



## Measurement Methodologies - LatenceTech

### Latency (response time)

<b>Measurement protocol</b>	HTTP, HTTP/S, TCP, UDP, ICMP, TWAMP																																			
<b>TCP or UDP port used</b>	<p>HTTP: 12080</p> <p>HTTP/S: 12443 (TLS 1.3 for HTTP/S testing)</p> <p>TCP: 12023</p> <p>UDP: 12024</p> <p>ICMP: 1</p> <p>TWAMP: TCP: 12862, UDP: 12800 to 12819</p>																																			
<b>Number of latency unit tests performed</b> (if overall time-out not has not expired)	Continuous, from 100ms to a few minutes per test																																			
<b>Number of bytes typically exchanged for each latency unit test</b>	<p>See this table using the suggested frequency of latency measurements:</p> <table border="1"> <thead> <tr> <th>Protocol</th> <th>Sampling</th> <th>Hourly consumption</th> <th>Daily consumption</th> <th>Montly consumption</th> </tr> </thead> <tbody> <tr> <td>TWAMP</td> <td>30 / min</td> <td>0.1 Mb</td> <td>2.4 Mb</td> <td>74.4 Mb</td> </tr> <tr> <td>ICMP</td> <td>30 / min</td> <td>0.2 Mb</td> <td>4.8 Mb</td> <td>148.8 Mb</td> </tr> <tr> <td>HTTP</td> <td>30 / min</td> <td>0.5 Mb</td> <td>12 Mb</td> <td>372 Mb</td> </tr> <tr> <td>HTTPs</td> <td>30 / min</td> <td>0.6 Mb</td> <td>14.4 Mb</td> <td>446.4 Mb</td> </tr> <tr> <td>TCP</td> <td>30 / min</td> <td>0.4 Mb</td> <td>9.6 Mb</td> <td>297.6 Mb</td> </tr> <tr> <td>UDP</td> <td>30 / min</td> <td>0.4 Mb</td> <td>9.6 Mb</td> <td>297.6 Mb</td> </tr> </tbody> </table>	Protocol	Sampling	Hourly consumption	Daily consumption	Montly consumption	TWAMP	30 / min	0.1 Mb	2.4 Mb	74.4 Mb	ICMP	30 / min	0.2 Mb	4.8 Mb	148.8 Mb	HTTP	30 / min	0.5 Mb	12 Mb	372 Mb	HTTPs	30 / min	0.6 Mb	14.4 Mb	446.4 Mb	TCP	30 / min	0.4 Mb	9.6 Mb	297.6 Mb	UDP	30 / min	0.4 Mb	9.6 Mb	297.6 Mb
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<b>Length of the time-out in seconds, for each latency unit test</b>	1 second																																			
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<b>Encrypting Latency Test Streams</b>	N/A																																			
<b>Version of the Internet Protocol (IP) and selection method used</b>	All the protocols are measured, one after the other. It is possible to configure the types of protocols to be used (or not), frequency and other parameters.																																			
<b>Explanations of the indicators displayed</b>	TCP Median Latency in ms, UDP Median Latency in ms, HTTP Median Latency in ms, Median http/S Latency in ms, ICMP Median Latency in ms, TWAMP Median Latency in ms. For each protocol measured, we also propose: % of abnormal events, number of abnormal events.																																			



## Upload and upload speed

<b>Measurement protocol</b>	<b>iPerf3</b> (v3.18) <b>LIFBE</b> (v1.13) i.e. Low Intrusive Fast Bandwidth Estimation (European Patent of the Orange Group packaged in the LatenceTech solution)
<b>TCP or UDP port used</b>	Iperf3 : 12501 LIFBE : 12550
<b>Number of connections used simultaneously during the speed test</b>	1
<b>Duration of each test</b> (provided the volume threshold has not been reached)	iPerf3: 1 minute LIFBE: 20 seconds
<b>Maximum volume of data exchanged</b>	iPerf3: 41Mb to 100Mb LIFBE : 4,3Mb – 15Mb
<b>Encryption of Throughput Stream</b>	N/A
<b>Information on whether or not to remove the <i>slow start</i></b>	N/A
<b>IP Protocol Version and Selection Method</b>	IPv4 used by default (IPv6 under validation)
<b>Explanations of the indicators displayed</b>	<b>iPerf3</b> : TCP Download Speed, TCP upload Speed, UDP Download Speed, UDP upload Speed, <b>LIFBE</b> : LIFBE (UDP) Download Throughput Mb/s, LIFBE (UDP) Upload Throughput Mb/s, Download Jitter Ms, Upload Jitter Ms, Download Packet Loss, Upload Packet Loss %.

## Other information

<b>Generic information given to the user about the factors that can influence the different measurements including speed, web browsing and video streaming</b>	We can provide access to a "webapp" to view the results of throughput and latency measurements. See <a href="https://online.latence.ca">online.latence.ca</a> We also have a mobile application offered free of charge on the Google and Apple stores so that a user can take measurements from their mobile phone. The measurements will be carried out with any type of network access supported by the telephone (LTE, 5G, WIFI, Satellite) on 5 public targets (see below) otherwise paid version to private target(s).
<b>Nature of the tests that take place in the background</b>	Yes when installed on a PC, server, or virtual machine and configured for continuous, background measurements. Not supported on mobile app (so as not to impact users' data plan)



## LatenceTech Test Targets

### Test Targets

<b>Method for selecting the default test target</b>	<p>Mobile app: select from the iOS or Android app</p> <p>Deployed/Embedded Agent (CPE): Configure the target target(s)</p> <p>Custom target: easy deployment with Docker container on any type of host</p> <p>See documentation on reflectors: docs.latence.ca</p>
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Town	Region	IPv4 / IPv6 protocol	Connection capacity	Port Used	Name of the host	AS (Autonomous System)
Paris	France	IPv4	1 Gbps	Multiple	Azure	8075
Montreal	Canada	IPv4	1 Gbps	Multiple	Azure	8075
Chicago	USA	IPv4	1 Gbps	Multiple	Azure	8075
Rio	Brazil	IPv4	1 Gbps	Multiple	Azure	8075
Delhi	India	IPv4	1 Gbps	Multiple	Azure	8075
Quito	Ecuador	IPv4	1 Gbps	Multiple	Server Wala	263812

Online test tool (available with temporary license): [online.latence.ca](https://online.latence.ca)

Technical documentation: [online.latence.ca/docs](https://online.latence.ca/docs)

For any questions, information or demonstrations, contact us:

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