Slow first ping, faster following

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Question

The first ping that I send somewhere is always slow the first time, then every subsequent time it is significantly better (the first hop is really fast; its the first ping that is slow). My first pings run 300-500 ms, then subsequent ones are usually under 100ms, depending on the route.

Solution

We usually see this more on dial-up connections as compared to broadband connections. The first sample with PingPlotter has significantly more bandwidth usage than subsequent ones. First off, the first sample always sends out 35 packets. PingPlotter has no idea how long the actual route is (and it wants to return data as fast as possible), so it sends out 35 packets each separated by a small time period (as specified in Advanced Options / Packet Option tab / Time interval between hop traces. This defaults to 25ms which means with a 56-byte packet, you're looking at a bit over 2 K/s of bandwidth used. If you have more than a 56-byte packet specified, this is higher. Once PingPlotter knows the route length i.e.: sample 2 and beyond, it only sends out as many packets as is necessary to make the final destination. There is a small chance that this will impact your bandwidth the first time the trace is initiated.

Second, as individual results come back on the first sample, the routers that have responded also need to have their names looked up. This happens immediately as each hop responds back. This means that there is additional bandwidth being used at this point as PingPlotter talks to the DNS server(s). This handshaking doesn't take a lot of time (and could stay entirely local on your own network), but it can overlap and has a chance to impact the first sample set's times.

If you want to see if this is impacting you at all, there are several ways to set PingPlotter. First off, to disable the impact of the reverse DNS lookups, there's an option to disable threaded (concurrent) DNS lookups. Reset your trace and see if the behavior is any different.

Another way to minimize the impact of PingPlotter's network usage is to change the time interval between hop traces. If you've got it set to 25, try changing it to 75 or 100. This will slow the rate at which PingPlotter uses network resources.

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