Teacher’s Notes

Chapter 1a:  
Hands-On: A Few Internet Tools

# Role in the Course

The discussion of networking can be a bit abstract. A little hands-on work helps students visualize what these concepts mean. It can be covered after Chapter 1. Ping is also covered in Chapter 4.

# Flow of the Material

Speed is important. Students find the throughput they are really getting at home, at schools, or in a coffee shop.

DNS allows you to look up the IP address of a host name. If you know an IP address, you can also learn the host name.

Ping is a great way to see if a host is reachable. It also tells you the round-trip-delay (latency) to that host. Ping is a tool that every networking professional uses constantly to identify and diagnose problems. Traceroute (or tracert) also shows you the routers between you and the host you want to know about. It helps you visualize the Internet as a collection of routers, and it helps you see a real route. Ping does not always work. Firewalls often block it because it can also be useful to external attackers.

# Hard Parts

Nothing is difficult, but if a student is asked to download some program to their computer, tell them, “DON’T!” These are all Web programs.

# CEPTs

None. This is just a fun exercise.

# Teaching Note

This is a pretty fast exercise. I usually just do it as part of teaching Chapter 1. When we talk about routes, I sometimes pause the lecture flow to get them to do the exercise for Ping and Tracert. I usually hold off on DNS until the end.

The fact that firewalls may block pings is a teachable moment. Why would a firm want to do that? Hopefully, one or two students will realize that if the bad guys (and girls) don’t know the IP addresses of you hosts, they can’t attack them easily.