



Learning To Love The DAG For Fun And Profit

Jonathan "Duke" Leto

@dukeleto

letolabs.com

duke@leto.net



A Bit About Me

- PDX Git Together
- Git consulting
- Parrot Virtual Machine
- Google Summer of Code
- ...

What *is* Git, exactly?

- A DAG (Directed Acyclic Graph)
- A content tracker
- A diverse community with a common bond
- A collection of implementations

What *is* Git, exactly?

DAG = Directed Acyclic Graph

- a "Tree of Arrows"
- You can't be your own Grandpa
- Graph = nodes + vertices

What *is* Git, exactly?

A content tracker

- Originally "an information manager from hell"
- Track changes in content, storing the diffs
- An empty directory has no content

What *is* Git, exactly?

A diverse community with a common bond

- Started with Linus in kernel-land and then spread quickly
- Now: web app developers, UI designers, scientists, professors...

What *is* Git, exactly?

A Collection of Implementations

- "official" Git 1.x
- JGit - Git 1.x server in Java
- libgit2 - "fresh start" linkable library in C
- js-git - Very alpha implementation in Javascript

What *is* Git, exactly?

Git 1.x

- /bin/sh
- C
- Perl (git svn, git add -i)
- Some optional optimized assembly

What *is* Git, exactly?

JGit

- Git server written in Java
- Eclipse
- Gerrit Code Review
- various commercial products

What **is** Git, exactly?

libgit2.github.com

- No dependencies
- ANSI 89 C for max(portability)
- Linkable, re-entrant C library
- Designed for multi-threading
- Funded by: Github + Microsoft

What **is** Git, exactly?

github.com/creationix/js-git

- Git in Pure JavaScript
- Currently only read-only supports
- Funded on bountysource.com
- Large donations from Mozilla + Adobe

Git + Perl community similarities

- Perl 5 ~ Git 1.x
- Perl 6 ~ libgit2

Recent Features: 1.8.4

git clean -i
"interactive cleaning"

Useful Features

`git checkout -`
"checkout the last branch I was on"

Useful Features

git merge -
"merge the last branch I was on"

Useful Features

```
git blame -L 20,50 foo.txt # lines 20-50
```

```
git blame -L 10,+10 foo.txt # lines 10-20
```

```
git blame -L 50,-10 foo.txt # lines 40-50
```


Coming Soon! in 1.8.5

`git log HEAD <=> git log @`

Coming Soon! in 1.8.5

```
git -C foo/ status ~ make -C foo/
```

Extra Credit

```
# Read the first Git commit by Linus himself  
# Thu Apr 7 15:13:13 2005  
$ git clone git://github.com/git/git.git  
$ git show e83c5163
```

How I Can Help You

Git It Together

- Educating stakeholders on the value of Git
- On-site Training
- Implementing Git at your organization
 - Converting from cvs|svn|? → Git
 - Continuous Integration
 - Deployment from Git
 - Custom workflow creation + documentation
- letolabs.com

git merge -s=social

- @dukeleto
- 209.691.DUKE
- duke.letto.net
- duke@letto.net
- linkedin.letto.net
- IRC: dukeleto on Freenode, Mozilla, Perl

Mahalo!

