



# Grundlagen Internet-Technologien

## INF3171

„Das Web, das unbekannte Wesen“  
Internet, Web, HTTP, CGI

Version 1.01

15.04.2013





# Aktuelles





# das Web

- „Internet“ seit ~ 1969
  - einfache, textbasierte Dienste wie telnet und FTP
- „Web“ seit ~ 1989
  - Tim Berners-Lee am CERN
  - Grafik
  - Formatierung
  - Hyperlinks





# das Internet

- „Internet“ seit ~ 1969
  - 1972 ARPANET
    - Advanced Research Project Agency
    - 1.1.1970: Unix
  - 1982: tcp/ip
  - 1997 B-WiN
  - heute X-WiN





# Klassifikation von Netzen

typischer Bereich	Begriff	
100m	Local Area Network: <b>LAN</b>	Gebäude, Campus
10 km	Metropolitan Area Network: <b>MAN</b>	Stadt
1.000 km	Wide Area Network: <b>WAN</b>	Land
10.000 km	Internet (Global Area Network: <b>GAN</b> )	die Erde – und mehr?

• **VPN: virtuelles privates Netzwerk**





# typische Datenraten

Anwendung	erforderliche Datenrate
Email	0,3 bis 9,6 kb/s
Mobiltelefon (GSM)	9,6 kb/s
ISDN-Telefon	64 kb/s
Audio komprimiert	64 bis 256 kb/s
Audio unkomprimiert	1,4 Mb/s
Video	0,768 bis 10 Mb/s
Video HDTV	bis zu 2 Gb/s





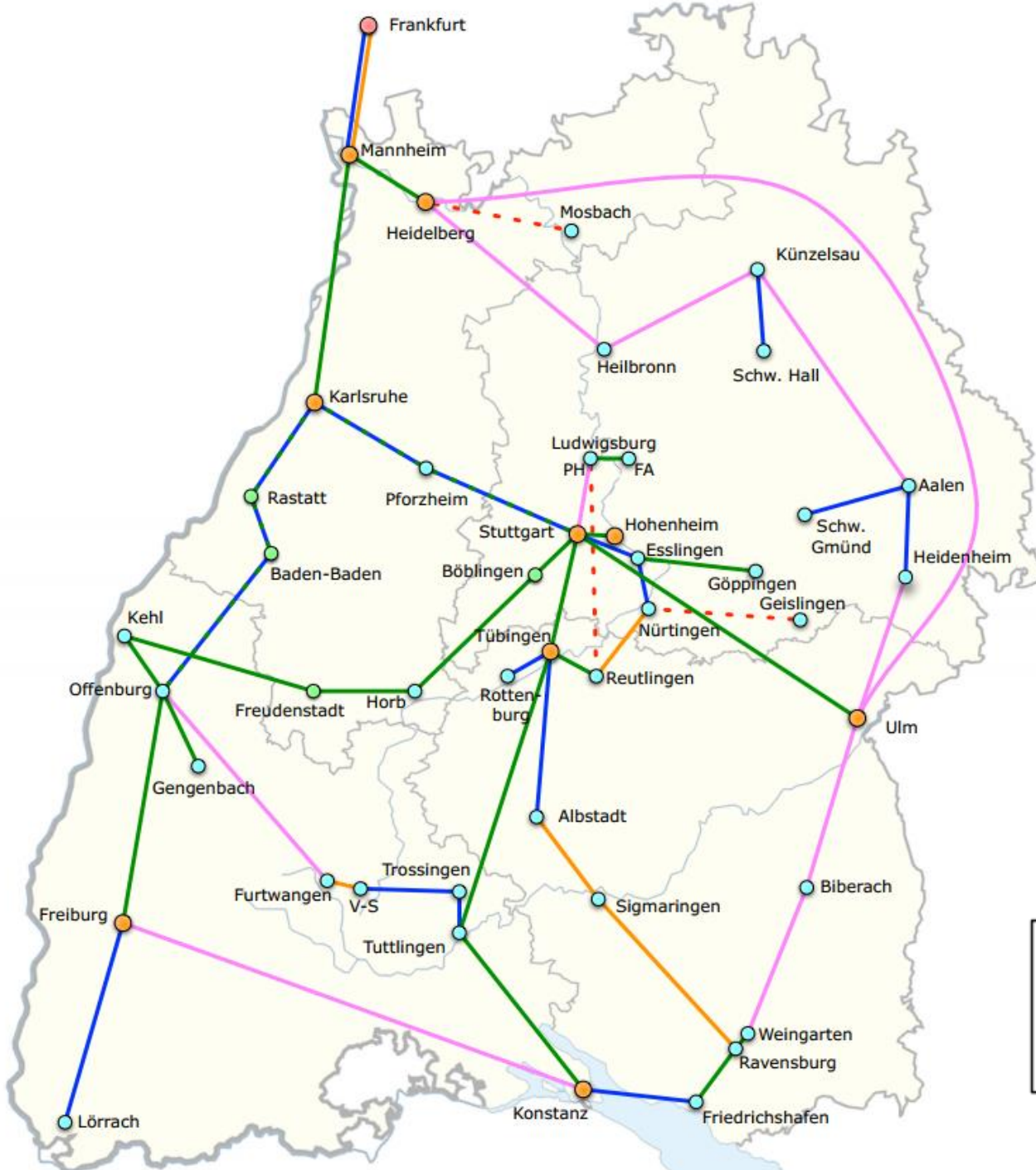
# unsere Netze

- LAN: Universität Tübingen/ZDV
  - 12.000 Rechner
  - 80 km Glasfaserkabel
    - insgesamt ca. 1.500 km Faserlänge
  - ~ 140 Gebäude mit 5.000 Räumen, 9.300 Anschlussdosen, 460 km Kabel
  - 650 Access-Points für WLAN



- WAN: BelWü und DFN
  - [www.belwue.de](http://www.belwue.de) und [www.dfn.de](http://www.dfn.de)









# der nächste Schritt

- seit Anfang 2013 Ausbau des BelWü  
auf **100 Gb/s**





# Kommunikationsprotokolle

- Kommunikationsprotokolle: Vereinbarung zur Kommunikation von Rechnern
  - "Regeln für den Austausch von Information"
  - Netzwerkprotokoll: Format für den Austausch von Nachrichten und Spezifikation der notwendigen Aktionen
- wir benötigen **Familie von Protokollen (Protocol Suites)**





# Internet-Protokolle

- ip: Internet Protocol
  - IPv4 und IPv6
- udp: User Datagram Protocol
- tcp: Transmission Control Protocol
  - IP-Adresse + Port (16 bit)
- DNS: Domain Name Service
- telnet (Port 23)
- FTP: File Transfer Protocol (Port 21)
- SMTP: Simple Mail Transfer Protocol
- POP: Post Office Protocol
- IMAP: Internet Message Access Protocol
- NTP: Network Time Protocol
- **insgesamt > 200 Protokolle!**





# Server für die Übungen

- wir üben auf dem Server

**134.2.2.38**

- Debian-Linux
- ZDV-Account
- Anmelden über SSH





```

134.2.2.38 - ID Übungen - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles

This copy of SSH Secure Shell is a non-commercial v
ersion.
This version does not include PKI and PKCS #11 func
tionality.

Last login: Thu Mar  1 10:55:42 2012 from 195.37.23
4.90
zrvwa01@infodienste:~$ exit
logout
Last login: Sun Apr 22 20:08:09 2012 from hsi-kbw-149-172-241-249.hsi13.ka
bel-badenwuerttemberg.de
zrvwa01@infodienste:~$ who
zrvwa01 pts/0      Apr 22 20:08 (hsi-kbw-149
denwuerttemberg.de)
zrvwa01@infodienste:~$ whoami
zrvwa01
    
```

About SSH Secure Shell

**SSH® Secure Shell (TM)**

Version: 3.2.9 (Build 283)  
Product code: 27010-32X00  
© 2000-2003 SSH Communications Security Corp. All rights reserved. <http://www.ssh.com>

**This product is licensed to:**

This copy of SSH Secure Shell is a non-commercial version which does not include PKI and PKCS #11 functionality.

This non-expiring version may not be used for any commercial purposes.



ssh® is a registered trademark of SSH Communications Security Corp. in the United States and in certain other jurisdictions.

SSH2, the SSH logo, SSH Certifier are trademarks of SSH Communications Security Corp. and may be registered in certain jurisdictions. All other names and marks are property of their respective owners.

2:134.2.2.38 - ID Übungen - SSH Secure File Transfer

File Edit View Operation Window Help

Quick Connect Profiles

ime/zrvwa01

Local Name	Size	Type	Remote Name	Size	Type
Bibliotheken		System...	apache		Folder
thomas		System...	apache2		Folder
Mouton		System...	apache_test		Folder
Netzwerk		System...	perl		Folder
Systemsteuerung		System...	php		Folder
Papierkorb		System...	php5.3		Folder
Systemsteuerung		System...	public_html		Folder
Adobe Acrobat 9 Pro	2,027	Verknü...	sql		Folder
Adobe Reader 9	2,020	Verknü...	typo3		Folder
Cygwin	969	Verknü...	htpd-2.2.14.tar.gz	6,684,0...	GZ-Dat...
Eritz8	2,133	Verknü...	mysqlconfi...	190	Datai...

Transfer | Queue

Source File	Source Directory	Destination Dire...	Size	Status	Speed	Time

Connected to 134.2.2.38 - /home/zrvwa01 SSH2 - aes128-cbc - hmac-n 11 items (6,7 MB)



# SSH und die Übungen

- telnet und FTP sind unverschlüsselte Protokolle und deshalb heute kaum noch gebräuchlich („verboten“)
- alternative: SSH
  - Secure Shell
  - verschlüsselt
  - Standard-Port: 22
- verschiedene (freie) Client-Anwendungen (putty, ssh)

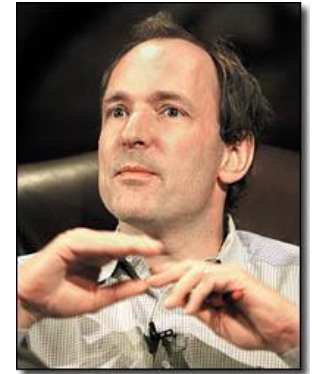




# Das WorldWideWeb (WWW)

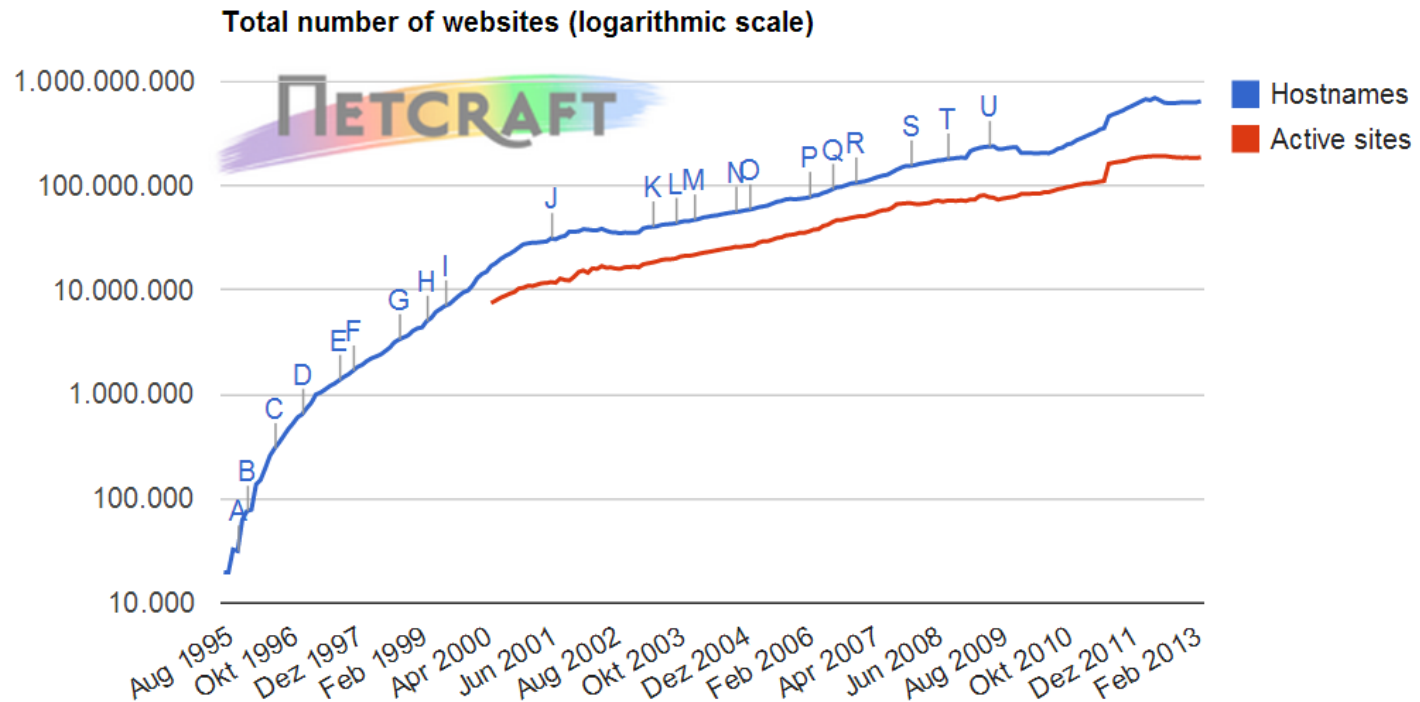
- Entwicklung des WWW am CERN ab 1989 (Tim Berners-Lee)
  - Hypertextsystem, Hyperlinks
- graphischer Browser Mosaic (Marc Andreessen)
- Netscape: Anbieter von WWW-Browsern und WWW-Servern

(das WWW ist nur einer von mehreren Diensten im Internet)





# Wachstum des Webs



Quelle: [www.netcraft.com](http://www.netcraft.com)





# WorldWideWeb: Proposal for a HyperText Project

To: P.G. Innocenti/ECP, G. Kellner/ECP, D.O. Williams/CN  
Cc: R. Brun/CN, K. Gieselmann/ECP, R.€ Jones/ECP, T.€ Osborne/CN, P. Palazzi/ECP, N.€ Pellow/CN, B.€ Pollermann/CN, E.M.€ Rimmer/ECP  
From: T. Berners-Lee/CN, R. Cailliau/ECP  
Date: 12 November 1990

The attached document describes in more detail a Hypertext project.

HyperText is a way to link and access information of various kinds as a web of nodes in which the user can browse at will. It provides a single user-interface to large classes of information (reports, notes, data-bases, computer documentation and on-line help). We propose a simple scheme incorporating servers already available at CERN.

The project has two phases: firstly we make use of existing software and hardware as well as implementing simple browsers for the user's workstations, based on an analysis of the requirements for information access needs by experiments. Secondly, we extend the application area by also allowing the users to add new material.

Phase one should take 3 months with the full manpower complement, phase two a further 3 months, but this phase is more open-ended, and a review of needs and wishes will be incorporated into it.

The manpower required is 4 software engineers and a programmer, (one of which could be a Fellow). Each person works on a specific part (eg. specific platform support).

Each person will require a state-of-the-art workstation, but there must be one of each of the supported types. These will cost from 10 to 20k each, totalling 50k. In addition, we would like to use commercially available software as much as possible, and foresee an expense of 30k during



# „Bestandteile des Webs“

- Web-Server
- Web-Client
- Protokoll zwischen beiden





# Web-Server

- 1989: CERN-Webserver
- 1995: Rob McCool: NCSA-Server
- Patches
  - Legende (?): „a patchy server“ → Apache
- [www.apache.org](http://www.apache.org) und [httpd.apache.org](http://httpd.apache.org)

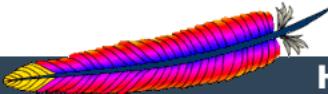




Welcome! - The Apache x

← → ↻ httpd.apache.org

D800



# Apache

## HTTP SERVER PROJECT

**Essentials**

- [About](#)
- [License](#)
- [FAQ](#)
- [Security Reports](#)

**Download!**

- [From a Mirror](#)

**Documentation**

- [Version 2.4](#)
- [Version 2.2](#)
- [Version 2.0](#)
- [Trunk \(dev\)](#)
- [Wiki](#)

**Get Support**

- [Support](#)

**Get Involved**

- [Mailing Lists](#)
- [Bug Reports](#)
- [Developer Info](#)

**Subprojects**

- [Docs](#)
- [Test](#)
- [Flood](#)
- [libapreg](#)
- [Modules](#)
- [mod\\_fcgid](#)
- [mod\\_ftp](#)

**Miscellaneous**

- [Contributors](#)
- [Sponsors](#)

**The Number One HTTP Server On The Internet**

The Apache HTTP Server Project is an effort to develop and maintain an open-source HTTP server for modern operating systems including UNIX and Windows NT. The goal of this project is to provide a secure, efficient and extensible server that provides HTTP services in sync with the current HTTP standards.

Apache httpd has been the most popular web server on the Internet since April 1996, and celebrated its 17th birthday as a project this February.

The Apache HTTP Server ("httpd") is a project of [The Apache Software Foundation](#).

**Apache httpd 2.4.4 Released** 2013-02-25

The Apache Software Foundation and the Apache HTTP Server Project are pleased to [announce](#) the release of version 2.4.4 of the Apache HTTP Server ("Apache"). This version of Apache is our latest GA release of the new generation 2.4.x branch of Apache HTTPD and represents fifteen years of innovation by the project, and is recommended over all previous releases. This version of Apache is principally a security and bug fix release.

This version of httpd is a major release of the 2.4 stable branch, and represents the best available version of Apache HTTP Server. [New features](#) include Loadable MPMs, major improvements to OSCP support, mod\_lua, Dynamic Reverse Proxy configuration, Improved Authentication/Authorization, FastCGI Proxy, New Expression Parser, and a Small Object Caching API.

[Download](#) | [New Features in httpd 2.4](#) | [Complete ChangeLog for 2.4](#) | [ChangeLog for just 2.4.4](#)

**Apache httpd 2.2.24 Released** 2013-02-26

The Apache HTTP Server Project is proud to [announce](#) the release of version 2.2.24 of the Apache HTTP Server ("httpd"). This version is principally a security and bugfix release. There is an official [vulnerability list](#) of those issues fixed in this release.

This version of httpd is a major release of the 2.2 stable branch. [New features](#) include Smart Filtering, Improved Caching, AJP Proxy, Proxy Load Balancing, Graceful Shutdown support, Large File Support, the Event MPM, and refactored Authentication/Authorization.

[Download](#) | [New Features in httpd 2.2](#) | [ChangeLog for 2.2.24](#) | [Complete ChangeLog for 2.2](#)

**Apache httpd 2.0.64 Released** 2010-10-19

The Apache HTTP Server Project [announces](#) the legacy release of version 2.0.64 of the Apache HTTP Server ("httpd").

This version of httpd is principally a security and bugfix release.

For further details, see the [announcement](#).

[Download](#) | [New Features in httpd 2.0](#) | [ChangeLog for 2.0.64](#) | [Complete ChangeLog for 2.0](#)





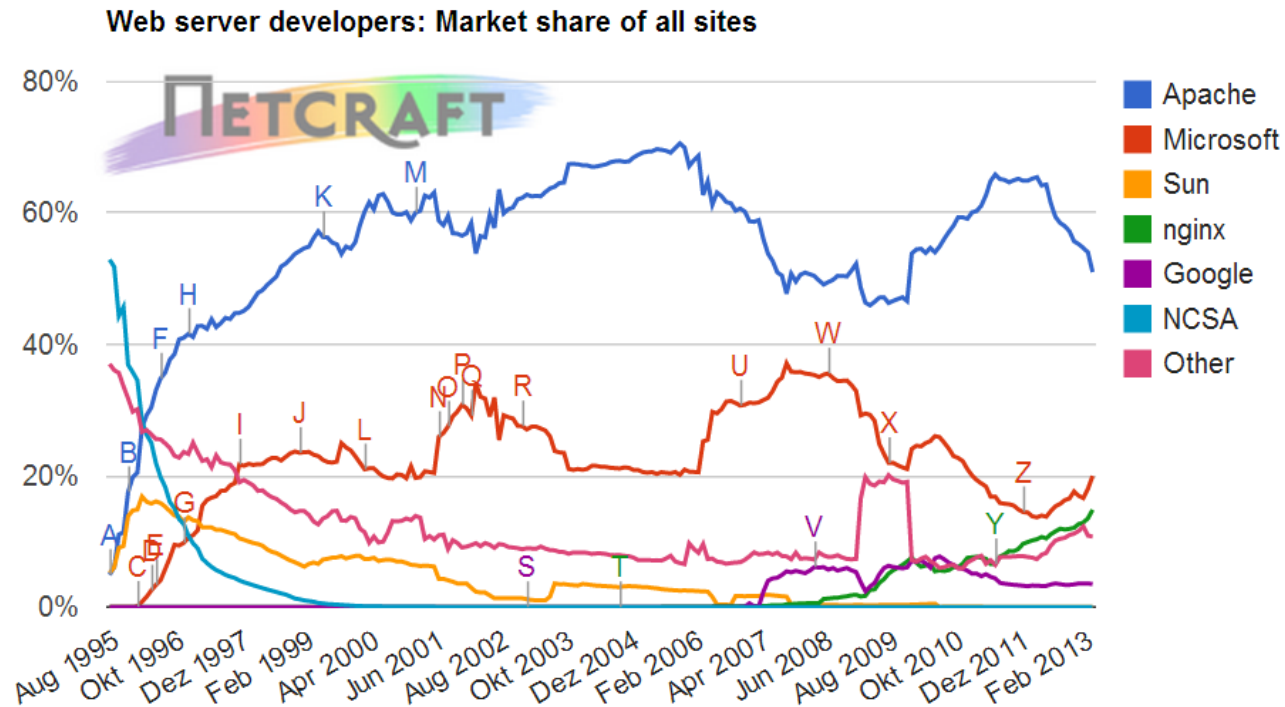
# in diesem Semester

- in dieser Veranstaltung benutzen wir Apache
  - dieser ist aber bereits vorhanden
    - Modul `user_dir` wird verwendet
  - Installation und Konfiguration in „Grundlagen der Web-Entwicklung“ INF3172





# Verteilung der Web-Server



Quelle: [www.netcraft.com](http://www.netcraft.com)





# Was „ist ein Web-Server“?

- Software, die permanent läuft
- wartet auf tcp-Netzwerkport 80 auf Anfragen und beantwortet diese
- schreibt Protokolldateien
- ist konfigurierbar und sicher





134.2.2.38 - ID Übungen - SSH Secure Shell

File Edit View Window Help

Quick Connect Profiles

```

zrvwa01@infodienste:~$
zrvwa01@infodienste:~$
zrvwa01@infodienste:~$ ps -ef|grep apache
zxmcs06  3109      1  0 Mar24 ?        00:00:13 /home/zxmcs06/apache2/bin/httpd -k start
zxmcs06  3207    3109  0 Mar24 ?        00:00:03 /home/zxmcs06/apache2/bin/httpd -k start
zxmell11 5906      1  0 Apr05 ?        00:00:08 /home/zxmell11/apache2/bin/httpd -k start
zxmell11 5907    5906  0 Apr05 ?        00:00:00 /home/zxmell11/apache2/bin/httpd -k start
zxmell11 5908    5906  0 Apr05 ?        00:00:00 /home/zxmell11/apache2/bin/httpd -k start
zxmell11 5909    5906  0 Apr05 ?        00:00:00 /home/zxmell11/apache2/bin/httpd -k start
zxmell11 5910    5906  0 Apr05 ?        00:00:00 /home/zxmell11/apache2/bin/httpd -k start
zxmell11 5911    5906  0 Apr05 ?        00:00:00 /home/zxmell11/apache2/bin/httpd -k start
root      8714      1  0 04:01 ?        00:00:00 /usr/sbin/apache2 -k start
www-data  8715    8714  0 04:01 ?        00:00:00 /usr/sbin/apache2 -k start
www-data  8716    8714  0 04:01 ?        00:00:00 /usr/sbin/apache2 -k start
www-data  8717    8714  0 04:01 ?        00:00:00 /usr/sbin/apache2 -k start
zxmcs06 14470    3109  0 Apr03 ?        00:00:01 /home/zxmcs06/apache2/bin/httpd -k start
zxmcs06 14522    3109  0 Apr03 ?        00:00:01 /home/zxmcs06/apache2/bin/httpd -k start
zxmcs06 14823    3109  0 Apr03 ?        00:00:03 /home/zxmcs06/apache2/bin/httpd -k start
zrvwa01 18834  18744  0 17:08 pts/0    00:00:00 grep apache
zxmcs06 19102    3109  0 Apr15 ?        00:00:00 /home/zxmcs06/apache2/bin/httpd -k start
zxmcs06 19373    3109  0 Apr14 ?        00:00:00 /home/zxmcs06/apache2/bin/httpd -k start
zxmcs06 19424    3109  0 Apr14 ?        00:00:00 /home/zxmcs06/apache2/bin/httpd -k start
zxmcs06 22865    3109  0 Apr04 ?        00:00:01 /home/zxmcs06/apache2/bin/httpd -k start
zxmcs06 23616    3109  0 Apr02 ?        00:00:02 /home/zxmcs06/apache2/bin/httpd -k start
zxmcs06 29439    3109  0 Apr06 ?        00:00:00 /home/zxmcs06/apache2/bin/httpd -k start
zrvwa01@infodienste:~$

```

Connected to 134.2.2.38

SSH2 - aes128-cbc - hmac-n 90x26







# der Web-Client

- Client-Software, die auch grafisch Web-Sites anzeigen kann
- früher Browser: Mosaic
  - → Netscape
- heute IE (9/8/6), Firefox, Opera, Safari, Chrome, ...
  - auch Lynx





Opera

Universität Tübing... x +

Web www.uni-tuebingen.de

Search with Google

EBERHARD KARLS  
UNIVERSITÄT  
TÜBINGEN

Google™ Benutzerdefiniert →

Uni A-Z →  
Anmelden →


STUDIENINTERESSIERTE | STUDIERENDE | BESCHÄFTIGTE | ALUMNI | PRESSE

UNIVERSITÄT | AKTUELLES | STUDIUM | FORSCHUNG | FAKULTÄTEN | EINRICHTUNGEN | INTERNATIONAL | SERVICE

**Aktuelle Veranstaltungen  
an der Universität Tübingen**

Personensuche (EPV)


**Video-Podcast "Neu in Tübingen"**


  
Prof. Dr. Klaus Sachs-Hombach  
Medienwissenschaft, Schwerpunkt  
Medieninnovation / Medienwandel  
(11.04.2012)

Video-Podcast (Flash)  
Video-Podcast (Silverlight)  
Archiv "Neu in Tübingen"

**Newsticker**

Stiftung Weltethos (19.04.2012):  
Horst Köhler wird Nachfolger von Hans Küng

  
Professor Dr. Dr. h. c. mult. Hans Küng.

  
Ab März 2013 neuer Präsident der Stiftung  
Weltethos: Alt-Bundespräsident Professor Dr.  
Horst Köhler. Fotos: Friedhelm Albrecht

Im Rahmen der 10. Weltethos-Rede, die am Mittwoch in der Neuen Aula der Universität

Update Ready





```

134.2.2.38 - ID Übungen - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles
# Universität Tübingen - Landingpage (p1 of 2)
#RSS-Feed
Logo Universität Tübingen
Bildleiste
* Aktuell
* Forschung
* Studium
* Fakultäten
* Einrichtungen
* Universität
* International

Suche
----- Suche
Uni von A-Z Uni von A-Z
Kontakt
Schnelleinstieg
[-----]
Zielgruppen
Studieninteressierte
Studierende
Beschäftigte
(NORMAL LINK) Use right-arrow or <return> to activate.
Arrow keys: Up and Down to move. Right to follow a link; Left to go back.
H)elp O)ptions P)rint G)o M)ain screen Q)uit /=search [delete]=history list
Connected to 134.2.2.38 SSH2 - aes128-cbc - hmac-n 90x26

```

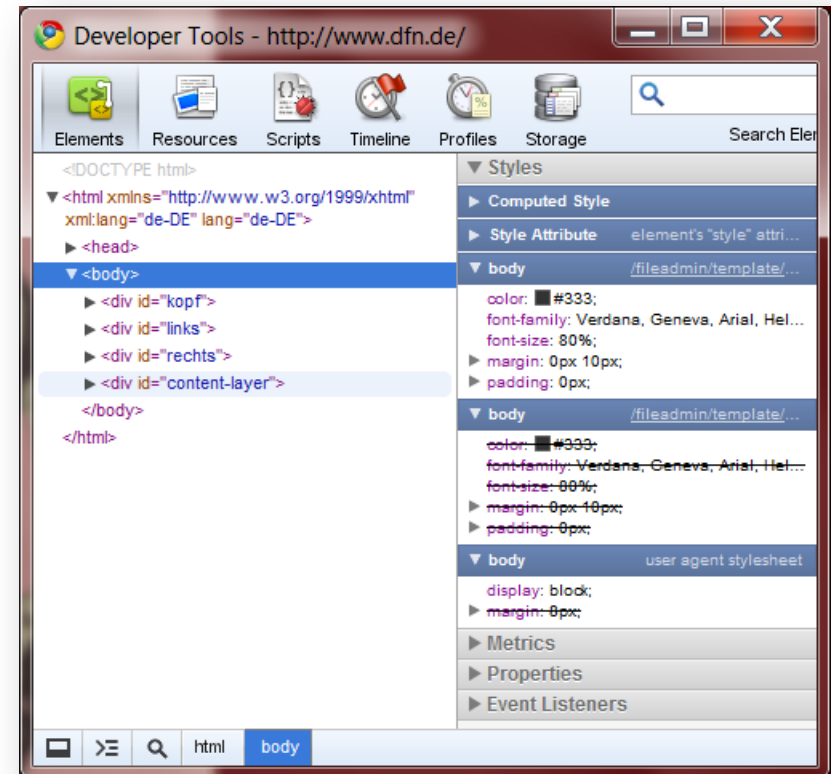




# Entwicklertools in Browsern

- verschiedene Browser bieten sehr nützliche Entwicklertools

– etwa Firebug für Firefox





# Hinweis zu Browsern

- professioneller Umgang:  
Webseiten immer mit **verschiedenen Browsern testen!**
  - nicht nur Browser, auch Client-Betriebssysteme, Schriftgröße, Auflösung testen
- Verteilung der Browser und **Zielgruppen** beachten!





# das HTTP-Protokoll

- Kommunikation zwischen Client und Server
  - Versionen 0.9 / 1.0 / 1.1
    - **GET** (Anfordern)
    - **POST** (wie GET, aber separates IO)
    - **HEAD** (Header-Informationen)
    - **PUT** (Upload)
    - **TRACE** (Proxys Ausweisen)
    - **DELETE** (Entfernt auf dem Server)
    - **OPTIONS** (mögliche HTTP-Anweisungen)
    - **CONNECT** (Proxy)
  - Simulation über `telnet <server> 80`





```

134.2.2.38 - ID Übungen - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles

zrvwa01@infodienste:~$
zrvwa01@infodienste:~$
zrvwa01@infodienste:~$ telnet www.dfn.de 80
Trying 194.95.237.15...
Connected to www.dfn.de.
Escape character is '^]'.
GET / HTTP/1.0

HTTP/1.1 200 OK
Date: Sun, 18 Apr 2010 17:27:36 GMT
Server: Apache/2.2.9 (Debian) mod_auth_kerb/5.3 DAV/2 SVN/1.5.1 PHP/5.2.6-1+lenny8 with Su
hosin-Patch proxy_html/3.0.0 mod_ssl/2.2.9 OpenSSL/0.9.8g mod_perl/2.0.4 Perl/v5.10.0
X-Powered-By: PHP/5.2.6-1+lenny8
Set-Cookie: fe_typo_user=cec5ce9fcad2d868ac316f261b25dbaf; path=/
Connection: close
Content-Type: text/html; charset=iso-8859-1

<!DOCTYPE html
  PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="de-DE" lang="de-DE">
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" />

<!--
  This website is powered by TYPO3 - inspiring people to share!

Connected to 134.2.2.38          SSH2 - aes128-cbc - hmac-n 90x26

```





# Antwort

- die Antwort besteht aus
  - Antwort-Code
  - Header-Infos
  - Dokument in HTML-Formatierung







# typischer Header

- `HTTP/1.1 200 OK`  
`Date: Mon, 19 Apr 2013 13:51:43 GMT`  
`Server: Apache/2.2.9 (Debian)`  
`Content-Type: text/html; charset=utf-8`  
`Set-Cookie:`  
`fe_typo_user=5e7981f2d875faf81927e3e65c66afc8;`  
`path=/`  
`Via: 1.0 192.168.200.20`  
`Connection: close`





# Server-Antwortcodes

- 100 - 199 : »informativ«  
(werden erst ab HTTP1.1 genutzt)
- 200 - 299 : Client-Request erfolgreich
- 300 - 399 : Client-Request umgeleitet; weitere Aktionen erforderlich
- 400 - 499 : Client-Request unvollständig
- 500 - 599 : Server-Error





# einige Server-Antwortcodes

200	ok	400	bad request
201	created	402	unauthorized
202	accept	403	forbidden
204	no content	404	not found
300	multiple choices	500	internal server error
301	moved permanently	501	not implemented
302	moved temporarily	502	bad gateway
304	not modified	503	service unavailable





# more special...

- momentan verwendet Apache 57 HTTP-Antwortcodes

– ...dabei besonders nette:

418 I'm a teapot

[ErrorDocument I'm a teapot](#) | [Sample 418 I'm a teapot](#)

The HTCPCP server is a teapot. The responding entity MAY be short and stout. Defined by the April Fools specification RFC 2324. See Hyper Text Coffee Pot Control Protocol for more information.





# Dynamik im Web

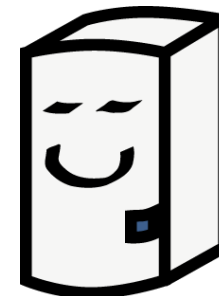
- Dynamik beim Client

- JavaScript
- Flash
- Silverlight
- Java Applets



- Dynamik beim Server

- CGI (mit Perl, C, ...)
- PHP
- Java Servlets



- Beispiele google, ebay, amazon, selfhtml, ...



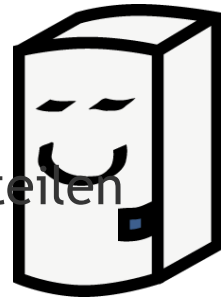
# Vergleich

## • Client

- direkte Interaktion
- keine Netzbelastung
- CPU des Clients
- keine DB-Aktion
- Gefahr für Client
- verschiedene Clients führen zu verschiedenen Ergebnissen
- Sourcecode wird ausgeliefert: Kopie

## • Server

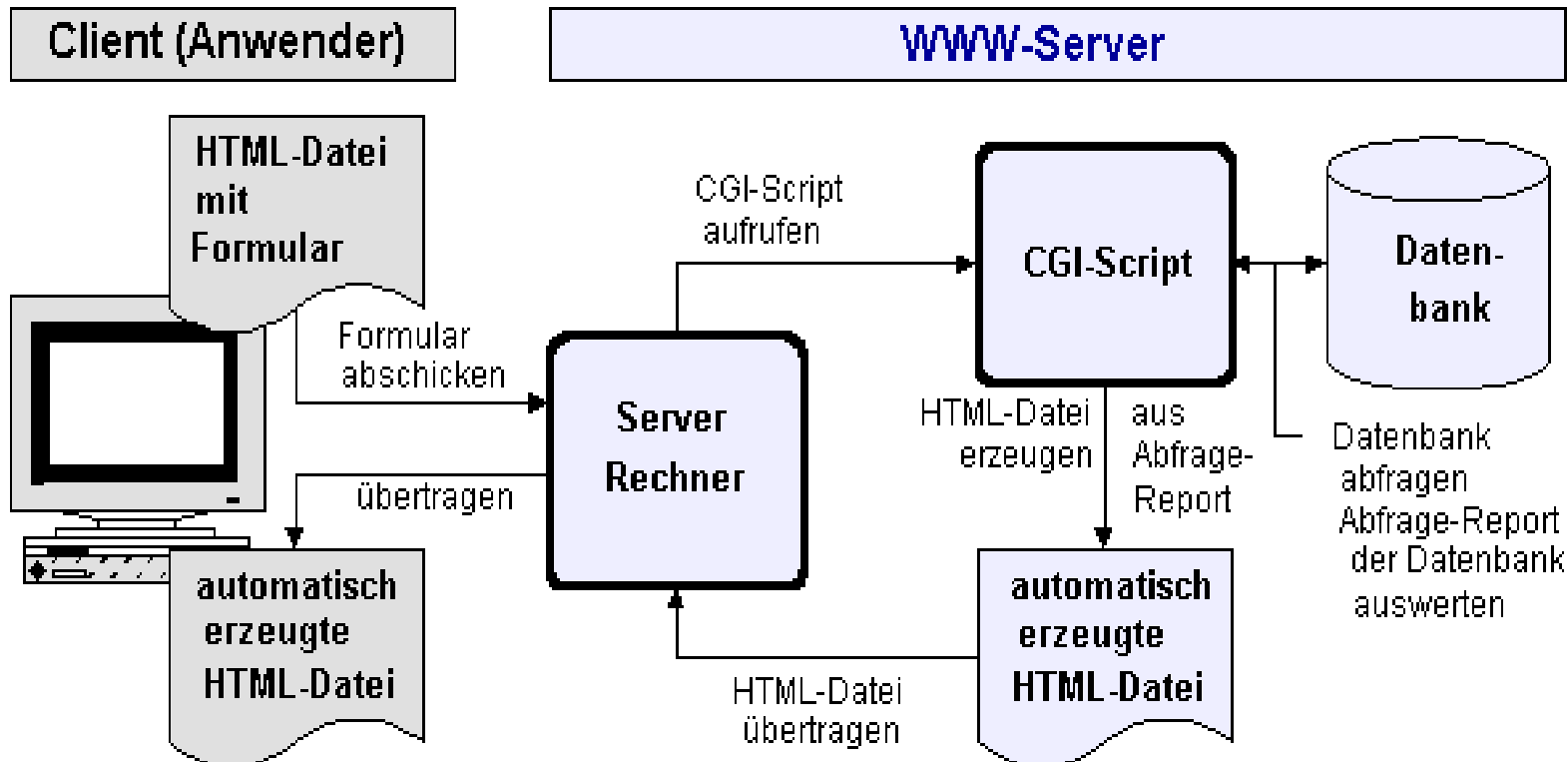
- Diensteanbieter hat alles in der Hand
- Datenbankanbindung
- zum Client wird nur HTML übertragen
- Performance: alle teilen sich Server-CPU
- keine Interaktion





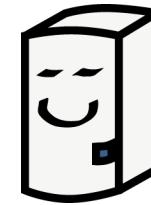
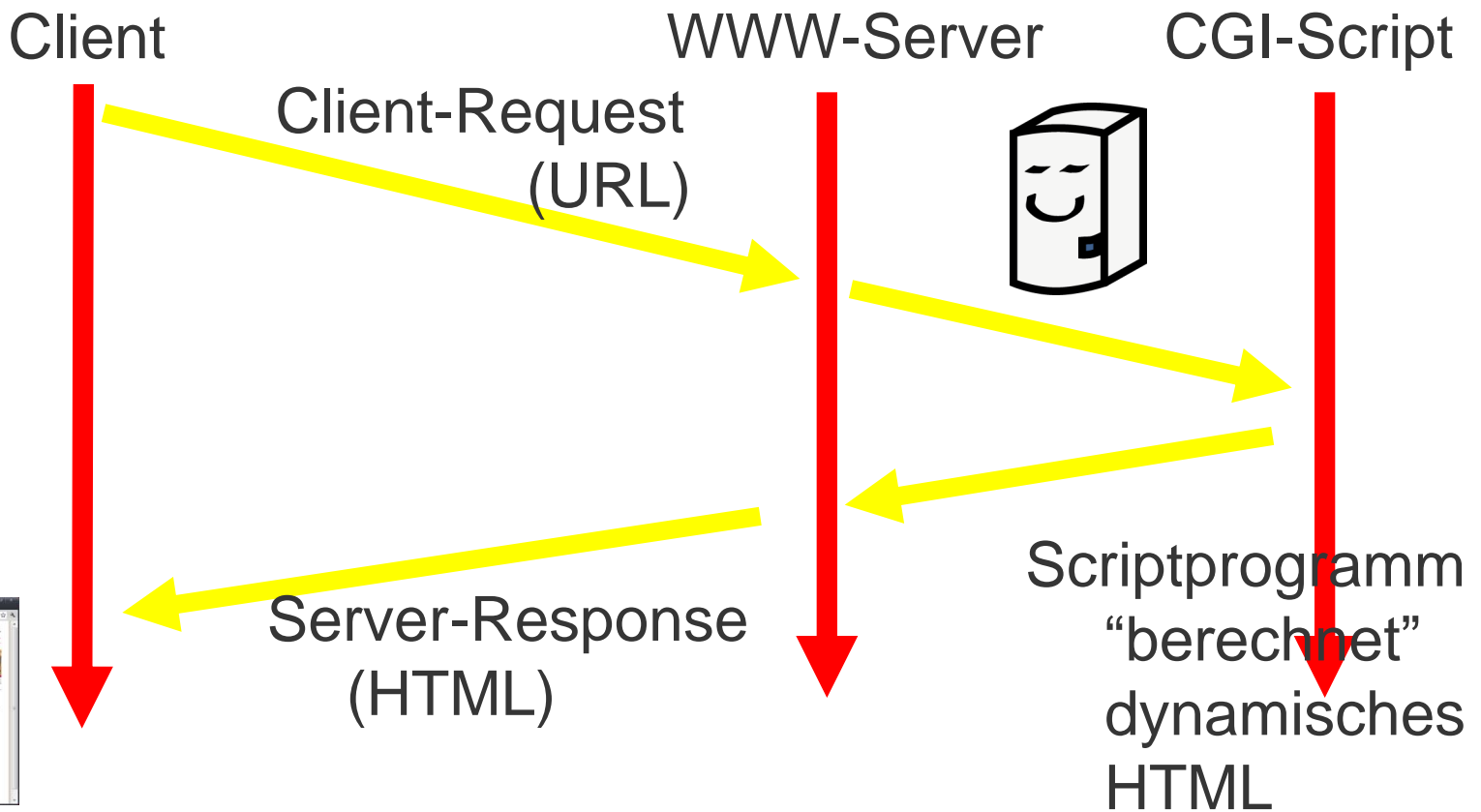
# cgi - Common Gateway Interface

- Möglichkeit, um im WWW serverseitig Programme bereitzustellen, die von HTML-Seiten gestartet werden und HTML-Code produzieren





# Struktur einer HTTP-Transaktion mit cgi

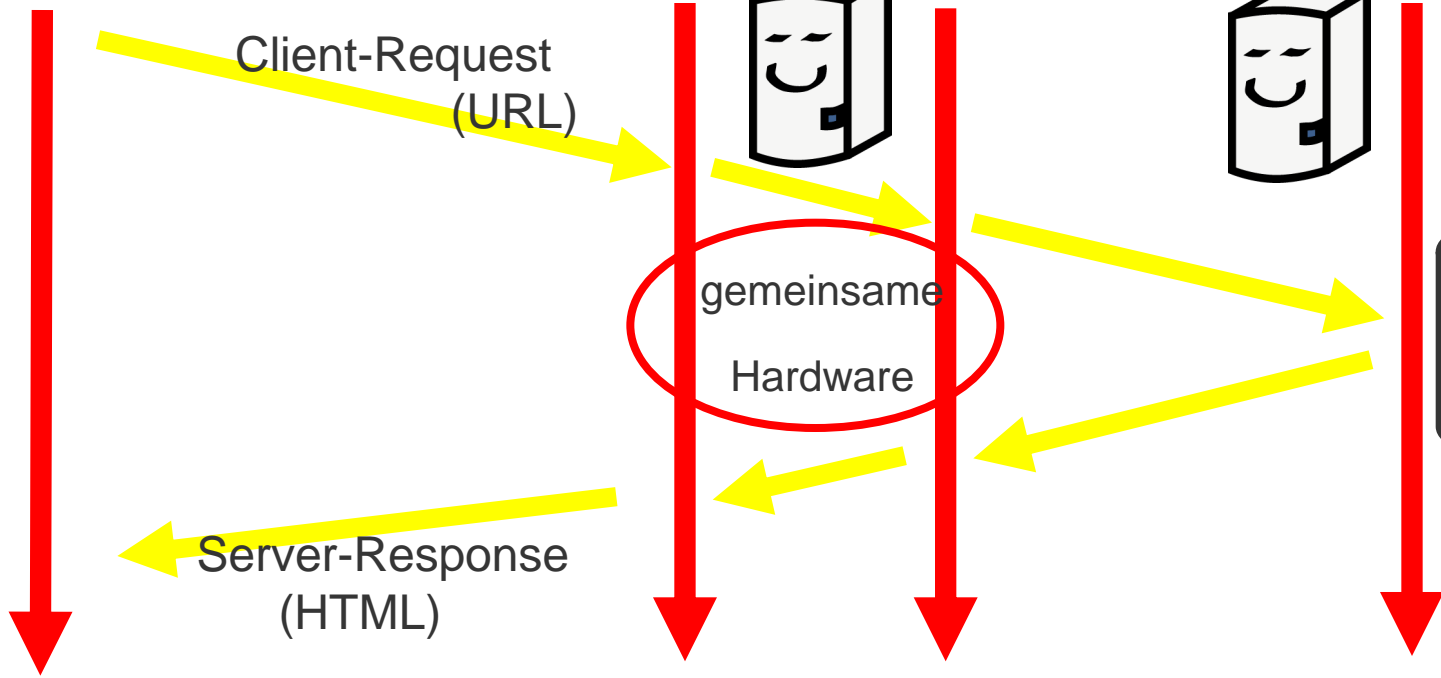
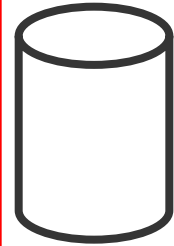
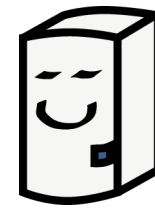
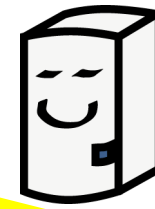






# Struktur einer HTTP-Transaktion mit *cgi und Datenbank*

Client                      WWW-Server cgi-Script                      DB-Server





# Umgebungsvariablen

```

134.2.2.38 - ID Übung - SSH Secure Shell
File Edit View Window Help
Quick Connect Profiles

zrvwa01@infodienste:~$ printenv
TERM=vt100
SHELL=/bin/bash
XDG_SESSION_COOKIE=19ca756ff08bfb6c9a05283e5022278b-1366451943.767822-1228342820
SSH_CLIENT=109.193.159.29 53427 22
SSH_TTY=/dev/pts/2
JRE_HOME=/usr/lib/jvm/java-7-openjdk-amd64/jre
USER=zrvwa01
LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:su=37;41:sg=30;
43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arj=01;31:*.taz=01;31:*.lzh=01;31:*.lzma=01
;31:*.tlz=01;31:*.txz=01;31:*.zip=01;31:*.z=01;31:*.Z=01;31:*.dz=01;31:*.gz=01;31:*.lz=01;31:*.xz=01;31:*.bz2=01;31:*.
bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31
:*.rar=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.jpg=01;35:*.jpeg=01;35:*.gif=01;35:*.bmp=01
;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.sv
g=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;3
5:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01
;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=
01;35:*.cgm=01;35:*.emf=01;35:*.axv=01;35:*.anx=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m
id=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.axa=00;36:*.oga=00;36:
*.spx=00;36:*.xspf=00;36:
MAIL=/var/mail/zrvwa01
PATH=/usr/local/bin:/usr/bin:/bin:/usr/local/games:/usr/games
JAVA_BINDIR=/usr/lib/jvm/java-7-openjdk-amd64/jre/bin
PWD=/home-link/zrvwa01
JAVA_HOME=/usr/lib/jvm/java-7-openjdk-amd64/jre
LANG=de_DE.UTF-8
PS1=\[\033[01;34m\]\u\[\033[00;36m\]@\h:\[\033[00;34m\]\w$ \[\033[00m\]
JDK_HOME=/usr/lib/jvm/java-7-openjdk-amd64
SHLVL=1
HOME=/home-link/zrvwa01
LOGNAME=zrvwa01
SSH_CONNECTION=109.193.159.29 53427 134.2.2.38 22
_=/usr/bin/printenv

Connected to 134.2.2.38
SSH2 - aes128-cbc - hmac-n 117x33

```



# Auszeichnungssprache HTML

- Kernbestandteile:
  - Formatierungen wie fett, Überschrift, ...
  - Hyperlinks
  - Grafiken sind einfach einzubinden
  - auch Multimedia einfach einzubinden
  - **aber: keine Dynamik**
  
- mehr in nächster Vorlesung





# URL

- URL: Uniform Ressource Locators (RFC 1738)
- generelle Syntax:
  - `schema:pfad`
- `http://hostname[:port]/dokumentenpfad`  
etwa:  
`http://www.uni-tuebingen.de:80/index.html`  
(80 ist Default-Port für HTTP)
- syntaktische Einschränkungen in URL-Kodierung:  
: und / haben Sonderfunktion  
+ & = - % (blank) müssen codiert werden





# Sicherheit

- Problem der Security
- insbesondere bei Datenbankanwendungen
- auch für den Client wichtig (insb. bei aktiven Inhalten)
- „Selbstangriff“ zum Erkennen von Lücken
- Grundregeln der Security






Informationendienste x Kurs: Grundlagen der x Internet Research, An x H Zone-H.org - Unrestr x

zone-h.org

D800


zone-h  
unrestricted information


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### Hacker diagnosed with brain cancer, hacks the closed source report distributing it to the open source community hoping to get some help

09/09/2012 Written by Sy564738

This is a somewhat astonishing news, and once again the demonstration that alternative thinking might be the way to solve apparently unsolvable cases. I just report what was written by the hacker himself on his website. Can anyone help?

My Open Source Cure



Rome, September 10<sup>th</sup> 2012

**I have a brain cancer.**

Yesterday I went to get my digital medical records: *I have to show them to many doctors.*

**Sadly they were in a closed, proprietary format** and, thus, I could not open them using my computer, or send them in this format to all the people who could have saved my life.

**I cracked them.**

#### ZONE-H In Numbers

News: **4.735**  
 Admins: **7**  
 Registered Users: **81.905**  
 Early Warning subscriptions: **9272**  
 Digital Attacks: **8.301.455**  
 Attacks On Hold: **39.614**  
 Online Users: **633**

#### Login

Login :  
  
 Password :  
  
 [Lost password ?](#)

#### Events

< April 2013 >

M	T	W	T	F	S	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					



Defacements Statistic: x

www.zone-h.org/news/id/4735



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## Defacements Statistics 2008 - 2009 - 2010\*

27/05/2010 *Written by Marcelo Almeida (Vympef)*



When Zone-H started back in 2002, we were receiving an average of 2500 defacements monthly, this number keeps on increasing year after year. For example, the last month we registered over 95.000 defacements, while we only had 60.000 in 2009 for the same period.

What we can also say from these numbers is that the methods used are still the same: most of the vulnerabilities exploited are on web applications. We also know from what we monitored that registrar attacks greatly increased the past years even if this number is quite low compared to the total of attacks. But not only web applications are guilty, as poor local system security on various web hostings usually allow crackers to get full access to the servers.

Worms and viruses like mpack/zeus variants also allow some crackers to gather ftp account credentials, but most of the people using those tools do not deface websites, but prefer to backdoor those sites with iframe exploits in order to hack more and more users, and to steal data from them. [Iskorpitx](#) for example (but many others do it as well) uses this method to break into hostings, he usually steals credentials with viruses and sometimes even backdoors the defacements for visitors of the defaced sites to be exploited.

Examples of some attacks on registrars (DNS hijacking):  
<http://www.zone-h.org/archive/ip=200.35.148.72>  
<http://www.zone-h.org/archive/ip=82.197.131.109>

Here are the statistics:


Attacks by month	Year 2008	Year 2009	Year 2010
Jan	18.562	37.968	53.921
Feb	51.925	2.919	57.869
Mar	48.138	7	73.715
Apr	41.492	60.471	95.090
May	29.017	48.087	
Jun	38.445	43.568	






wilshire.in hacked by 1 x

zone-h.org/mirror/id/17499115



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Mirror saved on: 2012-04-21 00:18:19

Notified by: TIGER-M@TE      Domain: <http://wilshire.in>      IP address: 204.93.160.152   
System: Win 2008      Web server: IIS/7.5      [Notifier stats](#)

This is a CACHE (mirror) page of the site when it was saved by our robot on 2012-04-21 00:18:19

**Server Hacked**

**By**

**TIGER-M@TE**

---

**#Bangladeshi Hacker**

**HACKED**

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# ...und damit...

- ...kennen wir das Internet
- ...und die wichtigsten Protokolle im Internet
- ...kennen das Web und das HTTP-Protokoll
- ...verstehen Server und Client im Web

- als nächstes:  
Darstellung im Web:

XML, HTML, CSS, XHTML  
und HTML5

