

GitHub Actions beyond CI/CD

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DevOps Consultant / GitHub Trainer

Xpirit

Level: Intermediate

Session Survey

- Your feedback is very important to us
- Please take a moment to complete the session survey found in the mobile app
- Use the QR code or search for “Converge360 Events” in your app store
- Find this session on the Agenda tab
- Click “Session Evaluation”
- Thank you!





GitHub Actions

Generic workflow engine

- Actions intro
- CI/CD: pipelines
- Events
- Examples
 - Make your own adventure!

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

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
14     - name: Setup .NET Core
15       uses: actions/setup-dotnet@v1
16       with:
17         dotnet-version: 3.0.100
18
19     # dotnet build
20     - name: Build with dotnet
21       run: |
22         dotnet build --configuration Release ./dotnet-core-webapp/dotnetcore-webapp.csproj
```

Most used triggers

on:

push:

pull_request:

workflow_dispatch

Available triggers

- branch_protection_rule
- check_run
- check_suite
- create
- delete
- deployment
- deployment_status
- discussion
- discussion_comment
- fork
- gollum
- issue_comment
- issues
- label
- merge_group
- milestone
- page_build
- project
- project_card
- project_column
- public
- pull_request
- pull_request_comment (use issue_comment)
- pull_request_review
- pull_request_review_comment
- pull_request_target
- push
- registry_package
- release
- repository_dispatch
- schedule
- status
- watch
- workflow_call
- workflow_dispatch
- workflow_run

<https://docs.github.com/en/actions/using-workflows/events-that-trigger-workflows>



Demo time!

Issue automation

- Notification setup for your team (on new issue...)
- Issue that closes itself when 🐞 is not included in the name
- Workflow that automatically labels an issue on creation

Profile updates

- Update profile readme: blogposts / streams

Administration stuff

- User automation: create repos and send invites
- JIT Admin rights
- Monitor self hosted runner counts

Action management

- Scanning for used/available actions in your org
- Security scanning on boarding actions
- Fork updater

Action marketplace

- Monitoring the actions marketplace
- Analyzing the actions marketplace

Project automation

Team processes

- Publish releases as Sprint completion notes (with webhook trigger from JIRA)
- Engineer onboarding process instead of a wiki
- Async standup



Getting started

New user creates an issue: [Link](#)

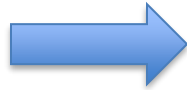
New user
creates an
issue: [Link](#)

workflow:

```
1 name: Welcome new user
2 on:
3   pull_request:
4     types: [opened, closed]
5   issues:
6     types: [opened]
7 jobs:
8   run:
9     runs-on: ubuntu-latest
10    permissions:
11      issues: write
12      pull-requests: write
13    steps:
14      - uses: wow-actions/welcome@v1
15        with:
16          FIRST_ISSUE: |
17            🍌 @{{ author }}
18            Thanks for opening your first issue here! Be sure to follow the issue template!
19            ![Happy cat gif](https://media4.giphy.com/media/PPgZCwZPKrLcw75EG1/giphy.gif)
20
21          FIRST_PR: |
22            🍌 @{{ author }}
23            Thanks for opening this pull request! Please check out our contributing guidelines.
24
25          FIRST_PR_MERGED: |
26            🎉 @{{ author }}
27            Congrats on merging your first pull request! We here at behaviorbot are proud of you!
28            ![Happy cat gif](https://media0.giphy.com/media/Rznz8HjrKQA0Q/giphy.gif?cid=ecf05e47btwvh04zgeky
29
30          FIRST_PR_REACTIONS: '+1, hooray, rocket, heart'
31
32          STAR_MESSAGE: If you like this project, please 🌟 star 🌟 our repo.
33
34          FIRST_ISSUE_REACTIONS: '+1, hooray, rocket, heart'
```

New user
creates an
issue: [Link](#)

Result:



My first issue #25



rajbos-demo opened this issue 1 minute ago · 1 comment



rajbos-demo commented 1 minute ago

Whoot!



github-actions bot commented 1 minute ago

@rajbos-demo

Thanks for opening your first issue here! Be sure to follow the issue template!



If you like this project, please star our repo.



1



1



1



1

New user
creates their 1st
PR: [Link](#)

Result:



github-actions bot commented 38 minutes ago

Welcome, new contributor!

Please make sure you've read our [contributing guide](#) and we look forward





Let's go on an adventure!

Issue automation

Choices

1. Notification setup
2. Issue that closes itself
3. Automatically labels issues

QR code



www.menti.com → 4644 6263

Issue automation poll results

Notification setup

Issue that closes itself

Automatically label issues

Next topic

Notification setup

No notifications by default on:

- New issues
- New Pull Requests

Create a workflow for that!

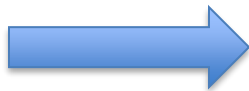
- [Link](#)

Back to poll

Notification setup

No notifications by default on:

- New issues
- New Pull Requests



Teams channel:
On: open / assigned / closed

- [Link](#)



Issue that closes itself

- Issue handling: [link](#)

Back to poll

Automatically label issues

- Issue handling: [link](#)

> bug / 🐞

Back to poll

Profile updates

- Update profile readme
- OSSF scores

Profile updates

- Link to [repo](#)
- Link to [workflow](#)

Profile updates

rajbos / README.md in main

Edit

Preview

```
13  ## ❤️ Sponsor me
14  You can [sponsor me](https://github.com/sponsors/rajbos/) u
15
16  <hr/>
17
18  ## 📄 Latest blog posts
19  <!-- BLOG-POST-LIST:START -->
20  - [How Copilot/AI helps me in my daily work](https://devops
21  - [Enabling CodeQL on GitHub Enterprise Server](https://dev
22  - [Making the case for GitHub's Secret scanning](https:
23  - [Improving your GitHub repositories security setup by adding branch protection](https://devopsjournal.io/blog/2024-01-15-improving-your-github-repositories-security-setup-by-adding-branch-protection/)
24  - [Examples for calling the GitHub GraphQL API & parsing with Python](https://devopsjournal.io/blog/2024-01-15-examples-for-calling-the-github-graphql-api-with-python/)
25  <!-- BLOG-POST-LIST:END -->
```

```
1  name: updater
2  on:
3    schedule:
4      - cron: '5 23 * * 6'
5    workflow_dispatch:
6
7  jobs:
8    update-readme-with-blog:
9      name: Update this repo's README with latest blog posts
10     runs-on: ubuntu-latest
11     steps:
12       - name: Checkout
13         uses: actions/checkout@v2
14
15       - name: Pull in last 5 blog posts
16         uses: rajbos-actions/blog-post-workflow@master
17         with:
18           feed_list: "https://devopsjournal.io/blog/atom.xml"
19           max_post_count: 5
```


OSSF Scorecard

README.md

DevOps-Actions is an organization by [@rajbos](#) to hold all the actions he has been creating. These are used for things like:

#	Description	Link
1	Internal Marketplace for GitHub Actions	repo
2	Request repo for validating and adding actions to the internal marketplace	repo

Reach out to Rob on [Mastodon](#) or read more info on his blog <https://devopsjournal.io>.

OSSF Scorecard overview for the repos:

Repo	Score
issue-comment-tag	openssf scorecard 6.9
json-to-file	openssf scorecard 8.7
load-available-actions	openssf scorecard 7.1
load-runner-info	openssf scorecard 7.9
load-used-actions	openssf scorecard 7.9
action-get-tag	openssf scorecard 7.8

Administration

Choices

1. User invite automation
2. JIT Admin Rights (PIM)
3. Monitor self hosted runners

QR code



www.menti.com → 4644 6263

Administration automation poll results

User invite automation

JIT Admin rights

Monitor self hosted runners


Next topic

User invite automation

- [Link](#)

Back to poll

User invite automation

Automation / users.yml 



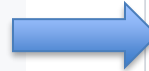
vriesmarcel Update users.yml

Code

Blame

15 lines (14 loc) · 269 Bytes

```
1 teams:
2   - name: vslive-orlando2022
3   users:
4     - renevanosnabrugge
5     - vriesmarcel
6     - renevo-demo
```



add-user summary

Found team [xpirit] with [15] users to verify for org [XpiritBV]
User [thdotnet] is not yet a member
User [FeatureFlagRob] is not yet a member

Job summary generated at run-time

Back to poll

JIT Admin rights (PIM)

```
- name: Grant admin access #2
  id: grant_admin
  uses: 040code/admin-support-issueops-actions/admin-support-cli@v1.0.0
  with:
    action: "promote_demote"
    username: ${ github.event.issue.user.login }
    target_org: ${ steps.parse_issue_output.outputs.target_org }
    role: "admin"
    admin_token: ${ steps.token.outputs.token }
```

<https://github.com/readme/guides/github-issueops-philips>

Back to poll

Monitor self hosted runners

- Start the runner: C:\temp\gh-runner
- Link for executing a job at the runner: [link](#)
- Workflow for check: [link](#)

Back to poll

Monitor self hosted runners

```
RobBos@Rob-XPS9700 > C:\temp\gh-runner
~#> .\run.cmd
1 file(s) copied.

√ Connected to GitHub

Current runner version: '2.304.0'
2023-05-16 14:11:33Z: Listening for Jobs
2023-05-16 14:12:13Z: Running job: self-hosted-number1
2023-05-16 14:18:29Z: Job self-hosted-number1 completed with result: Failed
2023-05-16 14:19:56Z: Runner connect error: The HTTP request timed out after 00:01:00.. Retrying until reconnected.
2023-05-16 14:25:38Z: Runner reconnected.
```

Back to poll



Monitor self hosted runners

[link](#)



self-hosted-number summary

● Found an unexpected amount of runners with label "self-hosted": 0

Job summary generated at run-time

self-hosted-number summary

● Found the expected amount of runners with label "self-hosted"

Job summary generated at run-time

Back to poll

Actions management

Best practice:

1. Review the action
2. Fork the action

<https://xpir.it/universe-2021>

Actions management

Best practice: **Review** the action

Examples:

- Synopsis: [detect-action](#) (src/detect/detect-manager.ts)
- Setup-Terraform: [link](#)

<https://xpir.it/universe-2021>

Actions management

1. Scanning for actions
2. On-boarding actions
3. Fork updater

Stand up for your choice!



Action management poll results

Scanning for actions

On-boarding actions

Fork updater

Next topic

Scanning for actions

- Marketplace: [link](#)
- Scanning for available actions: [link](#)

Back to poll

On-boarding actions

- [link](#)

Back to poll

On-boarding actions

Triggered via issue 4 minutes ago

Status

Total duration

Artifacts

 rajbos labeled #44 -> d09a2aa

In progress

-

-

issue-labeled-as-security-scan.yml

on: issues

✓ find-action-name

4s

✓ Fork action to test organizati...

6s

⚠ codeql

3m 21s

○ display-results

✓ Load action code langua...

1m 17s

✓ check-action-security-setup

6s

✓ enable-dependabot

3s



Back to poll

Fork updater

- [link](#)

Back to poll

Fork updater

Parent repository for [rajbos-actions/github-action-markdown-link-check] has updates available #88

Edit New issue

Open rajbos opened this issue 3 weeks ago · 0 comments



rajbos commented 3 weeks ago

Member ...

The parent repository for [rajbos-actions/github-action-markdown-link-check](#) 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 automatically.



rajbos added the `update-fork` label now

Assignees

No one—assign yourself

Labels

`update-fork`

Projects

None yet

Milestone

No milestone

Development

[Create a branch](#) for this issue or link a pull request.

Back to poll

GitHub Actions Marketplace

- Monitoring the marketplace for updates
- Analyzing the marketplace

Team processes

Choices

1. Sprint release notes
2. Engineer onboarding
3. Async stand-up

Wave hands



Team processes poll results

Sprint release notes

Engineer onboarding

Async stand-up

Next topic

Sprint release notes

Demo [link](#)

Back to poll



Sprint release notes

Release Sprint-23_8 Latest



What's Changed


Improvements

- Adding new feature 1 by @github-actions in #85
- Adding new feature 2 by @github-actions in #86
- Adding new feature 3 by @github-actions in #87
- Adding new feature 4 by @github-actions in #88
- Adding new feature 5 by @github-actions in #89

Full Changelog: [v1.0.41...Sprint-23_8](#)

▼ Assets 2

 Source code (zip)	5 minutes ago
 Source code (tar.gz)	5 minutes ago



Demo [link](#)

Back to poll

Engineer onboarding

- [link](#)

Back to poll

Engineer onboarding

Get Access to Splunk #133

 Open  github-actions  bot opened this issue 3 minutes ago · 0 comments






 github-actions  bot commented 3 minutes ago

/ insert gif here

Request for Splunk access from SNOW



  github-actions  bot added the  splunk label 3 minutes ago

  github-actions  bot assigned  rajbos 3 minutes ago

```
const issues = await github.paginate(opts)

directories.forEach(function (directory) {
  console.log(directory);

  const files = fs.readdirSync(`issues/${directory}`, 'UTF8')

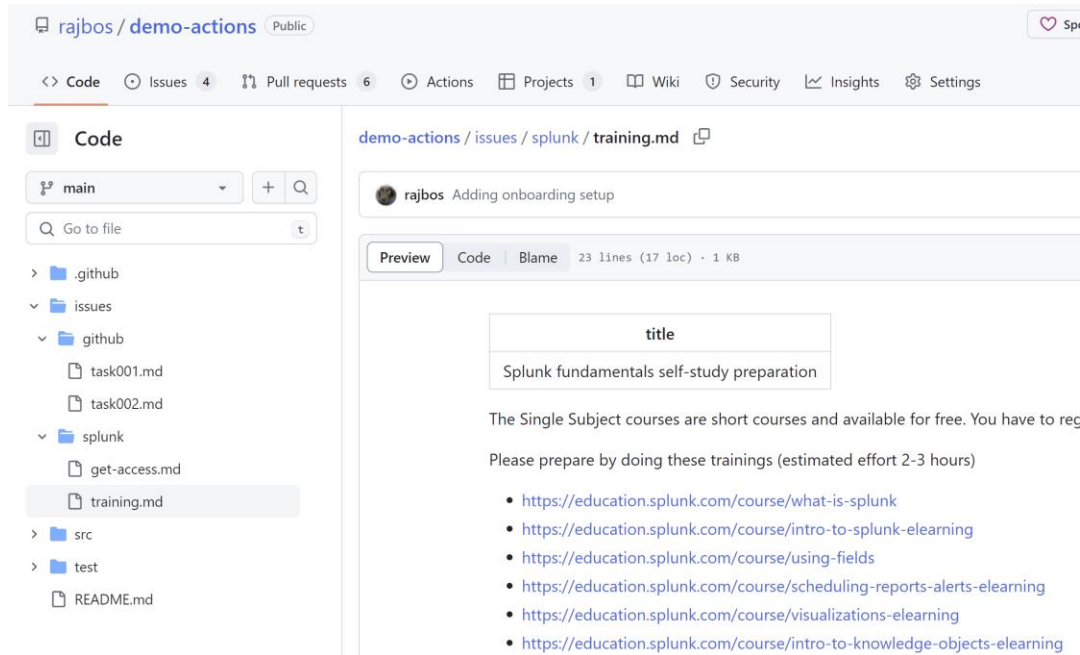
  files.forEach(function (file) {

    const fileContents = fs.readFileSync(`issues/${directory}/${file}`, 'UTF8')
    let arr = fileContents.split('\n');
    const title = arr[1].substring(8, arr[1].length-1)
    console.log('title: ' + title)

    // Check if there is an issue with same title
    for (const issue of issues) {
      if (issue.title === title) {
        console.log(`Issue with title ${title} already exist for user ${context.actor}`)
        return 0
      }
    }
  })
}
```

Back to poll

Engineer onboarding



The screenshot shows a GitHub repository for 'rajbos / demo-actions'. The file 'training.md' is open, showing a commit by 'rajbos' titled 'Adding onboarding setup'. The file content includes a table with a header 'title' and a row 'Splunk fundamentals self-study preparation'. Below the table, there is a paragraph about Single Subject courses and a list of links for training.

rajbos / demo-actions (Public)

<> Code Issues 4 Pull requests 6 Actions Projects 1 Wiki Security Insights Settings

demo-actions / issues / splunk / training.md

rajbos Adding onboarding setup

Preview Code Blame 23 lines (17 loc) · 1 KB

title
Splunk fundamentals self-study preparation

The Single Subject courses are short courses and available for free. You have to register for these courses.

Please prepare by doing these trainings (estimated effort 2-3 hours)

- <https://education.splunk.com/course/what-is-splunk>
- <https://education.splunk.com/course/intro-to-splunk-elearning>
- <https://education.splunk.com/course/using-fields>
- <https://education.splunk.com/course/scheduling-reports-alerts-elearning>
- <https://education.splunk.com/course/visualizations-elearning>
- <https://education.splunk.com/course/intro-to-knowledge-objects-elearning>

Back to poll


Async stand-up

- Demo [link](#)




Back to poll


Async stand-up

Demo [link](#)

 rajbos commented 13 minutes ago Owner ...

Please fill out the following table for 2023-05-13:

Who	Name	Priorities 🤖	Progress 🏃	Problems 🙄
	Rob Bos			
	Marcel de Vries			
	Michael Kaufman			



Back to poll

Closing off

Some people go even further: [link](#)

Session Survey

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- Find this session on the Agenda tab
- Click “Session Evaluation”
- Thank you!



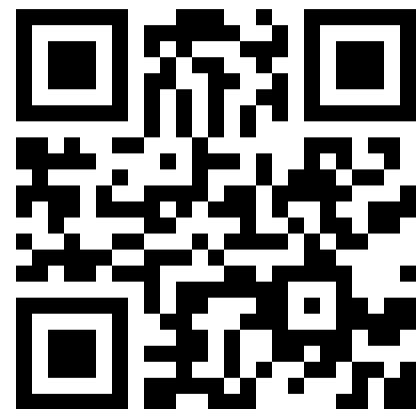
GitHub Actions beyond CI/CD

Rob Bos

DevOps Consultant / GitHub Trainer

Xpirit

<https://devopsjournal.io>



Your Code Powers the World.
Our Training Powers You.