Welcome to

CS 3516:
Computer Networks

Prof. Yanhua Li

Time: 9:00am –9:50am M, T, R, and F
Zoom Lecture
Fall 2020 A-term

1

Lecture 1: roadmap

1.1 what *is* the Internet?
"nuts and bolts" view
a service view

what's a protocol?

1.2 network edge
- hosts, access networks, physical media/links

"Fun" internet appliances

IP picture frame
http://www.ceiva.com/

Web-enabled toaster + weather forecaster

Tweet-a-watt: monitor energy use

Slingbox: watch, control cable TV remotely

Internet refrigerator

Drone

Internet phones

Partial map of the Internet based on the
January 15, 2005 data found on opte.org.
(from http://atheistuniverse.net/group/internet)
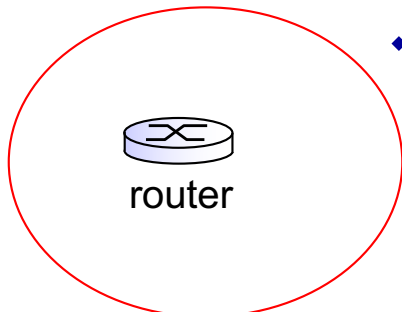
What's the Internet: "nuts and bolts" view

PC

server

wireless laptop

smartphone
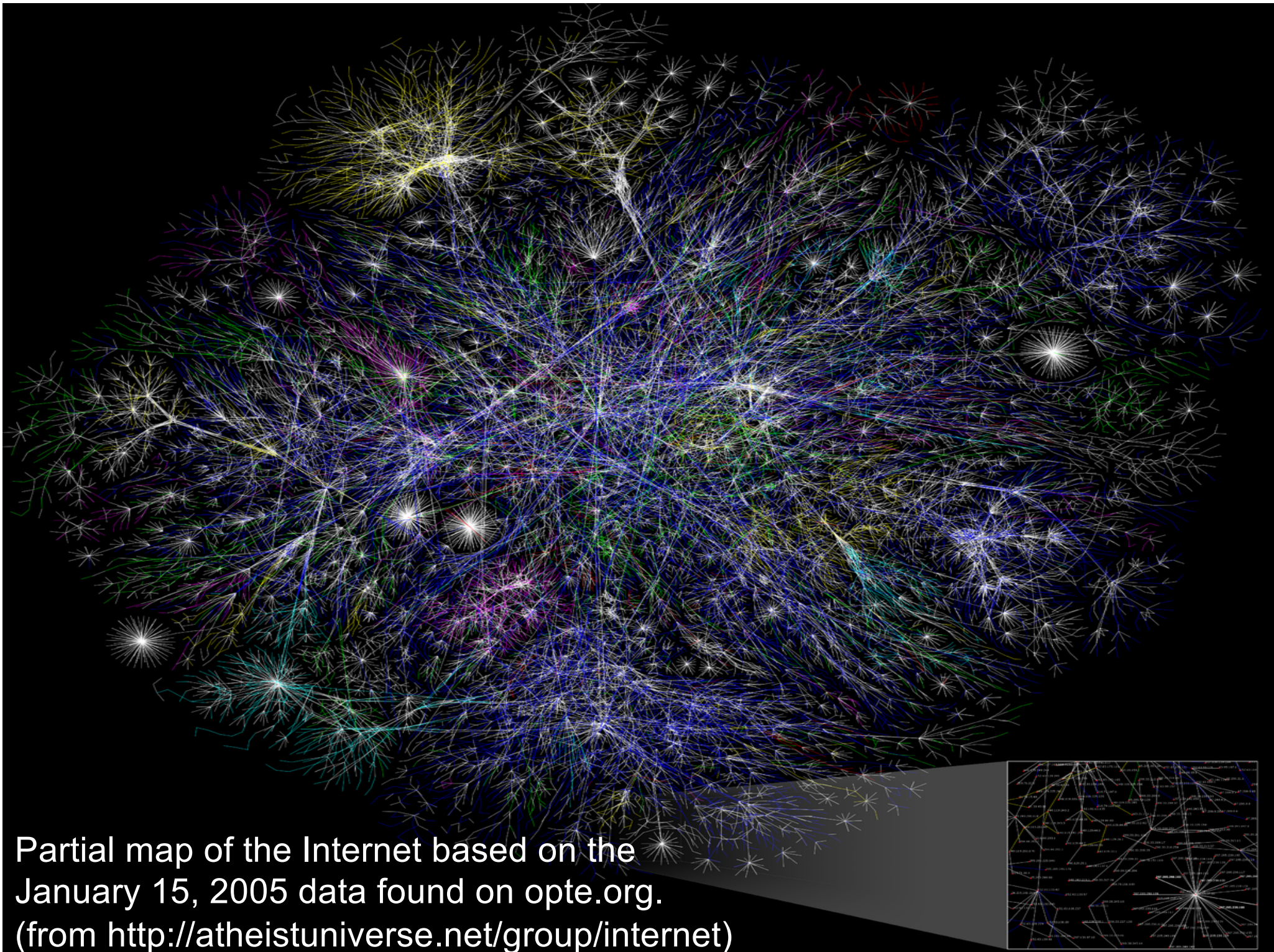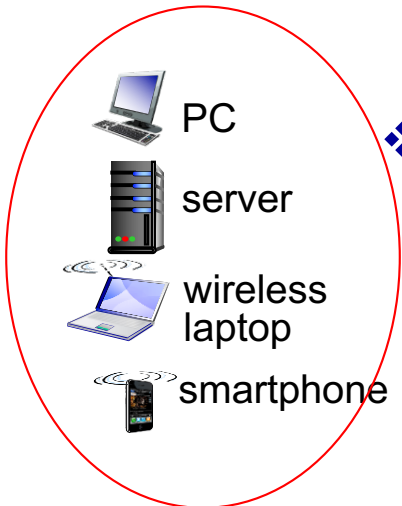
- ❖ **millions of connected computing devices:**
  - *hosts = end systems*
  - running *network apps*

wireless links

—— wired links
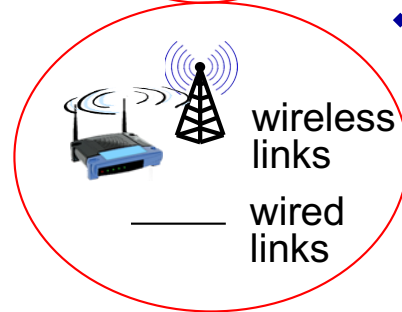
- ❖ *communication links*
  - fiber, copper, radio, satellite
  - transmission rate: *bandwidth*

router

- ❖ *Packet switches:* forward packets (chunks of data)
 - *routers* and *switches*

mobile network

global ISP

home network

regional ISP

institutional network
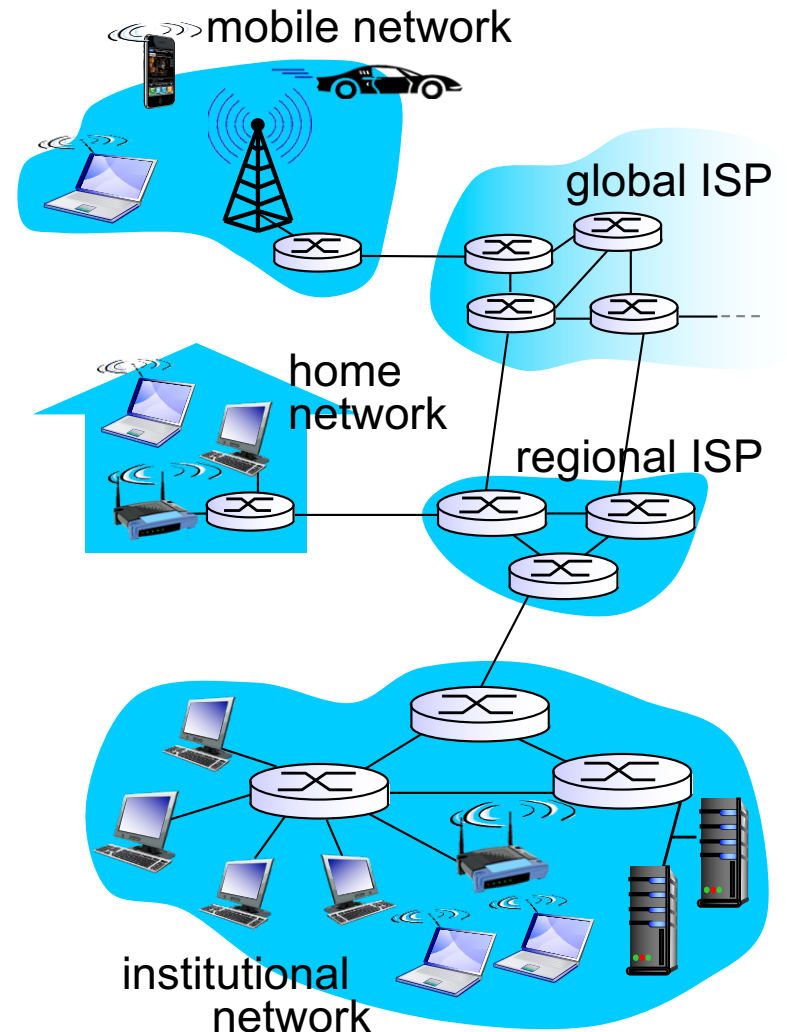
Hardware components.

What's the Internet: "nuts and bolts" view

- ❖ *Internet:* "network of networks"
  - ▪ Interconnected ISPs
- ❖ *protocols* control sending, receiving of msgs
  - ▪ e.g., TCP, IP, HTTP, Skype, 802.11
- ❖ *Internet standards*
  - ▪ RFC: Request for comments
  - ▪ IETF: Internet Engineering Task Force – an open international community of network designers

mobile network

global ISP

home network

regional ISP

institutional network
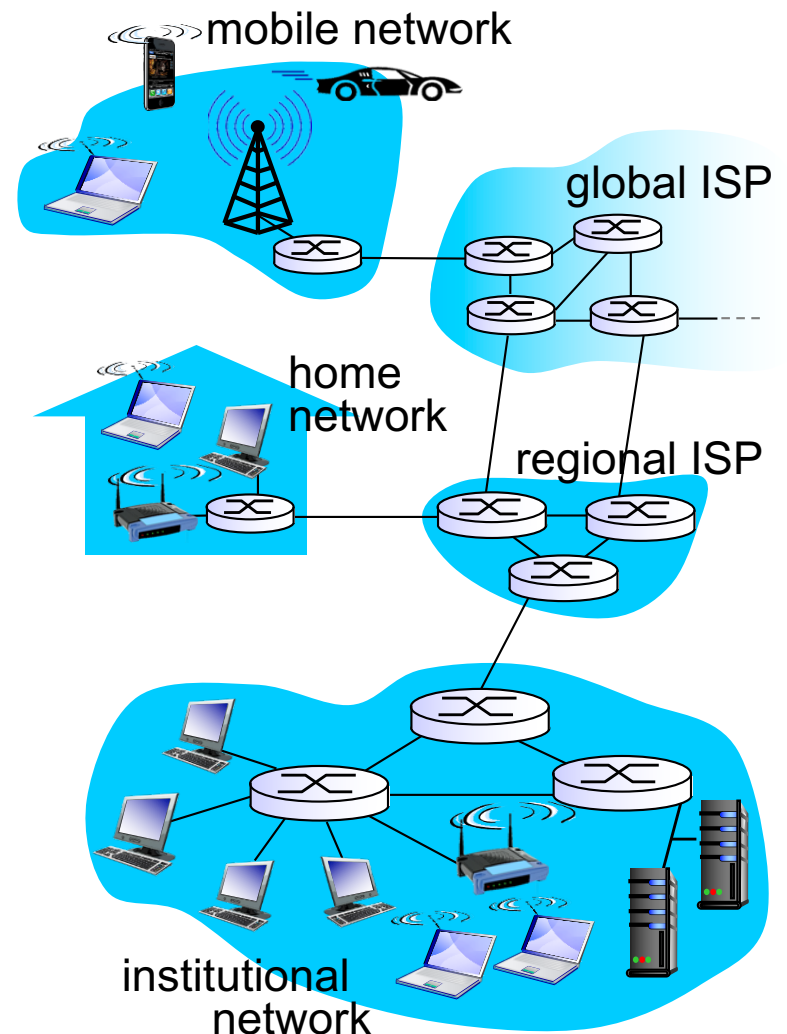
Software components.

Questions?