HPS

martin-leandro.paleico@gwdg.de

Martin Paleico

git and Gitlab

Collaborative Work, Issue and Feature Tracking

Table of contents

Today

- Learn a bit about version control and git (if you haven’t already)
- Install Gitlab CE
- Test some of Gitlab’s collaborative tools and a bit of git
- Plenary conclusion

Outline

Version control for system administrators

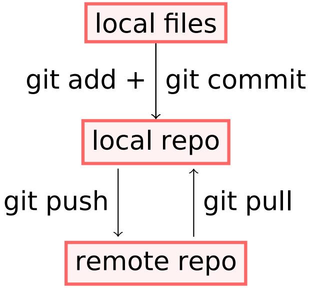
"Framework that allows for keeping track of changes made to files"

- Normally used for code, but relevant for sys. admins: configuration files, documentation, many libraries and services available as repositories
- Versioning
- "Backuping"
- History of changes and reasoning behind them -> Sneaky documentation
- Branching: Work on new features without overwriting base configuration
- Transferrability to other systems (e.g. from dev to live system)
- Collaborative and simultaneous work with other admins

Features of git

- "distributed": no unique central repository for files, many local and remote repositories possible with more or less equal rank
- "non-locking": multiple people can work on the same file (have to deal with it afterwards)
- Many other frameworks (mercurial, subversion, etc) with different philosophies
- Many possibilities for remote repository. Here: Gitlab

git scheme (reminder)



Reality can be much more complicated, see for example
`https://blog.osteele.com/2008/05/my-git-workflow/`

Good practices when working with git

- Files are stored whole, not as diffs, so don't commit large binaries, images, pdf's/MS Office formats, etc. -> Store the scripts that generate those when possible
- Small changes with continuous commits that fix one issue
- Commit functional configurations and code
- Use branches for testing and development
- Mistakes are fixable but sometimes disentangling a repository is hard

Good practices when working with git

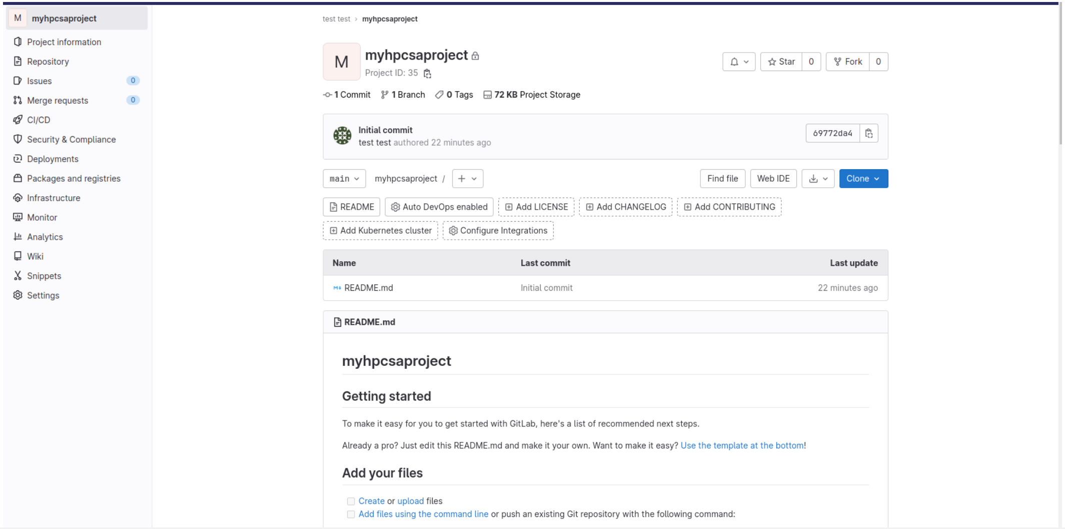
- Once something enters a repository, it can be very hard to get rid of it: Careful with passwords, API tokens, etc.!

Docker config file

```
version: "3.7"
services:
  omeroserver:
    image: "omero-server-with-figure:5.6.5"
    user: 'omero-server'
    environment:
      CONFIG_omero_db_host: database
      CONFIG_omero_db_user: omero
      CONFIG_omero_db_pass: omero
      CONFIG_omero_db_name: omero
      ROOTPASS: OoPsPl41n73x7p4s5w0rd
```

Outline

Collaborative Work: Gitlab



myhpcsaproject
Project ID: 35

1 Commit 1 Branch 0 Tags 72 KB Project Storage

Initial commit
test test authored 22 minutes ago
69772da4

main myhpcsaproject /

Name	Last commit	Last update
README.md	Initial commit	22 minutes ago

README.md

myhpcsaproject

Getting started

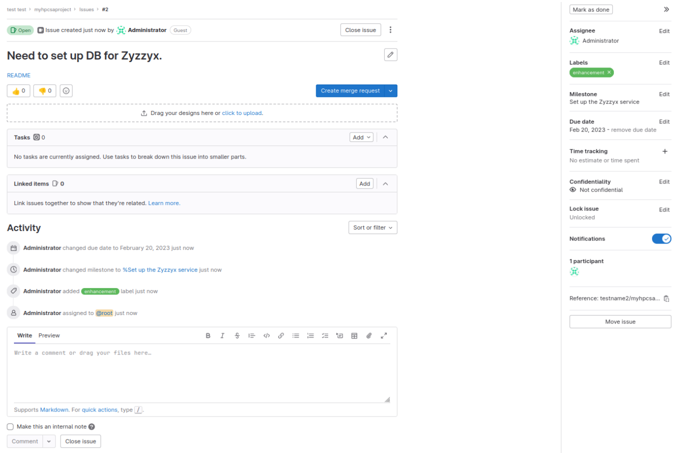
To make it easy for you to get started with GitLab, here's a list of recommended next steps.

Already a pro? Just edit this README.md and make it your own. Want to make it easy? Use the template at the bottom!

Add your files

- [ ] Create or upload files
- [ ] Add files using the command line or push an existing Git repository with the following command:

Collaborative Work: Issues


test test › myhpcsaproject › Issues › #2

Open | Issue created just now by Administrator (Guest) | Close issue

Need to set up DB for Zyzzyx.

README

👍 0 👎 0 | Create merge request

Drag your designs here or click to upload.

Tasks 0 | Add

No tasks are currently assigned. Use tasks to break down this issue into smaller parts.

Linked items 0 | Add

Link issues together to show that they're related. Learn more.

Activity | Sort or filter

Administrator changed due date to February 20, 2023 just now

Administrator changed milestone to %Set up the Zyzzyx service just now

Administrator added enhancement label just now

Administrator assigned to @root just now

Write | Preview

Write a comment or drag your files here…

Supports Markdown. For quick actions, type /.

Make this an internal note

Comment | Close issue

Mark as done

Assignee: Administrator

Labels: enhancement

Milestone: Set up the Zyzzyx service

Due date: Feb 20, 2023 - remove due date

Time tracking: No estimate or time spent

Confidentiality: Not confidential

Lock issue: Unlocked

Notifications: on

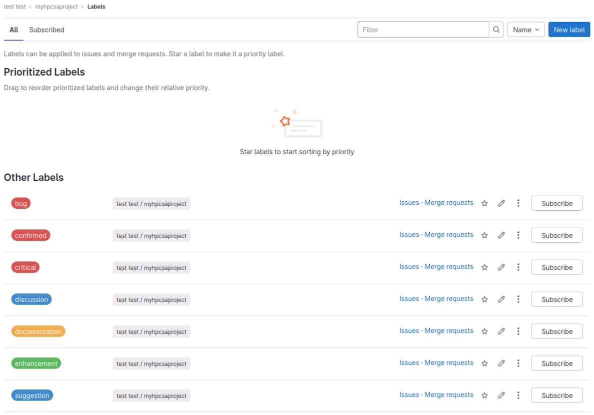
1 participant

Reference: testname2/myhpcsa...

Move issue

- An issue can be a problem with one of your services
- An issue can also be a task that you need to achieve, such as a new service or feature for an existing service
- This could be use to track and have a record of your own tasks and work

Collaborative Work: Labels


test test › myhpcsaproject › Labels

All Subscribed | Filter | Name | New label

Labels can be applied to issues and merge requests. Star a label to make it a priority label.

Prioritized Labels

Drag to reorder prioritized labels and change their relative priority.

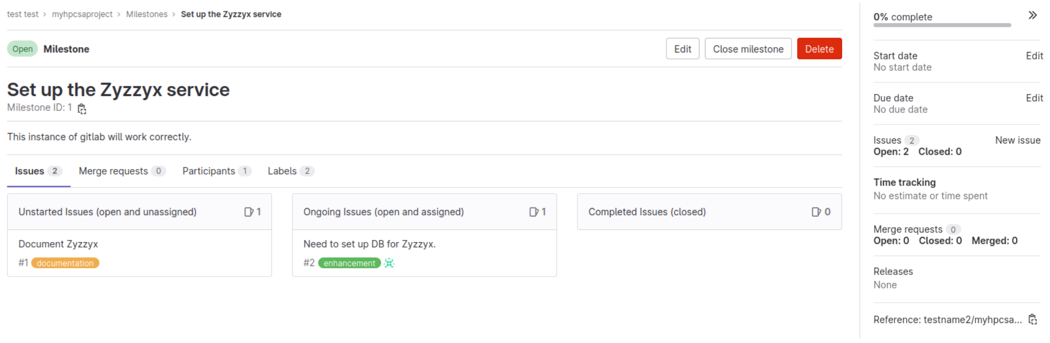
Star labels to start sorting by priority

Other Labels

bug	test test / myhpcsaproject	Issues · Merge requests	Subscribe
confirmed	test test / myhpcsaproject	Issues · Merge requests	Subscribe
critical	test test / myhpcsaproject	Issues · Merge requests	Subscribe
discussion	test test / myhpcsaproject	Issues · Merge requests	Subscribe
documentation	test test / myhpcsaproject	Issues · Merge requests	Subscribe
enhancement	test test / myhpcsaproject	Issues · Merge requests	Subscribe
suggestion	test test / myhpcsaproject	Issues · Merge requests	Subscribe

- Labels help you categorize issues
- You can subscribe to labels and get notifications, or use them to create boards

Collaborative Work: Milestones

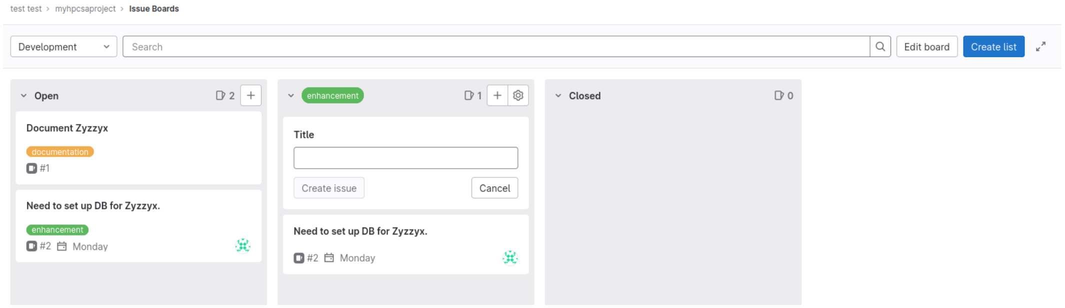

test test › myhpcsaproject › Milestones › Set up the Zyzzyx service
Open Milestone
Edit
Close milestone
Delete
Set up the Zyzzyx service
Milestone ID: 1

This instance of gitlab will work correctly.

Unstarted Issues (open and unassigned) 1	Ongoing Issues (open and assigned) 1	Completed Issues (closed) 0
Document Zyzzyx #1 documentation	Need to set up DB for Zyzzyx. #2 enhancement	

- Collect tasks to achieve a specific goal
- Track progress of your goals

Collaborative Work: Boards



- Visualize issues at a glance

Plenary Discussion

- Have you used version control before?
- Have you used feature and issue tracking?
- Would you use Gitlab's tools? Any other feature you would need?
- Any other tools that you use for this sort of work?
- Possible security concerns?
- Look-back at previous "best practices" presentation