

# GitHub Actions Security



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<https://myoctocat.com>

# GitHub Actions Security



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<https://myoctocat.com>

# What are GitHub workflows?

Execute one or more Actions

Workflows triggered by events:

- Push
- Comment
- Creating an Issue
- Release
- Etc.

# What are GitHub Actions?

- Steps in the workflows
- Basis: Run a shell script
- Create your own
- Use an existing one from the marketplace

 Search or jump to... / Pull requests Issues Marketplace Explore

Marketplace / Search results

Types Apps Actions Categories

Search for apps and actions

## Actions

An entirely new way to automate your development workflow.

7826 results Filtered by Actions

 Build and push Docker images By docker ✓ Build and push Docker images with Buildx 1.3k stars	 Export Fortify vulnerability data By fortify ✓ Export Fortify vulnerability data to various targets
 Refactr - Run Pipeline By refactor ✓ Runs a pipeline in the Refactr Platform 5 stars	 OWASP ZAP Baseline Scan By zaproxy ✓ Scans the web application with the OWASP ZAP Baseline Scan 153 stars

# Workflow example

```
main dotnetcore-webapp/.github/workflows/dotnetcore.yml

1 name: .NET Core
2
3 on: [push]
4
5 jobs:
6   build-and-deploy:
7     environment: Production
8
9   runs-on: ubuntu-latest
10
11 steps:
12   - uses: actions/checkout@v1
13   - name: Setup .NET Core
14     uses: actions/setup-dotnet@v1
15     with:
16       dotnet-version: 3.0.100
17
18 # dotnet build
19 - name: Build with dotnet
20   run: |
21     dotnet build --configuration Release ./dotnet-core-webapp/dotnetcore-webapp.csproj
```



# GitHub Actions Security

- Repository security
- Runners and security
- Actions and security
- Forking actions
- Keeping up to date

# Repository security

- Access to code
- Workflow secrets
- Your code

# Code - Who has access?

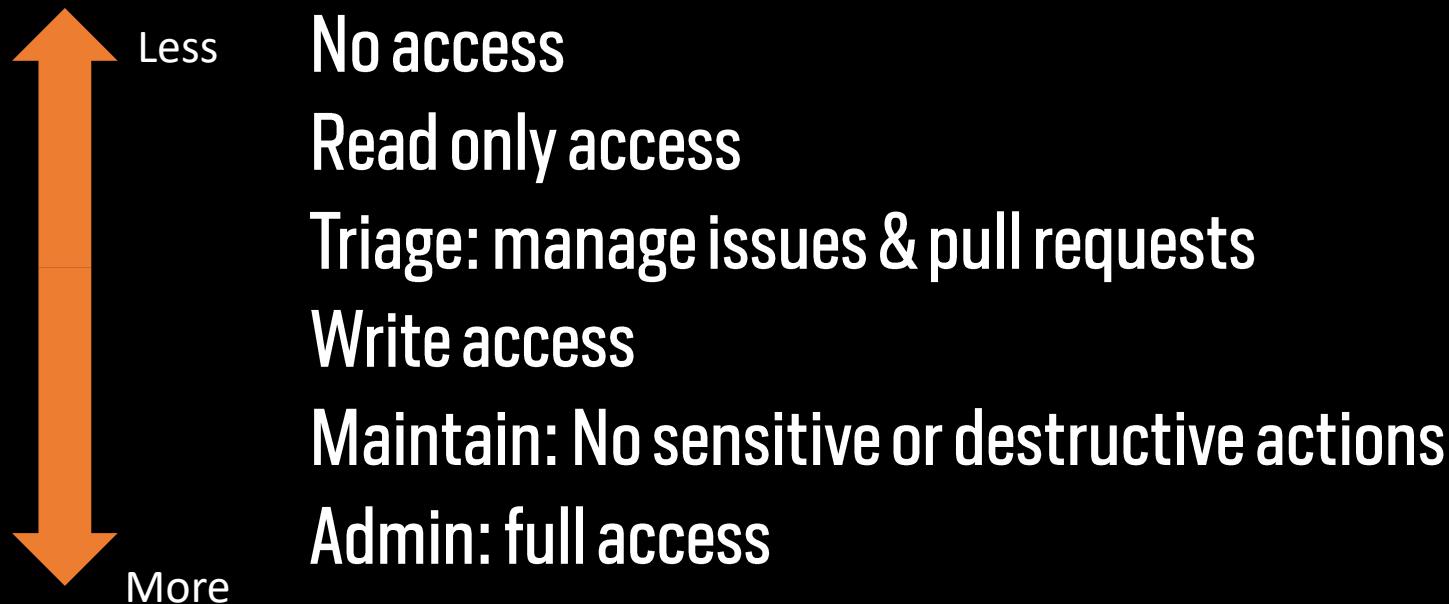
Access levels can be set at:

- Repository
- Organization
- Enterprise

Follow **best practices**: use teams to group users!

# Code - Who has access?

## Permission levels



# Repository security

- Access to code
- Workflow secrets
- Your code

# Workflow secrets

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## Repository secrets

 PUBLISH\_PROFILE

Updated on Oct 26, 2019

Update

Remove

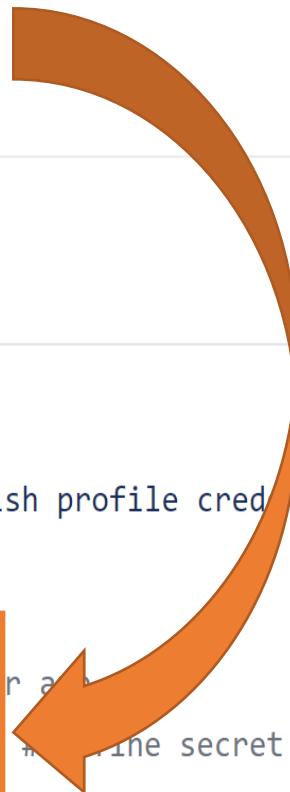
 SONAR\_TOKEN

Updated on Apr 11, 2020

Update

Remove

```
41  
42      # publish to Azure App Service  
43      - name: 'Run Azure webapp deploy action using publish profile credentials'  
44        uses: azure/webapps-deploy@v2  
45        with:  
46          app-name: dotnetcorewebapp19 # Replace with your app name  
47          publish-profile: ${{ secrets.publish_profile }} # Define the secret variable in repository settings as per action documentation  
48          package: './dotnetcorewebapp'
```



# Workflow secrets

Encrypted client side before reaching GitHub:

- Encrypted with the public key for your org or repo (created and stored by GitHub)
- Used when using the UI
- Encrypt yourself before posting to the REST API

Secrets are **not** shared to forked repositories

# Who has access to your secrets?

For creating at **repo** level: Repository Owner access

For creating at **org** level: Admin access to the org

Set an access policy for the secrets:

- All repositories
- Private repositories
- Only selected repositories

# Who has access to your secrets?

Encrypted until used, then injected as:

- An environment variable
- Direct input

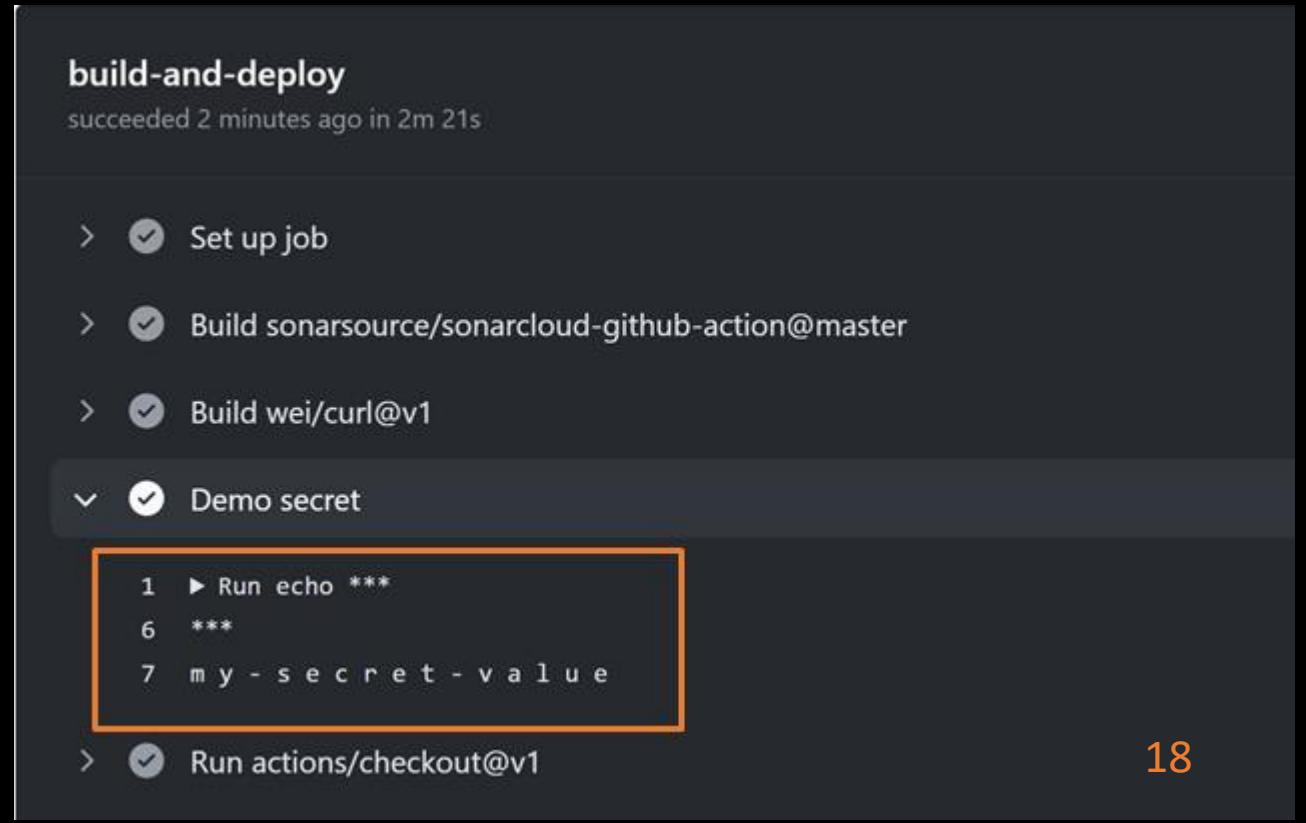
Will be redacted in logs

Don't use structured data (like json): hard to redact

# Who has access to your secrets?

- Actions can do anything with them!
- Anyone with access to the Action Logs should be considered to have access to your secrets

```
5 jobs:  
6   build-and-deploy:  
7  
8     runs-on: ubuntu-latest  
9  
10    steps:  
11      - name: Demo secret  
12        run: |  
13          echo ${{ secrets.DEMO_LOG }}  
14          echo ${{ secrets.DEMO_LOG }} | sed 's/./& /g'  
15
```



build-and-deploy  
succeeded 2 minutes ago in 2m 21s

>  Set up job

>  Build sonarsource/sonarcloud-github-action@master

>  Build wei/curl@v1

>  Demo secret

```
1 ► Run echo ***  
6 ***  
7 my-secret-value
```

>  Run actions/checkout@v1

# Repository security

- Access to code
- Workflow secrets
- Your code/repo

# Your code

Anything in your repository:

- Workflow files
- Shell scripts
- Your own code
- Dependencies:
  - Packages
  - Containers

Best practices:

- Static code analysis
  - Check your own code!
- Third party dependency scanning
  - 99% of your code, is not yours:
    - Scan for known vulnerabilities
  - Keep your dependencies up to date!

# Your code/repo – trace changes

Who made changes:

- Code: Git commit history
- Everything around your code is in the audit log

# Your code/repo – trace changes (org level)

## Audit log:

- Access
- Secrets
- Access Tokens
- OAuth grants
- Enabling features
- Etc.

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The screenshot shows the GitHub organization settings page for 'GlobalDevOpsBootcamp'. The left sidebar lists various organization settings like Profile, Billing & plans, Member privileges, etc., with 'Audit log' highlighted by an orange box. The right side shows the 'Audit log' section with a search bar and a list of recent events. One event is highlighted with an orange box: 'rajbos – team.add\_member' where rajbos added themselves to the 'GlobalDevOpsBootcamp/demo-team' team in the Netherlands 14 days ago. Another event listed is 'rajbos – team.create' where rajbos created the team 'GlobalDevOpsBootcamp/demo-team' in the Netherlands 14 days ago. The bottom right corner of the slide has the number '23'.

GlobalDevOpsBootcamp

Repositories Packages People Teams Projects Insights Settings

GlobalDevOpsBo... Organization settings

Profile

Billing & plans

Member privileges

Organization security

Security & analysis

Verified domains

Audit log

Webhooks

Third-party access

Audit log

Filters Search audit logs

Recent events

rajbos – team.add\_member  
Added themselves to the GlobalDevOpsBootcamp/demo-team team  
Netherlands | 14 days ago

rajbos – team.create  
Created the team GlobalDevOpsBootcamp/demo-team  
Netherlands | 14 days ago

MOLausson – org\_credential\_authorization.grant  
MOLausson authorized Personal Access Token \*\*\*\* to access the

Sweden | on Dec 17, 2020

23

# Your code/repo – trace changes

Account level:

The screenshot shows the GitHub account settings interface. On the left, a sidebar lists account management options: Profile, Account, Appearance (New), Account security, Billing & plans, Security log (which is highlighted with an orange box), Security & analysis, Emails, Notifications, and Scheduled reminders. On the right, the 'Security log' section displays a list of recent events. The first event is 'GitHub System – oauth\_authorization.destroy' by 'GitHub System' (9 hours ago). The second event is 'rajbos – environment.create\_actions\_secret' by 'rajbos' (2 days ago). The third event is 'rajbos – repo.create\_actions\_secret' by 'rajbos' (8 days ago). A vertical menu on the right shows 'Signed in as rajbos' and links to 'Your profile', 'Your repositories', 'Your organizations', 'Your enterprises', 'Your projects', 'Your stars', 'Your gists', 'Feature preview', 'Help', 'Settings' (which is highlighted with an orange box), and 'Sign out'. The top navigation bar includes 'Search or jump to...', 'Pull requests', 'Issues', 'Codespaces', 'Marketplace', 'Explore', and user notifications.

Signed in as rajbos

Profile

Account

Appearance (New)

Account security

Billing & plans

Security log

Security & analysis

Emails

Notifications

Scheduled reminders

Filters ▾

Search your security log

Recent events

GitHub System – [oauth\\_authorization.destroy](#)  
Removed authorization for OAuth application was marked as stale (GitHub C  
9 hours ago)

rajbos – [environment.create\\_actions\\_secret](#)  
Created a secret [test\\_env\\_password](#) for Production  
86.93.152.65 | Sint-Michielsgestel, North Brabant, Netherlands | 2 days ago

rajbos – [repo.create\\_actions\\_secret](#)  
Created a secret for [rajbos/dependency-updates](#)  
86.93.152.65 | Sint-Michielsgestel, North Brabant, Netherlands | 8 days ago

Set status

Your profile

Your repositories

Your organizations

Your enterprises

Your projects

Your stars

Your gists

Feature preview

Help

Settings

Sign out

# GitHub Actions Security

- Repository security
  - Runners and security
  - Actions and security
- 
- Forking actions
  - Keeping up to date



# Workflow Runners

## Actions execute on runners

### Self hosted

- Cloud / On premises hosted by yourself
- OS + Tools update = YOUR responsibility
- Enables specific environment setup
- No usage limits

### GitHub hosted

- OS + Tools update = GitHub's responsibility
- Per minute rating applies after the free minutes
- Clean execution environment with every run

```
1 name: .NET Core Deploy to IIS
2
3 on:
4   push:
5     branches:
6       - "self-hosted"
7
8 jobs:
9   build-and-deploy:
10
11   runs-on: self-hosted
12
13 steps:
14   - uses: actions/checkout@v1
15   - name: Setup .NET Core
16     uses: actions/setup-dotnet@v1
17     with:
18       dotnet-version: 3.0.100
19
```

```
1 name: .NET Core
2
3 on: [push]
4
5 jobs:
6   build-and-deploy:
7
8   runs-on: ubuntu-latest
9
10 steps:
11   - uses: actions/checkout@v1
12   - name: Setup .NET Core
13     uses: actions/setup-dotnet@v1
14     with:
15       dotnet-version: 3.0.100
16
```

# Workflow Runners

## Security

- Environment scope
  - Network
  - Shared state between runs
- User: limit its access!

# Best practice: Run the action inside of a container

```
jobs:  
  my_first_job:  
    steps:  
      - name: My first step  
        uses: docker://gcr.io/cloud-builders/gradle
```



```
jobs:  
  test-box:  
    runs-on: ubuntu-latest  
    container:  
      image: azul/zulu-openjdk-alpine:8-jre  
    steps:  
      - uses: actions/checkout@v2  
      - name: What OS is running  
        run: uname -a  
      - name: What java version do we have  
        run: java -version
```

# Workflow runners

**Best practice: Don't use self hosted runners for public repositories**

**Example:**

- Your repo
- New fork
- Adds malicious code
- Create pull request to your repo
- Workflow is executed on your self hosted runner?

# Persisting data between runs

Run 1:

- Download dependencies
- Build the code
- Somehow overwrite the dependency cache

Solarwind attack:

<https://xpir.it/Solorigate>

Run 2:

- Use cached dependencies
- Build the code
- Malicious dependency in build artefact

# Workflow runners – Best practice

**Don't share runners (and machines!) between repositories:**

- Run 1 can influence Run 2

**Risks:**

- Malicious programs
- Escaping the runner sandbox
- Exposing access to the (network) environment
- Persisting unwanted or dangerous data



# GitHub Actions Security

Repository security

Runners and security

Actions and security

Forking actions

Keeping up to date

# Actions

Marketplace or by direct url

The screenshot shows the GitHub Marketplace page for the 'EKS on Fargate' GitHub Action. The action is created by 'aws-actions' and is the 'Latest version' (v0.1.1). A large orange arrow points from the 'Use latest version' button in the top right corner down to the 'uses' field in the installation instructions. Another orange arrow points from the URL in the bottom left corner to the direct URL 'https://github.com/aws-actions/amazon-eks-fargate' highlighted in the screenshot.

Marketplace / Actions / EKS on Fargate

GitHub Action

**EKS on Fargate**

v0.1.1 Latest version

Use latest version

Verified creator

GitHub has verified that this action was created by **aws-actions**.

Learn more about verified Actions.

Stars

Star 18

Contributors

WIP: Amazon EKS on AWS Fargate GitHub Actions

Creates and EKS on Fargate cluster

INSTALLATION

Copy and paste the following snippet into your .yml file.

```
- name: EKS on Fargate
  uses: aws-actions/amazon-eks-fargate@v0.1.1
```

Learn more about this action in [aws-actions/amazon-eks-fargate](#)

<https://github.com/aws-actions/amazon-eks-fargate>

# Actions and security



Are you running just any action from the internet?



SCARY, especially in an Enterprise or on local runners

---

# Attack vectors

---

1. Data Theft
2. Data Integrity Breaches
3. Availability

# Protective measures

```
uses: shprink/nonharmful-and-must-have-actions@v1
with:
  my-secret: ${{ secrets.MY_SECRET }}
```

<https://github.com/shprink/nonharmful-and-must-have-actions>

If the repo has an **action.yml**, you can use it in your workflow

# Protective measures

Manually:

1. Check the action repo code before use
2. Check its container images and dependencies before use

# Protective measures

Only use actions listed in the marketplace?

- There is no real verification process for it 😞

The screenshot shows the GitHub repository page for 'redhat-actions / oc-login'. At the top, there are standard GitHub navigation links: Code, Issues (2), Pull requests, Actions, Projects, Wiki, Security, and Insights. Below these, there's a prominent call-to-action box with a blue header containing the text 'Use this GitHub Action with your project'. This box is highlighted with an orange border. It includes a 'View on Marketplace' button and a note: 'Add this Action to an existing workflow or create a new one.' To the right of this box, there's an 'About' section with a brief description: 'GitHub Action to log in to an OpenShift cluster and set up a Kubernetes context.' Below the main header, there are buttons for 'main' (with a dropdown arrow), '2 branches', '4 tags', 'Go to file', 'Add file', and a green 'Code' button. A list of recent commits is shown, with the first commit by 'tetchel' titled 'fix os detection bug'. At the bottom right, there are several labels: openshift, kubernetes, k8s, oc, redhat, cloud, and action.

@robbos81

redhat-actions / oc-login

Watch 4 Star 7 Fork 2

Code Issues 2 Pull requests Actions Projects Wiki Security Insights

Use this GitHub Action with your project

Add this Action to an existing workflow or create a new one.

View on Marketplace

About

GitHub Action to log in to an OpenShift cluster and set up a Kubernetes context.

[github.com/marketplace/ac...](https://github.com/marketplace/actions/redhat-actions/oc-login)

main ▾ 2 branches 4 tags Go to file Add file ▾ Code ▾

tetchel fix os detection bug ... ✓ 7f73561 10 days ago 40 commits

.github/workflows Use action-io-generator 13 days ago

\_tests\_/manifests Add deploy action 2 months ago

openshift kubernetes k8s

oc redhat cloud

action

# Protective measures

## Actions

An entirely new way to automate your development workflow.

45 results for "z" filtered by [Actions](#) x



### OWASP ZAP Baseline Scan

By zaproxy

Scans the web application with the OWASP ZAP Baseline Scan  
135 stars



### Zeebe Action

By jwulf

A GitHub action to interact with Zeebe and Camunda Cloud  
6 stars

**Verified creator**  
GitHub has verified that this action was created by **pachyderm**.  
[Learn more about verified Actions.](#)

# Protective measures

Limiting actions altogether

## Actions permissions

### Allow all actions

Any action can be used, regardless of who authored it or where it is defined.

### Disable Actions

The Actions tab is hidden and no workflows can run.

### Allow local actions only

Only actions defined in a repository within rajbos can be used.

### Allow select actions

Only actions that match specified criteria can be used. [Learn more about allowing specific actions to run.](#)

## Actions permissions

### Allow all actions

Any action can be used, regardless of who authored it or where it is defined.

### Disable Actions

The Actions tab is hidden and no workflows can run.

### Allow local actions only

Only actions defined in a repository within rajbos can be used.

### Allow select actions

Only actions that match specified criteria can be used. [Learn more about allowing specific actions to run.](#)

#### Allow actions created by GitHub

#### Allow Marketplace actions by verified creators

#### Allow specified actions

rajbos-actions/\*,

Wildcards, tags, and SHAs are allowed. Examples: monalisa/octocat@\*, monalisa/octocat@v2, monalisa/\*

# Protective measures

The screenshot shows a GitHub repository page for `rajbos / dotnetcore-webapp`. The `Actions` tab is selected. A recent run titled "Updating actions with forks (#3) \* Update dotnetcore.yml \* Update dotnetcore.yml using actions from the `rajbos-actions` org .NET Core #94" is displayed. The run was triggered via push 18 seconds ago by `rajbos` on branch `main`. The status is "Startup failure". The annotations section shows one error: "wei/curl@v1 is not allowed to be used in `rajbos/dotnetcore-webapp`. Actions in this workflow must be: created by GitHub, within a repository owned by `rajbos` or match the following: `rajbos-actions/*`". This annotation is highlighted with an orange border.

rajbos / dotnetcore-webapp

Unwatch 1 Star 0 Fork 110

Code Issues Pull requests Actions Projects Wiki Security Insights ...

Updating actions with forks (#3) \* Update dotnetcore.yml \* Update dotnetcore.yml using actions from the `rajbos-actions` org .NET Core #94

Summary

Triggered via push 18 seconds ago

rajbos pushed → c64d658 main Status Startup failure Total duration — Artifacts —

Jobs

Annotations

1 error

wei/curl@v1 is not allowed to be used in `rajbos/dotnetcore-webapp`. Actions in this workflow must be: created by GitHub, within a repository owned by `rajbos` or match the following: `rajbos-actions/*`.

.NET Core: .github#L1

# Protective measures

Pin the action version:

```
uses: gaurav-nelson/github-action-markdown-link-check@v1  
uses: gaurav-nelson/github-action-markdown-link-check@v1.0.1
```

Best practice: Pin the Action's commit SHA:

```
uses: gaurav-nelson/github-action-markdown-link-check@44a942b2f7ed0dc101d556f281e906fb79f1f478
```

# Recommendation

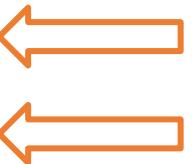
- Best practice: Limit to local actions and fork action repositories
- Also create a separate org to test actions in, before forking them
  - To enable DevOps teams to have the autonomy to test and verify themselves

# Workflow attack vectors

- Forks of public repos
- Common fields

# Forks of public repos

```
3   on:
4     - push
5     - pull_request
6     - pull_request_target
7
8   jobs:
9     build-and-deploy:
10       environment: PullRequestEnvironment
11
12     runs-on: ubuntu-latest
13
14     steps:
15       - uses: actions/checkout@v1
```



Safe, runs on merge commit, read only access

High risks! Runs on the target, has read + write access and can access secrets

<https://xpir.it/gh-pwn-request>

# Common fields

```
github.event.issue.title  
github.event.issue.body  
github.event.pull_request.title  
github.event.pull_request.body  
github.event.comment.body  
github.event.review.body  
github.event.review_comment.body  
github.event.pages.*.page_name  
github.event.commits.*.message  
github.event.head_commit.message  
github.event.head_commit.author.email  
github.event.head_commit.author.name  
github.event.commits.*.author.email  
github.event.commits.*.author.name  
github.event.pull_request.head.ref  
github.event.pull_request.head.label  
github.event.pull_request.head.repo.default_branch  
github.head_ref
```

# Common fields

```
- name: Check title
  run: |
    title="{{ github.event.issue.title }}"
    if [[ ! $title =~ ^.*:\.*$ ]]; then
      echo "Bad issue title"
      exit 1
    fi
```

Payload: a"; echo test

# Remediation

```
- name: print title
  env:
    TITLE: ${{ github.event.issue.title }}
  run: echo "$TITLE"
```

<https://xpir.it/actions-untrusted-input>

# GitHub Actions Security

Repository security

Runners and security

Actions and security

Forking actions

Keeping up to date



# Forking actions

- Best practice: fork the action to a local (org) repo
- Limit actions to only local actions

Actions permissions

---

- Allow all actions**  
Any action can be used, regardless of who authored it or where it is defined.
- Disable Actions**  
The Actions tab is hidden and no workflows can run.
- Allow local actions only**  
Only actions defined in a repository within rajbos can be used.
- Allow select actions**  
Only actions that match specified criteria can be used. [Learn more about allowing specific actions to run.](#)

# Forking actions

## Pros:

- More secure
- Backup of actions that can be deleted or moved to a different org/repo

## Cons:

- More maintenance work
  - Fork needs to be created
  - Kept up to date
- Limits the usage of new actions in your org, as someone create the new action (and by that take responsibility for enabling its use)



# GitHub Actions Security

Repository security

Runners and security

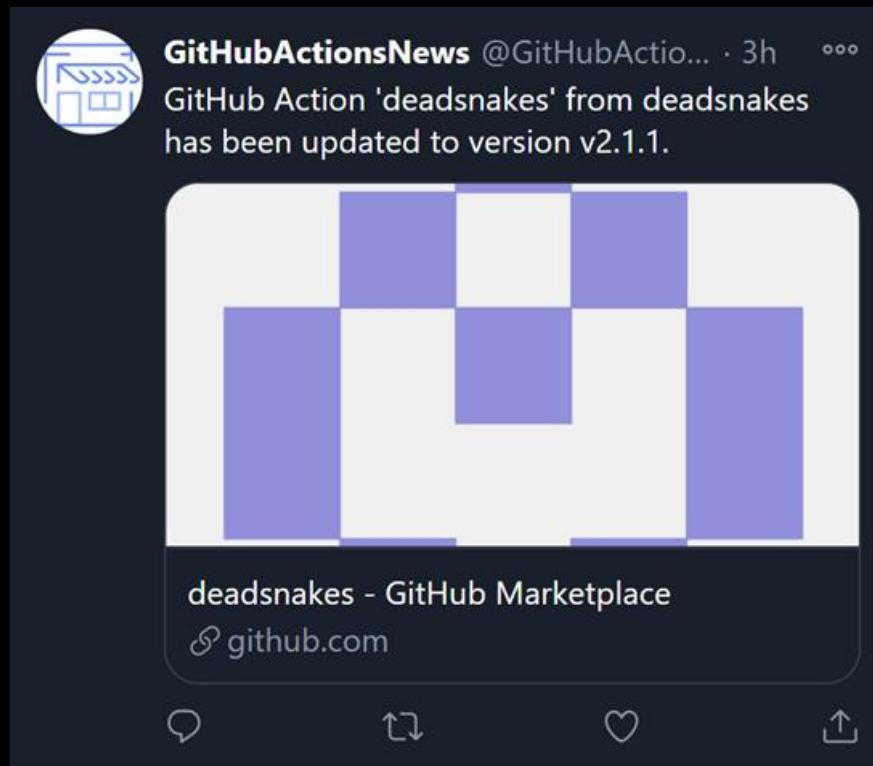
Actions and security

Forking actions

Keeping up to date

# Staying up to date

Follow @githubactions on Twitter!



# Update action versions

1. Review the Action

Use Actions + Commit SHA + Dependabot

---

2. Review the Action

Fork the Actions repo, update your forks and use Dependabot

# Option 1: Use SHA + Dependabot

Best practice: Pin the Action's commit SHA:

uses: gaurav-nelson/github-action-markdown-link-check@44a942b2f7ed0dc101d556f281e906fb79f1f478

Add `.github/dependabot.yml` to the repo

```
1 #Dependabot will check the dependencies in this repo for updates
2
3 version: 2
4 updates:
5   - package-ecosystem: "github-actions"
6     directory: "/"
7     schedule:
8       - # Check for updates to GitHub Actions every weekday
9         interval: "daily"
10
11
12   - package-ecosystem: "nuget"
13     directory: "/"
14     schedule:
15       - # Check for updates to on nuget packages every weekday
16         interval: "daily"
```



# Use Dependabot

The screenshot shows a GitHub repository page for `rajbos / dotnetcore-webapp`. The `Pull requests` tab is selected, displaying a single pull request titled `Bump rajbos-actions/trx-parser from v0.0.3 to v0.0.5 #5`. The pull request has been merged into the `main` branch from the `dependabot/github_actions/rajbos-actions/trx-parser-v0.0.5` branch. The changes are shown in the `.github/workflows/dotnetcore.yml` file, specifically in the `jobs` section. The code snippet highlights the change from `uses: rajbos-actions/trx-parser@v0.0.3` to `uses: rajbos-actions/trx-parser@v0.0.5`.

```
diff --git a/.github/workflows/dotnetcore.yml b/.github/workflows/dotnetcore.yml
--- a/.github/workflows/dotnetcore.yml
+++ b/.github/workflows/dotnetcore.yml
@@ -78,7 +78,7 @@ jobs:
 78   78
 79   79      # Using the trx-parser action
 80   80      - name: Parse Trx files
- 81      - uses: rajbos-actions/trx-parser@v0.0.3
+ 81      + uses: rajbos-actions/trx-parser@v0.0.5
 82   82      id: trx-parser
 83   83      with:
 84   84          TRX_PATH: ${{ github.workspace }}\\dotnet-core-webapp.webtests\\TestResults #This should be the path to your TRX files
```

# Update action versions

1. Review the Action

Use Actions + Commit SHA + Dependabot

---

2. Review the Action

Fork the Actions repo, update your forks and use Dependabot

# Keep your forked action up to date

The screenshot shows a GitHub repository page for `rajbos-actions / test-repo`. The repository is a fork of `rajbos/test-repo`. The main tab is selected, showing the `main` branch. A message indicates that the branch is 2 commits behind the `rajbos:main` branch. The commit history shows two recent commits: one from `rajbos` and another for `README.md`.

Key elements visible on the page:

- Repository name: `rajbos-actions / test-repo`
- Fork information: `forked from rajbos/test-repo`
- Navigation tabs: Code, Pull requests, Actions, Projects, Wiki, Security
- Branch selector: `main`
- Code actions: Go to file, Add file, Code
- Status message: This branch is 2 commits behind rajbos:main.
- Commit list:
  - `rajbos Initial commit` 23 hours ago 1
  - `README.md Initial commit` 23 hours ago

# Keep your forked action up to date

Fork a repo and automate it!

<https://github.com/rajbos/github-fork-updater>

Contains:

- Scheduled workflow
- Creates an issue
- Review the changes
- Label the issue
- Pull in changes

# Creates issues

The screenshot shows a GitHub repository page for `rajbos / github-fork-updater`. The main heading reads: "Parent repository for [rajbos/SonarQube-AzureAppService] has updates available #25". Below this, a comment from `github-actions bot` states: "The parent repository for `rajbos/SonarQube-AzureAppService` has updates available." A callout box highlights a message: "Important! Click on this [compare link](#) to check the incoming changes before updating the fork." To the right, there are sections for Assignees, Labels, Projects, and Milestone, each with a gear icon.

rajbos / `github-fork-updater`

Unwatch 1 Star 0 Fork 0

Code Issues 7 Pull requests Actions Projects Wiki ...

Parent repository for [rajbos/SonarQube-AzureAppService] has updates available #25

Open `github-actions` (bot) opened this issue 22 hours ago · 0 comments

`github-actions` (bot) commented 22 hours ago

The parent repository for `rajbos/SonarQube-AzureAppService` has updates available.

**Important!**

Click on this [compare link](#) to check the incoming changes before updating the fork.

To update the fork

Add the label `update-fork` to this issue to update the fork

Assignees: No one—assign yourself

Labels: None yet

Projects: None yet

Milestone: No milestone

# Review before merging

The screenshot shows a GitHub repository page for `rajbos/SonarQube-AzureAppService`. The repository was forked from `vanderby/SonarQube-AzureAppService`. The main navigation bar includes links for Code, Pull requests, Actions, Projects, Security, Insights, and more.

A message at the top states: "This is a direct comparison between two commits made in this repository or its related repositories. View the default comparison for this range [here](#)".

### Comparing changes

The comparison settings are highlighted with an orange box:

- base repository: `rajbos/SonarQube-AzureAppS...`
- base: `master`
- head repository: `vanderby/SonarQube-AzureAp...`
- compare: `master`

Below the comparison controls, it says "Showing 5 changed files with 283 additions and 44 deletions." and provides "Unified" and "Split" view options.

A code diff view is shown for the file `.gitignore`:

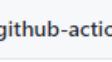
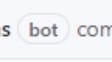
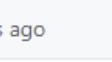
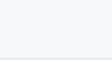
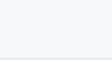
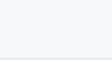
```
diff --git a/.gitignore b/.gitignore
index 16e0f..a2a2d 100644
--- a/.gitignore
+++ b/.gitignore
@@ -1,6 +1,9 @@
 ...
 1 1 ## Ignore Visual Studio temporary files, build results, and
 2 2 ## files generated by popular Visual Studio add-ons.
 3 3
 4 4 + # Don't include extracted sonarqube folder
 5 5 + sonarqube-*/
```

# Automation

- Add a label
- Fork gets updated
- Issue gets closed

Parent repository for [rajbos/ParallelTestRunner] has updates available #23

 Closed ·  github-actions · bot · opened this issue 2 days ago · 2 comments

 ·  ·  ·  ·  ·  ·  ·  ·  ·  ·  ·  · 

github-actions · bot · commented 2 days ago

The parent repository for [rajbos/ParallelTestRunner](#) has updates available.

**Important!**

Click on this [compare link](#) to check the incoming changes before updating the fork.

**To update the fork**

Add the label `update-fork` to this issue to update the fork

 rajbos added the `update-fork` label now

 rajbos commented now

Updating the fork with the incoming changes from the parent repository

 rajbos commented now

Fork has been updated

 rajbos closed this now

# Pros of forking

- Backup of the action
  - Full control over updates
  - Pull in updates with validation centrally
  - Only allow actions from your actions organization
- 
- Skip commit SHA lookup and updating in every workflow
  - Skip adding Dependabot in every repository

# GitHub Actions Security

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Repository security

Runners and security

Actions and security

Forking actions

Keeping up to date

# Best practices summarized

- Treat workflow secrets very carefully: best to think of them as public
- Review actions' source code
- Pin actions to commit SHA
- Don't trust incoming Pull Requests on public repos
- Fork the action repo and limit actions to local actions only
- Have an organization setup to test with
- Keep your forked actions up to date



Thank you!

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