



HiDoo

DEVOPS AND MORE

Advanced pipelines in GitLab

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Keywords

- include
- extends
- rules
- trigger

Include

include

- local
- file
- remote
- template



local

`.gitlab-ci.yml:`

`stages:`

- `build`
- `test`
- `deploy`

`include:`

- `local: 'configs/build.yaml'`
 - `local: 'configs/test.yaml'`
 - `local: 'configs/deploy.yaml'`
-

file

.gitlab-ci.yml:

include:

- project: 'devops/ci-setup'
file: 'tpls/microservices.yml'
ref: 'master'

remote

`.gitlab-ci.yml:`

`include:`

- `- remote: 'https://site.pl/my.yml'`

template

`.gitlab-ci.yml:`

`include:`

- `- template: 'Bash.gitlab-ci.yml'`

include

- local
- file
- remote
- template



Extends

extends

```
.gitlab-ci.yml:
```

```
.deploy:  
  script: ./deploy.sh
```

```
deploy dev:  
  extends: .deploy
```

```
deploy prod:  
  extends: .deploy  
  when: manual
```

extends

```
deploy dev:  
  script: ./deploy.sh
```

```
deploy prod:  
  script: ./deploy.sh  
  when: manual
```

extends

```
.gitlab-ci.yml:
```

```
test:
  before_script:
    - echo "before"
  script:
    - echo "test"
```

```
second test:
  extends: test
  after_script:
    - echo "after"
```

extends

```
test:
  before_script:
    - echo "before"
  script:
    - echo "test"
```

```
second test:
  before_script:
    - echo "before"
  script:
    - echo "test"
  after_script:
    - echo "after"
```

extends

`.gitlab-ci.yml:`

`example:`

`variables:`

`MY_VAR: "54"`

`second example:`

`extends: example`

`variables:`

`MY_SECOND_VAR: "49"`

extends

example:

variables:

MY_VAR: "54"

second example:

variables:

MY_VAR: "54"

MY_SECOND_VAR: "49"

extends

`.gitlab-ci.yml:`

`example:`

`script:`

- `echo "example"`
- `echo "another example"`

`second example:`

`extends: example`

`script:`

- `echo "hello!"`

extends

example:

script:

- echo “example”
- echo “another example”

second example:

script:

- echo “hello!”

Rules



rules

only/except?

rules

- when
- allow_failure

rules

.gitlab-ci.yml:

```
build:
  rules:
    - if: '$CI_COMMIT_REF_NAME == "master"'
      when: always
    - when: manual
      allow_failure: true
```

rules

- if
- changes
- exists



changes

.gitlab-ci.yml:

build:

rules:

- changes:
 - Dockerfile
 - app/**/*

exists

`.gitlab-ci.yml:`

`build:`

`rules:`

- `exists:`
 - `Dockerfile`

mixes

.gitlab-ci.yml:

```
build:
  rules:
    - if: '$CI_COMMIT_REF_NAME == "master"'
      changes:
        - Dockerfile
      when: always
    - when: manual
      allow_failure: true
```

Trigger

trigger

- multi-project pipelines
- child pipelines

multi-project pipelines

.gitlab-ci.yml:

trigger job:

trigger:

project: my-group/my-project

branch: master (optional)

strategy: depend (optional)

child pipelines

`.gitlab-ci.yml:`

`trigger job:`

`trigger:`

`include: my-group/my-project`

`strategy: depend (optional)`

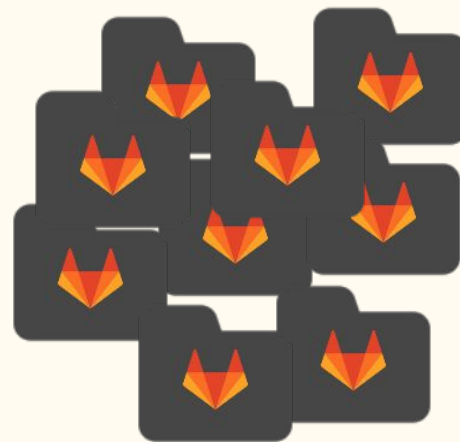
Examples

Include

Repo with template yml file



Microservices



Include

Repo with template yml file (tpl-micro.yml)

```
1  ...
2
3  variables:
4  |   REPO_URL: pseudo-address.ecr.us-west-2.amazonaws.com/$CI_PROJECT_NAME
5
6  build:
7  |   stage: build
8  |   script:
9  |     - docker build -t $REPO_URL:$CI_COMMIT_SHORT_SHA .
10 |     - docker push $REPO_URL:$CI_COMMIT_REF_NAME
11
12 test:
13 |   stage: test
14 |   script:
15 |     - docker run $REPO_URL:$CI_COMMIT_SHORT_SHA command for tests
16
17 deploy:
18 |   stage: deploy
19 |   script:
20 |     - helm upgrade --create-namespace --install --wait 300 ...
21
22 ...
```

Microservices (.gitlab-ci.yml)

```
1  include:
2  |   - project: my-group/include-template
3  |     file: tpl-micro.yml
4  |     ref: master
5
6  variables:
7  |   REPO_URL: another-address.com/$CI_PROJECT_NAME
8
9  ...
10
11
```

Extends

```
1  .deploy:
2  |   script: ./deploy.sh $ENV
3
4  deploy dev:
5  |   extends: .deploy
6  |   variables:
7  |     ENV: dev
8
9  deploy prod:
10 |   extends: .deploy
11 |   variables:
12 |     ENV: prod
13 |   when: manual
14 |   after_script:
15 |     - ./send_info_to_slack.sh
16
```

Rules and Trigger

Trigger pipelines from this repository



Microservices

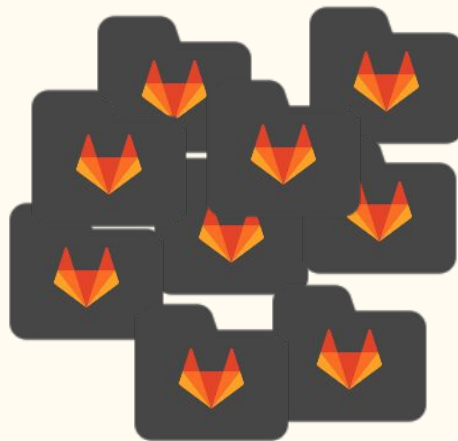


Rules and Trigger

Trigger pipelines from this repository

Microservices

```
1  √ .common:
2    when: manual
3  √  trigger:
4    branch: master
5    strategy: depend
6
7  √ trigger micro 1:
8    extends: .common
9  √  trigger:
10   project: micros/micro_1
11
12 √ trigger micro B:
13   extends: .common
14 √  trigger:
15   project: other-micros/micro_2
16
17 ...
18
19
```



Rules and Trigger

Trigger pipelines from this repository

Microservices

```
1  √ .common:
2    |   when: manual
3  √   trigger:
4    |   |   branch: master
5    |   |   strategy: depend
6
7  √ trigger micro 1:
8    |   extends: .common
9  √   trigger:
10   |   |   project: microservices/micro_1
11
12 √ trigger micro B:
13   |   extends: .common
14 √   trigger:
15   |   |   project: other-microservices/micro_2
16
17 ...
18
```



trigger

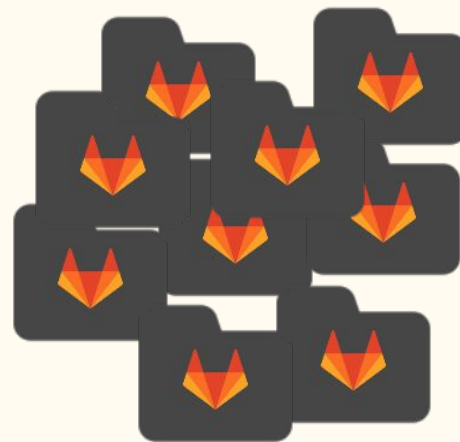
```
1  stages:
2    |   - build
3    |   - deploy
4
5  build:
6    |   stage: build
7    |   rules:
8    |   |   - if: '$CI_PIPELINE_SOURCE == "pipeline"'
9    |   |     |   when: never
10   |   |   - if: '$CI_COMMIT_REF_NAME == "master" || $CI_COMMIT_REF_NAME == "develop"'
11   |   |     |   when: always
12   |   |   - when: manual
13   |   script: ./build.sh
14
15  deploy:
16    |   stage: deploy
17    |   rules:
18    |   |   - if: '$CI_PIPELINE_SOURCE == "pipeline" && $CI_COMMIT_REF_NAME == "master"'
19    |   |     |   when: always
20    |   |   - if: '$CI_COMMIT_REF_NAME == "master"'
21    |   |     |   when: manual
22    |   |   - when: never
23    |   script: ./deploy.sh
24
25
```

Rules and Trigger

Mother repository



Microservices



EOF

- include
- extends
- rules
- trigger

Include

Blog post



YouTube video



Extends

[Blog post](#)



[YouTube video](#)



Rules

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Trigger

[Blog post](#)



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Question

In which release has it been added?

```
include:
  - project: devops/ci-cd/pipelines
    ref: latest
    file:
      - terraform/terraform.yml
      - terraform/deploy/continuous.yml
      - ...
```
