Homework 1

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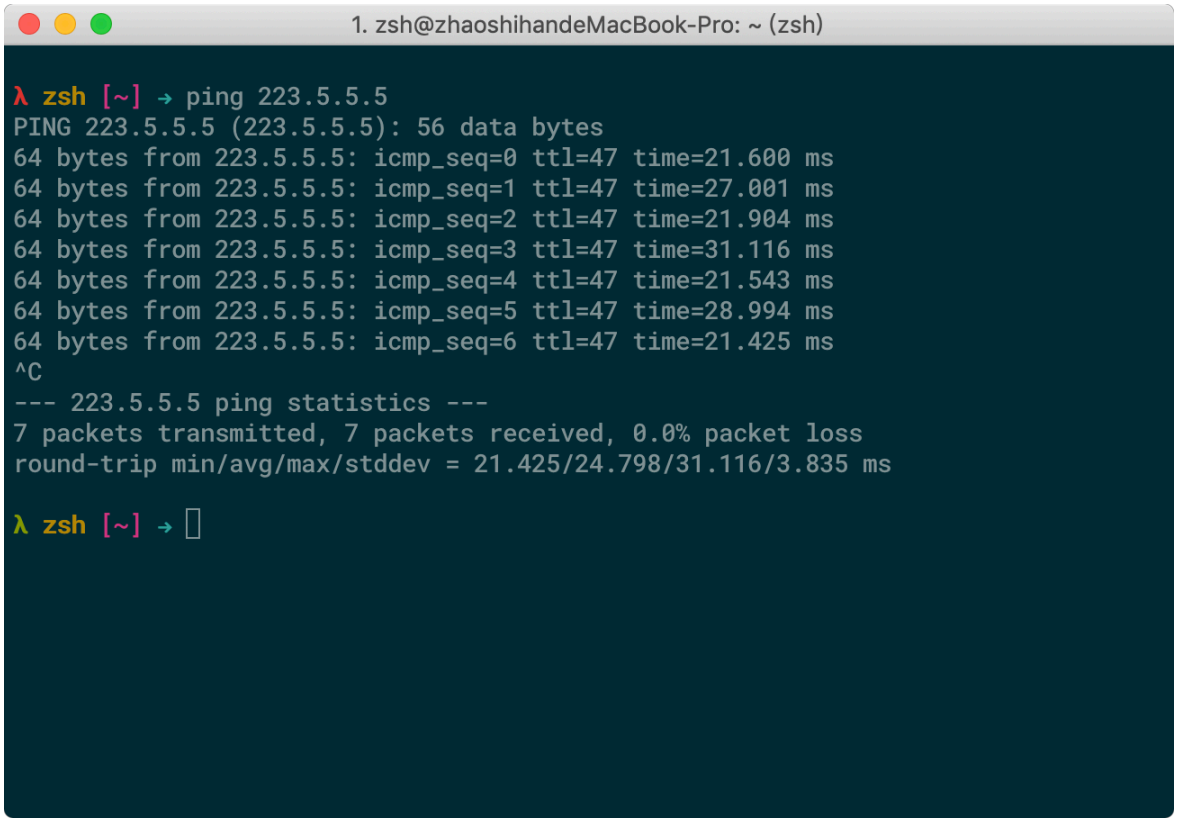
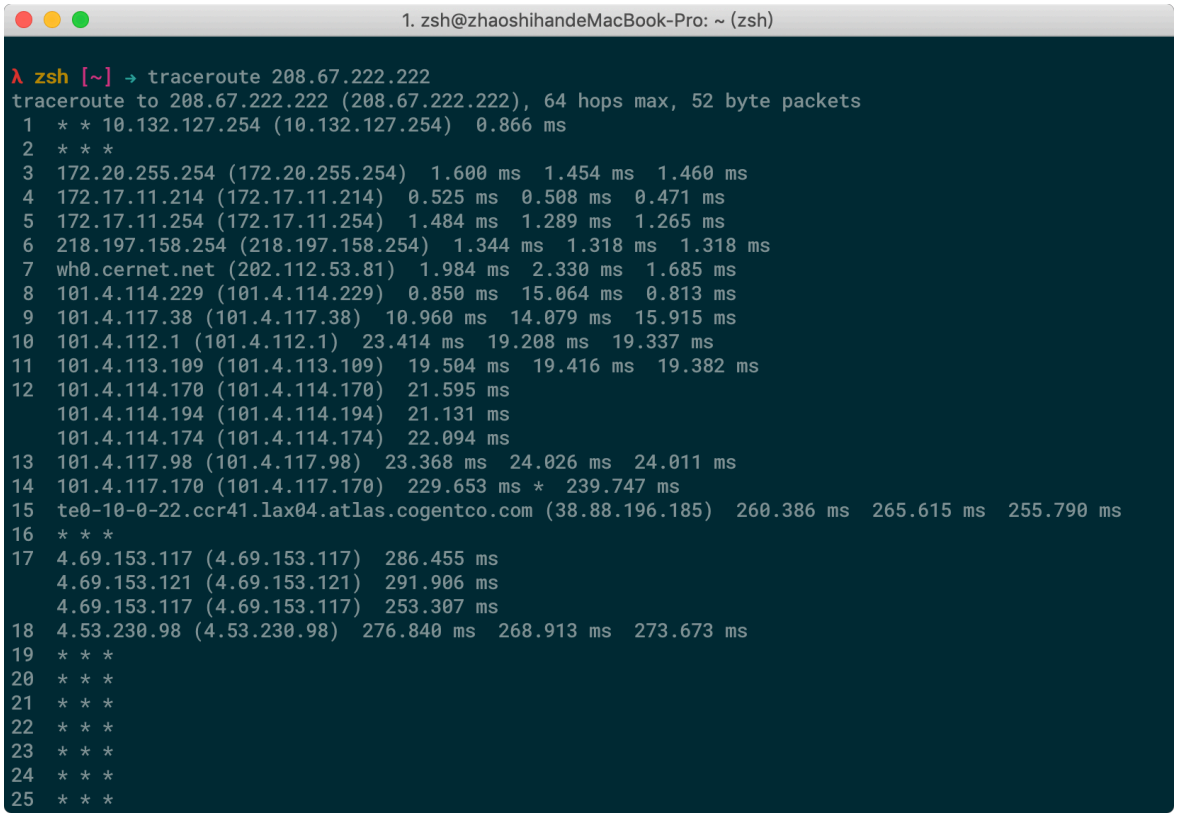
1. ping另外一台计算机

这里使用阿里默认DNS服务器ip（233.5.5.5）



2. traceroute一个服务器

这里使用OpenDNS服务器，IP地址为208.67.222.222



3. 课本习题

R8. What are some of the physical media that Ethernet can run over?

Answer：

Few physical media where Ethernet can run.
1.Twisted pair cable—Now two basic type of twisted pair cable exist Unshielded twisted pair(UTP) and
Shielded twisted pair(STP)
Few feature of UTP cable

- Speed and throughput— 10 to 1000 Mbps
- Average cost per node— Least expensive
- Media and connector size – Lmall
- Maximum cable length—100 m (short) Shielded twisted pair (STP)

Few feature of STP cable

- Speed and throughput— 10 to 100 Mbps
- Average cost per node— Moderately expensive
- Media and connector size – Medium to large
- Maximum cable length—100 m(short)

2.Coaxial cable
Few feature of coaxial cable

- Speed and throughput— 10 to 100 Mbps
- Average cost per node— Inexpensive
- Media and connector size – Medium
- Maximum cable length—500 m(medium)

3. Fiber optic
Feature of Fiber optic

- Very high bandwidth

Fiber optic cable can be used in environments that make wire cables unusable
No radio frequency emissions; signals of fiber optic cable can not interfere with nearby electronic devices and can not be detected by conventional electronic eavesdropping techniques.
Speed and throughput—100 Mbps to 100 Gbps(single mode) 100 Mbps to 9.92 Gbps(multimode)

- Fiber optic is expensive.
- Can not be tapped so better security
- Can be used over great distances

R2. Describe the protocol that might be used by two people having a telephonic conversation to initiate and end the conversation.

Answer：

From Wikipedia: Diplomatic protocol is commonly described as a set of international courtesy rules. These well-established and time-honored rules have made it easier for nations and people to live and work together. Part of protocol has always been the acknowledgment of the hierarchical standing of all present. Protocol rules are based on the principles of civility.

R10. Describe the different wireless technologies you use during the day and their characteristics. If you have a choice between multiple technologies, why do you prefer one over another?

Answer：

There are two popular wireless Internet access technologies today:
a) Wifi (802.11) In a wireless LAN, wireless users transmit/receive packets to/from an base station (i.e., wireless access point) within a radius of few tens of meters. The base station is typically connected to the wired Internet and thus serves to connect wireless users to the wired network.
b) 3G and 4G wide-area wireless access networks. In these systems, packets are transmitted over the same wireless infrastructure used for cellular telephony, with the base station thus being managed by a telecommunications provider. This provides wireless access to users within a radius of tens of kilometers of the base station.
From my perspective, I would like to choose the 4G wide-area wireless because it is more faster than Wifi. In many occasions, using unauthorized Wifi in the public might cause some serious vulnerabilities about our information security. But we don’t have the problem in 4G network.