EGit 3.0 and beyond

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Performance improvements
Recursive merge

how to merge fix1?

2 common base versions
3.0 - June 2013

Merge options

Rename detection
3.0 - June 2013

Reset to expression
3.1 - October 2013

Staging view
Presentation modes (tree, list)
Filter
Rebase integration
3.1 - October 2013

Compare with
  Synchronize for multi-selection
  3-way compare
Mylyn links in history & staging view

Usability

Commit Message

Bug_123456 · Test hyperlinks in commit message

Change-Id: I0000000000000000000000000000000000000000
3.2 - December 2013

Push branch wizard
Interactive rebase
History view: Search all
Planned

Merge drivers (text, binary, model)
Wizard for pushing tag(s)
Optional Apache HttpClient for HTTP
Serving git with JGit - faster -

3.0 (GC fixes in 3.1)
Serving git with JGit

**jgit (git)**

$ jgit daemon <dir> --export-all

**gitblit (http)**

$ java -jar gitblit.jar --baseFolder <dir>

**gerrit (http and ssh)**

$ ./gerrit.sh start
Serving faster

Clone & fetch dominated by “counting...” phase
Cost linear with repo complexity/age

Linux kernel git: 2.9M objects
  ⇒ 60 sec 100% CPU counting...

JGit bitmap index (ignored by native git)
pre-computed reachability data for commits in a pack
559 MiB pack / 78 MiB idx / 2.9 MiB bitmap idx
  ⇒ < 80ms counting...
### Bitmap structure

<table>
<thead>
<tr>
<th></th>
<th>1a410e</th>
<th>cac0ca</th>
<th>fdf4fc</th>
<th>3c439c</th>
<th>0155eb</th>
<th>d8329f</th>
<th>1f7a7a</th>
<th>fa49b0</th>
<th>83baae</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a410e</td>
<td>1 1 1 1 1 1 1 1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>cac0ca</td>
<td>0 1 1 0 1 1 1 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>fdf4fc</td>
<td>0 0 1 0 0 1 0 0 1</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Assign bits by order of objects in pack file
- Objects to send = want AND_NOT have
- Bitmaps are compressible
- EWAH bitmap, variant of RLE
The race

Use `jgit gc` to create bitmap index

```
$ jgit --git-dir <dir> gc
$ ssh -p 29418 <host> gerrit gc <repo>
```

Race `jgit` vs. native git daemon
which doesn’t (yet) understand bitmap index
Staging View

Presentation modes (tree, list)
Filter
Rebase integration
Tips & Tricks
  Partial staging
  Drag file to editor area to open
  Drag from explorer views to stage
  Commit message completion
Push Branch Wizard

3.2
Interactive Rebase

3.2
sneak preview
Interactive Rebase

**commit --amend** on steroids: edit a series of commits

- Don’t use on published commits

Rebase actions:

- **pick**: include commit, reorder commits
- **skip**: remove commit
- **edit**: pick and pause, amend, insert/split commit
- **reword**: fix commit message
- **squash**: combine commits incl. messages
- **fixup**: combine commits excl. additional messages
join us at the

ECLIPSE CONTRIBUTOR
Hackathon

and learn how to hack on JGit / EGit

today evening 20:30-22:30
in Wilhelm-Krämer-Zimmer

http://www.eclipsecon.org/europe2013/eclipse-contributor-hackathon