Even more about the Internet
16 February 1999

Opening announcements

- 2 handouts in back
- Final Mac/PC workshops this Saturday
- Homework collaboration policy
- Grading issues
- Representing yourself on the bulletin boards and links page
- Pace and atmosphere of sections
- Yellow sheets of paper

Topics

- URLs revisited
- Downloading software
- Searching the Web

- Network topologies
- Network devices: cards and cables
- Bandwidth

- The physical Internet
- Domains
- ISPs and modems
- Backbones and routers
- DNS: IP addresses and fully qualified domain names
- TCP/IP and packets

- Protections: firewalls and proxy servers

Closing announcements

- Assignment 3: ISPs and you
- Next week: computer hardware—looking under the hood

URLs Revisited

Uniform (not Universal) Resource Locator

Which of the below are valid and invalid?

A.	`http://www.cnn.com`
B.	`http:/CNN.com`
C.	`ftp://ftp.netscape.com`
D.	`http://www.pizza.com\index.html`
E.	`http://www.cnn.com/help.htm`
F.	`http://www.ibm.net/index.html#register`
G.	`www.nsa.gov`
H.	`http://restaurant.com/menus/specials.html`

Make-A-URL

Task #1

protocol	HTTP
page	index.html
domain	balloons.com
host	www

Task #2

protocol	HTTP
page	about.html
domain	peacecorps.org
folder that page is in	docs
host	home

Search Engines

www.altavista.com

www.excite.com

www.infoseek.com

www.lycos.com
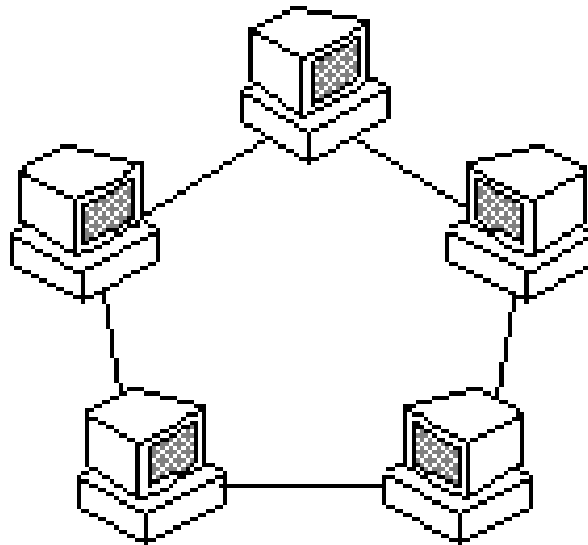
www.yahoo.com
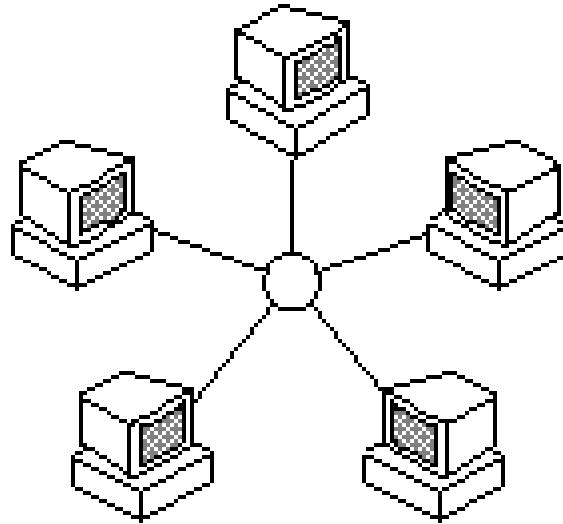
Network Topologies

Bus network
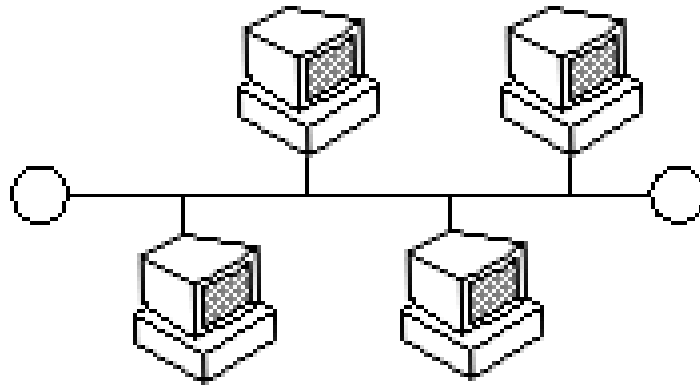
Network Topologies

Ring network

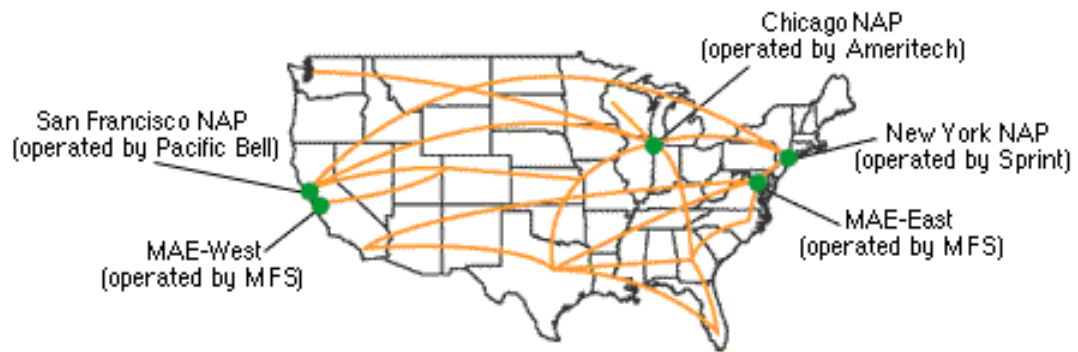# Network Topologies

Star network

Internet backbones

Figure 1: The U.S. commercial backbone and major Internet connection points

IP Addresses

. # . # .

(# is a number from 0 to 255)

TCP/IP

STEP 1

The TCP protocol breaks data into packets.

STEP 2

The packets travel from router to router over the Internet according to the IP protocol.

STEP 3

The TCP protocol reassembles the packets into the original whole.

To :

From :

sender

router

router

router

router

router

router

recipient

To :

From :
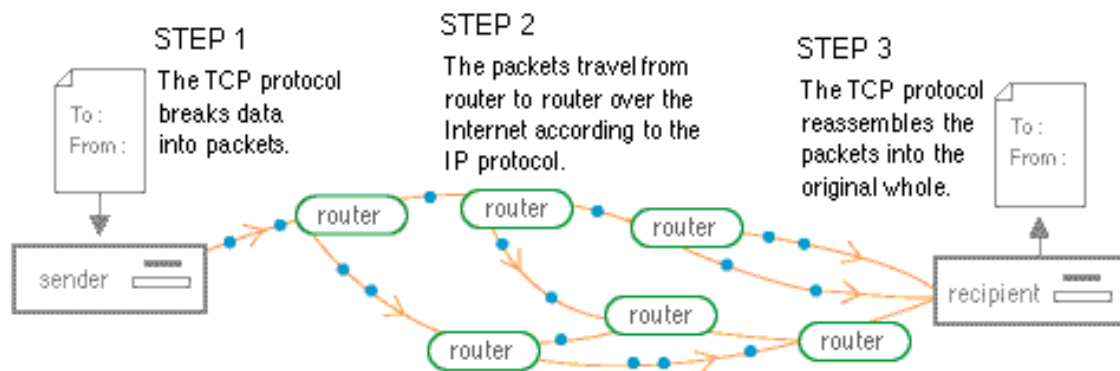
Figure 2. How data travels over the Net.

Who runs the Internet?

The World Wide Web Consortium (W3C)
HTML standards

The Internet Engineering Task Force (IETF)
Focuses on Internet evolution

Internet Engineering Steering Group (IESG)
Manages IETF activities and the Internet standards process

The Internet Architecture Board (IAB)
Defines Internet architecture

Internet Society (ISOC)
Comments on Internet policies and practices

The Internet Assigned Numbers Authority (IANA)
Responsible for assigning IP addresses

The Internet Network Information Center (InterNIC)
Responsible for assigning domain names