CS121: Our Digital World

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+ Introductions

- What is your name?

- What year are you?

- Where is your hometown?

- What is your major?

- What do you hope to be/do when you graduate?

+ M&Ms

- Brown: Describe what you hope to get out of this course

- Yellow: Why did you sign up for this course?

- Green: Describe something you recently read that is related to the Internet

- Red: Describe something that you want to learn from this course

- Orange: Describe what you already know about the topic of this course

- Blue: Describe your most recent success

Activity: Fill out the Questionnaire

- Go to: http://zeus.cs.pacificu.edu/shereen/cs121sp12/

- Explore the site:
    - Find the course schedule
    - Find the syllabus
    - Find the questionnaire

- Complete the questionnaire

- Print it out

- Staple pages together

- Turn it in to instructor

+ Topics

- Aspects of the Internet
  - Ethical
  - Social
  - Economic
  - Political

- Give examples of each of the above:
  - Ethical:
  - Social:
  - Economic:
  - Political:

+ Syllabus

- Go through syllabus:
  - Blog
  - Participation
  - Midterm
  - Final Project

Activity: Blog

- Go to wordpress.com and create a new blog

- For your blog you must:
  - Add a link to the course website:
    http://zeus.cs.pacificu.edu/shereen/cs121sp12/
  - Add an image

- Change the theme to one that represents your personality

What words do you associate with the Internet?

+ Basics of the Internet

- To understand how the Internet impacts and affects our lives, we need to understand:
  - What it is?
  - How it works?
  - A little history

+

Activity: Watch this video

■ http://www.commoncraft.com/video/world-wide-web

+ How does the Internet work?

- Internet is a collection of computer networks

- They use the standard Internet protocol suite (TCP/IP)

- Networks are connected through special gateways or routers
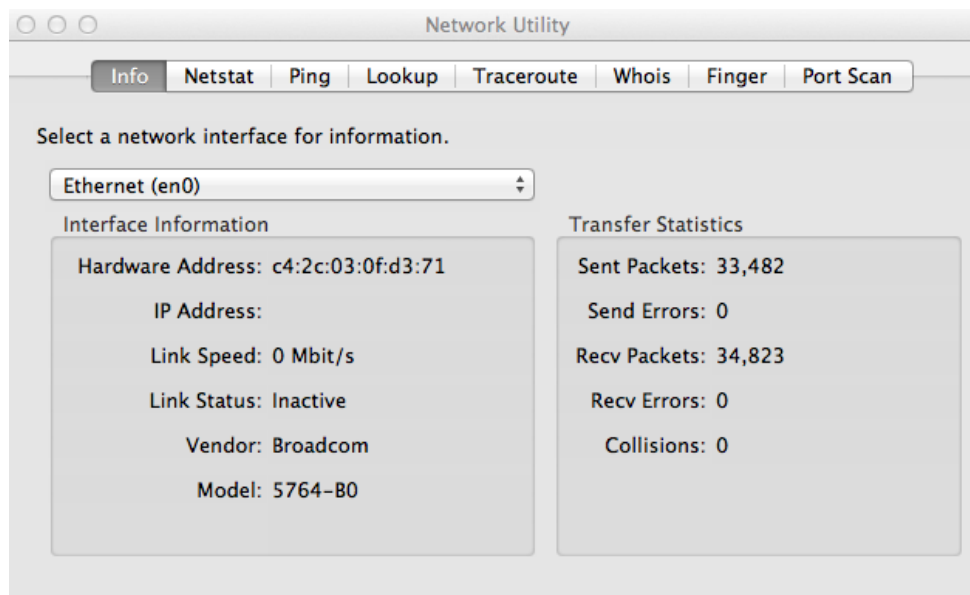
+ Internet Addresses

- Every computer connected to the Internet must have a unique address

- Address is in the form xxx.xxx.xxx.xxx where xxx represents a number between 0-255

- This address is called an IP address

+ ping

- You can use a program to send a ping message to any computer on the Internet

- The pinged computer will send a reply

- The ping program will countdown until it gets a reply

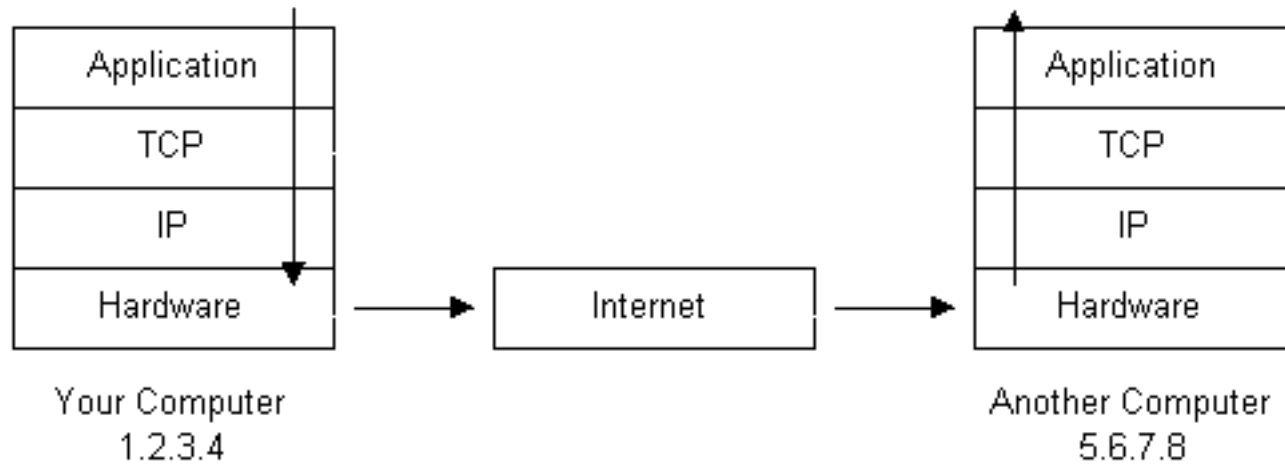- The ping program will accept an **IP address** or a **domain name**

+
Activity: ping
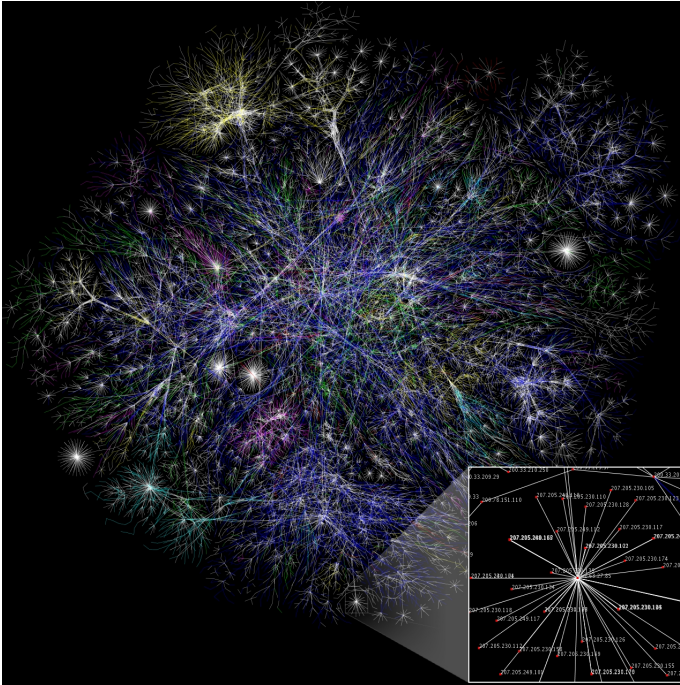
- Try it now! Go to Applications -> Network Utility

- What is your IP address?

+ How is information transferred?
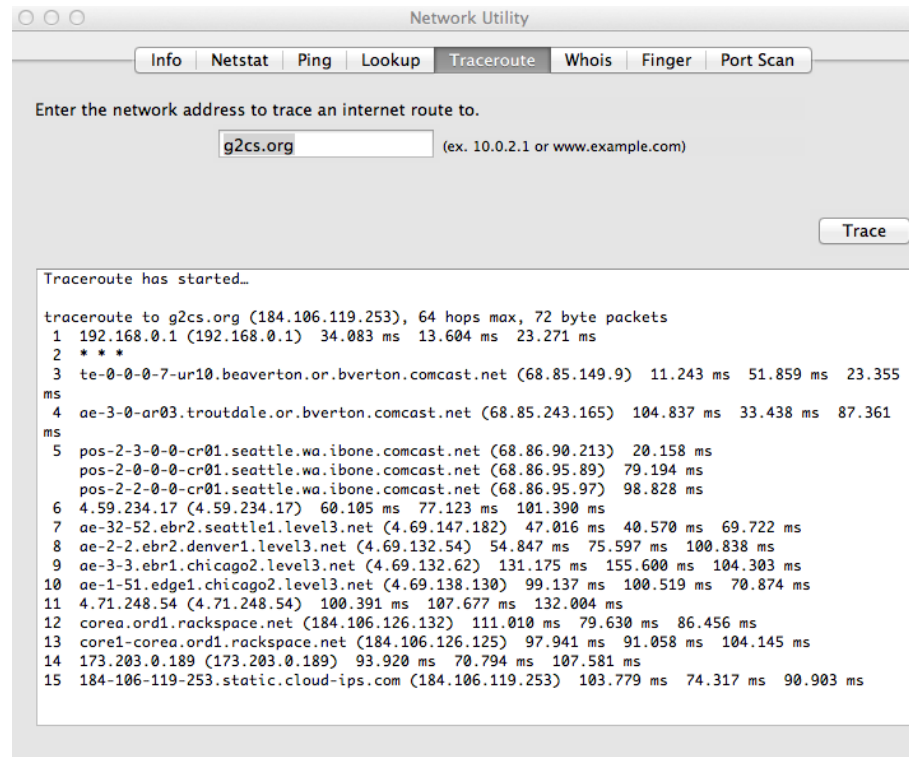
Internet Infrastructure

- English: Partial map of the Internet based on the January 15, 2005 data found on opte.org.

- Each line is drawn between two nodes, representing two IP addresses.

- The length of the lines are indicative of the delay between those two nodes. This graph represents less than 30% of the Class C networks reachable by the data collection program in early 2005.

- Lines are color-coded according to their corresponding RFC 1918 allocation as follows:
  - Dark blue: net, ca, us
  - Green: com, org
  - Red: mil, gov, edu
  - Yellow: jp, cn, tw, au, de
  - Magenta: uk, it, pl, fr
  - Gold: br, kr, nl
  - White: unknown

Activity: Traceroute

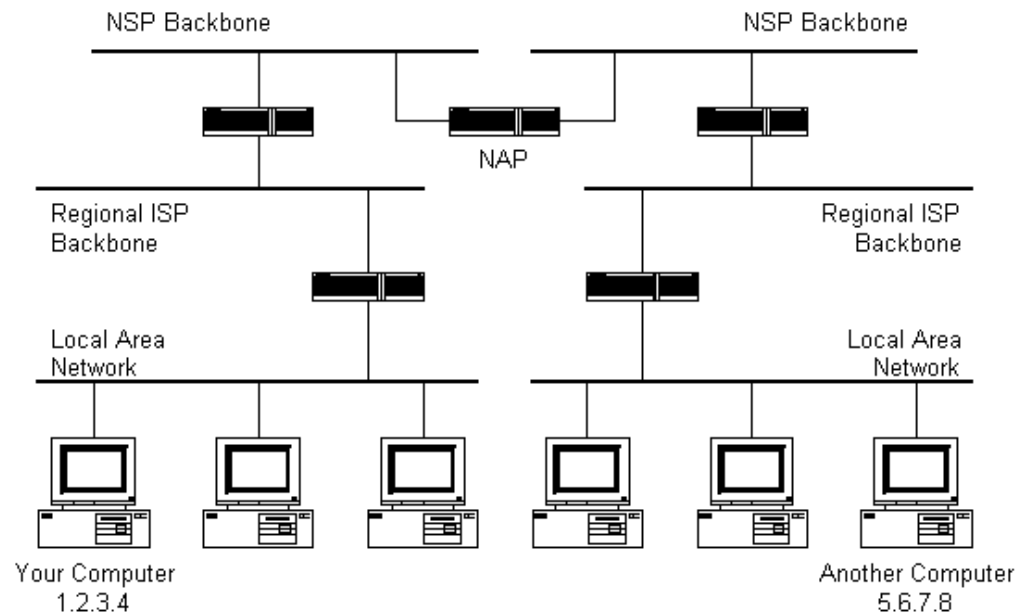■ Try it now! Go to Applications -> Network Utility

+ Internet Routing Hierarchy

- Does every computer on the Internet know where other computers are?

- Do packets get "broadcast" to every computer?

+ Domain Names

- How does your computer know that g2cs.org is 184.106.119.253?

- Domain Name Service (DNS)

- Distributed database that keeps track of computer names and their corresponding IP address

So, what is the world wide web?

- The world wide web (WWW) is a service of the Internet

- Examples of other services:
  - Email
  - File Sharing (FTP)

- WWW is a system of interlinked hypertext documents

Activity: Find the answers to the two questions below

- How many people use the Internet today?
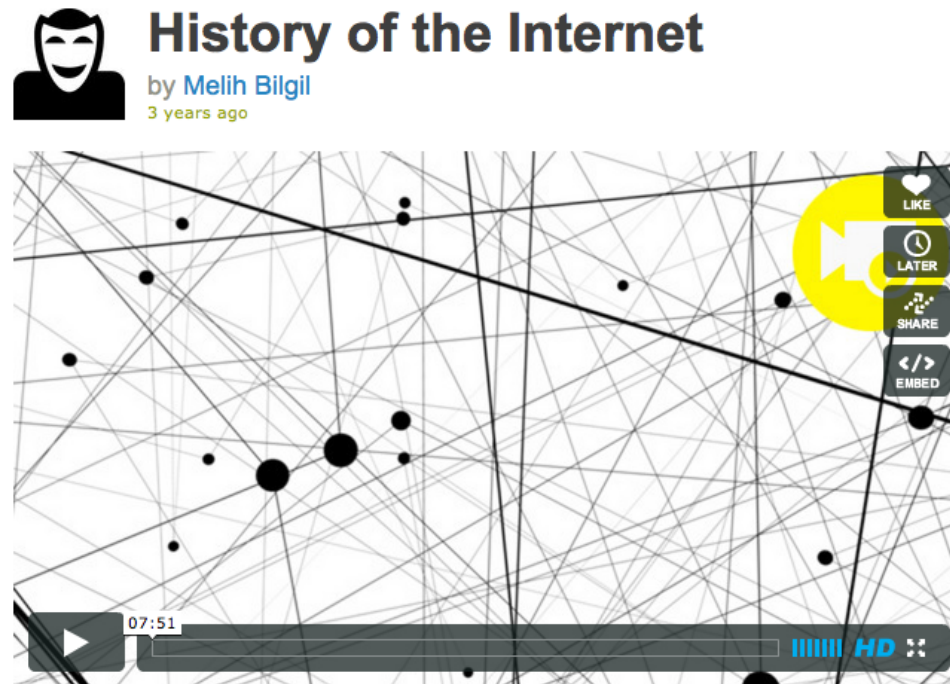
- What has the growth been like since 1995?

+ Who invented the Internet?

+ Brief History of the Internet

■ Watch the following video:
http://vimeo.com/2696386?pg=embed&sec=2696386

+ Key Moments in the History of the Internet

- Based on the video we just watched, list 5 key moments in the history of the Internet:

  1.

  2.

  3.

  4.

  5.

Keywords

- TCP
- IP
- Packets
- Ping
- Traceroute
- Internet
- WWW
- Router or gateway
- Packet switching
- Server

- Domain names
- Domain name service
- DNS
- Database
- URL
- ARPANET
- Web browser
- FTP
- Hypertext