What is Jitter?

Saved From: https://www.pingman.com/kb/article/what-is-jitter-57.html

Question

I see that PingPlotter Pro shows a 'Jttr' (short for Jitter) column and graph. What is that used for?

Solution

Jitter is the amount of variation in latency/response time, in milliseconds. Reliable connections consistently report back the same latency over and over again. Lots of variation (or 'jitter') is an indication of problems.

Jitter shows up as different symptoms, depending on the application you're using. Web browsing is fairly resistant to jitter, but any kind of streaming media (voice, video, music) is quite suceptible to Jitter.

Jitter is a symptom of other problems. It's an indicator that there might be something else wrong. Often, this 'something else' is bandwidth saturation (sometimes called congestion) - or not enough bandwidth to handle the traffic load.

How is Jitter calculated in PingPlotter Pro?

To measure Jitter, we take the difference between samples, then divide by the number of samples (minus 1).

Here's an example. We have collected 5 samples with the following latencies: 136, 184, 115, 148, 125 (in that order). The average latency is 142 - (add them, divide by 5). The 'Jitter' is calculated by taking the difference between samples.

136 to 184, diff = 48
184 to 115, diff = 69
115 to 148, diff = 33
148 to 125, diff = 23
(Notice how we have only 4 differences for 5 samples). The total difference is 173 - so the jitter is 173 / 4, or 43.25.

We use this same mechanism no matter how many samples you have - it works on 5, 50 or 5000.

What does it mean when the Jitter number is red in PingPlotter Pro?

Note: The following information currently applies to versions 4.12.0 and older of PingPlotter.

Using the default rule, the jitter displays in red when it exceeds 15% of the average latency. If average latency on that hop is 150, and jitter is > 22.5, then it will show as red.

If you're a bit of a hacker, you can look at the rules behind this. Browse to the 'scripts' directory of your PingPlotter Pro install and open the 'Jitter.ppx' in your favorite text editor. Here, you'll see a script that displays the jitter. You can add your own logic tweaks here.

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If you want to change this, the best way is probably to copy the Jitter script to one of your own making (call it, say, Jitter-Custom.ppx), then edit the rules to make it match your needs. When you restart PingPlotter Pro, go to the 'Plugins & Scripting' section and turn off the Jitter rule and turn on your Jitter-Custom rule. You want to do this rather than just edit the existing rule because we overwrite the scripts when you install, so when you upgrade, you'd lose any changes to your existing script.

More information about Jitter

The previous is just an introduction to Jitter. There is a lot more information out there. One good source for technical information about jitter is at VoIPTroubleshooter.com at http://www.voiptroubleshooter.com/indepth/jittersources.html.

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