



IBM Software Group

"Performance Tuning von Web Applikationen"

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Agenda

- Messen der Performance einer Web Applikation
- Performance-Probleme, und wie man damit umgeht
- Fragen und Antworten

Messen der Performance einer Web Applikation

Definition

Tools

Subjektiv

FasterFox (Firefox Extension)

Solex (Eclipse Plugin)

domlog.nsf

iSpy

IBM Page Detailer



Definition - Performance

- „Performance /pə'fɔ:məns/ (engl.) bezeichnet in der Informatik den Ressourcenverbrauch und die Qualität der Ausgabe von Programmen und Hardware. Meistens ist mit Performance die Datenrate gemeint, also die Menge von Daten, die innerhalb einer bestimmten Zeitspanne verarbeitet werden kann.“
- Quelle: [http://de.wikipedia.org/wiki/Performance_\(Informatik\)](http://de.wikipedia.org/wiki/Performance_(Informatik))



Definition - Antwortzeit

- Antwortzeit (engl. response time) bezeichnet die Zeitspanne zwischen dem Absenden einer Nachricht am Computer (z.B. durch das Drücken der Eingabetaste) und dem vollständigen Empfang der zugehörigen Antwort am Terminal. [...]
- Einflussfaktoren auf die Antwortzeit können u.a. sein:
 - * Bei der Datenübertragung: Netzleistung (Effizienz) und Netzlast
 - * Bei der Wartezeit: Rückstau bei hoher Anfragerate
 - * Bei der Bearbeitungszeit: Leistung der Rechner und des Datenbanksystems, Qualität des Datenbankdesigns und der Programmierung.
- Quelle: <http://de.wikipedia.org/wiki/Antwortzeit>



Subjektive Messung

- Messung durch manuelle Zeitnehmung
- Vorteile:
 - Geringe technische Anforderungen
- Nachteile
 - Ungenaue Messungen
 - kurze Ladezeiten sind kaum messbar
 - Cache des Browsers kann die Messung verfälschen



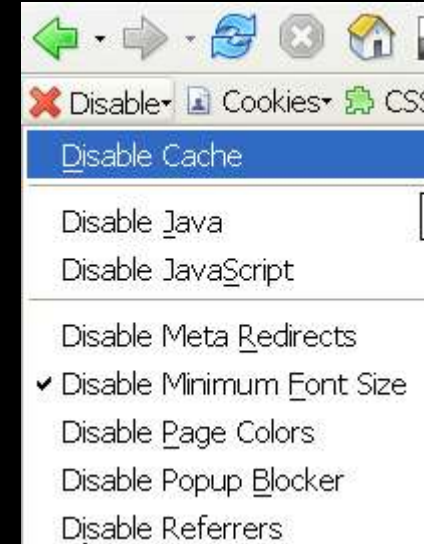

Fasterfox
<http://fasterfox.mozdev.org/>


Fasterfox / Firefox Extension

- Zeigt die Ladezeit einer Seite an
- Vorteile:
 - Geringe technische Anforderungen
 - Auch für kurze Ladezeiten anwendbar
- Nachteile:
 - Cache des Browsers kann die Messung beeinflussen
 - Cache kann mit der Web Developer Toolbar deaktiviert werden.

<https://addons.mozilla.org/extensions/moreinfo.php?id=60>

Limitiert auf den Firefox Browser



Ladezeitanzeige

Ladezeitanzeige aktivieren

Vor dem erneuten Test einer Seite sollte stets der Cache gelöscht werden.

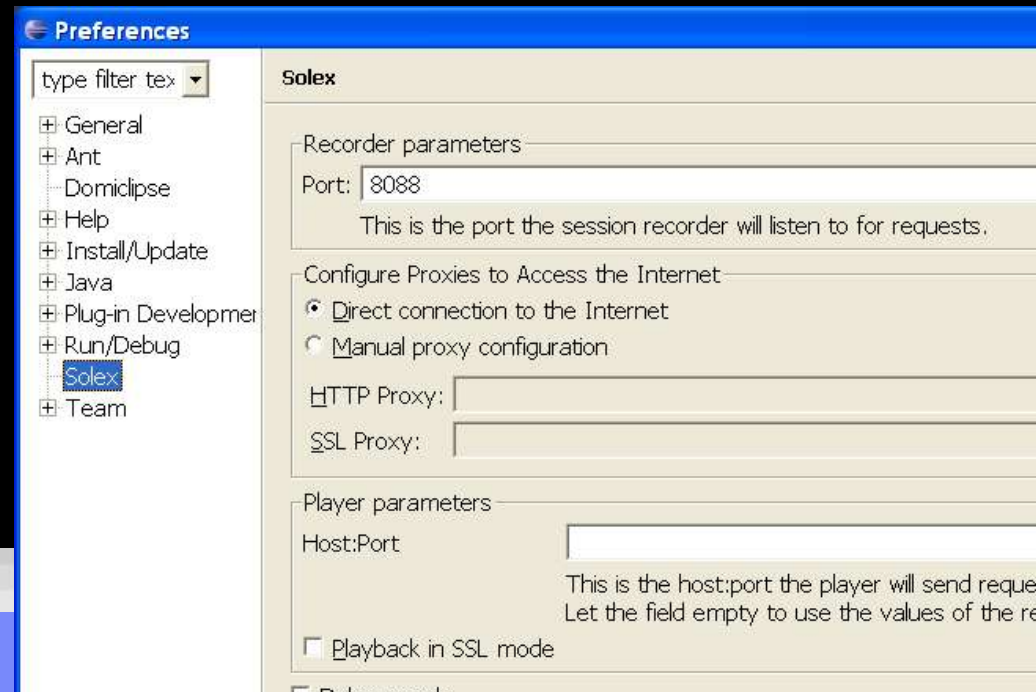
Fasterfox Beispiel

The screenshot shows a Mozilla Firefox browser window with the following elements:

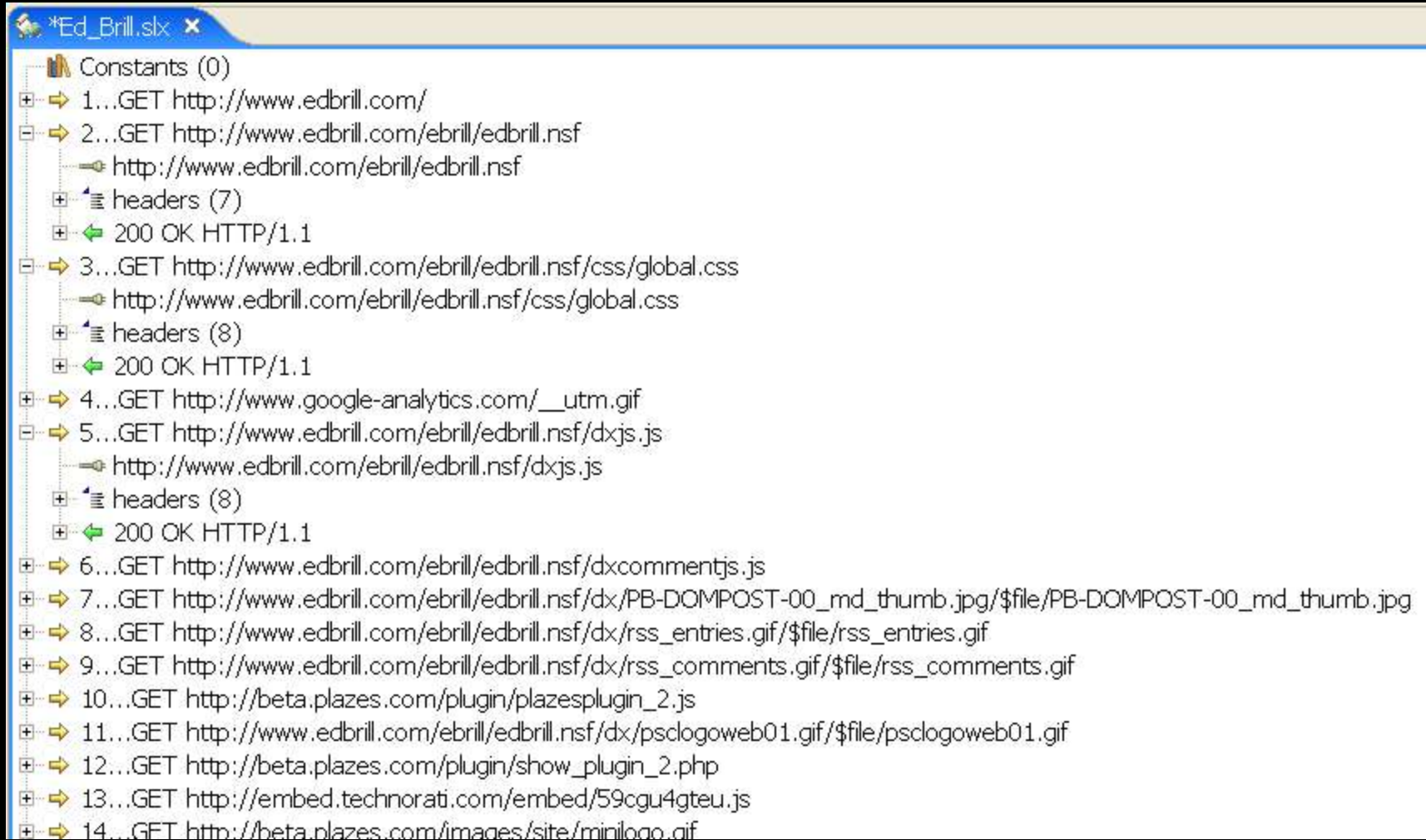
- Browser Title Bar:** Interface | matters: Microsoft Attacked! - Mozilla Firefox
- Menu Bar:** Datei, Bearbeiten, Ansicht, Gehe, Lesezeichen, Extras, Hilfe, del.icio.us
- Address Bar:** http://interfacematters. (with a Go button)
- Page Content:**
 - Banner:** A yellow banner with the text "Interface|matters". To the left is an image of an alien pointing at a "Microsoft" sign with a speech bubble saying "Exchange must go!". Below the image is a "Lotus. THE INVASION BEGINS" logo.
 - Date:** Thursday, April 06, 2006
 - Post Title:** Microsoft Attacked!
 - Post Text:** "So...like my banner? I wasn't going to put it on here, but I thought some of my Notes pals might get a kick out of it. I was on the phone with a friend late one night and doodling on my tablet pc when the image of the 'Mars Attacks' aliens marching on the Microsoft campus popped into my head (I've learned not to ask...my brain seems to have a mind of its own). So, I fired up the trusty 'ol graphics editor and played around a bit. That's the result at the top of the page. I'll only keep it around for a little while. Too bad it's only make believe! ;-)"
 - Author:** posted by Chris Blatnick @ 8:17 PM
 - Right Sidebar:**
 - Thoughts about Collaborative Technologies and User Interface Design...**
 - About Me:**
 - Name:** Chris Blatnick
 - Description:** "By day, I work as a Collaborative Technologies architect and champion the cause of usability and user interface design."
 - Links:** My Profile | Contact Me
 - LOTUS GEEK..** (with a red arrow pointing to the "Contact Me" link)
- Browser Status Bar:** Fertig, 1.402s, Adblock

Solex / Eclipse Plugin

- Solex zeichnet HTTP Sessions auf und kann sie später erneut „abspielen“.
- Für die Aufzeichnung tritt Solex als lokaler Proxy auf.
- Optional können Filter gesetzt werden sowie Requests durch dynamische Formeln ersetzt werden



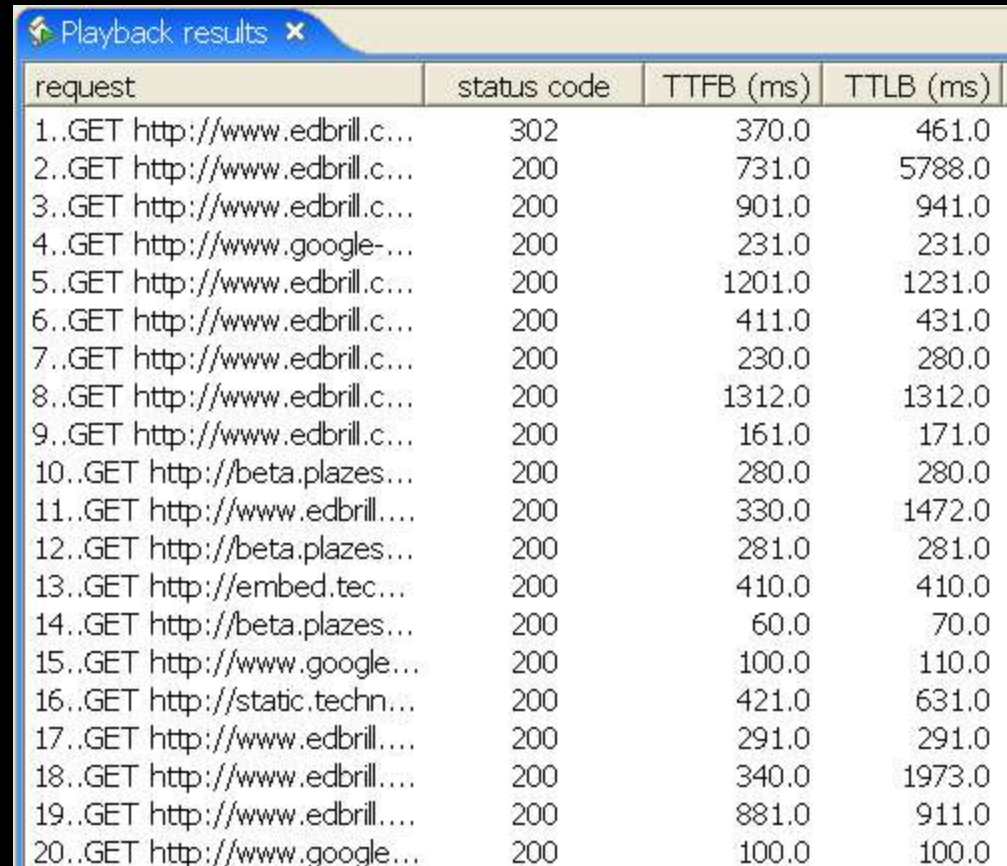
Aufgezeichnete Session



Playback

■ Playback der zuvor aufgezeichneten Session

- URI
- Status Code
- Time To First Byte
- Time To Last Byte



request	status code	TTFB (ms)	TTLB (ms)
1..GET http://www.edbrill.c...	302	370.0	461.0
2..GET http://www.edbrill.c...	200	731.0	5788.0
3..GET http://www.edbrill.c...	200	901.0	941.0
4..GET http://www.google-...	200	231.0	231.0
5..GET http://www.edbrill.c...	200	1201.0	1231.0
6..GET http://www.edbrill.c...	200	411.0	431.0
7..GET http://www.edbrill.c...	200	230.0	280.0
8..GET http://www.edbrill.c...	200	1312.0	1312.0
9..GET http://www.edbrill.c...	200	161.0	171.0
10..GET http://beta.plazes...	200	280.0	280.0
11..GET http://www.edbrill....	200	330.0	1472.0
12..GET http://beta.plazes...	200	281.0	281.0
13..GET http://embed.tec...	200	410.0	410.0
14..GET http://beta.plazes...	200	60.0	70.0
15..GET http://www.google...	200	100.0	110.0
16..GET http://static.techn...	200	421.0	631.0
17..GET http://www.edbrill....	200	291.0	291.0
18..GET http://www.edbrill....	200	340.0	1973.0
19..GET http://www.edbrill....	200	881.0	911.0
20..GET http://www.google...	200	100.0	100.0

Domino Web Server Log / domlog.nsf

HTTP Request:	
Server Address:	test.brandlehner.at
Date:	16.04.2006 11:59:17
User Address:	192.168.2.130
Authenticated User:	-
User Agent:	Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; .NET CLR 1.1.4322; FDM; .NET CLR 2.0.50727)
Cookie:	
Request:	GET /homepage.nsf HTTP/1.1
Status:	200 OK (Request fulfilled)
Content Length:	5918 bytes
Content Type:	text/html; charset=windows-1252
Process Time:	7571 ms
Error:	
Translated URI:	C:/Program Files/Lotus/Domino/data/homepage.nsf
Translated Request:	test.brandlehner.at/homepage.nsf
Decoded Query:	
Referring URL:	
Decoded Query:	

domlog.nsf - Facts

- Zeichnet (optional alle) HTTP(S) Zugriffe auf
- Vorteile:
 - Verarbeitungszeit des Domino Servers wird aufgezeichnet
- Nachteile:
 - Logging belastet den Server
 - Reduzieren auf das Wesentliche
 - Alternative: Logging in Textfiles

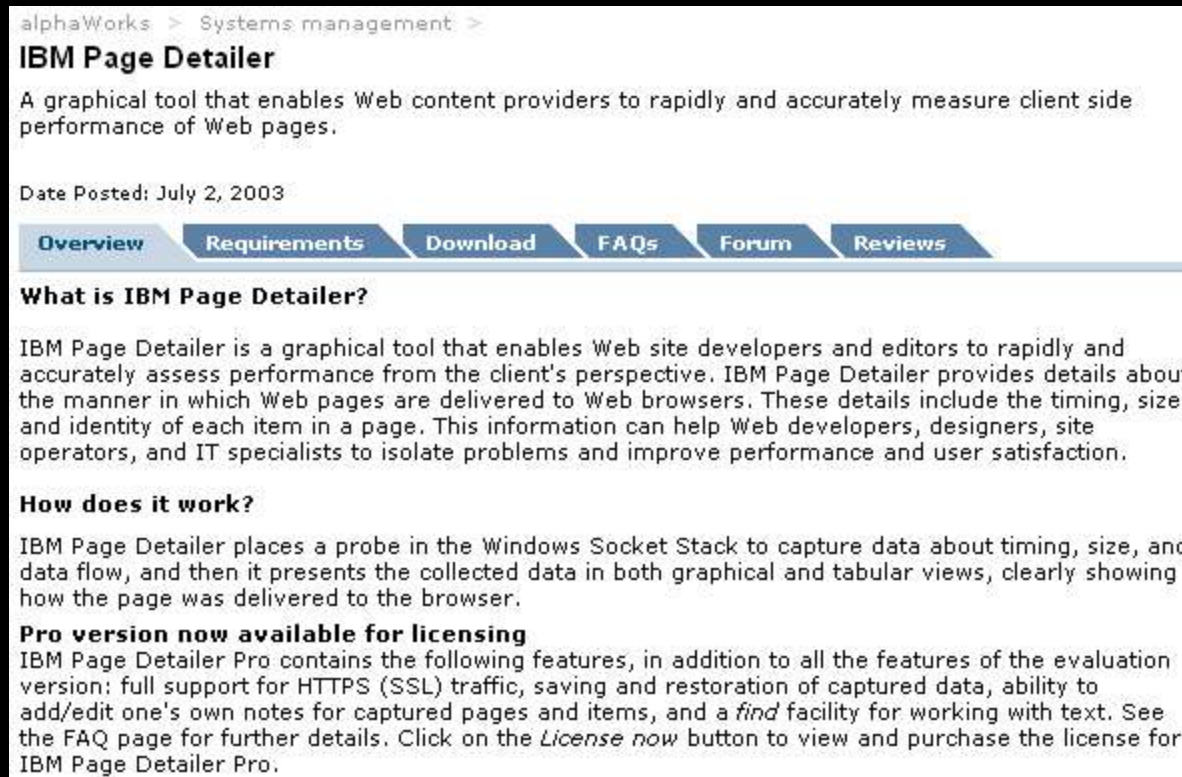
ISpy / events4.nsf

- Erzeugt „Quality of Service“ Statistiken
QOS.HTTP.<Destination Server>.<DUID>.ResponseTime
Die ResponseTime wird in ms angegeben.
- Intervall konfigurierbar
(default: 15 Minuten)
- Timeout-Schwellwert konfigurierbar
(default: 30 Sekunden)
Timeout generiert ein Event

The screenshot displays the IBM ISpy monitoring interface. At the top, there are tabs for Status, Analysis, Monitoring, Statistics, and Performance. Below the tabs, the server information is shown: Server: at00782/Brandlehner, Release 7.0.1 HF29 on Windows NT 5.0. The main area shows a tree view of statistics. The root node is '517 statistics - Last updated: 16.04.2006 14:53:32'. Underneath, there are several categories: ADMINP, Agent, Database, Disk, Domino, EVENT, FT, Http, Mail, Mem, Monitor, NET, Platform, QOS, and runjava. The QOS category is expanded, showing HTTP, Mail, and runjava. Under HTTP, there is a sub-entry for 'at00782/Brandlehner', which is further expanded to show 'CBRR-6NWFwV' with a 'ResponseTime: 30' value. The runjava category shows 'ISpy: 1'.

Page Detailer

- <http://www.alphaworks.ibm.com/tech/pagedetailer>



alphaWorks > Systems management >

IBM Page Detailer

A graphical tool that enables Web content providers to rapidly and accurately measure client side performance of Web pages.

Date Posted: July 2, 2003

[Overview](#) [Requirements](#) [Download](#) [FAQs](#) [Forum](#) [Reviews](#)

What is IBM Page Detailer?

IBM Page Detailer is a graphical tool that enables Web site developers and editors to rapidly and accurately assess performance from the client's perspective. IBM Page Detailer provides details about the manner in which Web pages are delivered to Web browsers. These details include the timing, size, and identity of each item in a page. This information can help Web developers, designers, site operators, and IT specialists to isolate problems and improve performance and user satisfaction.

How does it work?

IBM Page Detailer places a probe in the Windows Socket Stack to capture data about timing, size, and data flow, and then it presents the collected data in both graphical and tabular views, clearly showing how the page was delivered to the browser.

Pro version now available for licensing

IBM Page Detailer Pro contains the following features, in addition to all the features of the evaluation version: full support for HTTPS (SSL) traffic, saving and restoration of captured data, ability to add/edit one's own notes for captured pages and items, and a *find* facility for working with text. See the FAQ page for further details. Click on the *License now* button to view and purchase the license for IBM Page Detailer Pro.

IBM Page Detailer - [FIREFOX.EXE]

File View Actions Window Help

Page: Ed Brill
 http://www.edbrill.com/ebrill/edbrill.nsf
 12.735545 Seconds 100291 Bytes 17 Items Sunday April 16, 2006 03:25:27.768661 PM

Ed Brill

12.735545 Seconds 100291 Bytes 17 Items Sunday April 16, 2006 03:25:27.768661 PM

Ed Brill

Chris A. E

Chris A. E

Chris A. E

Netcraft

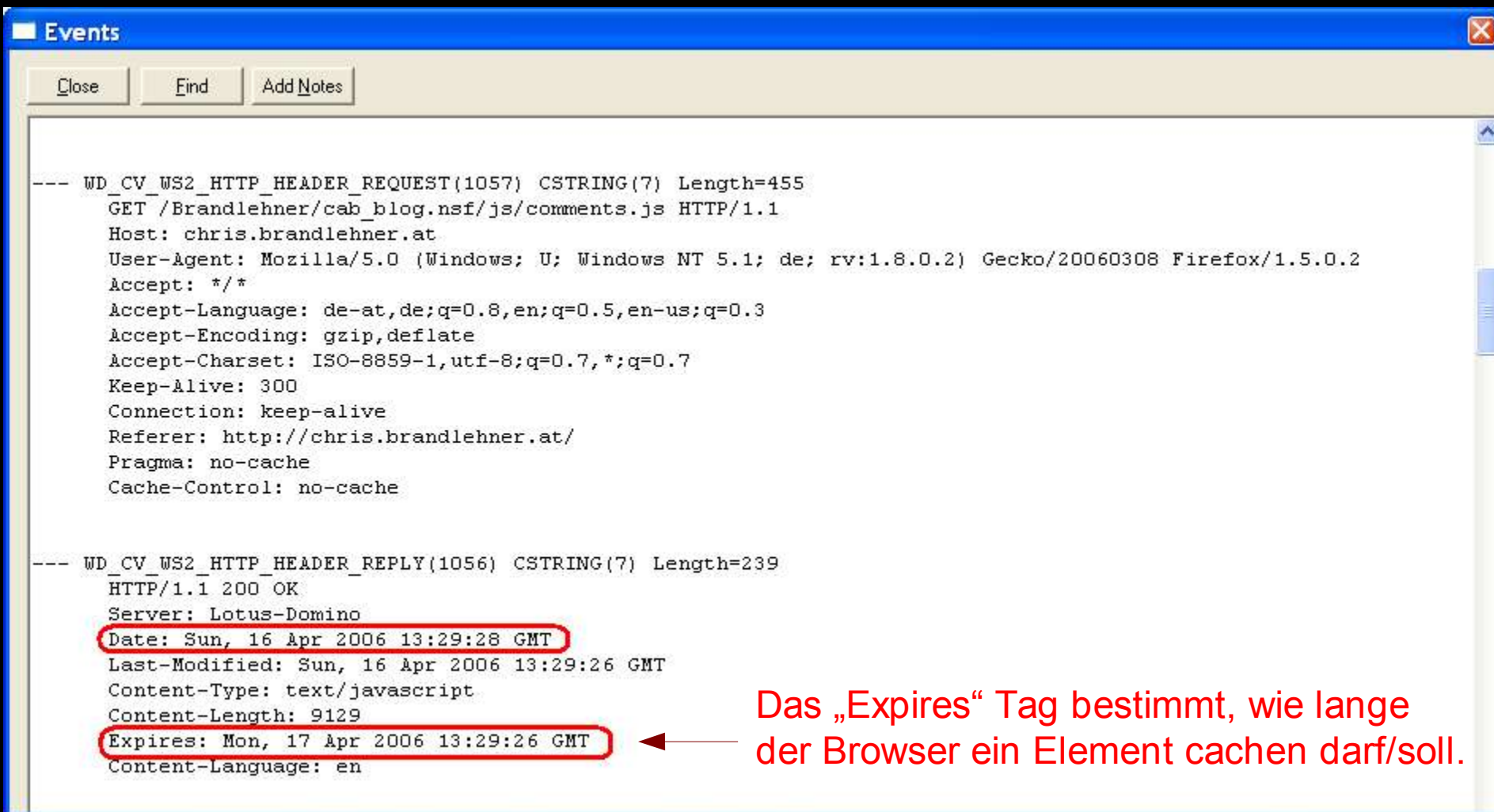
Netcraft

Netcraft

Chart Details

http://www.edbrill.com/ebrill/edbrill.nsf/css/global.css 3842 0.310443

Ready localhost



Events

Close Find Add Notes

```
--- WD_CV_WS2_HTTP_HEADER_REQUEST(1057) CSTRING(7) Length=455
GET /Brandlehner/cab_blog.nsf/js/comments.js HTTP/1.1
Host: chris.brandlehner.at
User-Agent: Mozilla/5.0 (Windows; U; Windows NT 5.1; de; rv:1.8.0.2) Gecko/20060308 Firefox/1.5.0.2
Accept: */*
Accept-Language: de-at,de;q=0.8,en;q=0.5,en-us;q=0.3
Accept-Encoding: gzip,deflate
Accept-Charset: ISO-8859-1,utf-8;q=0.7,*;q=0.7
Keep-Alive: 300
Connection: keep-alive
Referer: http://chris.brandlehner.at/
Pragma: no-cache
Cache-Control: no-cache

--- WD_CV_WS2_HTTP_HEADER_REPLY(1056) CSTRING(7) Length=239
HTTP/1.1 200 OK
Server: Lotus-Domino
Date: Sun, 16 Apr 2006 13:29:28 GMT
Last-Modified: Sun, 16 Apr 2006 13:29:26 GMT
Content-Type: text/javascript
Content-Length: 9129
Expires: Mon, 17 Apr 2006 13:29:26 GMT
Content-Language: en
```

Das „Expires“ Tag bestimmt, wie lange der Browser ein Element cachen darf/soll.