Keeping the illusion of a monorepo on GitLab(?)

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Who are we?

• We are responsible for building large part of software to control the accelerators (Controls)
  • Over 1000 Java processes running on 550 consoles and servers
• ~200 developers, all CERN employees
  • ~60% software engineers
  • ~40% domain experts (physicists, operators)
• VCS
  • Currently, one huge SVN monorepo
  • ~20 millions LOC, ~1000 projects
Life at the moment with SVN

• We have one huge “product” (20 MLOC) that needs to evolve together
  • ⇒ We need a good and coherent development environment
• We (Controls) have set up our own Atlassian suite over 10 years ago
  • Fisheye (code search), Crucible (code review), JIRA, Confluence, Bamboo
• Easy administration & maintenance
  • Centralized configurations; easy integrations/tooling; custom pre-commit hooks
• All in all, we are happy with the current monorepo in SVN
  • But some teams need more advanced branching workflows (git)
Moving to IT’s GitLab?

- Trigger to move away from SVN
  - SVN closure was announced by IT
- Motivation to move to GitLab
  - Use IT services (as we always try)
  - Abandon some of our own services (Fisheye&Crucible)
  - Some teams would benefit from Git(Lab)
- But migrating SVN to a 1000 of Git repositories is not straightforward
  - While still trying to preserve nice features of a monorepo
How could GitLab help us?

- **Requirements for migration**: GitLab *should* provide satisfactory alternatives to Atlassian Fisheye&Crucible
  - Code reviews
  - Advanced global code search
- **Feedback**: how GitLab *could* help us to keep the illusion of our monorepo
  - Coherence across the code base
  - Coherence across the project settings
Requirement: Alternative to Atlassian Crucible

**Code reviews**

- **Current situation**
  - Most of the teams want to stay on Crucible
    - No tree view in code reviews
    - Hard to review bigger changes

- **After next GitLab release (v11.4)**
  - Upcoming feature: "File browser in merge request"
  - Hopefully it can replace Crucible

- **Allow code reviews without merge-requests**
  - Still an ongoing problem
  - Since 1/10/2018, it’s on GitLab’s roadmap: gitlab-ce-19976
Requirement: Alternative to Atlassian Fisheye

Advanced global code search

• GitLab global code search is not reliable ✗
• Reason → No special characters are allowed (not even dots) in full text search gitlab-ee-7098
  • This might be a showstopper for us ✗

This should be solved soon, but I’m optimistic about a resolution
(Mario is working on already, thanks a lot!)
Feedback: How could GitLab help us more?

Coherence across the code base

• Preserve tree layout
  • Subgroups help a lot - better than GitHub ;)

• Guarantee same files across the repos
  • e.g.: same .gitignore, .gitattributes
  • GitLab’s new direction towards file templates could help gitlab-ee-5987
    • Premium feature

• Keep repositories clean (no binaries, log files, etc…)
  • Push rules are not really enough
    • Maintainer role can override them (problems with GitLab roles are frequently reported)
Feedback: How could GitLab help us more?

Coherence across the project settings

• Support to
  • Set up **same** services, settings, visibility, etc.
  • …on group level
  • …to apply recursively on each projects
  • …and apply automatically on **newly created projects**

• **Settings could be forced or set optional**
  • Forced: developers cannot change it (e.g. push rules)
  • Optional: developers can change/tailor it on project level (e.g. services)
Can we keep the illusion of a monorepo on GitLab?

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