Class Mechanics

- **Web Access:**
  - iad01f/cache

- **Group Formation**
  - Next class we will form groups of 2
  - group work/individual report.
  - 2 phases + optional creative enhancement
  - In class group demonstration

- **Class attendance** will be important.
- **Personal information.**
Today’s Topic

Internet Real-state

Who manages Internet & Its Organization.

Visit to some high tech. sites

A Map of Internet Real-state
World Wide Networks

Who Manages Internet?
There is no single body which manages the Internet.

It runs through a host of independent or loosely coupled coordinating organizations.

The organizations below play a major role in the organization, management and development of it:

- Internet Society (IS)
- Internet Architecture Board (IAB)
- Internet Engineering Task Force (IETF)
- Internet Assigned Number Authority (IANA)
- ICANN
- Internet Network Information Center (InterNIC)
- W3C

**Internet Society (IS)**

A nonprofit, non-governmental professional-membership organization of individuals and organizations interested in the development of Internet. More specifically, this is the legal umbrella for other coordinating bodies (such as IAB, IANA) for global cooperation and coordination for the Internet and its internetworking technologies and applications.
Internet Architecture Board (IAB)

IAB is a technical advisory group of the Internet Society. Its responsibilities include oversight of IETF, editorship of the RFC document series, administration of Internet assigned numbers, and liaison of the Internet Society in liaison relationships with other organizations concerned with standards.

Internet Engineering Task Force (IETF)

Body to address and resolve technical and operational problems on the Internet and to develop Internet standards and protocols.

The membership of IETF is international and completely voluntary. Members consist of network designers, operators, vendors, researchers and other interested individuals.
Internet Assigned Numbers Authority (IANA):

Chartered by the ISOC and the Federal Networking Council and operates out of the University of Southern California, is the central coordinator for the assignment IP addresses and manages the Root Domain Name Service.

Internet Corporation for Assigned Names and Numbers (ICANN):

To oversee policy for determining, addition, deletion, allocation and management of generic top level domain names (EDU, COM, NET, ORG, GOV, MIL, INT, and ISO-3166 country codes).
Global Internet Assigned Numbers Authority

Americas and sub-Saharan Africa:
The American Registry for Internet Numbers (ARIN)

Europe and North Africa:
ReseaIS IP Europeens (RIPE) (http://www.ripe.net)

Asia and Australia:
Asian-Pacific Network Information Center (APNIC)
(http://www.apnic.net)
World Connectivity in 1991

INTERNATIONAL CONNECTIVITY
 Internet
 Direct but not Internet
 EMail Only (UCNP, FilmNet)
 No Connectivity

World Connectivity in 1995

INTERNATIONAL CONNECTIVITY
 Internet
 Direct but not Internet
 EMail Only (UCNP, FilmNet)
 No Connectivity
Global Village

As of January 1998, 205 countries had at least one connection to the Internet. By July this had grown to 212. Only 11 new countries joined the Internet in 1997. This is a diminished Internet spread rate, but it occurs for the simple reason that there aren't many new countries to join.

Matrix Inc.
Global Village

World Total 407.1 million
Africa 3.11 million
Asia/Pacific 104.88 million
Europe 113.14 million
Middle east 2.4 million
Canada and USA 167.12 million.
Latin America 16.45 million.

November 2000
source: Nua Internet Surveys http://www.nua.ie

Global Village

By late 1999 the number of non-English speakers online has surpassed the number of English speakers online worldwide and will grow to two-thirds of the online word by 2005.

Global Reach Inc.
Think of this chart as a city of 100 M people: the city of those online who do not access the Internet in English. It is a city where 20% are Japanese, 14% are German, 12% Hispanic, etc.

Where the Internet hosts are by domain

**Jan 2000**

**Jan 2001**
Hosts: Two-letter Domains 50 000-100 000

- Ireland
- Chile
- China
- Malaysia
- Thailand
- Uruguay

Probably due to network outage

Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01

Hosts: Two-letter Domains 25 000-50 000

- Colombia
- Iceland
- Romania
- Estonia
- Ukraine
- Slovakia
- India
- United Arab Emirates
- Indonesia

Jan-96 Jan-97 Jan-98 Jan-99 Jan-00 Jan-01
Growth Rates

Internet Hosts

- The Domain Survey attempts to discover every host (i.e., uniquely reachable connected computers) on the Internet by doing a complete search of the Domain Name System. The latest results gathered during late Jan 2001 are listed, together with Mark Lottor’s work in this area over many years. For more information see RFC 1296; for more data see the archive site at the Internet Software Consortium, http://www.isc.org/ds/

- Beginning with the January 1998 survey, Lottor began using a new method of doing the survey to avoid the increasing blocking of DNS zone transfers. This method of querying the DNS for known IP address is explained at <http://www.isc.org/ds/new-survey.html>. It is not backward compatible with the old results. The old and the new data is juxta posed in these trends graphs with dotted lines.

- Actual country host counts must be done by attributing the three-letter domain hosts to specific countries and aggregating totals of 2 and 3 letter domain hosts. This has been done by John Quarterman of MIDS since July 1995, and subsequent data is available from him. See http://www.matrix.net/
Growth of Internet Hosts

<table>
<thead>
<tr>
<th>Date</th>
<th>Hosts</th>
<th>Year</th>
<th>New Survey</th>
<th>Old Survey</th>
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<tr>
<td>12/49</td>
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<td>66</td>
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<td>68</td>
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<td>81</td>
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</table>

Growth of Internet Domains

Hobbes Internet Timeline Copyright ©1998 Robert H. Zakon
http://www.zakon.org/pub/internet/history/HIT.html
Growth of Internet Networks

Growth of World Wide Networks
Will growth continue for ever?

The results show that we have already passed the point of fastest growth in host numbers in 1997, the level-off is due at about 47 (51) million hosts in 2002(3)! (Src: Mario’s Scenarios, 1999)
**S-Curve**

- The creative output of talented persons is similar to the growth curve, be it musical compositions, poems or scientific articles.

- The number of sold units of a certain models or types of industrial products follow S-curves. These products are, among others, computer models, car models, structural wood panels, Gothic cathedrals, particle accelerators, railroad tracks and super tankers.

- There are saturation processes. AIDS has already filled its niche in the USA at 0.95% of all deaths. The decline of deaths by tuberculosis also follows an S-curve. Air freight transport have reached 90% of its limit value by 2000.