What target should I ping or trace?

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Question

I think my cable modem (or cable line) is bad. What's the best address to ping or trace?

Solution

The best address to use for troubleshooting is a target that is exhibiting problems when using other (not just PingPlotter) applications. If you're a gamer, and you're getting lag in your game, then you should trace to your game server. If you're a stock trader and your stock software is having delays/slowness, trace to the server that your software connects to. If you're having voice quality problems on VoIP, you should trace to your VoIP server. If your internet browsing is timing out, you should trace to the web site that you're having problems with.

If you're having problems with all applications, then you ideally want to find the server (a provider of services, not a router) that is the closest to you that is also having problems. If you're having problems with your cable modem, these symptoms might show up when checking mail - and usually your mail server is inside your ISP's network, so the mail server is a good candidate here.

It's tempting, when you think the problem is a hardware device close to you (DSL modem, cable modem, etc) to trace to a router very close to you. The problem with doing this is that routers are built to forward data/packets, they aren't built to respond to packets and reply to them. When using PingPlotter or MultiPing, we're asking the final destination to reply to an ICMP (or TCP or UDP if you're using those packet types) packet, and that router might not be very good at doing that, so it shows a problem that doesn't appear if you trace a target further away. By tracing to a target that is downstream, you can still turn on the time graph for any hop/router, so you can still graph the performance over time for your router, but the results are more reliable because you're using it as a router, not a server.

Since packet loss and latency is really only important when it's seen at your final destination (game server, web server, etc), any packet loss or latency seen at intermediate routers might just be because the router doesn't like to respond to packets, but loves forwarding them. See our article on Packet loss at intermediate hops for more details.

There may be some instances where tracing to an intermediate hop gives you a better picture of the problem, but in general, you should start by tracing to the final destination.

If you see packet loss or latency at your final destination, then look back upstream for the first hop showing similar characteristics. We discuss this technique more in our "How do I pinpoint the problem" article.

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