

GitHub Actions

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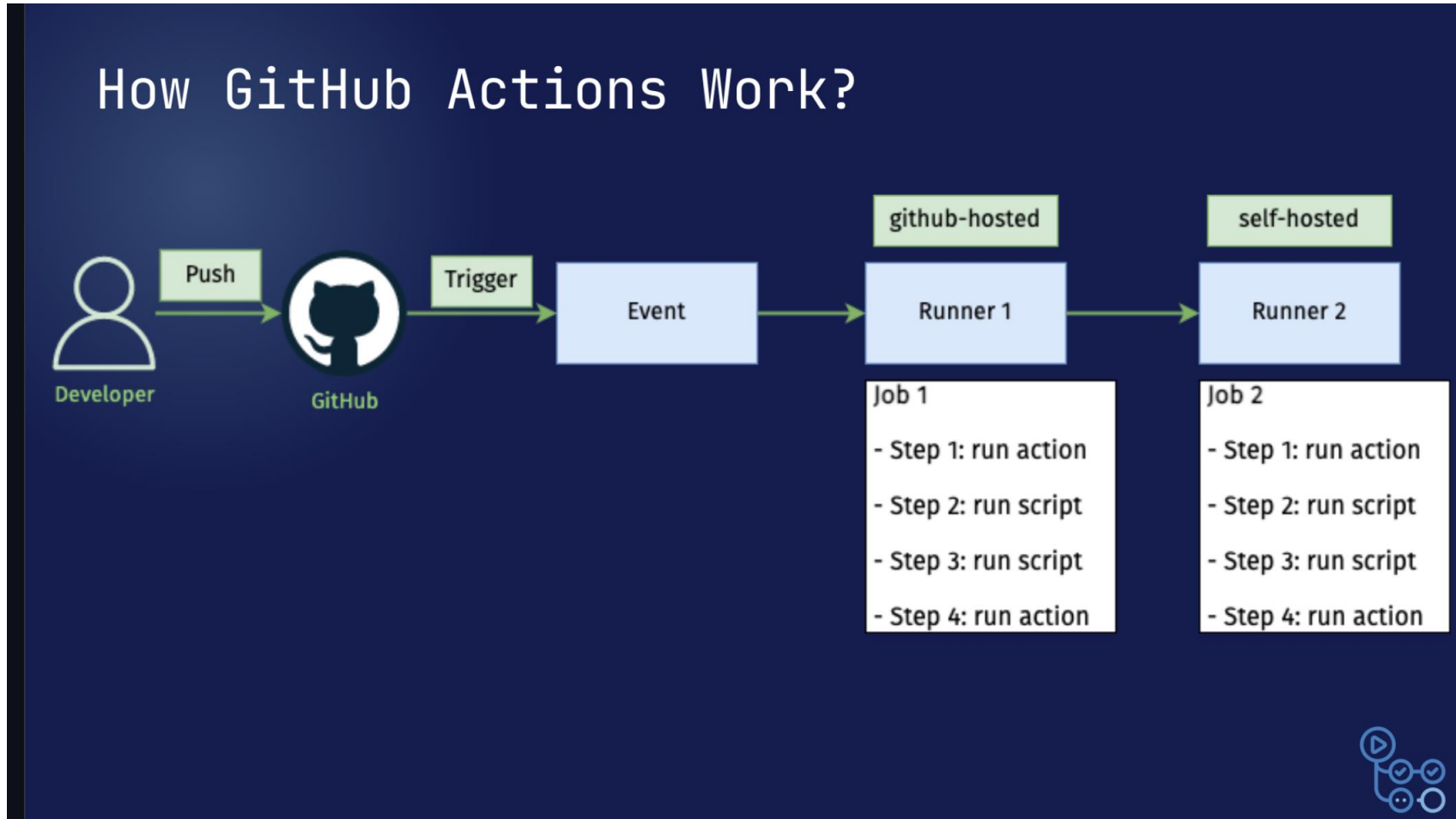
GitHub Actions

- Automated workflows runner
- Unlimited for public repos
- 2000 mins/months free for private repos
- Marketplace: <https://github.com/marketplace>

Workflows

- YML / YAML Files
- Events
 - Activity/Event that triggers a workflow
- Jobs
 - Job that execute on runner
- Actions
 - Action is a custom application

Workflows



Workflows

Location: {repo_root}/.github/workflows/xxxx.yaml

YAML




```
name: learn-github-actions
run-name: ${ github.actor } is learning GitHub Actions
on: [push]
jobs:
  check-bats-version:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v4
      - uses: actions/setup-node@v4
        with:
          node-version: '20'
      - run: npm install -g bats
      - run: bats -v
```

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```




Optional - The name of the workflow as it will appear in the "Actions" tab of the GitHub repository. If this field is omitted, the name of the workflow file will be used instead.

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```



Optional - The name for workflow runs generated from the workflow, which will appear in the list of workflow runs on your repository's "Actions" tab. This example uses an expression with the github context to display the username of the actor that triggered the workflow run. For more information, see "[Workflow syntax for GitHub Actions](#)."

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```


Specifies the trigger for this workflow. This example uses the push event, so a workflow run is triggered every time someone pushes a change to the repository or merges a pull request. This is triggered by a push to every branch; for examples of syntax that runs only on pushes to specific branches, paths, or tags, see "[Workflow syntax for GitHub Actions](#)."

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Jobs: Groups together all the jobs that run in the learn-github-actions workflow.


check-bats-version: Defines a job named check-bats-version. The child keys will define properties of the job.

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```



runs-on: Configures the job to run on the latest version of an Ubuntu Linux runner. This means that the job will execute on a fresh virtual machine hosted by GitHub. For syntax examples using other runners, see "[Workflow syntax for GitHub Actions](#)"

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Groups together all the steps that run in the check-bats-version job. Each item nested under this section is a separate action or shell script.

Workflows

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```


The `uses` keyword specifies that this step will run v4 of the `actions/checkout` action. This is an action that checks out your repository onto the runner, allowing you to run scripts or other actions against your code (such as build and test tools). You should use the `checkout` action any time your workflow will use the repository's code.

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This step uses the actions/setup-node@v4 action to install the specified version of the Node.js. (This example uses version 14.) This puts both the node and npm commands in your PATH.

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The run keyword tells the job to execute a command on the runner. In this case, you are using npm to install the bats software testing package.

Workflows

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Finally, you'll run the bats command with a parameter that outputs the software version.

Run workflow on local with **Act**

- <https://github.com/nektos/act>
- Download: <https://github.com/nektos/act/releases> or <https://nektosact.com/installation/index.html>



A screenshot of the GitHub Actions assets page for the repository nektos/act. The page shows a list of 14 assets, including pre-built binaries for various operating systems and architectures, as well as source code. The assets are listed in a table with columns for the asset name, size, and upload date. The assets are categorized by operating system (Darwin, Linux, Windows) and architecture (arm64, x86_64, armv6, armv7, i386). The source code is also available as a zip file and a tar.gz file.

▼ Assets 14		
act_Darwin_arm64.tar.gz	6.16 MB	last week
act_Darwin_x86_64.tar.gz	6.46 MB	last week
act_Linux_arm64.tar.gz	5.62 MB	last week
act_Linux_armv6.tar.gz	5.92 MB	last week
act_Linux_armv7.tar.gz	5.91 MB	last week
act_Linux_i386.tar.gz	5.94 MB	last week
act_Linux_x86_64.tar.gz	6.22 MB	last week
act_Windows_arm64.zip	5.75 MB	last week
act_Windows_armv7.zip	6.09 MB	last week
act_Windows_i386.zip	6.23 MB	last week
Source code (zip)		last week
Source code (tar.gz)		last week
Show all 14 assets		

GitHub Action by pranpaveen lay.

Act

Docs: <https://nektosact.com/usage/index.html>

Events

- `act` has basic event support, it will try to get as much information from local repository as possible, although this might be not enough for certain event types.
- Running `act` without any event name specified will run with event `push`.
- For a list of event names, please see [events that trigger workflows](#).

- `push`:

```
act push
```

Runs all workflows with `push` event

- `pull_request`:

```
act pull_request
```

- `schedule`:

```
act schedule
```

To list all workflows for a given event, use `-l / --list`:

```
act -l pull_request
```

GitHub Action by prangepaveen lay.

Act

Workflows

By default `act` will run **all** workflows in `.github/workflows`.

You can override that behaviour with `-W / --workflows` flag by specifying directory containing workflow files

```
act -W '.github/workflows/'
```



This example will run **all jobs** in **all workflows** in directory `.github/workflows` but only if the trigger event is `push`

or by specifying exact workflow file to run

```
act -W '.github/workflows/checks.yml'
```



This example will run **all jobs** in `.github/workflows/checks.yml` workflow file but only if it's trigger event is `push`

Act

Jobs

By default `act` will run **all jobs** in **all workflows** that are triggered by `push` event

```
act -j 'test'
```



This example will run **all jobs** named `test` in **all workflows** that trigger on `push` event

Vars

To run `act` with repository variables that are accessible inside the workflow via `${{ vars.VARIABLE }}`, you can enter them interactively or load them from a file. The following options are available for providing github repository variables:

- `act --var VARIABLE=somevalue` - use `somevalue` as the value for `VARIABLE`.
- `act --var-file my.variables` - load variables values from `my.variables` file.
- The variables file format is the same as `env` format.

Act

Action Offline Mode

If you want to speed up running act and using cached actions and container images you can enable this mode.

- stops pulling existing images
- stops failing if an action has been cached and you cannot connect to GitHub
- pulls non existent actions and images
- act will work offline if it has at least ran once while you are online
- get rid of unnecessary timeouts when you have an unstable connection to GitHub or Container registries
- workaround rate limit problems

```
act --action-offline-mode
```



or a `.actrc` file in your cwd like

```
--action-offline-mode
```



Act

Demo:

SECRET_FILE: contains secret ex: .env

RUNNER_NAME: ex. ubuntu-latest



```
act --secret-file {SECRET_FILE} -P {RUNNER_NAME}=--self-hosted -j {JOB_NAME}
```

Reference

- <https://docs.github.com/en/rest/actions>
- <https://github.com/ninefyi/gh-action-series>
- <https://nektosact.com/usage/index.html>