



Internet Architecture

Michael Hahsler

18.2.2002

Contents

- Origin of the Internet
- Structure, Transmission, Addresses
- Services

History of the Internet

- 1970 ARPANET (Advanced Research Projects Agency)
 - US Military/Universities
 - Failure save network
- 1978 Introduction of the TCP/IP-Protocol
- 1986 National Science Foundation (NFS)
 - Network of Universities
 - Network of Networks
- 1993 WWW is introduced (Mosaic)
- Commercialization of the Internet

Structure of the Internet

- Network
- Server are the knots
- Several paths to every Server
- Backbones
- Name Server

Data Transmission on the Internet

- Protocol: TCP/IP
 - TCP: Transmission Control Protocol
 - IP: Internet Protocol
- Package oriented transmission
- Routing, Gateways
- IP-Addresses
195.58.165.125 or `www.webster.ac.at`
- Several servers on one machine (ports)

Internet Addresses

195.58.165.125
domain machine

http://www.webster.ac.at:80
protocol machine domain port

- Domain name registration services:

<http://www.internic.net/>

Internet Services

- WWW (World Wide Web)
- Telnet, SSH
- E-Mail: SMTP, POP3
- FTP (File Transfer)
- News (Newsgroups)
- IRC (Chat)
- ...

Internet Services II (/etc/services)

```
ftp      21/tcp    #File Transfer [Control]
ftp      21/udp    #File Transfer [Control]
ssh      22/tcp    #Secure Shell Login
ssh      22/udp    #Secure Shell Login
telnet   23/tcp
telnet   23/udp
...
smtp     25/tcp    mail #Simple Mail Transfer
smtp     25/udp    mail #Simple Mail Transfer
nsw-fe   27/tcp    #NSW User System FE
nsw-fe   27/udp    #NSW User System FE
...
http     80/tcp    www www-http #World Wide Web
http     80/udp    www www-http #World Wide Web
```