act Run Actions locally

START HERE

`act -l`
List workflows and jobs

`act -W <file>`
Pick a workflow file

`act`
Run the push event

`act -P <label>=<image>`
Choose the runner image

`act pull_request`
Run another event

`act -j <job>`
Run one job

`act -n`
Dry run, validate only

`act -s <NAME>`
Pass a secret

CONCEPTS

act reads .github/workflows, builds a plan for the event and runs each job in a Docker container. Docker must be running; with no event name it runs push.

Event push, pull_request ...
Workflows .github/workflows
Jobs filtered by -j / -W
Containers image per runs-on label
What act does with one command

RUN

`act`
Run the push event

`act <event>`
Run a given event (pull_request, schedule)

`act -l`
List workflows and jobs for the event

`act -j <job>`
Run only one job by ID

`act -W <path>`
Use a workflow file or directory

`act -n`
Dry run: validate without containers

`act -e <event.json>`
Supply an event payload file
A pull_request payload needs head.ref and base.ref; a tag push needs ref set to refs/tags/<tag>.

RUN (cont.)

`act workflow_dispatch --input <NAME>=<value>`
Set a dispatch input

`act --input-file <file>`
Read inputs from a .env-style file

`act --matrix <key>:<value>`
Limit matrix to combinations
Cannot add values the workflow does not define; exclude wins over --matrix.

`act -g`
Draw the workflow graph

`act --validate`
Validate workflows

`act --detect-event`
Use the workflow's first event type

`act -w`
Re-run when local files change

`act -C <dir>`
Set the working directory

`act -a <user>`
Set the triggering actor

SECRETS AND VARIABLES

`act -s <NAME>`
Read secret from env or prompt
Avoids leaving the value in shell history.

`act -s <NAME>=<value>`
Set a secret inline

`act --secret-file <file>`
Load secrets from a .env file

SECRETS AND VARIABLES (cont.)

`act -s GITHUB_TOKEN="$(gh auth token)"`
Use the gh CLI token

`act --var <NAME>=<value>`
Set a vars.* variable

`act --var-file <file>`
Load variables from a file

`act --env <NAME>=<value>`
Set an environment variable

`act --env-file <file>`
Load env from a file

`act --insecure-secrets`
Show secrets in logs

act sets ACT in the environment. Guard steps with if: ${{ !env.ACT }}, or jobs with an event file containing {"act": true}.

IMAGES AND CONTAINERS

`act -P <label>=<image>`
Map a runs-on label to an image

`act -P <label>=-self-hosted`
Run a label directly on the host

`act --pull=false`
Use local images, skip pulling

`act --container-architecture <os/arch>`
Force architecture, e.g. linux/amd64
Handy on Apple silicon; needs Docker API 1.41 or newer.

IMAGES AND CONTAINERS (cont.)

`act -r`
Reuse containers to keep state

`act -b`
Bind-mount the directory, do not copy

`act --rm`
Remove containers after a failure

`act --privileged`
Run containers privileged

`act --container-options <opts>`
Extra docker options for job containers

`act --container-cap-add <cap>`
Add a kernel capability

`act --network <name>`
Set the docker network

`act --container-daemon-socket <uri>`
Docker socket URI, or - to disable

`act --use-gitignore=false`
Copy gitignored paths too

`act --rebuild`
Rebuild local action images

OUTPUT AND OFFLINE

`act -v`
Verbose output

`act -q`
Hide step output

OUTPUT AND OFFLINE (cont.)

`act --json`
Log as JSON

`act --log-prefix-job-id`
Show job ID, not full name, in logs

`act --action-offline-mode`
Use cached actions and images
Works after at least one online run.

`act --artifact-server-path <dir>`
Enable artifact upload/download
The artifact server is off unless a path is set.

`act --no-cache-server`
Disable the cache server

`act --concurrent-jobs <n>`
Cap parallel jobs

`act --bug-report`
Print system info for a report

CONFIGURATION

`~/.config/act/actrc`
User-wide default flags (XDG)

`~/.actrc`
Home default flags

`.actrc`
Per-project default flags
One argument per line; comments are not supported. Read in order, then the command line.

CONFIGURATION (cont.)

Default images for ubuntu-latest

Size	Image
`Micro`	node:16-buster-slim
`Medium`	catthehacker/ubuntu:act-latest
`Large`	catthehacker/ubuntu:full-latest

Pick the image size on first run; the medium image is a compromise that lacks many tools the hosted runner has.

RECIPES

Pull request check with a token

```
act pull_request -j test \
  -s GITHUB_TOKEN="$(gh auth
token)" \
  -e pr.json
```

Project defaults in .actrc

```
-P ubuntu-latest=catthehacker/
ubuntu:act-latest
--container-architecture=linux/
amd64
--action-offline-mode
```

One matrix cell with artifacts

```
act push --matrix node:20 \
  --artifact-server-path
$PWD/.artifacts
```

Skim jobs then run one

```
act -l
act -n -j build
act -j build --secret-
file .secrets
```