

# Behind the Scenes of Google Project Hosting



Jason Robbins and Nathan Ingersoll, Google Inc

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# Overview



What is  
Google  
Project  
Hosting?



Key  
Features  
and  
Examples



Pro-tips and  
Power-user  
Features



How It  
All Works

# What is Google Project Hosting?

- It's a collaborative development environment for open source projects
- Features:
  - Easy project creation and administration
  - Version control with Subversion or Mercurial
  - Source code browsing and reviews
  - Issue tracker for defects, enhancements, other tasks
  - Wiki for project documentation
  - Downloads for project releases





Multi-format 1D/2D barcode image processing library with clients for Android, Java

Search projects

Project Home Downloads Wiki Issues Source

Summary Updates People

### Project Information

Activity High  
[Project feeds](#)

Code license  
[Apache License 2.0](#)

Labels  
Google, barcode, QRCode,  
Java, scanner, reader,  
DataMatrix, UPC, decoder,  
Android, EAN, Code39,  
Code128, ITF, RSS14

**Members**  
[sro...@gmail.com](#),  
[dswit...@gmail.com](#),  
[dswit...@google.com](#)  
[17 committers](#)  
[8 contributors](#)

### Featured

**Downloads**  
[BarcodeScanner3.53.apk](#)  
[ZXing-1.6.zip](#)  
[Show all »](#)

**Wiki pages**  
[BarcodeContents](#)  
[FrequentlyAskedQuestions](#)  
[GetTheReader](#)  
[InterestingLinks](#)  
[LicenseQuestions](#)  
[ScanningFromWebPages](#)  
[ScanningViaIntent](#)  
[Show all »](#)

### Links

**External links**

## ZXing ("Zebra Crossing")



ZXing (pronounced "zebra crossing") is an open-source, multi-format 1D/2D barcode image processing library implemented in Java. Our focus is on using the built-in camera on mobile phones to photograph and decode barcodes on the device, without communicating with a server. We currently have support for:

- UPC-A and UPC-E
- EAN-8 and EAN-13
- Code 39
- Code 93
- Code 128
- QR Code
- ITF
- Codabar
- RSS-14 (all variants)
- Data Matrix
- PDF 417 ('alpha' quality)
- Aztec ('alpha' quality)

This library is divided into several components; some are actively supported:

1. **core**: The core image decoding library, and test code
2. **javase**: J2SE-specific client code
3. **android**: Android client, called Barcode Scanner
4. **androidtest**: Android test app
5. **android-integration**: Supports integration with our Barcode Scanner app via Intent
6. **zxingorg**: The source behind [zxing.org/w](#)
7. **zxing.appspot.com**: The source behind our web-based barcode generator

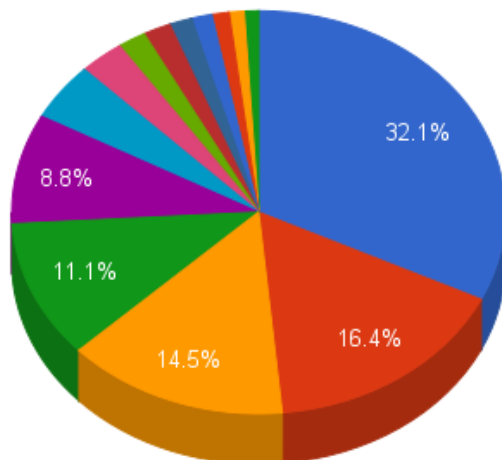
Some modules are contributed and/or intermittently maintained:

1. **javame**: JavaME client
2. **csharp**: Partial C# port

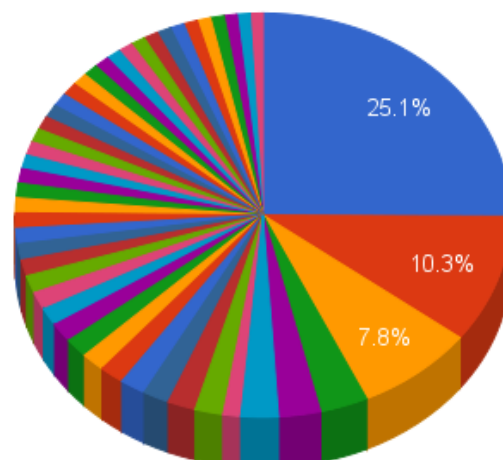
# What kind of projects do we host?

- The stats for our projects look similar to the OSS community as a whole, but skewed toward web tech
- We also host focused communities for [eclipse-labs.org](http://eclipse-labs.org) and [apache-extra.org](http://apache-extra.org)

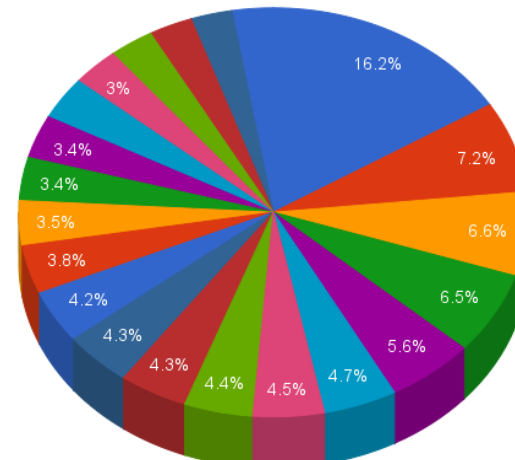
## Languages



## Topics

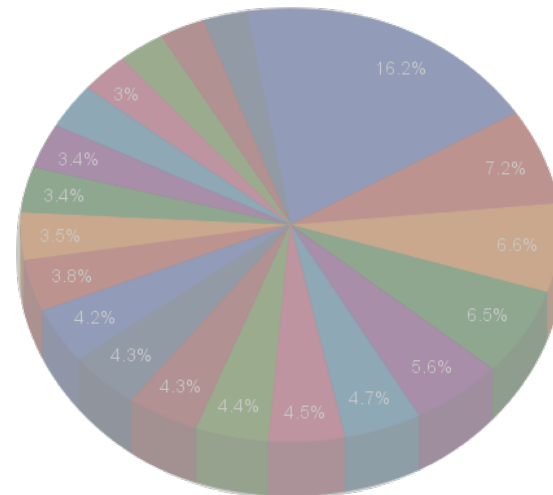
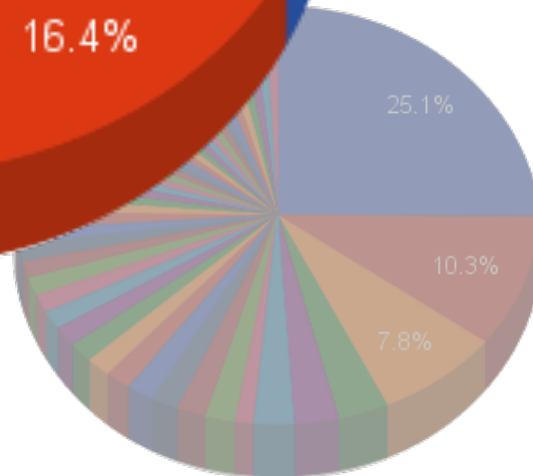
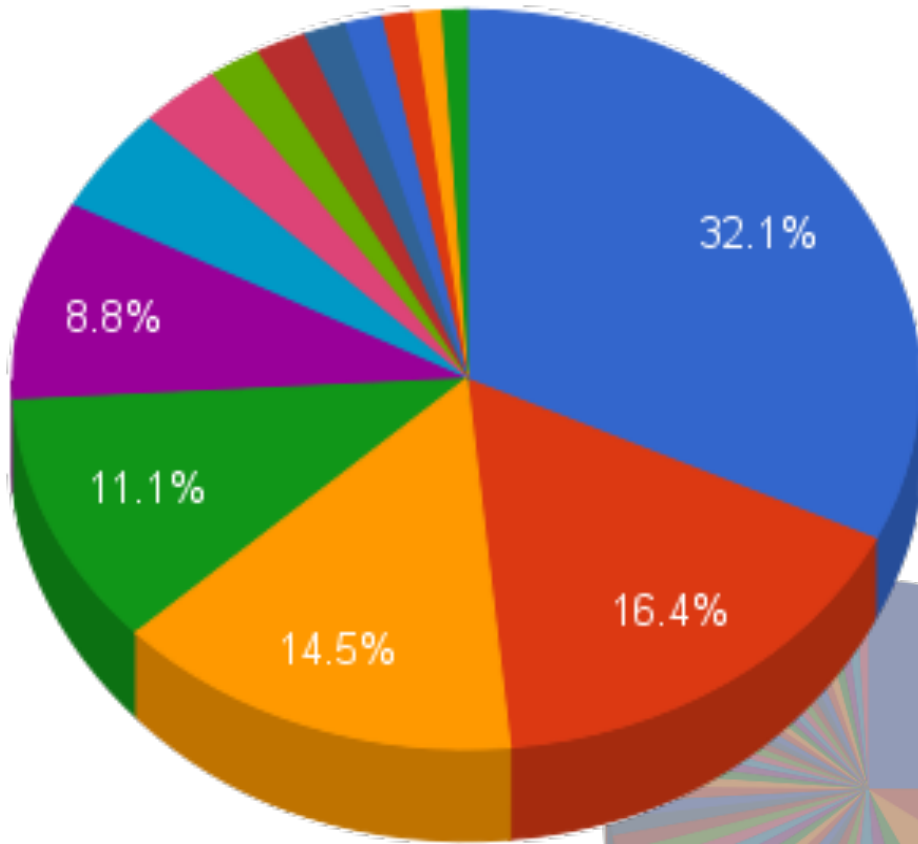


## Technologies



# Project Languages

Java  
Python  
PHP  
Javascript  
C/C++  
CSharp  
Actionscript  
SQL  
ASP.net  
Perl  
Lua  
Ruby  
Objective-C  
Delphi  
...

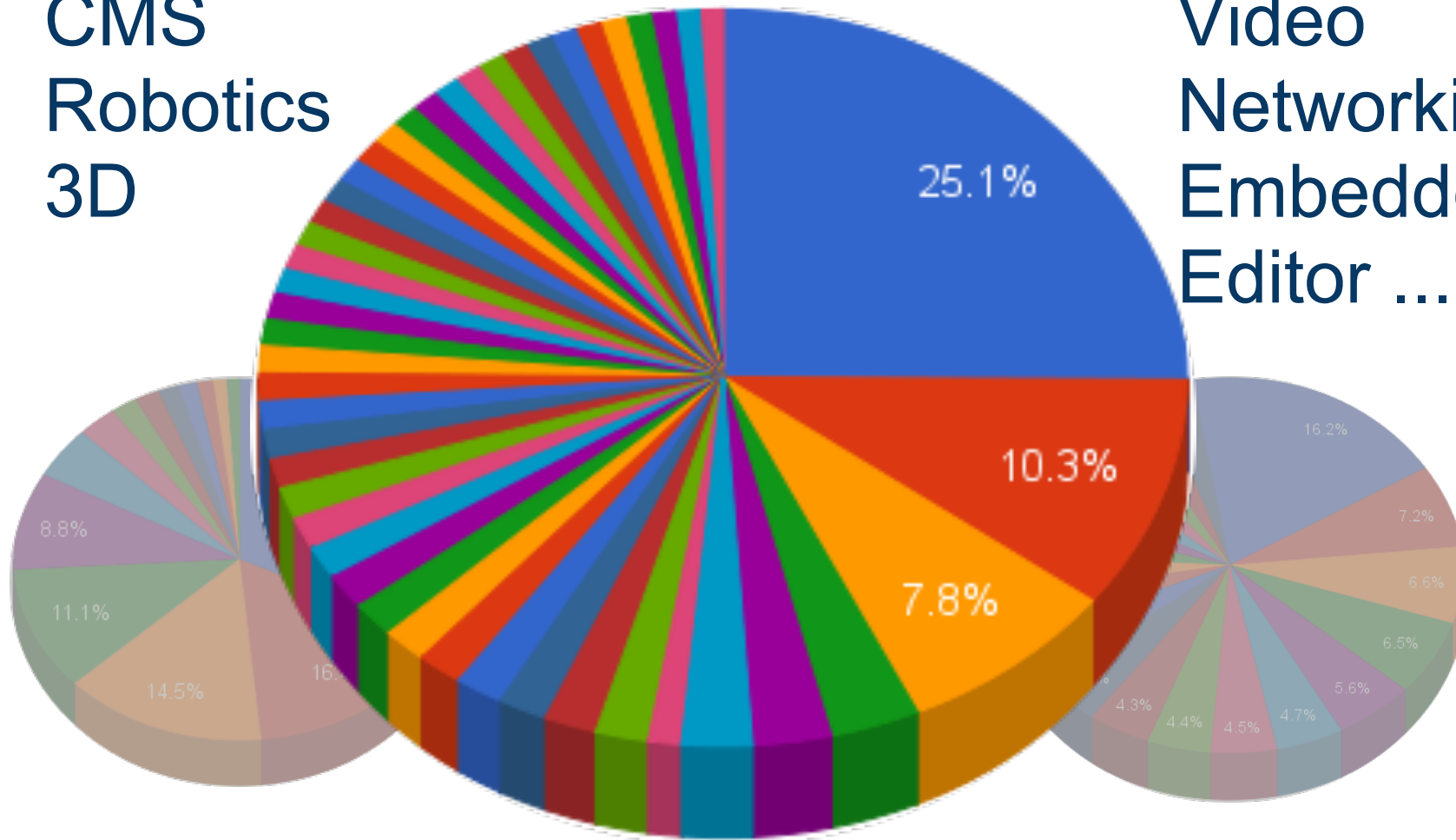


# Project Topics

Academic  
Game  
Web  
Database  
CMS  
Robotics  
3D

Simulator  
Accessibility  
Security  
Mobile

Graphics  
OperatingSystem  
Emulator  
Music  
Video  
Networking  
Embedded  
Editor ...





# Project Technologies

Android

Ajax

MySQL

Linux

Chrome

Windows

XML

HTML

jquery

AppEngine

Browser

.Net

GWT

iPhone

OpenGL

Flash

Flex

CSS

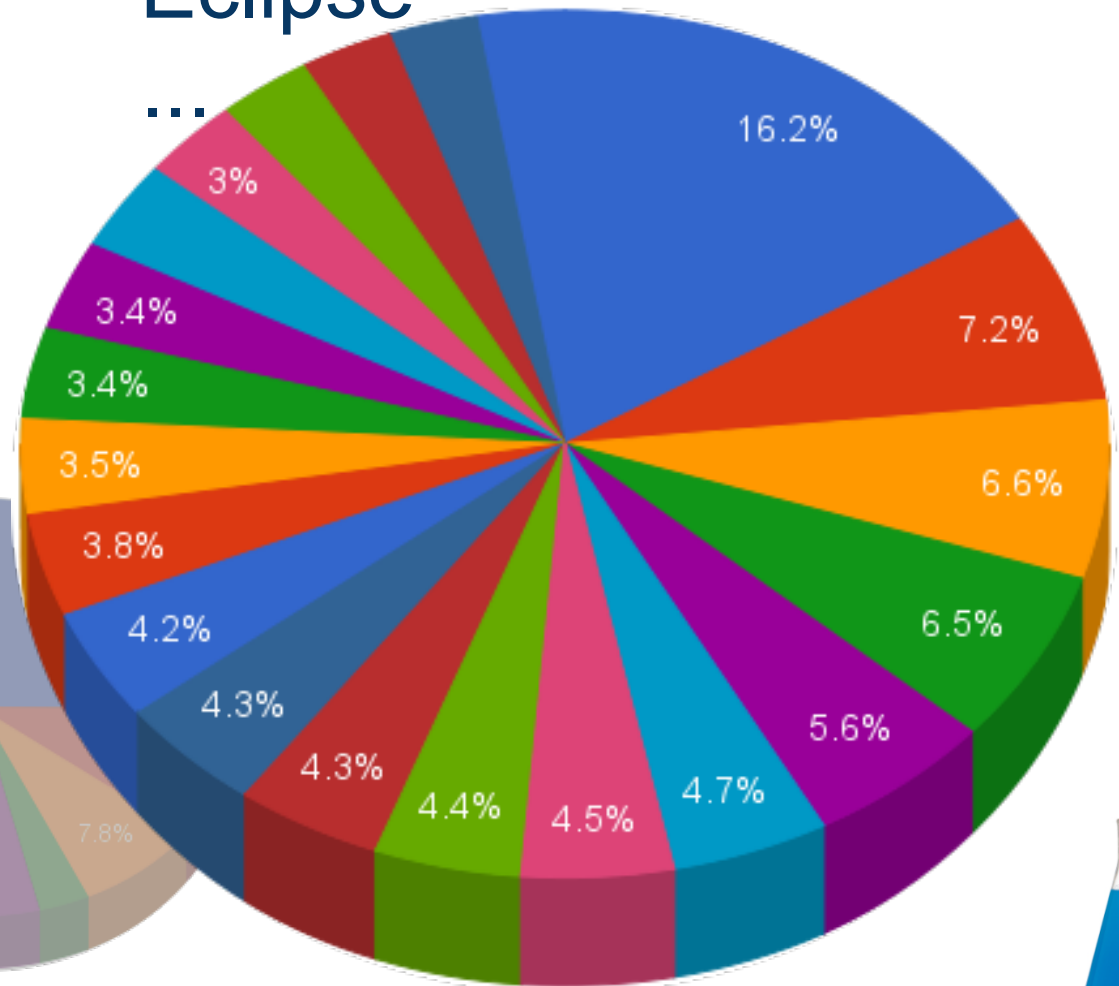
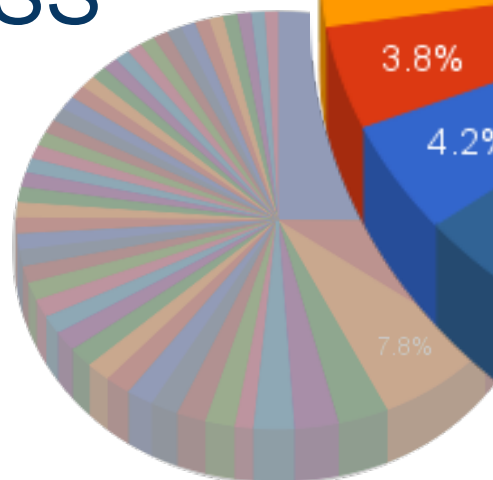
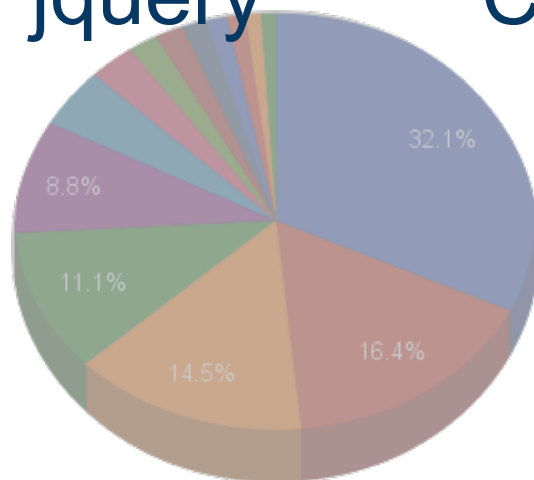
Spring

Django

qt

Eclipse

...





# Why does Google offer this product?

- When we launched in 2006:
  - Promote long-term health of OSS community
  - Help make OSS developers productive
  - Reinvigorate the CDE category
- Today in 2011:
  - Even more focused on developer productivity
  - Support strategic OSS Google-sponsored projects
    - GWT, Chrome, Android, and ~1000 smaller ones
  - Help bring more development into the cloud



# Key Features

When we designed GPH, we took some risks and did some things a little differently than they had been done before.

- Easy project creation with no moderation
- Simple project home pages
- Subversion and Mercurial on Bigtable
- Googley artifact search and key-value labels
- Wiki centered on the page list
- Integrated source code browsing and code review



# Easy project creation with no moderation

- Problem:
  - It's tedious to host software engineering tools yourself
- Status Quo:
  - Project creation wizard, then wait for moderation
- Our solution:
  - Simple one-page form to create a project
  - No moderation or review at creation time
  - Allow empty projects to proliferate, but rank them low in search results
  - Open the door to spam projects, but detect and demotivate abuse



 Search projects

## Create a new project

Instantly create your open source hosting project by filling out the form below. For your project, you'll receive:

- Subversion and Mercurial code hosting with 2 gigabytes of storage space
- Download hosting support with 2 gigabytes of storage space
- Integrated source code browsing and code review tools
- An issue tracker and project wiki

[Learn more](#)

**Project name**

Example: my-project-name

**Project summary**

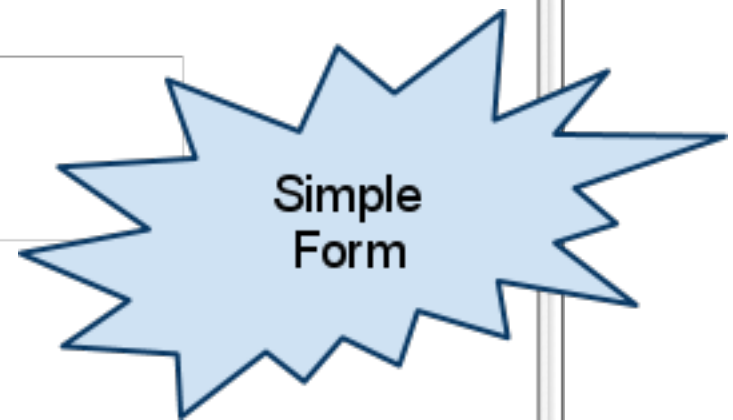
**Description**

**Version control system**

**Source code license**

**Project label(s)**

[add another row](#)





social mobile

Search projects

Results 1 - 10 of 168

[prssr - pRSSreader is a free RSS reader for Windows Mobile](#) ☆

Activity: ■■■ Medium - Updated: Last 30 days

5.2.2009: Project discontinued. Formats pRSSreader can handle many versions of feeds: RSS 0.90, 0.91, 0.92 and 2.0, RDF 1.0 and Atom 0.3. Google Reader Synchronization pRSSre...

[RSS](#), [Reader](#), [PocketPC](#), [News](#), [WindowsMobile](#)

[vkontakte-android - Android client for vk.com social network](#) ☆

Activity: ■■■ High - Updated: Apr 17, 2010

Исправлена ошибка при экспорте в контакты Исправлены различные ошибки, части...

[userapi](#), [vkontakte](#), [android](#)



[haggle - A content-centric network architecture for opportunistic com](#)

Activity: ■■■ Medium - Updated: Dec 16, 2010

NEWS Release 0.3 of Haggle is now available from the Downloads page. Haggle is a network architecture for content-centric opportunistic communication. In laymen's terms, it means that Haggle ...

[Content-Centric](#), [Data-centric](#), [Content-oriented](#), [Android](#), [WindowsMobile](#), [Architecture](#), [Network](#), [Mobile](#), [Social](#), [Community](#), [Opportunistic](#)



[boghe - IMS/RCS client for Windows and WinPhone7](#) ☆

Activity: ■■■ High - Updated: Last 7 days

This application uses Doubango Framework. RCS (Rich Communication Suite) was a joint industry effort aiming to speed up the evolution of mobile phone communication towards rich communication...

[Windows](#), [WinPhone7](#), [SIP](#), [IMS](#), [3GPP](#), [LTE](#), [RCS](#), [GSMA](#), [VoIP](#), [MMTel](#), [XCAP](#), [MSRP](#), [TISPAN](#), [IPTV](#), [VoLTE](#)



[jaikuengine - Jaiku, now with more open source!](#) ☆

Activity: ■■■ Medium - Updated: Last 30 days

JaikuEngine is a social microblogging platform that runs on AppEngine. JaikuEngine powers Jaiku.com. For the mobile client source, see: Jaiku Mobile client Python 2.4 or 2.5 D...

[Google](#), [microblogging](#), [Jaiku](#), [AppEngine](#)

[mssw - A mobile social semantic web client for android.](#) ☆

Activity: ■■■ Low - Updated: Last 30 days

The aim of this project is to provide a minimal mobile social semantic web client framework for the android platform. It will support: Authentication with FOAF+SSL. in the social network Sv...



# Easy project creation with no moderation

- How has it worked out?
  - Many thousands of projects have been created
  - People used to complain about empty projects, but now we have so many good projects that bad ones are easily out-ranked
  - We still fight spam, but it has decreased



# Simple project home pages

- Problem:
  - If users visit ten different OSS projects, they need to learn ten different website navigation schemes.
- Status Quo:
  - Limit project owners to plain text descriptions, but then they put the real info in custom websites instead.
- Our solution:
  - Use a standard project nav for accessing tools, but give some flexibility to replace tabs with wiki pages
  - Project logos
  - Use wiki markup for project descriptions







zxing

Multi-format 1D/2D barcode image processing library with

Standard Tabs

Project Home Downloads Wiki Issues Source

Summary Updates People

Project Information

Activity High Project feeds

Code license Apache License 2.0

Labels Google, barcode, QRCode, Java, scanner, reader, DataMatrix, UPC, decoder, Android, EAN, Code39, Code128, ITF, RSS14

Members sro...@gmail.com, dswit...@gmail.com, dswit...@google.com, 17 committers, 8 contributors

Featured

Downloads BarcodeScanner3.53.apk, ZXing-1.6.zip, Show all

Wiki pages BarcodeContents, FrequentlyAskedQuestions, GetTheReader, InterestingLinks, LicenseQuestions, ScanningFromWebPages, ScanningViaIntent, Show all

Links

External links

ZXing ("Zebra Crossing")



ZXing (pronounced "zebra crossing") is a multi-format barcode image processing library implemented in Java. Our focus is on using the built-in camera of the device, without communicating with a server. We currently support the following barcode formats:

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Code 39
Code 93
Code 128
QR Code
ITF
Codabar
RSS-14 (all variants)
Data Matrix
PDF 417 ('alpha' quality)
Aztec ('alpha' quality)

This library is divided into several components; some are actively supported:

- 1. javame: JavaME client
2. csharp: Partial C# port

Wiki-Formatted Project Description

Quick Links to Featured Items

# Simple project home pages

- How has it worked out?
  - People have built a lot of great project home pages
  - Feels like a community site, not like a card catalog
  - It breaks down where project owners don't bother to provide any details



# Subversion and Mercurial on Bigtable

- Problem:
  - Host a million OSS source code repositories reliably
- Status Quo:
  - Run stock subversion servers sharded across a fixed number of machines
- Our solution:
  - Dynamic load balancing across any number of servers
  - Fits into Google infrastructure
  - Bigtable is a NoSQL database that is inherently scaleable and reliable within one datacenter
  - We added distribution across datacenters



# Subversion and Mercurial on Bigtable

- How has it worked out?
  - We host many, many thousands of projects
  - We handle a huge number of concurrent users
  - Speed is a problem, because of SVN's protocol
  - We still have occasional read-only periods



# Googley artifact search and key-value labels

- Problem:
  - Let users search complex artifacts easily
  - Let project owners customize the tools
- Status Quo:
  - Tons of built-in fields and widgets
- Our solution:
  - Single search text box with search operators
  - Auto-completion of search operator terms
  - Use key-value labels instead of enumerated fields
  - UI makes key-value labels feel like real custom fields



Simple Search | Advanced Search

[Give me some help](#) (reloads page).

**Summary:** contains all of the strings [input] Search

<b>Classification:</b> Client Software Components Server Software Other Graveyard	<b>Product:</b> addons.mozilla.org AUS Bugzilla Calendar Camino	<b>Component:</b> .NET (Microsoft) AIR (Adobe) API AUS Server Accessibility	<b>Version:</b> 0.1 0.1.1 0.1.2 0.1.3 0.1.4	<b>Target:</b> -- -- 0.007 0.008 0.009
--	--	--	--	---

**A Comment:** contains all of the strings [input]  
**The URL:** contains all of the strings [input]  
**Whiteboard:** contains all of the strings [input]  
**Keywords:** contains all of the words [input]



<b>Status:</b> UNCONFIRMED NEW ASSIGNED REOPENED RESOLVED VERIFIED CLOSED	<b>Resolution:</b> -- FIXED INVALID WONTFIX DUPLICATE WORKSFORME INCOMPLETE EXPIRED MOVED	<b>Severity:</b> blocker critical major normal minor trivial enhancement	<b>Priority:</b> -- P1 P2 P3 P4 P5	<b>Hardware:</b> All ARM DEC HP PowerPC x86 x86_64 SGI Sun	<b>OS:</b> All Windows 98 Windows ME Windows NT Windows 2000 Windows XP Windows Server 2003 Windows Server 2008
--	--	---	--	---	---

**Email Addresses, Bug Numbers, and Votes**

Any of:  
 the bug assignee  
 the reporter  
 the QA contact

Any of:  
 the bug assignee  
 the reporter  
 the QA contact

**Bug Changes**

**Only bugs changed between:**  
[input] and Now [input]  
(YYYY-MM-DD or relative dates)



Simple Search Box w/ Auto-Complete

New Issue Search Open issues for memory pr Search Advanced search Search tips

Note: *Italic text* indicates

- Priority=Critical = Must resolve
- Priority=High = Strongly want to resolve
- Priority=Medium = Normal priority
- Priority=Low = Should fix

Select: All None Actions...

ID	Status	Priority	Summary + Labels	HW	OS	Area	Stars
49	New	---	v8 does not use correct Integer types.	---	---	---	14
61	Accepted	Medium	CatchStackOverflow fails with multiple threads on MacOSX	---	Mac	---	6
64	Accepted	Low	Support additional toolchains on Windows	---	---	---	22
82	Accepted	Low	Check for trailing whitespace in Python files	---	---	---	3
99	Accepted	Medium	Detect whether g++ is installed	---	---	---	3
104	Accepted	Low	Add generated documentation for v8.h to the site	---	---	Documentation	7
105	Assigned	Low	Implicit call to valueOf has wrong caller	---	---	---	2
117	New	---	Reject reserved words as identifiers for ES5 strict mode. <b>ES5</b>	---	---	---	---
119	Accepted	Medium	Remove push(holder_reg) in CheckAccessGlobalProxy	---	---	---	---
126	Assigned	Medium	Dictionary::Allocate should preserve 25% more space than asked	---	---	---	---
129	Assigned	Medium	Memory consumption hyperoscillations	---	---	---	---
138	New	---	globally deleted function erroneously hides function in global with statement	---	---	---	---
144	Accepted	Low	Easy C++ Wrapper for Embedding	---	---	---	12
146	New	Medium	Delete ARM Simulator object when a thread goes away	ARM	---	---	1
147	Accepted	Medium	class SaveContext missing description	---	---	---	1
150	New	---	scons install target	---	---	---	2
153	Accepted	Medium	Add support for running multiple JS tests in same VM	---	---	---	4
155	New	---	v8::ScriptData::PreCompile does crash	---	---	---	1

Key-Value Label Shown as Column





Frets on Fire fork with plenty of features, customizable themes and options

Search projects

Project Home Downloads Wiki Issues Source Administer

New issue Search Open issues for Search Advanced search Search tips

Summary: Enter a one-line summary

Description: Describe the problem. What did you expect? What do you see? List the steps to recreate the problem. What version are you using? Include the FoFiX version, the Python version, your operating system, and whether it is Git, alpha, beta, RC, or final release. (If it's Git, please include the commit hash.) Did you read the wiki on how to report bugs, conveniently called ReportingBugs? If this is a bug report, please include the log file!

Tip: Please search for an existing issue before reporting a problem as a new issue. Remember: This report will be publicly visible. So, don't include passwords or other confidential information.

Attach a file Notify me of issue changes, if enabled in

Status: New

Owner:

Cc:

Labels: Priority-Low Milestone-Release-3.020 Type-WishList

Blocked on:

Submit issue Discard



- Type-Defect = Report of a software defect
Type-MinorDefect = Report of a minor or inconsequential defect
Type-Enhancement = Request for enhancement
Type-WishList = Would be nice, but is very difficult to implement
Type-Task = Work item that doesn't change the code or docs
Type-Review = Request for a source code review
Type-Other = Some other kind of issue

**Define Possible Status Values that Match Your Development Process**

### Predefined status values

#### Open Issue Status Values:

New	= Issue has not had initial review yet
Reviewed	= Issue has been reviewed, but no decision made
Accepted	= Problem reproduced / Dev team acknowledges the need
Started	= Work on this issue has begun
FixPending	= We have a fix, but it's not deployed to the site yet

#### Instructions:

List one status value per line in desired sort-order.

Optionally, use an equals-sign to document the meaning of each status value.

#### Closed Issue Status Values:

Fixed	= Fix has been deployed, QA should verify
Verified	= QA has verified that the fix worked
Invalid	= This was not a valid issue report
WontFix	= We decided not to take action on this issue
Duplicate	= This report duplicates an existing issue
Starved	= Lack of votes over a substantial period of time

**Define Labels to Organize Issues in Your Project**

If an issue's status is being set to one of these values, offer to mark it as

### Predefined issue labels

Type-Defect	= Report of a software defect
Type-Enhancement	= Request for enhancement
Type-Task	= Work item that doesn't change the code or docs
Type-Service	= Request for support with a project
Type-Spam	= Invalid item with abusive intent
Type-Other	= Track any kind of issue
Priority-Critical	= Must resolve in the specified milestone
Priority-High	= Strongly want to resolve in the specified milestone
Priority-Medium	= Normal priority
Priority-Low	= Might slip to later milestone
Component-SourceBrowsing	= Web-based source code browsing

#### Instructions:

List one label per line in desired sort-order.

Optionally, use an equals-sign to document the meaning of each label.

# Googley artifact search and key-value labels

- How has it worked out?
  - Certainly exceeded expectations
  - People seem to understand it and have used it extensively
  - About 1/3 of active projects use the issue tracker
  - Over 1000 active projects have 100-1000 issues
  - Largest project has 73,000 issues and growing



# Wiki centered on page list

- Problem:
  - Wiki's are messy and disorganized
  - Establishing navigation takes time and distracts
  - When hunting around, you don't know when to stop
- Status Quo:
  - Start at some initial page. Use macros for page lists.
- Our Solution:
  - By default, take visitors to a complete list of pages first
  - Each page has both a WikiWord and one-line summary
  - Wiki pages can have Key-Value labels that show in the list view, just like issues
  - Optional wiki sidebar for custom navigation





Search projects

Project Home Downloads Wiki Issues Source Admin

New page Search Current pages for

Users Start on the List of All Wiki Pages

1 - 18 of 18

PageName	Summary + Labels	Changed	Phase	...
<a href="#">HowToCreateStencilSet</a>	How to create a stencil set for oryx by the example of Let's Dance <i>Featured</i>	6 days ago	---	
<a href="#">SetupDevelopmentEnvironment</a>	This guide shows how to set up and configure a development environment in order to build the Oryx application from source.	Oct 04		
<a href="#">RoleResolution</a>	Mapping of roles to team members.			
<a href="#">HowToUseGoogleCode</a>	Guidelines on how to use Google Code for the Oryx project.			
<a href="#">Install3rdPartyApplication</a>	Provides quick installation guides for all required 3rd party applications.			
<a href="#">OryxStandalone</a>	HowTO Create a Webrunner for Oryx	Feb 2010	Deploy	
<a href="#">HowToDevelopAnEditorPlugin</a>	Guideline on how to develop a plugin <i>Featured</i>	Feb 2010	---	
<a href="#">I18N</a>	Internationalization of Oryx	Feb 2010	Implementation	
<a href="#">HowToDocumentYourCodeInOryx</a>	When contributing to Oryx, your code should be well-documented. This document provides some best practices and tools to comment your code.	Feb 2010	Implementation, QA	
<a href="#">HowToTestOryx</a>	This document describes how to run and write tests for oryx	Feb 2010	Implementation, QA	
<a href="#">OryxDatabase</a>	Structure of the database for storing oryx models	Feb 2010	---	
<a href="#">OryxSerialization</a>	Changes on serialization format from (e)RDF to JSON	Feb 2010	---	
<a href="#">OryxJavaScriptPlugins</a>	When using JavaScript Plugins for the Oryx Editor, there is the possibility to access the data using GRDDL.	Feb 2010	---	
<a href="#">DataManagementImplementation</a>	How Oryx data management and querying works. Excerpt from Bachelor's Paper.	Feb 2010	---	
<a href="#">InstallUpdateConfigureProductiveSystems</a>	This guide gives a quick overview about the default installation,	Jan 2010	---	

Organize Pages by Labels

Pages Have Both WikiWord and Summary





3485 Pages in a Flat List

New page Search  Current pages  for  Search

1 - 100 of 3485 [Next >](#)

PageName ▾	Summary + Labels ▾	Changed ▾	ChangedBy ▾	About ▾	Is ▾	...
<a href="#">sample</a>	One-sentence summary of this page.	5 hours ago	sivagurunath	---	---	
<a href="#">boxShadowAndRidious</a>	box Ridious Shadow webkit moz	4 days ago	regh.manolo	---	---	
<a href="#">BoxShadow</a>	shadow box	4 days ago	regh.manolo	---	---	
<a href="#">DocumentCharacterSetProperty</a>	The document.characterSet property	Jan 15	bnkuhn	dom	dom-property	
<a href="#">ArticleUtf7</a>	UTF-7: the case of the missing charset	Jan 12	paul.irish	security	article	
<a href="#">TOCArticles</a>		Jan 12	abdelmomen1985	---	---	
<a href="#">webkitRidiousAndShadow</a>	webkit border ridious corners box shadow bottom khtml moz top round roundtop	Jan 09	regh.manolo	---	---	
<a href="#">ArticleFixingFlashExternalInterface</a>	HOWTO fix issues in Flash's ExternalInterface API.	Jan 05	aduston	---	---	
<a href="#">SEO</a>	Search Engine Optimization and SEO tips from Google. seo google webmaster marketing advertising online	Jan 04	affordableweb	---	---	
<a href="#">AffordableWebPro</a>	Affordable Web Design, SEO and Internet Marketing Services.	Jan 04	affordableweb	---	---	
<a href="#">ArticleGoogleChromeCompatFAQ</a>		Jan 04	jeremy@chromium.org	best-practices	tip	
<a href="#">ArticleIntroductionToXSS</a>	Introduction to Cross-Site Scripting Vulnerabilities.	Dec 24	dmchoull	security	article	
<a href="#">ArticleContentSniffing</a>	HOWTO protect against malicious images and other non-HTML content	Dec 24	dmchoull	security	article	
<a href="#">WindowObject</a>	The window object is the AbstractView of the document.	Dec 05	guss77	dom	dom-object	

## ★ Welcome

Welcome to Google Doctype. Written by web developers, for web developers.

## What do you want to learn today?

Read [HOWTO articles](#) on

- [Web security](#)
- [DOM manipulation](#)
- [CSS and style](#)
- [Tips and tricks](#)
- [Creating libraries that extend web browsers](#)

Dive into [DOM objects](#), including

- [document](#)
- [window](#)
- [history](#)
- [location](#)
- [navigator](#)
- [screen](#)
- and other historical curiosities

Style your pages with [CSS](#)

- [CSS properties](#)
- [pseudo-classes](#) and [pseudo-elements](#)
- [at-rules](#)
- [colors](#)
- ...and more on the way

Make your site search friendly

- [Use the right meta tags?](#)
- [Prevent content from being crawled/appearing in search results](#)

Do you need help with an [HTML element](#)? We have an HTML reference from [<a>](#) to [<xmp>](#).







Search Current pages for  Search

General

- [Goals](#)
- [ProblemsWithExistingEditors](#)
- [UserInterfaceQuestions](#)

Releases

- [ReleasePlan](#)
- [ReleaseNotes](#)

Development

- [ImplementationNotes](#)
- [PackageOrganization](#)
- [PlatformSpecificInterface](#)
- [SwtGuiFramework](#)
- [CodingStandards](#)
- [DeploymentChecklist](#)

★ **ReleaseNotes**  
*Notes on current and past releases*

Updated Mar 02, 2009 by [onlyafly](#)  
Labels: [Phase-Deploy](#), [Featured](#)

# Release Notes

## Version 0.4

<b>Release Date</b>	March 1, 2009
<b>Code Revision</b>	238

**Version Goal:** Document editing improvements.

### Document Editing

- Support for different text character sets such as UTF-16 (see [Issue #11](#))
- ...
- ...
- ...

### User Interface

- File menu
  - Project menu merged into File menu
- Edit menu
  - "Redo" item



# Wiki centered on page list

- How has it worked out?
  - Page list landing page works really well: reduces workload on authors, always up-to-date
  - About 1/3 of all our projects use the wiki
  - 79 active projects have 100-1000 wiki pages
  - Of the top 20 projects with the most wiki pages:
    - 4 replaced the list with a custom page, 16 kept list
    - 3 made a wiki sidebar, 17 rely on list view



# Integrated source code browsing and code review

- Problem:
  - Existing source browsing tools required too many clicks, made it hard to navigate deep trees
  - Certain OSS teams were great at using email for code reviews, others didn't try
- Our solution:
  - AJAXy directory tree browser
  - Go directly to source file content, metadata is on the side
  - Client-side syntax highlighting for speed
  - Double-click adds post-commit review comment
  - Show +1/-1 scores on the revision list page, comments on revision detail page.





# fbug

Web development evolved

Search projects

Project Home Wiki Issues **Source**

Checkout **Browse** Changes Search Trunk

Source path: svn/

r9066 r9067

### Directories

- ▼ svn
  - ▶ artwork
  - ▶ branches
  - ▶ canvasinspector
  - ▶ chromebug
  - ▶ diff
  - ▶ eventbug
  - ▼ examples
    - ▶ firebug1.4
    - ▶ firebug1.5
    - ▼ firebug1.7
      - ▼ CommandLineDebugger
        - .settings
        - source
        - ▶ HelloModule
        - ▶ HelloModuleScope
  - ▶ extensions
  - ▶ fbtest
  - ▶ jsdoc
  - ▶ lite
  - ▶ mozilla
  - ▶ netexport
  - ▶ prototypes
  - ▶ sdk
  - ▶ tags
  - ▶ tests

Filename	Size	Rev	Date	Author
<a href="#">BTICommandLine.js</a>	9.2 KB	r8201	Oct 28, 2010	darin.eclipse
<a href="#">CFBreakpoint.js</a>	3.1 KB	r8201	Oct 28, 2010	darin.eclipse
<a href="#">CFBrowser.js</a>	11.2 KB	r8063	Oct 18, 2010	darin.eclipse
<a href="#">CFBrowserContext.js</a>	3.7 KB	r7977	Oct 07, 2010	darin.eclipse
<a href="#">CFCompilationUnit.js</a>	3.5 KB	r8201	Oct 28, 2010	darin.eclipse
<a href="#">CFExecutionContext.js</a>	2.6 KB	r7946	Oct 06, 2010	darin.eclipse
<a href="#">readme.txt</a>	890 bytes	r7899	Sep 29, 2010	darin.eclipse

AJAX Preloading of Directories for Speed





# fbug

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[Project Home](#) [Wiki](#) [Issues](#) **Source**

Checkout **Browse** Changes  Search Trunk

Source path: [svn/](#) [trunk/](#) [components/](#) firebug-service.js [Edit file](#)

```
1 /* See license.txt for terms of usage */
2
3 // *****
4 // Utils
5
6 function CC(className)
7 {
8     ret
9 }
10
11
12
13 }
14
15
16 // *****
17 // Constants
18
19 const CLASS_ID = Components.ID("{a380e9c0-cb39-11da-a94d-0800200c9a66}");
20 const CLASS_NAME = "Firebug Service";
21 const CONTRACT_ID = "@joehe Witt.com/firebug;1";
22
23 // *****
24
25 const PrefService = CC("@mozilla.org/preferences-service;1");
26 const DebuggerService = CC("@mozilla.org/js/jsd/debugger-service;1");
27 const ConsoleService = CC("@mozilla.org/soleservice;1");
28 const Timer = CC("@mozilla.org/timer;1");
29
30 const jsdIDebuggerService = CI("jsdIDebuggerService");
31 const jsdIScript = CI("jsdIScript");
32 const jsdIStackFrame = CI("jsdIStackFrame");
33 const jsdICallHook = CI("jsdICallHook");
```

Source Code Served in Black  
Syntax Highlighted by JS

History and Metadata  
Can be Collapsed

[Hide details](#)

### Change log

[r366](#) by johnjbarton.com on Feb 19, 2008 [Diff](#)  
[1.1b12]  
\*\* ~~Issue 450~~: DOM Browser crashes Firefox  
\*\* ~~Issue 434~~: Network Monitoring not showing image downloads  
\*\* Unreported problem with breakpoints removed then re-added, seen in work on firebug 1.2

Go to:

### Older revisions

[r356](#) by johnjbarton.com on Feb 07, 2008 [Diff](#)  
[r302](#) by johnjbarton.com on Dec 08, 2007 [Diff](#)  
[r26](#) by joehe Witt on Apr 29, 2007 [Diff](#)  
[All revisions of this file](#)

### File info

Size: 63007 bytes, 2009 lines  
[View raw file](#)



# fbug

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[Project Home](#) [Wiki](#) [Issues](#) **Source** [Administer](#)

[Checkout](#) [Browse](#) **Changes**  [Request code review](#)

Changes to /trunk/components/nsIFireBug.idl r26 vs. r302 [Edit](#) [r26](#) [r302](#)

## Code review of r302

Go to:

Double click a line to add a comment

```
/trunk/components/nsIFireBug.idl r26  
1 /* See license.txt for terms of usage */  
2  
3 #include "nsISupports.idl"  
4  
5 interface jsdIStackFrame;  
6 interface jsdIScript;  
7 interface jsdIValue;  
8  
9 interface nsIDOMWindow;  
10
```

```
/trunk/components/nsIFireBug.idl r302  
1 /* See license.txt for terms of usage */  
2  
3 #include "nsISupports.idl"  
4  
5 interface jsdIStackFrame;  
6 interface jsdIScript;  
7 interface jsdIValue;  
8 interface jsdINestCallback;  
9 interface nsIDOMWindow;  
10  
11 [scriptable, uuid(c8fd2c1c-060c-4c3b-b1e6-9e0e78425ae4)]  
12 interface nsIFireBugError : nsISupports  
13 {  
14     readonly attribute string message;  
15     readonly attribute string fileName;  
16     readonly attribute unsigned long line;  
17     readonly attribute unsigned long pos;  
18     readonly attribute unsigned long flags;  
19     readonly attribute unsigned long errnum;  
20     readonly attribute jsdIValue exc;  
21 };  
22  
23 [scriptable, uuid(c8bdf90d-483a-45b2-a3eb-c655c7084b2c)]  
24 interface nsIFireBugBreakpointProperties : nsISupports  
25 {  
26     readonly attribute boolean disabled;  
27     readonly attribute string condition;  
28     readonly attribute boolean onTrue;  
29     readonly attribute long hitCount;  
30
```



I Think I See  
Something Wrong



# fbug

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[Checkout](#) [Browse](#) **Changes**  [Search Trunk](#) [Request code review](#)

Changes to /trunk/components/nsIFireBug.idl r26 vs. r302 [Edit](#) [r26](#) [r302](#)

## Code review of r302

Go to:

Double click a line to add a comment

[/trunk/components/nsIFireBug.idl](#) [r26](#)

```
1 /* See license.txt for terms of usage */
2
3 #include "nsISupports.idl"
4
5 interface jsdIStackFrame;
6 interface jsdIScript;
7 interface jsdIValue;
8
9 interface nsIDOMWindow;
```

[/trunk/components/nsIFireBug.idl](#) [r302](#)

```
1 /* See license.txt for terms of usage */
2
3 #include "nsISupports.idl"
4
5 interface jsdIStackFrame;
6 interface jsdIScript;
7 interface jsdIValue;
8 interface jsdINestCallback;
9 interface nsIDOMWindow;
10
11 [scriptable, uuid(c8fd2c1c-060c-4c3b-b1e6-9e0e78425ae4)]
12 interface nsIFireBugError : nsISupports
13 {
14     readonly attribute string message;
```

Draft comment:

Will this always be read-only?

Save

Cancel

Make a Comment On Exactly That Line

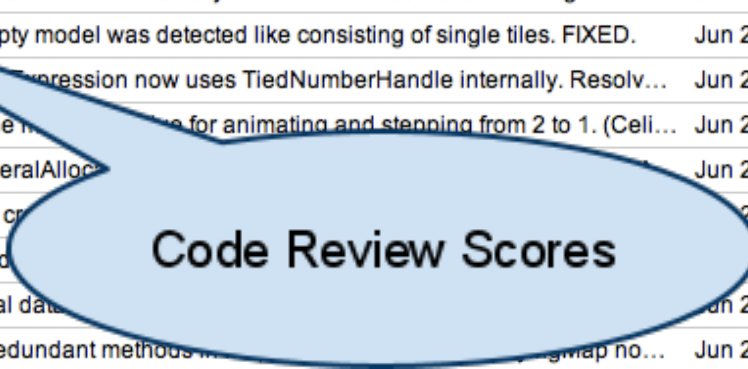
```
15     readonly attribute string fileName;
16     readonly attribute unsigned long line;
```



**Committed Changes**

[Newer](#) 6081 - 6057 of 8356 [Older](#)

Rev	Scores	Commit log message	Date	Author
<a href="#">r6081</a>		Lock status change of a tied number now sets a flag to indicate that the sl...	Jun 24, 2010	toontalk
<a href="#">r6080</a>		Lock status change of a tied number now sets a flag to indicate that mode...	Jun 24, 2010	toontalk
<a href="#">r6079</a>		Introduced two new configuration options to deal with Issue 870 single-ac...	Jun 24, 2010	toontalk
<a href="#">r6078</a>		Activity documents are now posted to the server whenever the done butto...	Jun 24, 2010	toontalk
<a href="#">r6077</a>	+1	[DP] New class that suggests pairs. Takes a Map of Users to ExpresserM...	Jun 24, 2010	sergut
<a href="#">r6076</a>		Several changes for the integration with future MigenPairMaker. Change...	Jun 24, 2010	sergut
<a href="#">r6075</a>		Some changes in order to be used with MigenPairMaker. Changes includ...	Jun 24, 2010	sergut
<a href="#">r6074</a>		Minor improvement in comment.	Jun 24, 2010	sergut
<a href="#">r6073</a>	+1	[DP] ClassGrouping now functional. Dummy code still in place, so it can b...	Jun 24, 2010	sergut
<a href="#">r6072</a>	+1	Additional test, after r6070.	Jun 24, 2010	sergut
<a href="#">r6071</a>	-1	Increased the amount of memory available to MiGen client. During the Dr...	Jun 24, 2010	toontalk
<a href="#">r6070</a>	+1	Bug: an empty model was detected like consisting of single tiles. FIXED.	Jun 24, 2010	sergut
<a href="#">r6069</a>	+1	TiedNumberExpression now uses TiedNumberHandle internally. Resolv...	Jun 24, 2010	toontalk
<a href="#">r6068</a>		Changed the number of cells for animating and stepping from 2 to 1. (Cell...	Jun 24, 2010	toontalk
<a href="#">r6067</a>		CorrectGeneralAlloc...	Jun 24, 2010	sergut
<a href="#">r6066</a>		First step in cr...	Jun 23, 2010	darren.pearce
<a href="#">r6065</a>		TeacherMod...	Jun 23, 2010	darren.pearce
<a href="#">r6064</a>		New general data...	Jun 23, 2010	darren.pearce
<a href="#">r6063</a>		Removed redundant methods...	Jun 23, 2010	darren.pearce
<a href="#">r6062</a>		KK please check. If this commit works it includes the getPositiveColors()	Jun 23, 2010	mavrikis



Code Review Scores



Revision: r6071

Author: toontalk
Date: Jun 24, 2010
Review scores: -1
Negative: darren.pearce

Log message

Increased the amount of memory available to MiGen client. During the Dry Run on Monday it seems it needed more than the 256MB previously allocated.
Note that I did more tests to confirm no memory leak in eXpresser. With IS etc it seems we just need more memory. If IS has a memory leak it is not large.

Start a code review
Add comments to files in this revision. Share them with the author and other users.
Learn more

Affected files expand all collapse all

Modify /trunk/java/run.bat diff
...
1 1 @echo off
2 - @java -Xmx256M -jar @MAIN-JAR-FILENAME@
2 + @java -Xmx512M -jar @MAIN-JAR-FILENAME@

Quick Diff

Link to 2-Column Diff

Comment by project member darren.pearce, Jun 24, 2010 Delete comment

Sorry, Ken, but 'more tests to confirm no memory leak in eXpresser' is a HUGE assumption. How rigorous is your testing regime? Can you explain the sequence of tests? Is it repeatable by us?

... during the dry run, I checked the task manager on mine and Alex's machine and the system looks to require about 300Mb of RAM to run.

Comment by project member ToonTalk, Jun 24, 2010 Delete comment

Testing is very time consuming. See http://code.google.com/p/migen/issues/detail?id=354

General Comments



Project Home Downloads Wiki Issues **Source**

Checkout Browse Changes  Search Trunk

★ Revision: r169 <r168 r169 r170>

Author: e.s.velez  
Date: May 24, 2010

Review scores:  
+1

Positive:  
[danielgutson](#)

### Log message

modificaciones a plugin admin

### Affected files [expand all](#) [collapse all](#)

- ⊕ Modify [/trunk/src/ASO/framework/main.cpp](#) [diff](#)
- ⊕ Modify [/trunk/src/ASO/framework/plugin\\_admin.cpp](#) [diff](#)
- ⊕ Modify [/trunk/src/ASO/framework/plugin\\_admin.h](#) [diff](#)
- ⊕ Modify [/trunk/src/ASO/framework/therapy\\_gen\\_imp.cpp](#) [diff](#)
- ⊕ Modify [/trunk/src/ASO/framework/therapy\\_gen\\_imp.h](#) [diff](#)

Comment by project member [danielgutson](#), May 25, 2010

[2 line-by-line comments](#)

[/trunk/src/ASO/framework/plugin\\_admin.cpp\\_r169\\_line\\_43:](#)

```
43: if (handle == NULL)
```

aca se tendria que construir success, con esta expresion.  
(acordate: usar siempre late declarations, osea definir las variables lo más cercano posible a donde se deban usar).

[/trunk/src/ASO/framework/plugin\\_admin.cpp\\_r169\\_line\\_48:](#)

```
48: CreatePlugin create_plugin = (CreatePlugin) dlsym(handle, 'create_plugin');
```

esto no se debería hacer si success es falso. Debería estar mejor estructurado todo este código en términos de errores.

Line-by-Line  
Comments for  
Detailed  
Discussion



fbug

Web development evolved

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**Assigned Code Reviews** [See all review issues](#) [Learn more](#)

Status	Owner	Branch	Summary
Triaged	Hans.Hillen	<a href="#">Review: /branches/firebug1.6</a>	Review new 1.6 command line code and completion system for accessibility issues

**Committed Changes** 9485 - 9461 of 9485 [Older >](#)

	Commit log message	Date	Author
	related to issue 3771, clicking anywhere in the balloon notification closes it.	Today (2 hours ago)	odvarko
	[tracing] Don't use __lookupGetter__ on DOM Members	Today (5 hours ago)	odvarko
	Update description for dom/storage test.	Today (5 hours ago)	ho...@allpeers.com
	[bti] register http listeners to fill tabCache	Yesterday (17 hours ago)	johnjbar...@johnjbar...
	Issue 4120 (Make it possible to use Ctrl+Shift+L without Firebug focused) http://c...	Yesterday (22 hours ago)	sebastia...@gmx.de
★ <a href="#">r9480</a>	script tag insertion can be async after all, so don't remove the tag on this event st...	Yesterday (24 hours ago)	johnjbar...@johnjbar...
★ <a href="#">r9479</a>	[fbtest] Exporting list of installed extensions must be asynchronous in Gecko 2.0	Yesterday (27 hours ago)	odvarko
★ <a href="#">r9478</a>	[fbTest-1.7b13]	Yesterday (29 hours ago)	odvarko
★ <a href="#">r9477</a>	Set minimum size needed for running tests (only applied if -runFBTests is specifi...	Yesterday (29 hours ago)	odvarko
★ <a href="#">r9476</a>	[fbTest-1.7b12]	Yesterday (30 hours ago)	odvarko
★ <a href="#">r9475</a>	[tests] user test case for issue 4145	Feb 23 (41 hours ago)	johnjbar...@johnjbar...
★ <a href="#">r9474</a>	[bti] implement part of BTI for context via contextadapter	Feb 23 (41 hours ago)	johnjbar...@johnjbar...
★ <a href="#">r9473</a>	[bti] big push to get rid of Firebug.Debugger in Script panel.	Feb 23 (43 hours ago)	johnjbar...@johnjbar...
★ <a href="#">r9472</a>	[bti] sync to change in resetTooltip on 1.7	Feb 23 (45 hours ago)	johnjbar...@johnjbar...
★ <a href="#">r9471</a>	[bti] merge with branches/modules up to R9469; not tested	Feb 23 (47 hours ago)	johnjbar...@johnjbar...
★ <a href="#">r9470</a>	[modules] merge with branches/firebug1.7 up to R9469; http://getfirebug.com/tes...	Feb 23 (47 hours ago)	johnjbar...@johnjbar...
★ <a href="#">r9469</a>	Yet one CSS fix for Firebug start button (Mac OS X). Related to issue 4093	Feb 23 (2 days ago)	odvarko
★ <a href="#">r9468</a>	[swarm] testing boots to installAll, user boots to ready	Feb 23 (2 days ago)	johnjbar...@johnjbar...
★ <a href="#">r9467</a>	[dvne] first attempt at error recovery	Feb 23 (2 days ago)	johnjbar...@johnjbar...

Requested Reviews

# Integrated source code browsing and code review

- How has it worked out?
  - Some scalability limits on huge directories and revisions
  - Teams that really like reviews want pre-commit reviews
  - We deferred to stand-alone tools for pre-commit reviews
  - About 10% of projects have done code reviews
  - Heaviest using project has over 4000 review comments
  - Most common usage is to say "Thank you"



# Pro Tips and Power-User Features

- Keystrokes
- Issue Grid
- Issue templates and filter rules
- Project people pages and custom permissions
- User groups



# Pro Tip: Keystrokes

- Issue tracker has keystroke accelerators
  - Navigate: next, previous, up to list
  - Jump to search field
  - Add a comment (reply)
  - Enter issue (compose)
  - Press "?" for full list



Status: Accepted  
Owner: jrobbins@google.com  
Comment 13 by project member apasha@google.com, Apr 04, 2010

Type-Enhancement  
Priority-Medium  
Component-UserProfile  
Issue tracker keyboard shortcuts

Issue list 14 by project member ningerso@g...  
k / j : up/down in the list  
h : preview the current issue  
o or <Enter> : open the current issue  
x : select the current issue

Anywhere  
/ : focus on issue search field  
c : compose a new issue  
s : star the current issue  
r : add comment & make changes

Note: Only signed in users can star issues or add comments, and only project members can select issues for bulk edits.  
Comment 16 by MALfunction84, Aug 26, 2010

An RSS feed for starred issues across all projects would be a nice alternative to email notifications. Filed as issue 3900.

Add a comment and make changes

Empty text input field for adding a comment.



Attach a file

Summary: Show starred issues across all projects

Status: Accepted

Owner: jrobbins@google.com

Cc:

Labels: Type-Enhancement Priority-Medium Component-UserProfile

Add a row

Blocked on:

Save changes Discard And then: Stay on this issue Send email More actions...



# Issue Grid

- Issue grid view shows a 2D scatter graph
  - Triage: star count vs. type
  - Release planning: milestone vs. priority
  - Workload balancing: milestone vs. owner



Project Home Downloads Wiki Issues

New issue Search Open issues

Choose Each Axis

Grid Mode

Rows: Stars Color: type Cells: Tiles 24 issues shown List Grid

Defect					Enhancement	Task
<p>★ 190 New delFriends怎么用?</p>						
<p>★ 107 New 计算Acc的解决建议(方法)</p>	<p>★ 121 Assigned 关于 R147, DoPostLess15, 这个选项与R139有点重复</p>	<p>★ 134 New 升级车时忽略 NoBuyCaridList</p>	<p>★ 143 New 现在还没有可以批量提取所有好友的ID的功能吧?</p>	<p>★ 24 New 建议AddFriends中修改可以批量执行newfriend文件功能</p>	<p>★ 194 Accepted 拉力赛加油小工具</p>	
<p>★ 160 New Paker 1.0b 停车随机不能停入邻居车位</p>	<p>★ 168 New 发现刚出炉的Biter V0.6e 有bug</p>	<p>★ 169 New 建议增加Log输出选项(1:全部输出,2:错误输出)</p>	<p>★ 171 New Biter.V0.6e 小号咬主号不成功</p>	<p>★ 25 New 是否可以考虑一下增加查询id好友的小程序</p>		
<p>★ 172 New 3in1Kaixin-V1.0a 出错</p>	<p>★ 184 New 有被封过号的没, 进来说说</p>	<p>★ 186 Accepted 发现停车多了一个拉力赛</p>	<p>★ 198 New 晕死了, 封外挂了?</p>	<p>★ 39 Assigned 完善common代码</p>		
<p>★ 199 New 建议修改机制, 检测到被开心网BAN的帐号后直接跳过后续操作。</p>	<p>★ 200 New 发现了一个停车的问题</p>	<p>★ 219 New 3in1Kaixin 什么时候出新版本?</p>	<p>★ 236 New 开心网现在有一个 验证码登陆 你们的外挂登不上去了。</p>	<p>★ 65 New 建议在PARKER中将显示车位的“满”与“空”作为可选参数</p> <p>★ 131 Assigned 建议升级模块升级完毕以后按任意键以后再退出</p>		
				<p>★ 16 New 系统托盘和日志记录</p>		

# Issue templates and filter rules

- Project owners can define templates for new issues
  - Makes it easier to enter new issues of common types
  - Channels the efforts of non-members toward good issue reports
- Project owners can define if-then rules that automatically add labels and CC users
  - E.g., if it is labeled Security, automatically restrict access
  - E.g., if it is labeled Component-Printing, automatically CC the person in charge of printing



### New issue templates

- Choose Template:
- Defect report from user
  - Defect report from developer
  - Security Bug
  - Translation Issue
  - Regression
  - Defect on Linux
  - Defect on Mac OS
  - ChromeFrame Issue
  - Broken Webpage
  - Layout Test Failure
  - New Feature
  - NaCl Issue
  - Flash issue (private)
  - Flash Security issue (private)
  - Privacy issue
  - Enterprise Issue

New... Delete

Only offer this template to project members

Summary:  
  
 Users must edit issue summary before submitting

Description:  
1.  
2.  
3.  
What is the expected result?  
What happens instead?  
Please provide any additional information below. Attach a screenshot if possible.

Status:

Owner:  
  
 Default to member who is entering the issue

Labels:  

Type-Bug	Pri-2	Area-Undefined
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>

Default template for project members:

Default template for non-members:

### List and grid preferences

Default columns shown in list view: [Learn more](#)

ID	Stars	Pri	Area	Feature	Type	Status	Summary	Modified	Owner	Mstone	OS
----	-------	-----	------	---------	------	--------	---------	----------	-------	--------	----

### Filter rules

Filter rules can help you fill in defaults and stay organized. [Learn more](#)

If the item has all these labels:	Then, do the following:
1. regression, channel-stable	Add Cc: lforge@chromium.org, srantha@chromium.org
2. regression, channel-stable	Also notify email: lforge@chromium.org, srantha@chromium.org
3. area-Webkit	Add Cc: karan@chromium.org
4. javascript	Also notify email: tjblackow-bugs@chromium.org
5. ReleaseBlock-	Also notify email: lforge@chromium.org, eric.balak@gmail.com, orleng
6. video	Add Cc: scherkus@chromium.org, kylep@chromium.org, toland
7. FlakyTest	Add Cc: jhazan.j@chromium.org, mat@google.com
8. Feature-Sync	Add Cc: bn@chromium.org, rick@chromium.org, zed@chromium
9. NewFTP	Add Cc: jhazan.j@chromium.org
10. os-mac	Also notify email: os-mac-issues@chromium.org
11. Security	Add Cc: security@chromium.org
12. os-chrome	Add Cc: sky@chromium.org, zeldrag@chromium.org
13. Feature-Bookmarks	Add Cc: sky@chromium.org, jp@chromium.org, mrossetti@chr
14. Feature-Sessions	Add Cc: sky@chromium.org
15. Area-Compat	Add Cc: karan@chromium.org
16. i18n	Add Cc: jhr@chromium.org, kd@chromium.org, cns@chromium
17. 3D-	Also notify email: orleng@chromium.org
18. Area-Compat-Web	Add Cc: karan@chromium.org

# Project people pages and custom permissions

- The "People" pages show what each project member is responsible for doing
  - An easy way to give credit to people for their work
  - Declaring who's in charge of X can motivate them
  - The auto-complete list of common "duties" helps project owners notice roles they might need to fill
- On the people detail pages you can grant fine-grained permissions
  - E.g., allow a contributor to make certain kinds of edits
  - E.g., allow certain project members to access restricted artifacts





# tortoisesvn

A Windows Subversion client, implemented as a shell extension

Search projects

Project Home Downloads Issues Source Admin

Summary Updates **People**

People Subtab Shows Everyone's Duties

How-to: Join this project by contacting the project owners, usually through a mailing list.

Name	Role	Duties	Notes
tortoisesvn	Owner	<ul style="list-style-type: none"><li>Lead by providing a project vision and roadmap</li><li>Lead the UI design and incorporate feedback</li></ul>	Lead Developer
luebbe.tortoisesvn	Owner	<ul style="list-style-type: none"><li>Translate UI text and documentation to new locales</li><li>Write end-user documentation and examples</li></ul>	TortoiseSVN fossil. Project member since the early days. Organizing a world-wide pack of translators is fun!
simon.tortoisesvn	Owner	<ul style="list-style-type: none"><li>Write end-user documentation and examples</li></ul>	---
stefan.fuhrmann.1974	Owner	<ul style="list-style-type: none"><li>Lead by providing a project vision and roadmap</li><li>Design core libraries, write code and unit tests</li><li>Design new features, write code and unit tests</li></ul>	Boring infrastructure stuff gets me excited.
DartRavern	Committer	---	---
iDkravitz	Committer	---	---
toschaef	Committer	---	---
situmanyan	Committer	<ul style="list-style-type: none"><li>Help with the UI to improve it for blind people</li></ul>	---
kari.grano	Contributor + Commit	<ul style="list-style-type: none"><li>Translate UI text and documentation to new locales</li><li>Finnish</li></ul>	---

Standard Roles May Be Upgraded



# User groups

- Project owners can create user groups and make them project members
  - Create user groups on [groups.google.com](https://groups.google.com), or in your FYD control panel
  - Add the email address of the group to the project
  - Group members get to see other group members in auto-complete menus

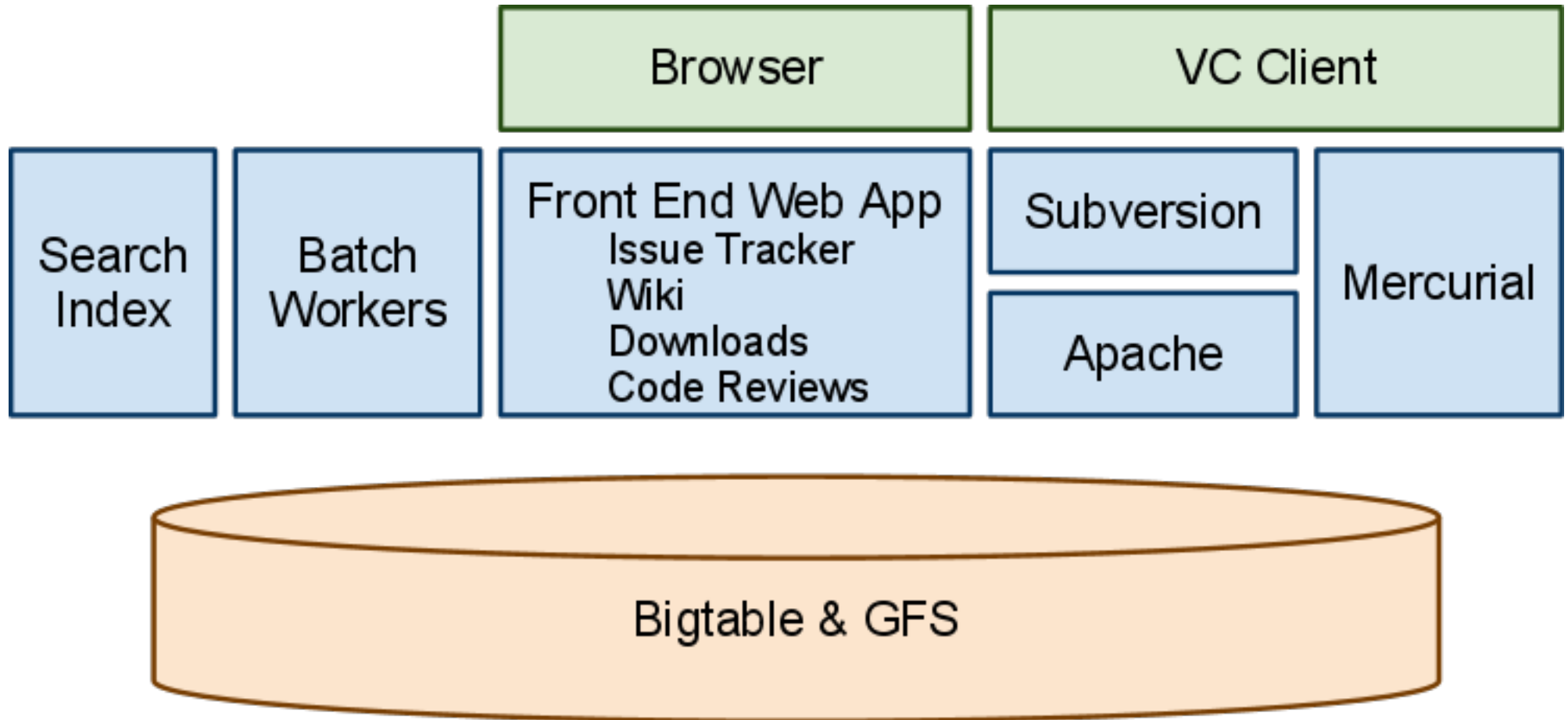


# How it all works

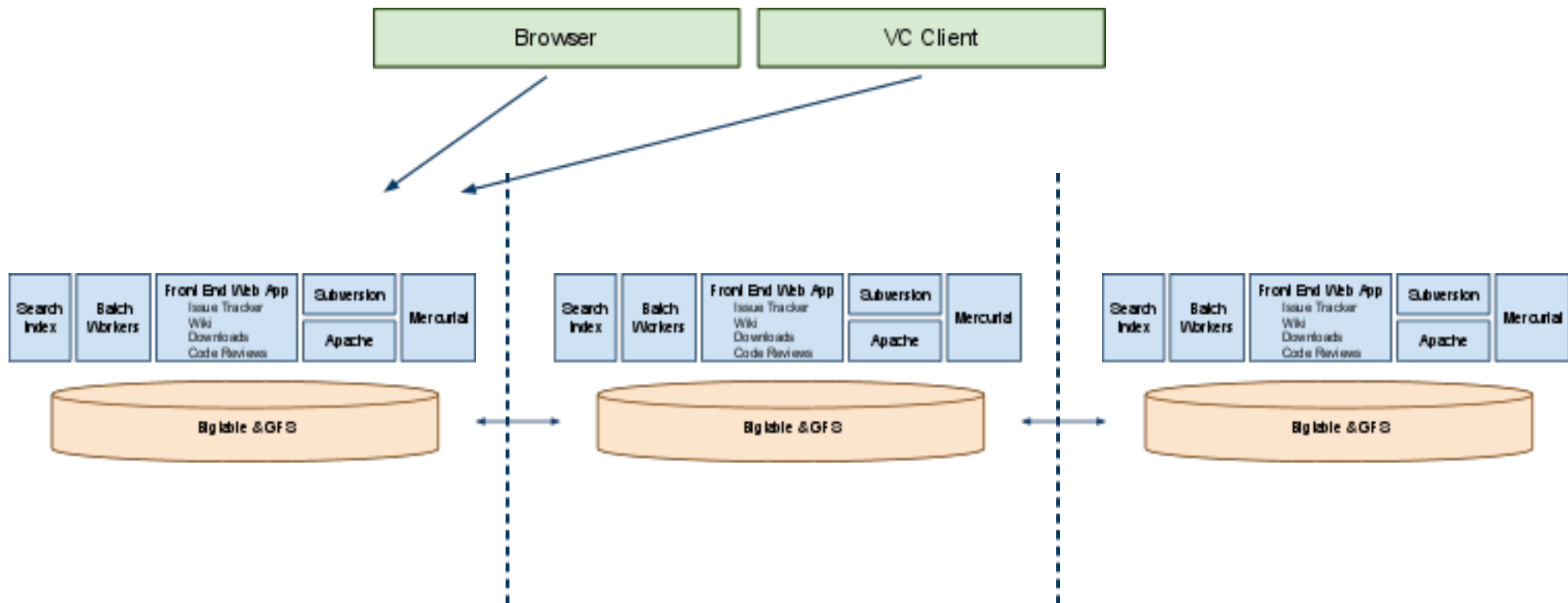
- Architecture
- Implementation
- Operational experience



# Google Project Hosting Architecture



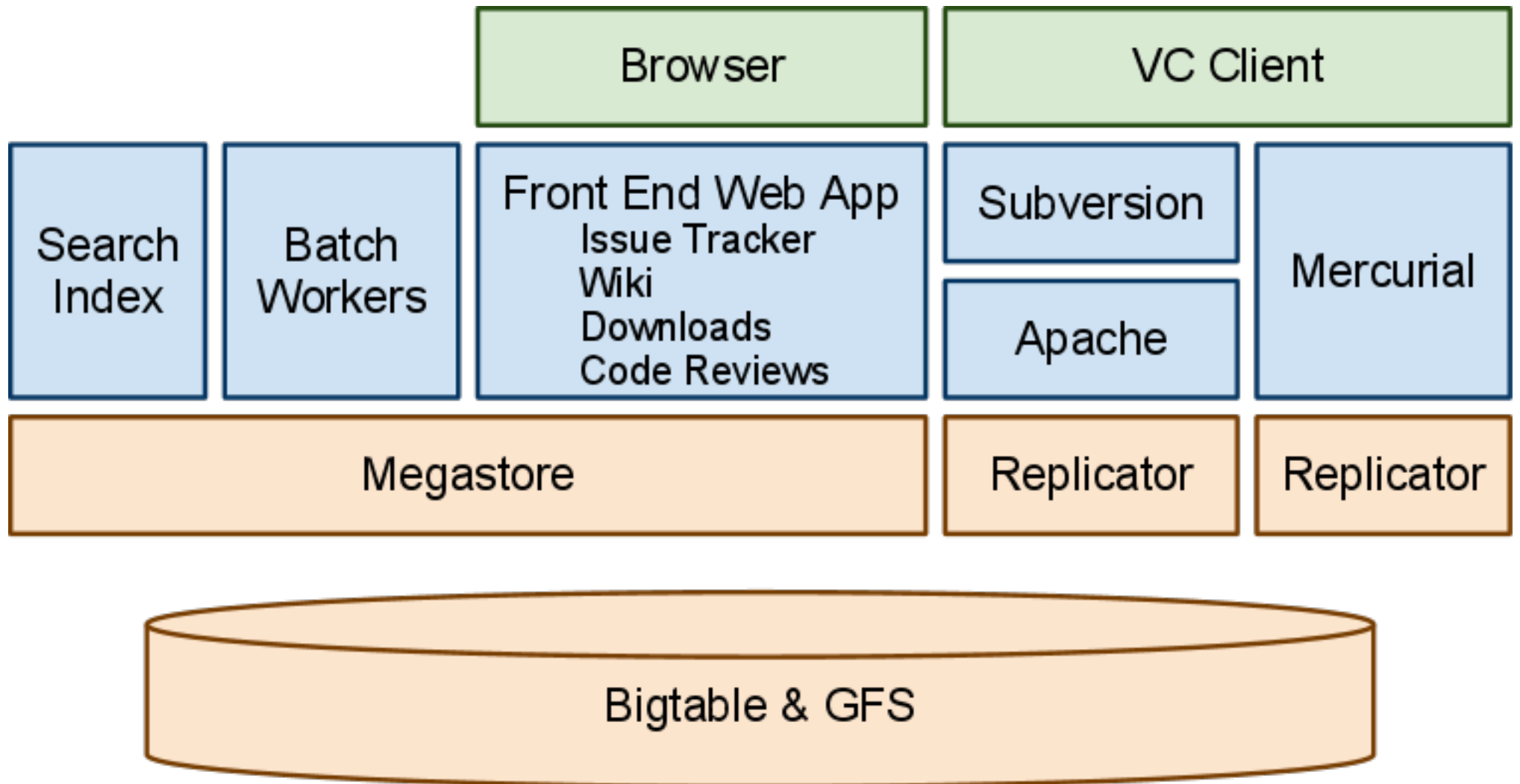
# Google Project Hosting Replication



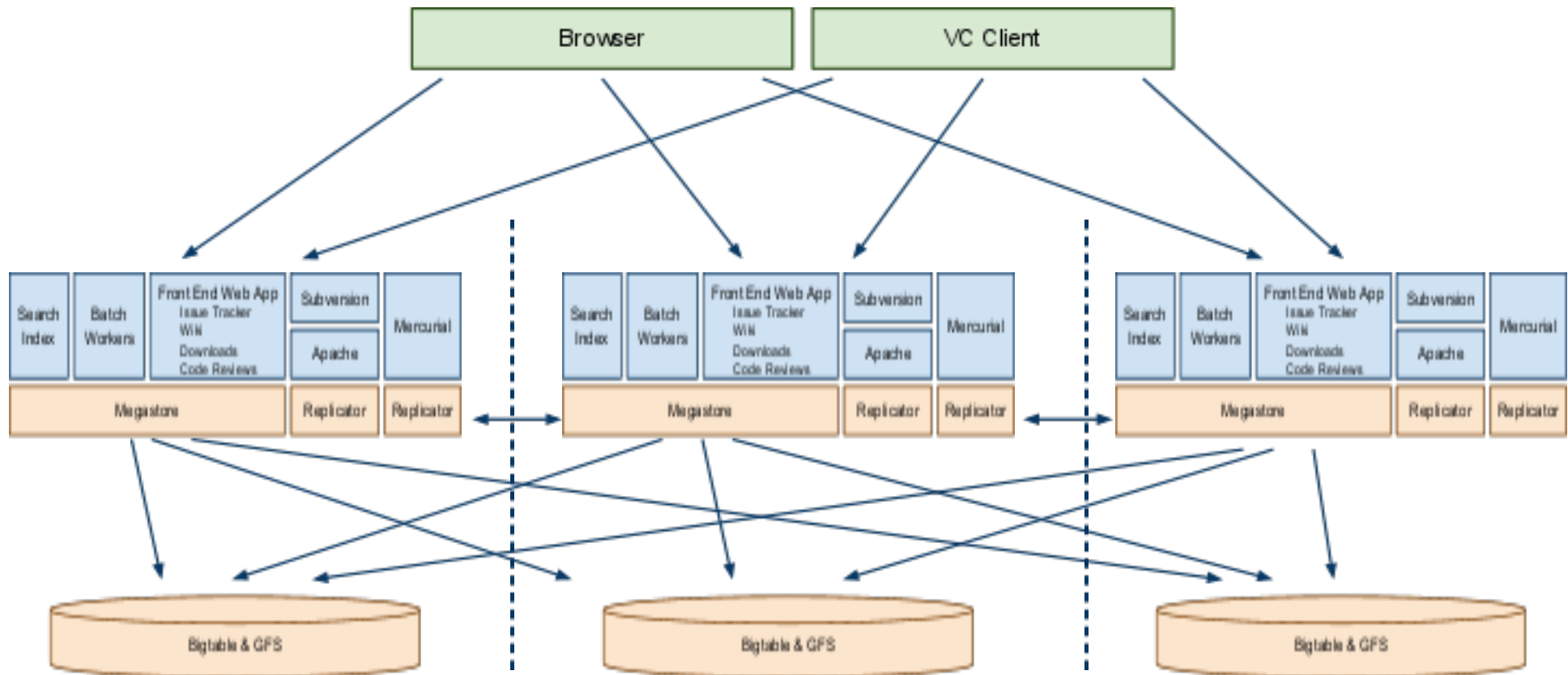
- Multiple datacenters, but only one is live at any give time
- Asynchronous replication of Bigtable data
- When failing over from one datacenter to another, the site must be in a read-only mode until replication catches up



# New GPH Architecture



# New GPH Replication



- Multiple datacenters, all live all the time
- Megastore writes synchronously to multiple Bigtable cells
- Custom replication for version control (also Paxos)



# Implementation

- About 200 KLOC of Python, 80 KLOC of C, Some Java
- Custom Python web app framework
- Parallel threads to make each request faster
- Follow-up work done in a batch processing system
- Not internationalized, but we handle unicode
- Unit tests and selenium tests





# Operational experience

- Frequent server-side updates, not user-visible
  - Schema changes must be backwards compatible
  - Flags to control new feature launches
- Biggest operational challenges:
  - latency spikes and fail-overs
- Technical support and community management:
  - We use our own issue tracker for tech support
  - Google Group for tech support
  - Automated analysis for spam and malware
  - Usage reports highlight unusual projects
  - We ban spammers and abusive users from the site



# The Team

Ali Pasha

Ben Collins-Sussman

Nathan Ingersoll

Jason Robbins

Logan Hanks

Robert Spier

Lucas Bergman

Jon Trowbridge

Tony Zale

Nathaniel Manista

Nate Kopchick

Vijay Menon

Augie Fackler

Jeremy Wall

Jacob Lee

David Borowitz