Gitlab & CI in NSLS-II

AUthor: Mizuki Karasawa

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Why Git?
&
Why Git management service?

Gitlab BackGround

- Gitlab- A web-based Git repository hosting service with wiki and issue tracking features.

- Very similar model to Github, offers hosted accounts and allows its software to be used on third-party servers.

- 2014/2 - Gitlab CE is under MIT license, Gitlab EE is under a proprietary license

- Currently 9 employees and 700+ contributers.

- Used by 100,000+ organizations including NASA, CERN

Benefits of having an internal Gitlab

- Convenience: Local backup, no need to fetch the code from external.

- Free: No license fee associated with the private repos.

- Github-like hosting service, ease of use and access, easy to adapt.

- Granular ACL controls to the repositories: Public/Private/Internal Users

- Integration to powerful tools, i.e, CI, HipChat, Slack etc and it's potential power. Acquired Gitorius (another github-like service) in May.

- Freedom to control

Fees associated with github.com

Plan	Cost	Private repositories	
Large	$50/month	50	Choose
Medium	$22/month	20	Choose
Small	$12/month	10	Choose
Micro	$7/month	5	Choose
Free	$0/month	0	Chosen

Charges to your account will be made in **US Dollars**. Converted prices are provided as a convenience and are only an *estimate* based on *current* exchange rates. Local prices will change as the exchange rate fluctuates.
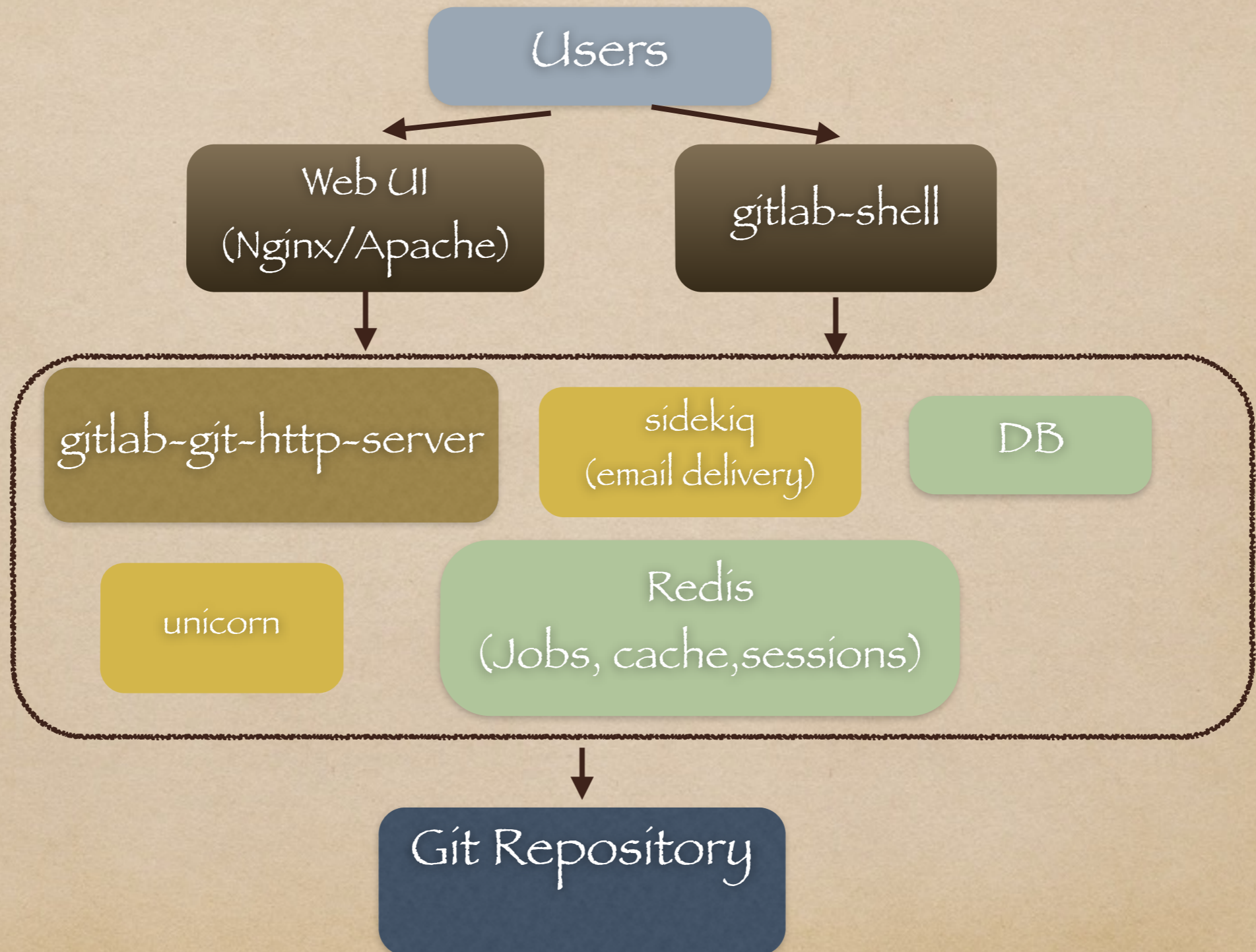
Don't worry, you can cancel or upgrade at any time.

Greater Gitlab Permissions

Project

Action	Guest	Reporter	Developer	Master	Owner
Create new issue	✓	✓	✓	✓	✓
Leave comments	✓	✓	✓	✓	✓
Pull project code		✓	✓	✓	✓
Download project		✓	✓	✓	✓
Create code snippets		✓	✓	✓	✓
Manage issue tracker		✓	✓	✓	✓
Manage labels		✓	✓	✓	✓
Manage merge requests			✓	✓	✓
Create new merge request			✓	✓	✓
Create new branches			✓	✓	✓
Push to non-protected branches			✓	✓	✓
Force push to non-protected branches			✓	✓	✓
Remove non-protected branches			✓	✓	✓
Add tags			✓	✓	✓
Write a wiki			✓	✓	✓
Create new milestones				✓	✓
Add new team members				✓	✓
Push to protected branches				✓	✓

Gitlab Architecture

Users

Web UI
(Nginx/Apache)

gitlab-shell

gitlab-git-http-server

sidekiq
(email delivery)

DB

unicorn

Redis
(Jobs, cache,sessions)

Git Repository

Useful features

- Powerful Code Review

- Git powered Wiki

- Issue Management

- Code Snippets

- Web Hooks

Gitlab CI
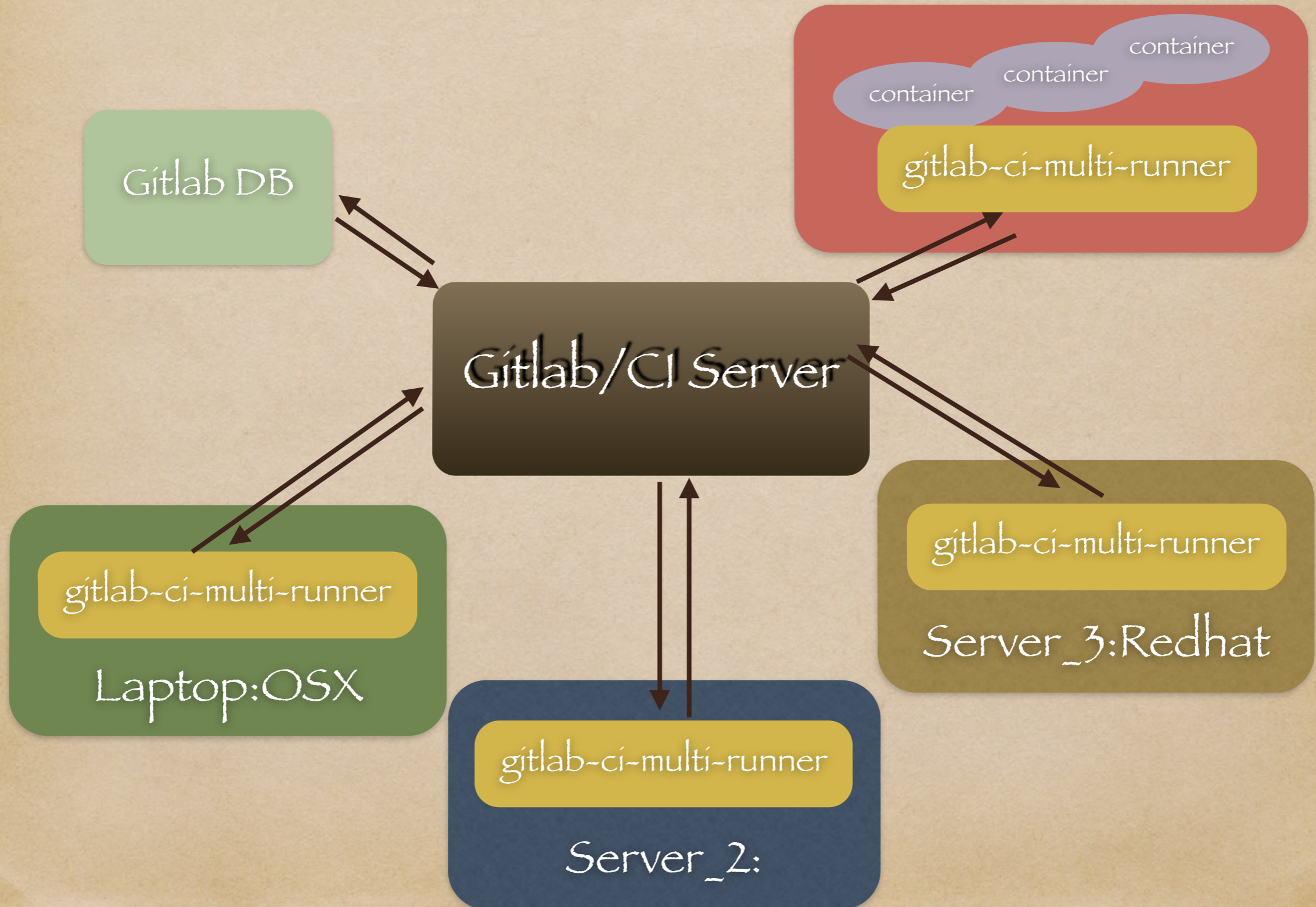
Gitlab CI

Project Name	Last commit		Access	Commits
Mizuki Karasawa / gitlab	✖ failed	feb0dd07 · 1 day ago	🔒 Private	13
Mizuki Karasawa / gitlab	⏲ pending	aaf3507a · 1 day ago	🔒 Private	1
Mizuki Karasawa / test	✅ success	4e0a2b9f · 1 day ago	🔒 Private	1

```
gitlab-ci-multi-runner 0.5.5-1-g69bc934 (69bc934)
Using Docker executor with image gitdebian:latest ...
Running on runner-62892361-project-4-concurrent-0 via git...

Cloning repository...
Cloning into '/builds/mizuki/test'...
Checking out 4e0a2b9f as master...

$ touch ./before_docker.log
$ touch ./finish_docker.log

Build succeeded.
```

Build

Duration: 5 s

Created: 1 d

Finished: 1 d

Runner: #5

Commit

Travis Vs Gitlab CI?

Intersourcing

- Visibility: All software projects are by default visible to all employees

- Forking: Everyone who can see the code, can create a copy(folk) where they can make changes freely;these forks are visible for everyone

- Pull/Merge requests:Even people outside of the project are able to suggest changes and you can have a conversation about the code with line comments.

- Testing: software includes unit- and integration-tests so that changes can be made with less fear of causing problems.

- Continuous Integration: every proposed change is automatically tested and the result is shown with the change.

- Documentation: all software projects include a readme that describes what the software does, why that is important, how run it and how to develop it.

- Issue tracker: there is a public issue tracker in which everyone can submit a bug or ask a question

Links:

- Updates:
https://about.gitlab.com/blog/

- Gitlab CE Documentation:
http://doc.gitlab.com/ce/

- Architecture:
https://github.com/gitlabhq/gitlabhq/blob/master/doc/development/architecture.md

- Workflow Comparison (Git vs Github vs Gitlab)
http://doc.gitlab.com/ce/workflow/gitlab_flow.html

- Gitlab CI:
https://about.gitlab.com/gitlab-ci/

- Gitlab CE API:
http://doc.gitlab.com/ce/api/

- Protections:
https://about.gitlab.com/2014/11/26/keeping-your-code-protected/