

# GitHub Actions with Node.js

Focus on what matters: **code**

SENCHACOM  
MUNITYDAYS  
19



# Stefan Stölzle

Solution Architect



✉ stefan@github.com

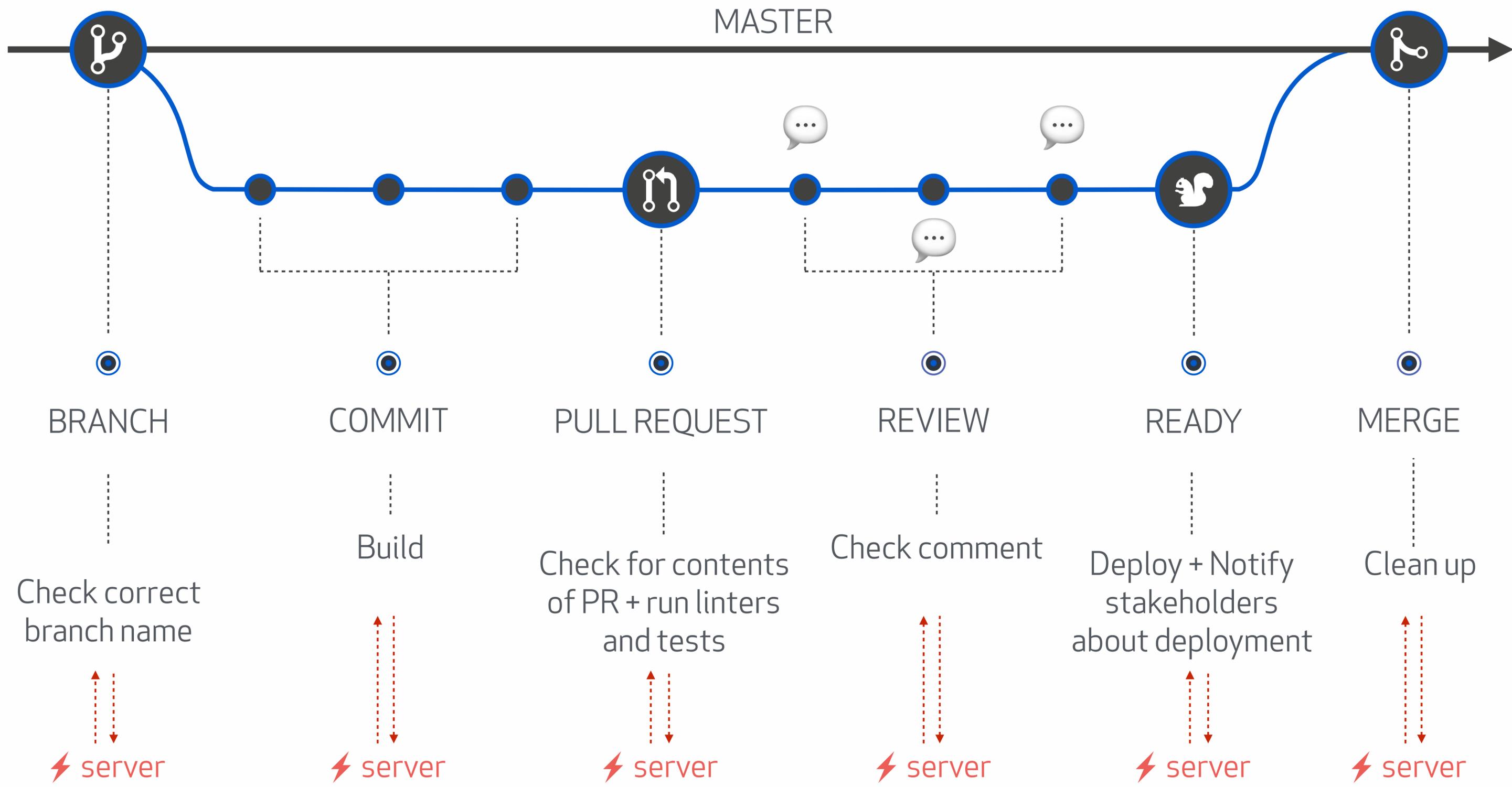
🐦 me\_stoe

The screenshot shows the GitHub profile page for user 'stoe' (Stefan Stölzle). The browser address bar shows 'https://github.com/stoe'. The navigation bar includes 'Why GitHub?', 'Enterprise', 'Explore', 'Marketplace', and 'Pricing'. The profile header shows 'Overview', 'Repositories 30', 'Projects 0', 'Stars 351', and 'Followers 131'. The profile picture is a man with a beard, and the bio includes 'keinbockaufnazis.de', 'Stefan Stölzle', 'stoe', and 'I ❤️ my Lederhos'n.'. The bio also lists 'Solution Architect @github', 'Earth', and the website 'https://stefan.stoelzle.me'. The 'Pinned' section features repositories: 'ansible/ansible-lint-action', 'actions', 'dotfiles', and 'ghe-playbooks'. The '2,042 contributions in the last year' section shows a heatmap of activity from April to March. The 'Activity overview' section lists contributions to 'stoe/dotfiles', 'stoe/ghe-playbooks', 'stoelzle/pdfify-node', and 5 other repositories. A 'Contribution activity' radar chart shows: 44% Commits, 16% Code review, 21% Pull requests, and 19% Issues. The 'Organizations' section shows membership in '@github', '@stoelzle', and '@ansible'.

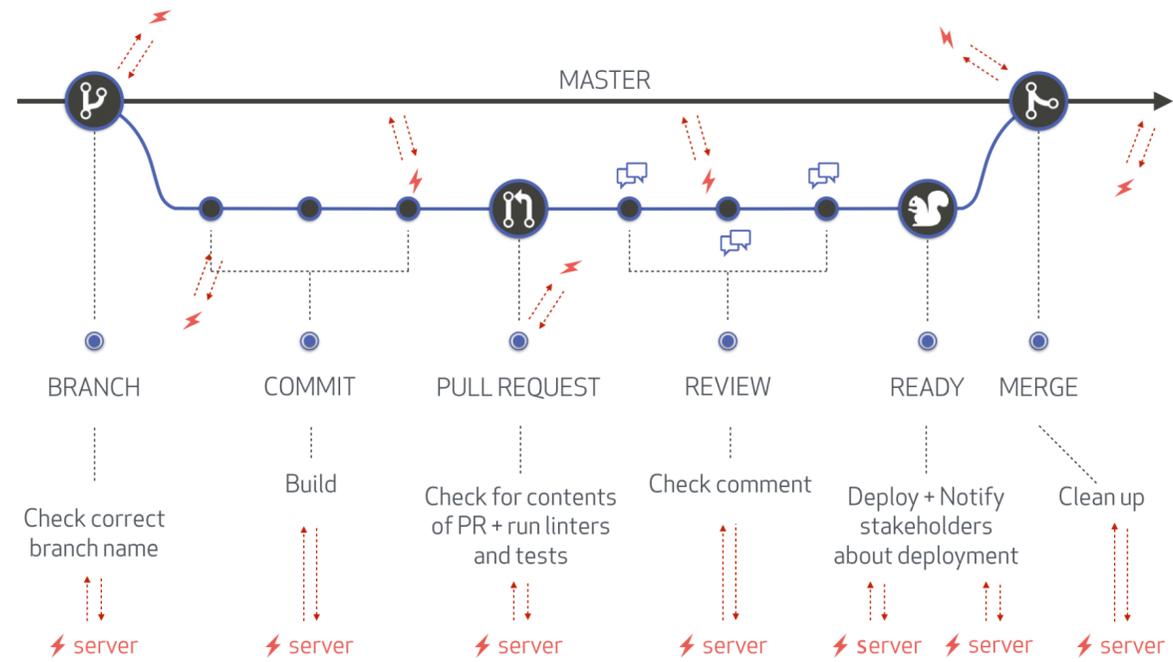


# Developers' Flow Today

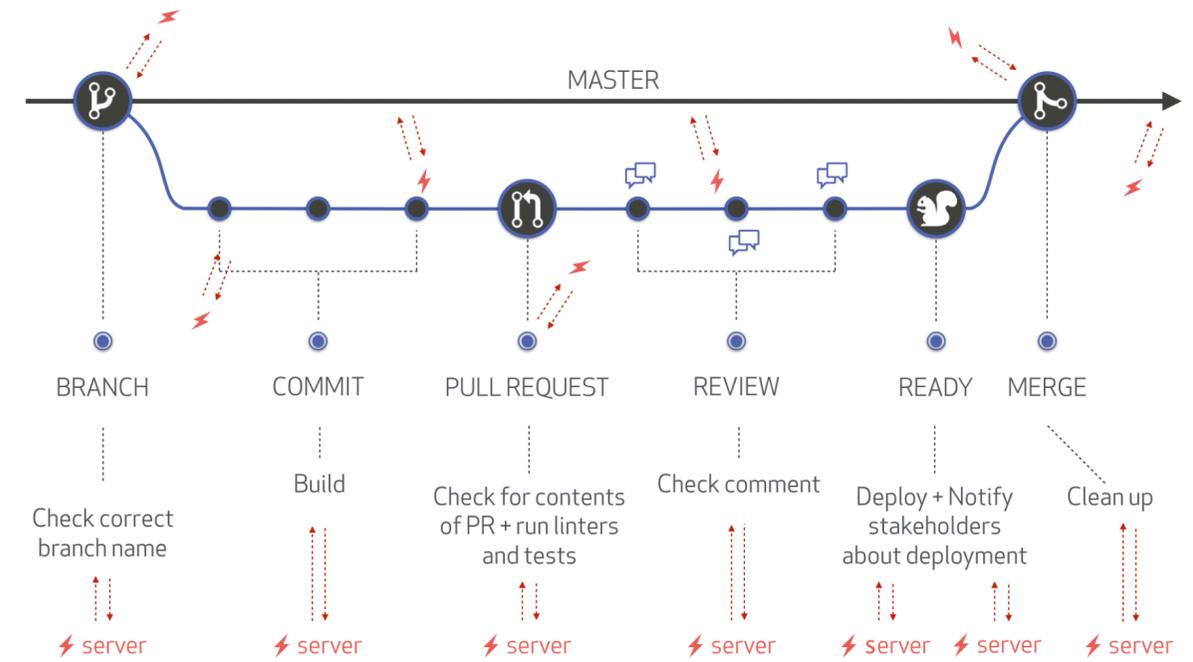




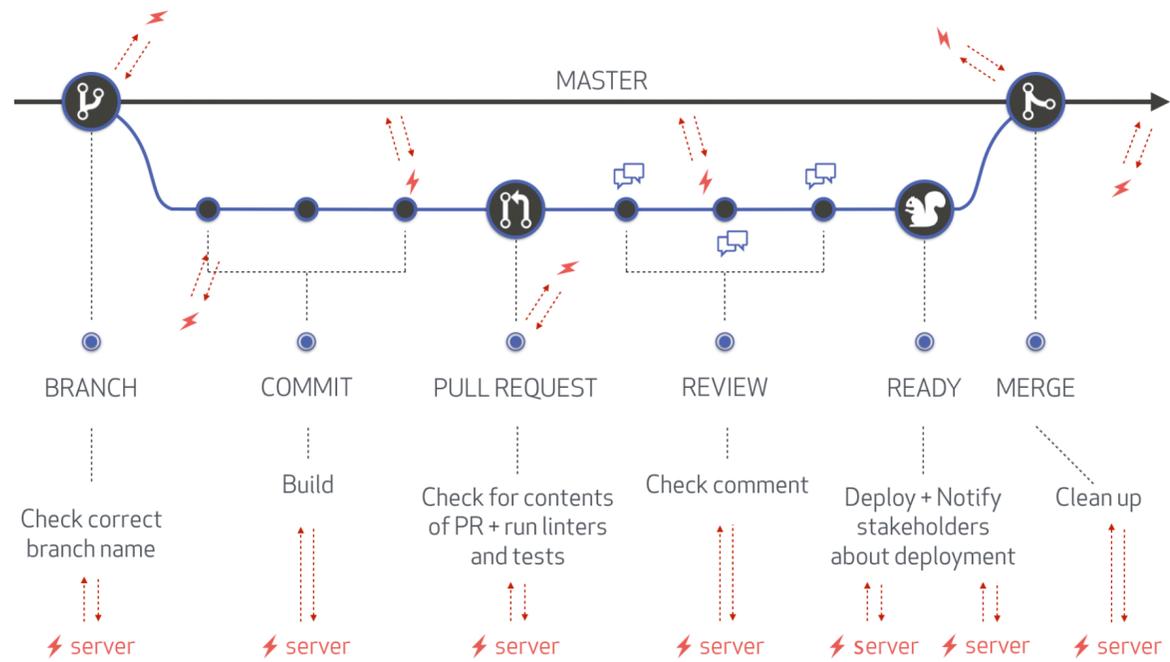
# Project X



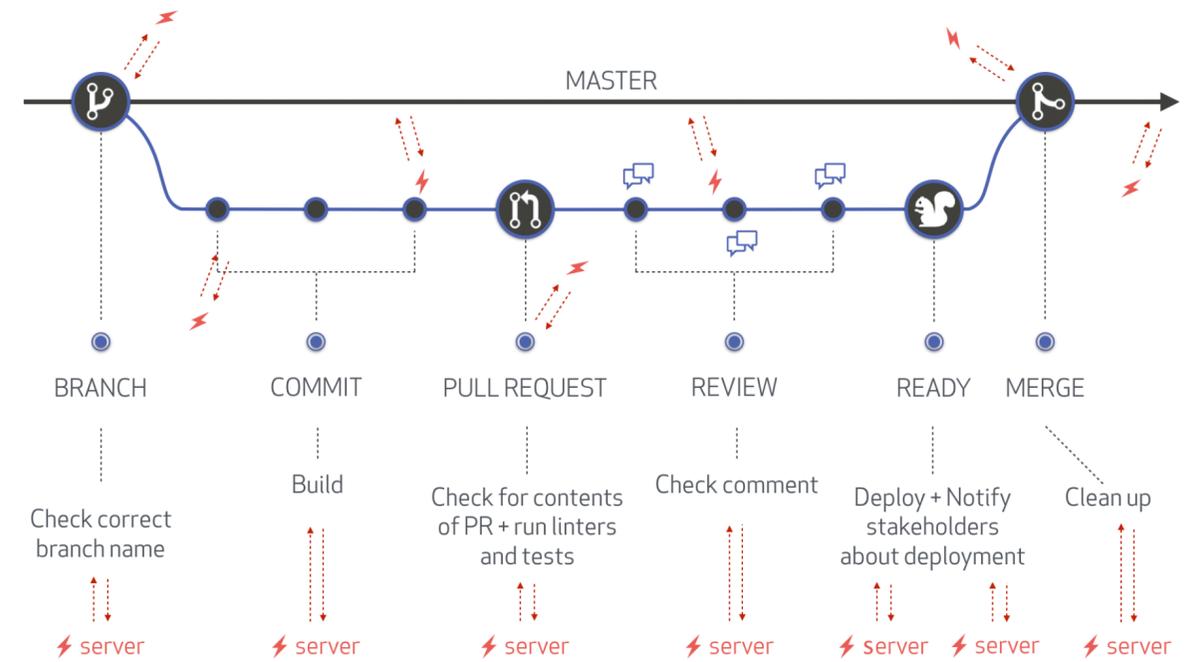
# Project Y



# Project Z



# Project XY



# How modular is it?



# Maintainable?



# Transparent?



# Re-usable?



# Speed of delivery?



Actions is an **r(evolution)** in  
building workflows!



Actions enable **all kinds** of  
developer automation



IFTTT helps your apps and devices talk to each other. Not everything on the internet plays nice, so we're on a mission to build a more connected world.

# A world that works for you

# IFTTT

"if this, then that"

IFTTT is the free way to get all your apps and devices talking to each other. Not everything on the internet plays nice, so we're on a mission to build a more connected world.

Enter your email  [Get started](#)

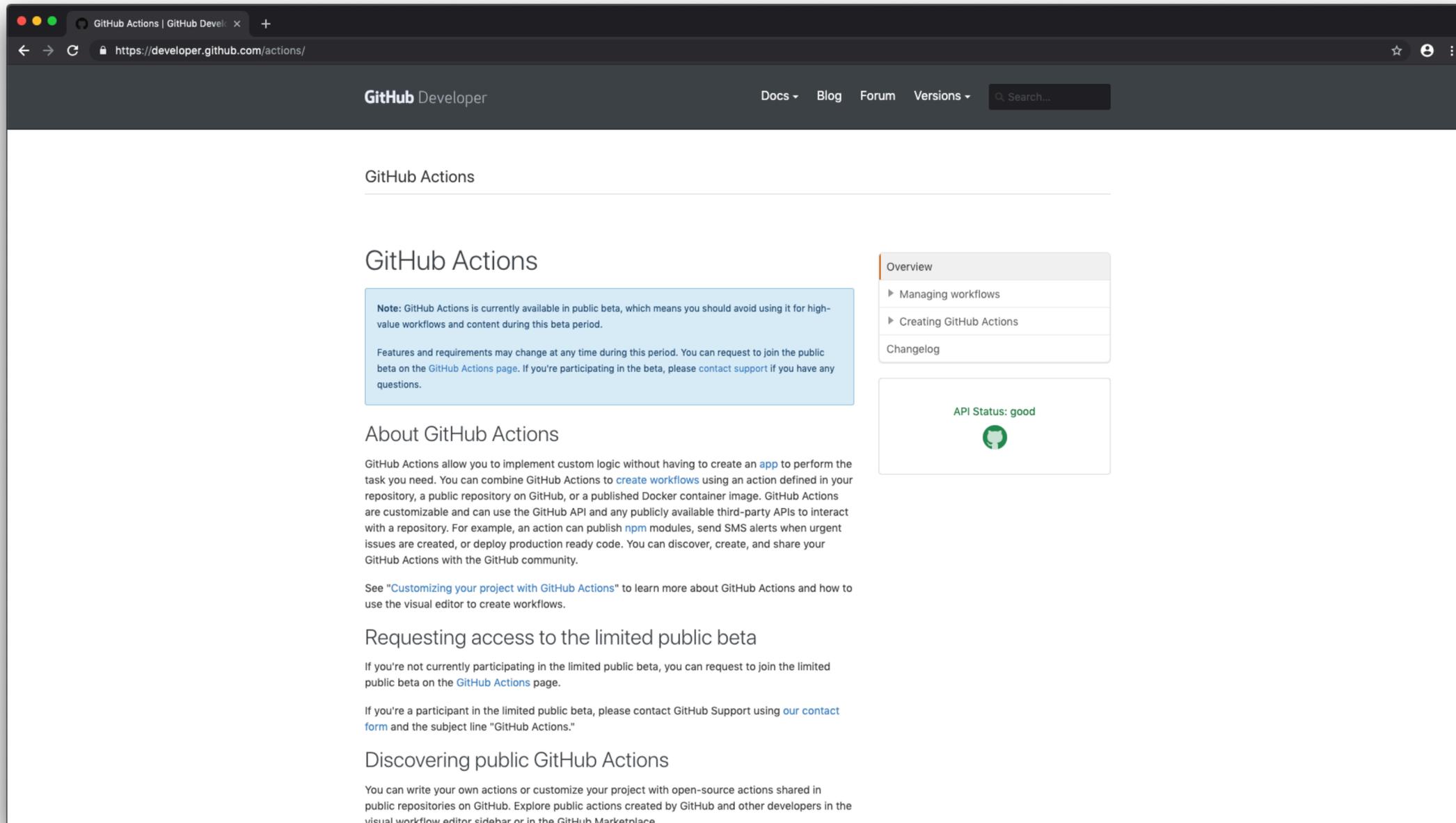
or

[Continue with Google](#) [Continue with Facebook](#)

[Sign in](#) [Sign up](#)

[Build new service](#)





developer.github.com/actions



Event name	GITHUB_SHA	GITHUB_REF	Event description
check_run	Check run commit	Check suite branch	Triggered when a check run is <code>created</code> , <code>rerequested</code> , <code>completed</code> , or has a <code>requested_action</code> .
check_suite	Check suite commit	Check suite branch	Triggered when a check suite is <code>completed</code> , <code>requested</code> , or <code>rerequested</code> .
commit_comment	Commit that was commented on	n/a	Triggered when a <code>commit comment</code> is created.
create	Resolved by branch or tag	Branch or tag created	Represents a created repository, branch, or tag.
delete	Last commit on default branch	Default branch	Represents a <code>deleted branch or tag</code> .
deployment	Commit to be deployed	Branch/tag to be deployed (empty if commit)	Represents a <code>deployment</code> . Deployments created with a commit SHA may not have a GitHub ref.
deployment_status	Commit being deployed	Branch/tag to be deployed (empty if commit)	Represents a <code>deployment status</code> . Deployments created with a commit SHA may not have a GitHub ref.
fork	Last commit on default branch	Default branch	Triggered when a user <code>forks a repository</code> .
gollum	Last commit on default branch	Default branch	Triggered when a Wiki page is created or updated.

# 26 events

beta

The screenshot shows the GitHub Actions website. At the top, there's a navigation bar with the GitHub logo, links for 'Why GitHub?', 'Enterprise', 'Explore', 'Marketplace', and 'Pricing', a search bar, and 'Sign in' and 'Sign up' buttons. The main content area features the heading 'GitHub Actions' and a large sub-heading 'Focus on what matters: code'. Below this is a sub-heading 'With GitHub Actions you can automate your workflow from idea to production.' and a blue 'Sign up for the beta' button. To the right, a workflow diagram is shown with three steps: 'Build, Test, and Deploy on push', 'Build actions/docker', and two parallel steps 'Get octocat' and 'Provision Database'. Each step is represented by a box with an icon, a title, and details on what it uses and runs. The 'Build' step uses 'actions/docker' and runs 'docker build -t octoverse'. The 'Get octocat' step uses './fetch-from-octodex/'. The 'Provision Database' step uses 'hashicorp/terraform' and runs 'terraform apply'. The 'Build, Test, and Deploy' step has an 'Edit' button. Below the main heading, there's a section titled 'Powerful workflows to supercharge your repos' with text explaining that workflows can be triggered by GitHub platform events and can run a sequence of serial or parallel actions. It also mentions that actions can be written in any language using the millions of Open Source libraries available on GitHub.

github.com/features/actions



beta

**32k** signups  
in 24 hours



Built by **you**, run by **us**





Executed as containers



# Current runtime environment resources

- 1 virtual CPU
- Up to 3.75 GB of memory
- Remote network access
- Environment variables describing current workflow context
- Write access to the filesystem
- 100 GB of disk space



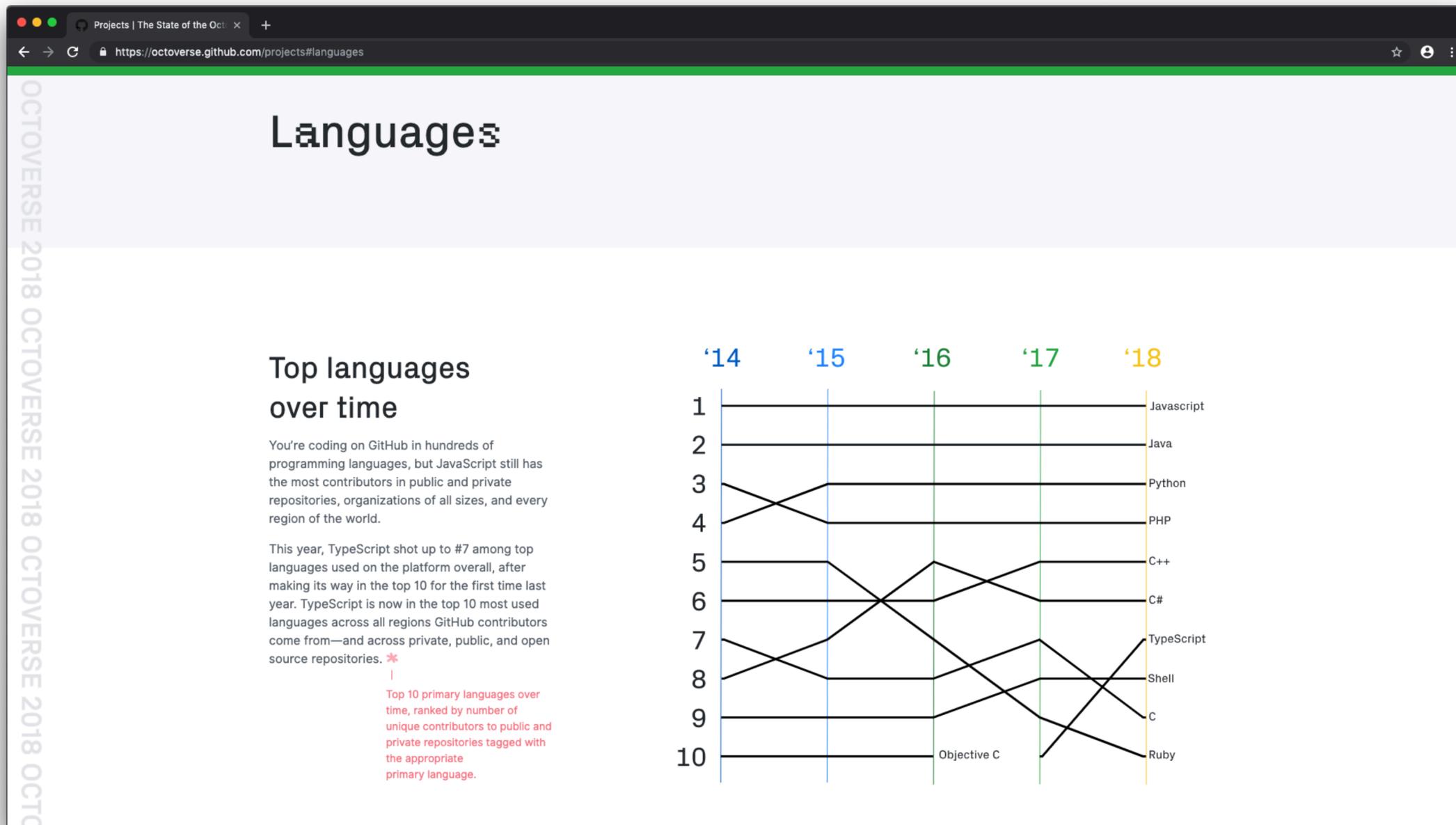
## Dockerfile

```
FROM debian:9.5-slim  
  
# ...  
  
COPY "entrypoint.sh" "/entrypoint.sh"  
  
ENTRYPOINT ["/entrypoint.sh"]
```

## entrypoint.sh

```
#!/bin/sh  
  
set -e  
  
echo "Hello Sencha Community Days"
```



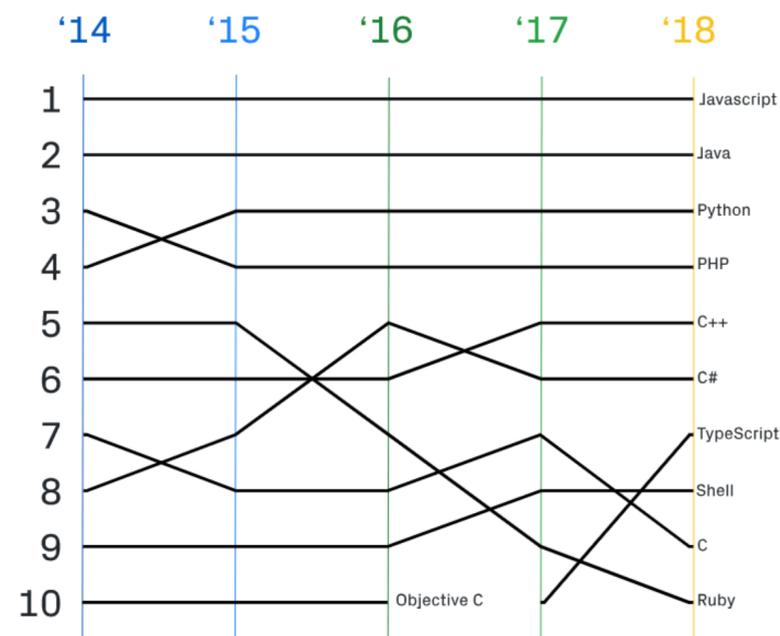


[octoverse.github.com/projects#languages](https://octoverse.github.com/projects#languages)



# JavaScript

- is the most popular programming language on GitHub
- and has been for > 5 years



## Dockerfile

```
FROM node:10-slim

# ...

COPY package*.json ./
RUN npm ci
COPY . .

ENTRYPOINT ["node", "/entrypoint.js"]
```

## entrypoint.js

```
#!/usr/bin/env node

// github.com/JasonEtco/actions-toolkit
const {Toolkit} = require('actions-toolkit');

Toolkit.run(async tools => {

  // ...

  tools.log('Hello Sencha Community Days');

  // ...

});
```



# Demo



Live Hacking...



stoe / actions-demo

Watch 0 Star 0 Fork 0

Code Issues 0 Pull requests 0 Actions Insights Settings

GitHub Actions Demo

Edit

github-actions demo Manage topics

1 commit 1 branch 0 releases 1 contributor MIT

Branch: master New pull request Create new file Upload files Find File Clone or download

stoe Init		Latest commit 22ef0a8 29 minutes ago
.gitignore	Init	29 minutes ago
index.js	Init	29 minutes ago
license	Init	29 minutes ago
package-lock.json	Init	29 minutes ago
package.json	Init	29 minutes ago
readme.md	Init	29 minutes ago

```
readme.md
```

# actions-demo

GitHub Actions Demo

stoe / actions-demo

Watch 0 Star 0 Fork 0

Code Issues 0 Pull requests 0 Actions Insights Settings

actions-demo / readme.md or cancel

Edit file Preview changes Spaces 2 Soft wrap

```
1 # actions-demo  
2 GitHub Actions Demo  
3  
4 > Test and build on push
```

## main.workflow

```
workflow "Test on push" {  
  on = "push"  
  resolves = ["test"]  
}  
  
action "build" {  
  uses = "actions/npm@master"  
  args = "install"  
}  
  
action "test" {  
  uses = "actions/npm@master"  
  needs = ["build"]  
  args = "test"  
}
```



GitHub Actions · GitHub

GitHub, Inc. [US] | https://github.com/actions

Why GitHub? Enterprise Explore Marketplace Pricing Search Sign in Sign up

# GitHub Actions

Automate your GitHub workflows

https://github.com/features/actions support+actions@github.com

Repositories 25 People 10 Projects 0

### Pinned repositories

<b>gcloud</b> GitHub Actions for interacting with Google Cloud Platform Makefile ★ 42 📄 26	<b>aws</b> GitHub Actions for interacting with AWS Makefile ★ 115 📄 39	<b>azure</b> GitHub Action for interacting with Azure is archived, in favor of https://github.com/Azure/github-actions Shell ★ 35 📄 15
<b>heroku</b> GitHub Action for interacting with Heroku HCL ★ 43 📄 14	<b>zeit-now</b> GitHub Action for interacting with Zeit Now HCL ★ 94 📄 13	<b>npm</b> GitHub Action for interacting with npm Shell ★ 188 📄 84

Find a repository... Type: All Language: All

### example-zeit-now

An example GitHub Action using Zeit Now

example

HTML ★ 29 📄 43 CC0-1.0 Updated 3 days ago

### workflow-parser

The parser for GitHub Actions Workflow files

Go ★ 135 📄 7 MIT Updated 4 days ago

### Top languages

- JavaScript
- HCL
- Shell
- Makefile
- HTML

### People

10 >

github.com/actions



beta

Marketplace / Search results

Search for apps and actions

Types

Apps

Actions

Verification

Verified

Unverified

Categories

API management

Chat

Code quality

Code review

Continuous integration

Dependency management

Deployment

Learning

Localization

Mobile

Monitoring

Project management

Publishing

Recently added

**Actions**  
An entirely new way to automate your development workflow.

245 results filtered by Actions

- xo-action**  
JavaScript happiness style linter  
GitHub Action
- validate-license-action**  
Action to validate that a repo contains a license of one of the allowed types  
2 stars
- vale-lint**  
Vale - linter for prose  
3 stars
- store-env**  
Stores environment variables in .profile  
2 stars
- shellcheck**  
Run shell check on ALL sh files in the repository  
3 stars
- s3cmd for GitHub Actions**  
Runs s3cmd in an Action  
2 stars
- rsync deployments**  
For deploying code to a webserver via rsync over ssh  
3 stars
- python-nose-test**  
Run nose tests for Python codes
- python-lint**  
Run style check for Python codes
- php-ga.composer-require-checker**  
composer-require-checker
- msgfmt**  
Generate binary message catalog from textual translation description
- markdown-link-check**  
Check if all links are valid in markdown files
- haindex**  
Generate or update package.yaml for haindex.org
- github-action-tester**  
Run tests against pull requests  
4 stars

github.com/marketplace



```
stoe@0x73746f65x1: ~/scratch/actions-demo
~/scratch/actions-demo(master*) » |
```

[github.com/nektos/act](https://github.com/nektos/act)



**Publish on push**

**Build Docker image**  
● In progress...

**Deploy branch filter**  
● In progress...

**Deploy to Zeit**  
● In progress...

**Login to ECR**  
● In progress...

**Tag image for Heroku**  
● In progress...

**Setup Google Cloud**  
● In progress...

**Load AKS kube cred...**  
● In progress...

**Zeit Alias URL**  
● In progress...

**Tag image for ECR**  
● In progress...

**Heroku Docker Login**  
● In progress...

**Tag image for GCR**  
● In progress...

**Setup ACR**  
● In progress...

**Push image to ECR**  
Waiting to run

**Push image to Heroku**  
Waiting to run

**Push image to GCR**  
● In progress...

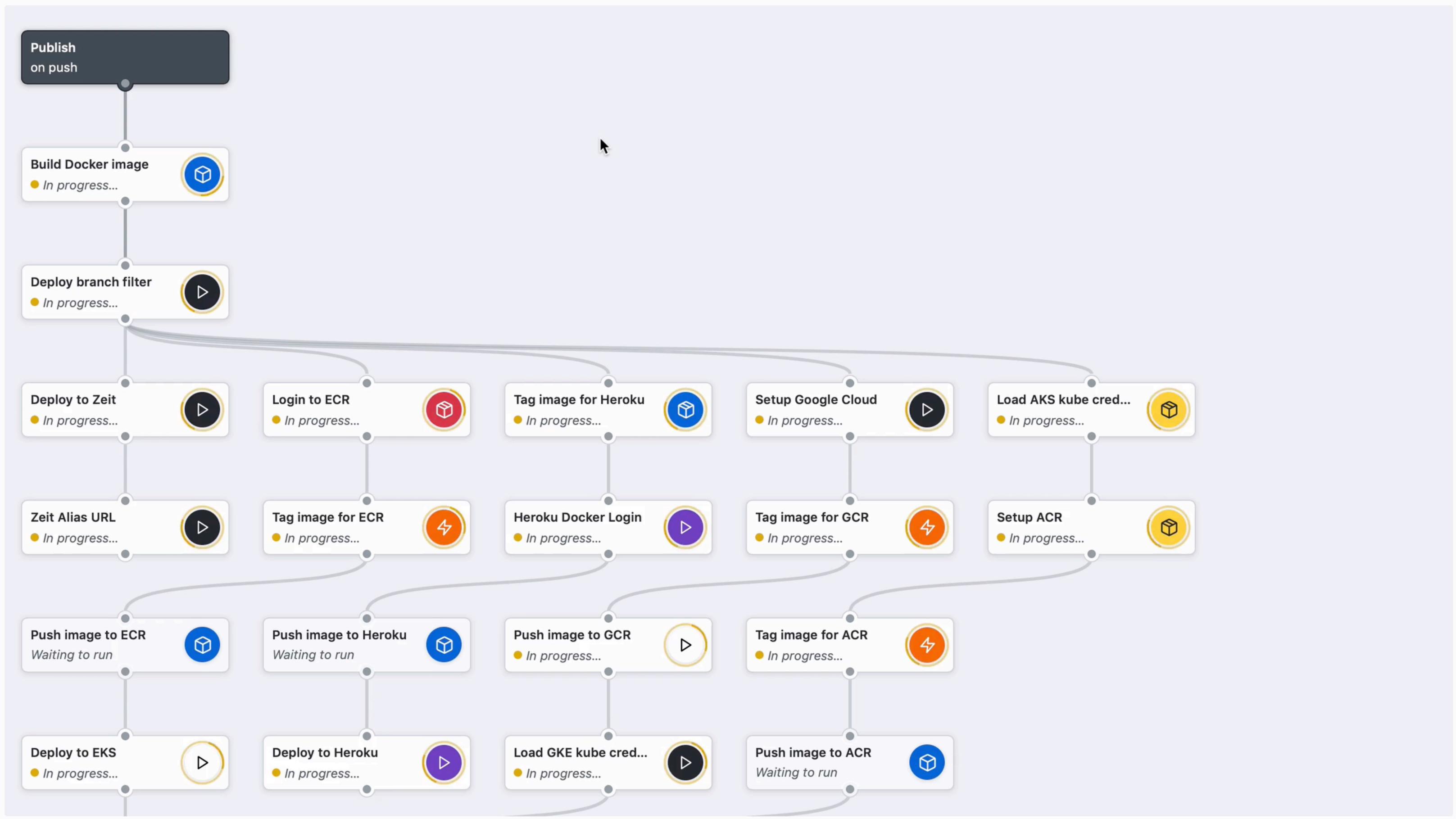
**Tag image for ACR**  
● In progress...

**Deploy to EKS**  
● In progress...

**Deploy to Heroku**  
● In progress...

**Load GKE kube cred...**  
● In progress...

**Push image to ACR**  
Waiting to run





**SATELLITE**

BERLIN, GERMANY

MAY 23rd 2019

SENCHACOM  
MUNITYDAYS  
19

Thank you

**Stefan Stölzle**

Solution Architect

 stoe

 stefan@github.com

 me\_stoe

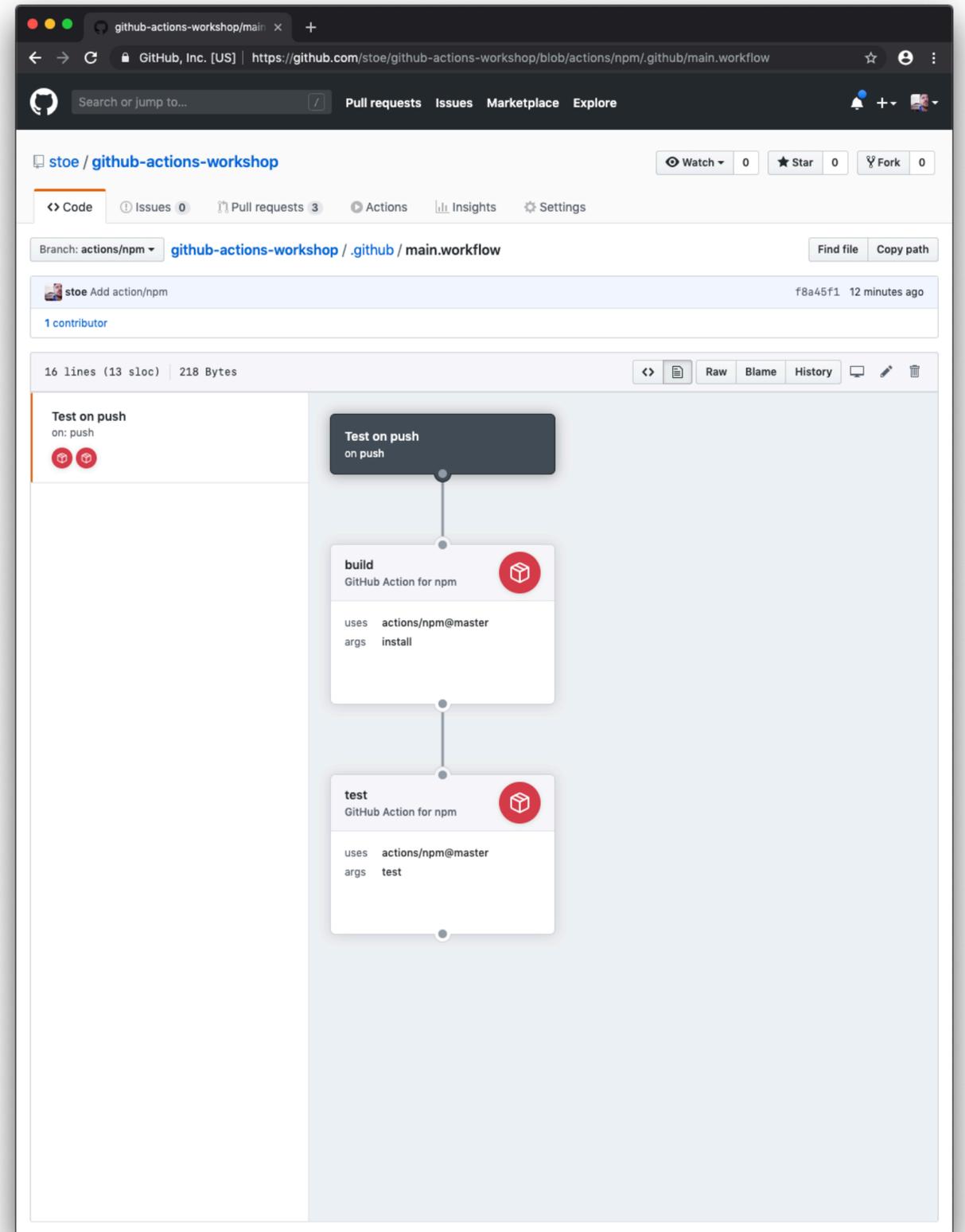




# Appendix



# GitHub Action default



The screenshot shows a GitHub repository page for 'stoe / github-actions-workshop'. The browser address bar displays the URL: `https://github.com/stoe/github-actions-workshop/blob/actions/npm/.github/main.workflow`. The repository page includes navigation tabs for 'Code', 'Issues', 'Pull requests', 'Actions', 'Insights', and 'Settings'. The current view is the 'main.workflow' file, which is a GitHub Action workflow. The workflow is triggered on push and consists of three jobs: 'Test on push', 'build', and 'test'. The 'build' job uses the 'actions/npm@master' action with the argument 'install'. The 'test' job uses the 'actions/npm@master' action with the argument 'test'. The workflow file content is as follows:

```
16 lines (13 sloc) | 218 Bytes
Test on push
on: push

build
  uses: actions/npm@master
  args: install

test
  uses: actions/npm@master
  args: test
```



# GitHub Action default

The screenshot shows the GitHub Actions workflow editor for the repository 'stoe / github-actions-workshop'. The main area displays a workflow graph with three jobs: 'Test on push on push', 'build', and 'test'. Each job is configured to use the 'actions/npm@master' action. The 'build' job has the argument 'install', and the 'test' job has the argument 'test'. A 'Configure action' panel is open on the right, showing the configuration for the 'actions/npm@master' action. The configuration includes the 'uses' field set to 'actions/npm@master', the 'label' set to 'build', and the 'runs' field set to 'Overrides ENTRYPOINT'. The 'args' field is set to 'install'. There are also sections for 'secrets' (with a 'GITHUB\_TOKEN' secret) and 'env' (environment variables). A 'Done' button is visible at the bottom of the configuration panel, and a 'Delete action' button is at the bottom of the main editor area.



# GitHub Action docker

The screenshot shows a GitHub Actions workflow configuration page for the repository 'stoe/github-actions-workshop'. The workflow is named 'Test on push' and is triggered on push events. It consists of four jobs arranged in a 2x2 grid:

- Test on push** (triggered on push)
- npm ci (10)** (uses `docker://node:10-alpine`, runs `npm ci`)
- npm ci (latest)** (uses `docker://node:alpine`, runs `npm ci`)
- npm test (10)** (uses `docker://node:10-alpine`, runs `npm test`)
- npm test (latest)** (uses `docker://node:alpine`, runs `npm test`)

The workflow is defined in the `main.workflow` file in the `actions/docker` directory. The page shows the file content, which is 36 lines (31 sloc) and 554 Bytes. The workflow is triggered on push events and runs on the `actions/docker` branch.



# GitHub Action docker

The screenshot shows the GitHub Actions workflow editor for the repository 'stoe / github-actions-workshop'. The workflow is named 'main.workflow' and is triggered 'on: push'. It consists of three steps:

- Test on push** (on: push)
- npm ci (10)** (docker://node:10-alpine)
  - uses: docker://node:10-alpine
  - runs: npm
  - args: ci
- npm test (10)** (docker://node:10-alpine)
  - uses: docker://node:10-alpine
  - runs: npm
  - args: test

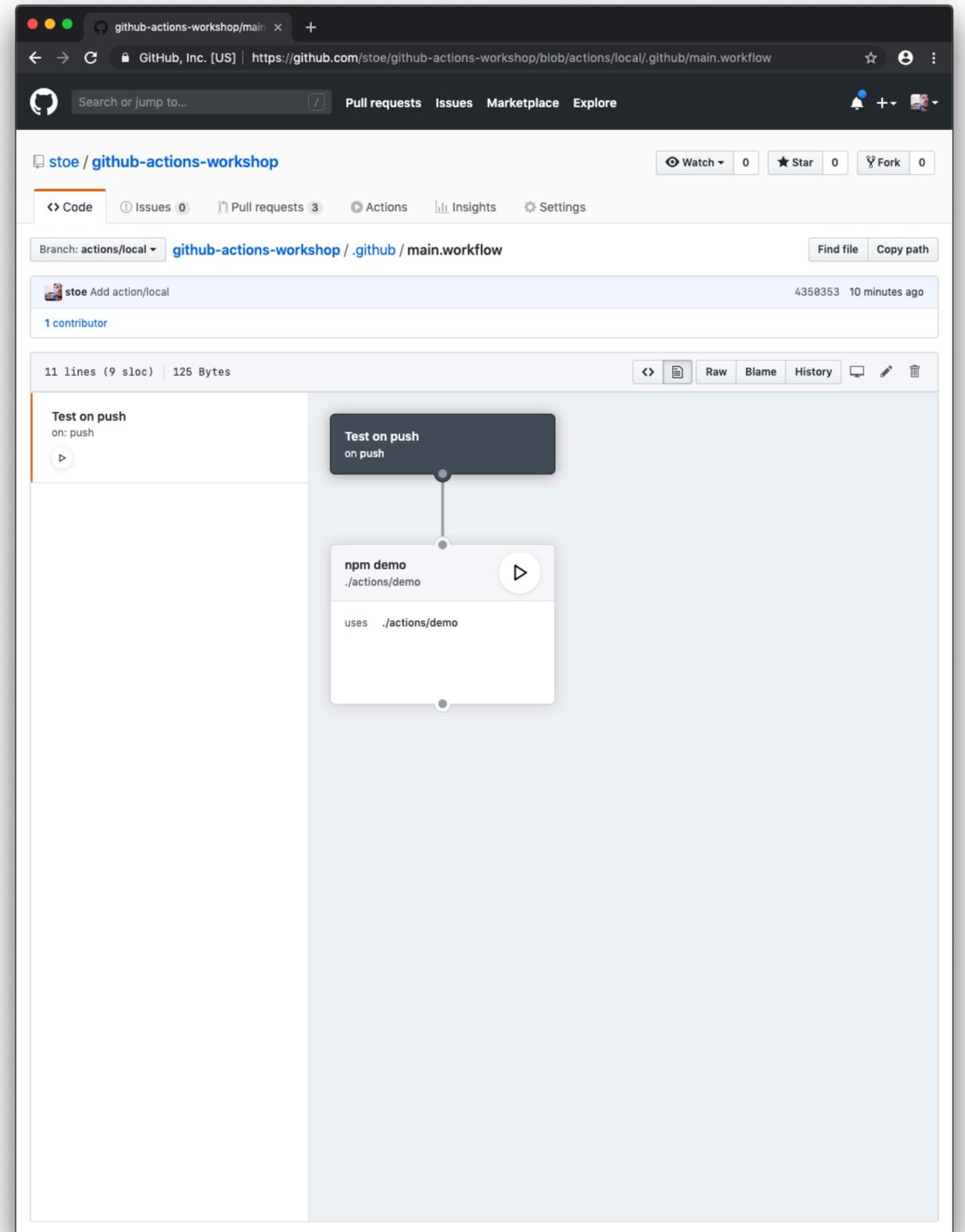
The 'Configure action' panel for the 'docker://node:10-alpine' action is open, showing the following configuration options:

- uses:** docker://node:10-alpine
- label:** npm ci (10)
- runs:** npm
- args:** ci
- secrets:** A checkbox for 'GITHUB\_TOKEN' is present, with a note: 'Secrets are environment variables that are encrypted and available only when this action executes.'
- env:** A section for environment variables with a note: 'Environment variables that are available at runtime. Use secrets (above) for sensitive data.'

Buttons for 'Done' and 'Delete action' are visible at the bottom of the configuration panel.

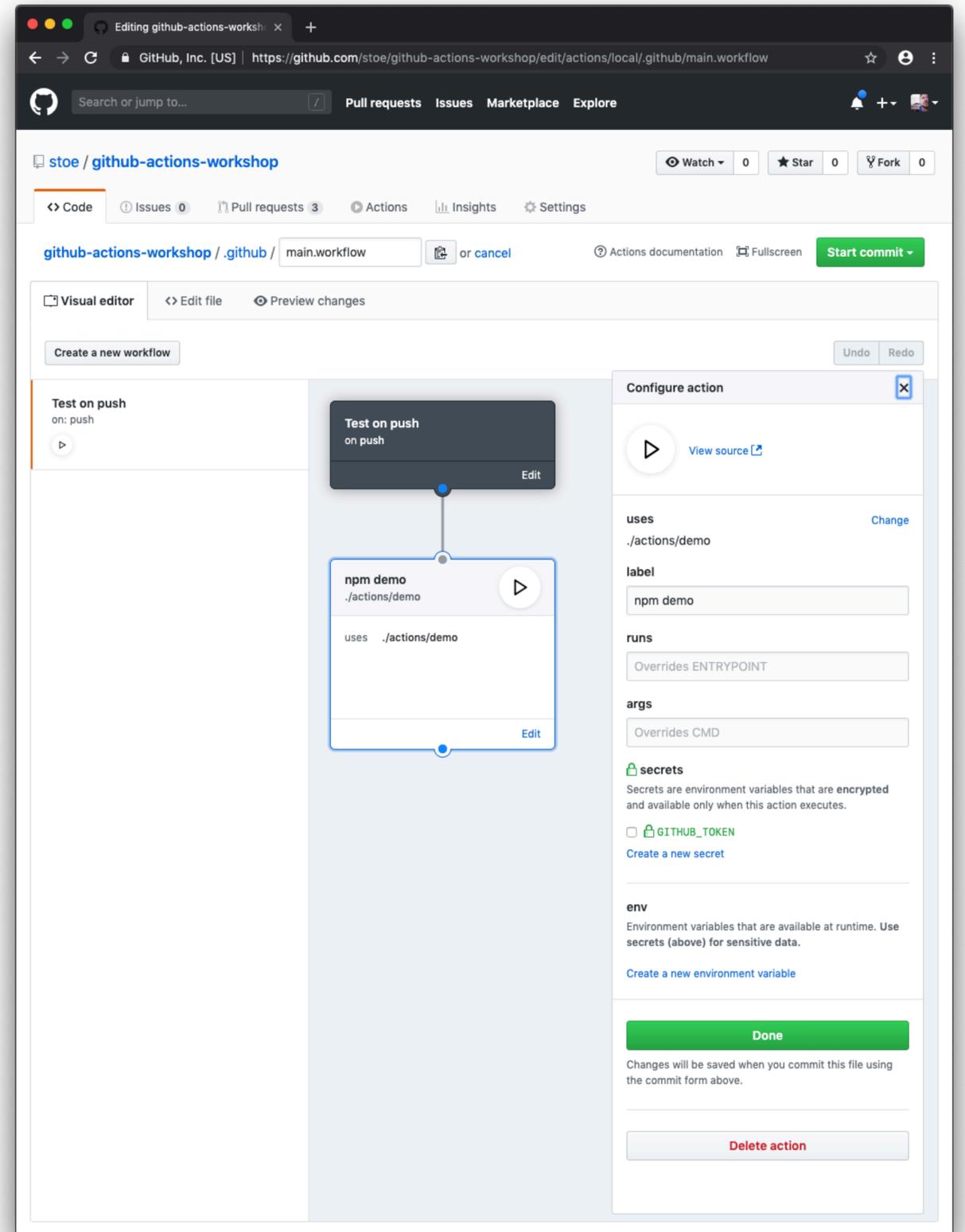


# GitHub Action local



# GitHub Action

## local



# Resources

- <https://github.com/features/actions>
- <https://developer.github.com/actions>
- <https://github.com/actions>
- <https://github.com/marketplace?type=actions>
- <https://octoverse.github.com/projects#languages>
- <https://github.com/nektos/act>
- <https://github.com/sencha-community-days/sencha-community-days-action>
- <https://github.com/stoe/xo-action>
- <https://github.com/JasonEtco/actions-toolkit>

