Why am I seeing route changes?

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Question

Why am I seeing continual route changes when I run PingPlotter? There also are 10-50% packet loses on various hops. This doesn't seem to manifest itself when I download files. I am connected to Qwest DSL via a Cisco 678 router.

Solution

Route changes are a pretty normal fact of life with the Internet. It sometimes happens for load balancing reasons, sometimes to route your data around problem areas, or a number of other possible reasons.

PingPlotter, by default, keeps track of ALL route changes. Normally, this works really well - and pretty much without notice by anyone (unless you're looking for it). The time when it can start to cause problems in the data that PingPlotter displays is when the length of the route changes (when your destination shows up at different hops, depending on the route being used) - as the changing routes cause problems in the final hop.

If you want to suppress recording information about route changes, you can do this in PingPlotter unless the length of the route is changing, in which case recording these changes can't be suppressed

Now, there are a few different variations of things that could cause problems, and causing your packet loss. A big variable in this is whether or not your route length is changing.

One thing to know about PingPlotter (and all ping tools) compared to HTTP web access is that HTTP uses error correction in its communication. If you get a lost packet when transferring HTTP, you often don't notice this because the protocol corrects for errors. The ICMP protocol (which is used by Ping Plotter and other ping tools) is lossy - so if something along the way drops data, it's never corrected - just reported by whatever tool sent it out. This is one possible reason why you're not seeing lost data when browsing the web or downloading something, but are seeing it with Ping Plotter.

The symptoms seen when data is lost in an error correcting protocol is that performance suffers. When data is lost, the protocol negotiates for it to be resent and this takes time. If you're seeing slow performance when downloading files, or browsing the web, it's possible that the drop in performance is being caused by packet loss.

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