



# Automated checking with GHA

<https://github.com/r-lib/actions>

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# Continuous Integration (CI) with GitHub Actions



- Automated service to run code
- GitHub Actions (GHA)  
<https://github.com/features/actions>
- Free for open source  
<https://github.com/features/actions#pricing-details>
- GHA for R developers  
<https://github.com/r-lib/actions>

# Getting started: <https://github.com/r-lib/actions>



☰ README.md

## GitHub Actions for the R language

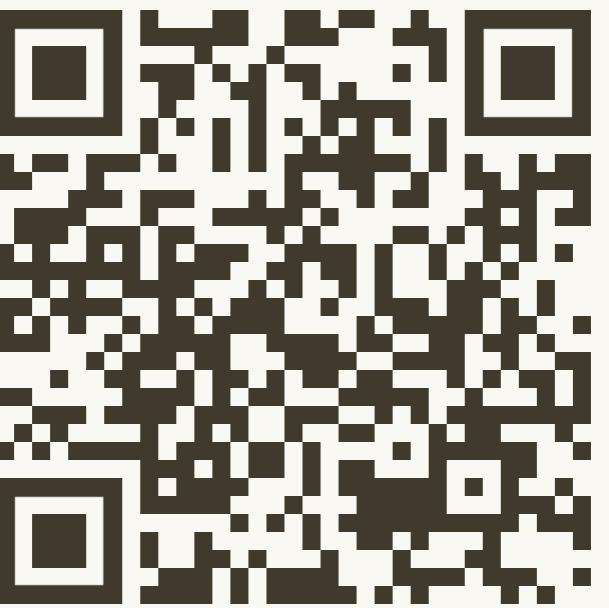
 R-CMD-check passing  R Community  github-actions

This repository stores [GitHub Actions](#) for R projects, which can be used to do a variety of CI tasks. It also has a number of [example workflows](#) which use these actions.

## Getting started

See [this blog post](#) on the Tidyverse blog.

# Getting started: <https://github.com/r-lib/actions>



## GitHub Actions for R developers, v2

<https://www.tidyverse.org/blog/2022/06/actions-2-0-0>

### Setting up r-lib/actions

...

```
usethis::use_github_action("check-standard")
usethis::use_github_action("test-coverage")
usethis::use_github_action("pkgdown")
```

```
usethis::use_github_action("check-standard")
```



```
✓ Setting active project to '/Users/gaborcsardi/works/tiff'  
✓ Creating '.github/'  
✓ Adding '^\\.github$' to '.Rbuildignore'  
✓ Adding '*.html' to '.github/.gitignore'  
✓ Creating '.github/workflows/'  
✓ Saving 'r-lib/actions/examples/check-standard.yaml@v2' to '.github/workflows/check-standard.yaml'  
• Learn more at <https://github.com/r-lib/actions/blob/v2/examples/README.md>.  
>  
> gert::git_status()  
# A tibble: 2 × 3  
  file      status staged  
  <chr>     <chr>  <lgl>  
1 .github/   new    FALSE  
2 .Rbuildignore new    FALSE  
>  
> gert::git_add(c(".Rbuildignore", ".github"))  
# A tibble: 3 × 3  
  file      status staged  
  <chr>     <chr>  <lgl>  
1 .github/.gitignore  new    TRUE  
2 .github/workflows/check-standard.yaml new    TRUE  
3 .Rbuildignore  new    TRUE
```

# .github/workflows/check-standard.yaml



```
# Workflow derived from
# https://github.com/r-lib/actions/tree/v2/examples
# Need help debugging build failures? Start at
# https://github.com/r-lib/actions#where-to-find-help
on:

push:
  branches: [main, master]

pull_request:
  branches: [main, master]

name: R-CMD-check
```

# .github/workflows/check-standard.yaml #2



```
jobs:  
  R-CMD-check:  
    runs-on: ${{ matrix.config.os }}  
  
    name: ${{ matrix.config.os }} (${{ matrix.config.r }})  
  
    strategy:  
      fail-fast: false  
  
    matrix:  
      config:  
        - {os: macOS-latest, r: 'release'}  
        - {os: windows-latest, r: 'release'}  
        - {os: ubuntu-latest, r: 'devel', http-user-agent: 'release'}  
        - {os: ubuntu-latest, r: 'release'}  
        - {os: ubuntu-latest, r: 'oldrel-1'}
```

# .github/workflows/check-standard.yaml #3



```
steps:  
  - uses: actions/checkout@v2  
  - uses: r-lib/actions/setup-pandoc@v2  
  - uses: r-lib/actions/setup-r@v2  
    with:  
      r-version: ${{ matrix.config.r }}  
      http-user-agent: ${{ matrix.config.http-user-agent }}  
      use-public-rspm: true  
  - uses: r-lib/actions/setup-r-dependencies@v2  
    with:  
      extra-packages: any :: rcmdcheck  
      needs: check  
  - uses: r-lib/actions/check-r-package@v2  
    with:  
      upload-snapshots: true
```

# Workflows

 [gaborcsardi/tiff](#)

Public

forked from [cran/tiff](#)

 Watch ▾

 Fork ▾



 Code

 Pull requests

 Actions

 Projects

 Settings

 Releases

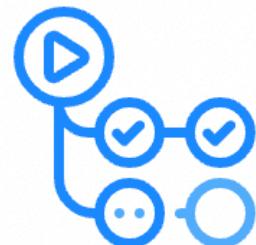
15

...

## Workflows

[New workflow](#)

[All workflows](#)



Tell us how to make GitHub Actions work better for you  
with three quick questions.

[Give feedback](#)

 R-CMD-check

## All workflows

Showing runs from all workflows

 Filter workflow runs

1 workflow run

Event ▾

Status ▾

Branch ▾

Actor ▾

 Add GHA check

R-CMD-check #1: Commit b902cbb pushed by  
gaborcsardi

master



9 minutes ago

2m 53s

# Actions at <https://github.com/r-lib/actions>



## List of actions

1. [r-lib/actions/setup-r](#) - Sets up R
2. [r-lib/actions/setup-r-dependencies](#) - Installs packages declared in **DESCRIPTION**
3. [r-lib/actions/setup-rev](#) - Installs packages from rev lockfile
4. [r-lib/actions/setup-pandoc](#) - Sets up pandoc
5. [r-lib/actions/setup-tinytex](#) - Sets up LaTeX with tinytex
6. [r-lib/actions/check-r-package](#) - Runs `R CMD check` on an R package
7. [r-lib/actions/pr-fetch](#) - Fetches changes of a PR associated with an event
8. [r-lib/actions/pr-push](#) - Pushes changes to a PR associated with an event
9. [r-lib/actions/run-rchk](#) - Runs rchk tests to detect memory protection errors in C source code

# Workflow runs

gaborcsardi / tiff Public forked from cran/tiff

Watch Fork ⚙

Code Pull requests Actions Projects Settings Releases 15 ⋮

Add GHA check R-CMD-check #1 Re-run jobs ⋮

Summary	Triggered via push 12 minutes ago	Status	Total duration	Artifacts
Jobs	 gaborcsardi pushed -o b902cbb master	Failure	2m 53s	-

macOS-latest (release) ✓

windows-latest (release) ✗

ubuntu-latest (devel) ✓

ubuntu-latest (release) ✓

ubuntu-latest (oldrel-1) ✓

**check-standard.yaml**  
on: push

Matrix: R-CMD-check

5 jobs completed

Show all jobs



# Workflow runs

windows-latest (release)  
failed 21 minutes ago in 1m 51s

Search logs

↻ ⚙

- > ✓ Set up job 5s
- > ✓ Run actions/checkout@v2 11s
- > ✓ Run r-lib/actions/setup-pandoc@v2 2s
- > ✓ Run r-lib/actions/setup-r@v2 17s
- > ✓ Run r-lib/actions/setup-r-dependencies@v2 37s
- > ✘ Run r-lib/actions/check-r-package@v2 34s
- > ✓ Post Run r-lib/actions/setup-r-dependencies@v2 0s
- > ✓ Post Run actions/checkout@v2 3s
- > ✓ Complete job 0s



# Workflow runs



```
44 — R CMD check —————
45 * using log directory 'D:/a/tiff/tiff/check/tiff.Rcheck'
46 * using R version 4.2.1 (2022-06-23 ucrt)
47 * using platform: x86_64-w64-mingw32 (64-bit)
48 * using session charset: UTF-8
49 * using options '--no-manual --as-cran'
50 * checking for file 'tiff/DESCRIPTION' ... 0K
51 * this is package 'tiff' version '0.1-10'
52 * checking package namespace information ... 0K
53 * checking package dependencies ... 0K
54 * checking if this is a source package ... 0K
55 * checking if there is a namespace ... 0K
56 * checking for executable files ... 0K
57 * checking for hidden files and directories ... 0K
58 * checking for portable file names ... 0K
59 * checking serialization versions ... 0K
60 * checking whether package 'tiff' can be installed ... ERROR
61 Error: Installation failed.
62 See 'D:/a/tiff/tiff/check/tiff.Rcheck/00install.out' for details.
63 * DONE
```

# Potential complications



- Dependency not on CRAN, but on GitHub
- Dependency in some CRAN-like repository
- You need extra packages, e.g. for the tests or pkgdown articles
- Secrets, e.g. for using API keys
- You need system packages
- You need to omit some optional dependencies

See the README in setup-r-dependencies

# Where to find help?



- 1.** <https://github.com/r-lib/actions>  
README
- 2.** README of the various actions
- 3.** README in r-lib/actions/examples
- 4.** Look at similar workflows, e.g. in the tidyverse or r-lib orgs
- 5.** GitHub Actions Community
- 6.** RStudio Community
- 7.** Look at the open r-lib/actions issues
- 8.** Open an issue at r-lib/actions

# Your turn



- \* [ ] `usethis::use\_github\_action("check-standard")`
- \* [ ] `usethis::use\_github\_action("test-coverage")`
- \* [ ] `usethis::use\_github\_action("pkgdown")`

I suggest you add them one by one, then commit and push to GitHub to see if it runs cleanly. Check that they work locally first!

- \* [ ] Please go to [rstd.io/conf-workshop-survey](https://rstd.io/conf-workshop-survey) to fill out the workshop feedback survey. Your feedback is crucial! Data from the survey informs curriculum and format decisions for future conf workshops and we really appreciate you taking the time to provide it.