

How GitHub builds GitHub



Bas Peters

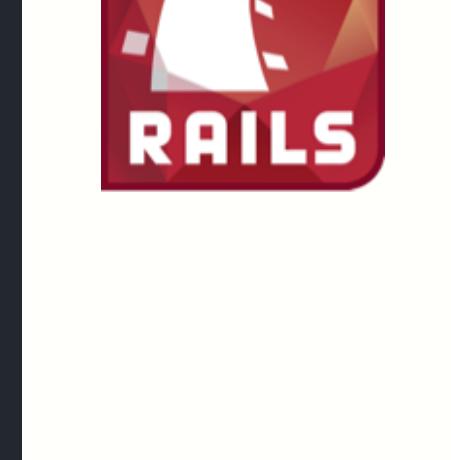
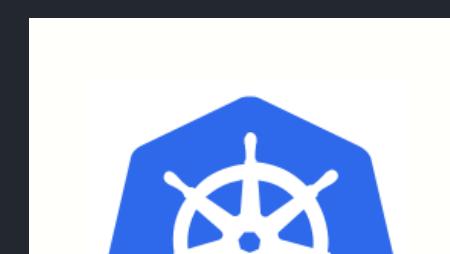
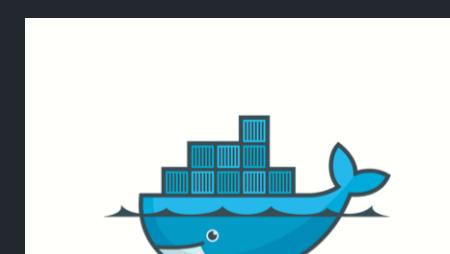
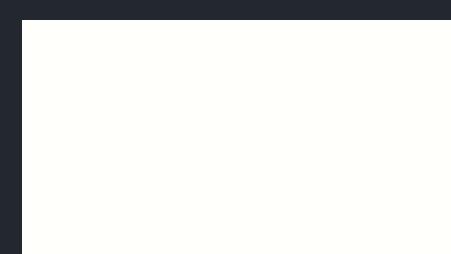
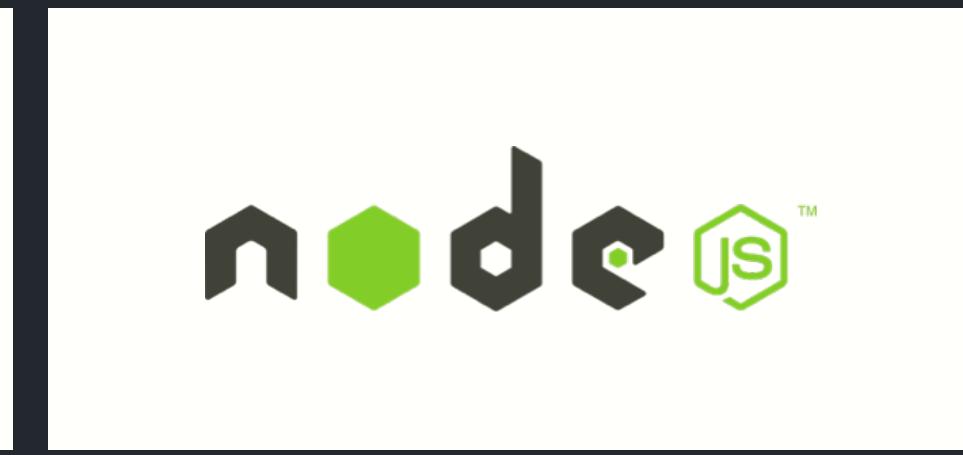
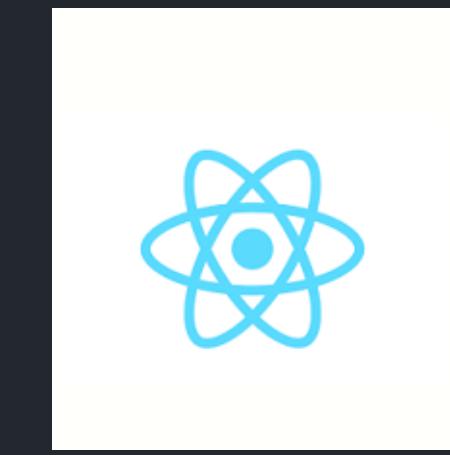
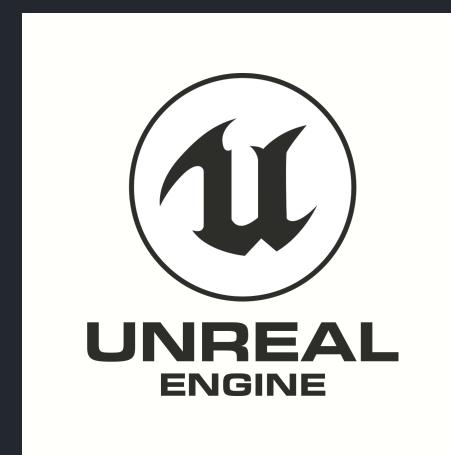
bas@github.com (@bas)

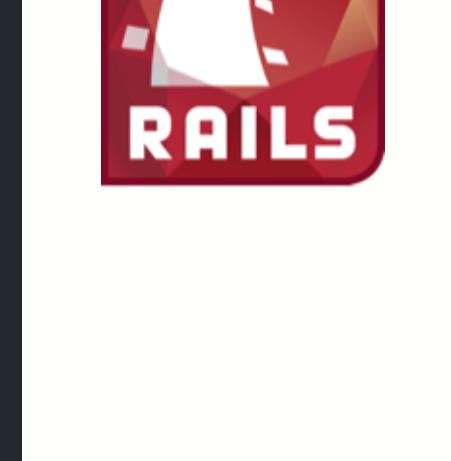
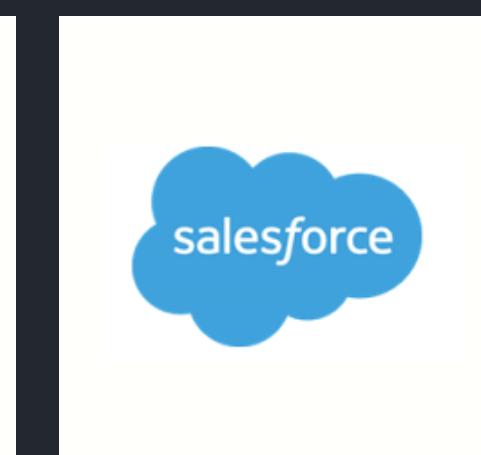
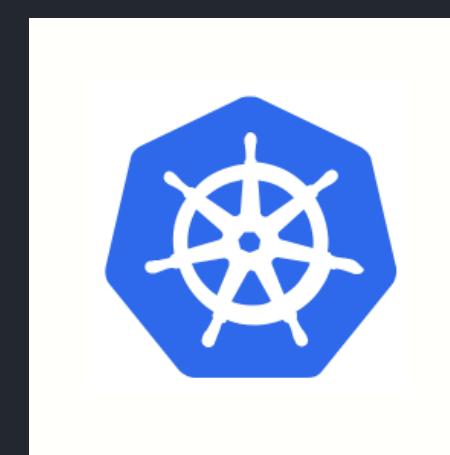
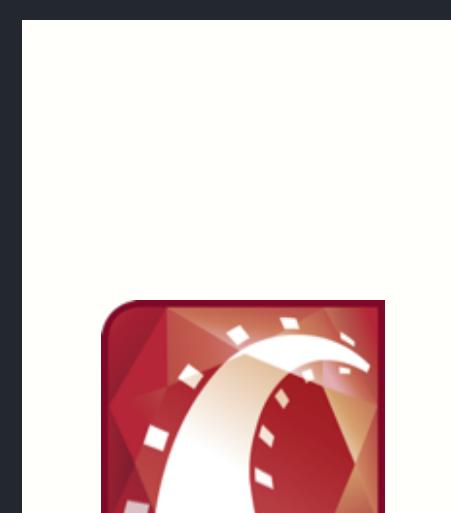
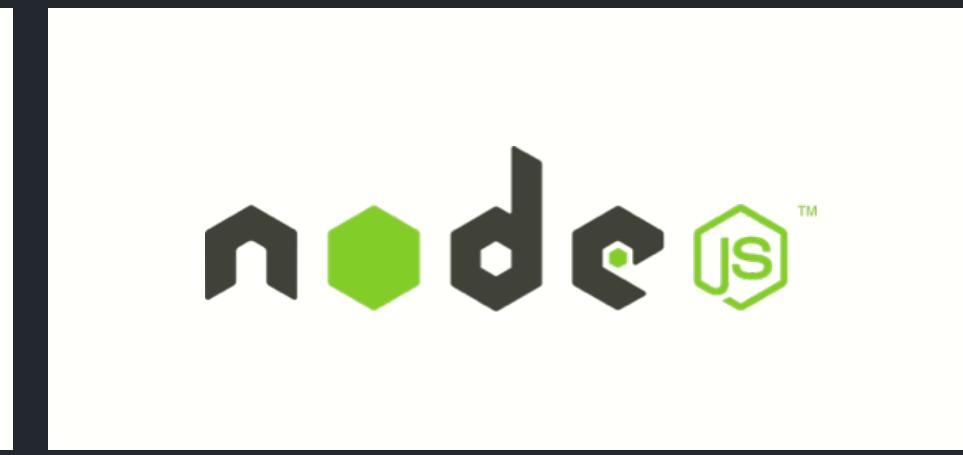
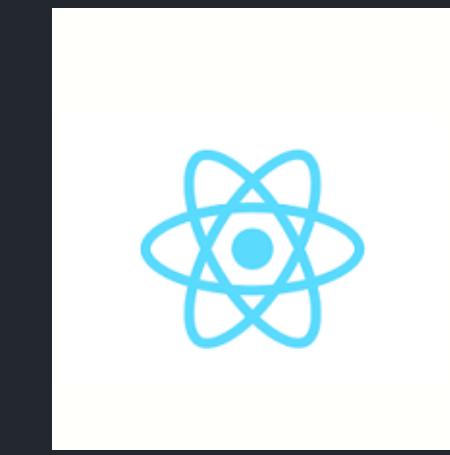


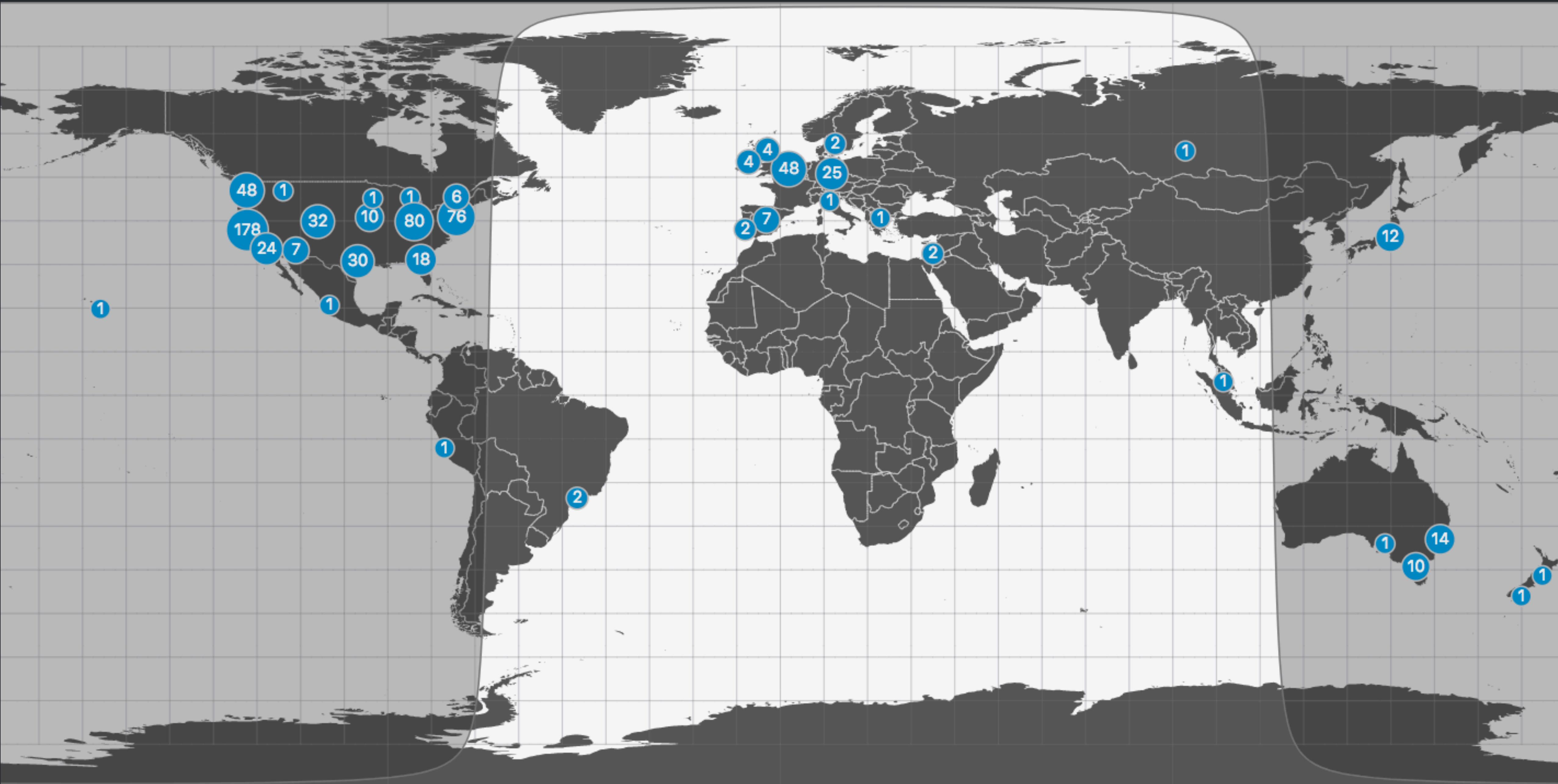
who emails patches?
hello. github.

Scott Barron

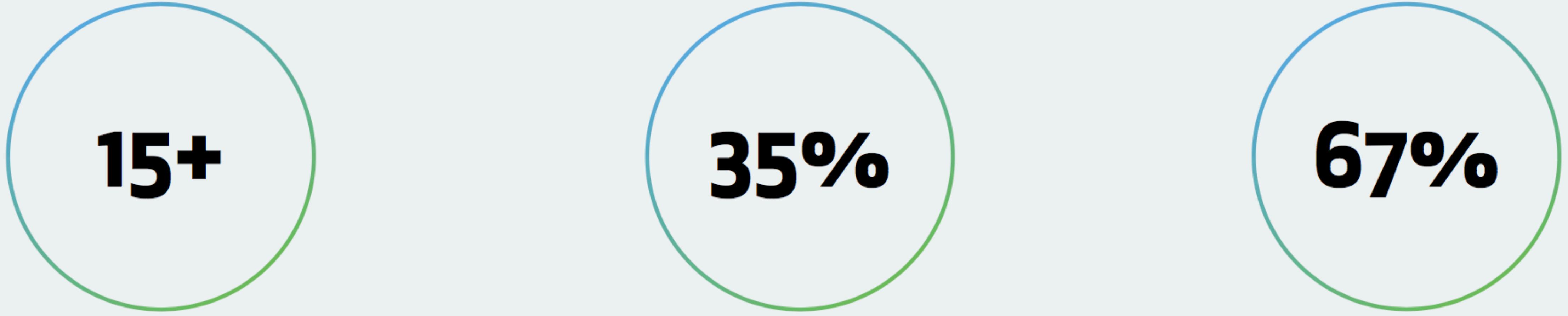












15+

pull requests are
merged each day in
[github/puppet](#)

35%

of all GitHubbers
have committed to
[github/puppet](#)

67%

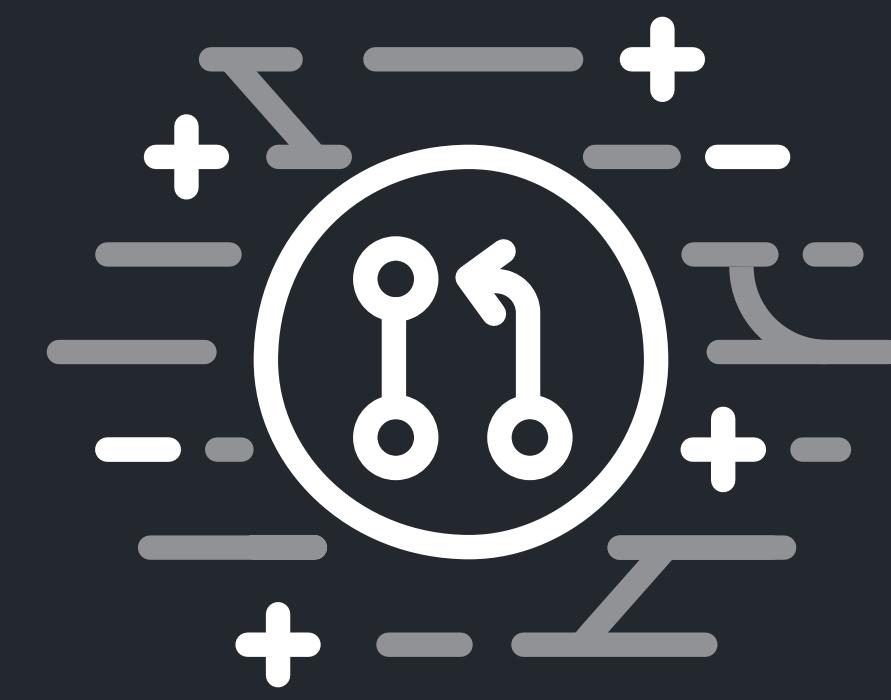
of GitHub engineers
have contributed to
[github/puppet](#)



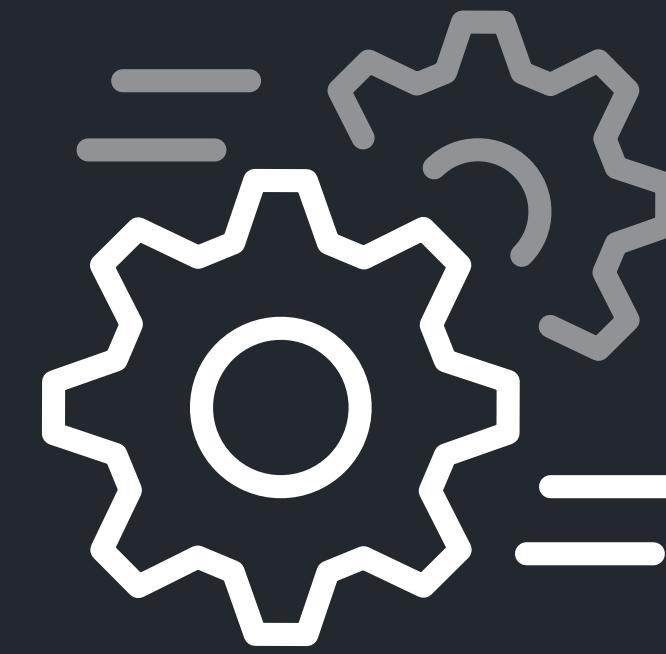
Minimizing friction enables participation



Documentation



Pull Request



Automation



ATOM

build failing

dependencies up to date

slack 98/3236

Atom is a hackable text editor for the 21st century, built on [Electron](#), and based on everything we love about our favorite editors. We designed it to be deeply customizable, but still approachable using the default configuration.

Visit [atom.io](#) to learn more or visit the [Atom forum](#).

Follow [@AtomEditor](#) on Twitter for important announcements.

This project adheres to the [Contributor Covenant 1.2](#). By participating, you are expected to uphold this code. Please report unacceptable behavior to atom@github.com.

Documentation

If you want to read about using Atom or developing packages in Atom, the [Atom Flight Manual](#) is free and available online, along with ePub, PDF and mobi versions. You can find the source to the manual in [atom/docs](#).

The [API reference](#) for developing packages is also documented on Atom.io.



Scripts to rule them all

`script/bootstrap` - installs/updates all dependencies

`script/setup` - sets up a project to be used for the first time

`script/update` - updates a project to run at its current version

`script/server` - starts app

`script/test` - runs tests

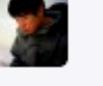
`script/cibuild` - invoked by continuous integration servers to run tests

`script/console` - opens a console

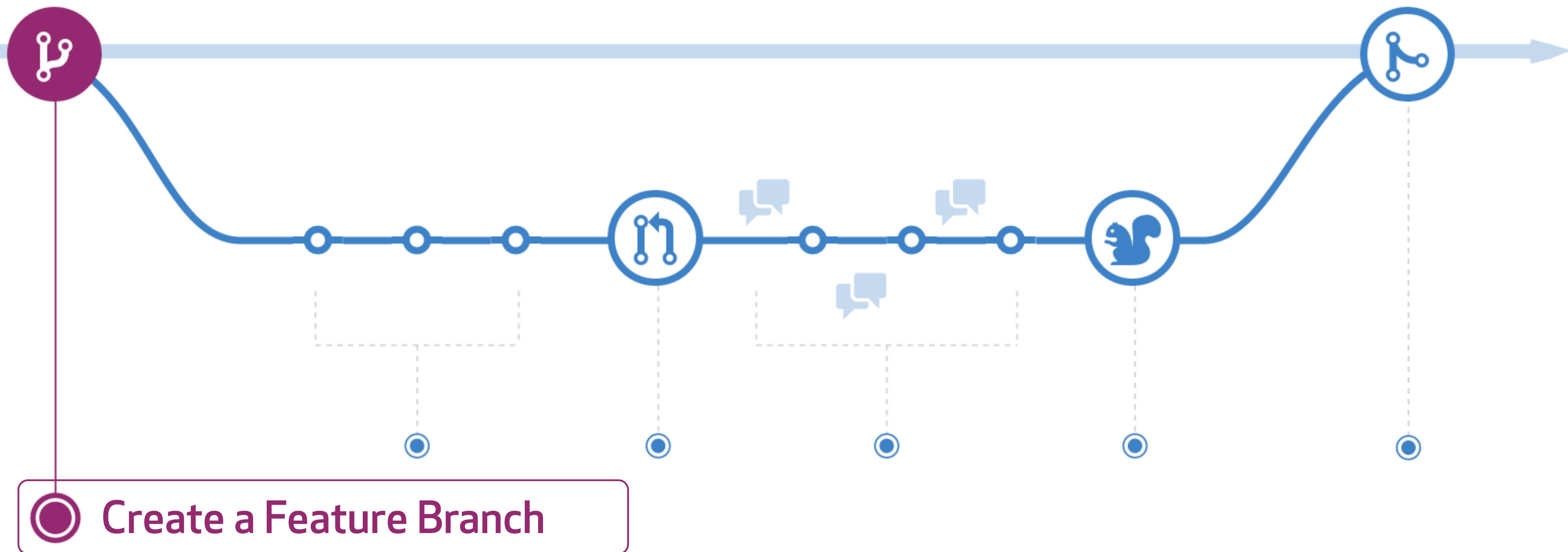


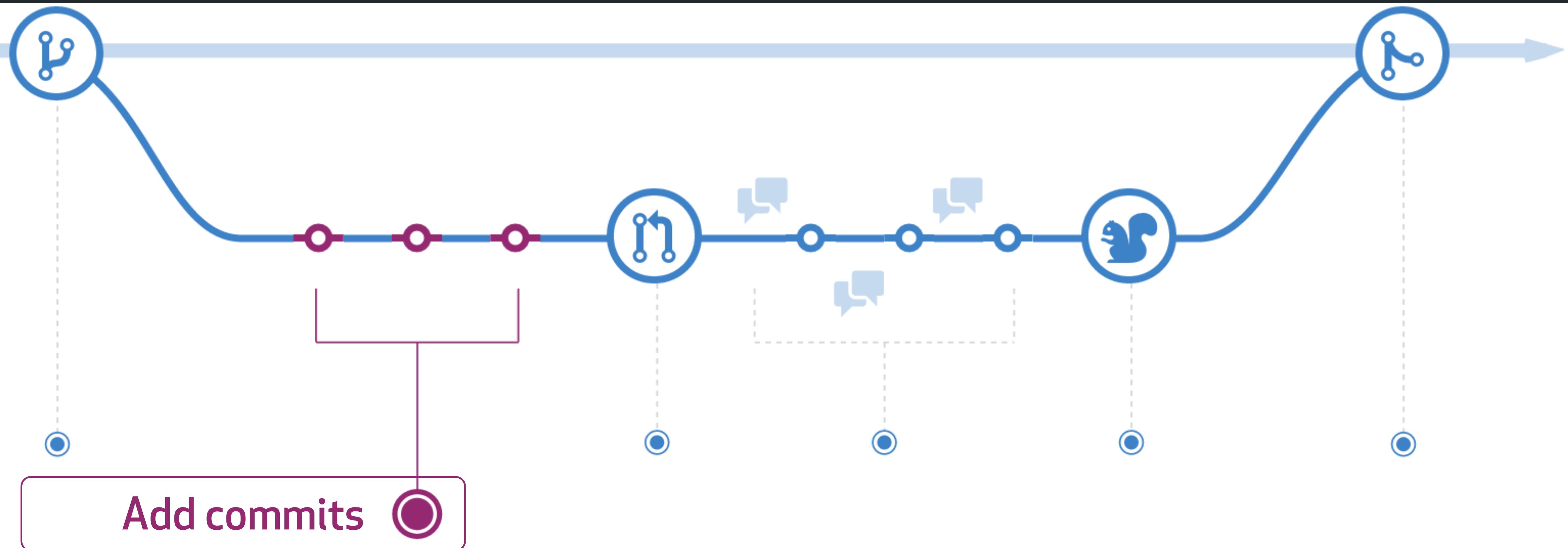
[Filters ▾](#) is:issue is:open [Labels](#) [Milestones](#) [New issue](#)

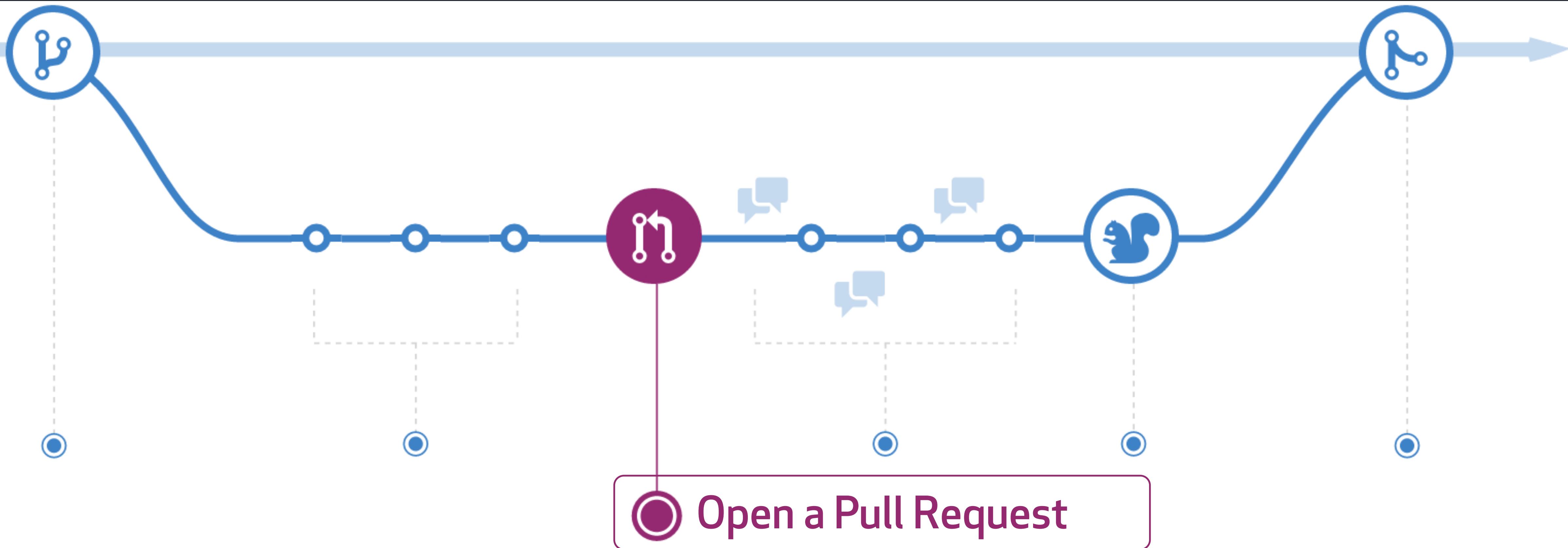
① 224 Open ✓ 640 Closed [Author ▾](#) [Labels ▾](#) [Projects ▾](#) [Milestones ▾](#) [Assignee ▾](#) [Sort ▾](#)

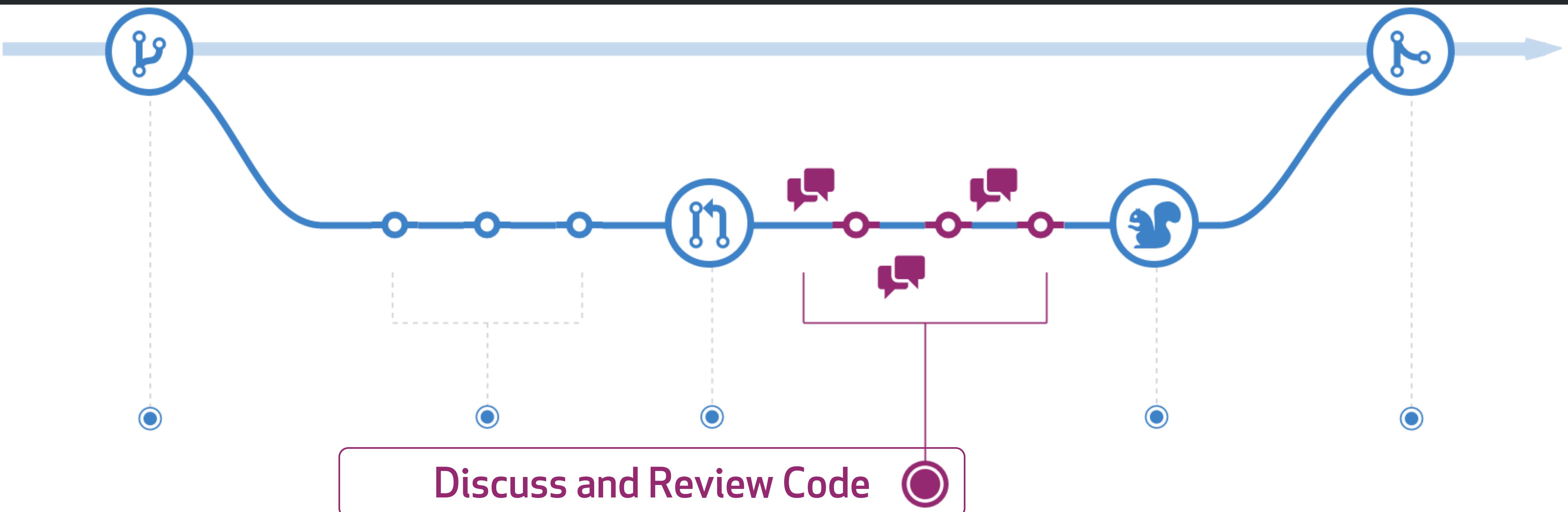
- ① **Only load `GitHub.TeamFoundation.14` MEF components in to Visual Studio 2015**
#1704 opened 6 minutes ago by jcansdale
- ① **Feature request: context menus on solution explorer** [enhancement](#) [feature](#)
#1697 opened 4 days ago by giggio 1
- ① **Organization avatar sometimes gets cut off in the fork repository dialog** [bug](#) [cosmetic](#)
#1696 opened 5 days ago by donokuda
- ① **Inline comment margin in editor with Dark color theme** [bug](#) [cosmetic](#) [usability](#)
#1693 opened 5 days ago by laurentkempe  4
- ① **"Cannot checkout as your working directory has uncommitted changes" appearing without pending changes** [help wanted](#)
#1691 opened 5 days ago by matt-neubert 5
- ① **MEF parts should initialize with all-free-threaded code** [enhancement](#)
#1688 opened 5 days ago by jcansdale
- ① **Mark branch for newly created Pull Request** [enhancement](#)
#1686 opened 5 days ago by grokys 
- ① **Varied repository type icons no longer displayed in repository list** [bug](#)
#1684 opened 6 days ago by meaghanlewis 1











A screenshot of a GitHub pull request interface. At the top, a comment from user **damieng** is shown, dated 13 days ago. The comment text reads: "This sorts out a number of specs issues but is not yet complete. Want to merge anyway as it's better than what we have right now." Below this, a commit history shows a single commit by **damieng** titled "Fix specs failures on Windows including paths" with a commit hash of **99e716f**. This commit was force-pushed from branch **f57a344** to **99e716f**, also 13 days ago. Following this, two comments from user **as-cii** are listed, both dated 10 days ago. The first comment says: "Nice work here, @damieng. Left a couple of comments, but these changes look good so long as they make the Mac build ❤️." The second comment asks: "Out of curiosity, did you get a sense about what are the other "groups" of specs that still fail on Windows (e.g. UI, interaction with the browser process, environment, etc.)?" At the bottom of the pull request interface, there is a GitHub logo.

damieng commented 13 days ago

This sorts out a number of specs issues but is not yet complete. Want to merge anyway as it's better than what we have right now.

Fix specs failures on Windows including paths **99e716f**

damieng force-pushed the dg-fix-windows-specs branch from **f57a344** to **99e716f** 13 days ago

as-cii commented on an outdated diff 10 days ago

as-cii and 1 other commented on an outdated diff 10 days ago

as-cii commented 10 days ago

Nice work here, @damieng. Left a couple of comments, but these changes look good so long as they make the Mac build ❤️.

Out of curiosity, did you get a sense about what are the other "groups" of specs that still fail on Windows (e.g. UI, interaction with the browser process, environment, etc.)?

Experimentation Without Risk

Branch — Question, Hypothesis, Experiment, Analyze, Conclude

Pull Request — Gather feedback from peers and integrate with 3rd party products to perform automation for quality of code, build status, and deployment



Changes approved

2 approved reviews. [Learn more.](#)

[Hide all reviewers](#)



nplasterer approved these changes

[See review](#)

[Dismiss review](#)



jessicard approved these changes

[See review](#)

[Dismiss review](#)



All checks have passed

3 successful checks

[Show all checks](#)



This branch has no conflicts with the base branch

Merging can be performed automatically.

[Merge pull request](#)



You can also [open this in GitHub Desktop](#) or view command line instructions.





All checks have passed

15 successful checks

[Hide all checks](#)



✓ **enterprise** — Build #3351587 succeeded in 153s

Required

[Details](#)



✓ **enterprise-lint-schema** — Build #3351588 succeeded in 72s

Required

[Details](#)



✓ **enterprise-setup** — Build #3351589 succeeded in 171s

[Details](#)



✓ **enterprise2-github** — Build #3351590 succeeded in 341s

[Details](#)



✓ **github** — Build #3351591 succeeded in 178s

Required

[Details](#)



✓ **github-all-features** — Build #3351592 succeeded in 214s

Required

[Details](#)



This branch has no conflicts with the base branch

Merging can be performed automatically.

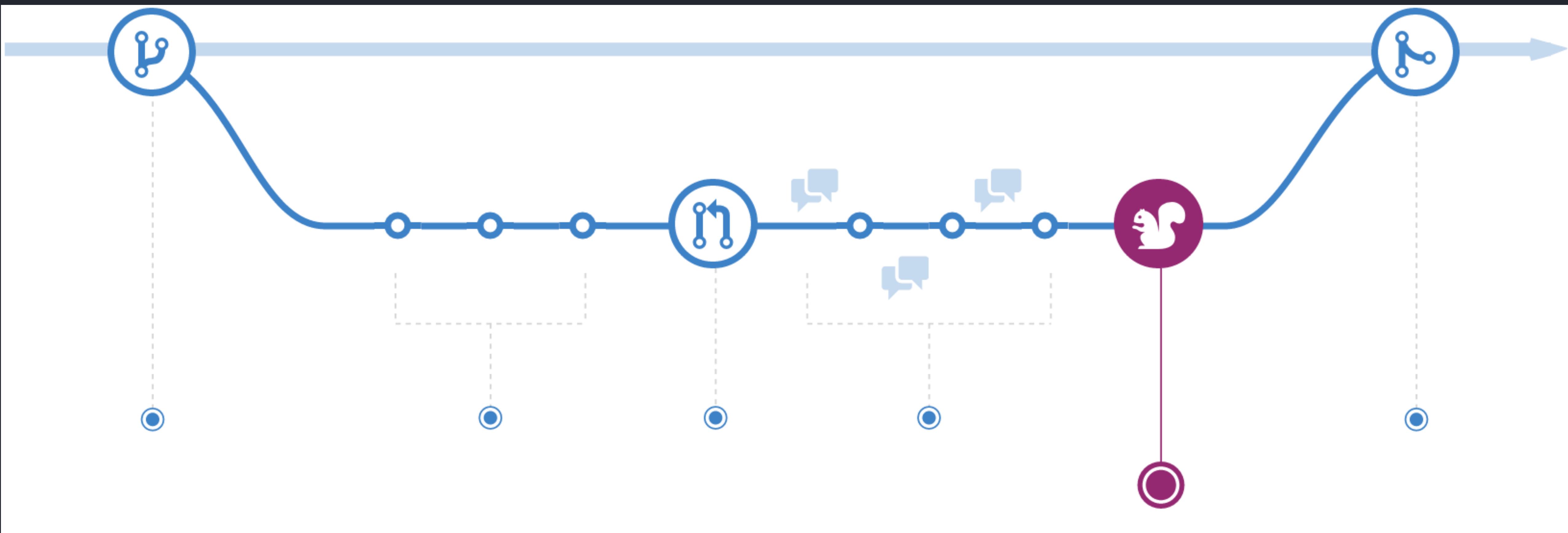
[Update branch](#)



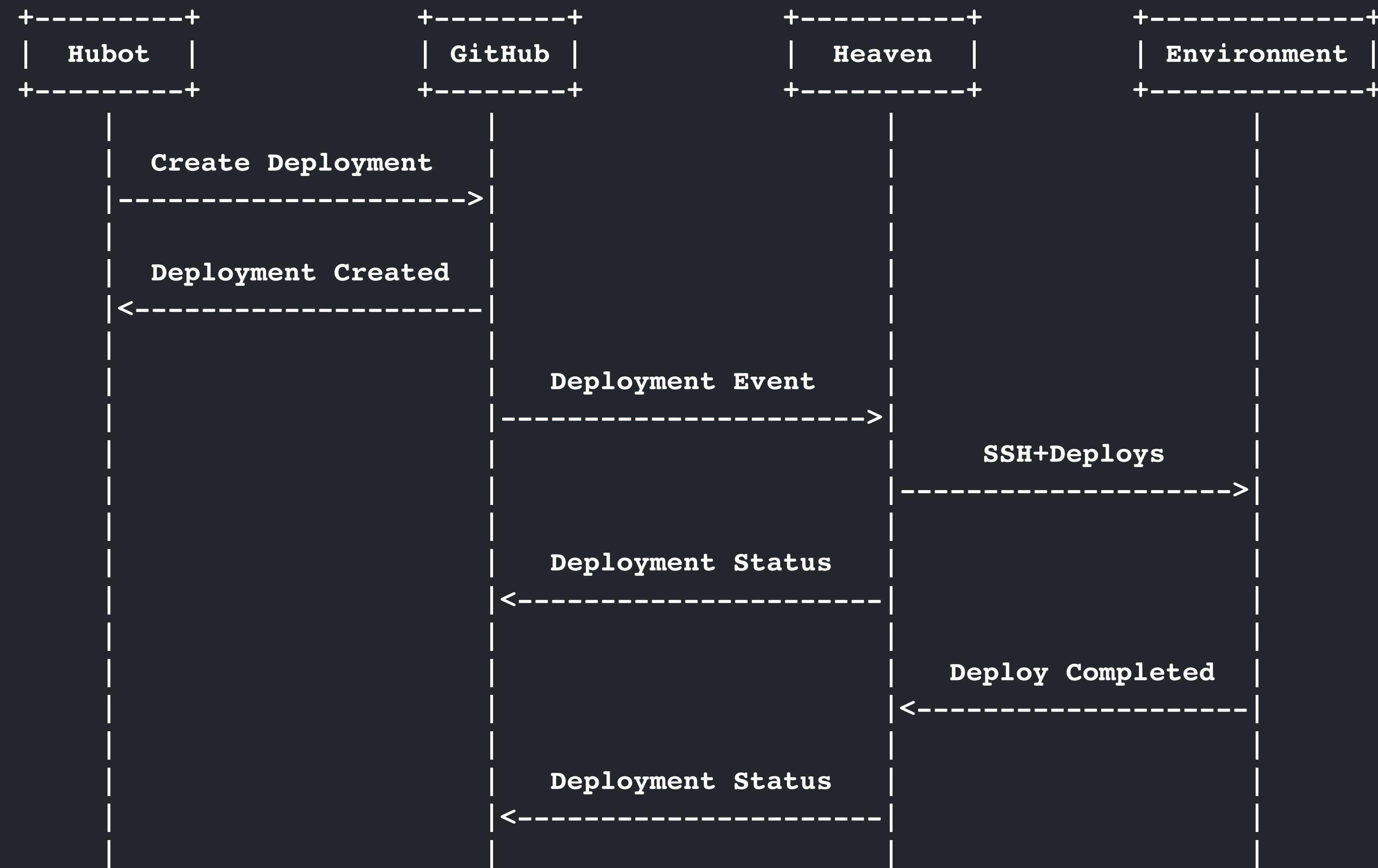
Merge pull request

You can also [open this in GitHub Desktop](#) or view [command line instructions](#).





Deployment API



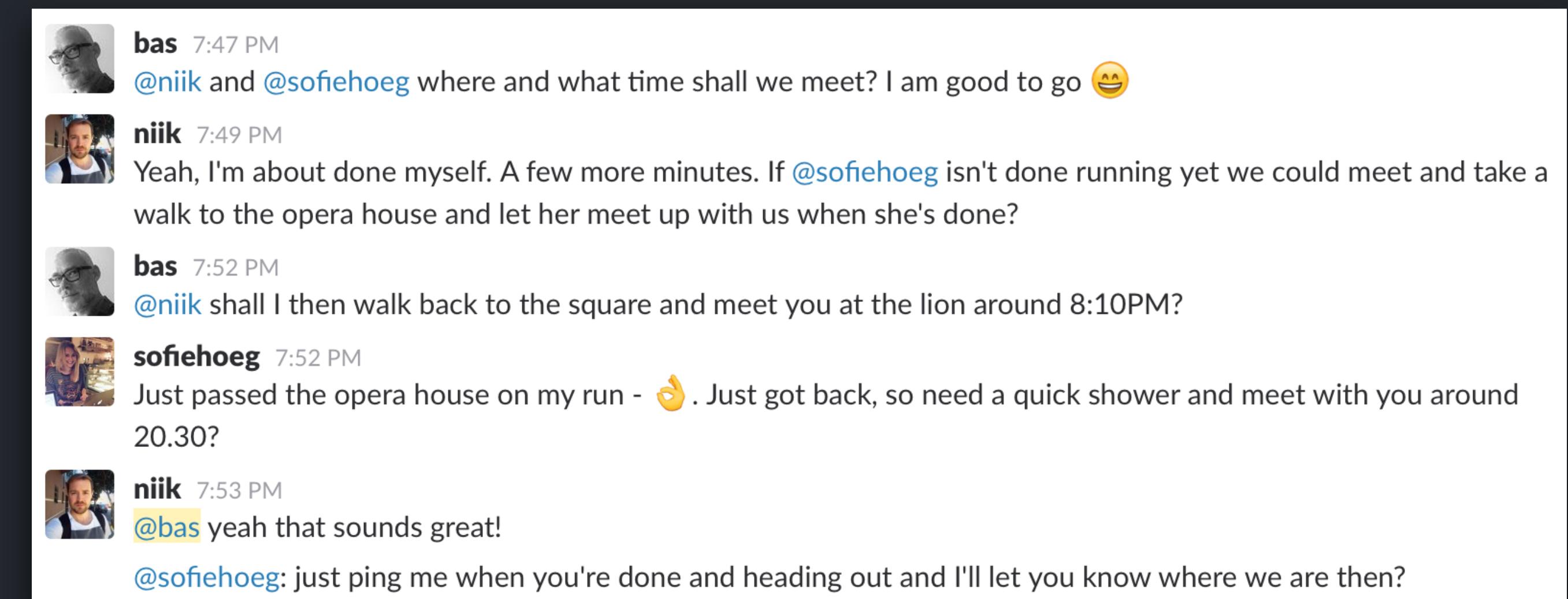
Deployment status

A deployment history timeline showing the following events:

- Auto-merged master into enforce-codesearch-types on deployment ✓ cb3f2f6
- mtodd deployed to production/canary an hour ago [View deployment](#)
- mtodd deployed to production 42 minutes ago [View deployment](#)
- mtodd merged commit `0a20028` into master 35 minutes ago
20 of 21 checks passed [View details](#) [Revert](#)
- mtodd deleted the enforce-codesearch-types branch 35 minutes ago [Restore branch](#)



Put everyone in one spot

- Team rooms
 - Region based rooms
 - Social rooms
 - Private chat
 - Ops rooms
- 

bas 7:47 PM
@niik and @sofiehoeg where and what time shall we meet? I am good to go 😊

niik 7:49 PM
Yeah, I'm about done myself. A few more minutes. If @sofiehoeg isn't done running yet we could meet and take a walk to the opera house and let her meet up with us when she's done?

bas 7:52 PM
@niik shall I then walk back to the square and meet you at the lion around 8:10PM?

sofiehoeg 7:52 PM
Just passed the opera house on my run - 🏃. Just got back, so need a quick shower and meet with you around 20.30?

niik 7:53 PM
@bas yeah that sounds great!

@sofiehoeg: just ping me when you're done and heading out and I'll let you know where we are then?



Bring your tools into your conversations...

bas 3:55 PM
.where can i deploy

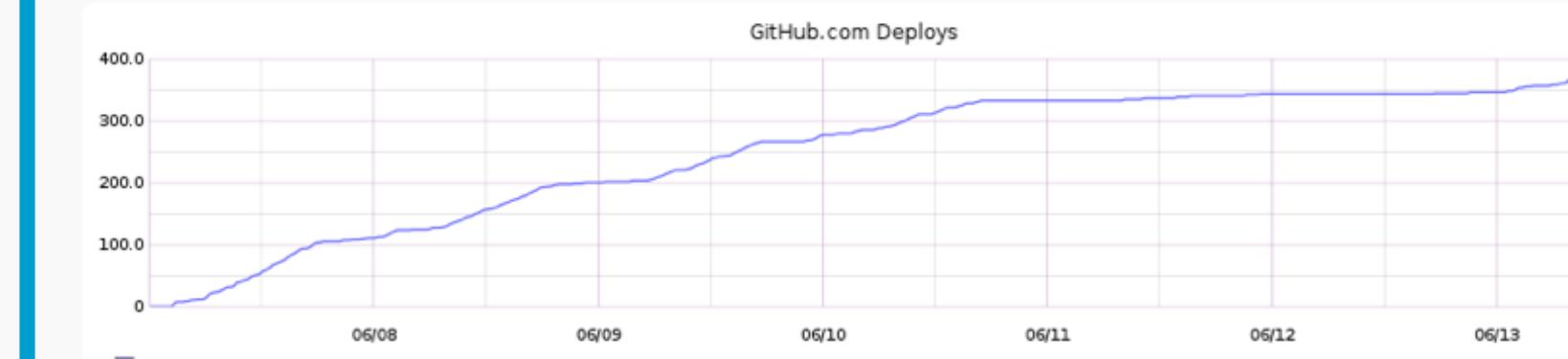
hubot BOT 3:55 PM

production: locked 13 minutes ago by mclark: testing the mclark/blob-position branch
branch-lab: always available
lab: unlocked
garage: unlocked
spider-skull-island: unlocked [Show more...](#)

bas 8:53 PM
.graph me 20160607..20160614 @github.deploy.total

hubot BOT 8:53 PM ☆

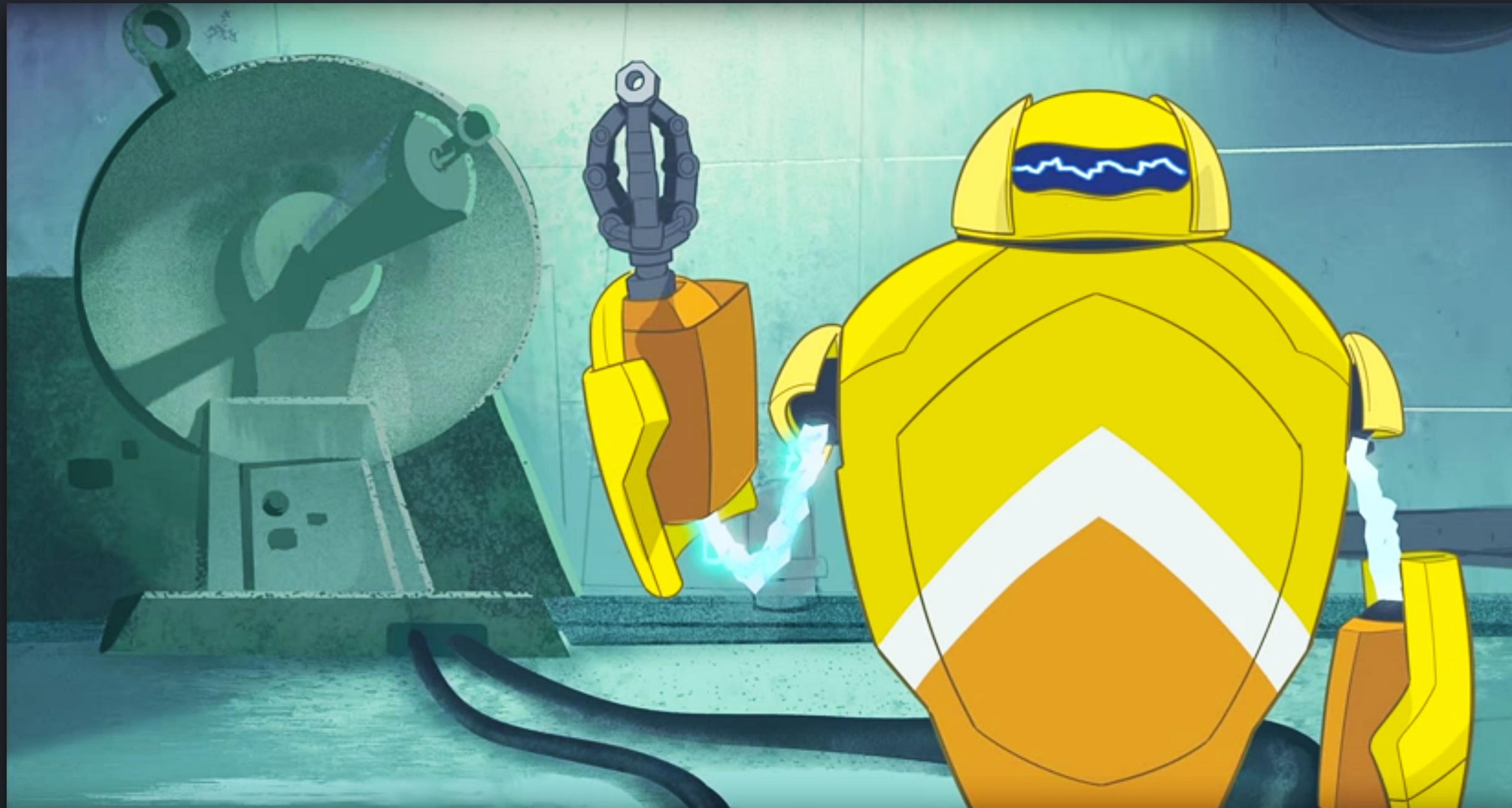
[Graph Me](#)
(13KB) ▾



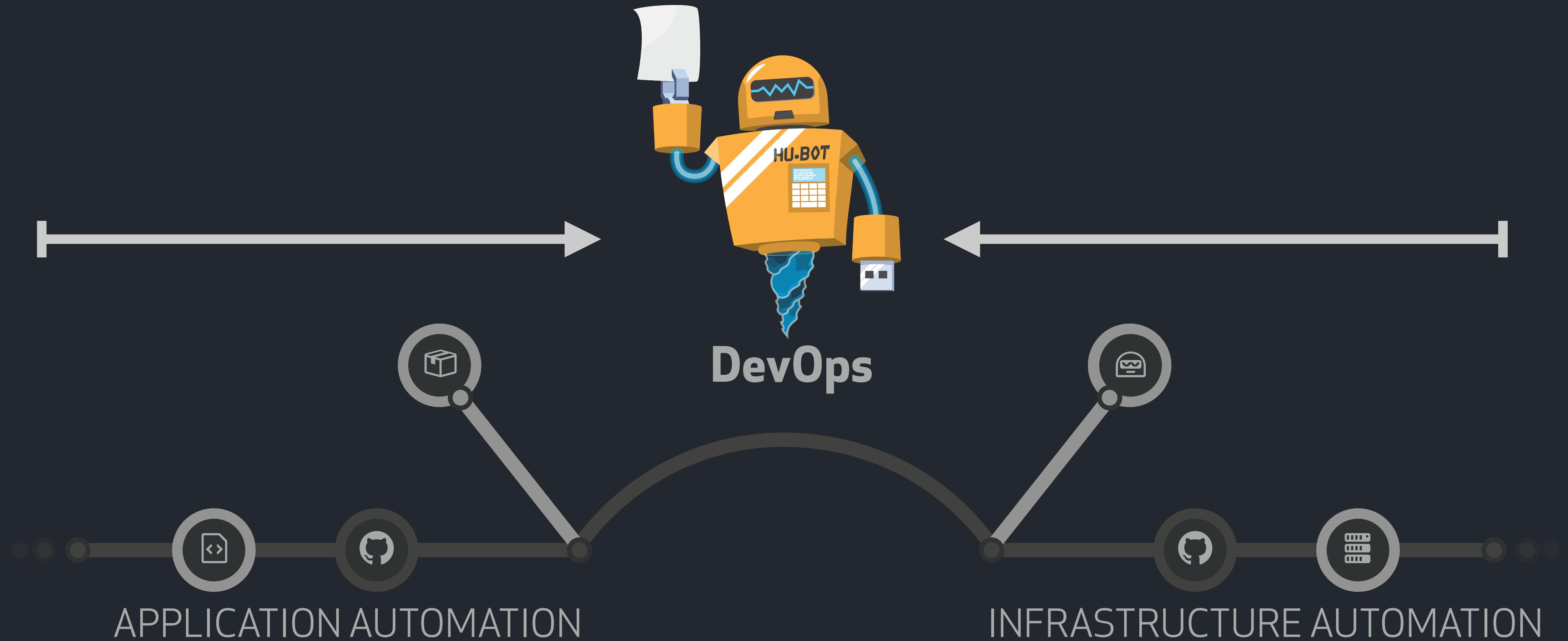
[+](#) [Smile](#)

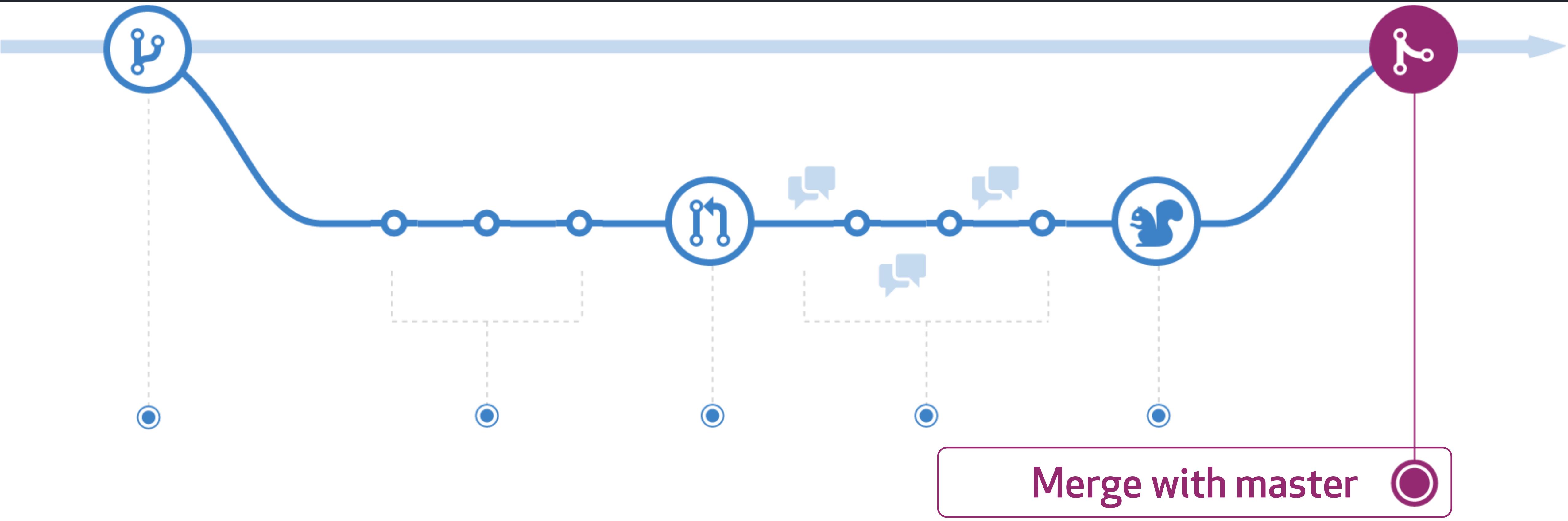


...meet Hubot

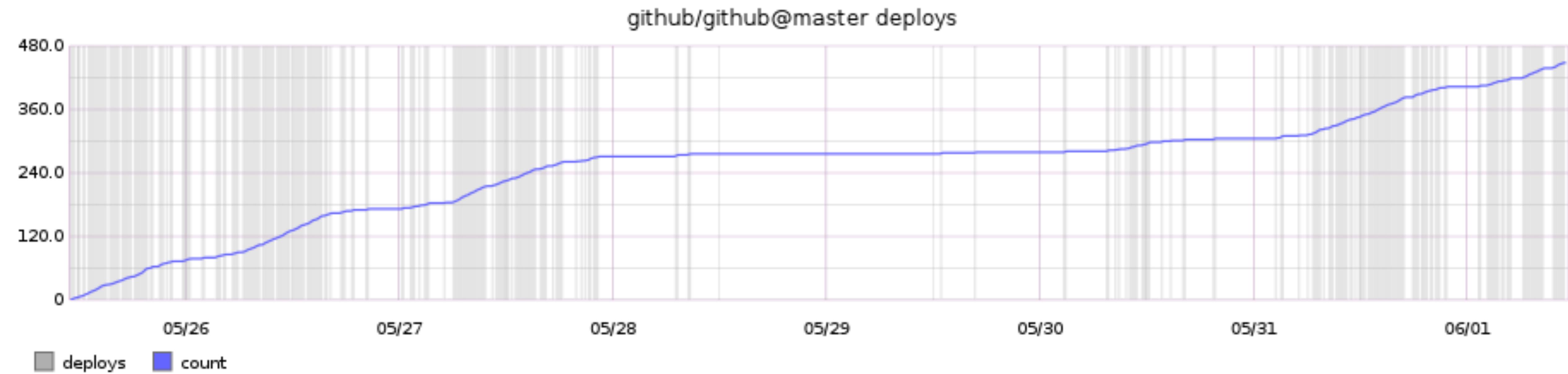


ChatOps as cultural glue





Deploys to production





Dashboard

Updated: May 27, 2015 9:55:22 AM

5m

30m

1h

3h

1d

Overview

Dashboard

Firehose

Experienced by you

Latest Deploys

 **clear_user_session_for_oauth**
deployed by ptoomey3 19 minutes ago

 **gist-fix-broken-render-on-search-results**
deployed by jdpace 36 minutes ago

 **member-privs-flash**
deployed by jakeboxer an hour ago

 **first_commit_token_scanning_fix**
deployed by mastahyeti an hour ago

Yajl::ParseError

last occurred just now — lexical error: invalid character inside string. `iveMethodAccesanager.java:169` at sun.in...

807

Repository::CommandFailed

[github/repo1 #35897](#) [github/git #4203](#) [github/repo2 #35530](#) [github/reposito #931](#) [github/repo3 #33605](#)

27

last occurred 41 seconds ago — Command failed [128]: condense-diff --max-diff-size=102400 --max-total-size...

NoMethodError

last occurred 27 minutes ago — undefined method `pushable_by?' for nil:NilClass

16

GitRPC::Timeout

last occurred 2 minutes ago — GitRPC::Timeout

16

GitRPC::InvalidRepository

last occurred 41 seconds ago — Failed to resolve path '/data/repositories/3/nw/36/12/d4/113169790/36381732...

9



Hubot has your back



hubot BOT 16:24

[nagios sev1 issue] [github/haystack-slow-queries-per-minute](#) is WARNING
Defined in [config/haystack/alerts.yml](#)



hubot BOT 16:27

[nagios sev1 issue#47533] [github/haystack-slow-queries-per-minute](#) is OK after 3
minutes



Nagios (3023645) - github/haystack-slow-queries-per-minute - 2016-06-01 07:24:39 -0700 #47533

[Edit](#)[New issue](#)

hubot opened this issue 18 hours ago · 5 comments



hubot commented 18 hours ago



github/haystack-slow-queries-per-minute is WARNING

This is an early warning intended to give you time to fix it ahead of it going CRITICAL. Please prioritise work on this issue before it goes CRITICAL. If this has fired too soon or too late, please update the alert WARNING threshold appropriately.

Output

```
WARNING Haystack exceptions per minute: 286.80
```

```
Nagios check created by github/nagios
```

Notes

<https://ops.githubapp.com/docs/playbooks/github-haystack-exceptions.md>

Defined in [config/haystack/alerts.yml](#)

Previous incidents for github

Labels

missing-diagnose-service

missing-fix-service

nagios

OK

sev1

Milestone

No milestone

Assignees

hubot

Notifications

[Subscribe](#)

You're not receiving notifications from this thread.

1 participant



Open in GitHub



☰ README.md



```
 _.-~_ )  
 _...~~~, ' , -/  
 .-' . . . ' , -' , ' , ' )  
 , ' . . . _ , --~, -' __..-' , '  
 , ' . . . (@) ' ---~~~ , '  
 / . . . . '~~ , -'  
 / . . . . , -'  
 ; . . . . - . , '  
 : . . . . - /  
 . . . . - -:  
 . . . ./ - . )  
 . . . | _ _ ..-.../_/ _ _  
 ~~~~~~ ~~~~~~ ~~~
```

Feature flipping is the act of enabling or disabling features or parts of your application, ideally without re-deploying or changing anything in your code base.

The goal of this gem is to make turning features on or off so easy that everyone does it. Whatever your data store, throughput, or experience, feature flipping should be easy and have minimal impact on your application.



Scientist!

A Ruby library for carefully refactoring critical paths. [build passing](#)

How do I science?

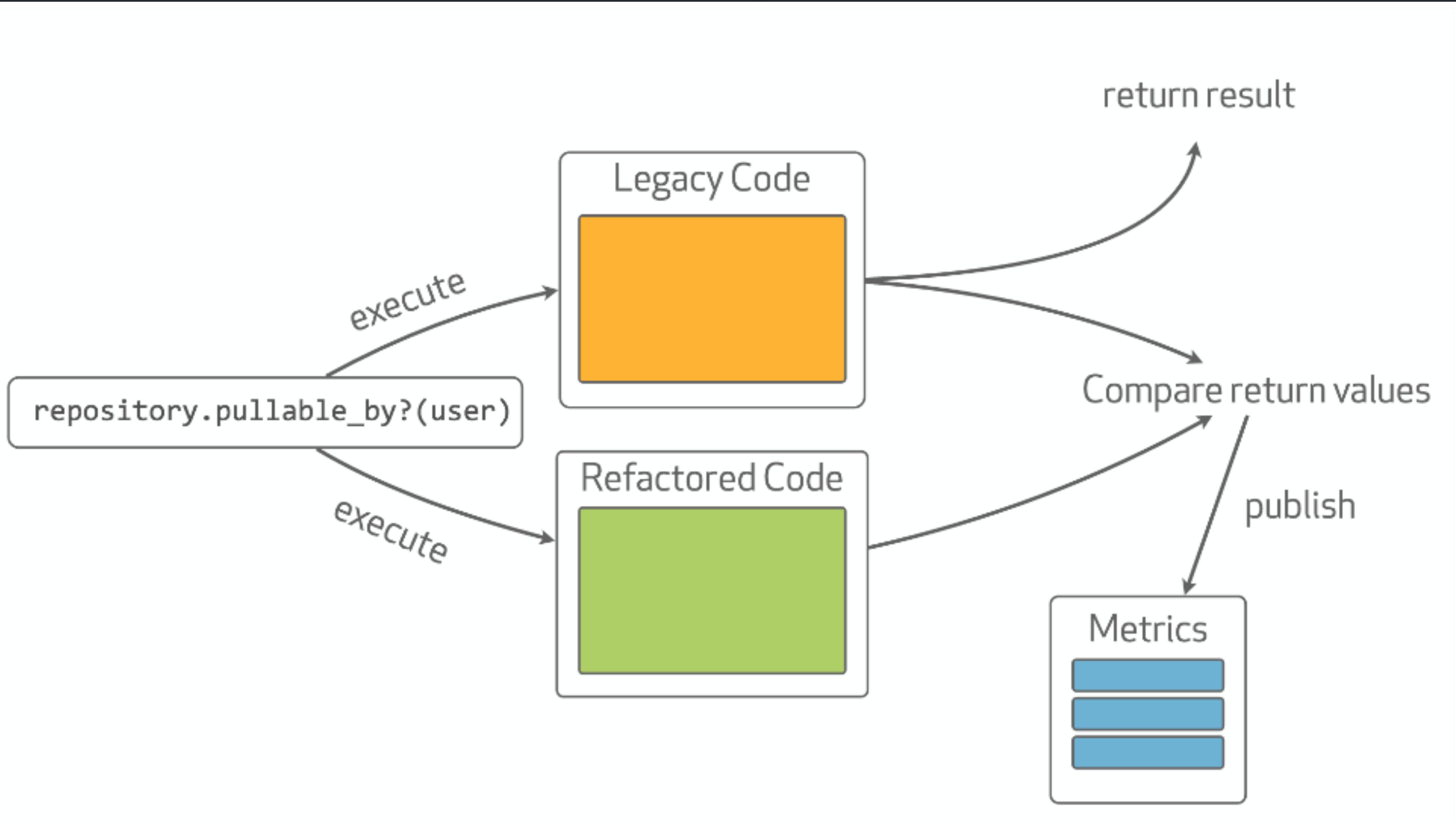
Let's pretend you're changing the way you handle permissions in a large web app. Tests can help guide your refactoring, but you really want to compare the current and refactored behaviors under load.

```
require "scientist"

class MyWidget
  def allows?(user)
    experiment = Scientist::Default.new "widget-permissions"
    experiment.use { model.check_user?(user).valid? } # old way
    experiment.try { user.can?(:read, model) } # new way

    experiment.run
  end
end
```





Developer tools / Code experiments

Active code experiments

[Disable code experiments](#)

[Add new](#)

These experiments are running now. Don't forget that experiments can hurt site performance!

| | |
|--|---------------------------|
|  api-user-repos.cached-ids | 0/min @ 100%, 0% wrong |
|  contrib-calendar.days-with-today | 924/min @ 100%, 0% wrong |
|  cpone_gpgverify | 0/min @ 100%, 0% wrong |
|  goomba-markdown-pipeline | 3,597/min @ 25%, 0% wrong |
|  goomba-short_repo_description | 5,291/min @ 50%, 0% wrong |
|  sciencetown | 0/min @ 100%, 0% wrong |
|  suggestions_without_spam | 0/min @ 10%, 0% wrong |

Inactive code experiments





GitHub Extension for Visual Studio

[Overview](#) [Help](#) [Release Notes](#)

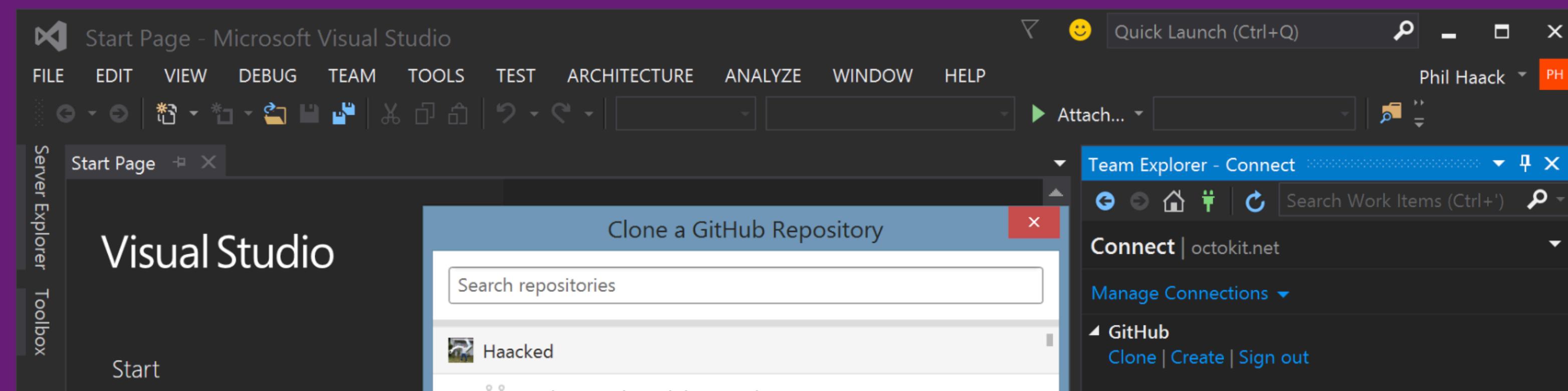
Fork me on GitHub

The easiest way to connect to your GitHub repositories in Visual Studio

 [Download GitHub Extension for Visual Studio](#)

By downloading the extension you agree to the [End-User License Agreement](#)

Requires Visual Studio 2015 or newer



Performance Impact of Removing OOBGC

 **tenderlove**  May 18, 2018

Until last week, GitHub used an Out of Band Garbage Collector (OOBGC) in production. Since removing it, we decreased CPU time across our production machines by 10%. Let's talk about what an OOBGC is, when to use it, and when not to use it. Then follow up with some statistics about the impact of removing it from GitHub's stack.

Improving your OSS dependency workflow with Licensed

 **jonabc**  March 07, 2018

GitHub recently open sourced [Licensed](#) in the hopes that it is as helpful to the OSS community as it has been to us.

February 28th DDoS Incident Report

 **skottler**  March 01, 2018

On Wednesday, February 28, 2018 GitHub.com was unavailable from 17:21 to 17:26 UTC and intermittently unavailable from 17:26 to 17:30 UTC due to a distributed denial-of-service (DDoS) attack. We understand how much you rely on GitHub and we know the availability of our service is of critical importance to our users. To note, at no point was the



Best practices

- **Improve collaboration**

- Let developers share their work
- Require public and focused code reviews
- Give employees the confidence to contribute code
- Share your experiences
- Put everyone in one spot with chat
- Assign a community leader to drive the initiatives

- **Ensure quality**

- Assign maintainers to do PR reviews
- Implement rigorous testing and build
- Short-lived branches for small features
- Make deploys boring and predictable
- Require documentation in the repositories
- Require mature and respectful behavior



Bas Peters

bas@github.com (@bas)



