

CI/CD

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GitHub Actions

Workflows

Workflows

```
.github/workflows/<workflow>.yaml
```

```
name: <name>
```

```
on: [<event>]
```

```
jobs:
```

```
  <job>:
```

```
    runs-on: <runner>
```

```
    steps:
```

- name: <step>
 uses: <action>
- run: <cmd>

On Events

Webhooks

```
on:
  <event>:
    <event-filter>:
      - <filter>
```

Scheduled

```
on:
  schedule:
    - cron: '* * * * *'
```

Runners

- ▶ Ubuntu
- ▶ Windows
- ▶ macOS
- ▶ self-host

Using Actions

Action Locations

Repository:

`<owner>/<repo>@<ref>`

Local Path:

`./<path-to-action>`

Docker Image:

`docker://<image>:<tag>`

Action Arguments

steps:

- `name: <step>`
`uses: <action>`
`with:`
`<arg>:<val>`

Dependencies

```
jobs:  
  <job>:  
    needs: [<dependency>]
```


Variables

Environment Variables

```
${{ env.<VARIABLE> }}
```

env:

```
<VAR>:<val>
```

Secrets

```
${{ secrets.<SECRET> }}
```

Set up on repository settings.

Environments

Set up on repository settings.

- ▶ Secrets
- ▶ Variables
- ▶ Permissions

```
jobs:  
  <job>:  
    environment: <environment>
```

Artifacts

- ▶ `actions/upload-artifact.`
- ▶ `actions/download-artifact.`
- ▶ Manual download.

Service Containers

```
jobs:
  <job>:
    services:
      <service>:
        image: <image>:<tag>
        env:
          <VAR>: <val>
        ports:
          - <hport>:<cport>
        options: >-
          --<option> <arg>
```

Caching

```
steps:
  - name: <name>
    uses: actions/cache
    with:
      key: <cache-key>
      path: <path>
${{ hashFile('<file>') }}
```

Matrix Strategy

```
${{ matrix.<key> }}
```

```
jobs:
```

```
  <job>:
```

```
    continue-on-error: ${{ matrix.<boolkey> }}
```

```
    strategy:
```

```
      max-parallel: <num>
```

```
      fail-fast: <true/false>
```

```
      matrix:
```

```
        <key>: [<vals>]
```

```
          include:
```

```
            - <key>: <include>
```

```
          exclude:
```

```
            - <key>: <exclude>
```

Custom Actions

Custom Actions

Docker

```
name: <name>
description: <description>
runs:
  using: 'docker'
  image: '<dockerfile>'
  args:
    - <args>
```

javascript

```
name: <name>
description: <description>
runs:
  using: '<node-runner>'
  main: '<app>'
```


Environment Variables

- ▶ **GITHUB_TOKEN:** temporary GitHub token.
- ▶ **GITHUB_REPOSITORY:** repo owner and name.
- ▶ **GITHUB_EVENT_PATH:** path to event payload file.

Metadata

Required

- ▶ Action name
- ▶ Description
- ▶ Commands

Optional

- ▶ Author
- ▶ Inputs
- ▶ Outputs
- ▶ Branding

Composite Actions

```
name: <name>
description: <description>
runs:
  using: "composite"
  steps:
    - name: <step>
      uses: <action>
```

RPM

Packaging Workspace

Packaging Workspace

```
rpmdev-setuptree
```

```
~/rpmbuild/
```

```
|-- BUILD
```

```
|-- RPMS
```

```
|-- SOURCES
```

```
|-- SPECS
```

```
`-- SRPMS
```

Spec File

rpmdev-newspec

Preamble

- ▶ Name
- ▶ Version
- ▶ Release
- ▶ Summary
- ▶ License
- ▶ URL
- ▶ Source0
- ▶ Patch0
- ▶ BuildArch
- ▶ BuildRequires
- ▶ Requires

Body

- ▶ %description
- ▶ %prep
- ▶ %build
- ▶ %install
- ▶ %files
- ▶ %changelog

Packages

Packages

Source Packages

```
rpmbuild -bs <specfile>
```

Binary Packages

```
rpmbuild -bb <specfile>  
rpmbuild --rebuild <srpm>
```