

MEZIANTOU'S BLOG

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Executing GitHub Actions jobs or steps only when specific files change


📅 02/28/2022 👤 Gérald Barré 🛠 Tools

Sometimes you want to execute a step or a job only when some files are modified. For instance, you may want to lint and deploy the documentation only when a file under `docs` is modified. This scenario is not directly supported by GitHub Actions. However, you can do it manually by using `git`, PowerShell Core, and GitHub Actions expressions.

The main idea is to use `git diff` to get the list of modified files. Then, you can filter the list of files using a regex (easy using PowerShell!). Finally, you can set the output of the step/job by using a workflow command.

Conditional steps

Use the following workflow if you want to run a step conditionally.

```
.github/workflows/conditional-step.yml (YAML)  copy

name: demo
on:
  push:
    branches:
      - 'main'

jobs:
  conditional_step:
    runs-on: 'ubuntu-20.04'
    steps:
      - uses: actions/checkout@v2
        with:
          # Checkout as many commits as needed for the diff
          fetch-depth: 2
      - shell: pwsh
        # Give an id to the step, so we can reference it later
        id: check_file_changed
        run: |
          # Diff HEAD with the previous commit
          $diff = git diff --name-only HEAD^ HEAD

          # Check if a file under docs/ or with the .md extension has changed (added, modified)
          $SourceDiff = $diff | Where-Object { $_ -match '^docs/' -or $_ -match '.md$' }
          $HasDiff = $SourceDiff.Length -gt 0

          # Set the output named "docs_changed"
          Write-Host "::set-output name=docs_changed::$HasDiff"

          # Run the step only with "docs_changed" equals "True"
      - shell: pwsh
        # steps.<step_id>.outputs.<output name>
```

GÉRALD BARRÉ

aka. meziantou



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```
if: steps.check_file_changed.outputs.docs_changed == 'True'
run: echo publish docs
```

Conditional jobs

Use the following workflow if you want to run a job conditionally.

```
.github/workflows/conditional-job.yml (YAML) 
name: sample
on:
  push:
    branches:
      - 'main'

jobs:
  conditional_job_check_files:
    runs-on: 'ubuntu-20.04'
    # Declare outputs for next jobs
    outputs:
      docs_changed: ${ steps.check_file_changed.outputs.docs_changed }
    steps:
      - uses: actions/checkout@v2
        with:
          # Checkout as many commits as needed for the diff
          fetch-depth: 2
      - shell: pwsh
        id: check_file_changed
        run: |
          # Diff HEAD with the previous commit
          $diff = git diff --name-only HEAD^ HEAD

          # Check if a file under docs/ or with the .md extension has changed (added, modified)
          $SourceDiff = $diff | Where-Object { $_ -match '^docs/' -or $_ -match '.md$' }
          $HasDiff = $SourceDiff.Length -gt 0

          # Set the output named "docs_changed"
          Write-Host "::set-output name=docs_changed::$HasDiff"

    # Run the job only with "docs_changed" equals "True"
  conditional_job:
    runs-on: 'ubuntu-20.04'
    needs: [ conditional_job_check_files ]
    if: needs.conditional_job_check_files.outputs.docs_changed == 'True'
    steps:
      - shell: pwsh
        run: echo publish docs
```

Additional resources

- [Workflow commands for GitHub Actions](#) 

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