

# PingER and mobility

Though PingER has very low network bandwidth requirements (e.g. 100bits/sec on average per monitor-remote host pair), it is not probe-less. At roughly regular intervals (30 mins) the monitors send up to 30 100 Byte ICMP ping probes at one-second intervals to each remote host until it they get 10 responses from each host or time out.

## Mobile clients

As currently implemented the remote hosts have fixed IP addresses, thus the current PingER would not work for mobile clients.

- One would be able to monitor from the monitoring hosts as far as the fixed IP address is available (e.g. to the client gateway/NAT box etc.) which might be good enough for what you need (if one is just interested in the performance of the network). Of course, this assumes the client gateway /NAT box etc. has to respond to pings.
- An alternative would be to use the phone number rather than the IP address. In this case, we would need to extend the current PingER archive to use phone numbers as well as IPv4 and IPv6 addresses. This needs some thought. It probably would results in costs based on the amount of data moved.
- Also the record would need to add the location (lat/long) of the mobile client to the data record.
- This is something that someone other than SLAC would need to take the lead role.

For mobile clients, I suspect one needs to install an App. Before an App is installed the client owner has to believe it will provide some benefit to her/him and will not cause problems. Thus with [Ookla SpeedTest](#) and [MobiPerf](#), the client is provided with an estimate of network performance. At the same time the provider can save the estimates and if GPS location is turned on, can know where the performance is available, hence providing lots of data for mining and plotting on maps (e.g. see the [Akamai app](#)). Similarly downloading of data (say apps) from a location (say an apps store) gives information on performance to the app store owner.

There are several mobile ping clients/apps available such as ping lite, pingtool, network analyzer etc. I imagine they can capture the data and may use it for mining. I suspect they could be improved upon to make them more attractive (e.g. give extra information on say Mean Opinion Score (MOS) and how well VoIP is likely to work, the Directness of the connection (i.e. comparing the RTT to that expected on a great circle route at the speed of light), indications of the quality of the connection (expectations, derived from measured jitter, RTT, loss, or for derived throughput etc.), also combining with a visual traceroute etc. I am not clear this would be of interest to an ISP. Maybe a startup would be interested, or it could be added to existing apps, such as mentioned above.

## Measurement Agent

This is more straight forward, but does not lend itself to mobility. It is basically a cheap, small, low power PingER Measurement Agent (MA) at a fixed location. A difference, however, is that the Android MA would probably not have a fixed wired connection to the network, rather communicating by wireless presumably to some local WiFi router. See [ePingER on Android phone](#).