



**Hasso
Plattner
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IT Systems Engineering | Universität Potsdam

Entwicklung in Open-Source- Projekten am Beispiel MediaWiki

12.12.2008 von Johan Uhle

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Geschichte und Relevanz
Organisation
Technischer Überblick
Codestruktur
Mein Patch
Skalierung und Caching

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MediaWiki

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- Für die Wikipedia entwickelt
- Einsatz in Wikipedia seit Januar 2002
- „Richtiger“ Release 1.1. Dezember 2003
- Neuster Release: 1.13.2 2.Oktober.2008

- Im Sinne der Wikipedia offen und zur Mitarbeit einladend
- Lizenzierung: GNU GPL 2

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- Alle Wikimedia-Projekte benutzen es:
 - Wikipedia
 - Wikibooks
 - Wiktionary
 - Wikinews

Ergebnisse 1 - 10 von ungefähr 76.900.000 für "Powered by MediaWiki". (0,14 Sekunden)

angeben.

- zusätzlich noch interner Einsatz in Unternehmen
- populärste Software für Wiki-Einsatz

Organisation 1/3

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- www.mediawiki.org
- Drei Bereiche:
 - Endbenutzer / Systemadministrator / Entwickler
- Entwicklertools:
 - Bugzilla
 - Subversion (Webansicht mit ViewVC)
 - Doxygen
 - Mailinglist Wikitech-l + lokale Gruppen

Organisation 2/3

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- IRC Channel #mediawiki auf irc.freenode.de >150 Teilnehmer
- Bot, der neue SVN-Commits und Aktionen in Bugzilla werden im Channel ausgegeben
- 174 SVN-Committer (gezählt!)

Organisation 2/3

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- Bot, der neue SVN-Commits und Aktionen in Bugzilla werden im Channel ausgegeben
- 174 SVN-Committer (gezählt!)

- Auf Wikimediaprojekten läuft eine der letzten SVN-Versionen

- Konstanter Code-Review der neusten Commits durch Communitymitglieder

Organisation 3/3

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- Lee Daniel Crocker / Erste Versionen auf Basis von „UseMod Wiki“
- Brion Vibber / CTO of the Wikimedia Foundation
- Tim Starling „I'm employed by the Wikimedia Foundation as a developer and system administrator. I became a Wikipedia editor on October 11, 2002, and began volunteer development work about a year later“
- Aaron Schulz „I do work in both adding functionality to core components as well as writing badly needed major extensions. I'll sometimes do cleanup/documentation if I am bored ;).“

Technischer Überblick 1/2

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- Technische Voraussetzungen
 - Webserver Apache oder IIS
 - PHP4 < 1.6 => PHP5
 - MySQL 4.0 oder PostgreSQL 8.1
- Wichtigste Funktionen:
 - Es ist ein Wiki
 - Mediendateien (Bilder, Tondateien)
 - Internationalisierung / Lokalisierung
 - Skalierung

Ohloh Analysis Summary

-  Mostly written in PHP
-  Mature, well-established codebase
-  Very large, active development team
-  Increasing year-over-year development activity
-  Few source code comments

Rebuilding the link tables may take a long time, par
[Manual:Database layout](#) on what rebuildall.php is g
Note that if you want to create a *public mirror* of Wi
mirror and include links back to the main site. See |

The MediaWiki codebase

The MediaWiki codebase is large and ugly. Don't b
You can browse the [generated documentation](#)  (w
One of the best ways to learn about MediaWiki is to

- [index.php](#) is the main entry point, although whe
- [Article.php](#) contains code for page view, delete
- [EditPage.php](#)  has about half of the code rela
- [Parser.php](#) has most of the code that converts

Code 2/3

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```

Terminal — bash — 80x21
bash bash
kropka:Documents johan$ perl cloc.pl phase3
3979 text files.
1427 unique files.
2830 files ignored.

http://cloc.sourceforge.net v 1.06 T=58.0 s (1.4 files/s, 429.1 lines/s)
-----
Language      files  blank  comment  code  scale  3rd gen. equiv
-----
PHP            65    2730   6209    13265 x  3.50 =  46427.50
Perl           9     271    170     1259 x  4.00 =   5036.00
SQL            1      75     14      483 x  2.29 =   1106.07
CSS            1      32     35      186 x  1.00 =    186.00
Javascript     1       3      3       76 x  1.48 =    112.48
D              2       9     10       30 x  1.70 =     51.00
Bourne Again Shell  4       9      0       19 x  3.81 =    72.39
Bourne Shell    1       0      0        2 x  3.81 =     7.62
-----
SUM:           84    3129   6441   15320 x  3.46 =  52999.06
-----
kropka:Documents johan$

```

Code 3/3

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- Objektorientiert Programmiert
- Dateistruktur:
 - /include PHP-Bibliotheken
 - /language Sprachen
 - /maintenance Administrationsaufgaben sowie SQL-Dateien für das Datenbanklayout
 - /skins Oberflächen
 - /t und /tests Tests für die meisten Funktionalitäten

```
1548  
1549 /* God-damned hack for the crappy layout */  
1550 .os-suggest {  
1551     font-size: 127%;  
1552 }  
1553
```

Mein Patch 1/4

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- 5491 Colour-coding of items in page histories (165xx ist neu)
- History eines Artikels. Jede Revision hat eigene Zeile.
- Verbesserung: Je nach Status des User, der die Revision getätigt hat, wird die Hintergrundfarbe geändert.

Mein Patch 2/4

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Compare selected versions

- (cur) (last) 05:27, 2 December 2008 0:0:0:0:0:0:1 (Talk | block) (458 bytes) (M)
- (cur) (last) 05:27, 2 December 2008 Admin (Talk | contribs | block) m (463 bytes)
- (cur) (last) 05:26, 2 December 2008 0:0:0:0:0:0:1 (Talk | block) (454 bytes) (ur)
- (cur) (last) 05:26, 2 December 2008 Test2 (Talk | contribs | block) (458 bytes) (u)
- (cur) (last) 05:22, 2 December 2008 Admin (Talk | contribs | block) (450 bytes) (
- (cur) (last) 05:22, 2 December 2008 Test2 (Talk | contribs | block) (453 bytes) (u)
- (cur) (last) 05:22, 2 December 2008 Test2 (Talk | contribs | block) (457 bytes) (u)
- (cur) (last) 03:45, 2 December 2008 Test (Talk | contribs | block) (462 bytes) (un)
- (cur) (last) 03:45, 2 December 2008 Test (Talk | contribs | block) (467 bytes) (un)
- (cur) (last) 03:23, 2 December 2008 Test (Talk | contribs | block) (472 bytes) (un)
- (cur) (last) 03:15, 2 December 2008 Admin (Talk | contribs | block) (460 bytes) (
- (cur) (last) 02:27, 2 December 2008 172.16.59.229 (Talk | block) (452 bytes) (ur)
- (cur) (last) 02:27, 2 December 2008 172.16.59.229 (Talk | block) (450 bytes) (ur)

Mein Patch 3/4

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----- *Comment #5 From Mr.Z-man*  2008-12-01 20:29:37 UTC -----

Adding the classes might be a good idea, but I don't think assigning default colors is necessary. I think that should be left up to individual sites or skin designers. Additionally, color combinations with the link+background text could potentially have accessibility issues for visually impaired users, especially things like red text on pink background, blue/green might have the same issue.

Mein Patch 4/4

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Compare selected versions

- (cur) (last) 05:20, 5 December 2008 **Test** (Talk | contribs | block) (37 bytes) *(Undo revision 29 by 0:0:0:0:0:0:0:1)*
- (cur) (last) 05:19, 5 December 2008 0:0:0:0:0:0:0:1 (Talk | block) (21 bytes) *(Vandalism) (undo)*
- (cur) (last) 05:19, 5 December 2008 **Test2** (Talk | contribs | block) **m** (37 bytes) *(Another Link) (undo)*
- (cur) (last) 05:19, 5 December 2008 **Test** (Talk | contribs | block) (32 bytes) *(Another Link) (undo)*
- (cur) (last) 05:18, 5 December 2008 0:0:0:0:0:0:0:1 (Talk | block) (27 bytes) *(Adding more information and)*
- (cur) (last) 05:18, 5 December 2008 **Admin** (Talk | contribs | block) (16 bytes) *(Adding new Information) (u*
- (cur) (last) 05:16, 5 December 2008 **Test** (Talk | contribs | block) (4 bytes) *(Undo revision 21 by Test (Ta*
- (cur) (last) 05:16, 5 December 2008 **Test** (Talk | contribs | block) (12 bytes) *(Adding some useless inform*
- (cur) (last) 05:15, 5 December 2008 **Test** (Talk | contribs | block) (4 bytes) *(Clean up a bit!) (undo)*
- (cur) (last) 05:15, 5 December 2008 0:0:0:0:0:0:0:1 (Talk | block) (22 bytes) (undo)
- (cur) (last) 05:15, 5 December 2008 0:0:0:0:0:0:0:1 (Talk | block) (9 bytes) (undo)

Skalierung 1/4

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- Skalierung sehr wichtig

Skalierung 2/4

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- Load Balancing vor Squid
- Squid bedient 75 % des WP-Traffics (vor Allem Anfragen ohne eingeloggte User)
- MediaWiki enthält NotifyFunktionen, um bei Änderungen dem Squid-Server Bescheid zu geben.

- Source: /include/Article.php
- doPurge() 1045
- onArticleEdit() 3137

Skalierung 3/4

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- Load Balancing vor Apache
- PHP Bytecode Caching mit vielen Frameworks. Empfohlen APC
- Caching auf Apache
 - Local Message Cache
 - Memcache
 - Datenbankanfrage

- Source: /incude/MessageCache.php
- Line: 228

Skalierung 4/4

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- Local Message Cache sind statische HTML-Seiten, die an IP-User gegeben werden
- Memcache läuft auf jedem ApacheServer
- Speichert Datenbankdaten lokal im Speicher. Löscht Daten nach Least Recent Used

Quellen:

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- MediaWiki SVN 440xx
- <http://www.mediawiki.org>
- <http://meta.wikimedia.org>
- http://en.wikipedia.org/wiki/MediaWiki_release_history
- <http://lists.wikimedia.org/pipermail/wikitech-l/>
- <https://bugzilla.wikimedia.org>
- <https://www.ohloh.net/p/mediawiki>

- #mediawiki auf irc.freenode.de

Stand: 10.12.08

Ende

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- Geschichte und Relevanz
Organisation
Technischer Überblick
Codestruktur
Mein Patch
Skalierung und Caching
- Fragen?

Empfehlungen

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- How to ask questions the smart way
- <http://www.catb.org/~esr/faqs/smart-questions.html>

- How to report bugs effectively
- <http://www.chiark.greenend.org.uk/~sgtatham/bugs.html>