

# Rebuilding the airplane at 10 000m

Continuous Deployment with Jenkins and Gerrit

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@jenkinsci



# Jenkins Infrastructure *with* Puppet





I work for Lookout



```
ast.rb ~/.viarc
self.fail(Puppet::ParseError, message)
end
```

Wrap a state in a reusable way so we always throw a parse error.

```
def parsewrap
  excepterap :type => Puppet::ParseError do
    yield
  end
end
```


The version of the evaluate method that should be called, because it correctly handles errors. It is critical to use this method because it can enable you to catch the error where it happens, rather than much higher up the stack.

```
def safeevaluate(*options)
  # We duplicate code here because the evaluate method is called so many times
  begin
    return self.evaluate(*options)
  rescue Puppet::Error => detail
    raise adderrorcontext(detail)
  rescue => detail
    error = Puppet::ParseError.new(detail.to_s, nil, nil, detail)
    # We can't use self.fail here because it always expects strings,
    # not exceptions.
    raise adderrorcontext(error, detail)
  end
end
```

Initialize the object. Requires a hash as the argument, and takes each of the parameters of the hash and calls the setter method for them. This is probably pretty inefficient and should

# Hacking with Ruby



The background of the slide is a composite image. The upper portion shows the tail of a white airplane with a red stripe and a 'TA' logo on the vertical stabilizer, set against a clear blue sky. The lower portion shows a close-up of a large, white rocket engine with red and blue decorative stripes around its base. A dark, semi-transparent rectangular box is centered over the image, containing white text.


Let's talk about:  
**continuous deployment**

Project \*  ServerIssue Type \*  Story ?Summary \* We should install Continuous Deployment  
Use "should" or "shouldn't". Example: "Logo on website homepage should be green, not blue"

Priority P1 ?

Urgency from Engineering's perspective:

P1 = Needed ASAP; won't release again without this change. P2 = Very important, but may not delay a release for it; P3 = Like to have, but won't delay a release for it. Do only if have the time and doesn't risk anything.

Component/s  x

Start typing to get a list of possible matches. Press down to select.


Fix Version/s  xStart typing to get a list of possible matches. Press down to select.  
Identifies the first Release this was fixed/resolved in.Due Date 29/Jul/12 

Optional customer-committed date (if no Fix Version specified).

Assignee  R. Tyler Croy [Assign To Me](#)

Description All the other people are using it and they seem to like it!

What it is:  
**NOT**

A photograph of a messy room. In the foreground, a wooden table is cluttered with various items: a yellow container, a blue and white striped bag, a glass jar, and some papers. In the background, a potted plant sits on a dark surface, and a wooden chair is visible. The floor is covered with debris, including a yellow container, a blue and white striped bag, a glass jar, and some papers. A large, semi-transparent grey box with white text is overlaid on the center of the image.

"Release *everything*  
as soon as possible!"



A photograph of a messy room. A light-colored wooden table is tipped over on its side. On the floor next to it is a potted plant with green leaves. Various items are scattered on the floor, including a yellow container, a blue and white striped bag, a glass jar, and some papers. A dark-colored sofa is visible in the background.

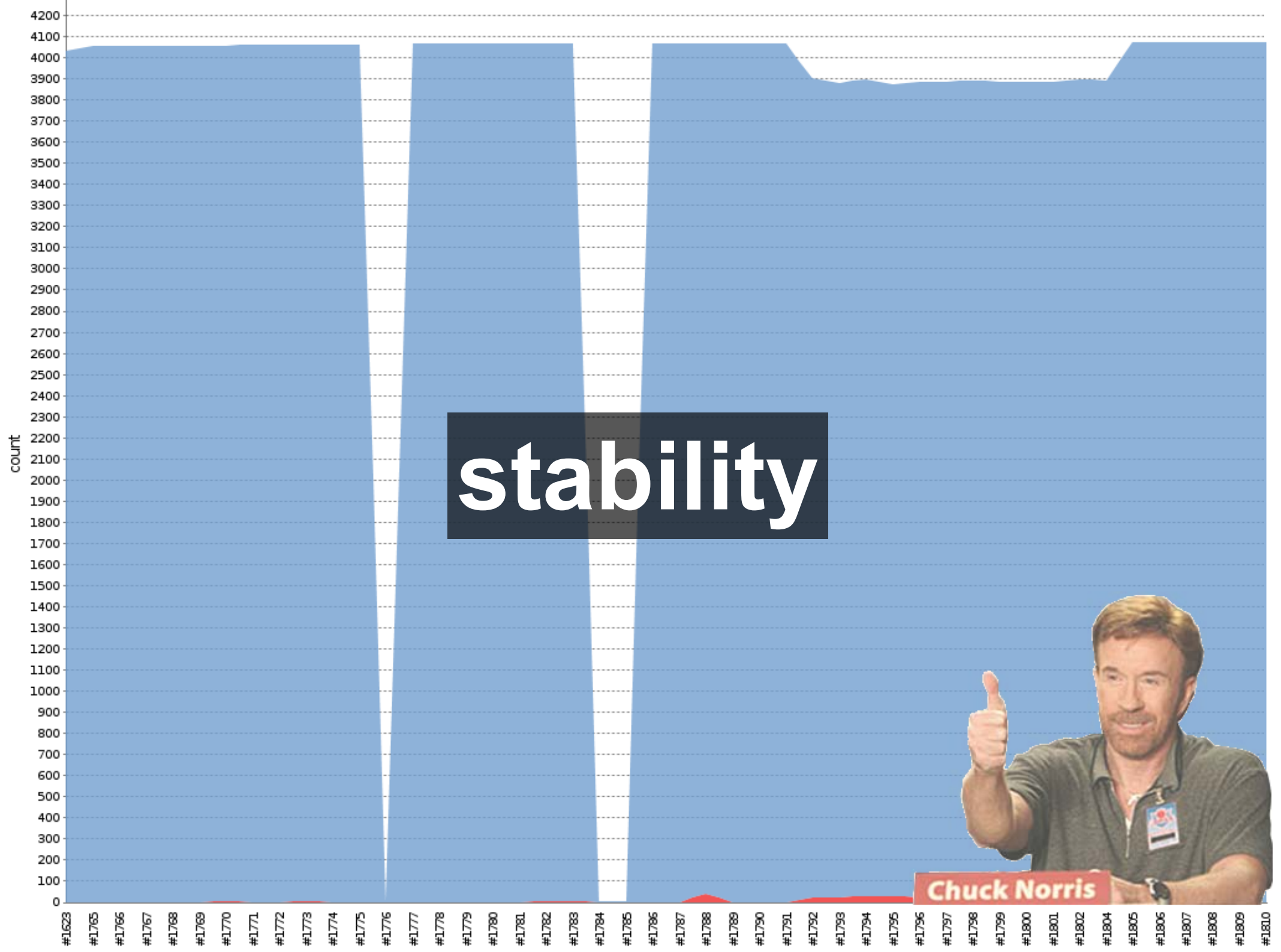
"Great! No need for a QA team"

A photograph of a messy room. A light-colored wooden table is tipped over on its side. On the floor next to it is a potted plant with green leaves. There is a lot of trash and debris scattered on the floor, including crumpled paper, a yellow container, and a glass jar. A dark-colored sofa is visible in the background.

"Our users will be our testers!"



Continuous Deployment  
is about





**Faster  
with  
More Confidence**



A large commercial airplane is shown from a low-angle perspective, flying towards the viewer. The aircraft is white with red and blue stripes along the fuselage and tail. The tail features a logo with the letters 'TA' inside a red circle. The plane is set against a clear blue sky. A dark, semi-transparent rectangular box is centered over the middle of the image, containing the text 'Continuous Deployment is' in white and 'GOOD' in large, bright green letters.

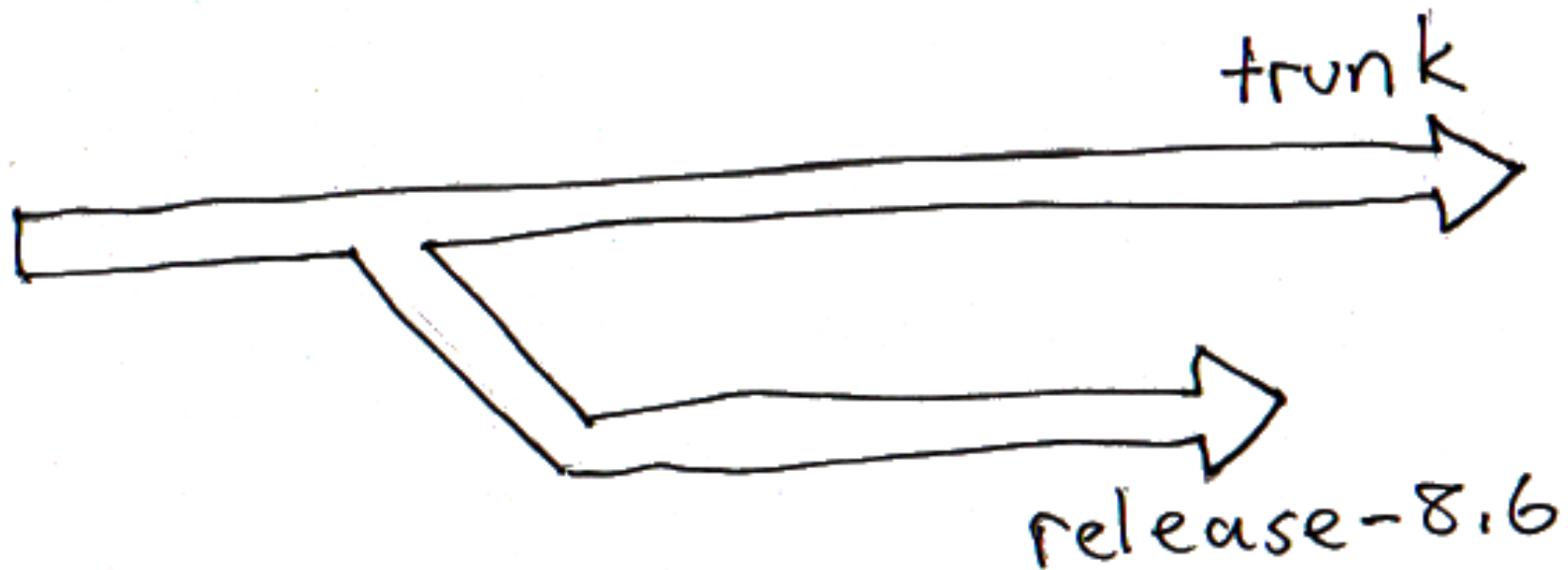
Continuous Deployment is  
**GOOD**

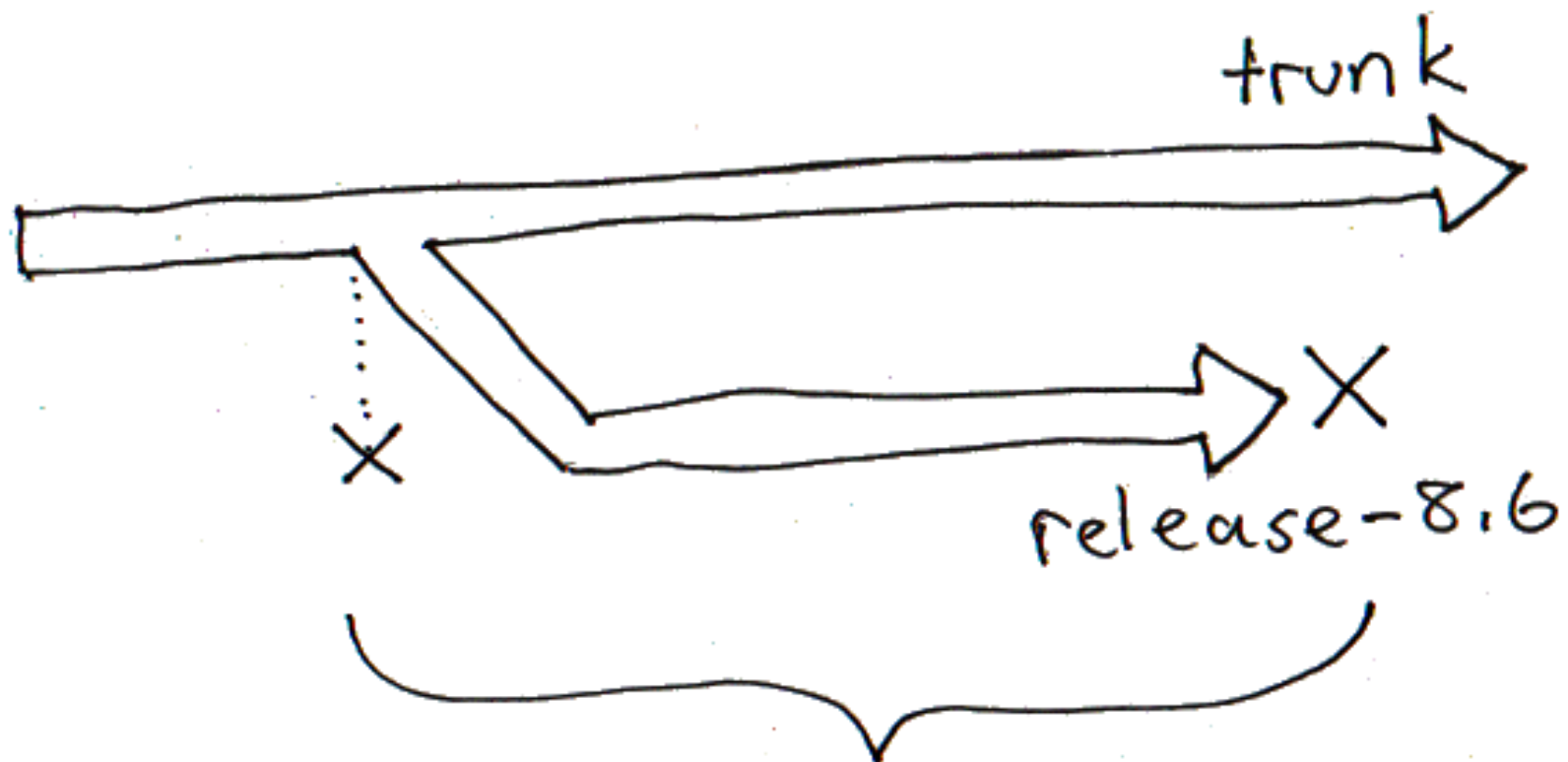


# Meanwhile at Lookout



# Subversion branches for releases





10-18 days per release branch





manual code review





very little automation





**36%**  
of deployments failed



# 68

commits per deployment



**62%**  
of deployments slipped







Let's fix this.





# Step One: Automate Development



A large industrial factory with yellow robotic arms assembling car chassis. The scene is filled with complex machinery, conveyor belts, and structural steel. In the foreground, a yellow robotic arm is positioned over a car chassis. Other robotic arms are visible in the background, working on different parts of the assembly line. The word "Jenkins" is overlaid in the center of the image.

# Jenkins





"Why don't our tests pass?"



A large yellow industrial robotic arm is the central focus, positioned over a car chassis. The arm has a red emergency stop button and various cables. In the background, another similar robotic arm is visible, working on another car. The factory floor is filled with industrial equipment, pipes, and structural beams. The text "Never stop automating." is overlaid in white on a dark horizontal band across the middle of the image.

Never stop automating.





Step Two  
Better tools,  
processes





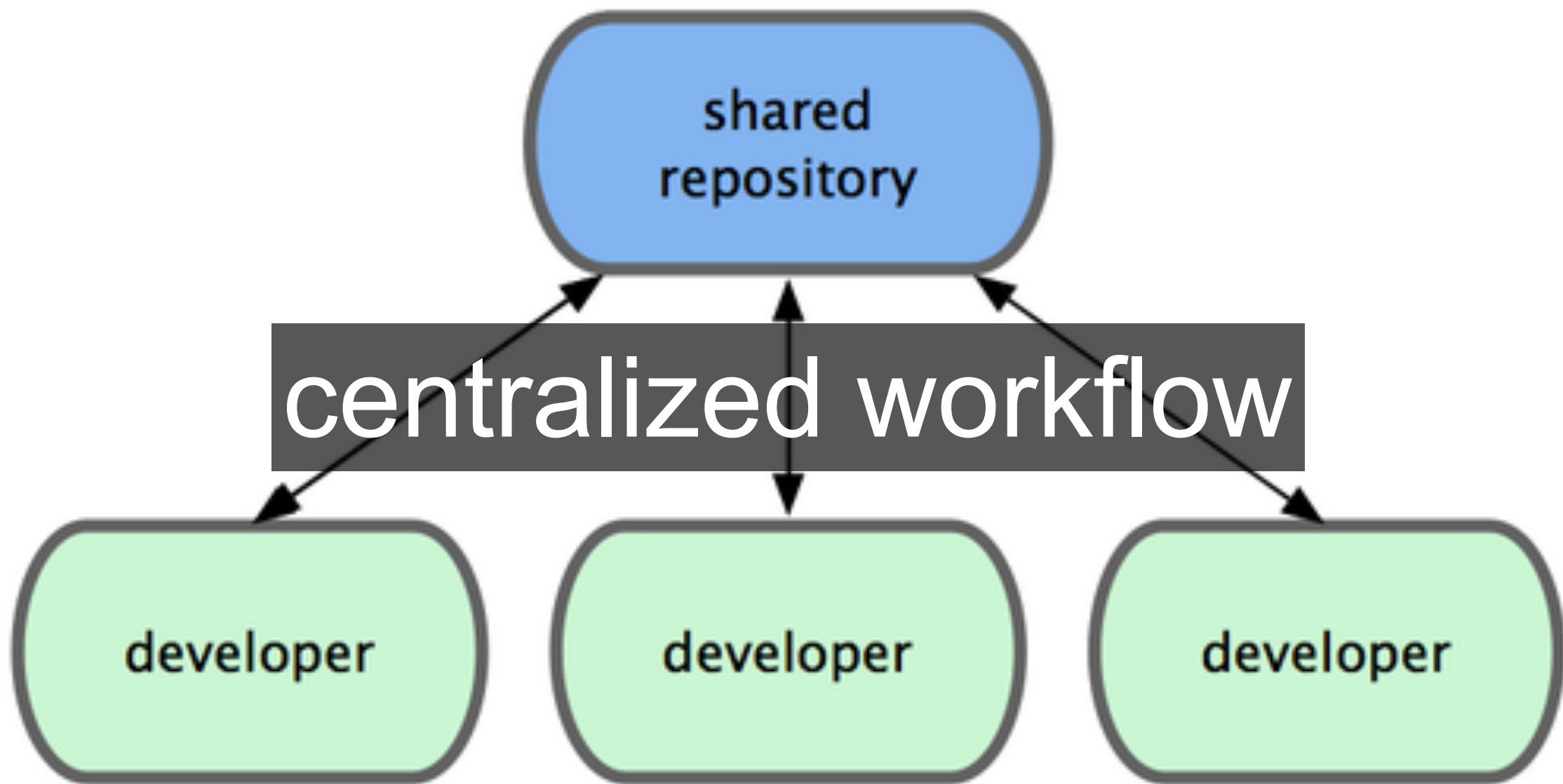
*(I don't like SVN)*

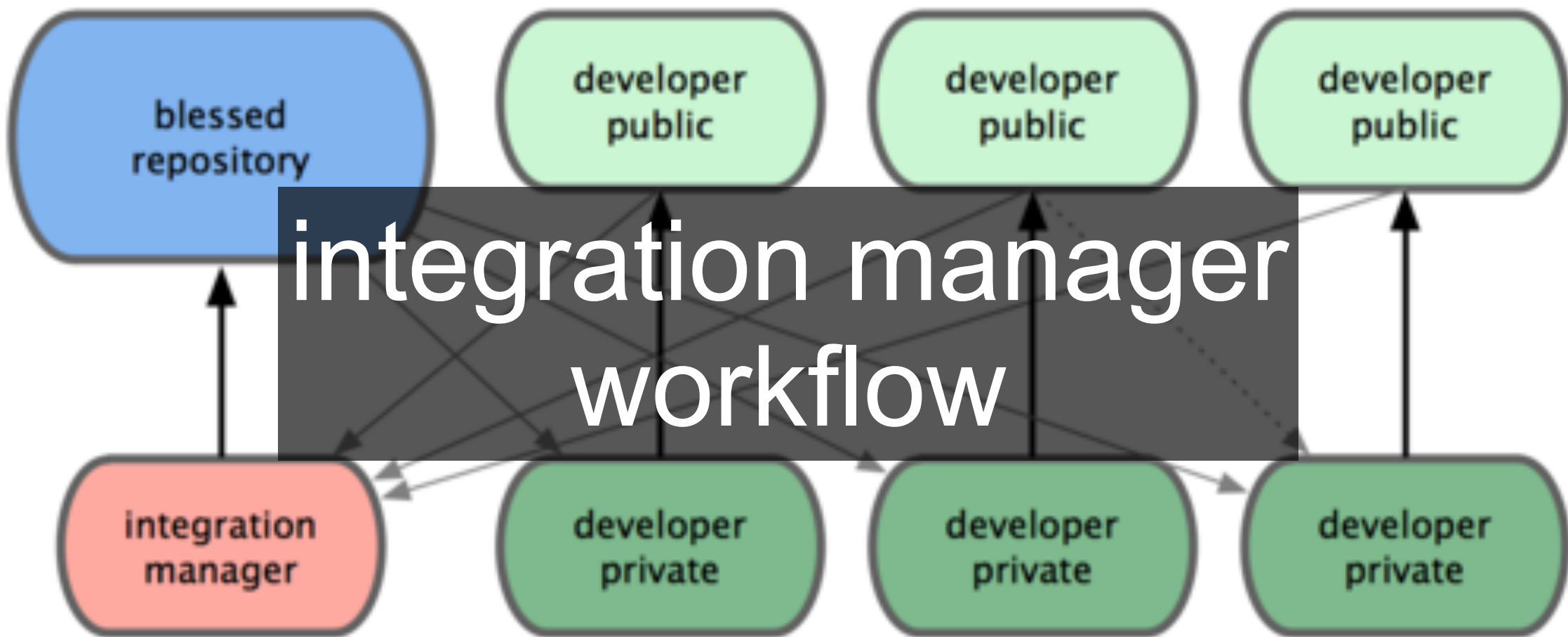




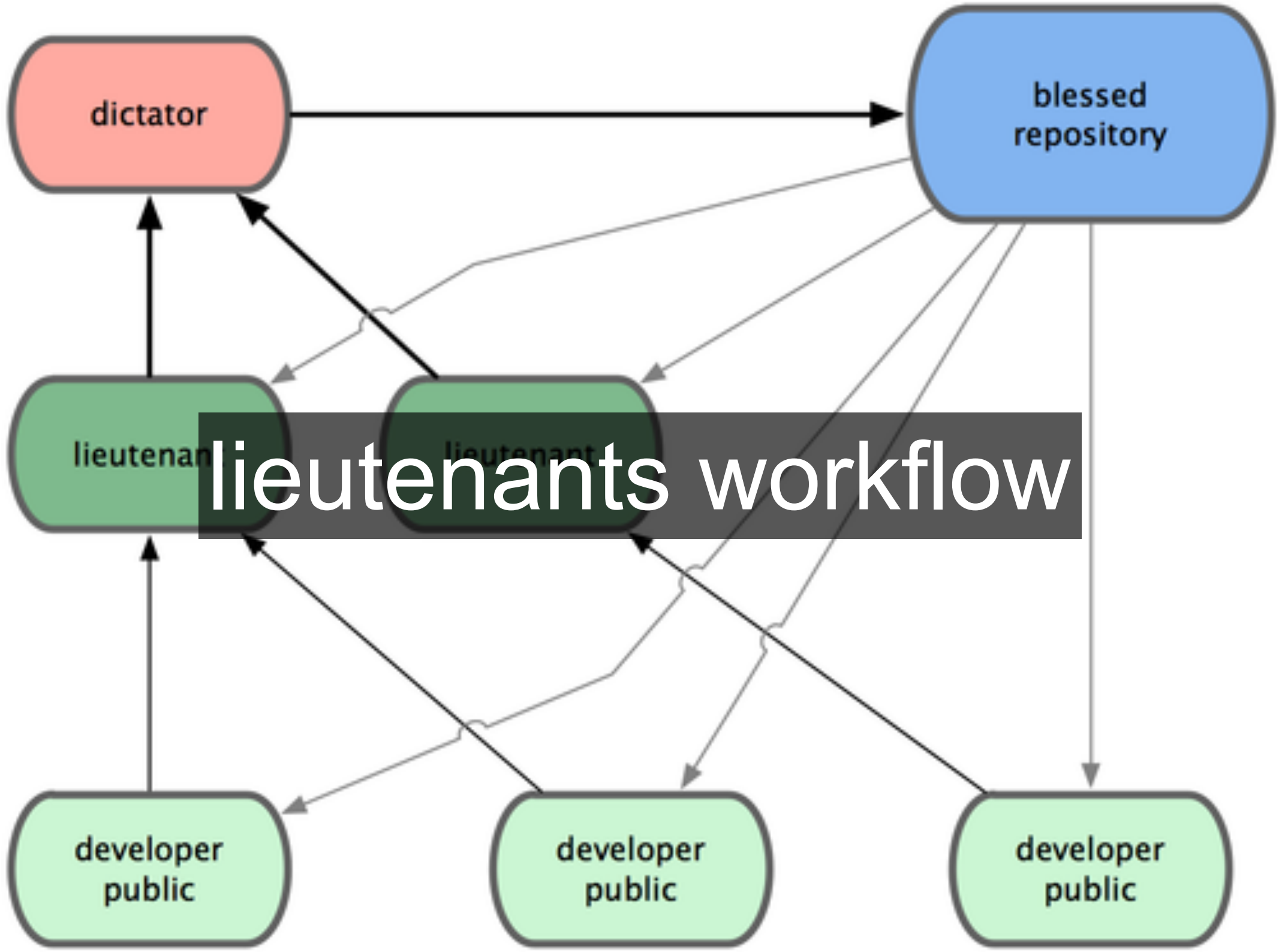
Git

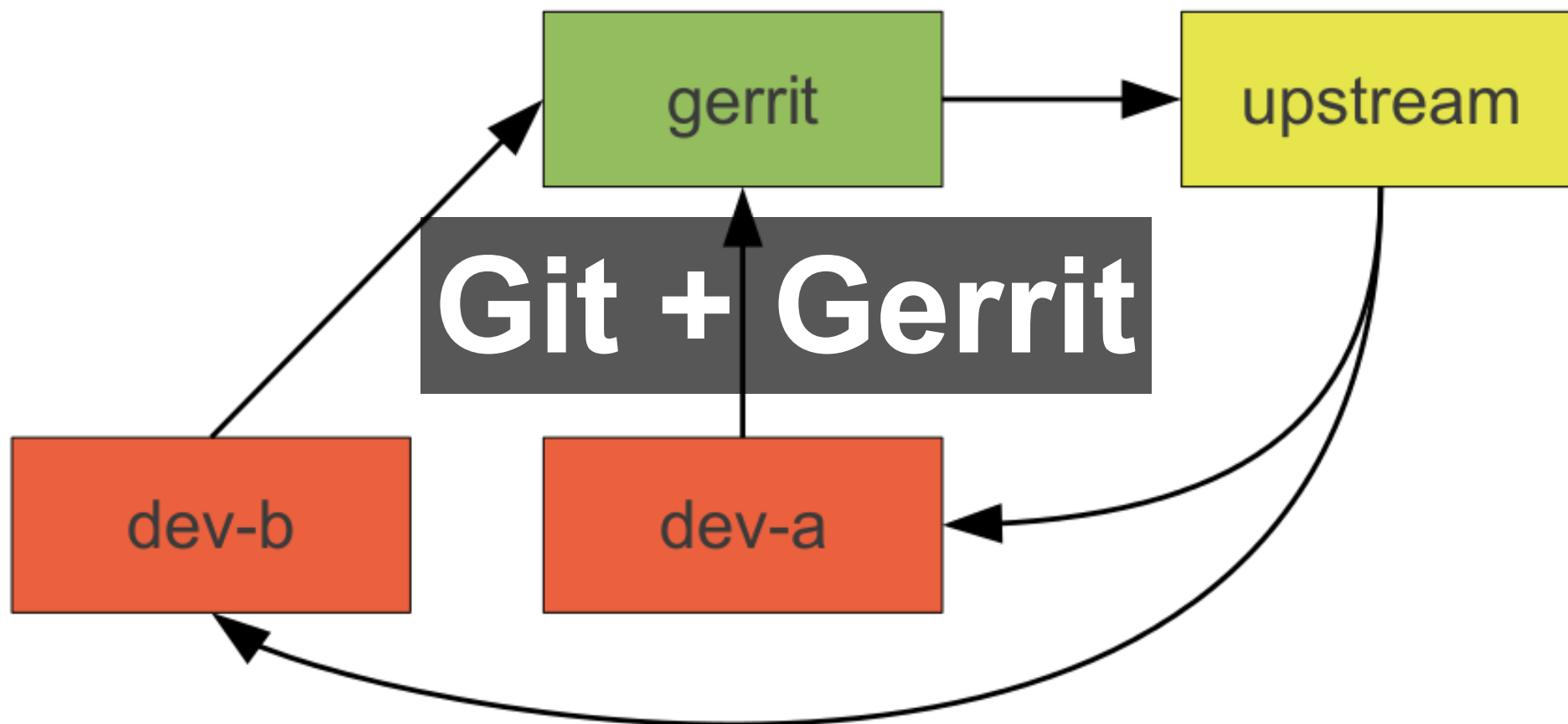














## Dashboard for Tyler Croy

	Owner	Project	Branch
	Tyler Gray	feed	master (frontend-emulog)
	Tyler Gray	feed	master (frontend-emulog)
Tyler Gray		feed	master
		feed	master
		feed	master
		feed	master
(MERGED)		feed	master (in-app-recurring)
(MERGED)		feed	master (in-app-recurring)
(MERGED)		gms/hwscippings	master
(MERGED)		gms/hwscippings	master
(MERGED)		gms/hwscippings	master
(MERGED)		gms/hwscippings	master
(MERGED)		gms/hwscippings	master
(MERGED)	Tyler Gray	feed	deploy-2012-07-18
(MERGED)	Tyler Gray	feed	master
(MERGED)	Tyler Gray	feed	deploy-2012-07-18
(MERGED)	Tyler Gray	feed	deploy-2012-07-17
(MERGED)	Tyler Gray	feed	master (5v4b-7576)

# code review

```
#include "ttyclock.h"
#include <stdlib.h>
```

```
void)
```

```
struct sigaction sig;
ttyclock->bg = COLOR_BLACK;
```

```
/* Init ncurses */
initscr();
cbreak();
noecho();
keypad(stdscr, True);
start_color();
```

```
#include "ttyclock.h"
#include <stdlib.h>
```

```
void
init(void)
{
    struct sigaction sig;
    ttyclock->bg = COLOR_BLACK;
    int *derp = NULL;
```

(Draft)

Draft saved

Poor variable naming

Edit

```
int foo = 1 + *derp;
```

(Draft)

Draft saved

This is a seriously terrible idea.

Edit

```
/* Init ncurses */
initscr();
cbreak();
noecho();
keypad(stdscr, True);
start_color();
```

# collaboration

```
struct sigaction sig;
```

```
ttclock->bc = 0; /* 1000000000
```

```
int *derp = NULL;
```

**rieger** Poor variable naming

```
int foo = 1 + *derp;
```

**rieger** This is a seriously terrible idea.

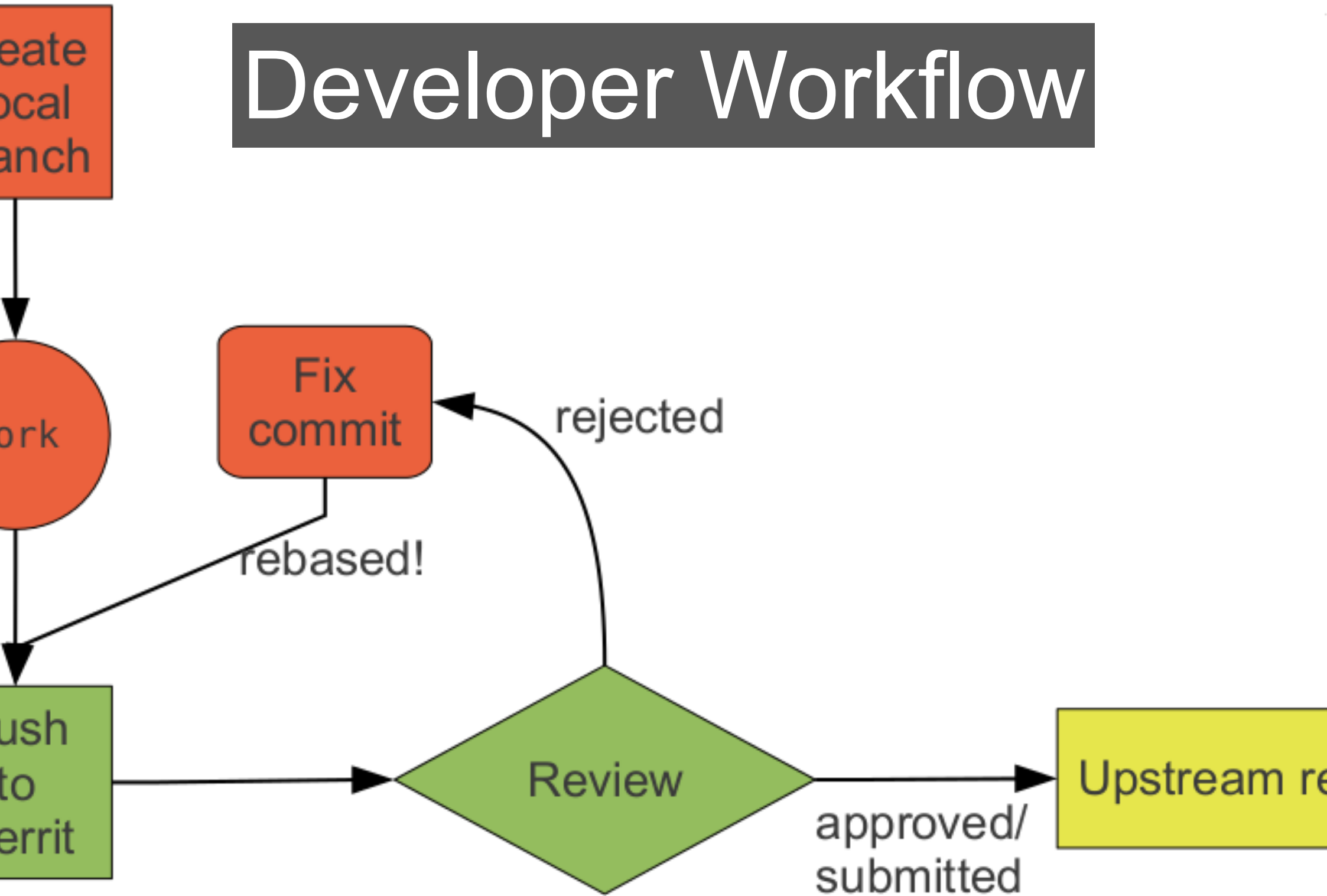
**te** Girl please

**Kane** Jesus christ Archer! Are you an idiot?

**ling Archer** Watch it Lana, you're in the \*danger zone\*

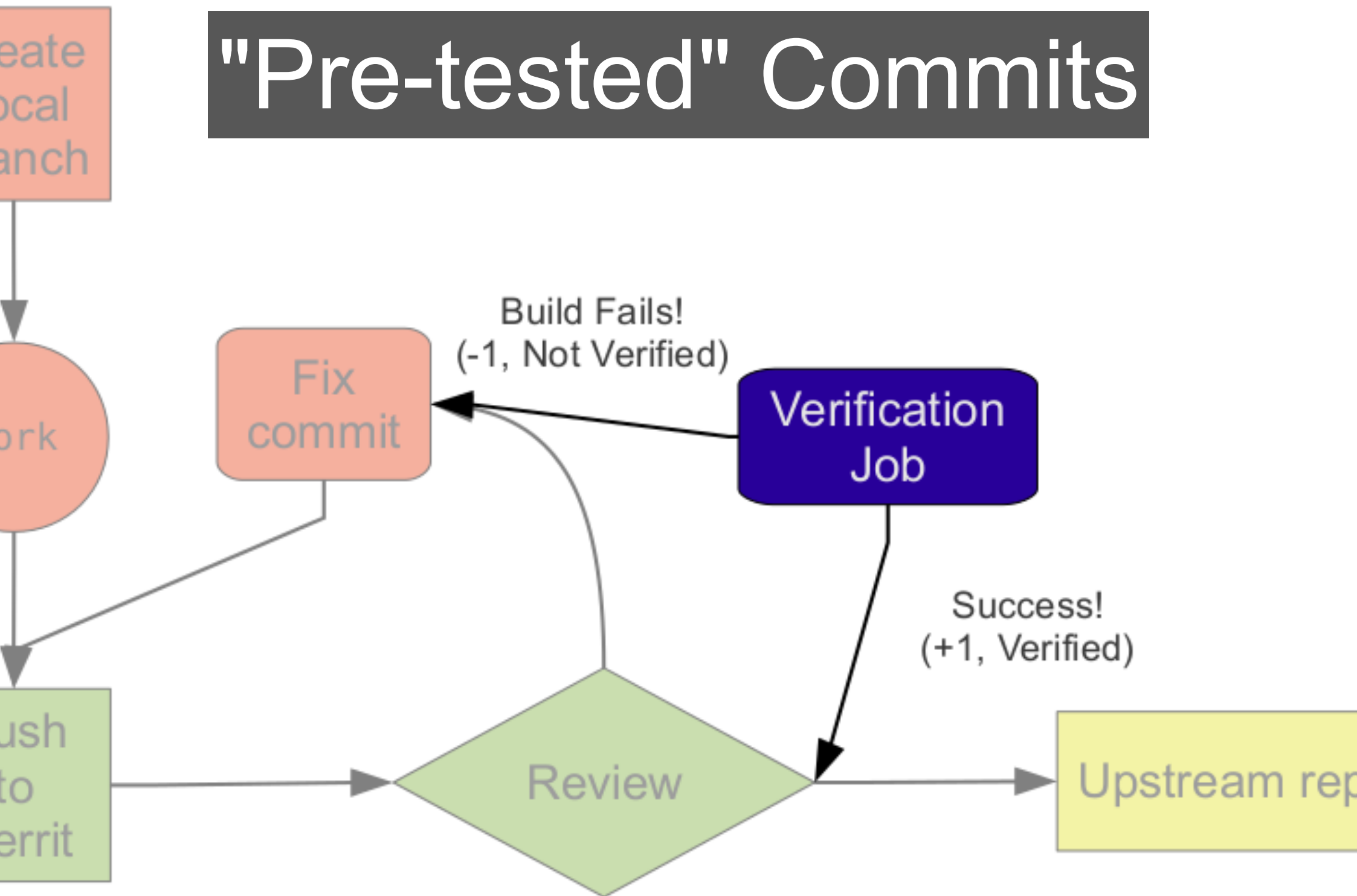
```
/* Init ncurses */
```

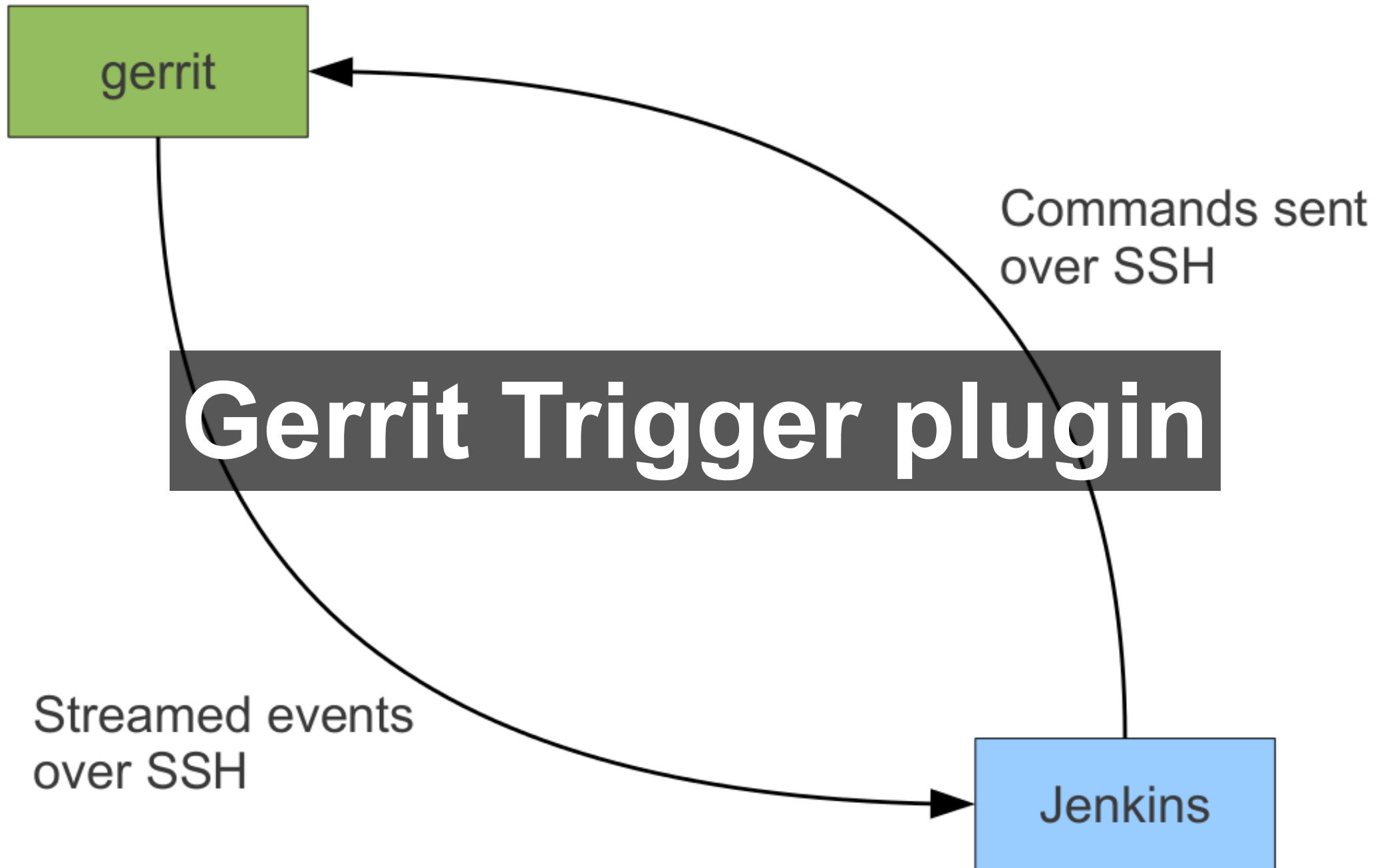
# Developer Workflow





# "Pre-tested" Commits





Uploaded Oct 1, 2011 12:42 PM

Updated Oct 1, 2011 12:44 PM

Status Review in Progress

# Feedback in Gerrit

[Permalink](#)

Reviewer	Verified	Code Review
<a href="#">Leeroy</a>	✗	Fails

- Need Verified +1 (Verified)
- Need Code Review +2 (Looks good to me, approved)

## ► Dependencies

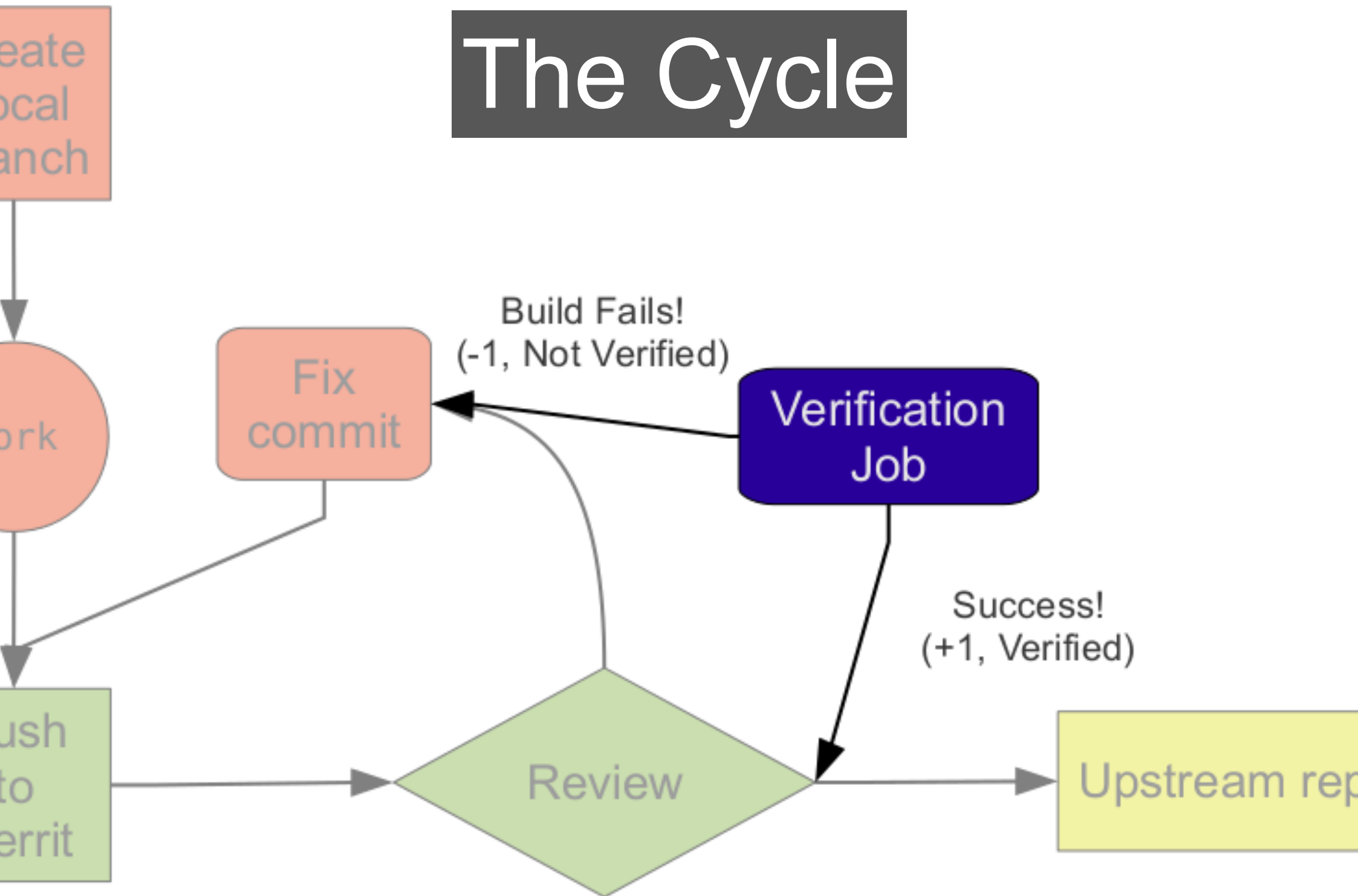
Old Version History:

► Patch Set 1 2b46eeeb675841f5e796e2e2910d2eee743c234e

► Patch Set 2 a607d3649f17c69070d06163bcc91442ec1eae0f

► Patch Set 3 2a32f079abcb0ad09a4c59a2a2737a76b11591e9

# The Cycle





Demo!

## Code Review Dashboard for Charlie Root

	Subject	Owner	Project	Branch	Updated
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### Code Review by Charlie Root

(none)

### Open Requests for Charlie Root

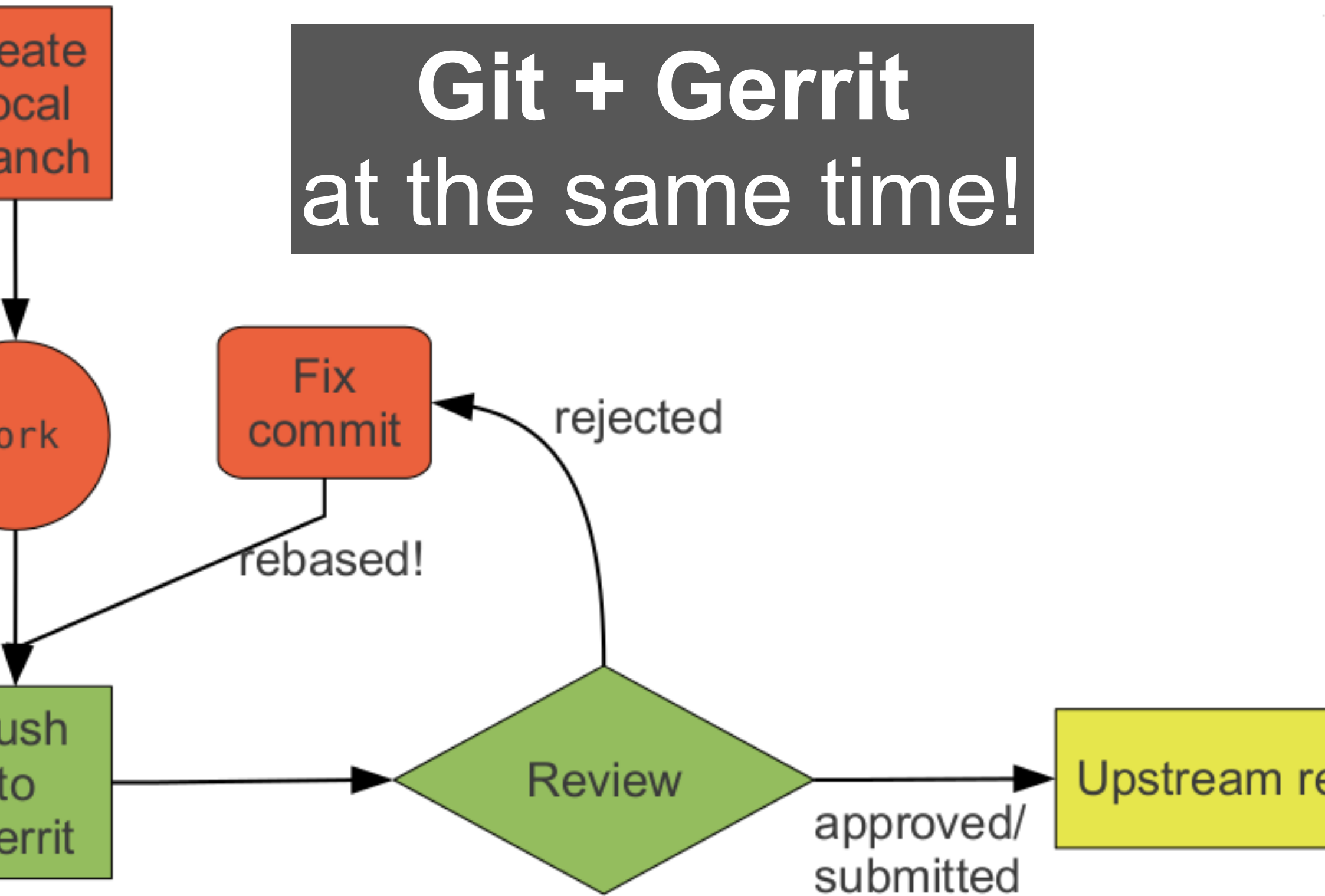
(none)


### Recently closed

4bf3bdd0	This is a simple change to exercise the jenkins integration (MERGED)	Charlie Root	blimpy	master	Jul 27	✓
2c0a8945	Add some more notes to the readme (MERGED)	Charlie Root	juctokyo	master	Jul 27	✓
107ae52b	Initial commit (MERGED)	Charlie Root	juctokyo	master	Jul 27	✓



# Git + Gerrit at the same time!





**"We need more builders!"**



**Recap**





# Step Three Automate Everything Else



A large yellow industrial robot arm is the central focus, positioned in a factory environment. To its left, the metal chassis of a car is visible, showing the front and side panels. The background is filled with various industrial structures, including pipes, beams, and other robotic equipment, all under bright overhead lighting. A semi-transparent dark banner is overlaid across the middle of the image, containing the text "Deploying test environments" in white.

Deploying test environments





New kinds of tests



# Automating deployment *to* production

upstream

Release  
Build

Downstream Job

Release  
Test

Downstream Job

Release  
Deploy

rsync/  
cap/  
scp/  
mvn

Production machines









A large crowd of green Android robots is gathered on a cobblestone street. The robots are of various sizes and are all looking towards the camera. They have a simple, friendly design with large heads, small bodies, and two antennae on each head. The background is a dark, textured surface, possibly a cobblestone street or a similar material. The overall scene is a dense, colorful assembly of these iconic mobile operating system mascots.

**Step Four  
More Robots!**

A large crowd of green Android robots, resembling the character Wall-E, is gathered on a cobblestone street. The robots are of various sizes and are looking in different directions. A semi-transparent black rectangular box is centered over the image, containing white text.

# OpenStack *and the* jclouds plugin



The background of the image is a dense crowd of green Android robots. They are standing on a dark, textured surface that looks like cobblestones or a similar material. The robots are arranged in rows, and their heads are slightly tilted in various directions. The lighting is somewhat dim, with a few highlights on the robots' heads and bodies.

# Slave Management *with* Puppet




TODO



*(nobody's perfect)*



No automated rollback



No production acceptance testing



A white Boeing 747-400 aircraft is shown in flight against a light blue sky. The aircraft is viewed from a low angle, emphasizing its size. It has four engines mounted on the wings and a red and white livery. A black rectangular text box is overlaid in the center of the image.

Tests are slow





**2%**  
of deployments failed





14

commits per deployment

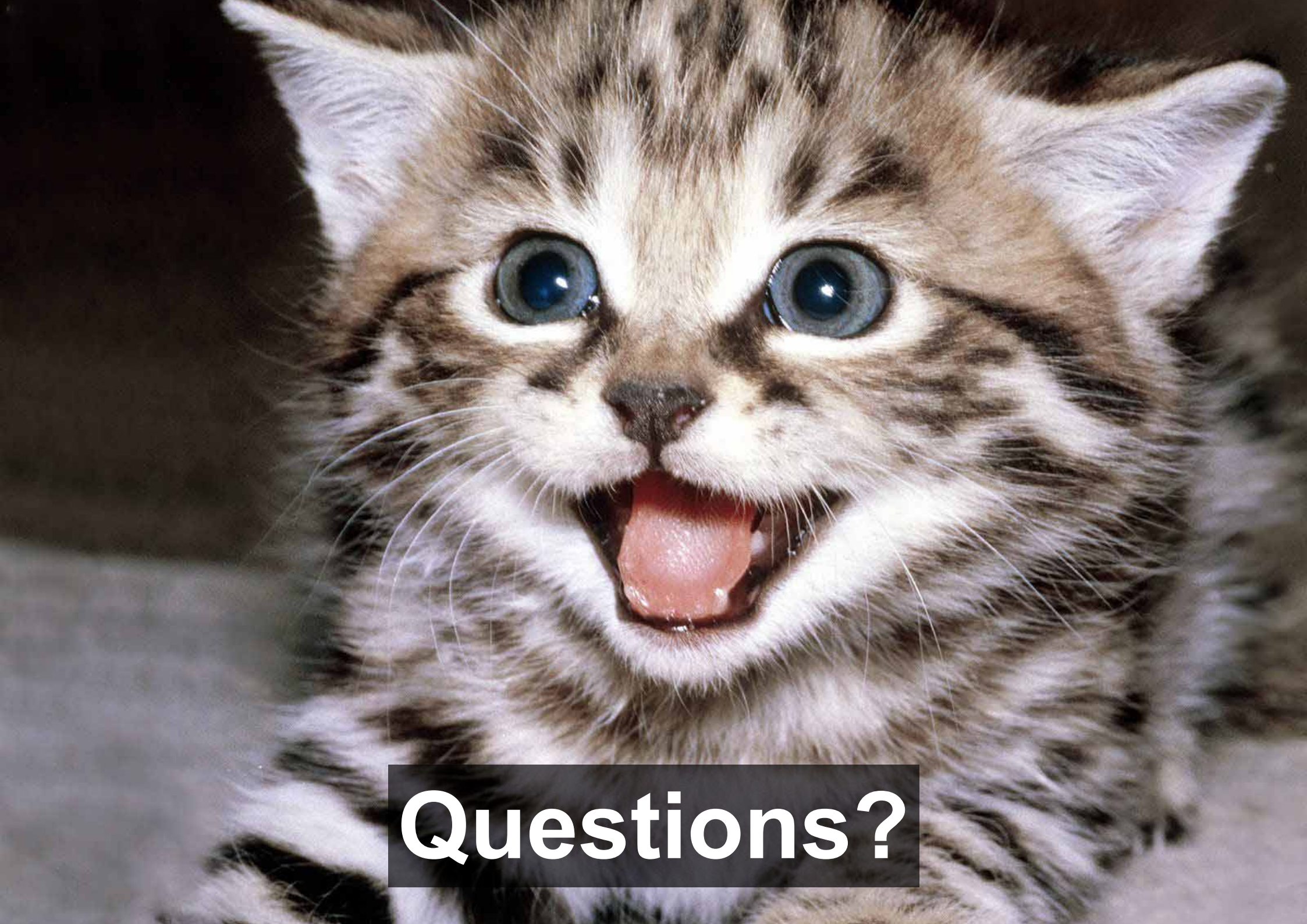




3%

of deployments slipped





**Questions?**



**Thank you**