

Introduction to Git & GitHub



by Matthew McCullough

Hello
my name is

Matthew McCullough



@matthewmccull

github
SOCIAL CODING

github
SOCIAL CODING

1,067,856 people hosting over 3,012,331 git repositories

jQuery, reddit, Sparkle, curl, Ruby on Rails, node.js, ClickToFlash, Erlang/OTP, CakePHP, Redis, and [many more](#)

 Find any repository



git /'git/

Git is an extremely fast, efficient, distributed version control system ideal for the collaborative development of software.

git·hub /'git,hʌb/

GitHub is the best way to collaborate with others. Fork, send pull requests and manage all your **public** and **private** git repositories.

Plans, Pricing and Signup

Unlimited public repositories are free!

Free public repositories, collaborator management, issue tracking, wikis, downloads, code review, graphs and much more...

Team management

30 seconds to give people access to code. No SSH key required. Activity feeds keep you updated on progress.

[More about collaboration](#)

Code review

Comment on changes, track issues, compare branches, send pull requests and merge forks.

[More about code review](#)

Reliable code hosting

We spend all day and night making sure your repositories are **secure**, **backed up** and **always available**.

[More about code hosting](#)

Open source collaboration

Participate in the most important open source community in the world today—online or at one of our meetups.

[More about our community](#)



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[hg](#) [bzr](#) [svn](#) [perforce](#)where "X" is one of A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z

Why Git is Better than X

This site is here because I seem to be spending a lot of time lately defending Gitsters against charges of fanboyism, bandwagonism and koolaid-thirst. So, here is why people are switching to Git from X, and why you should too. Just click on a reason to view it.

[Expand all](#) | [Collapse all](#)

Cheap Local Branching

[hg](#) [bzr](#) [svn](#) [perforce](#)

Everything is Local

[svn](#) [perforce](#)

Git is Fast

[bzr](#) [svn](#) [perforce](#)

Git is Small

[svn](#)

The Staging Area

[hg](#) [bzr](#) [svn](#) [perforce](#)

Distributed

[svn](#) [perforce](#)

Any Workflow

[svn](#) [perforce](#)

GitHub

[hg](#) [svn](#) [perforce](#)

a brief history of **Git**

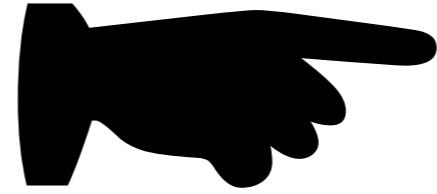


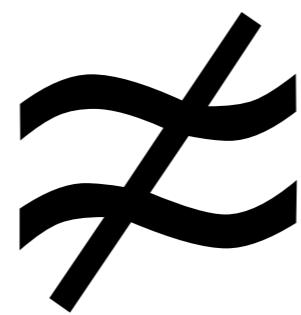
G



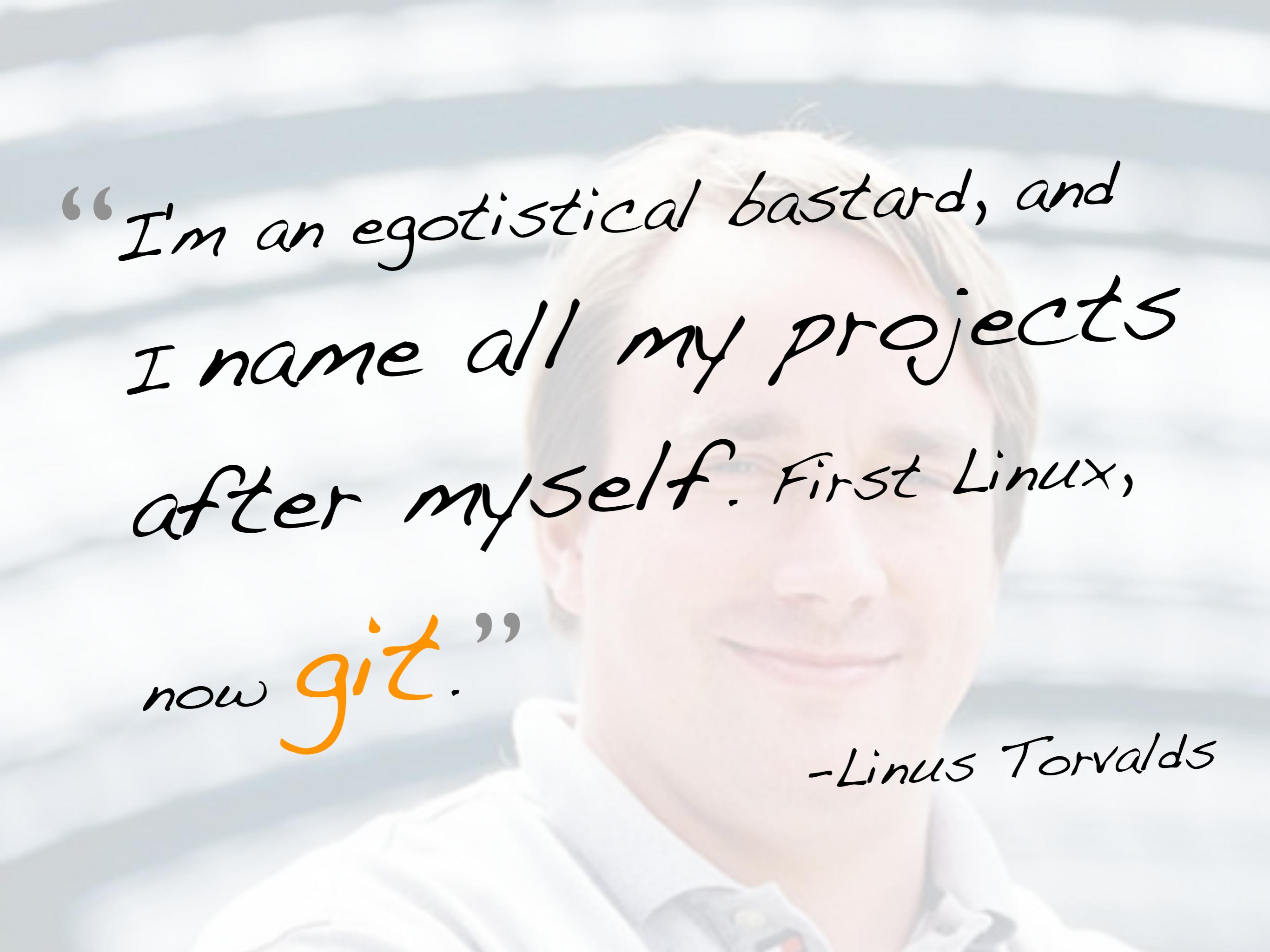
“Cool kids” version control system

Open Source

bash scripts  **C code**





A portrait of Linus Torvalds, a man with short brown hair and a beard, wearing a light-colored shirt. He is looking slightly to his left with a neutral expression.

“I'm an egotistical bastard, and
I name all my projects
after myself. First Linux,
now git.”

-Linus Torvalds

GitHub

a RIA for Git

Social coding, within the **Enterprise**

GitHub on Your Servers

A secure, intuitive system for enterprise software development and collaboration.

formerly known as **github:fi**

Try It Free for 45 Days

See Pricing Details

GitHub Enterprise is GitHub on your private network

USED BY



Collaborate like never before

Pull Requests allow team members to have living discussions about code. Conversations happen next to code, and updates in real time as code is changed, greatly reducing back-and-forth and wasted communication.

Track and assign issues

Finding and organizing issues can be a hassle, especially for big teams. GitHub Enterprise smooths the process. Anyone with permission can assign issues to other teammates and then track progress by setting milestones.

Enterprise-level security

GitHub Enterprise installs on your organization's servers. It's fully configurable to meet a wide range of security and regulatory requirements.



Every install fully supports LDAP

Version control as a **virtual appliance**

Install



Installing the software is as simple as starting up a virtual machine and installing the GitHub software on it.

Configure

Management Console

● nginx	up	<button>Restart</button>
● solr	down	<button>Restart</button>
● unicorn	down	<button>Restart</button>

Enterprise Manage allows you to manage all of the settings of your install from a simple, web-based user interface.

Collaborate

github:enterprise

github / enterprise

Code Network Pull Requests 0

Browse Issues Milestones

[Back to issue list](#)

tmm1 opened this issue September 30, 2011
500 page links to production status/support

No one is assigned

Collaborate. GitHub Enterprise is the best way for software teams to collaborate across a secure, internal network.

Desktop tools as **HTML5 components**

[Code](#)[Network](#)[Pull Requests 0](#)[Issues 0](#)[Stats & Graphs](#)[Files](#)[Commits](#)[Branches 1](#)[Tags](#)[Downloads](#)

Image View Mode Demo

[Browse code](#)

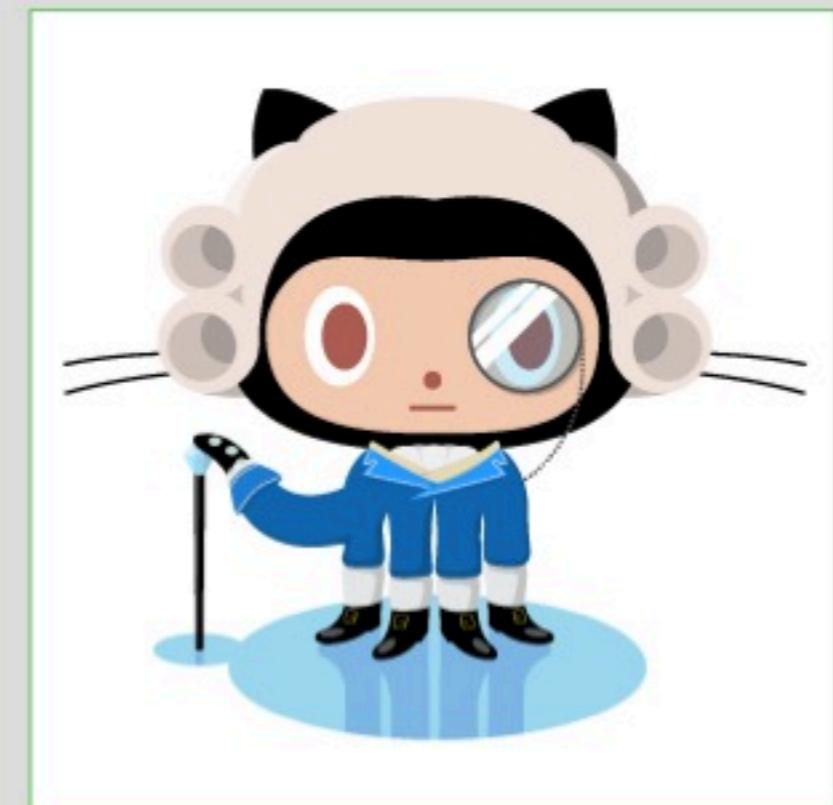
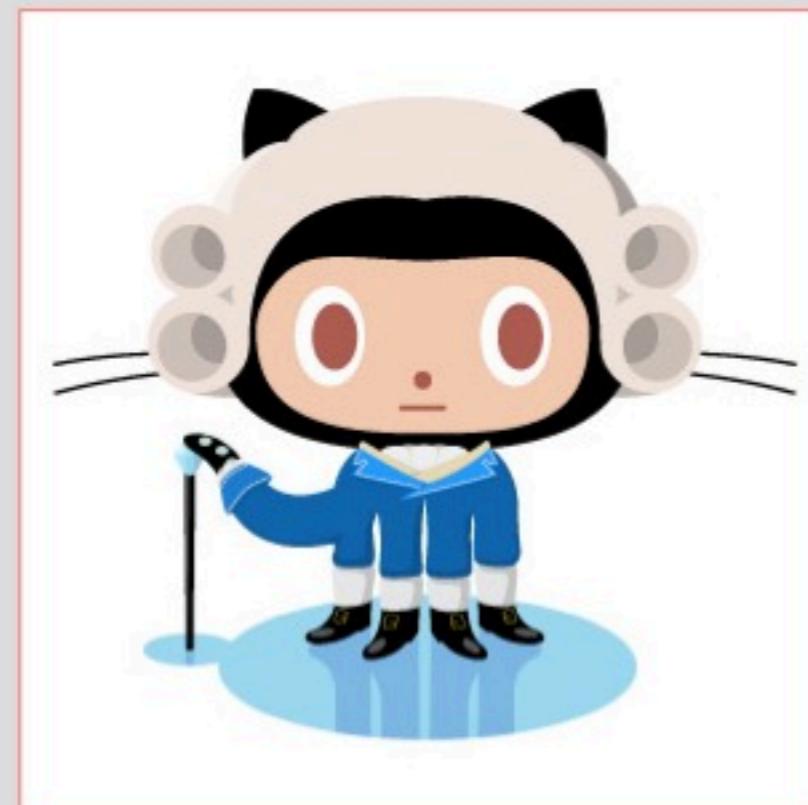
cameronmcefee authored March 18, 2011

1 parent 8bf009f5e2 commit 8e95f70c9c47168305970e91021072673d7cdad8

Showing 4 changed files with 0 additions and 0 deletions.

<input checked="" type="radio"/> 1_normal.jpg	0	
<input checked="" type="radio"/> 2_transparentPixels.png	0	
<input checked="" type="radio"/> 3_toolarge.jpg	0	
<input checked="" type="radio"/> 4_differentSize.jpg	0	

1_normal.jpg	View file @ 8e95f70
--------------	-------------------------------------



In-browser syntax highlighted **code editing**

 matthewmccullough / hellogitworld Admin Unwatch Pull Request 7 6[Code](#)[Network](#)[Pull Requests 1](#)[Issues 1](#)[Wiki 0](#)[Stats & Graphs](#)[Files](#)[Commits](#)[Branches 7](#)[Tags 2](#)[Downloads](#)

Current branch:

 master[hellogitworld / src / Main.groovy](#) [Back to source view](#) [Code](#) [Preview](#)[Spaces](#) 2 [No wrap](#) 

```
1 import static Square.square
2 import static Division.divide
3 import static Subtract.subtract
4 import static Sum.sum
5
6 def name = "Matthew"
7 int programmingPoints = 10
8
9 println "Hello ${name}"
10 println "${name} has at least ${programmingPoints} programming points."
11 println "${programmingPoints} squared is ${square(programmingPoints)}"
12 println "${programmingPoints} divided by 2 bonus points is ${divide(programmingPoints, 2)}"
13 println "${programmingPoints} minus 7 bonus points is ${subtract(programmingPoints, 7)}"
14 println "${programmingPoints} plus 3 bonus points is ${sum(programmingPoints, 3)}"
```

Conversations on proposed code changes

robbyrussell / oh-my-zsh

Unwatch

Your Fork

3,250

1,319

Code

Network

Pull Requests 180

Issues 249

Wiki 8

Stats & Graphs

All Requests

180

Yours

Find a user...

peterhoeg

3

Xalior

2

gwjo

2

szetobo

2

benlangfeld

2

olivierverdier

2

rgm

2

santiyrcr

2

sorin-ionescu

2

stevenharman

2

betawaffle

2

docwhat

2

giddie

2

toolbear

1

rafaelgaspar

1

aptiva

1

99 open requests

Keyboard shortcuts available

Read Open Closed

Submitted Updated Popularity

Allow user to disable update prompt

I added an option, \$DISABLE_UPDATE_PROMPT, which is checked for in "check_for_upgrade.sh" that wi...



gmcmillan submitted to robbyrussell/oh-my-zsh about 11 hours ago

Updated about 11 hours ago

0 comments

lib/termsupport now uses add-zsh-hook

This is needed to play nice with plugins that need various hooks. At the moment, termsupport conf...



docwhat submitted to robbyrussell/oh-my-zsh 1 day ago

Updated 1 day ago

0 comments

fpath set incorrectly for custom plugins

This defers setting the fpath for plugins until the plugins are actually loaded so we know where ...



docwhat submitted to robbyrussell/oh-my-zsh 1 day ago

Updated about 13 hours ago

1 comment

Added a new theme: rbrightI've uploaded a screenshot of the theme to <https://skitch.com/e-rbright/ge88w/rbright.zsh-theme>

rbright submitted to robbyrussell/oh-my-zsh 2 days ago

Updated 2 days ago

0 comments

Add sprung.us pastebin uploader plugin

This is a slick little plugin that I can't really take credit for writing, which uploads any give...



ilikenwf submitted to robbyrussell/oh-my-zsh 3 days ago

Updated 3 days ago

0 comments

Pull request #594 was not really correct

Completion for commands like ruby and rake was not working properly. This patch should fix it



sirech submitted to robbyrussell/oh-my-zsh November 09, 2011

Updated November 09, 2011

0 comments

[Code](#)[Network](#)[Pull Requests](#)

180

[Issues](#)

249

[Wiki](#)

8

[Stats & Graphs](#)**Open** **jamesottaway** wants someone to merge 1 commit into **robbryussell:master** from **jamesottaway:patch-1**

#573

[Discussion](#)[Commits](#)[Diff](#)

jamesottaway opened this pull request August 25, 2011

Open

+ 4 additions

- 2 deletions

Source RVM script in RVM plugin

A lot of instructions on how to get started with oh-my-zsh mention having to source the RVM script at the end of .zshrc, or somewhere similar. It should be as easy as adding the RVM plugin.



jamesottaway, dpickett, and vguercl are participating in this pull request.



dpickett commented

August 25, 2011

+1



jamesottaway added some commits

August 26, 2011

7a80152 Source RVM directly rather than relying on .zshrc or even .bashrc, an...



vguercl commented

September 03, 2011

Imho, this is not a good idea. people can have different needs.

For example, I source the rvm script before zshrc from zshenv, because I use rvm with some vim plugins, and vim doesn't initialize a full interactive zsh shell.... (= it doesn't source zshrc)

See rvm doc: <http://beginrescueend.com/integration/vim/> on this topic.

I would then suggest not to pull this request, or at least with an env var to disable this.

[All Pull Requests](#)

setting up a **Git Repo**



No daemon

No special repo area



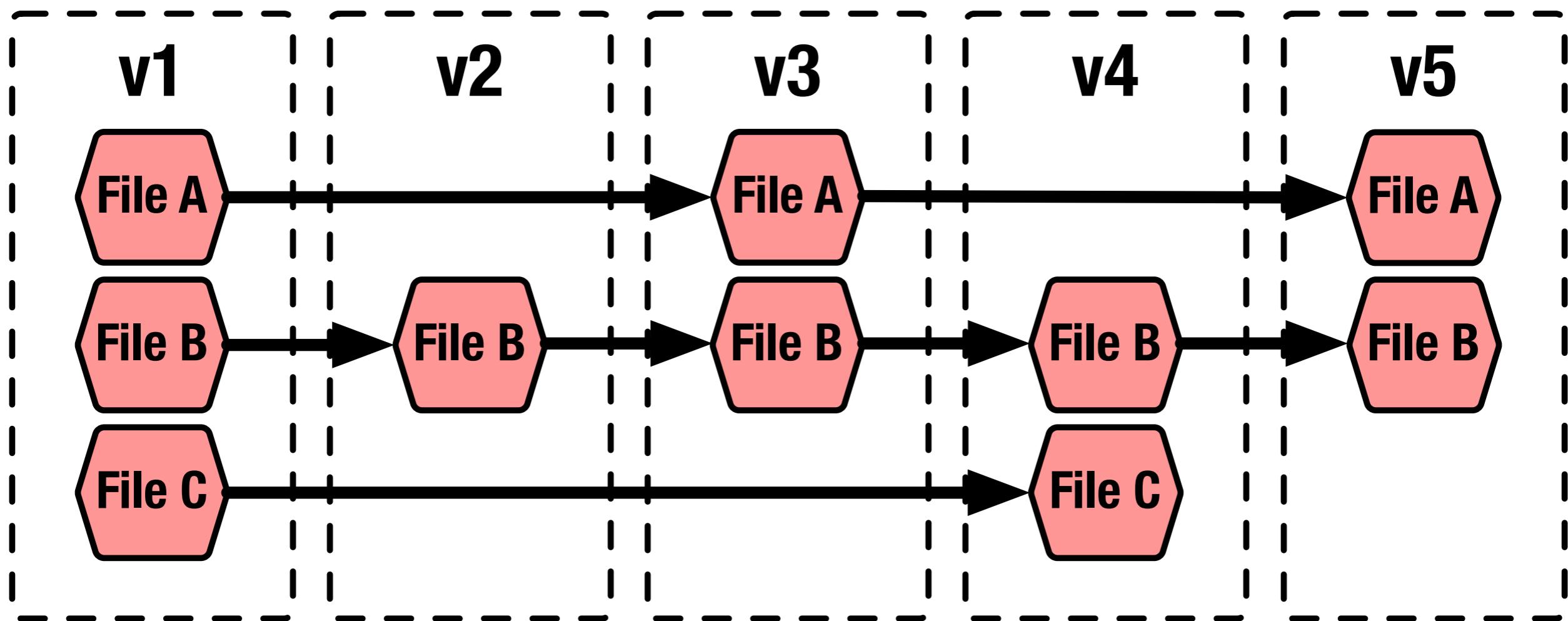
```
> cd myproj  
> git init
```

Initialized empty Git repository
in /stuff/myproj/.git/



Deltas vs. Copies

Typical SCMs use deltas



CVS, Subversion, darcs & Mercurial

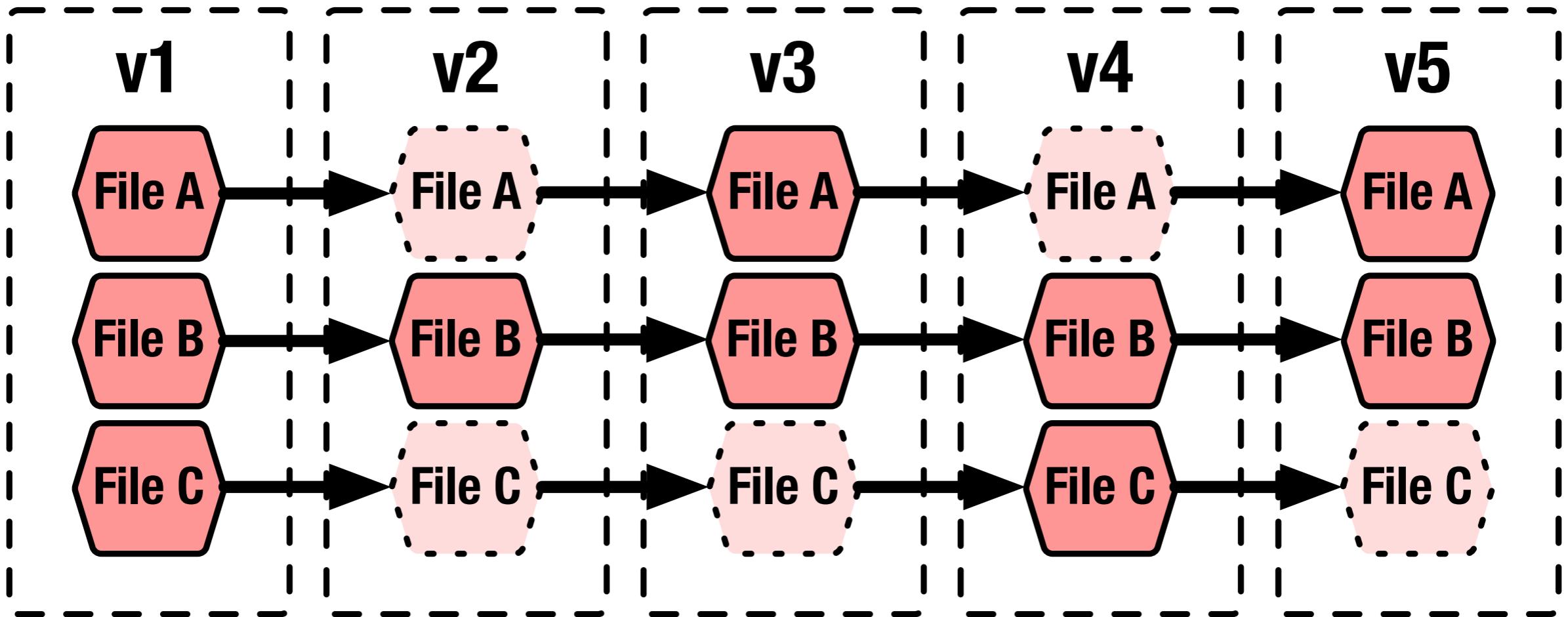


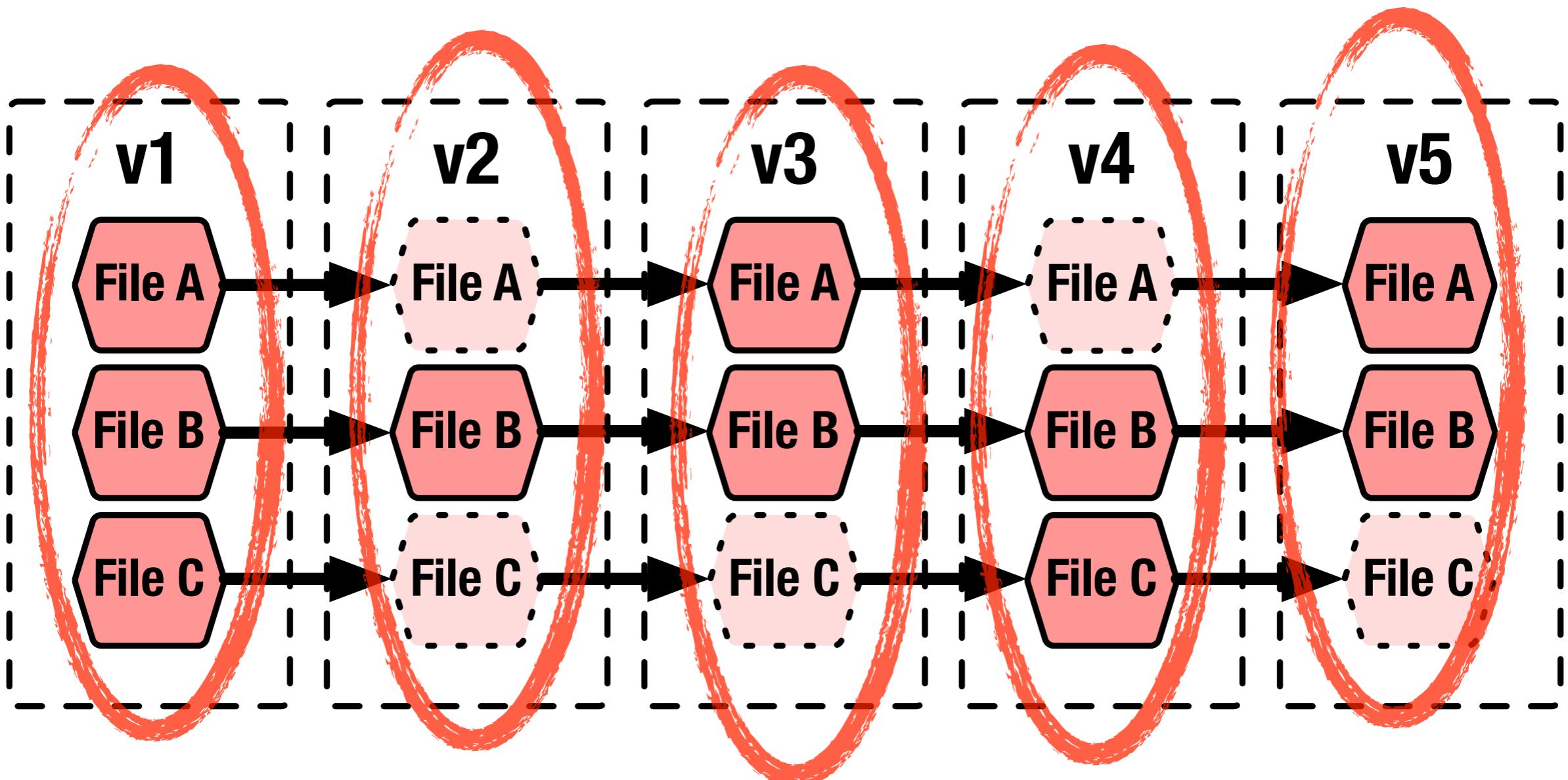
Delta storage gets **slower as the history
of a file gets **longer****

Git uses **Directed Acyclic Graph** storage

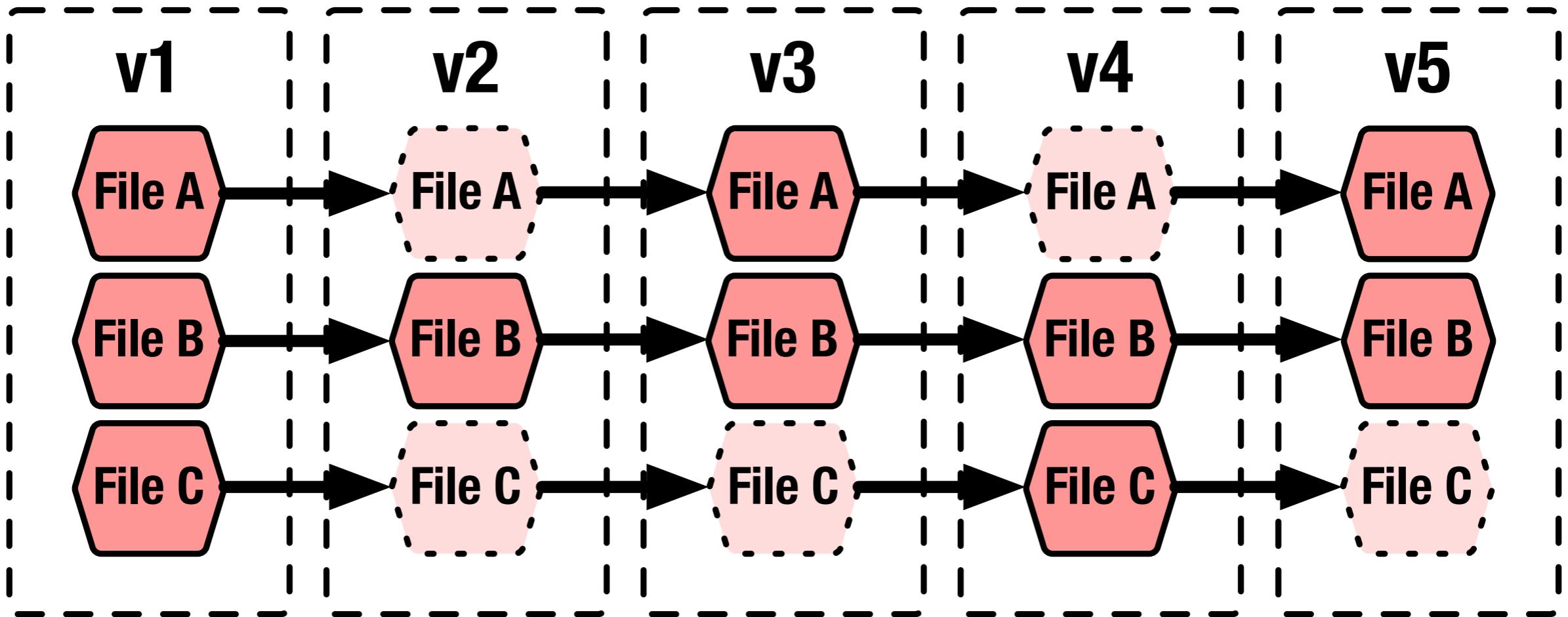
```
cp -r srcfolder srcfolder.prev
```

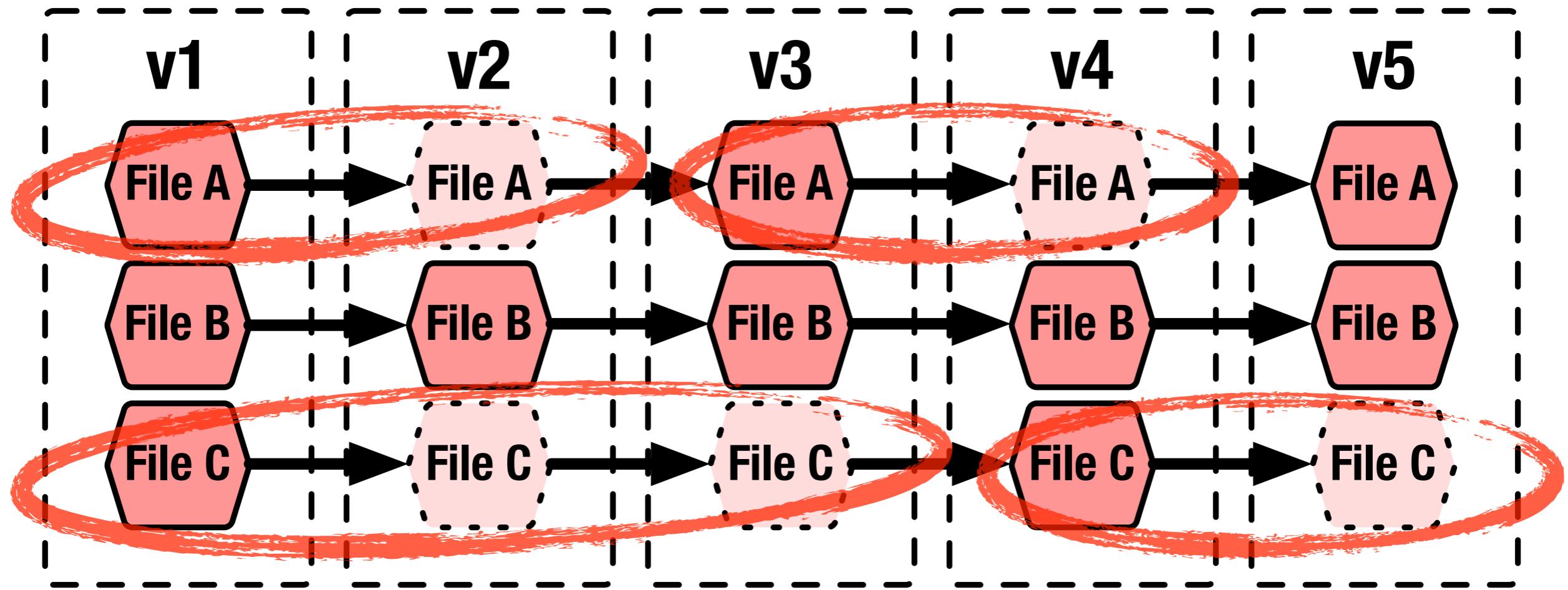
Copy of the entire tree per checkin



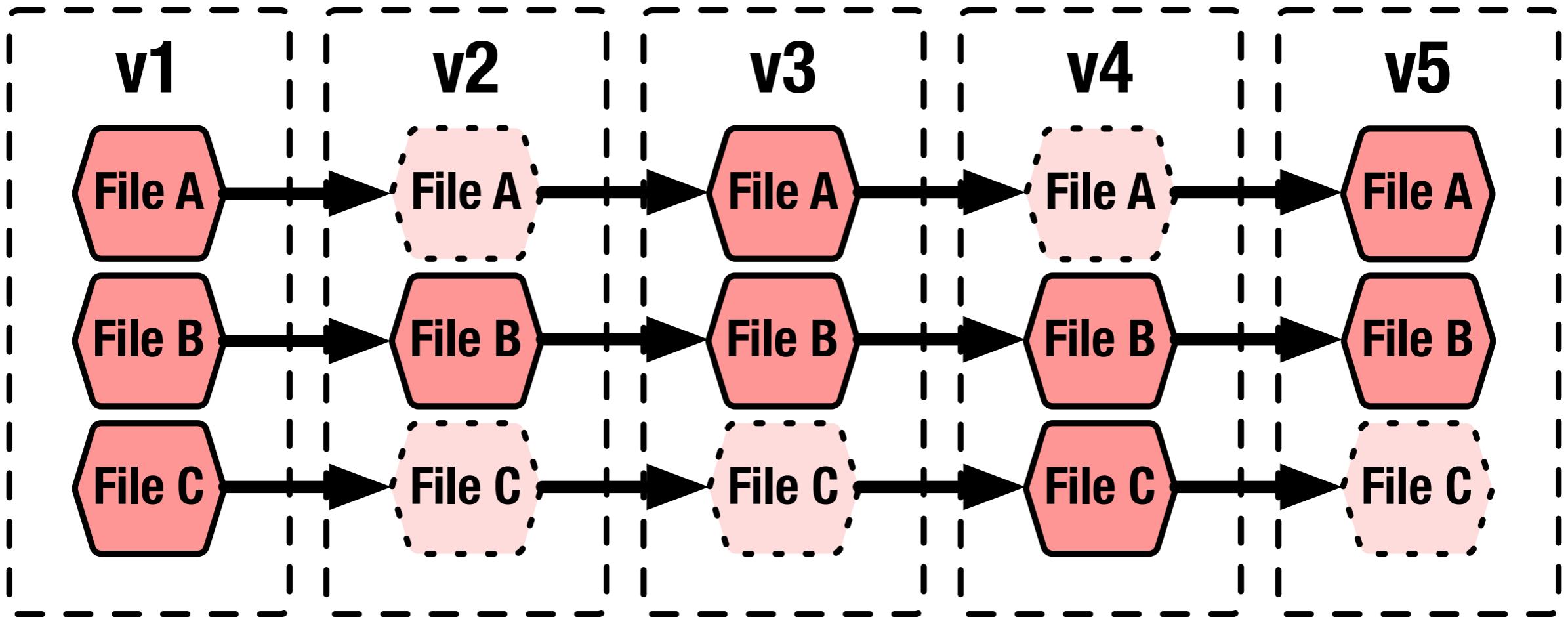


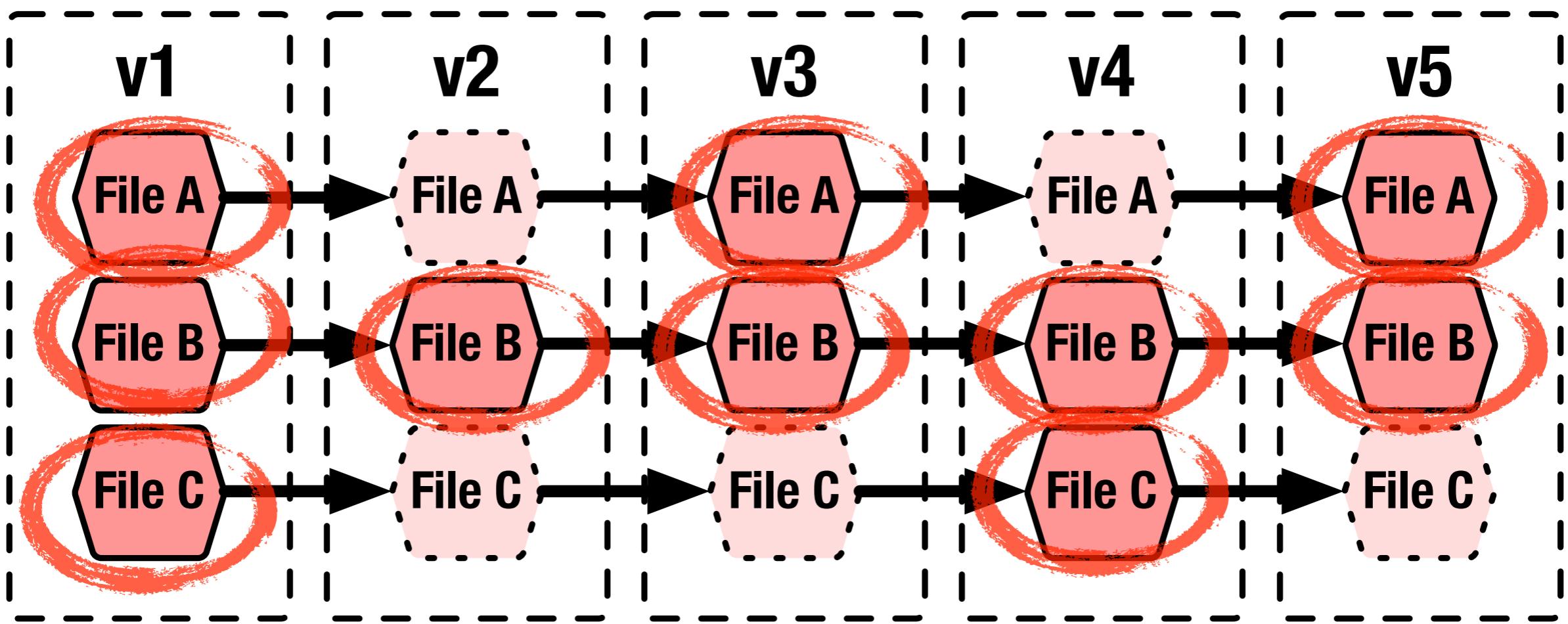
hardlinks to existing identical blobs



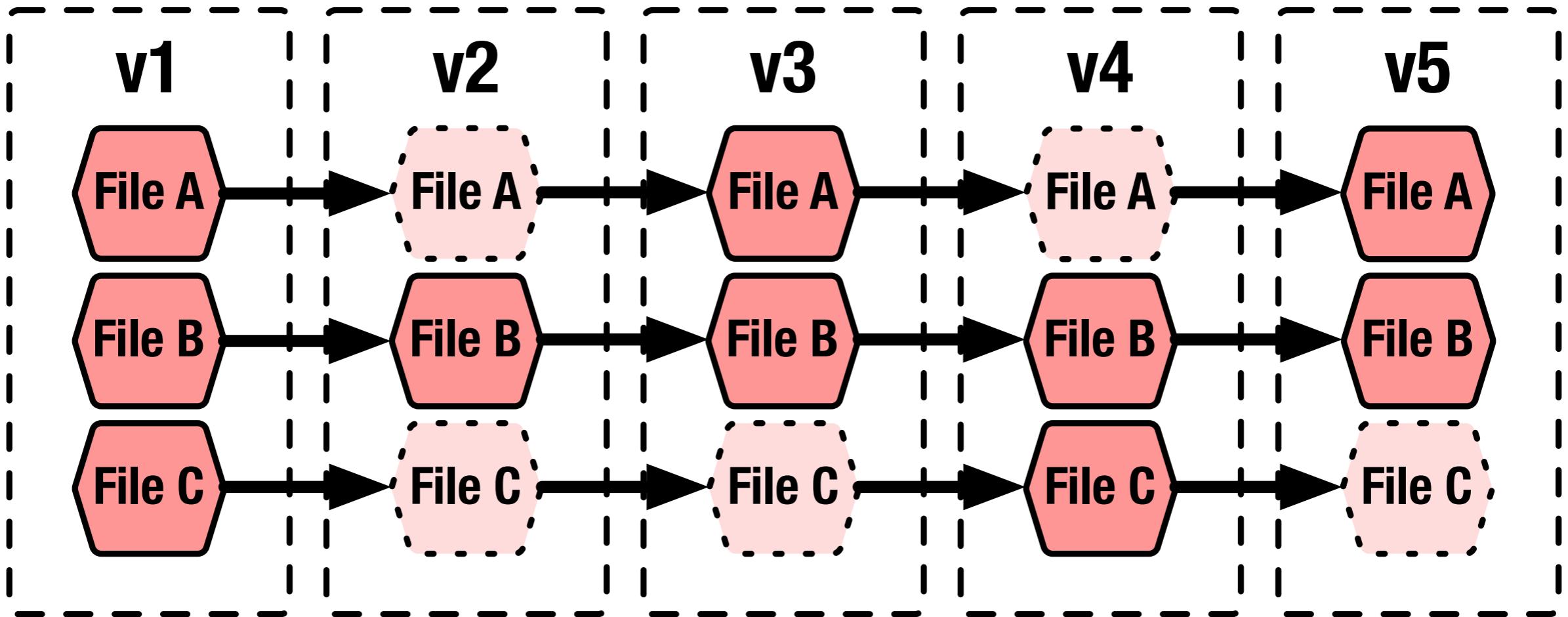


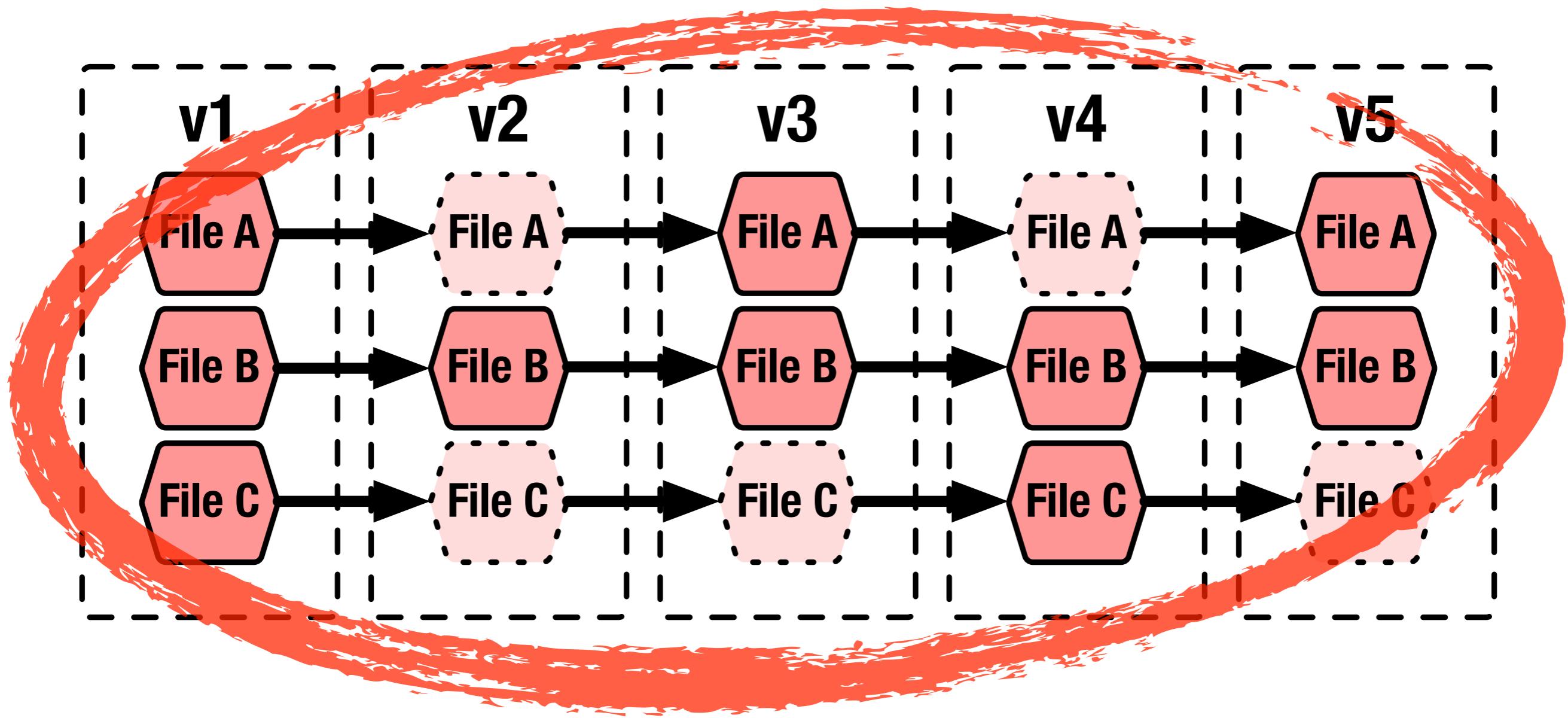
zlib deflates every blob at commit





zlib deflates entire repo





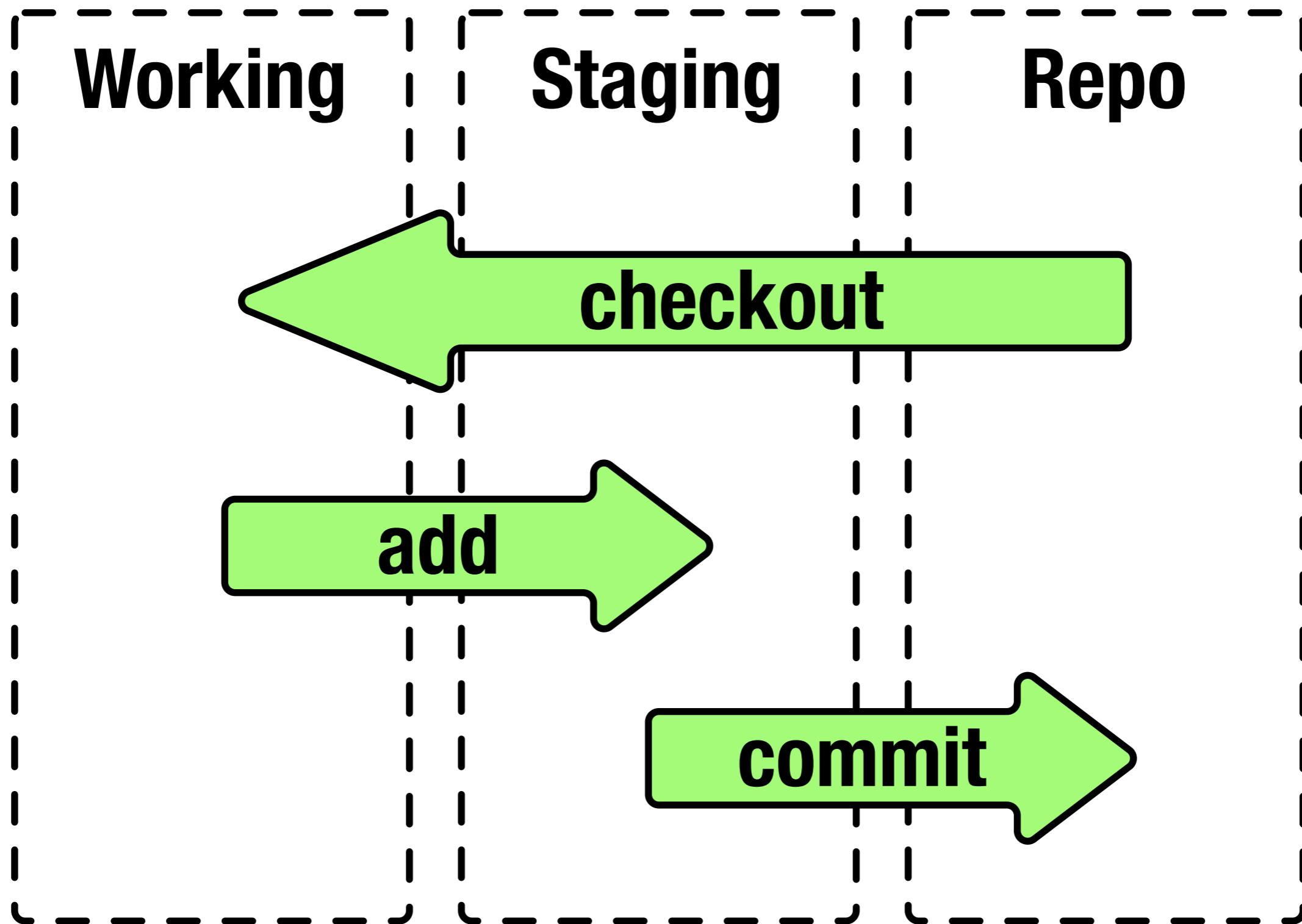


2100 MB became
205 MB



Add and Commit







```
> git add <FILENAME>
```





```
> git status
```

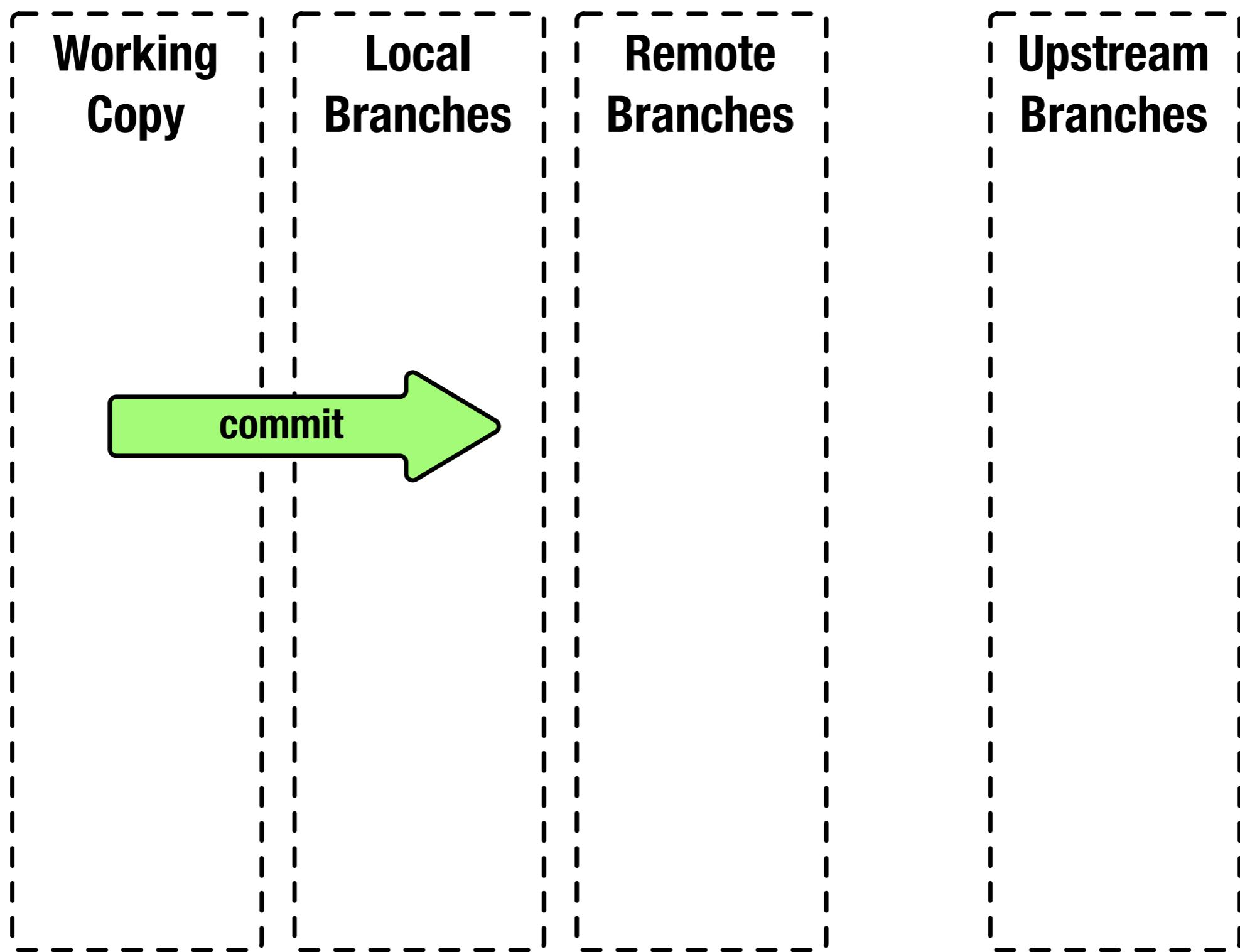
```
# On branch master
# Initial commit
# Changes to be committed:
#   (use "git rm --cached <file>..." to unstage)
# new file:   myfile.txt
```





```
> git commit -m"<MESSAGE>"  
[master (root-commit) 498cc44] My first commit  
 1 files changed, 5 insertions(+), 0 deletions(-)  
 create mode 100644 myfile.txt
```



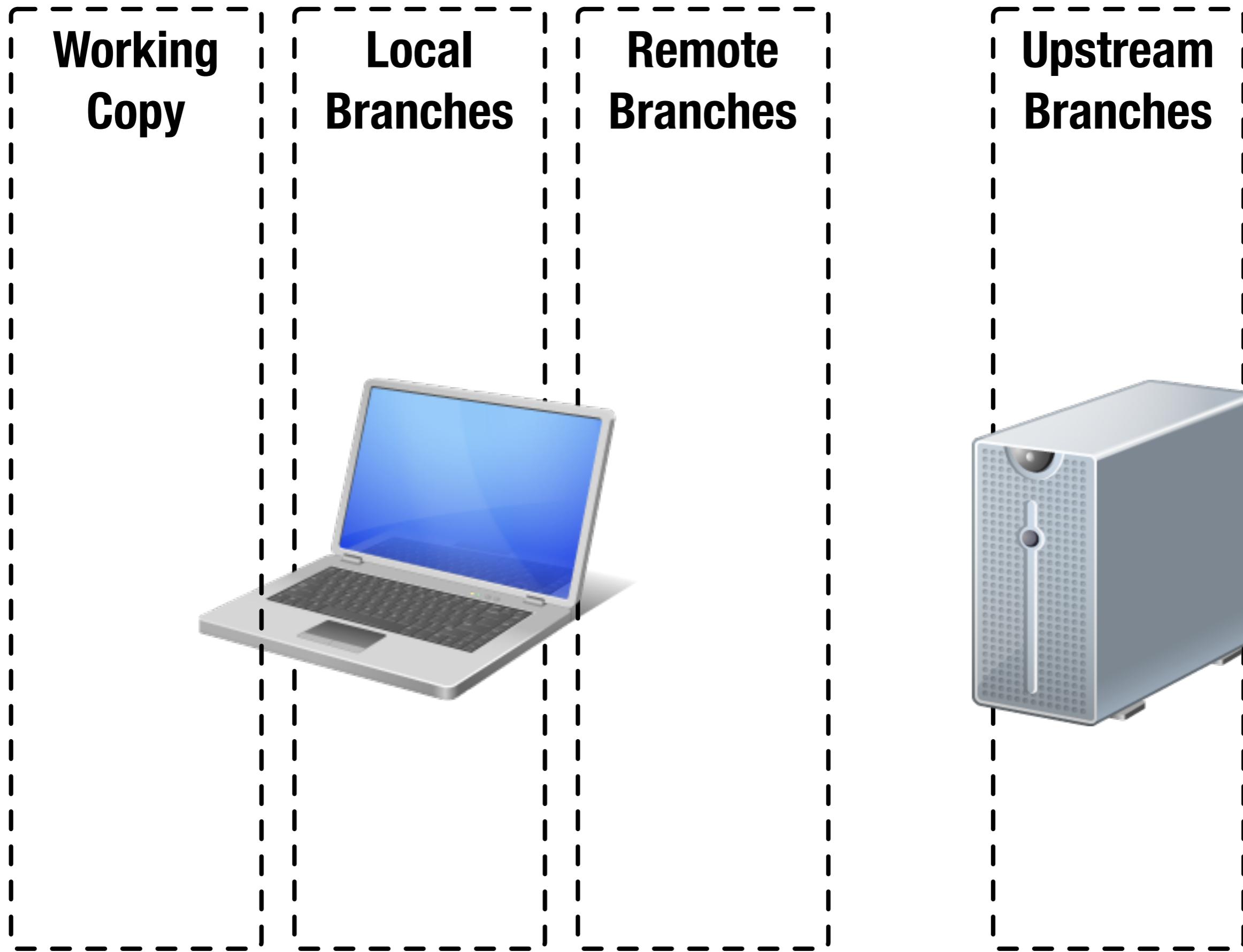


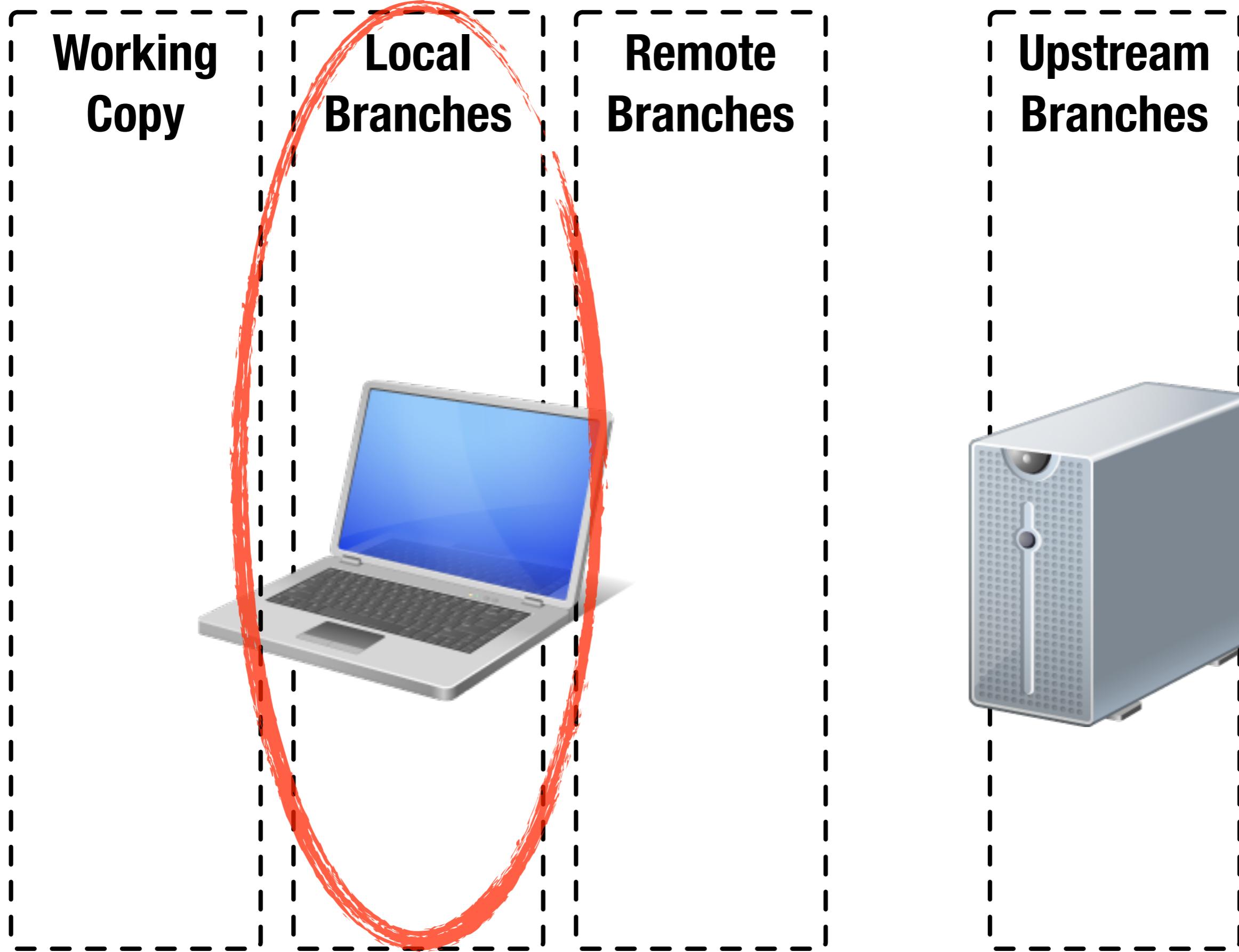
Branch and Checkout



```
> git branch <BRANCHNAME>
```



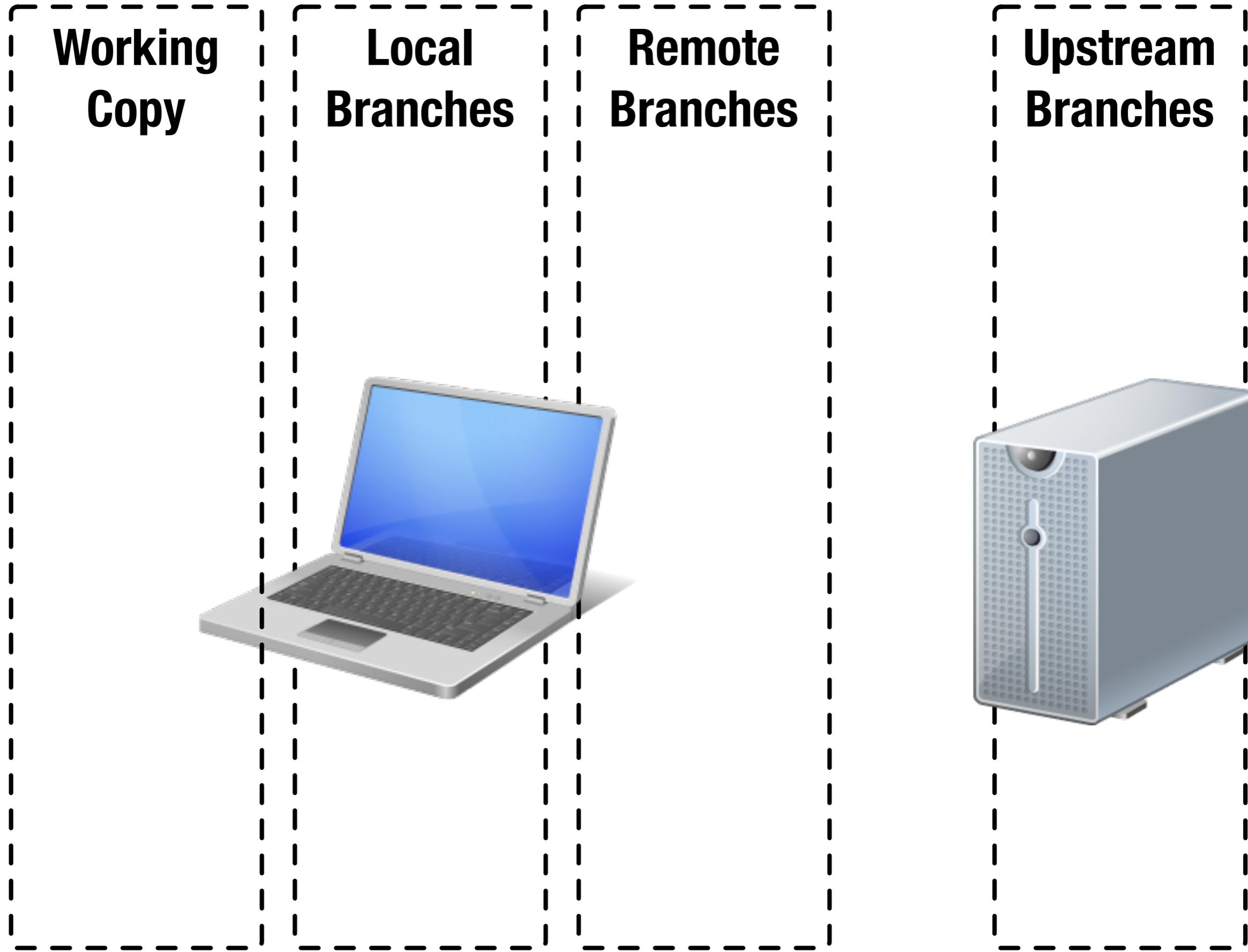


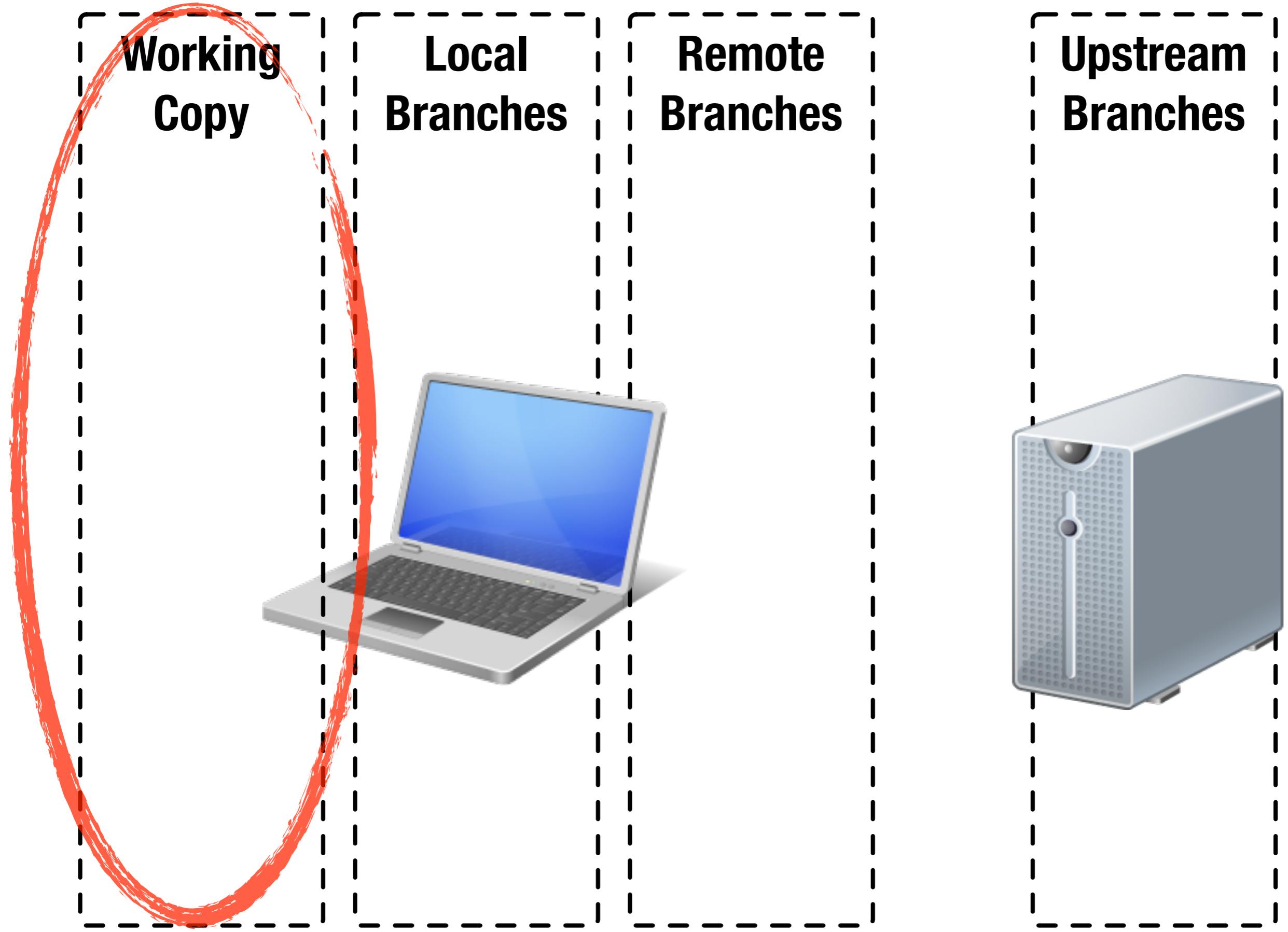




```
> git checkout <BRANCHNAME>  
Switched to branch 'mybranch'
```







Commit Ref Syntax

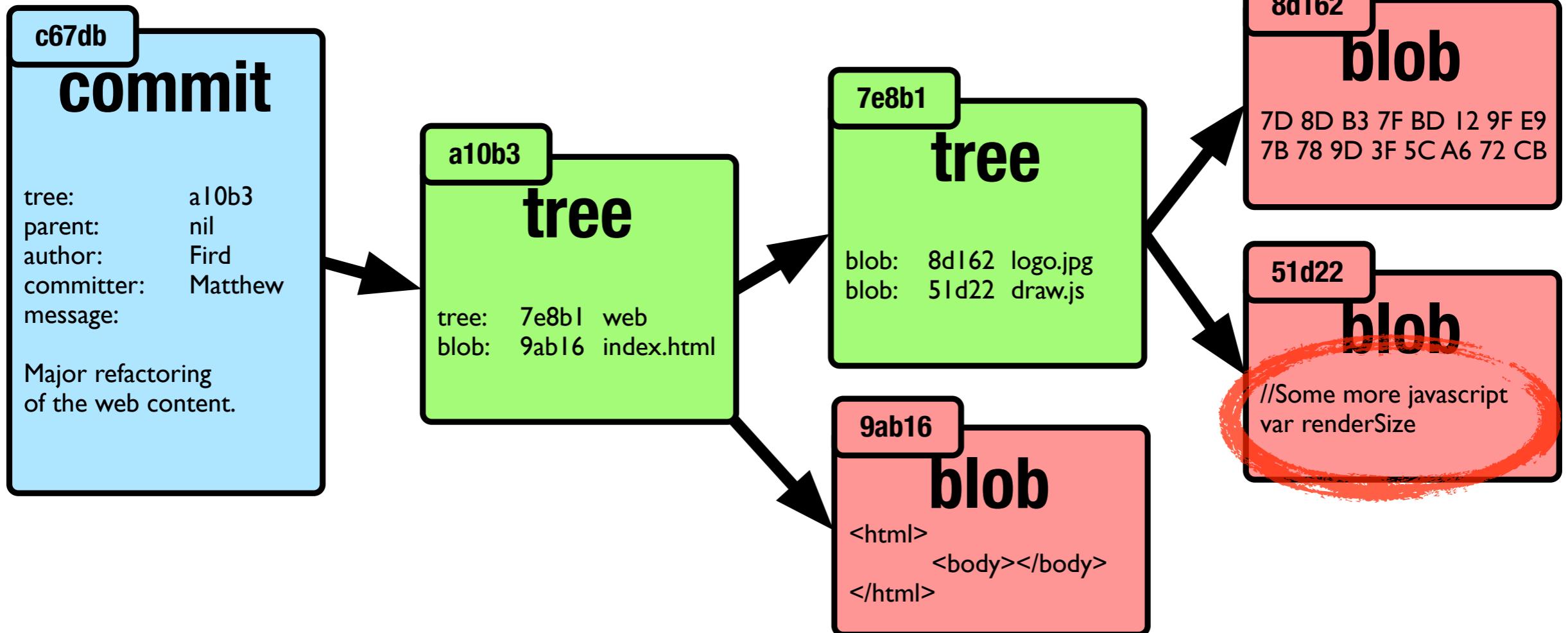


```
<html>
  <body>
    <p>This is a test</p>
    
  </body>
</html>
```





9AB223D28B1AA46EF1780B22F304982E39872C34



c67db
commit

tree: a10b3
parent: nil
author: Fird
committer: Matthew
message:
Major refactoring
of the web content.

a10b3
tree

tree: 7e8b1 web
blob: 9ab16 index.html

7e8b1
tree

blob: 8d162 logo.jpg
blob: 51d22 draw.js

9ab16
blob

```
<html>
  <body></body>
</html>
```

8d162
blob

7D 8D B3 7F BD 12 9F E9
7B 78 9D 3F 5C A6 72 CB

51d22
blob

//Some more javascript
var renderSize

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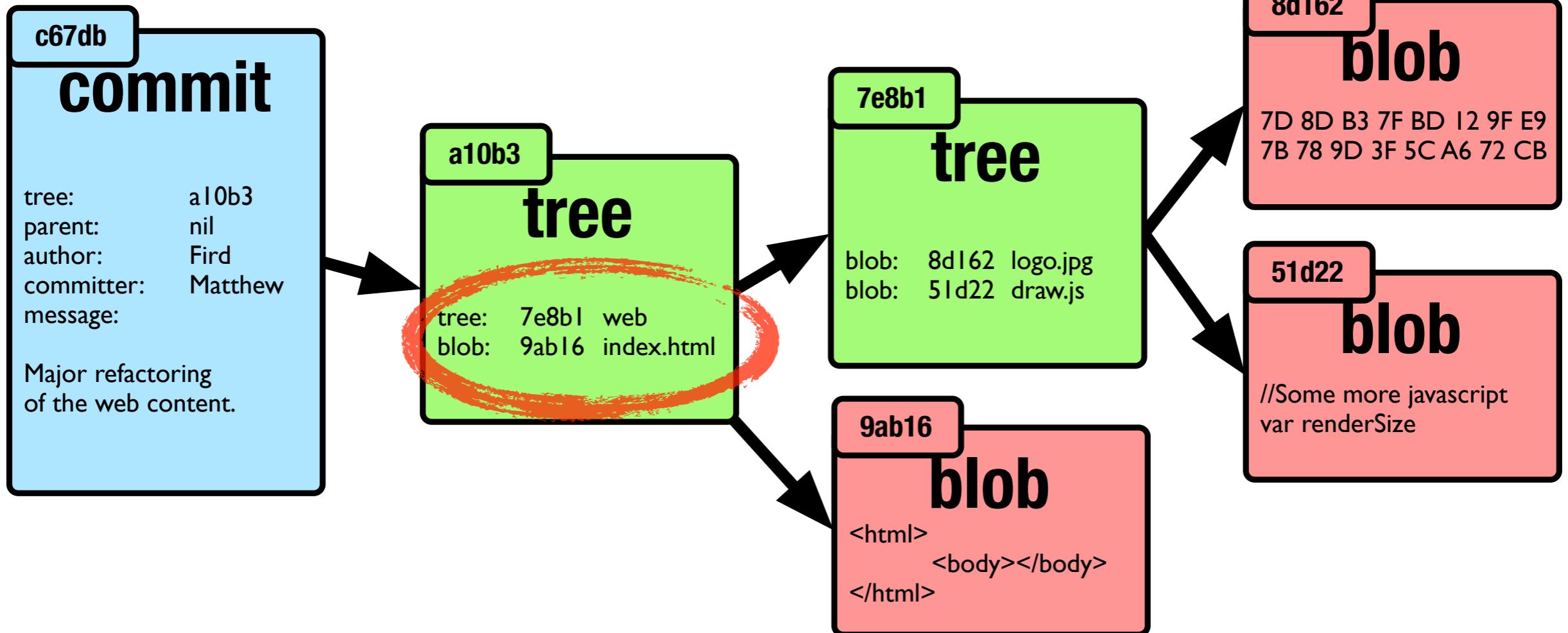
```
<html>
  <body></body>
</html>
```

8d162
blob

7D 8D B3 7F BD 12 9F E9
7B 78 9D 3F 5C A6 72 CB

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9ab16
blob

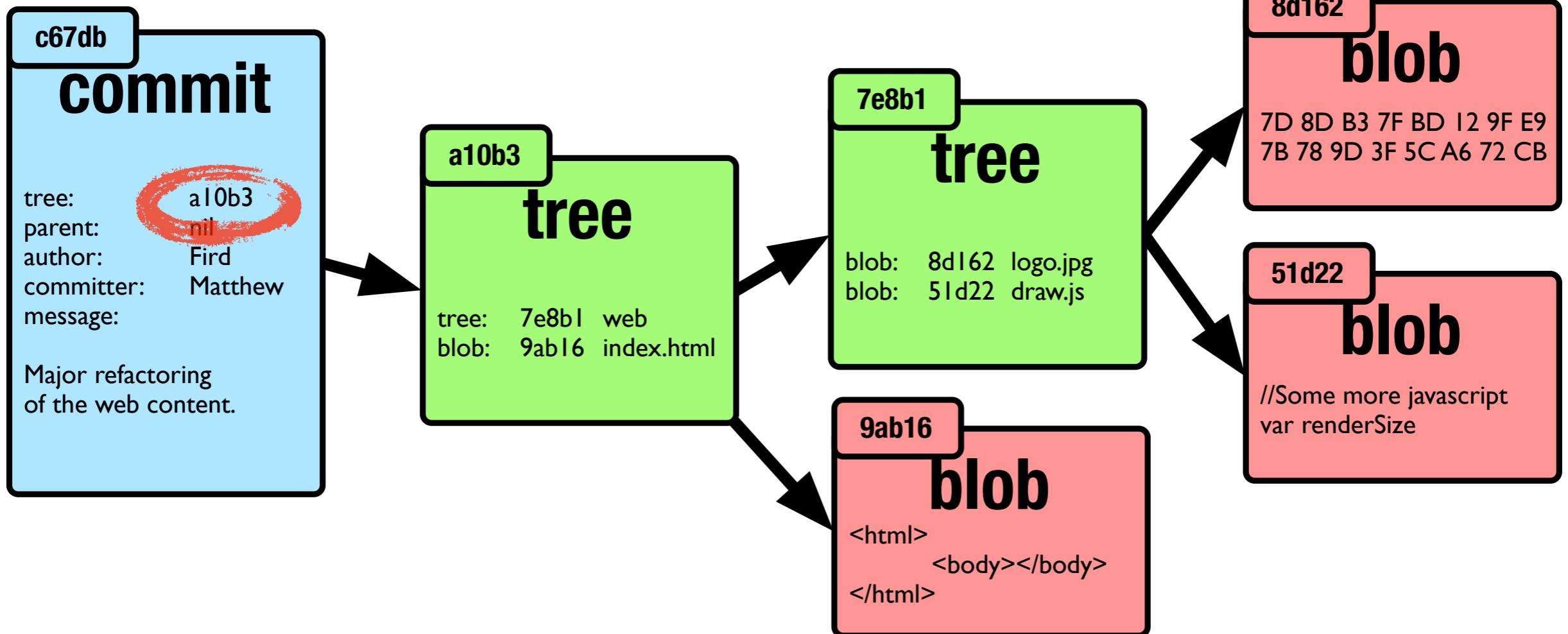
```
<html>
  <body></body>
</html>
```

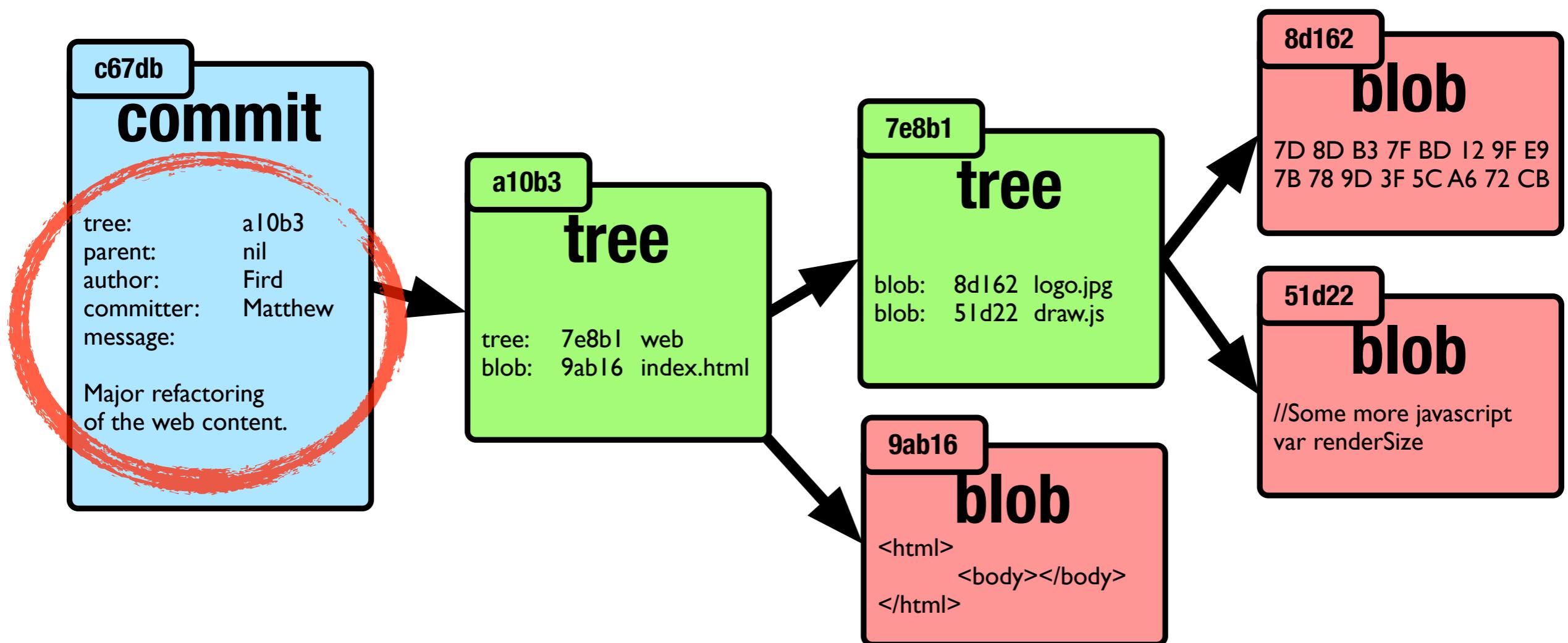
8d162
blob

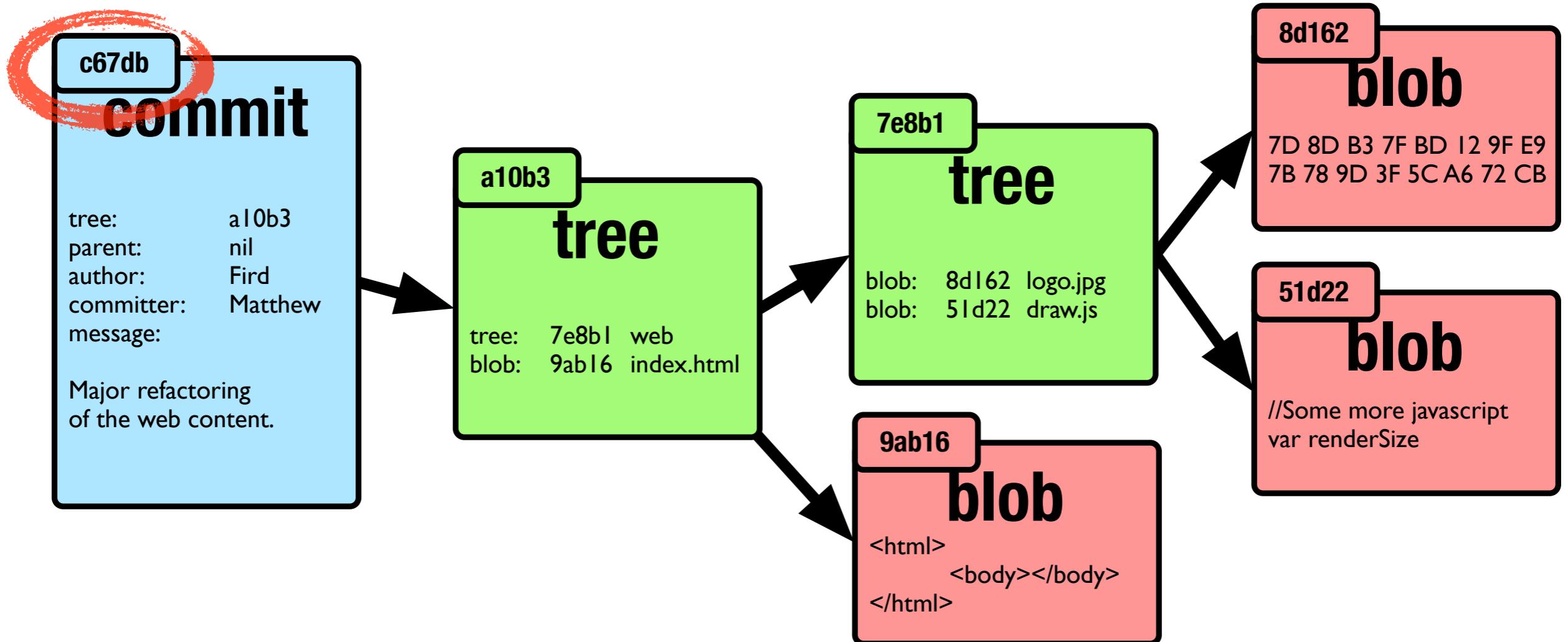
7D 8D B3 7F BD 12 9F E9
7B 78 9D 3F 5C A6 72 CB

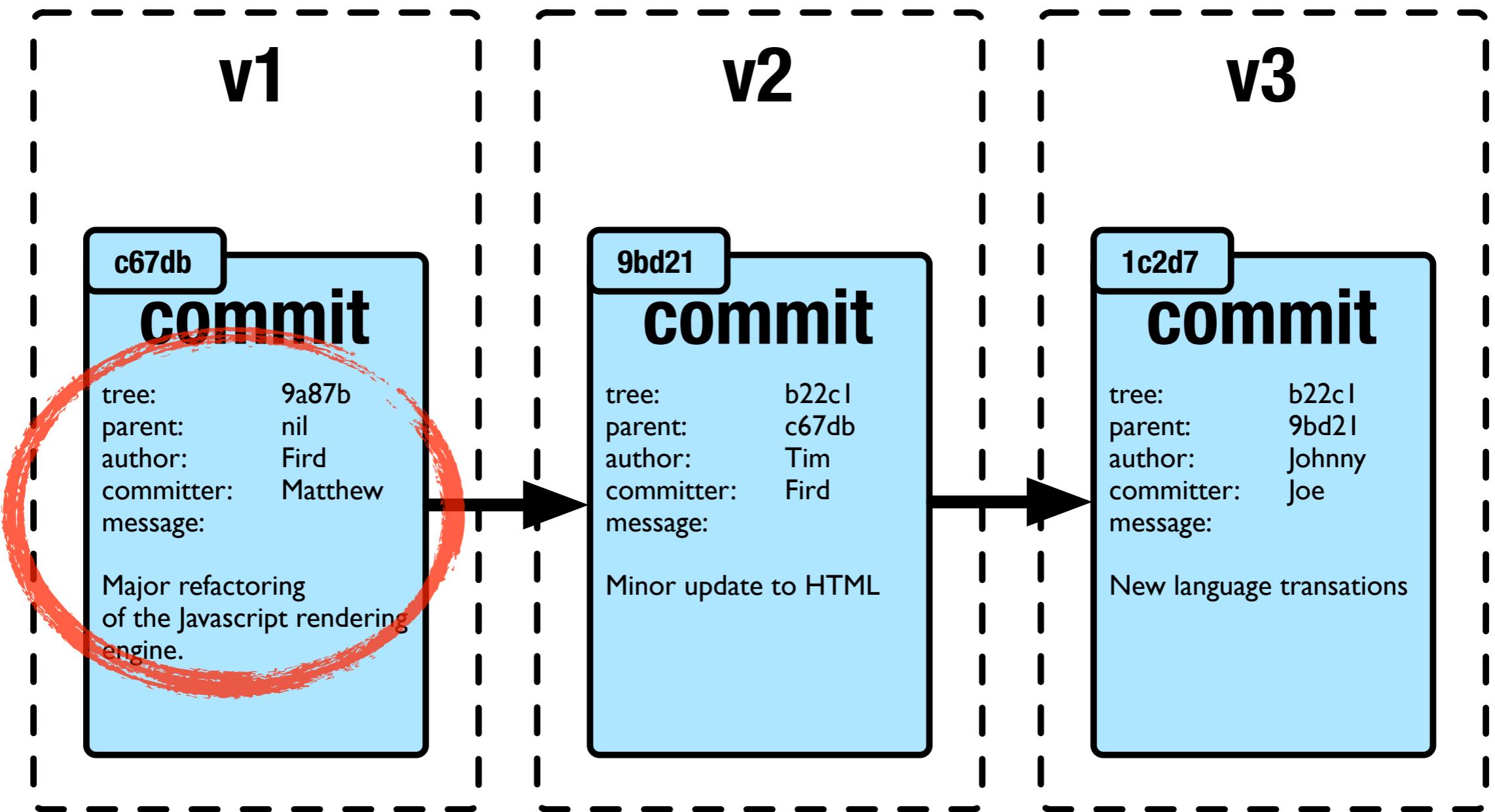
51d22
blob

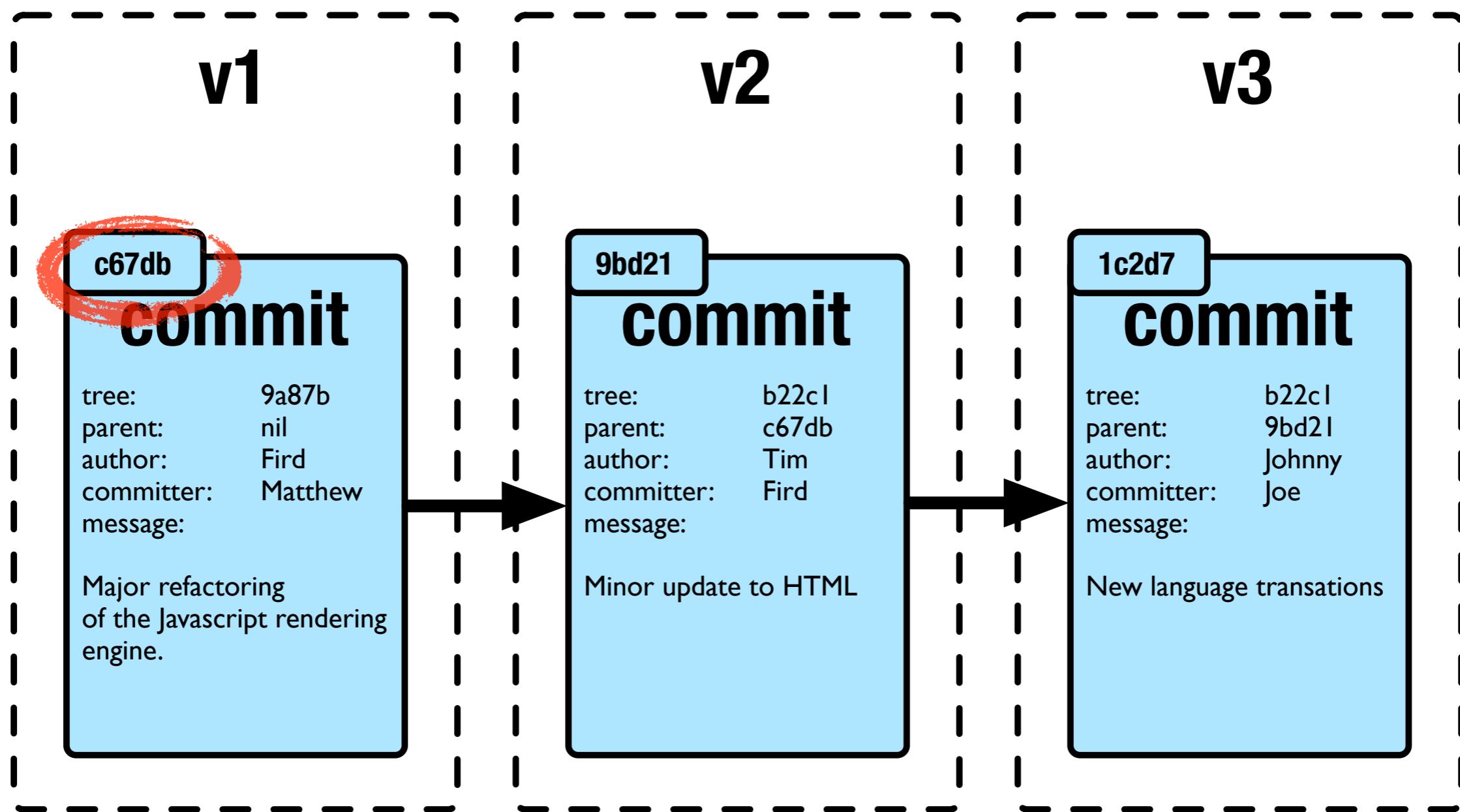
```
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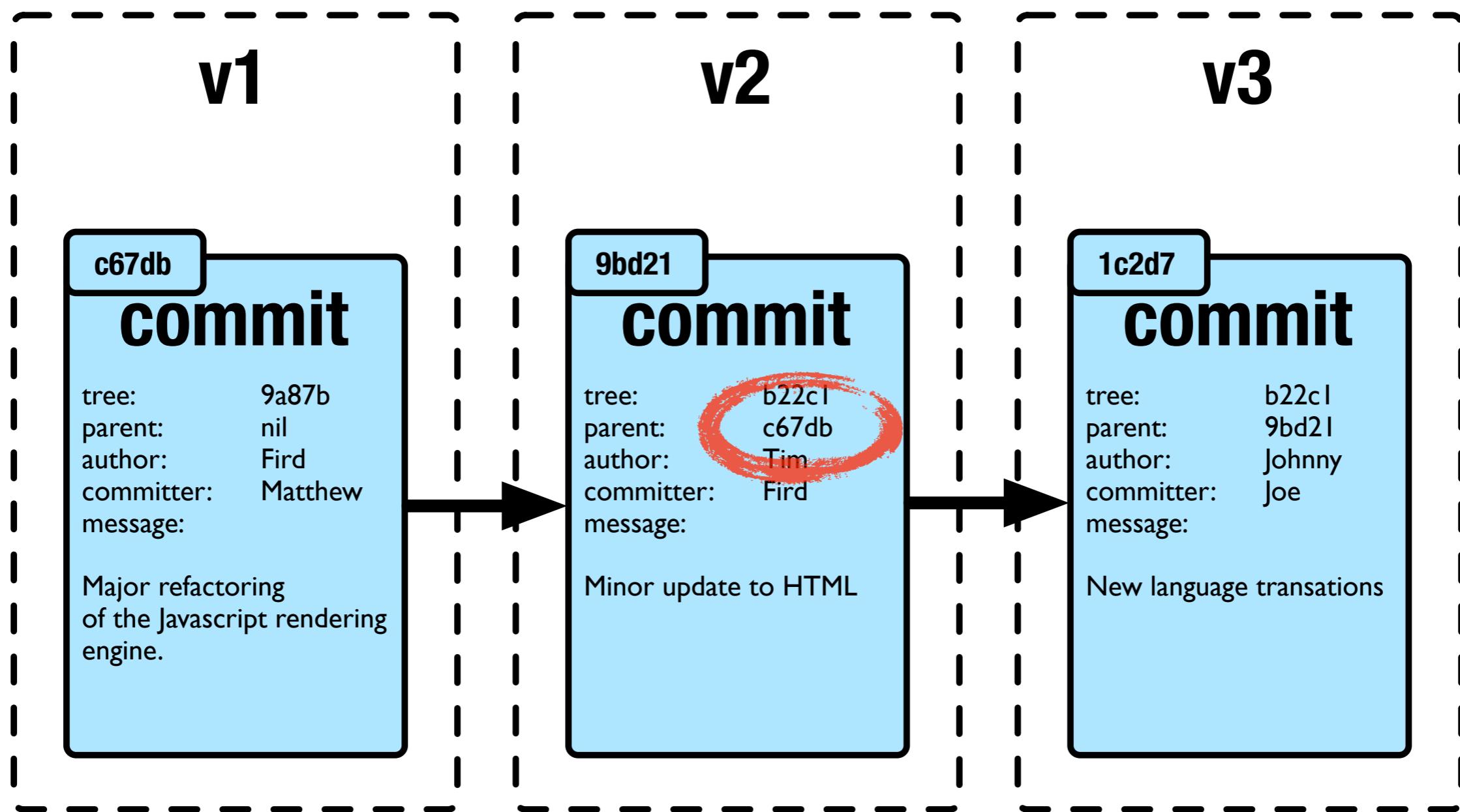


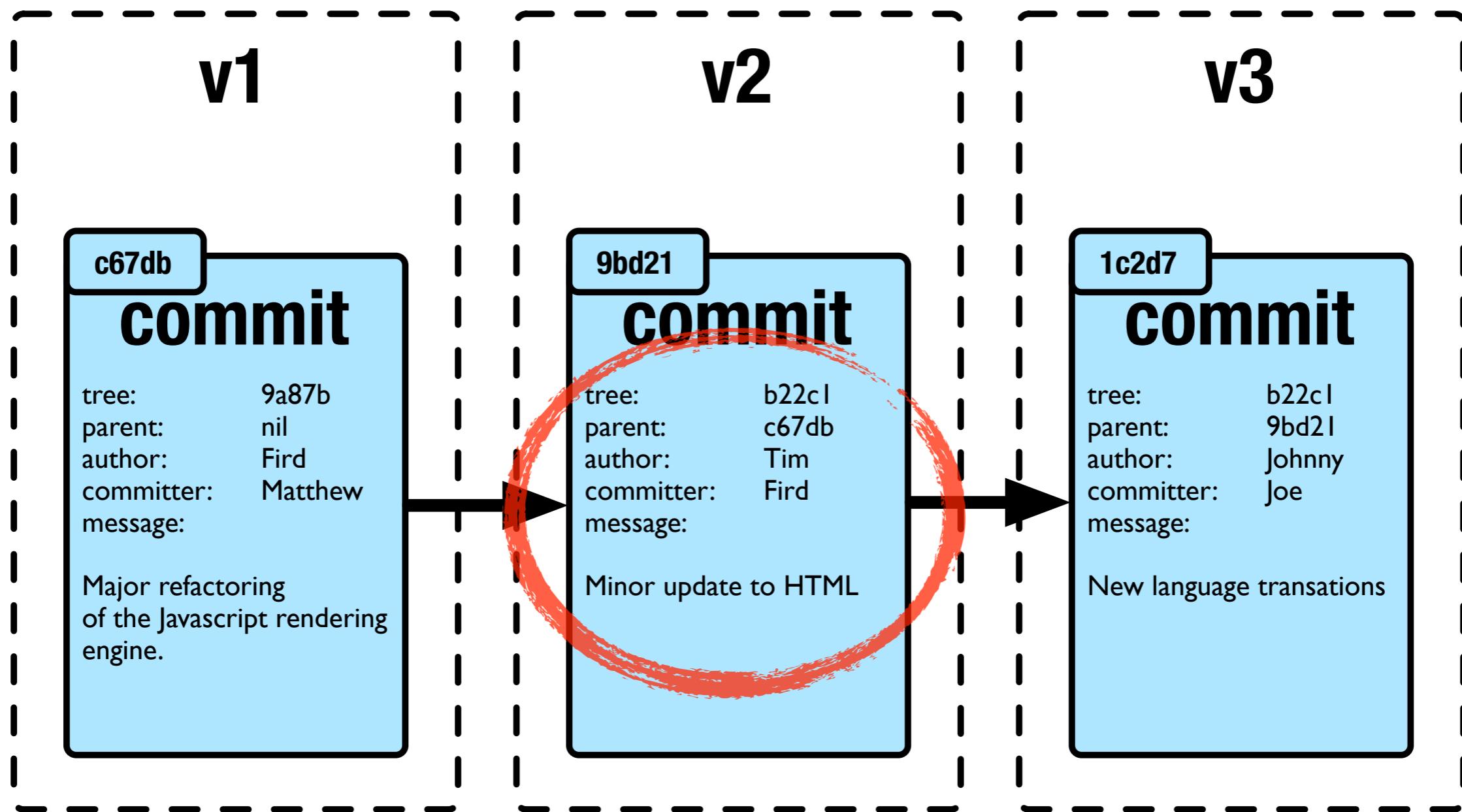


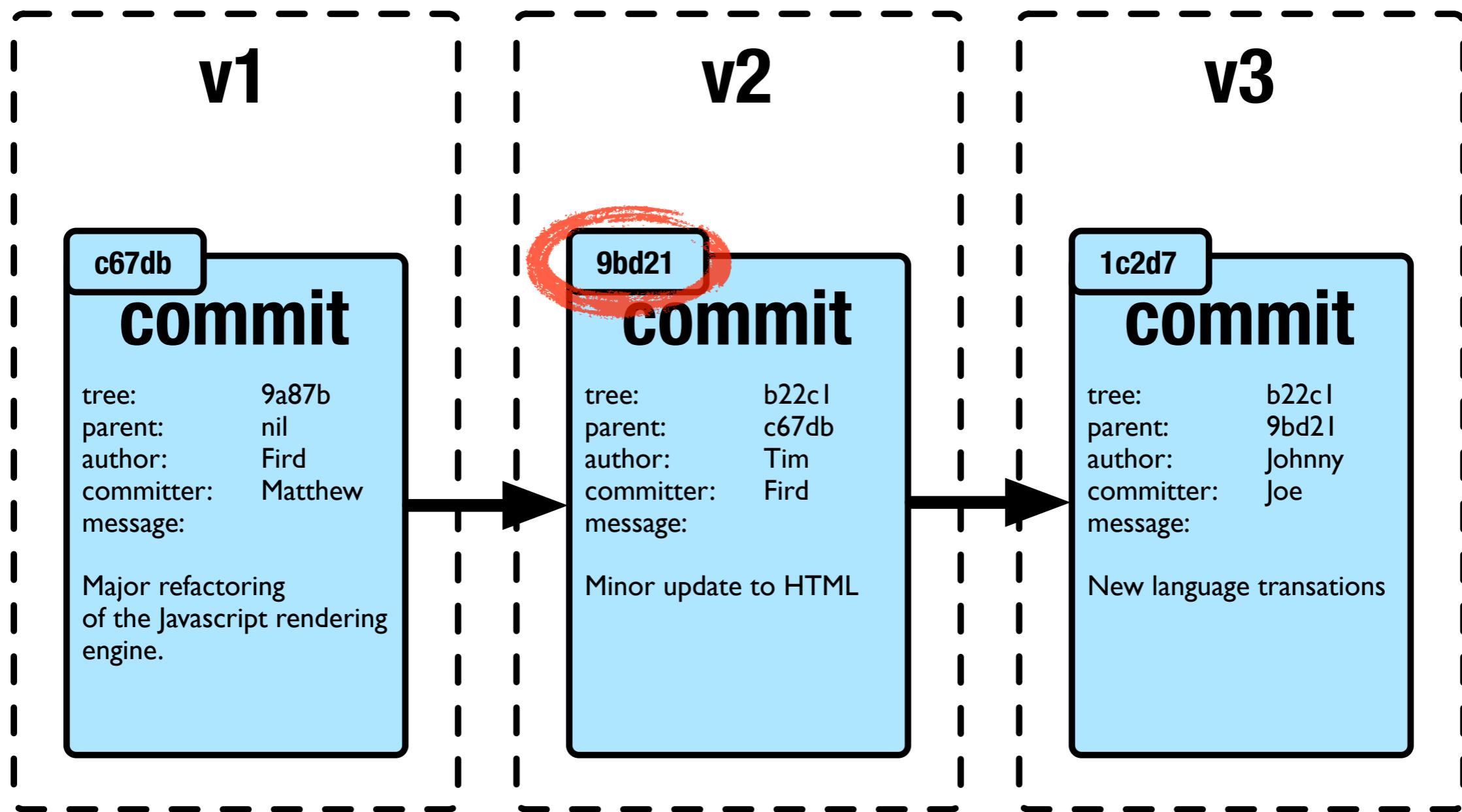


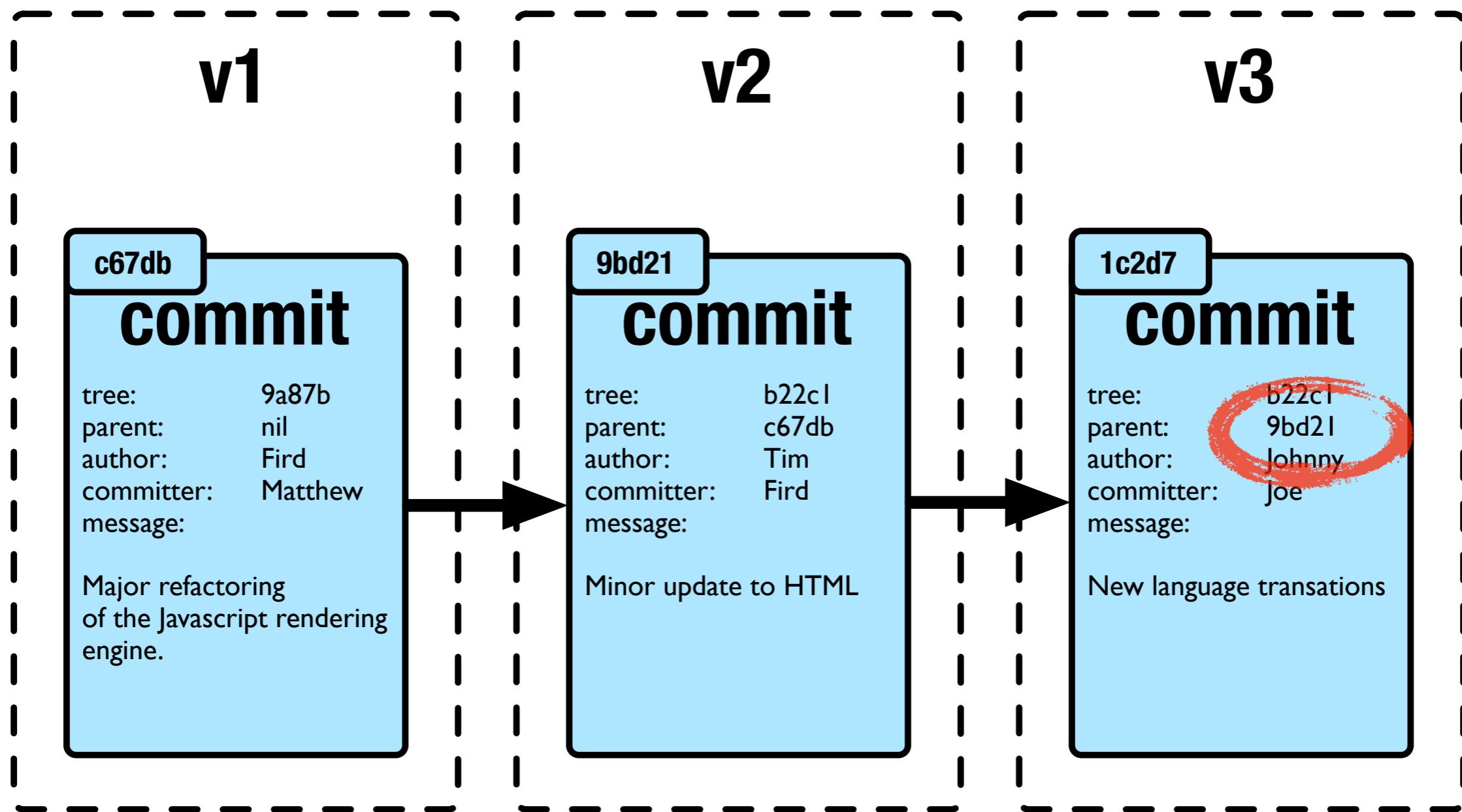


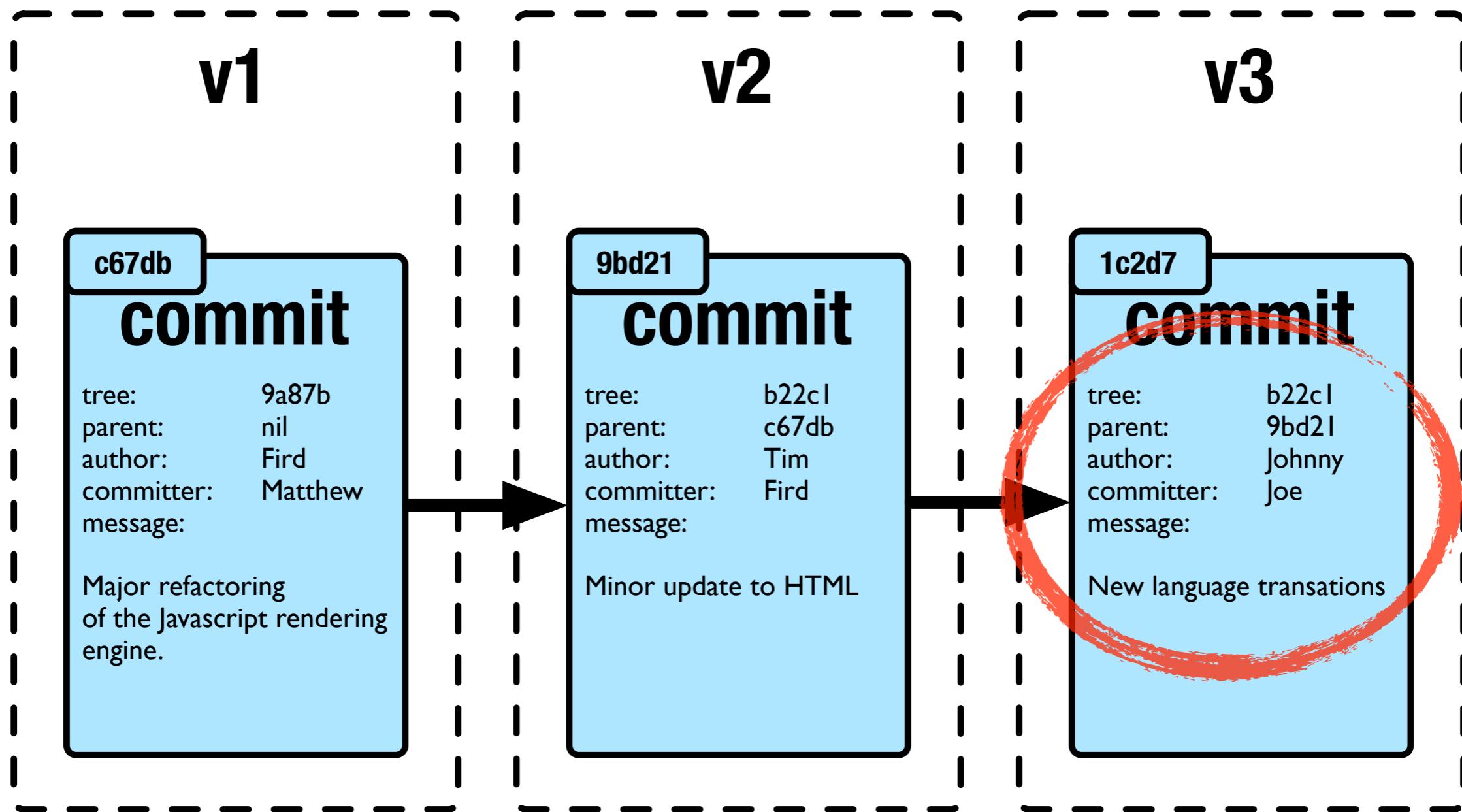


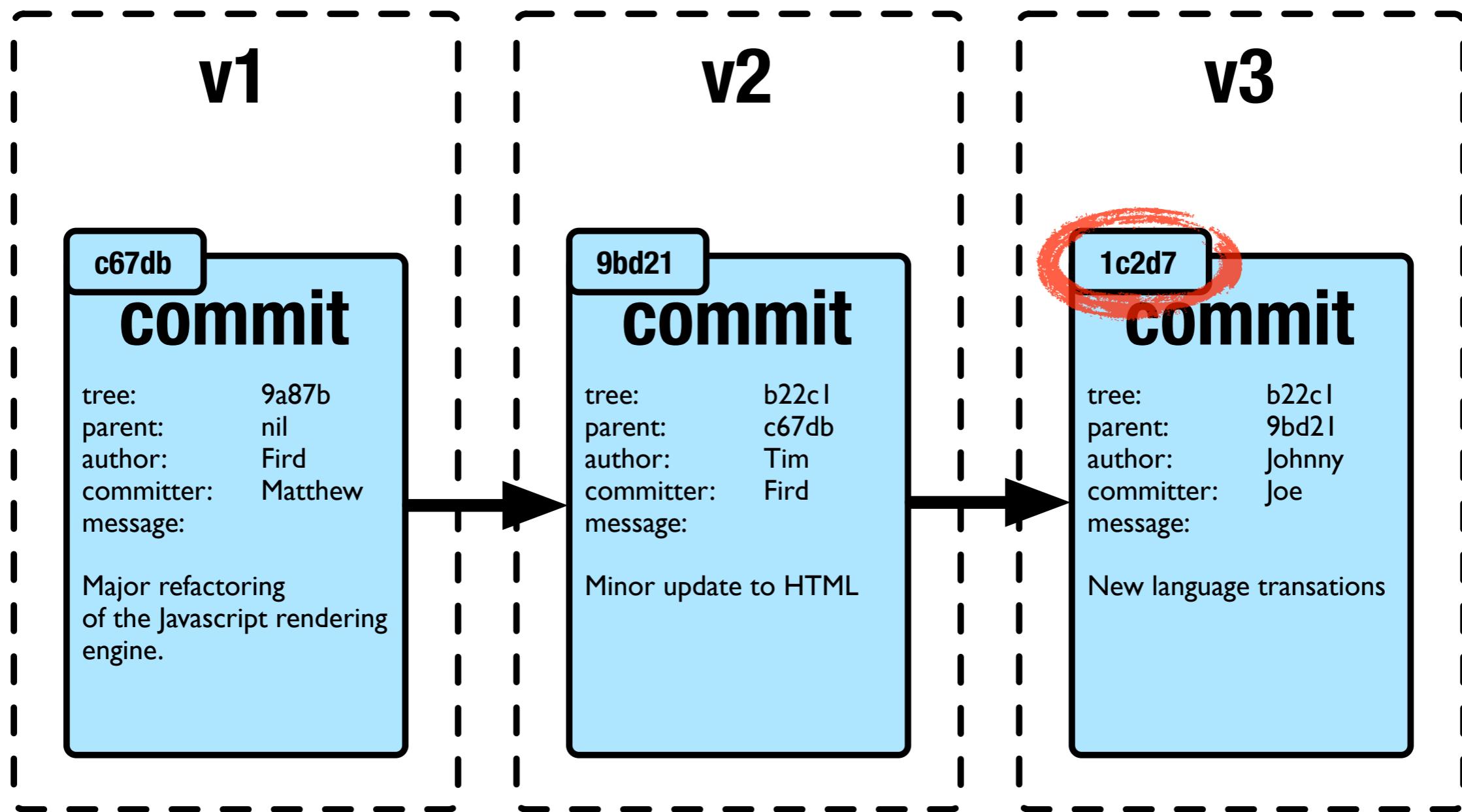












Distributed Connectivity



developer A



developer A



developer B

developer A



developer B

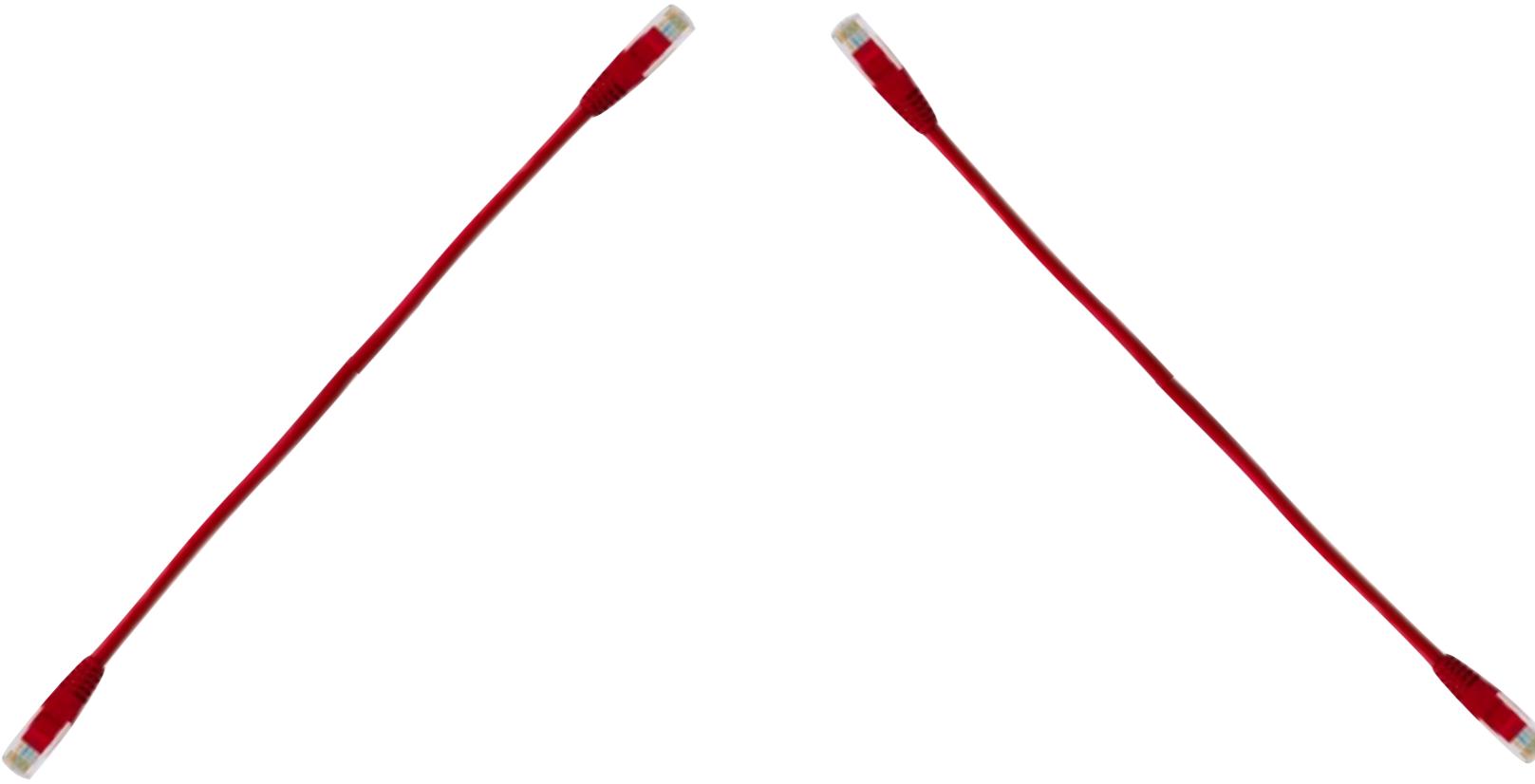


developer A



developer B

blessed repo



developer A



developer B

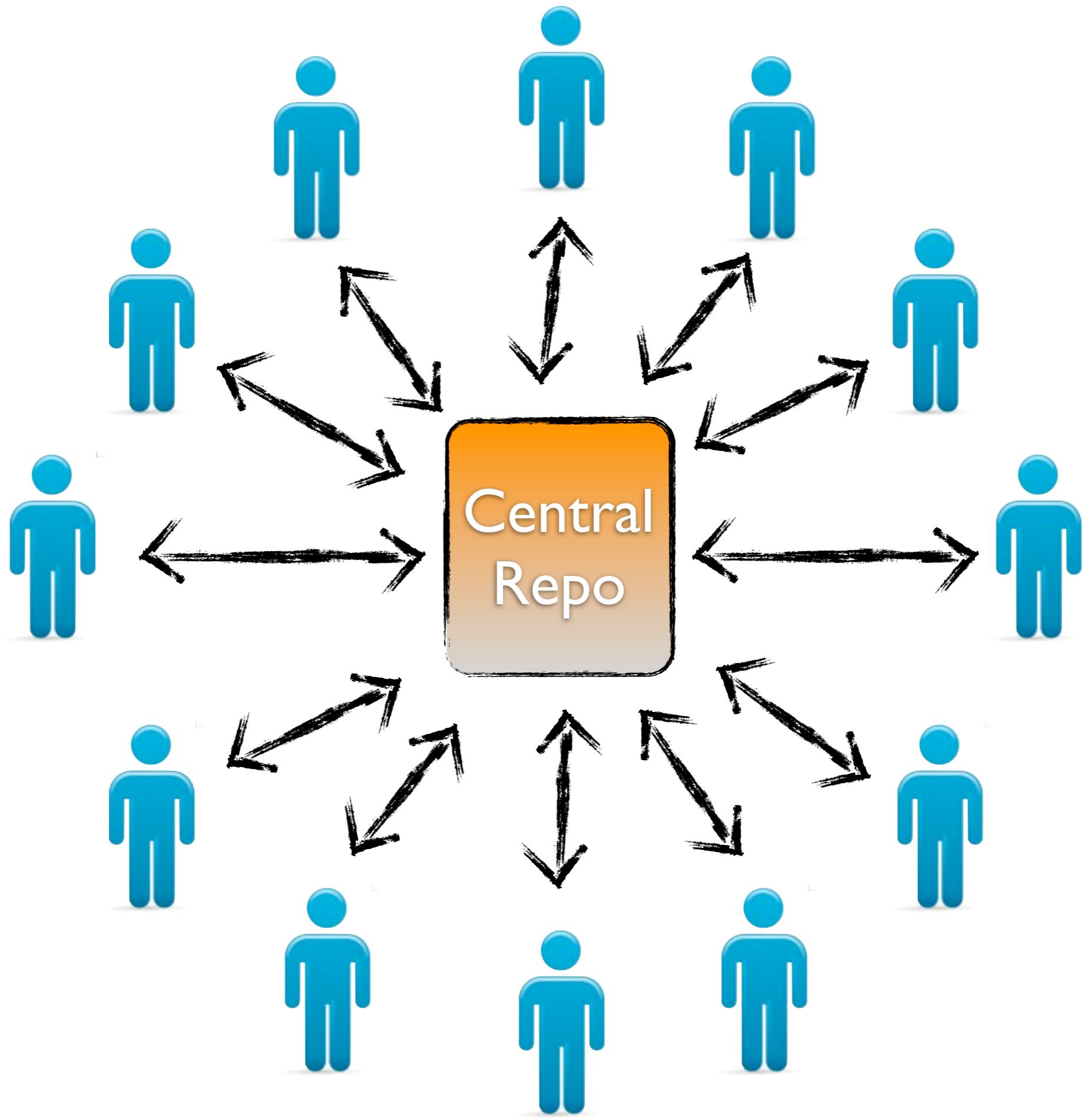


Workflows and collaboration

Centralized



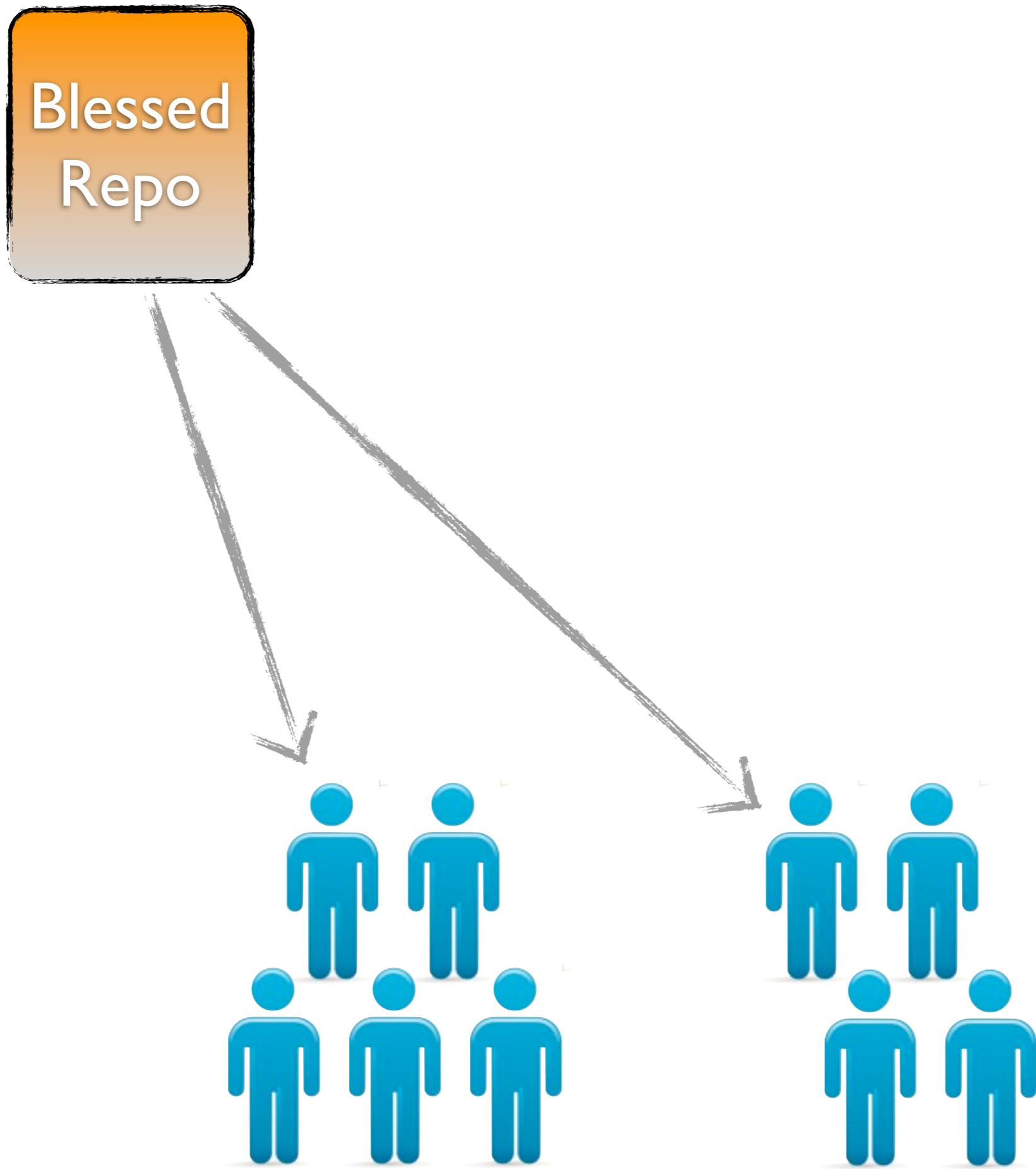
Centralized



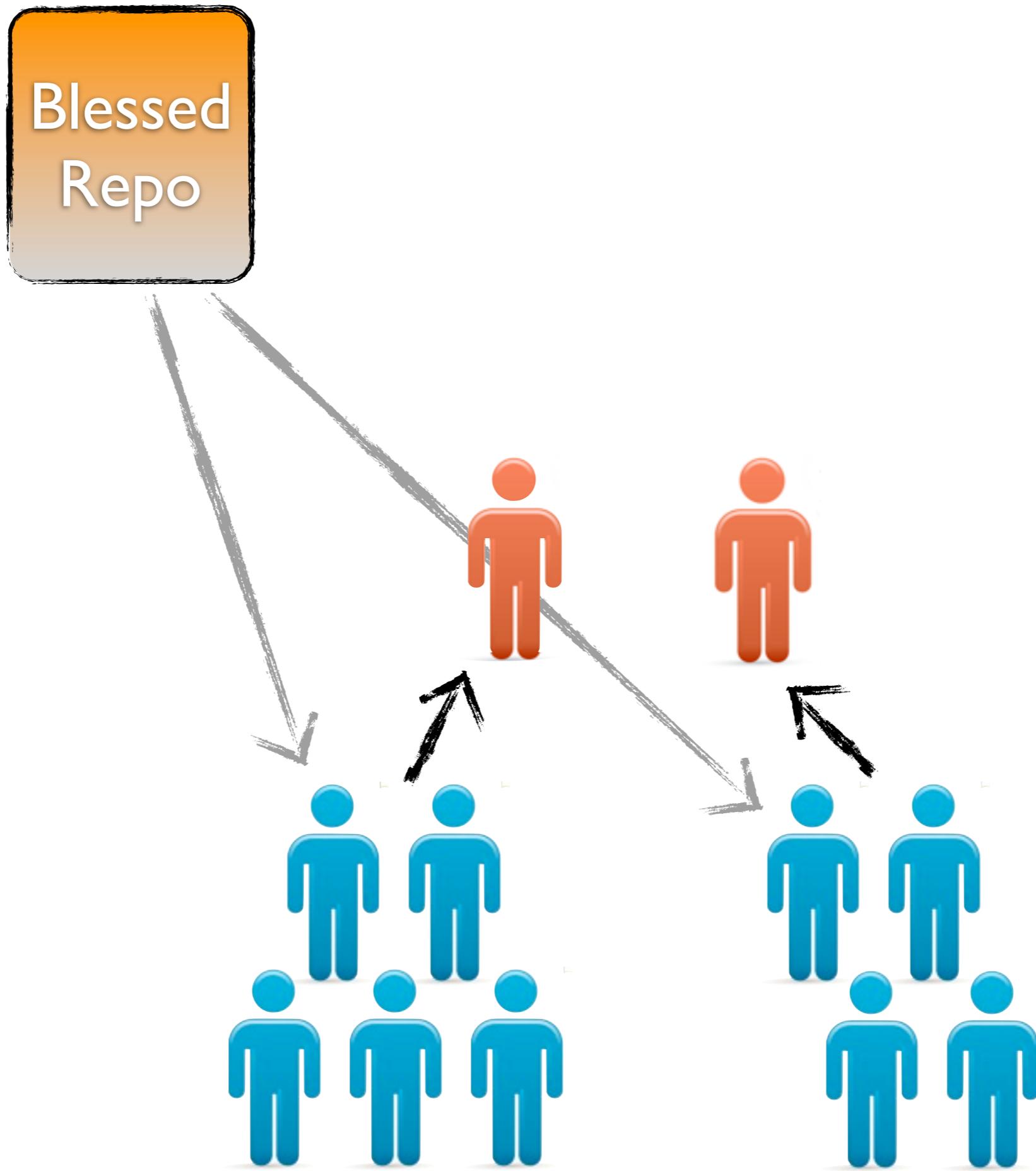
D i c t a t o r s h i p

Blessed
Repo

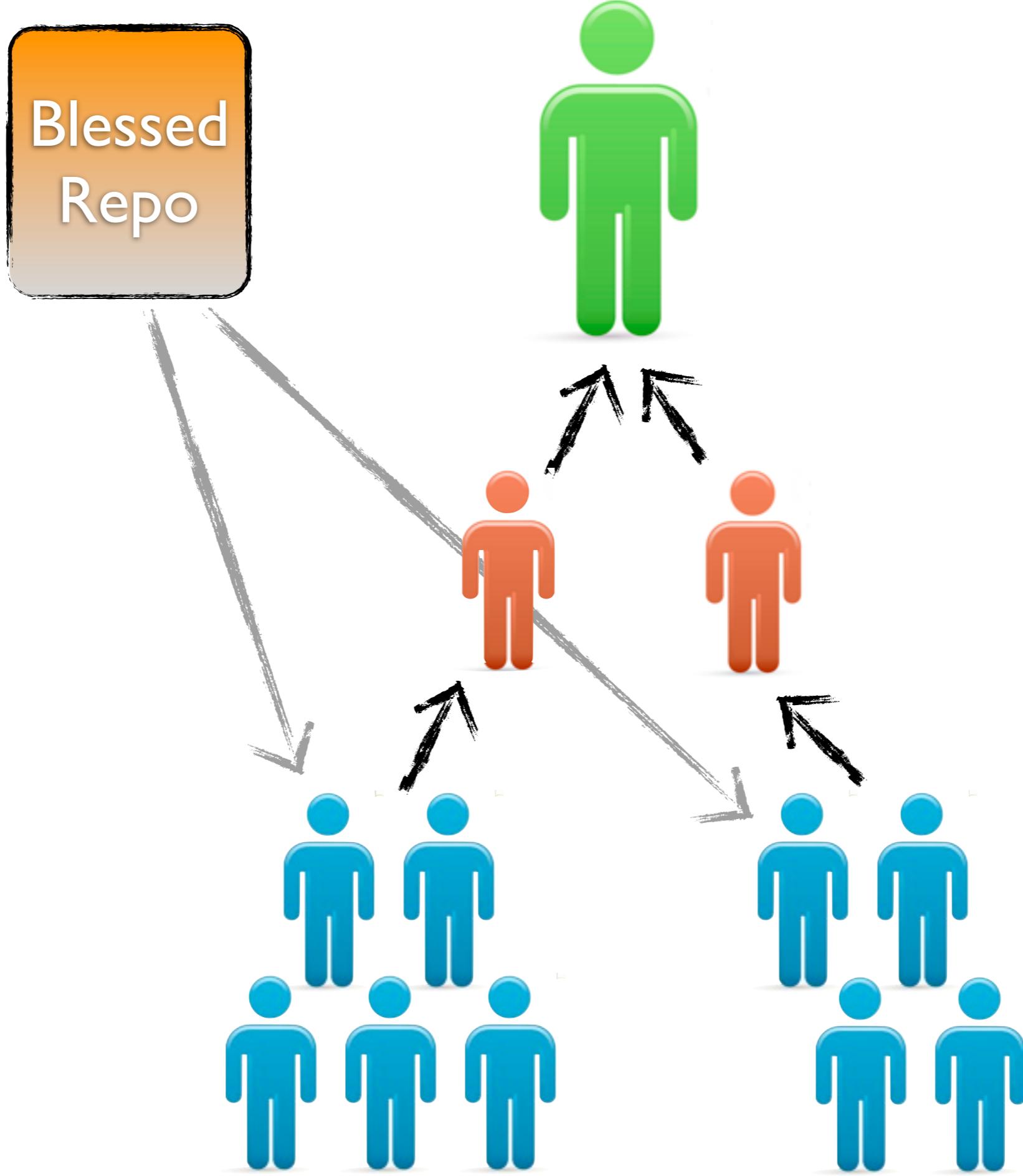
Dictatorship



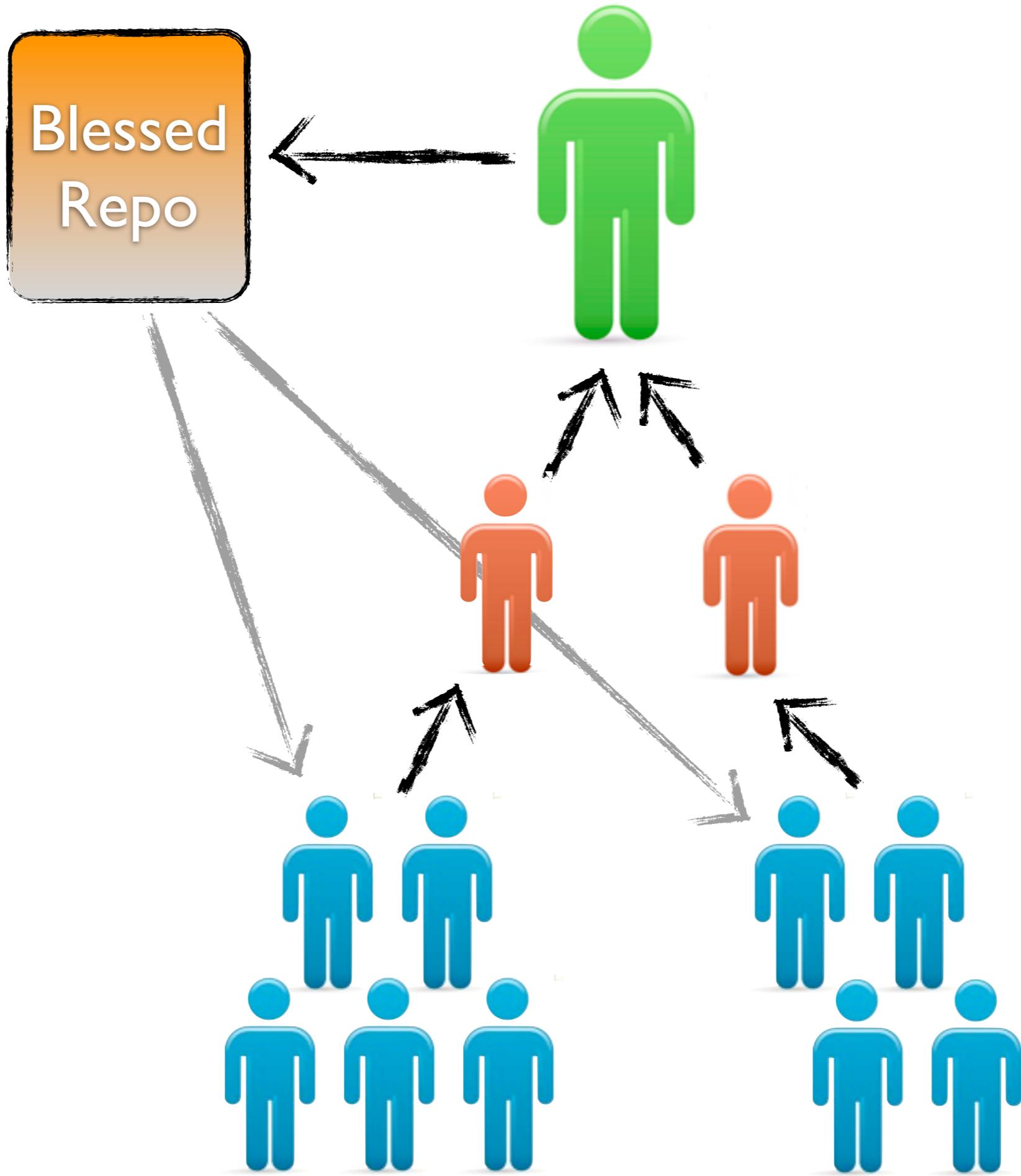
Dictatorship



Dictatorship



Dictatorship



Integration Management

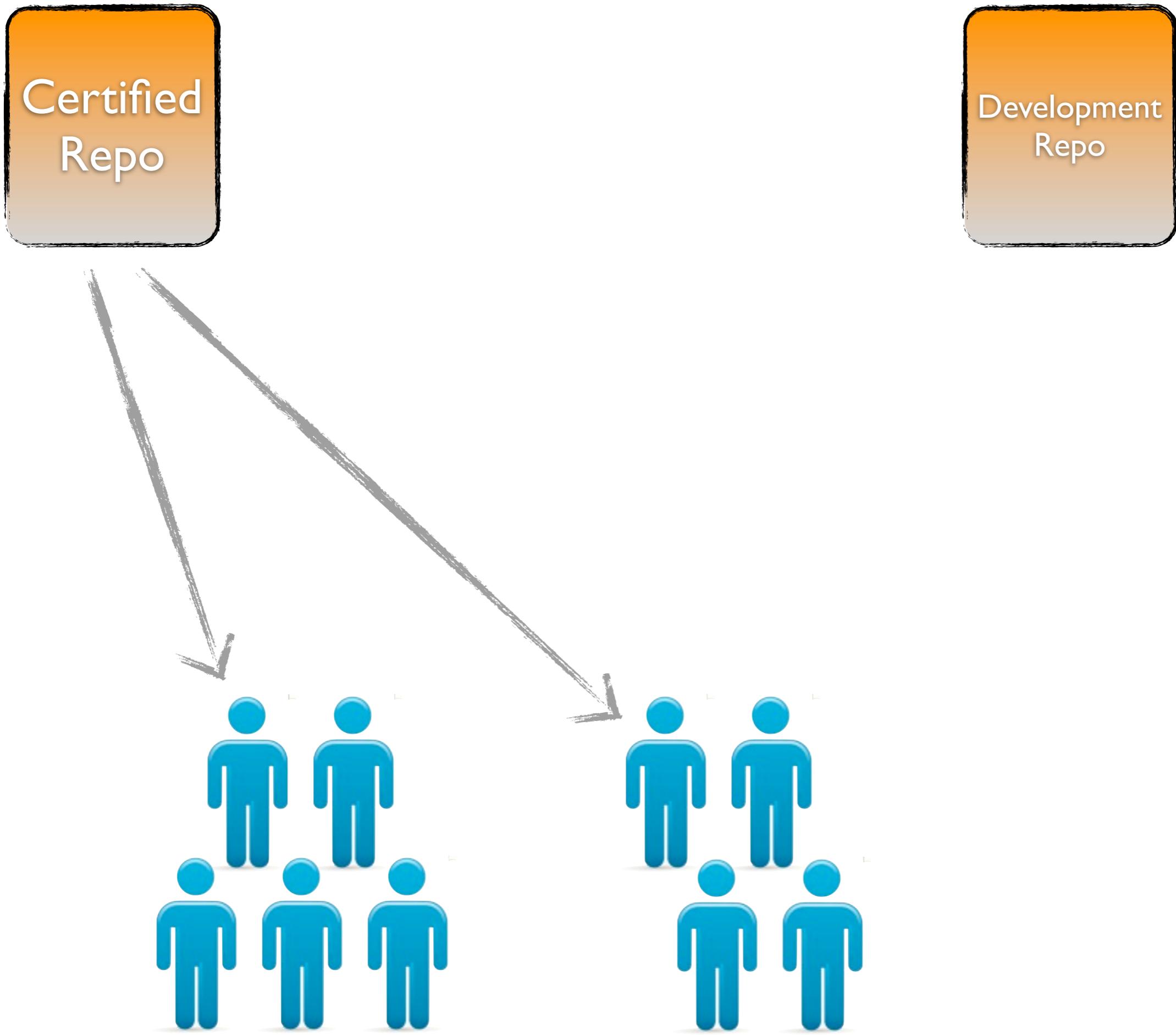


Certified
Repo

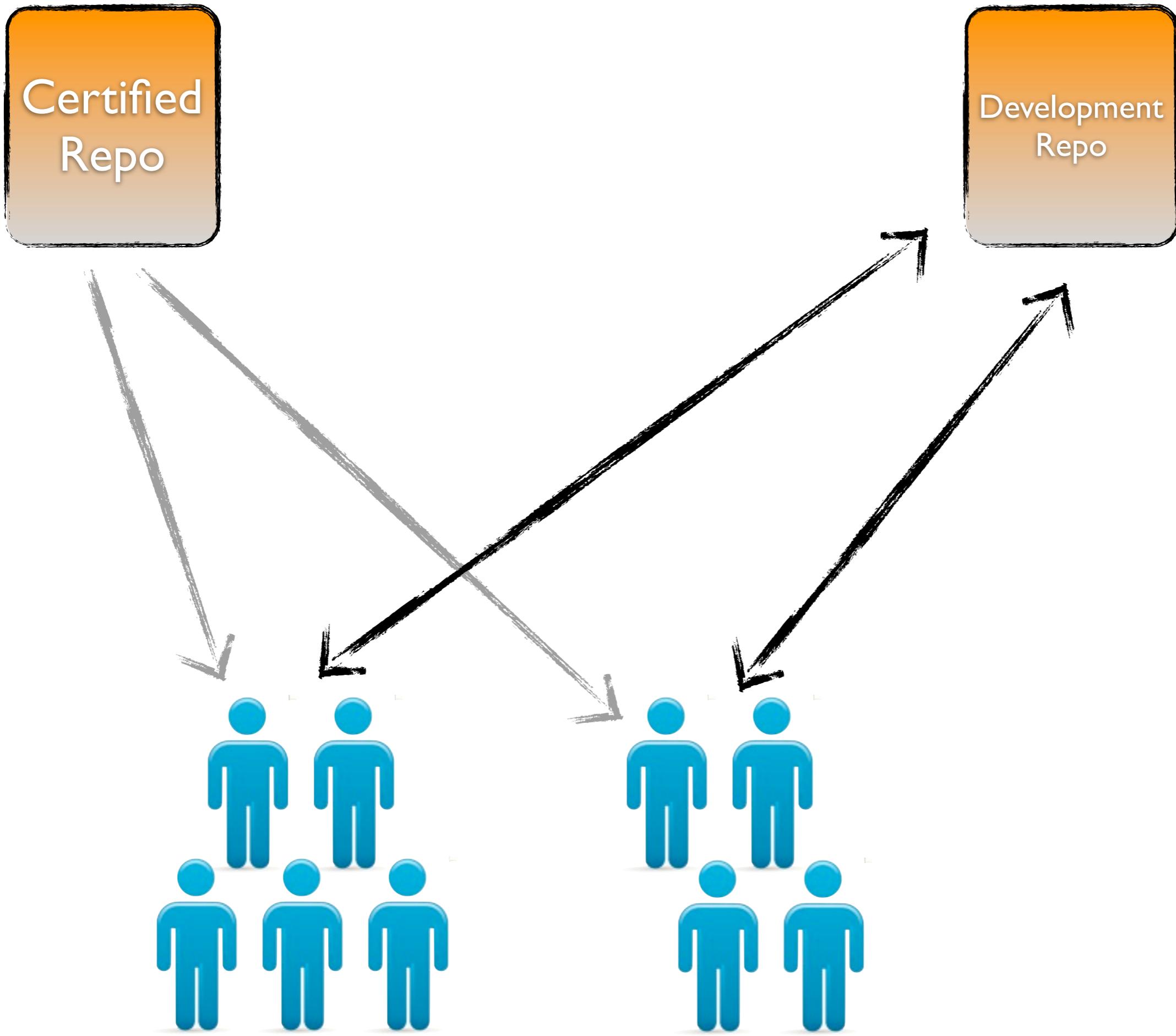


Development
Repo

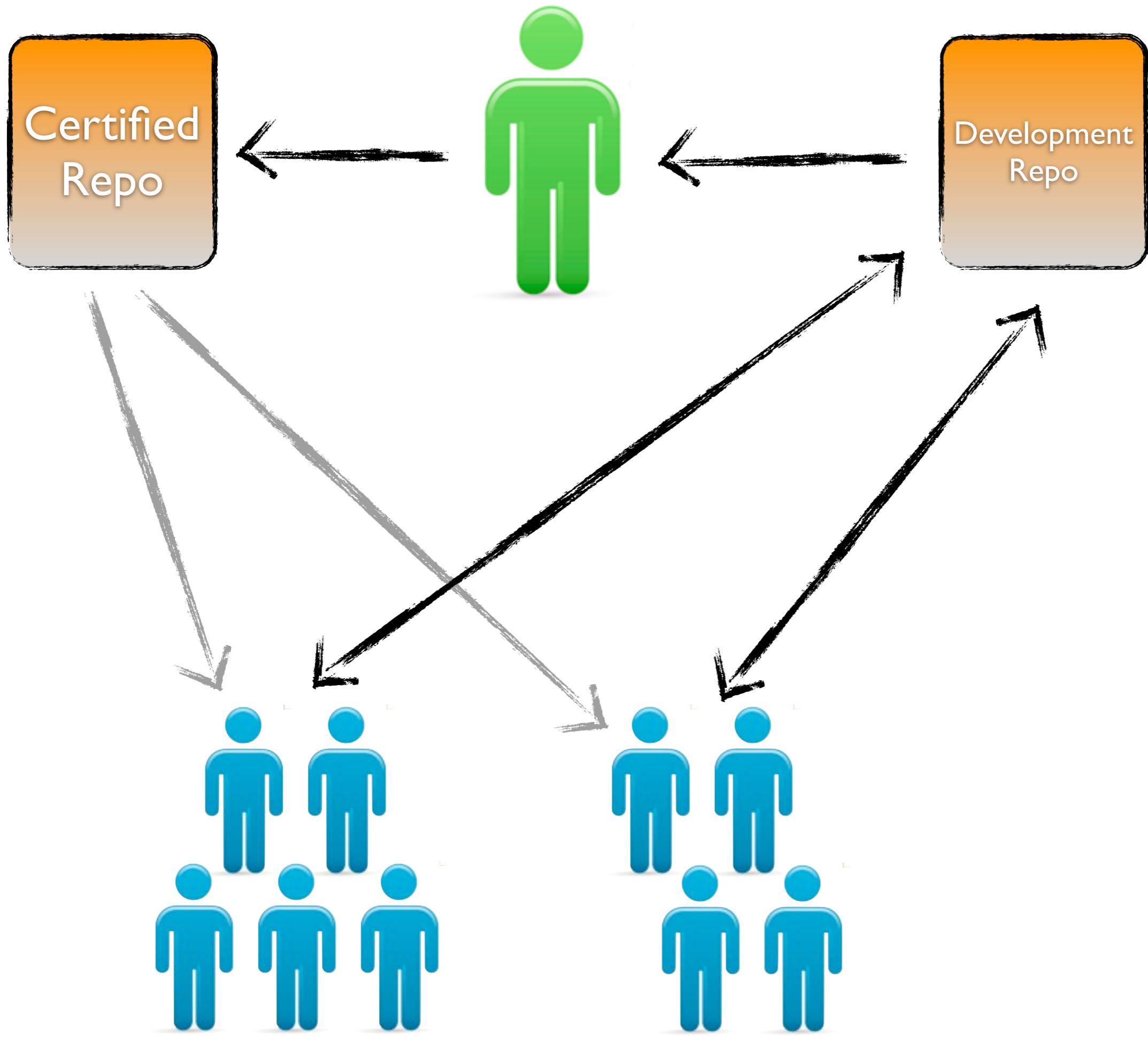
Integration Managed

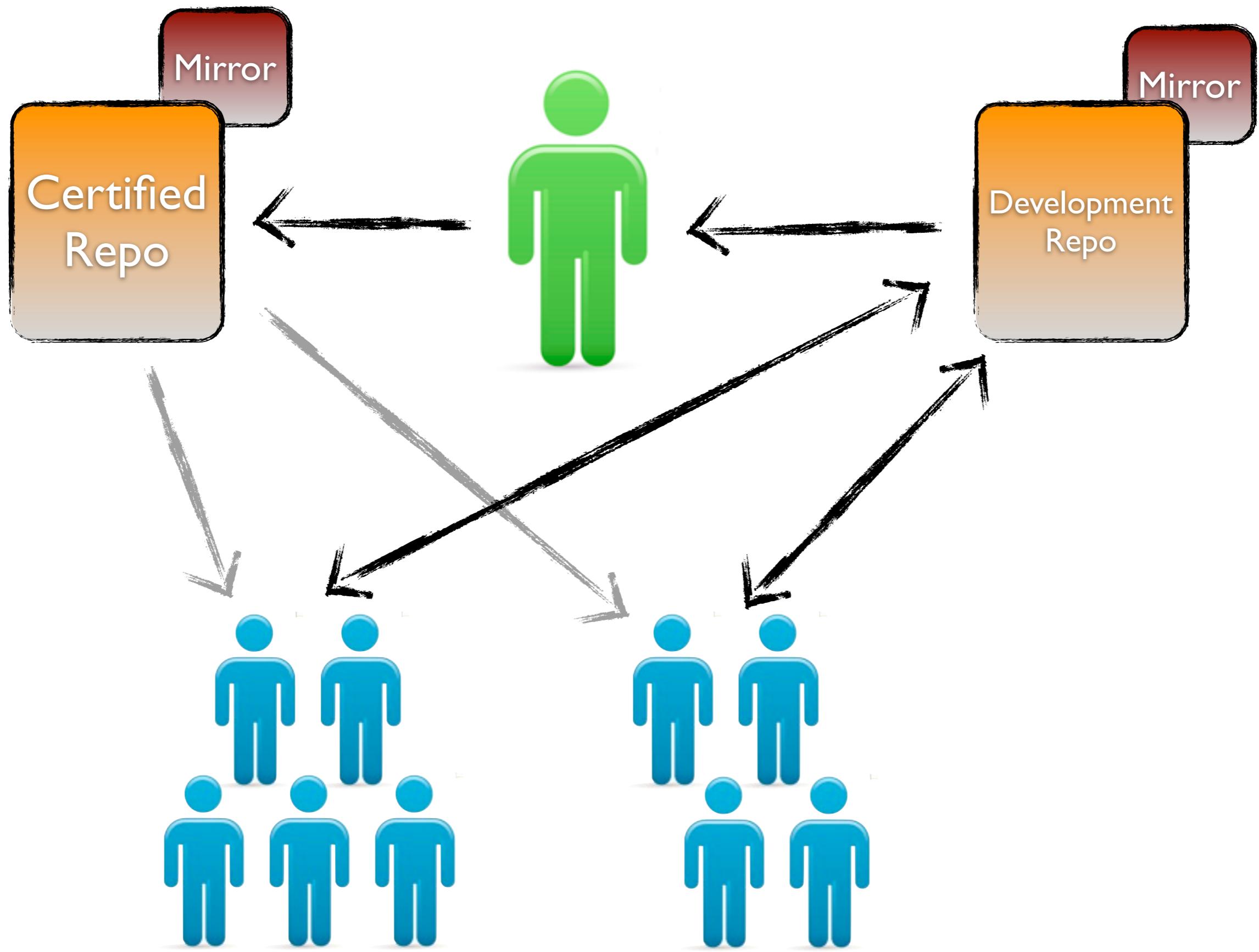


Integrated Management

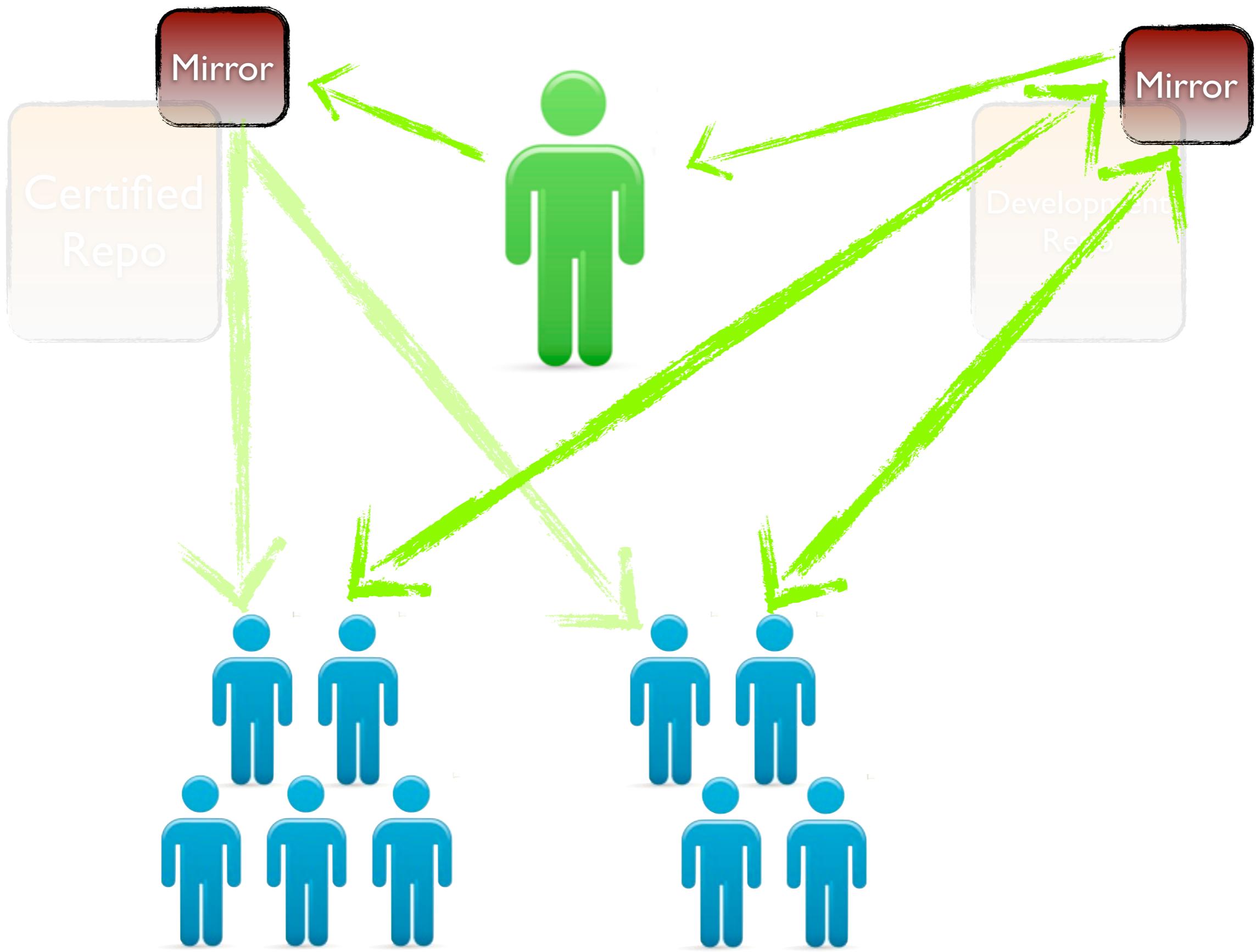


Integrated Management





Mirrored



Mirrored

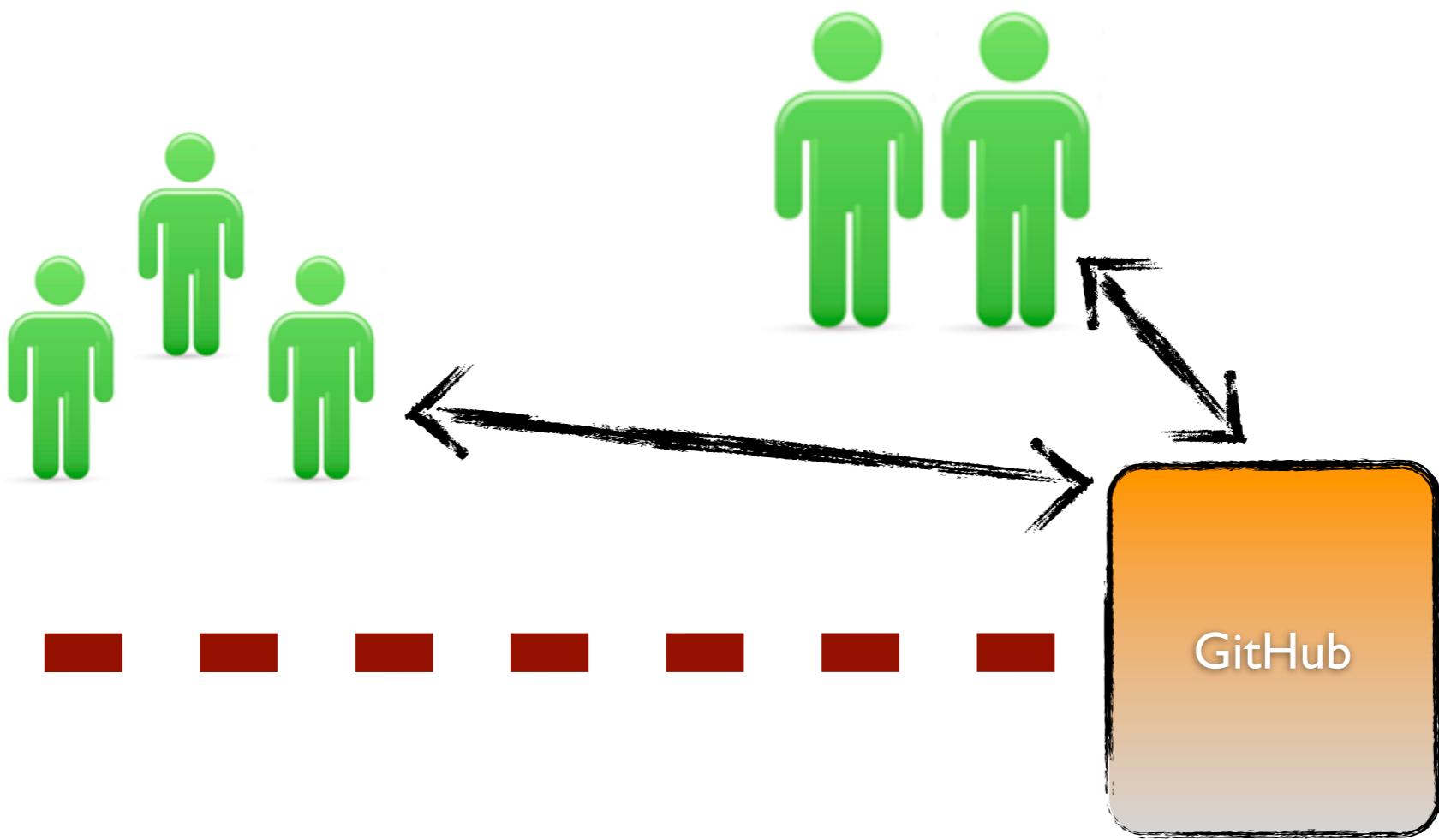
Custom + Public ↪

↗ Private ↪ Public ↪



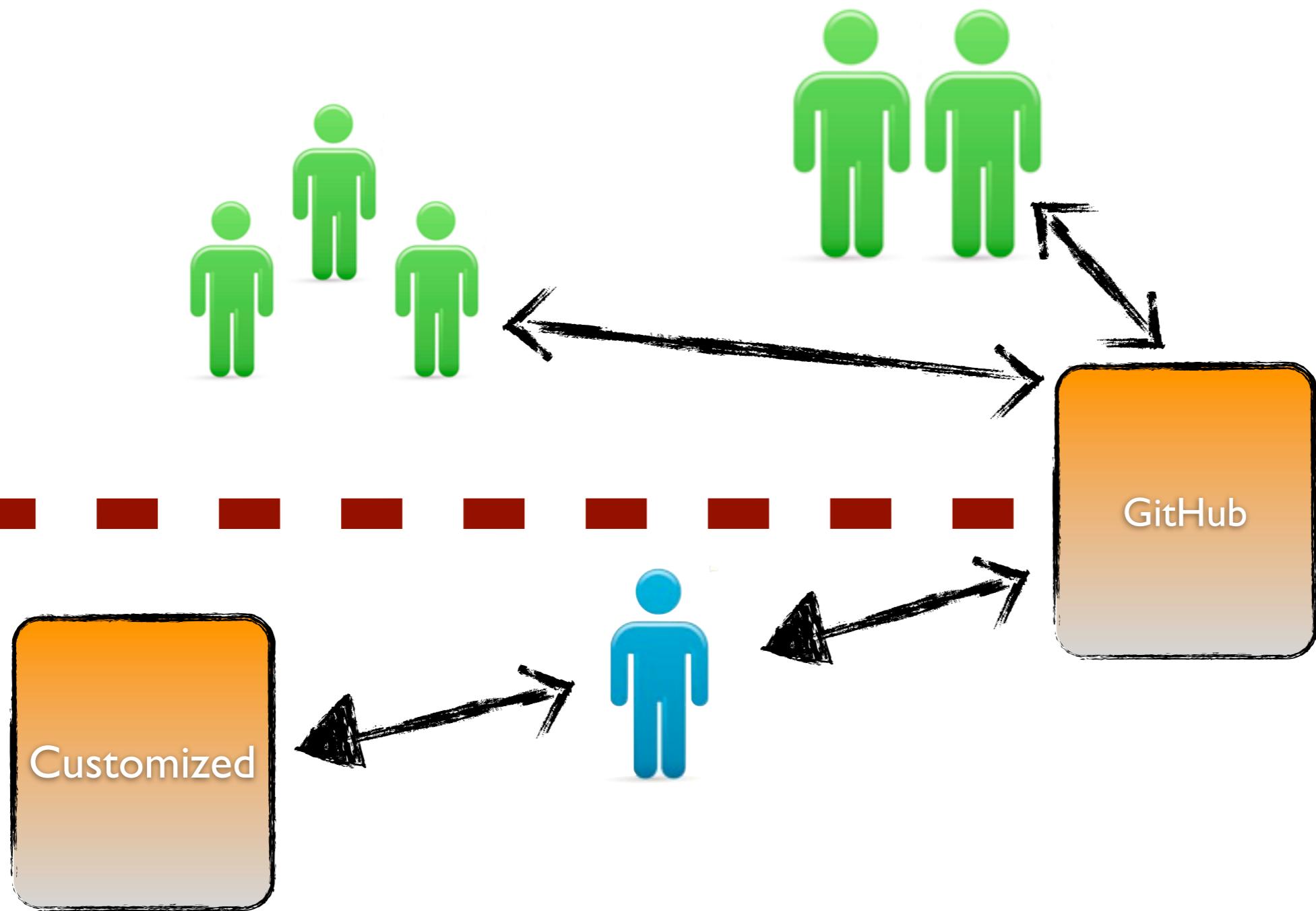
Custom + Public Contribution

→ Private → Public ↙



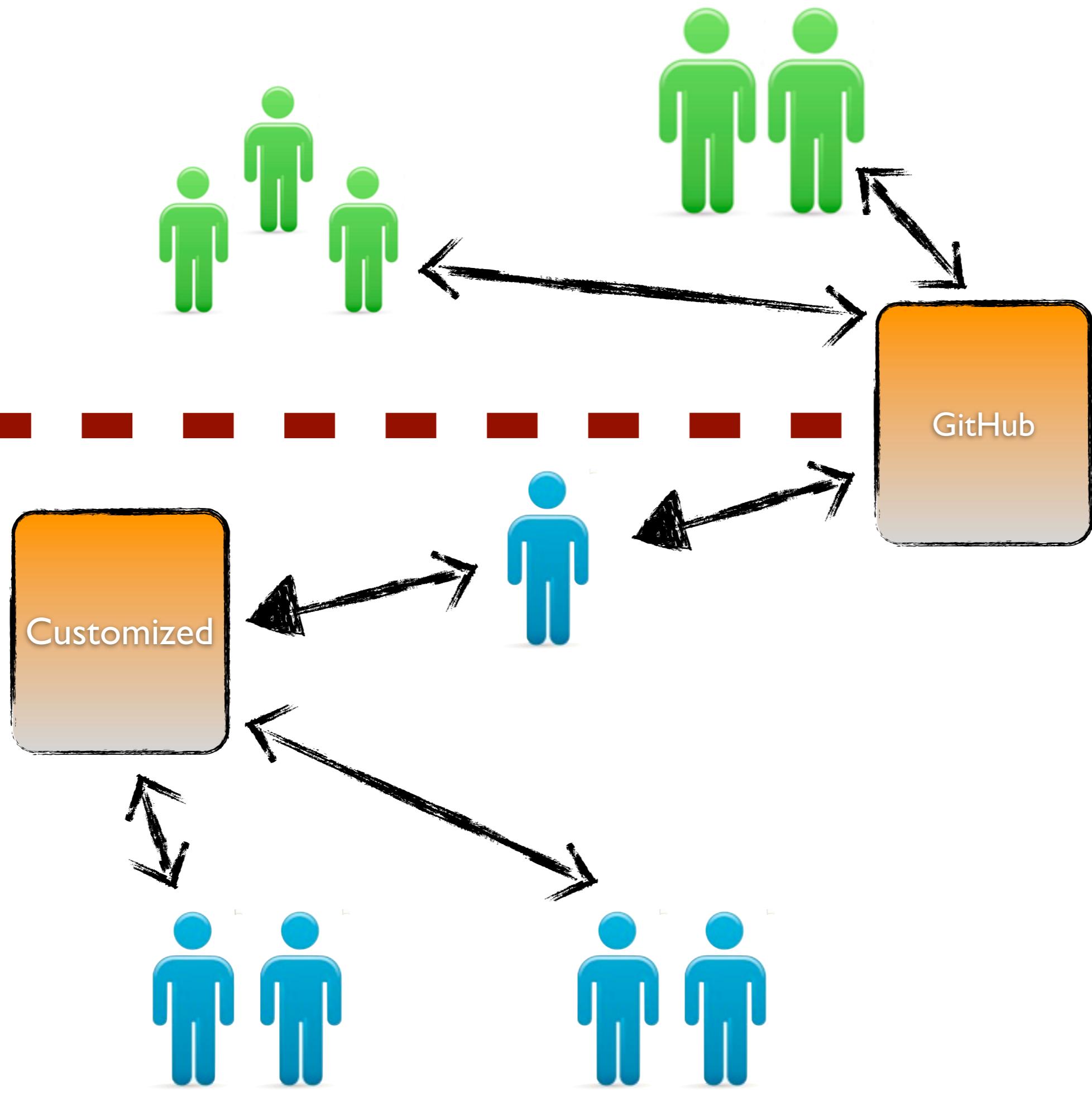
Custom + Public Contribution

→ Private
→ Public



Custom + Public Contribution

→ Private
→ Public



Git's notable users

ANDROID

open source project

Work with the code

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[Patch history](#)

[Known issues](#)

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[Documentation](#)

About the project

[Project layout](#)

[Release features](#)

[Roadmap](#)

[Project roles](#)

[Licenses](#)

Develop applications

If you are interested in developing applications for Android, visit the [Android application developer site](#).

About Android

For general information, visit [android.com](#).

Get source

For information about current problems and fixes, see [Known issues](#).

This document describes how to set up your local work environment, how to use Repo to get the Android files, and how to build the files on your machine.

Related reading:

- For an overview of the entire code-review and code-update process, see [Workflow](#).
- For reference details about Repo, see [Using Repo and Git](#).

What's in the source?

For a description of all the projects that make up the Android source code, see [Project layout](#). To see snapshots and histories of the files available in the public Android repositories, visit the [GitWeb](#) web interface.

The source is approximately 2.1GB in size. You will need 6GB free to complete the build.

Setting up your machine

To build the Android source files, you will need to use Linux or Mac OS. Building under Windows is not currently supported.

Linux



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Categories

Rails is moving from SVN to Git

Posted by David April 02, 2008 @ 09:39 PM

We've been preparing for Rails to move the official source repository from Subversion to [Git](#) for some time now and it seems that it'll happen over the next week or so. The premiere will happen alongside the official launch of [Github](#).

The move will also mean that we're going to be switching ticket tracking to [Lighthouse](#). So now both our repository and ticket tracking will be powered by Rails applications, which is a nice bonus treat.

When the move happens, we'll freeze the existing Subversion repository and the Trac installation. Both will live on for a long time to come, but will be entirely deprecated. This means that your existing svn:externals will not break, but if you want the latest edge, you'll have to get it from the new git repository.

So now is a great time to learn more about Git in anticipation of this move. I recommend starting with the [Git for SVN'ers crash course](#).

Perl migrates to git versioning control system.

Written on 01/03/09 at 19:14:32 by On

The [url=http://www.perlfoundation.org/]Perl Foundation[/url] has announced at the <http://use.perl.org...> website switching the version control systems to git. According to the announcement Perl 5 [url=http://use.perl.org/articles/08/12/22/0830205.shtml]migration to git[/url] would allow the language development team to take advantage of git's extensive offline and distributed versioning support.



[url=http://git.or.cz/]Git is open source[/url] and readily available to all Perl developers. Among other advantages, the announcement notes that git simplifies commits, producing fewer administrative overheads for integrating contributions. Git's change analysis tools are also singled out for praise.

The transformation from [url=http://www.perforce.com/]Perforce[/url] to git apparently took over a year. Sam Vilain of Catalyst IT "spent more than a year building custom tools to transform 21 years of Perl history into the first ever unified repository of every single change to Perl." The git repository incorporates historic snapshot releases and patch sets, which is frankly both cool and historically pleasing. Some of the patch sets were apparently recovered from old hard drives, notching up the geek satisfaction factor even more.

Git at Apache

Foundation Projects People Get Involved Support Apache Download

Git at Apache



This is a collection of read-only Git mirrors of Apache codebases. The mirrors are automatically updated and contain full version histories (including branches and tags) from the respective source trees in the official Subversion repository at Apache.

Note that these Git mirrors are missing Subversion features like svn:ignore, svn:eol-style and svn:keywords settings and support for empty directories.

Please contact the infrastructure-dev@apache.org mailing list if you have comments or suggestions regarding this service or want to see another Apache codebase mirrored.

Project	Description	Git Clone URL	HTTP Clone URL
abdera.git	Apache Abdera	git://git.apache.org/abdera.git	http://git.apache.org/abdera.git
activemq.git	Apache ActiveMQ	git://git.apache.org/activemq.git	http://git.apache.org/activemq.git
ant.git	Apache Ant	git://git.apache.org/ant.git	http://git.apache.org/ant.git
apr-iconv.git	Apache Portable Runtime iconv	git://git.apache.org/apr-iconv.git	http://git.apache.org/apr-iconv.git
apr-util.git	Apache Portable Runtime util	git://git.apache.org/apr-util.git	http://git.apache.org/apr-util.git
apr.git	Apache Portable Runtime	git://git.apache.org/apr.git	http://git.apache.org/apr.git
archiva.git	Apache Archiva	git://git.apache.org/archiva.git	http://git.apache.org/archiva.git
axis2-c.git	Apache Axis2/C	git://git.apache.org/axis2-c.git	http://git.apache.org/axis2-c.git
axis2-java.git	Apache Axis2/Java	git://git.apache.org/axis2-java.git	http://git.apache.org/axis2-java.git
batik.git	Apache Batik	git://git.apache.org/batik.git	http://git.apache.org/batik.git
buildr.git	Apache Buildr	git://git.apache.org/buildr.git	http://git.apache.org/buildr.git
camel.git	Apache Camel	git://git.apache.org/camel.git	http://git.apache.org/camel.git
cassandra.git	Apache Cassandra (incubating)	git://git.apache.org/cassandra.git	http://git.apache.org/cassandra.git
cayenne.git	Apache Cayenne	git://git.apache.org/cayenne.git	http://git.apache.org/cayenne.git
chainsaw.git	Apache Chainsaw	git://git.apache.org/chainsaw.git	http://git.apache.org/chainsaw.git
cocoon.git	Apache Cocoon	git://git.apache.org/cocoon.git	http://git.apache.org/cocoon.git
commons-codec.git	Apache Commons Codec	git://git.apache.org/commons-codec.git	http://git.apache.org/commons-codec.git
commons-collections.git	Apache Commons Collections	git://git.apache.org/commons-collections.git	http://git.apache.org/commons-collections.git

Go to "<http://git.apache.org/maven.git>"

Grails - Grails moves to Git

git grails

http://www.grails.org/blog/graeemeracher/Grails+n

GRAILS > Grails moves to Git

Grails moves to Git

Blog Home

Edit Entry

Grails Moves To Git

March 25, 2009 by [graeemeracher](#) | [grails git](#), [grails](#), [git](#) | [4 comments.](#)

The [Grails](#) source control repository has been officially moved to [Github](#). The [SVN repository](#) will continue to act as a read-only mirror of the Git repository.

Recent Comments:

link

A screenshot of a Mac OS X desktop environment showing a web browser window. The window title is 'Grails - Grails moves to Git'. The URL in the address bar is 'http://www.grails.org/blog/graeemeracher/Grails+n'. The page content is a blog post titled 'Grails Moves To Git' posted on March 25, 2009, by 'graeemeracher'. The post discusses the move from SVN to GitHub. Below the post is a section titled 'Recent Comments:' with a 'link' button. The browser interface includes standard OS X window controls and a toolbar with various icons.

Your dashboard - Gitorious

http://git.springsource.org/ RSS Google

Your dashboard - Gitorious

Dashboard ~matthewmccullough 0 Logout

spring

Matthew J. McCullough

~ matthewmccullough

Matthew J. McCullough
matthewm @ambien...deas.com
<http://ambientideas.com/blog>
Member for 2 months

Manage SSH keys
Manage email aliases
Edit details
Change password

You're watching

Sort by: Not yours Yours Merge requests Repositories All

Groovy enablement of the one groovy-supplemented project when ...
~matthewmccullough/spring-integration/matthewmcculloughs-spring-integration
spring-integration/spring-integration

Your Newsfeed (Show my activities)

Wednesday June 15 2011

PUSH 03:03 Chris Beams pushed 1b175cc9 to spring-integration/spring-integration:master
Chris Beams on June 15, 2011 02:54
Update buildSrc and wrapper to Gradle 1.0 M3

Saturday June 11 2011

PUSH 14:35 Gary Russell pushed 9b626c94 to spring-integration/spring-integration:master
Gary Russell on June 11, 2011 14:35
INT-1937 Fix NIO Connection State on Exception

Friday June 10 2011

Your projects

Create a new project

Your repositories

You currently don't have any repository clones. You can clone a repository you wish to contribute to, by going to a repository overview page and click the "Clone on Gitorious" link in the sidebar.

Introduction to Git & GitHub



by Matthew McCullough