LAAS CNRS

Git: Forges

Issues, Branches, Forks, Requests, CI, and Workflows

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This presentation

Available at

`https://homepages.laas.fr/gsaurel/talks/git-forges.pdf`

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This presentation (continued)

Source

`https://gitlab.laas.fr/gsaurel/talks : git-forges.md`

Discussions

https://im.laas.fr/#/room/#git-forges:laas.fr

Outline

1 Introduction

2 Branches

3 Forks

4 Requests

5 CI

6 Workflows

7 End notes

Introduction

What are software forges

- Software management
  - git repository (web, HTTPS, SSH)
  - authorizations
  - issue tracker

Hirarchy

1. domain
2. username *OR* group (organization)
3. project

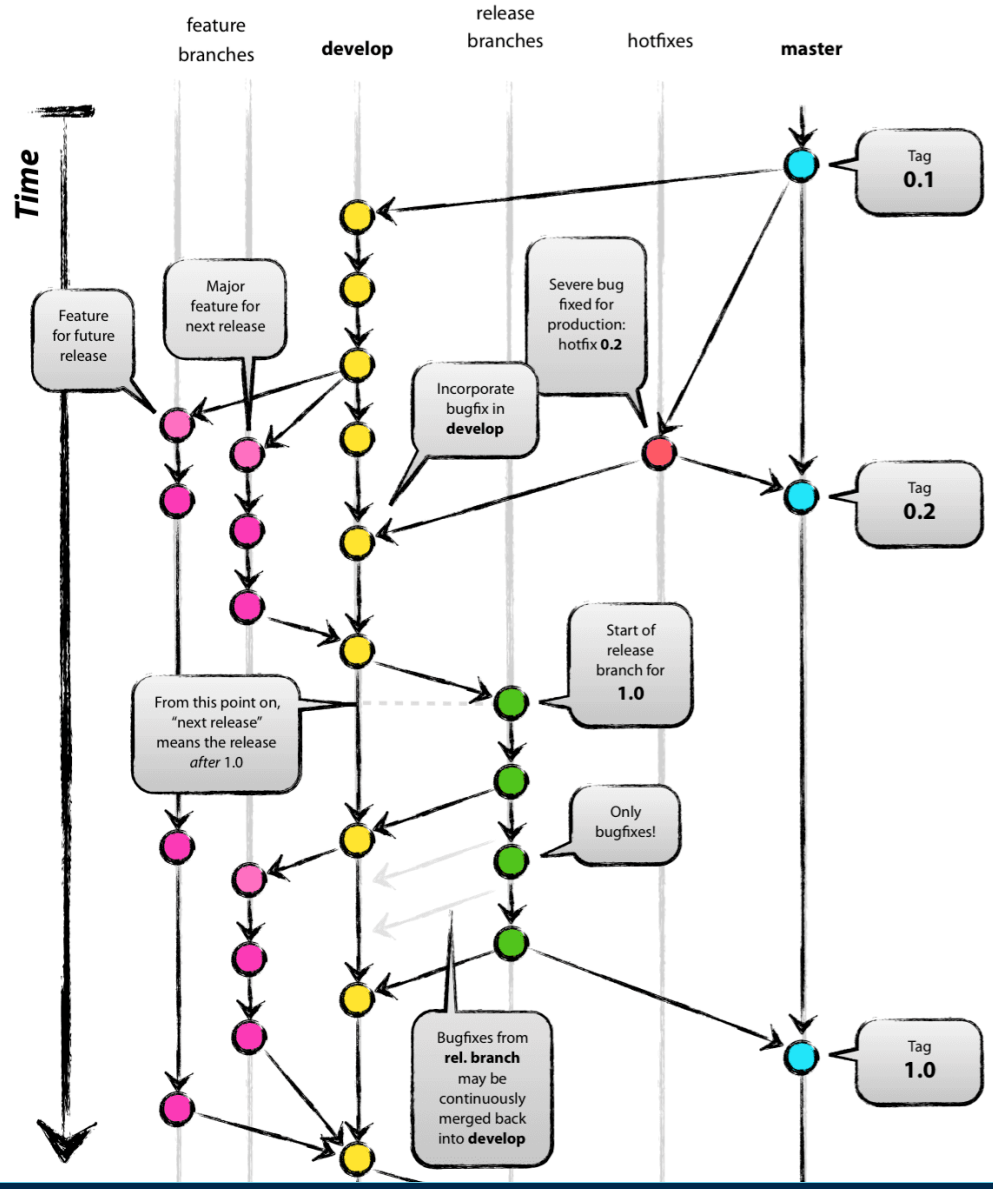
- `https:// gitlab.laas.fr / gsaurel / talks`
- `https:// github.com / gepetto / example-adder`

Issues

- bug fix / feature request
- Github / Gitlab: `#4`
- referencable from git:
  - `git commit -m "add test for user input, ref #4"`
  - `git commit -m "sanitize user input, fix #4"`

Branches

Goal


feature branches
develop
release branches
hotfixes
master
Time
Feature for future release
Major feature for next release
Severe bug fixed for production: hotfix 0.2
Incorporate bugfix in develop
Tag 0.1
Tag 0.2
Start of release branch for 1.0
From this point on, "next release" means the release after 1.0
Only bugfixes!
Bugfixes from rel. branch may be continuously merged back into develop
Tag 1.0

Usual branches

- default: `master` or `main`
- `devel`, `stable`
- `issue/5`
- `topic/something`

Forks

2 types of fork

- scission (software development)
  - document motivations
  - rename
  - change logo / website etc.
  - ensure compatibility
- collaboration (git forges)
  - try to keep synchronized

2 types of fork

- scission (software development)
  - document motivations
  - rename
  - change logo / website etc.
  - ensure compatibility
- **collaboration (git forges)**
  - try to keep synchronized

Work locally with multiple forks

```
git clone --recursive \
        git@gitlab.laas.fr:gsaurel/example-adder.git
cd example-adder
git remote add gepetto \
        git@gitlab.laas.fr:gepetto/example-adder.git
```

Work locally with multiple forks

```
git clone --recursive \
        git@gitlab.laas.fr:gsaurel/example-adder.git
cd example-adder
git remote add gepetto \
        git@gitlab.laas.fr:gepetto/example-adder.git

git pull gepetto master
git push origin master
```

SSH shortcut

```
# ~/.ssh/config
Host gl
    HostName gitlab.laas.fr
    User git

git clone --recursive gl:gsaurel/example-adder
```

Requests

Gitlab

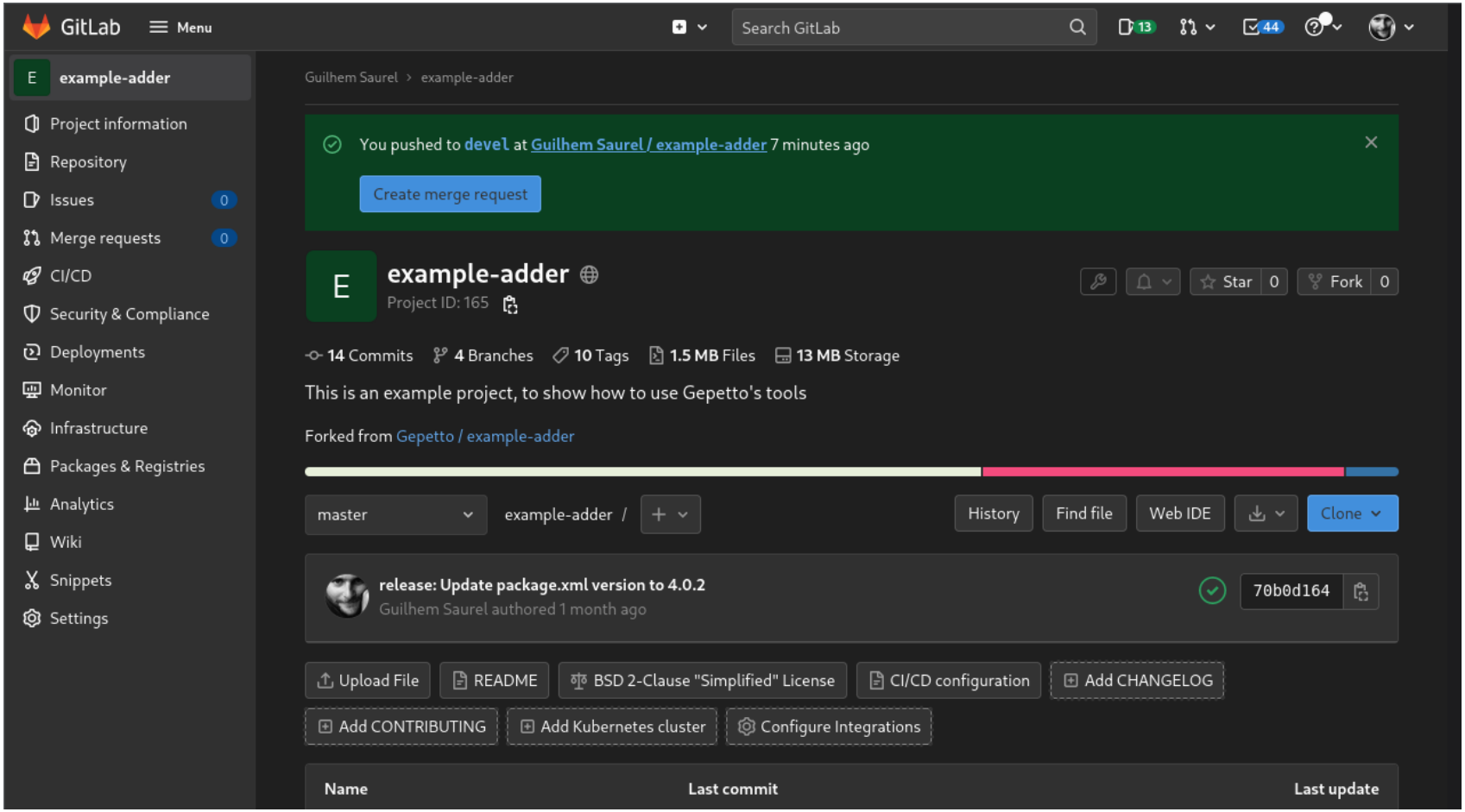


Figure 2: Merge Request

Gitlab from command line

```
git push -o merge_request.create \
         -o merge_request.target=devel \
         origin topic/something
```

Github

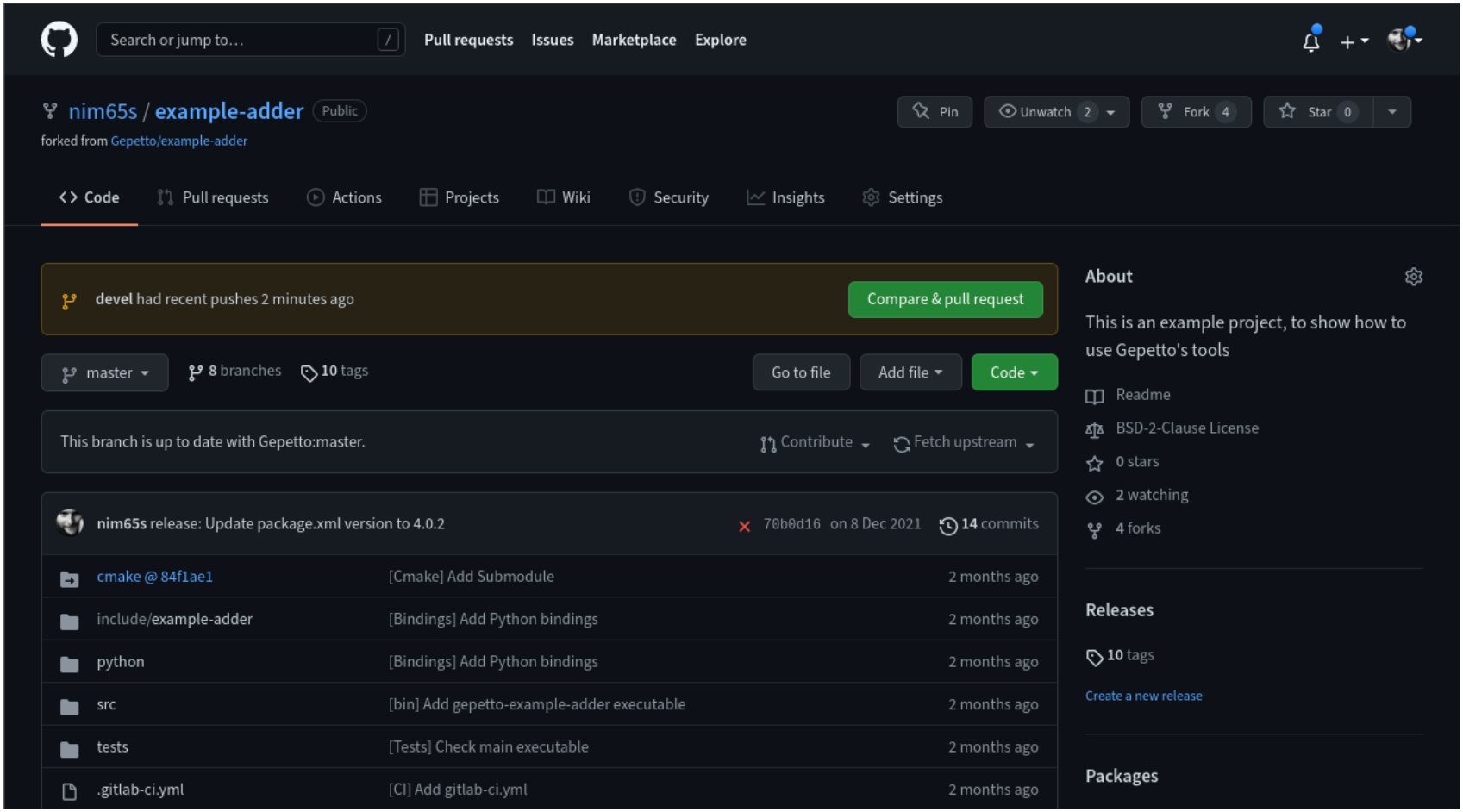


Figure 3: Pull Request

Github from command line

Required: https://cli.github.com/

```
gh pr create
```

CI

Gitlab

```yaml
# .gitlab-ci.yml
image: gitlab.laas.fr:4567/gsaurel/talks

build:
  script:
    - make

test:
  script:
    - make test
```

Gitlab shortcut

```
git config --global alias.mwps "push \
        -o merge_request.create \
        -o merge_request.target=devel \
      -o merge_request.merge_when_pipeline_succeeds \
        -o merge_request.remove_source_branch"

git mwps origin topic/something
```

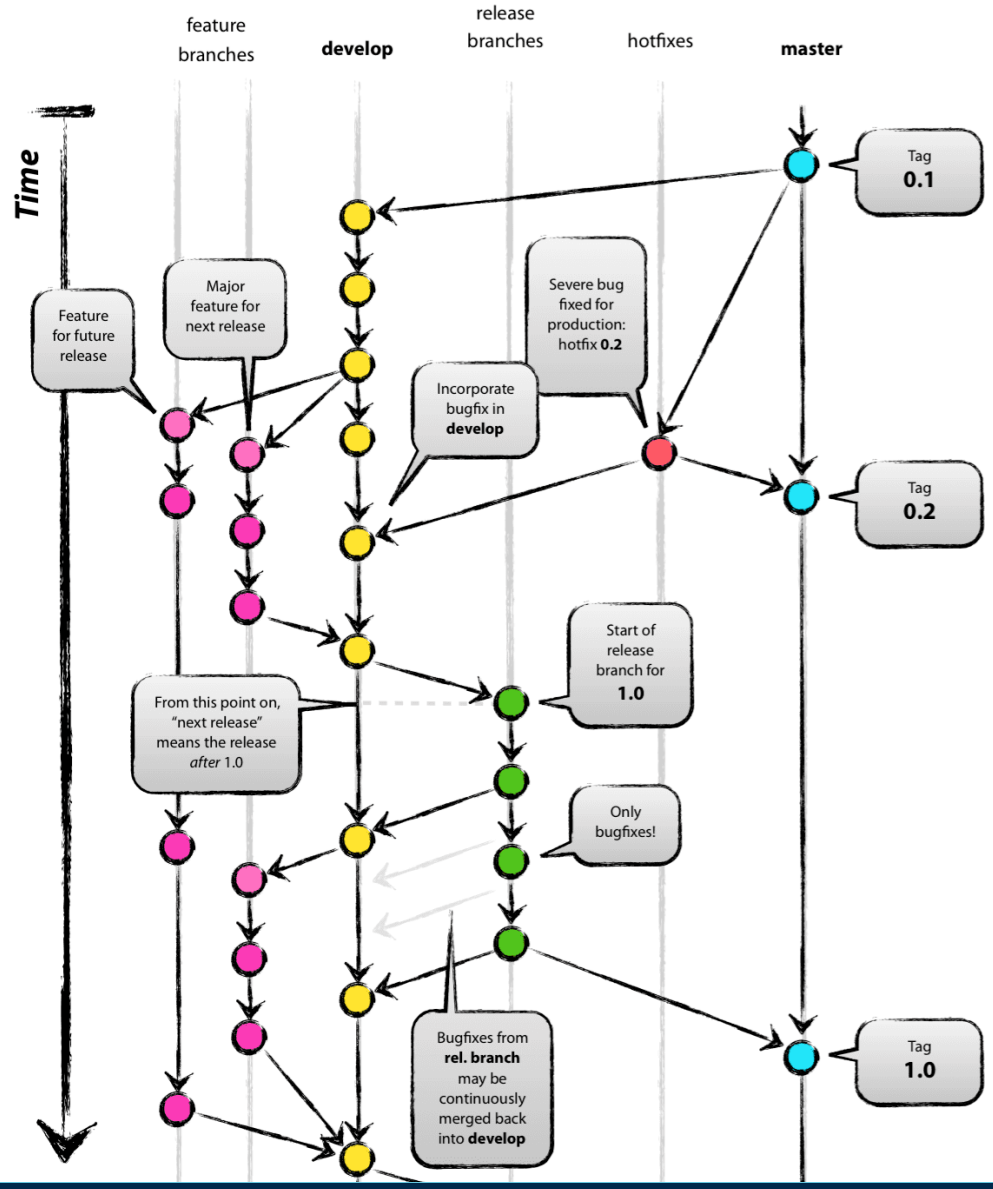
Github

```yaml
# .github/workflows/build.yml
name: Build
on: [push,pull_request]

jobs:
  build:
    name: Transpile markdown sources into PDF
    runs-on: nim65s/talks
    steps:
      - uses: actions/checkout@v2
      - run: make
```

Workflows

Example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End notes

References

https://learngitbranching.js.org/
https://nvie.com/posts/a-successful-git-branching-model/
https://docs.github.com/en/get-started/quickstart/github-flow

Questions ?

Thanks for your time :)