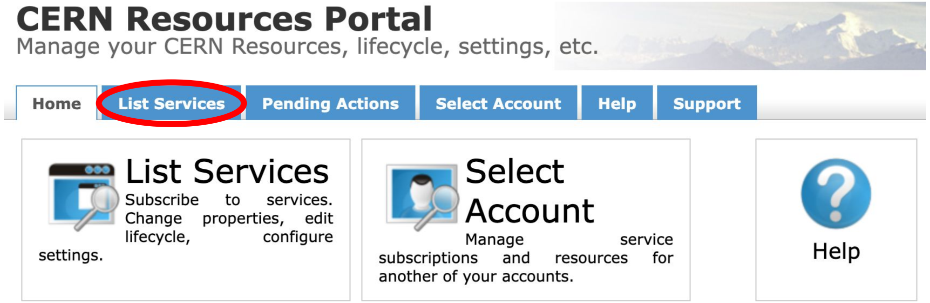
Lxplus and Git

Lxplus resources

https://resources.web.cern.ch/resources/

- Home folder
  - This should be on eos file system
- Storage
  - 1 TB of storage available on eos
  - Automatically synced with CERNBox



CERN Resources Portal

Manage your CERN Resources, lifecycle, settings, etc.

List Services

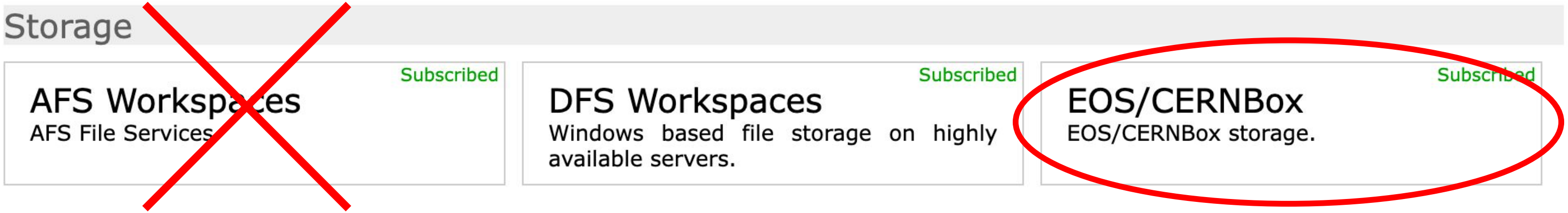
Subscribe to services. Change properties, edit lifecycle, configure settings.

Select Account

Manage service subscriptions and resources for another of your accounts.

DO NOT USE!!!

USE THIS

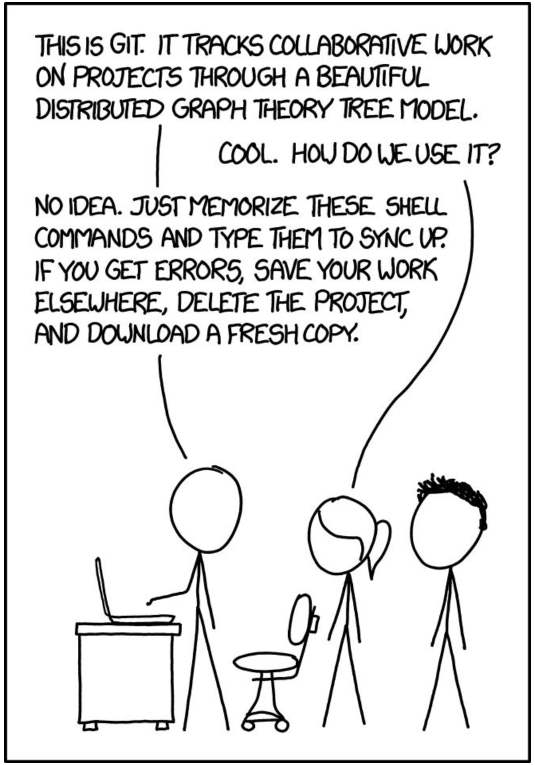


Storage

Subscribed **AFS Workspaces** AFS File Services	Subscribed **DFS Workspaces** Windows based file storage on highly available servers.	Subscribed **EOS/CERNBox** EOS/CERNBox storage.

What is Git?

- Version control for any files - generally code
  - Track changes and collaborate with multiple people
- Dedicated branches can be used for feature development without breaking main branch
  - Branches can be merged together to capture changes
- Repository complexity and workflow depend on size and scope of project and team
  - Good practice to keep code in git even for individual work
    - Serves as a backup in case of disaster
    - Makes it easy to share your work with others

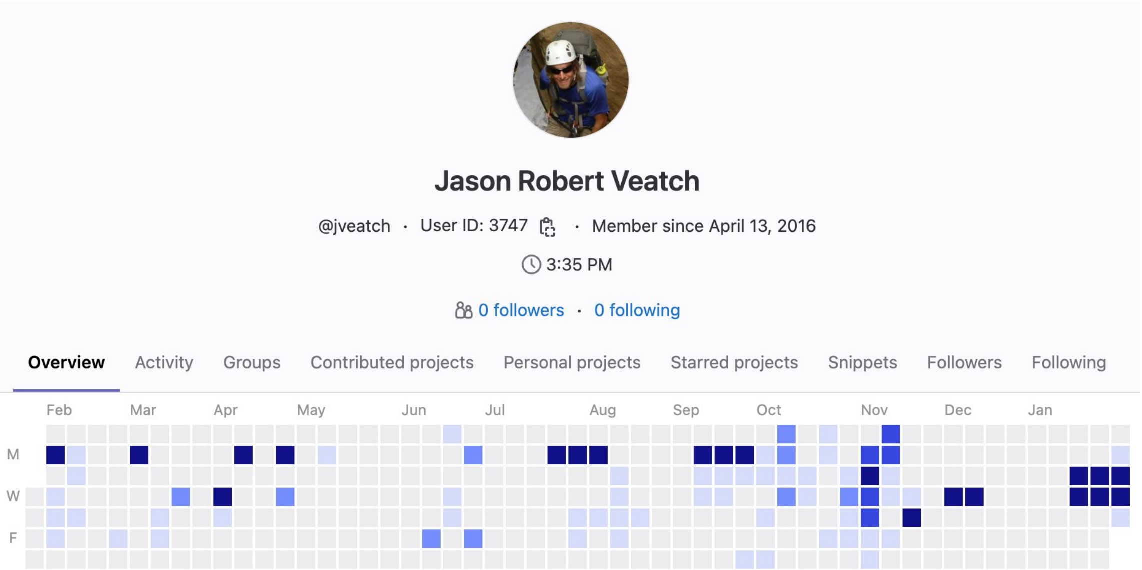

THIS IS GIT. IT TRACKS COLLABORATIVE WORK ON PROJECTS THROUGH A BEAUTIFUL DISTRIBUTED GRAPH THEORY TREE MODEL.
COOL. HOW DO WE USE IT?
NO IDEA. JUST MEMORIZE THESE SHELL COMMANDS AND TYPE THEM TO SYNC UP. IF YOU GET ERRORS, SAVE YOUR WORK ELSEWHERE, DELETE THE PROJECT, AND DOWNLOAD A FRESH COPY.

https://xkcd.com/1597/

GitLab

- Two main git services - GitHub and GitLab
- CERN has its own implementation of GitLab (https://gitlab.cern.ch/)

https://gitlab.cern.ch/<username>



Jason Robert Veatch

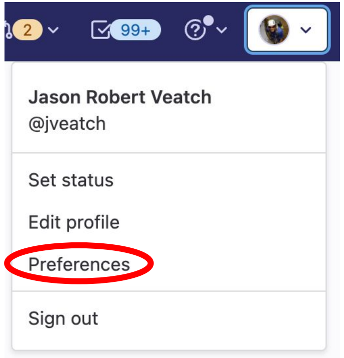
@jveatch · User ID: 3747 · Member since April 13, 2016

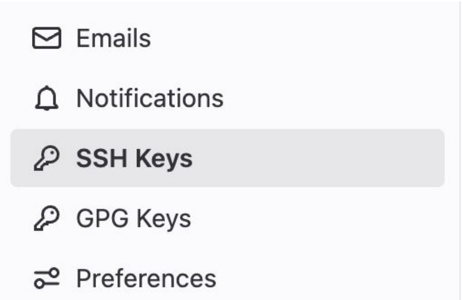
3:35 PM

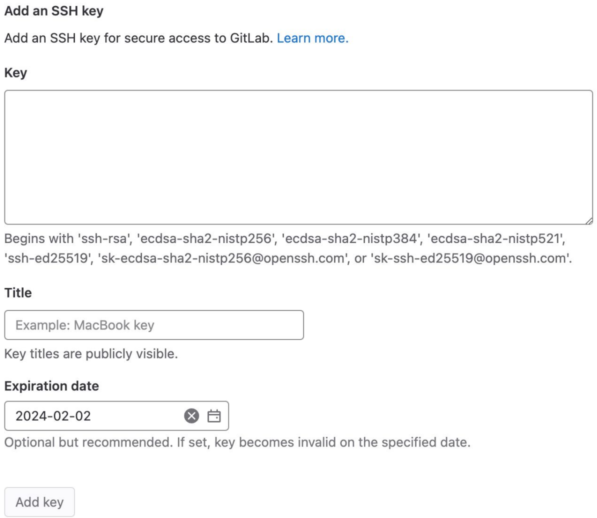
0 followers · 0 following

ssh authentication

- It is useful to provide an ssh key to link your local machine with your account
  - Other authentication methods available, but this is often the simplest to use
- Generate ssh key pair:
  - ssh-keygen -t rsa -b 2048
  - Enter passphrase or leave blank (passphrase will be needed each time you use key)
  - Public key: ~/.ssh/id_rsa.pub
  - cat ~/.ssh/id_rsa.pub | pbcopy to copy to clipboard






Add an SSH key

Add an SSH key for secure access to GitLab. Learn more.

Key

Begins with 'ssh-rsa', 'ecdsa-sha2-nistp256', 'ecdsa-sha2-nistp384', 'ecdsa-sha2-nistp521', 'ssh-ed25519', 'sk-ecdsa-sha2-nistp256@openssh.com', or 'sk-ssh-ed25519@openssh.com'.

Title

Example: MacBook key

Key titles are publicly visible.

Expiration date

2024-02-02

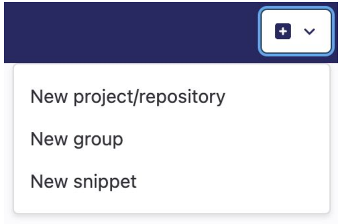
Optional but recommended. If set, key becomes invalid on the specified date.

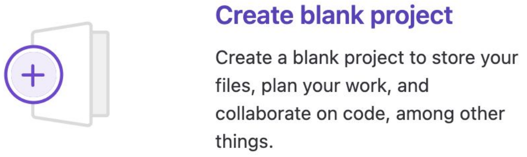
Configure git

- `git config --list`
- `git config --global user.name "Your Name"`
- `git config --global user.email "your.name@cern.ch"`
- `git config --global core.editor vim`

Create a new project

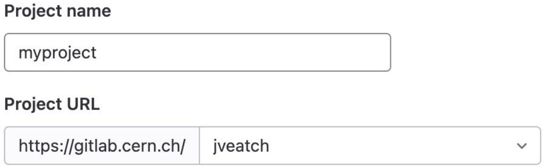
- Use GitLab interactive session
  - This is just one of several ways to create a git project
- Click on “New project/repository”
- Create blank project
- Pick a descriptive project name
- Use your username as namespace
- Set visibility to Internal
- Create project with README





Create blank project

Create a blank project to store your files, plan your work, and collaborate on code, among other things.

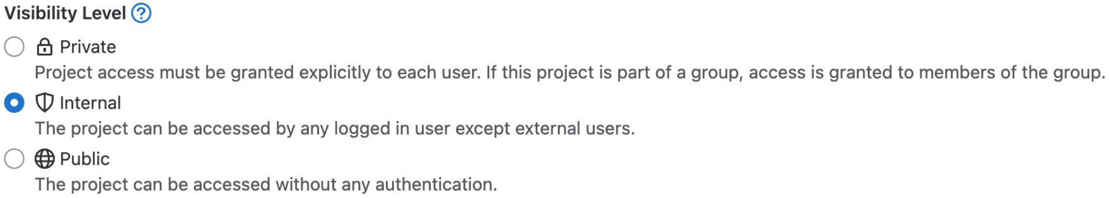


Project name

myproject

Project URL

https://gitlab.cern.ch/ jveatch



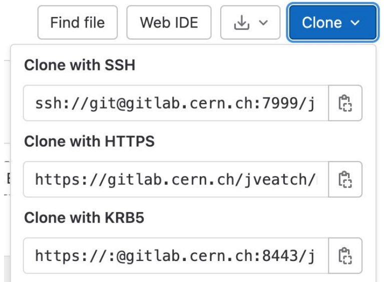
Visibility Level

○ Private
Project access must be granted explicitly to each user. If this project is part of a group, access is granted to members of the group.

● Internal
The project can be accessed by any logged in user except external users.

○ Public
The project can be accessed without any authentication.

Basic git commands



Clone with SSH

ssh://git@gitlab.cern.ch:7999/j

Clone with HTTPS

https://gitlab.cern.ch/jveatch/

Clone with KRB5

https://:@gitlab.cern.ch:8443/j

- Clone repository:

  git clone ssh://git@gitlab.cern.ch:7999/jveatch/myproject.git

  - This will create a new directory, which is your local repository
- Make changes locally (add, delete, edit files)
- git status - see the status of uncommitted changes
- git add <filename(s)> - stage file(s) to be committed
- git commit - commit changes to your local repository
  - Will open an editor to write commit message (for short messages, use -m “<text>” option)
- git push -u origin master - sync local changes to remote repository
- git pull - sync remote changes to local repository
  - If conflicts arise, use integrated tools to resolve them

https://xkcd.com/1296/