362	83.62
0.068841	68.841
0.081641	81.641
0.071622	71.622
0.067219	67.219
0.06616	66.16
0.065202	65.202
0.064032	64.032
0.064275	64.275
0.063397	63.397
0.062937	62.937
0.074998	74.998
0.083415	83.415
0.072799	72.799
0.084425	84.425
0.072493	72.493
0.073645	73.645
0.072438	72.438
0.07074	70.74
0.069085	69.085
0.064526	64.526
0.066231	66.231
0.06471	64.71
0.064127	64.127
0.063492	63.492
0.075796	75.796
0.06352	63.52
0.075178	75.178
0.078035	78.035
0.057572	57.572
0.244047	244.047
0.082094	82.094
0.065921	65.921
0.055003	55.003
0.053746	53.746
0.053631	53.631
0.054089	54.089

Latencia	69.94794
¥L	26.49085749
TPP%	0%



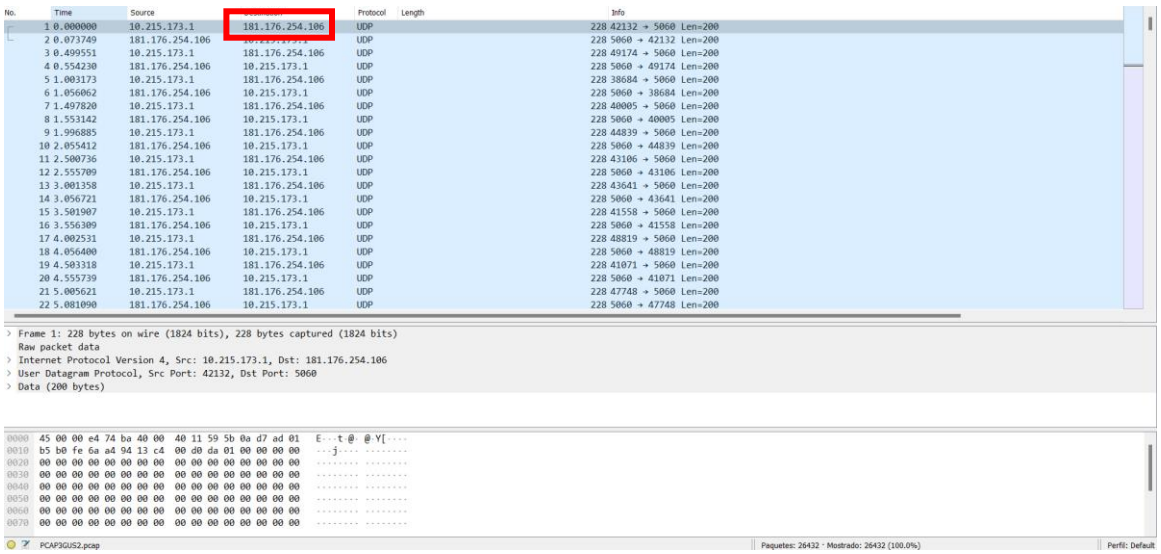
Margen de error

4.18%
-103.78%
0.00%

Sin embargo, se detecta lo siguiente:

La IP de destino no va acorde a la IP que corresponde a la del servidor internacional en el protocolo UDP.

La IP de destino a la que llegan los paquetes es la IP del NAP cuando se esta haciendo pruebas en el servidor Internacional.

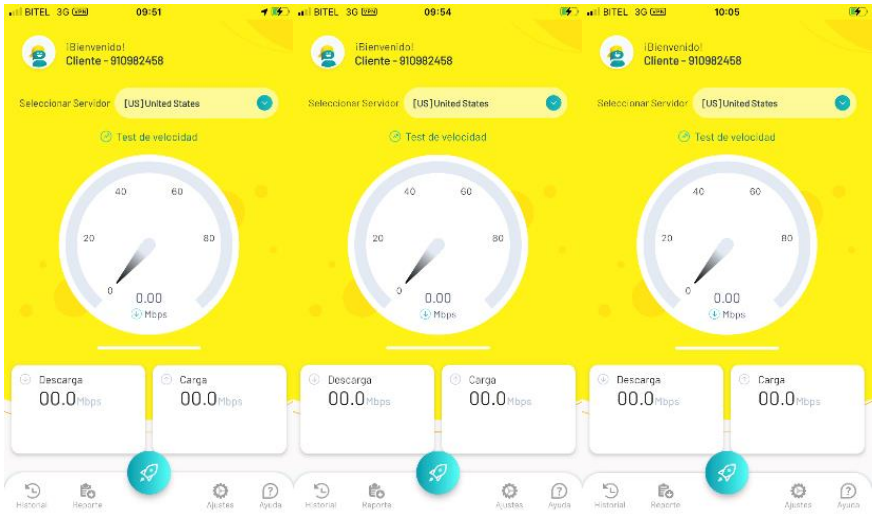


PRUEBAS REALIZADAS PARA IoS:

OBSERVACIONES:

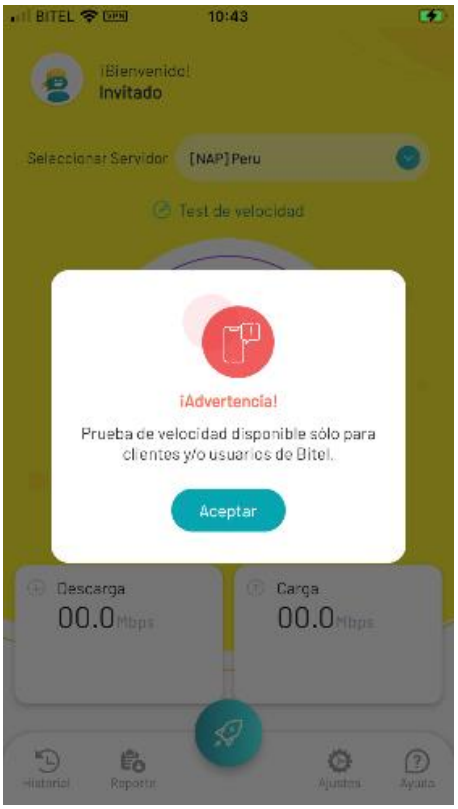
1. No realiza mediciones en la tecnología 3G hacia el servidor Internacional (US)

Al tratar de realizar la medición hacia el servidor US, la aplicación aparentemente se cuelga y no muestra resultados, se esperó hasta 25 min. aproximadamente sin arrojar resultados.

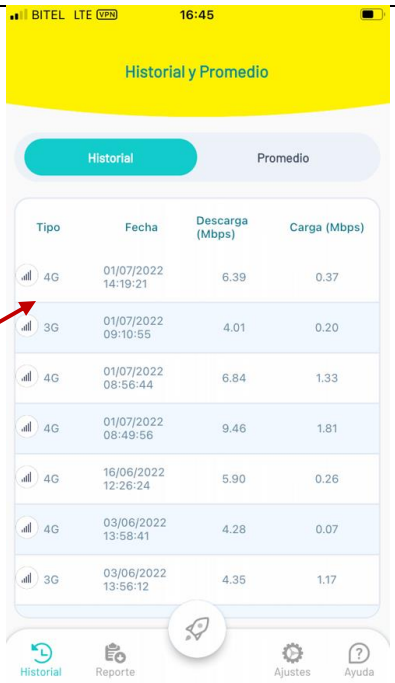


2. Mediciones en WIFI

Escenario 1: Cuando se tiene conectado a una red WIFI (Red otro operador) y se accede a la aplicación, al levantar el aplicativo de medición sale una advertencia y no deja hacer mediciones.



Escenario 2: Cuando se tiene conectado a la red móvil Bitel (3G,4G), se ingresa a la aplicación de medición y luego ya dentro de la aplicación, conectamos el móvil a una red WIFI (de otro operador) el aplicativo realiza la medición hacia el servidor NAP, pero no logra registrar la medición en el historial.

	
Medición realizada 01/07/22 Hora:10:48	Se observa que dicha medición no se registró en el historial

Bajo el mismo escenario cuando se escoge el servidor Internacional (US) no se logra realizar la medición: