Automation of Node.js core workflows

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https://github.com/nodejs/summit/issues/108

Not a serious talk

You probably don't care if you don't have to land commits in nodejs/node

If you are not a Node.js collaborator (yet)...

https://github.com/nodejs/node/blob/master/GOVERNANCE.md#collaborator-nominations

Collaborator Nominations

Any existing Collaborator can nominate an individual making significant and valuable contributions across the Node.js organization to become a new Collaborator.

To nominate a new Collaborator, open an issue in the nodejs/node repository, with a summary of the nominee's contributions, for example:

- Commits in the nodejs/node repository.
 - Can be shown using the link https://github.com/nodejs/node/commits?author=\${GITHUB_ID} (replace \${GITHUB ID} with the nominee's GitHub ID).
- Pull requests and issues opened in the nodejs/node repository.
 - Can be shown using the link https://github.com/nodejs/node/pulls?q=author%3A\${GITHUB_ID}+
- Comments and reviews on issues and pull requests in the nodejs/node repository
 - Can be shown using the links https://github.com/nodejs/node/pulls?q=reviewed-by%3A\${GITHUB_ID}+ and https://github.com/nodejs/node/pulls?q=commenter%3A\${GITHUB_ID}+
- Assistance provided to and users and povice contributors

https://github.com/nodejs/TSC/issues/392

Proposal to form an automation working group (or team?)

#392



joyeecheung opened this issue on Oct 21, 2017 · 34 comments



joyeecheung commented on Oct 21, 2017 • edited -

Member



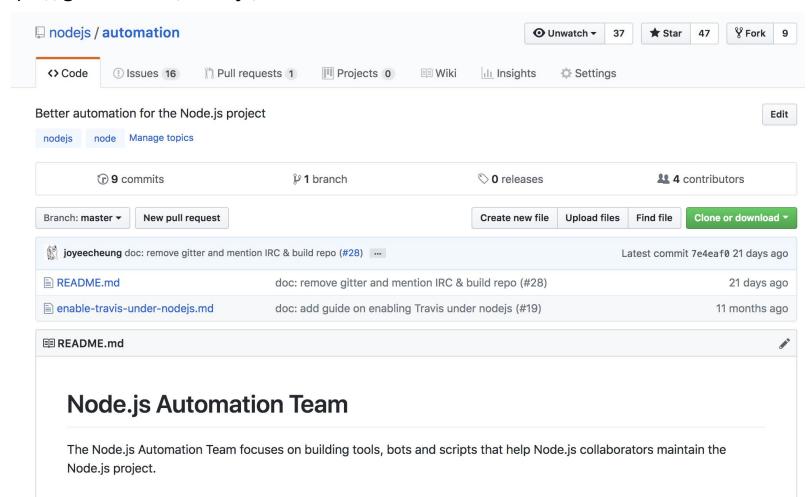
0.0

I am proposing to form an automation working group that handles automation outside build (i.e. tools, bots and scripts that make our lives easier)

Related projects:

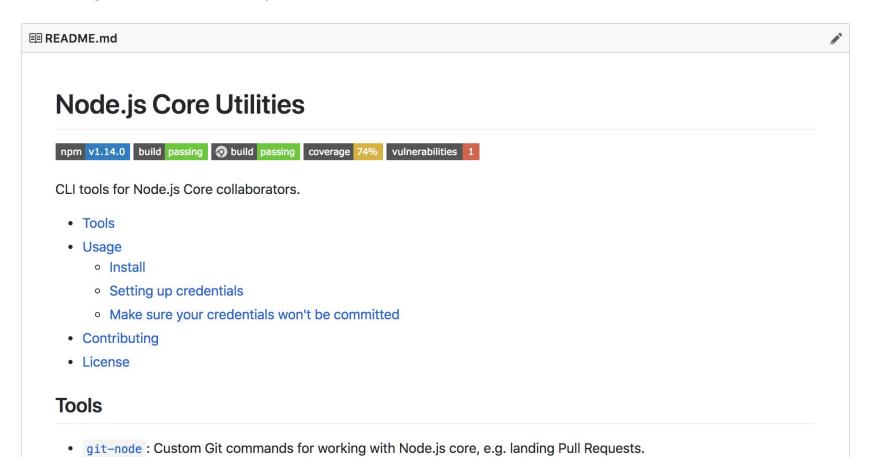
- The Github bot
- node-review (See discussion on moving them into the foundation)
- branch-diff and changelog-maker (See discussion on moving them into the foundation)
- core-validate-commit if @evanlucas agrees to move it into the foundation

https://github.com/nodejs/automation



https://github.com/nodejs/node-core-utils

ncu-config: Configure variables for node-core-utils to use.



a new team I listing members of a team synobronizing special blocks in files with the list of members

Who still remembers this?

Technical HOWTO

Clear any am / rebase that may already be underway:

```
$ git am --abort
$ git rebase --abort
```

Checkout proper target branch:

```
$ git checkout master
```

Update the tree (assumes your repo is set up as detailed in CONTRIBUTING.md):

```
$ git fetch upstream
$ git merge --ff-only upstream/master
```

Apply external patches:

```
$ curl -L https://github.com/nodejs/node/pull/xxx.patch | git am --whitespace=fix
```

Other Automation Projects (sort of)

- branch-diff
 - A tool to list print the commits on one git branch that are not on another using loose comparison.
- changelog-maker
 - A git log to CHANGELOG.md tool.
- commit-stream
 - Turn a git log into a stream of commit objects.
- core-validate-commit
 - Validate commit messages for Node.js core.
- github-bot
 - @nodejs-github-bot's heart and soul.
- node-auto-test
 - A <u>nodejs/node</u> clone for testing tools and bots.
- node-review
 - A browser extension that generates the metadata required for landing a Node.js Pull Request.

A few things that didn't work

- Monorepo https://github.com/nodejs/automation/issues/12
 - But you can argue node-core-utils is already a monorepo (we have v8-update migrated!)
 - But node-core-utils still depends on core-validate-commit
- Gitter
 - Back to IRC: good old #node-dev and #node-build
- @nodejs/automation & the team repo
- Moving repos under the automation team for better maintenance

Things that have been working

- node-core-utils
 - (or, just the git-node part?)
 - (anybody using ncu-ci? Or looking at nodejs/reliability?)
- Getting non-collaborators involved
 - Not a lot, but they exist!
 - https://github.com/nodejs/node-core-utils/graphs/contributors
 - Thanks, @priyankp10 and @alopezsanchez!

Things that can be improved

- Meetings....? To keep track of things
 - Or should we just report at build meetings..?
- Npm releases of node-core-utils
 - (anybody using npm link with master branch...?)
- Getting more people involved
 - Node-core-utils is just a Node.js CLI
 - Should we make the COLLABORATOR_GUIDE.md & CONTRIBUTING.md more approachable?
 - Better guides for new contributors?
- Tests

Things that can be improved

- Take more care of other projects that are not node-core-utils but are heavily depended by us
 - core-validate-commit
 - branch-diff
 - changelog-maker
 - github-bot
 - o github-bot
 - github-bot

node-core-utils

- https://github.com/nodejs/node-core-utils
- git-node: custom git commands for managing Node.js core PRs
- ncu-ci: CLI for querying test results from Jenkins and display summaries, format them as JSON for analysis or markdown to be pasted on GitHub
- ncu-team: for synchronizing member lists in README.md

git node land

- Read credentials from ~/.ncurc (git access token)
- Query GitHub API to get data about the PR and the author
- Download README.md of nodejs/node (why are we still doing this?) and parse for list of TSC and collaborators
- Check a bunch of stuff (pr_cheker.js), rules are mostly based on COLLABORATOR_GUIDE.md
- Start git commands interactively (landing_session.js), with states persisted to
 - ncu/config
 - .ncu/<prid>/land
 - .ncu/<prid>/metadata
 - ncu/<prid>/patch
 - o .ncu/<prid>/<commit-id>-message

ncu-ci

Also capable of walking through all recent runs and see failures that fail more than 1 PRs (potential flakes)

Understands:

- https://ci.nodejs.org/job/node-test-pull-request/
- https://ci.nodejs.org/job/node-test-commit/
- https://ci.nodejs.org/job/benchmark-node-micro-benchmarks/
- (Would be nice to support https://ci.nodejs.org/job/citgm-smoker/!)

ncu-ci

How `ncu-ci walk` works

- Read credentials from ~/.ncurc (Jenkins API token)
- Query https://ci.nodejs.org/job/<jobname>/<jobid>/api/json
- Pick failed runs with result = FAILED
- Download console output from the failed runs, parse them with pattern matching rules (ci_failure_parser.js)
- Aggregate similar failures and group them into output that can be pasted as markdown
 - E.g. <u>https://github.com/nodejs/reliability/issues/18</u>

Next steps

- WPT updates https://github.com/nodejs/node/issues/23192
 - We shouldn't be copy-pasting by hand!
 - Part of git-node
- CITGM failure triage
 - Part of ncu-ci
- Help with releases
 - Follow https://github.com/nodejs/node/blob/master/doc/releases.md
- git hooks https://github.com/nodejs/node-core-utils/issues/160
 - Right now you have to run `git node land --final` proactively for checks before pushing
- Stealing ideas from git-cl? (git cl try, git cl issue, .etc)
 - https://dev.chromium.org/developers/how-tos/depottools
 - Open PR, kick off CI, merge PR, backport PR, open web pages from console...all in one command!
 - If the tool manage the branches and associations for you, it knows what to do out of the box