An Introduction to the Internet

History and background

Uses and Issues Associated with the Internet

The terminology

The Conceptual 4-Layer Model

Protocols in the stack

Standards and RFCs

Services

Addresses and URLs

Routing

Summary

1957 Russia launch SPUTNIK and the USA create ARPA (Advanced Research Project Agency) who after creating a satellite look at computer networking

1969 ARPANET 4-nodes

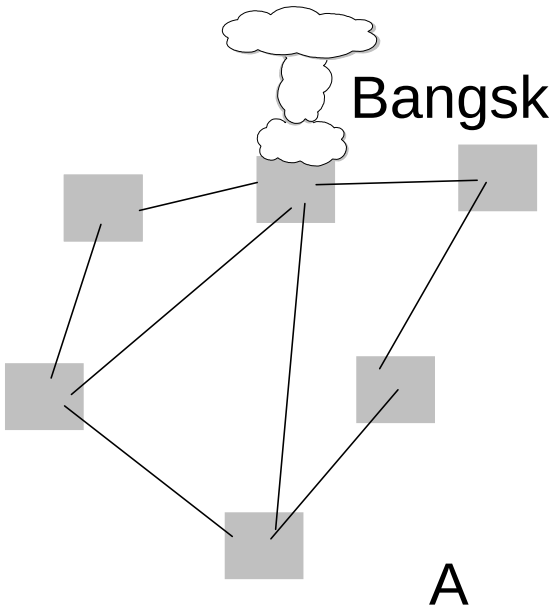
1971 15-nodes

1973 First international connections to ARPANET

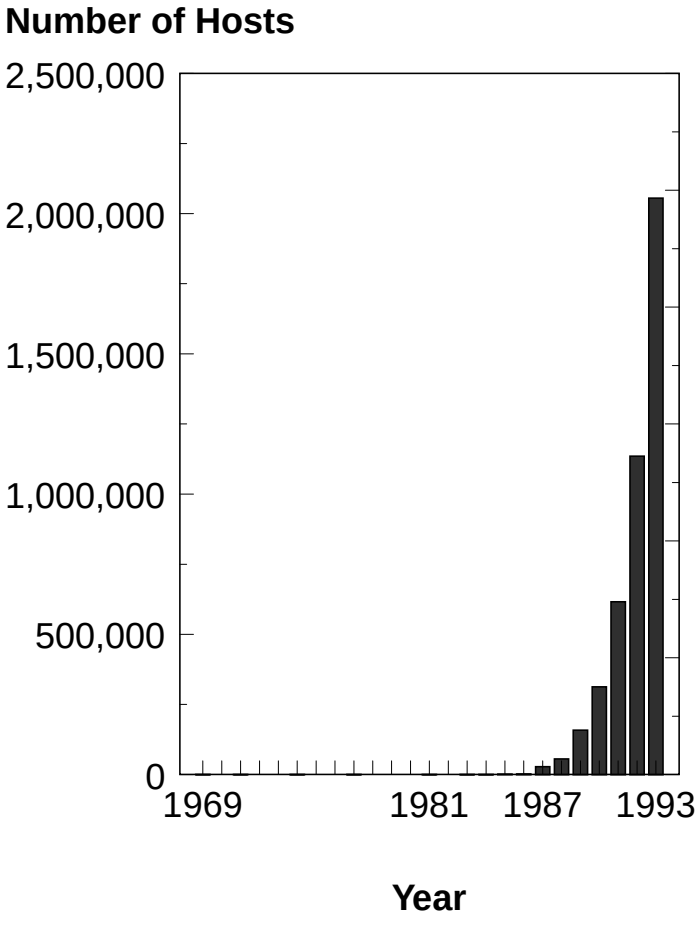
1982 TCP/IP established as protocol suite for ARPANET

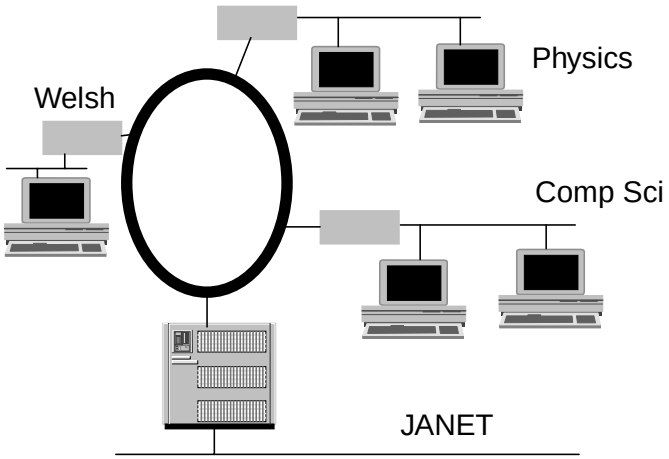
1992 World Wide Web released by CERN

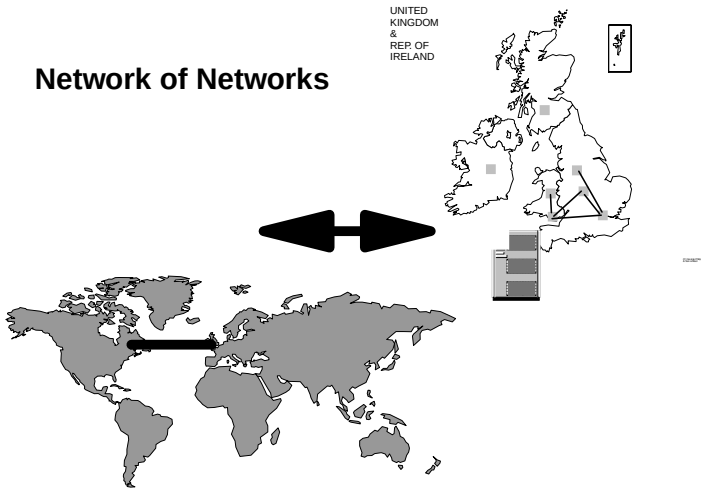
1993 Mosaic



A Resilient Network



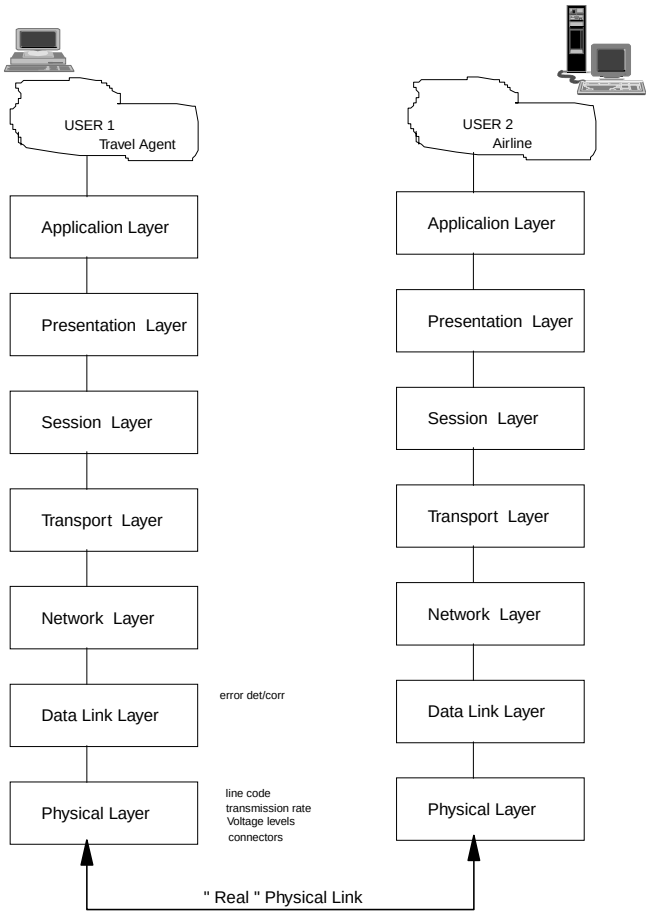




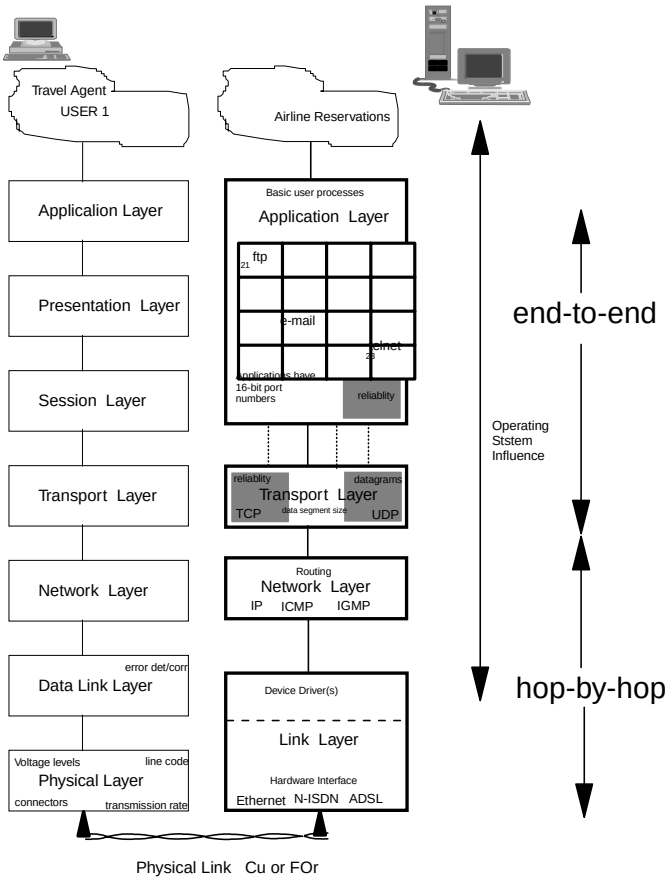
Uses and Issues Associated with the Internet

Use	Issues
Finding information	Quantity/time
File Transfer	Suitability of material
Advertising and commercial	Security money/information
News	
Discussion Groups Bulletin boards	No control
e-mail	Authentication Quality of data
Video conferencing	environmental - travel/presence
Surveillance and Control ?	Democracy

The OSI Reference Model

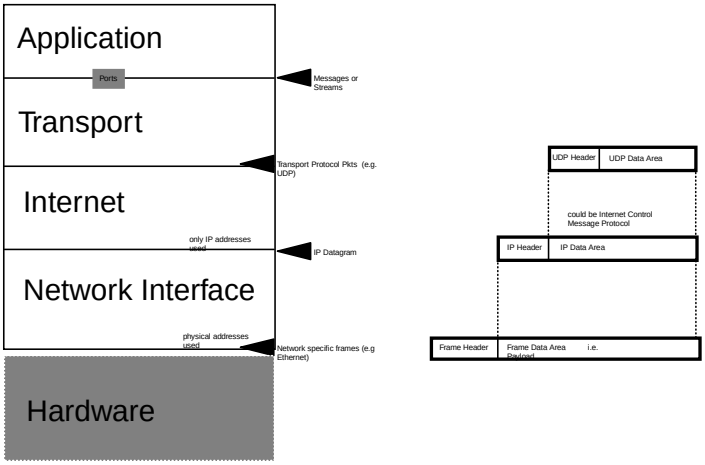


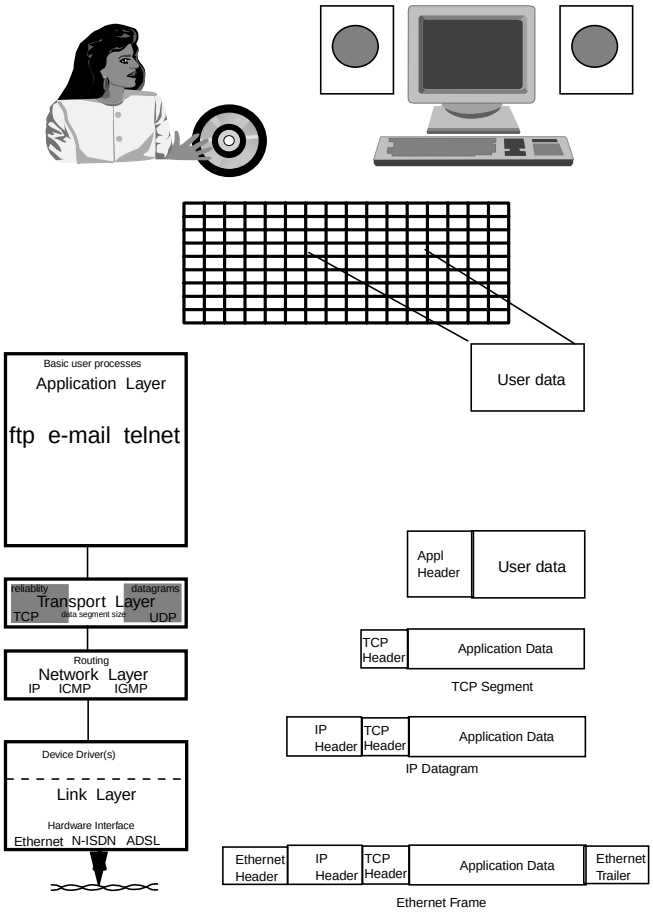
The Reference Models

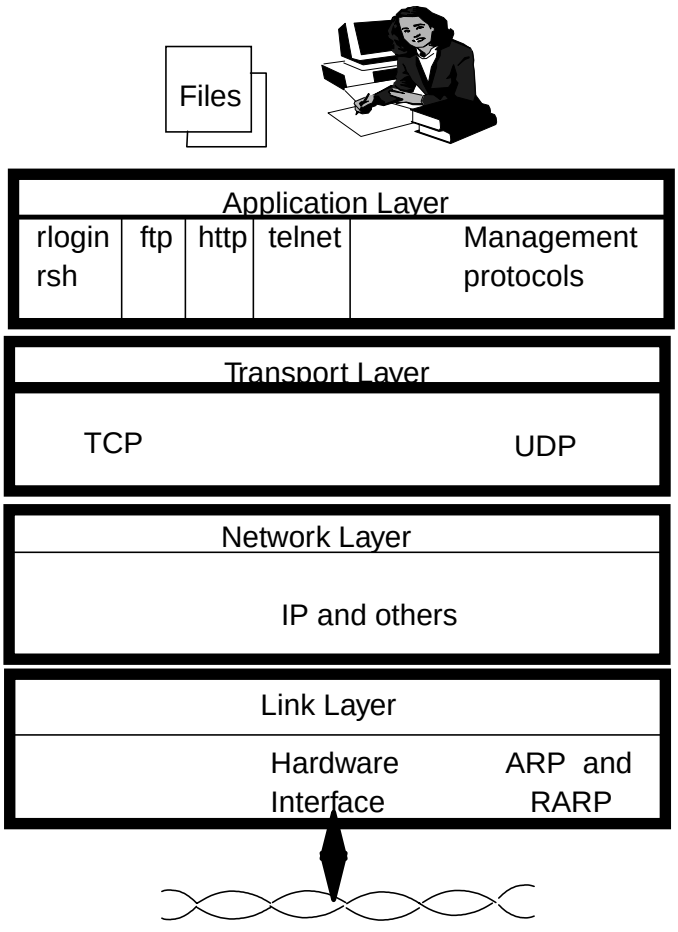


TCP/IP Conceptual Model and Message Formats

TCPIP1.PRE







Internet Standards and RFCs

There are a number of groups that control the technology used by the Internet :

The Internet Society (**ISOC**)
- promotes the growth and evolution

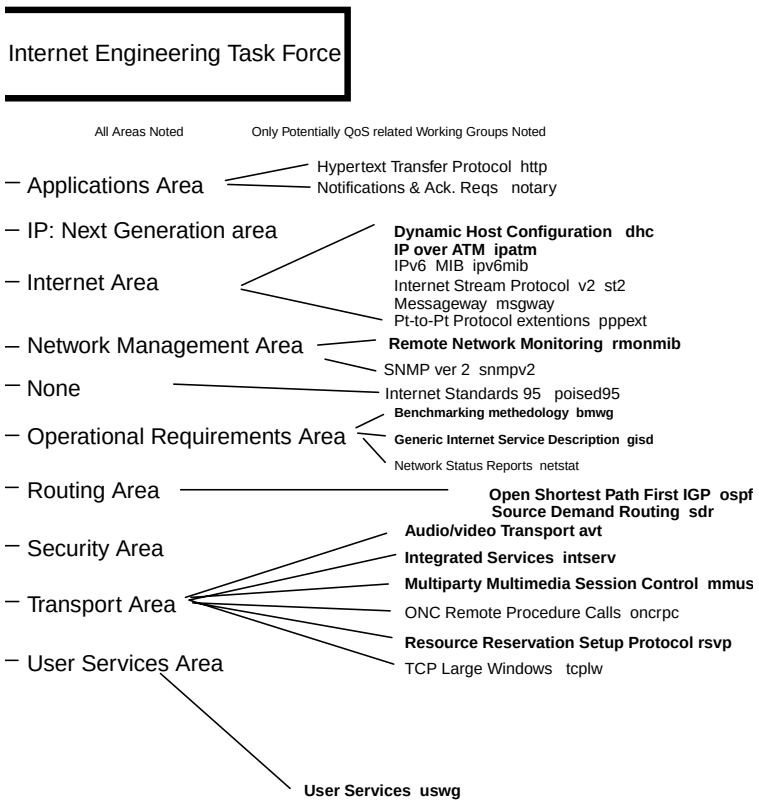
The Internet Architecture Board (**IAB**)
- technical overview and co-ordination
- quality of Internet standards

The Internet Engineering Task Force (I**ETF**)
- develops the specifications that become standards
- helped by the Internet Engineering Steering Group (**IESG**)

The Internet Research Task Force (**IRTF**)
- long term research

Official and non-official (even spoof) standards are published as a **Request for Comment**

Possible QoS Related Topics Dealt with by Internet Engineering Task Force



Internet Addresses , Ethernet Addresses and URLs

Every interface on an internet must have a unique *Internet Address (IP address)*

There is structure to IP addresses

32-bit address in a dot decimal notation
e.g. 144.124.16.21 osfa

Ethernet Card Addresses
e.g. 00:CC:A8:40:12:90

Uniform Resource Locators (URLs)
e.g. http://www.aber.ac.uk/departments.htm
type://host computer address/directory and file

Routing