



AWS  
re:Invent

**D O P 3 2 2 - S**

# Continuous delivery to AWS with GitHub Actions

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# Agenda

 Introduction

 Getting started with GitHub Actions

Demo: Real-world deployment scenario

Demo: Beyond CI/CD

 Wrap-up



# Introducing GitHub Actions

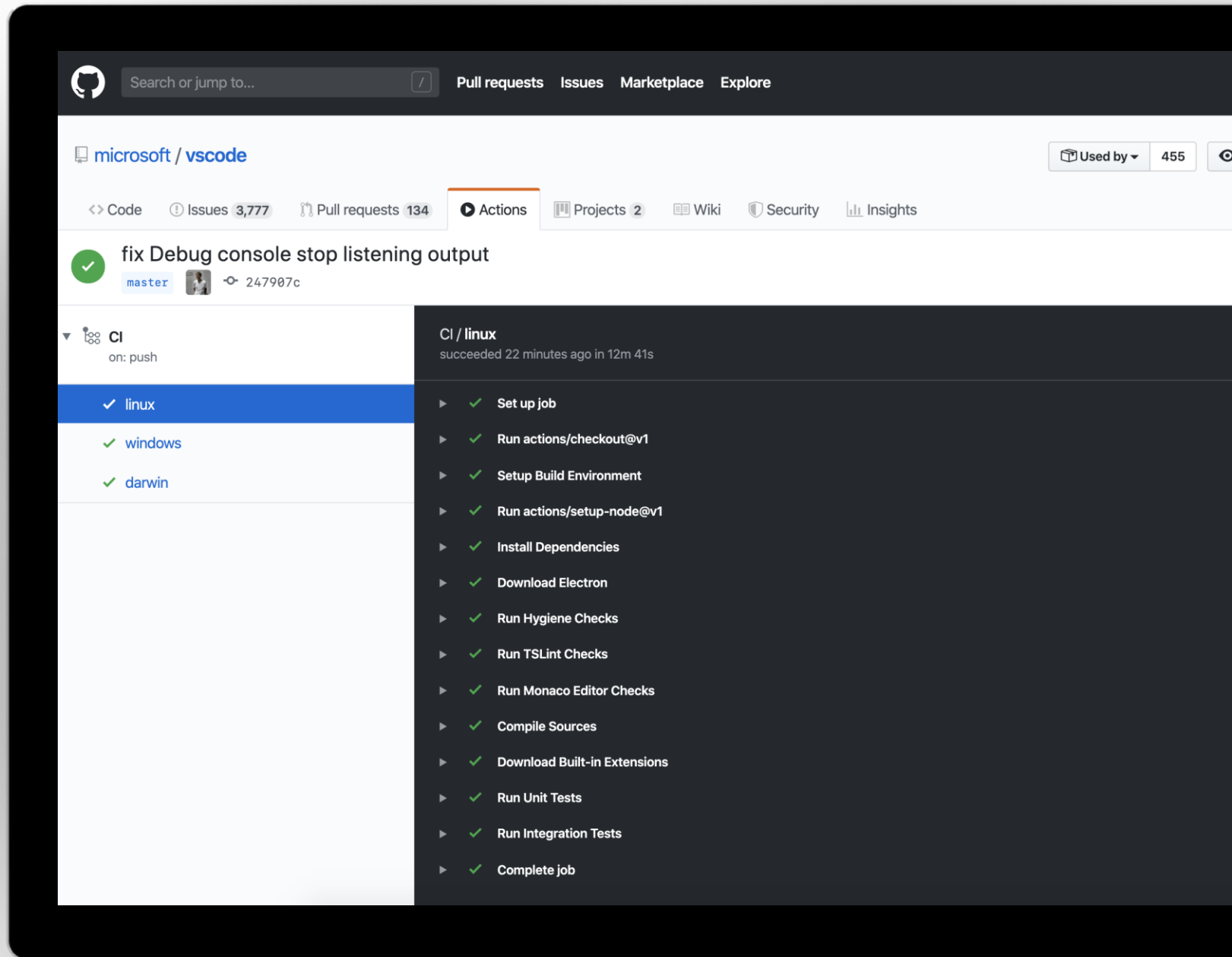


**GitHub Actions makes it easy to automate all your software workflows**

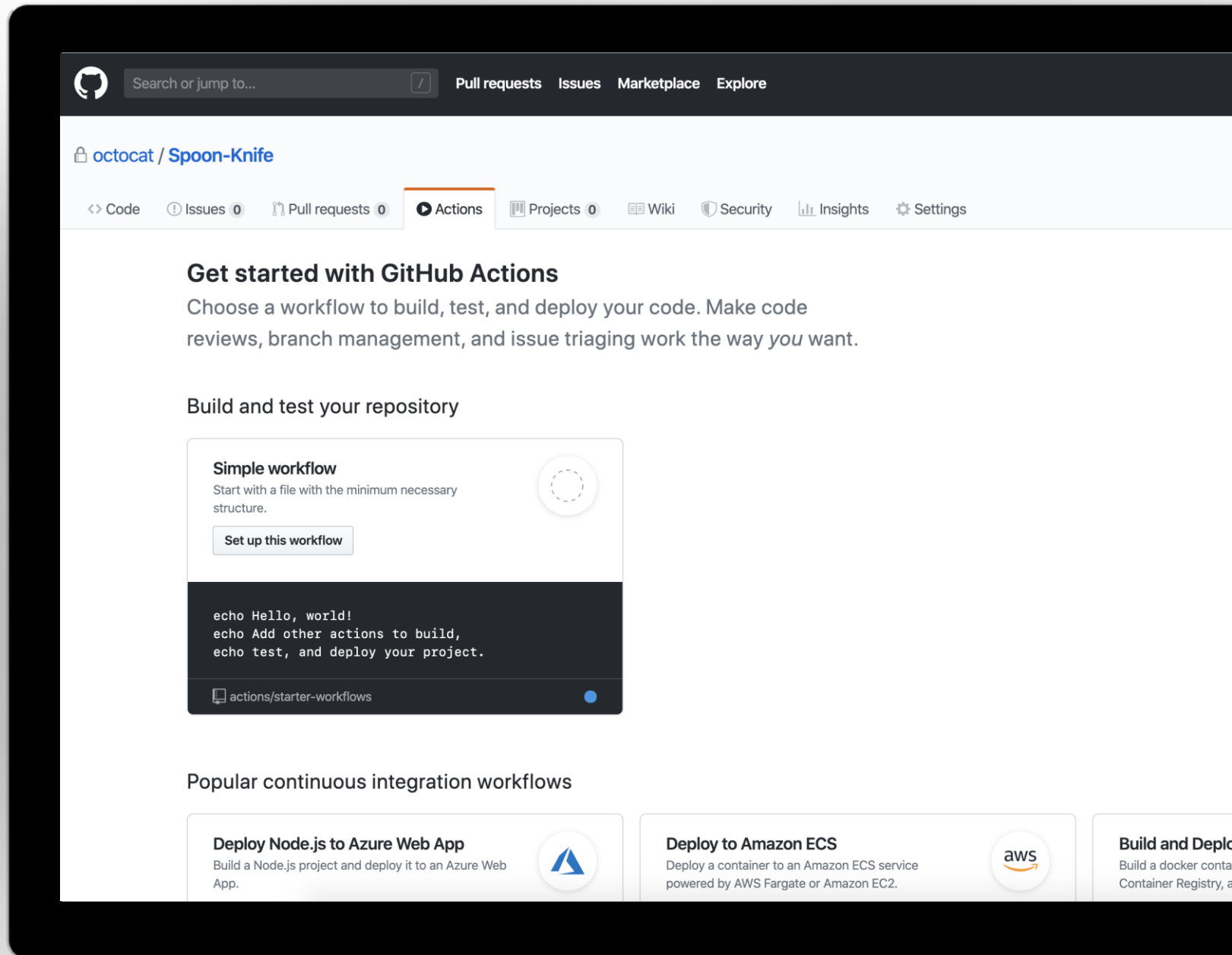
- Built-in CI/CD
- Linux, Mac, Windows, and containers
- Matrix builds
- Easy to write, easy to share
- Streaming, searchable, linkable logs
- Built-in secret store
- Artifact caching
- Self-hosted runners
- Event-driven or schedule-driven
- GitHub Enterprise Server support soon



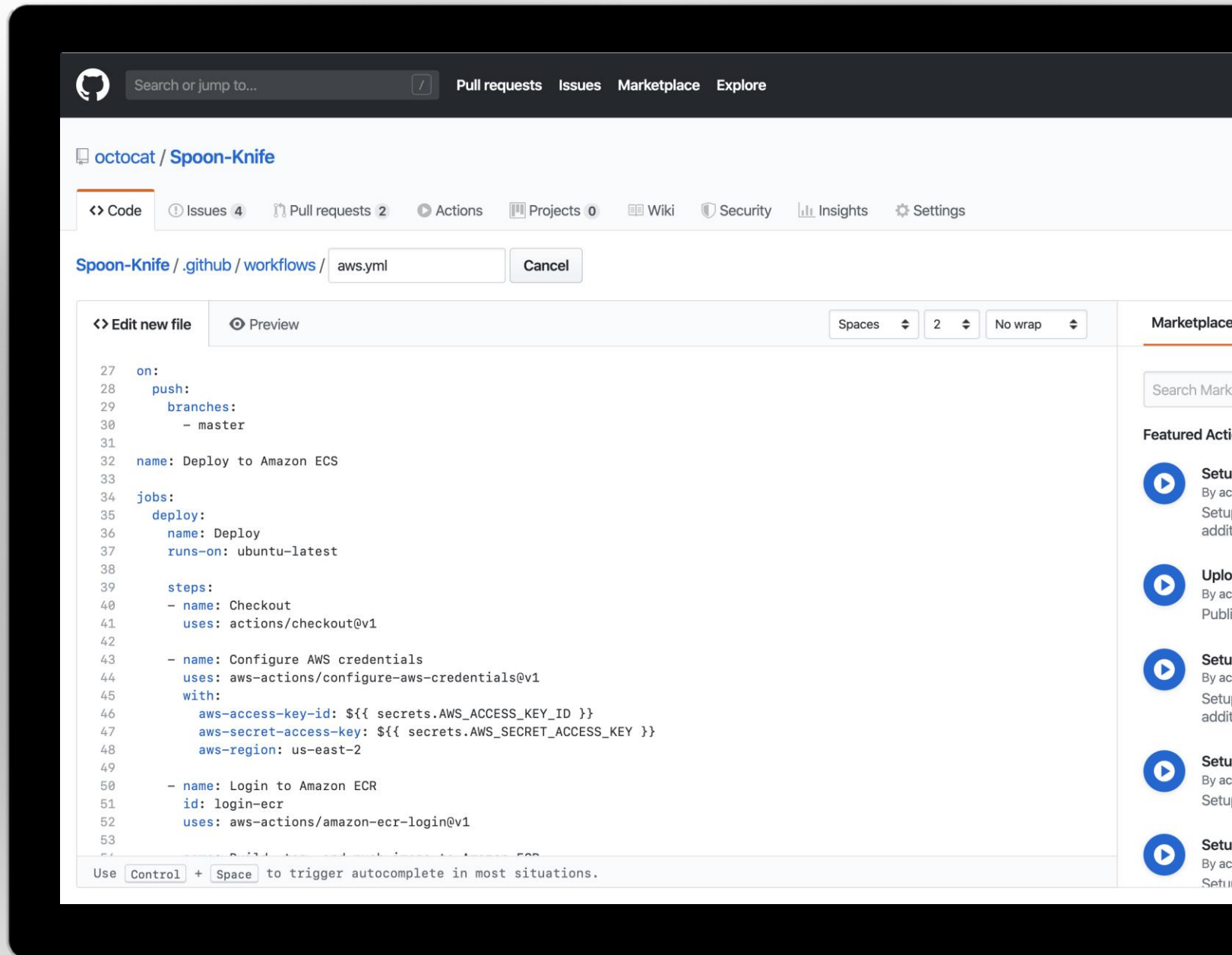
# Getting started



Head to the Actions  
tab on any repository  
you own



Start with a template workflow or build your own from scratch ✨



# Workflow

A configurable automated process that you can set up in your repository

For example

- Organizational: Welcoming new contributors
- Legal: Ensuring license uniformity
- Application: Testing across multiple operating systems

```
1 # .github/workflows/build.yml
2 name: Node CI
3
4 on: [push]
5
6 jobs:
7   build:
8
9     runs-on: ubuntu-latest
10
11     strategy:
12       matrix:
13         node-version: [8.x, 10.x, 12.x]
14
15     steps:
16     - uses: actions/checkout@v1
17     - name: Use Node.js ${{ matrix.node-version }}
18       uses: actions/setup-node@v1
19       with:
20         node-version: ${{ matrix.node-version }}
21     - run: npm install
22     - run: npm run build --if-present
23     - run: npm test
24     env:
25       CI: true
```





# Event

## Workflows are triggered on events

For example

- Push, pull\_request, public, etc.
- Schedule
- Repository\_dispatch (outside systems)

```
1 # .github/workflows/weekly-radar
2 name: Weekly Radar
3
4 on:
5   schedule:
6     - cron: 0 12 * * 1
7
8 jobs:
9
10  weekly_radar:
11    name: Weekly Radar
12    runs-on: ubuntu-latest
13    steps:
14
15      - name: weekly-radar
16        uses: imjohnbo/weekly-radar@master
17        with:
18          assignees: "teammate1 teammate2"
19          pinned: true
20        env:
21          GITHUB_TOKEN: ${ secrets.GITHUB_TOKEN }
```



# Actions

Individual unit of work that you combine as steps to create a job in a workflow

For example

- [actions/checkout](#)
- [actions/cache](#)
- [actions/javascript-action](#)
- Lots more on [GitHub Marketplace](#)

```
1 # action.yml
2 name: 'Wait'
3 description: 'Wait a designated number of milliseconds'
4 inputs:
5   milliseconds: # id of input
6     description: 'number of milliseconds to wait'
7     required: true
8     default: '1000'
9 outputs:
10  time: # output will be available to future steps
11    description: 'The message to output'
12 runs:
13   using: 'node12'
14   main: 'index.js'
```

```
1 // index.js
2 const core = require('@actions/core');
3 const wait = require('./wait');
4
5 async function run() {
6   try {
7     const ms = core.getInput('milliseconds');
8     console.log(`Waiting ${ms} milliseconds ...`)
9
10    core.debug((new Date()).toISOString())
11    wait(parseInt(ms));
12    core.debug((new Date()).toISOString())
13
14    core.setOutput('time', new Date().toISOString());
15  }
16  catch (error) {
17    core.setFailed(error.message);
18  }
19 }
20
21 run()
```

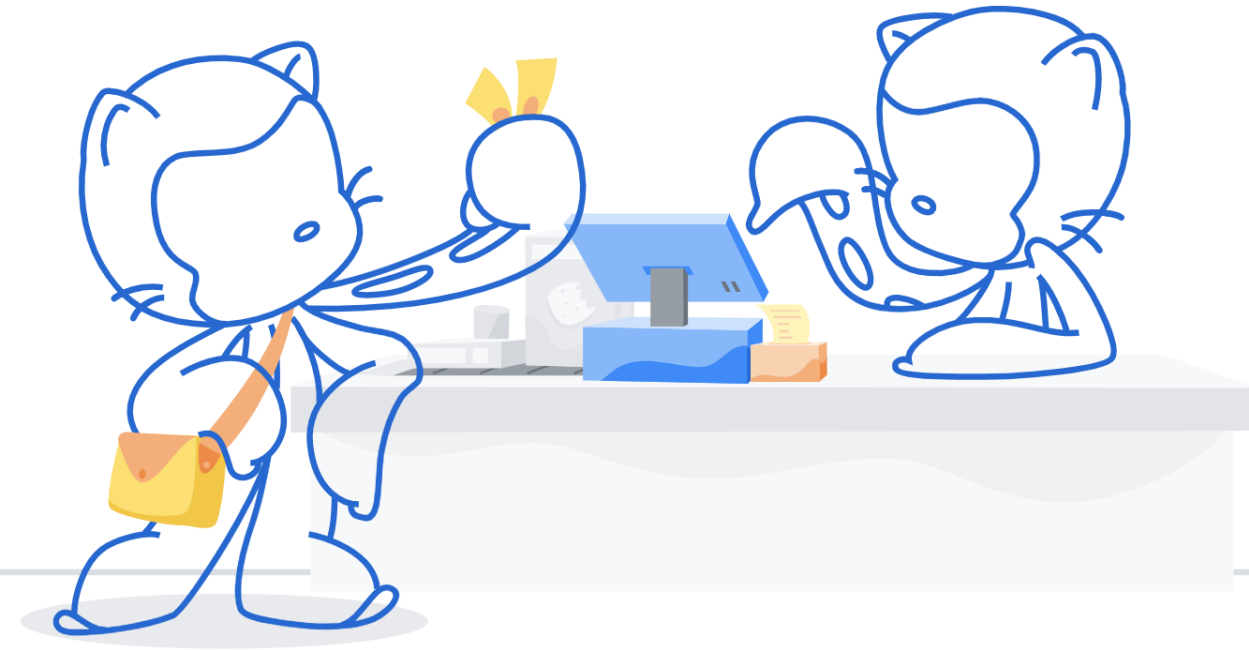


# Community

**GitHub Actions is powered by an open ecosystem and community contributions**

For example

- Workflows: [actions/starter-workflows](#)
- Actions: [github.com/aws-actions](#), [github.com/actions](#)
- Tooling: [actions/toolkit](#)



# Pricing

Simple, pay-as-you-go pricing

## Public repositories

**Free**

♥ We love open source

## Private repositories

### Included minutes

Free	2,000 minutes per month
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Pro	3,000 minutes per month
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Team	10,000 minutes per month
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Enterprise	50,000 minutes per month
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### Additional hosted runner minutes

Linux 2 cores, 7GB	\$0.008 per minute
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Windows 2 cores, 7GB	\$0.016 per minute
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macOS 2 cores, 7GB	\$0.08 per minute
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Self-hosted	Free
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# Demo: Real-world deployment scenario



# Demo: Beyond CI/CD



# Wrap-up

GitHub Actions is a powerful **idea-to-code-to-cloud pathway**, making it easy to deploy your code to AWS

In this session, you learned

- How GitHub Actions can enable CI/CD
- How GitHub Actions can automate your AWS workflows
- How GitHub Actions can replace manual processes
- How community and open source are at the heart of GitHub Actions



# Thank you!

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Please complete the session  
survey in the mobile app.