



Update on software collaboration services at CERN

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Outline

- Issue Tracking service
- Version Control services
 - SVN
 - GIT
- Code Review & Continuous Integration
 - GitLab
 - Jenkins
 - CERNforge
- Web documentation
 - TWiki service
- Questions

Issue Tracking Service

- Atlassian product
 - Track issues
 - Internal team organization
 - Collecting requests
- <http://cern.ch/its>



The screenshot displays the JIRA System Dashboard for a user named Super User. The dashboard includes several key components:

- Time Sheet:** A table showing work hours for Super User from October 7th to 13th. Issues are tracked by day and total hours.
- Project Pivot:** A table showing work hours for Super User and Test User across various issues.
- Assigned to Me:** A list of issues assigned to the user, including their keys and summaries.
- Worked Time Chart:** A pie chart showing the distribution of work hours across different issues.

	Mon 7/Oct	Tue 8/Oct	Wed 9/Oct	Thu 10/Oct	Fri 11/Oct	Sat 12/Oct	Sun 13/Oct	Tot
DEMO-1 What is an issue?				6h		8h		14h
DEMO-2 Changing an issue's status		6h						6h
DEMO-3 Keyboard shortcuts			7h					7h
DEMO-4 Editing issues	6h							6h
DEMO-5 Searching						2h		2h
DEMO-6 What's next?							6h	6h
Total:	6h	6h	7h	6h		10h	6h	41h

	Super User	Test User	Tot
DEMO-1 What is an issue?	14h	0h	14h
DEMO-2 Changing an issue's status	6h	8h	14h
DEMO-3 Keyboard shortcuts	7h	0h	7h
DEMO-4 Editing issues	6h	16h	22h
DEMO-5 Searching	2h	4h	6h

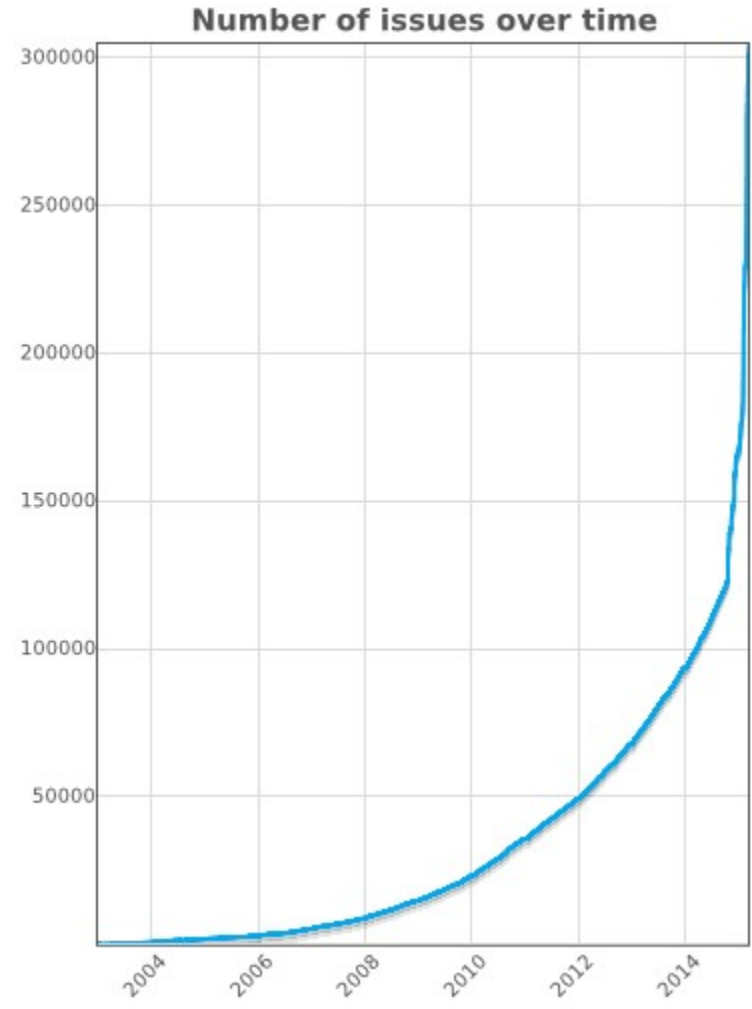
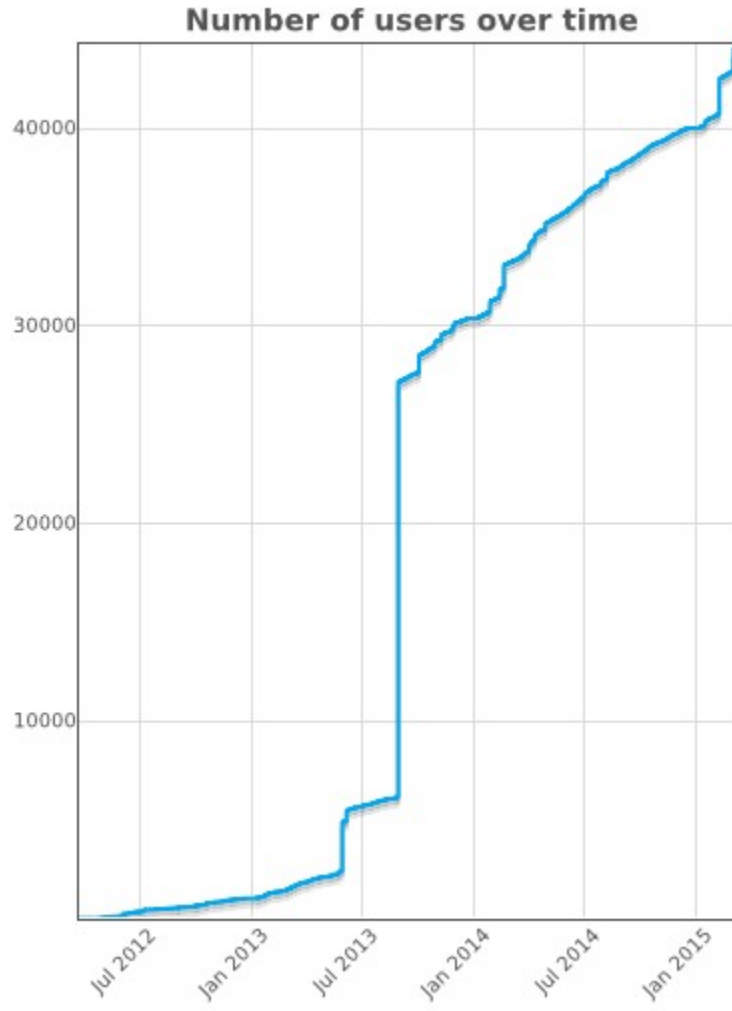
T	Key	Summary	P
	DEMO-2	Changing an issue's status	
	DEMO-4	Editing issues	
	DEMO-3	Keyboard shortcuts	
	DEMO-5	Searching	
	DEMO-1	What is an issue?	
	DEMO-6	What's next?	

Issue	Hours	Percentage
DEMO-1	14h	34%
DEMO-2	6h	15%
DEMO-3	7h	17%
DEMO-4	6h	15%
DEMO-5	2h	5%

Issue Tracking Service – CERN setup

- Two Central instances for most needs
- 3 production private instances, for people with special needs
 - One instance recently migrated to the central instance
 - Migration of JIRA projects can be very expensive if customized...
- Savannah migrated to JIRA last year
- All JIRA instances running on Puppet managed Openstack VMs (Agile Infrastructure)
 - SSO, E-groups integration
 - Interface to VCS (Git, SVN...)
 - Fisheye and Crucible, code review and create issues in JIRA
 - We observe scalability issues and administrative overhead

Issue Tracking Service - usage

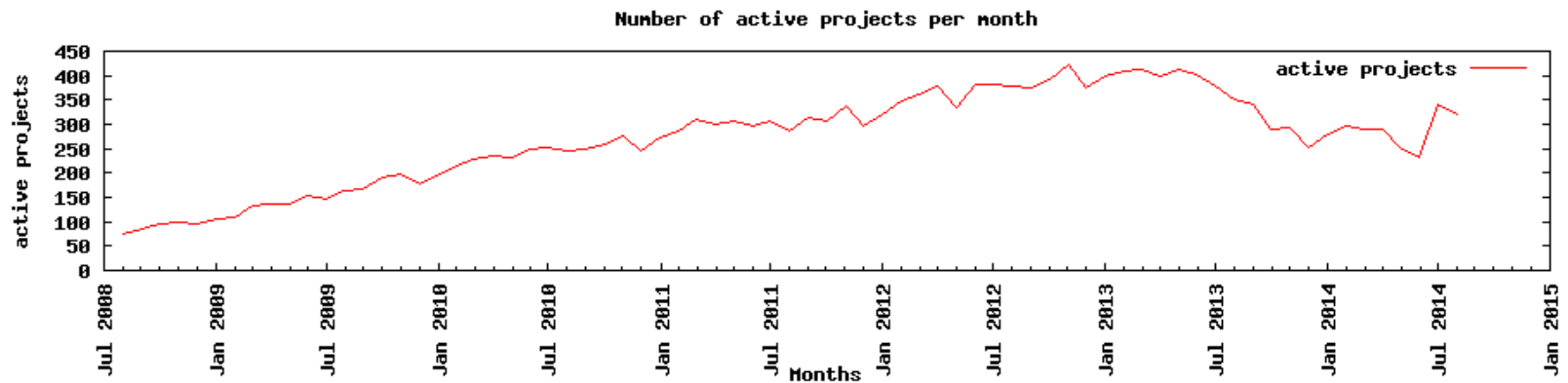


Version Control Services in use at CERN

- Central SVN service
 - Access control, CERN accounts, e-groups
- Central Git service
 - Access control, CERN accounts, e-groups
- Github
 - Nowadays de-facto standard for Open Source projects with external partners
 - Some projects mirror their repos at CERN
- Other private installations
 - Git, SVN, Stash etc
 - Smaller groups with specific needs (and system resources)
 - Should not be visible on the Internet

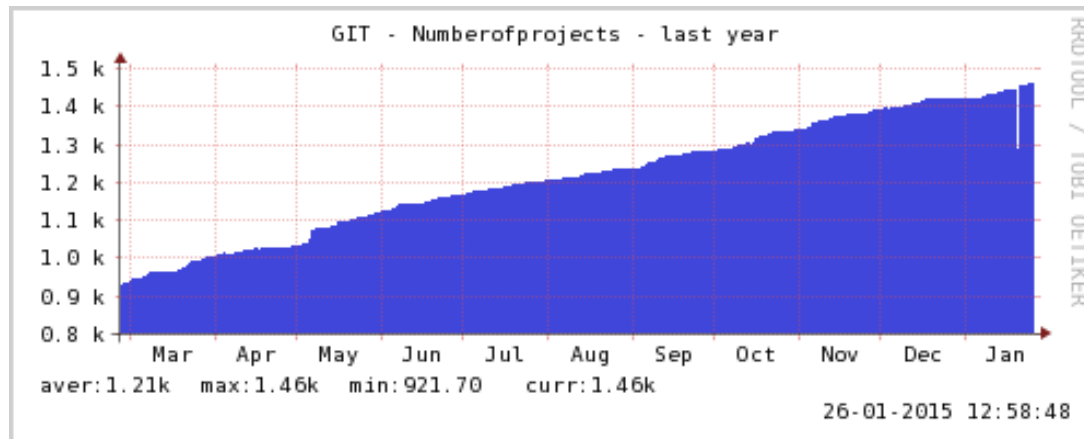
SVN Service

- Centralized VCS for CERN
 - Consolidating the service (learning from GIT)
 - ~2600 projects ~350 active
 - Migrated to Puppet managed infrastructure and SLC6 in autumn
 - Stable SVN service – no major changes foreseen
 - Need to address the Trac use and alternatives (JIRA...)



GIT Service

- Started 2013
- Gitolite + Gitweb
 - High growth
 - Software, Puppet manifests etc
 - ~1400 projects



Current situation

- We've got the Issue Tracker and the VCS but...
 - Anybody to check your fix?
 - Do I decide to push it to production?
 - Not only me working on this... merge conflict...
 - “It worked for me. Don't know why even the coffee machine stopped working after deploying”

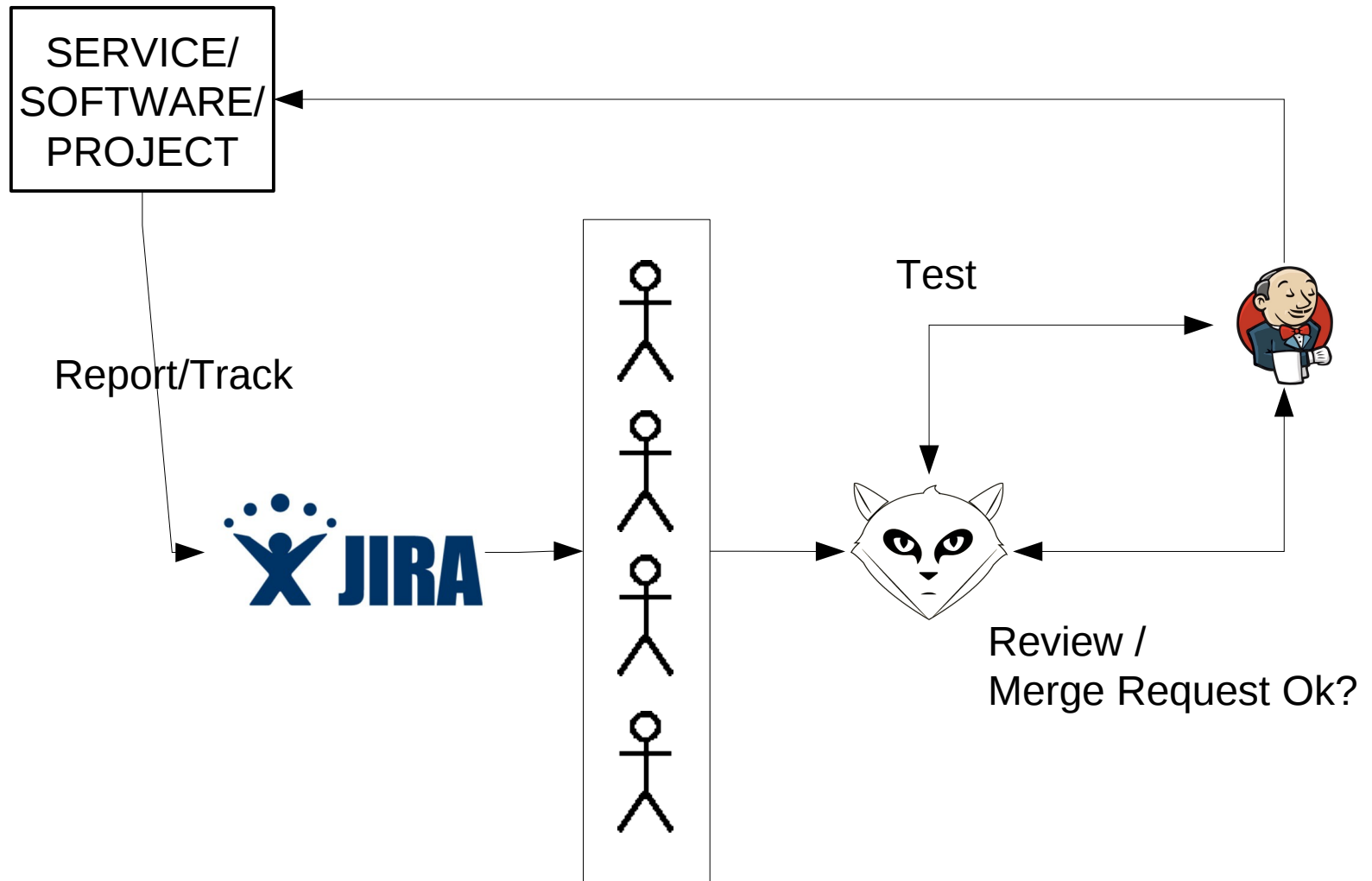
What we should provide

- Complement Version Control Services with new features to help developers implement software development best practices
 - Encourage collaboration by enabling project forks and merge requests
 - Associate code changes with an Issue Tracking System ticket
 - Provide code review features to help improve code quality
 - Make it easier to run tests with Continuous Integration platforms
 - Provide a central place to review code and test results, discuss and take decision whether to merge code
 - Better defined roles within a project

Proposal

- Issue Tracking + Collaboration + Code Review + CI
 - Get your task
 - Submit the fix
 - Verify/Test/Integrate
 - Approve

Proposal



GitLab



- On-premise “GitHub-like” application
 - Personal/Group projects
 - Open source
 - Community Edition (Gitlab CE) for free
 - Licensed Enterprise Edition (Gitlab EE) with more features (notably LDAP integration)
 - Downgrade to Community Edition possible
- Pilot service since mid 2014
 - Gathering of requirements
 - Evolution of GitLab from upstream
 - Positive feedback from CERN IT-Dept and experiments
 - Better user experience compared with FishEye
 - Pilot: <http://twiki.cern.ch/IT/GitLab>
 - <http://gitlab.cern.ch>

The screenshot shows a web browser window displaying a GitLab project page. The browser's address bar shows the URL `https://gitlab.cern.ch/vcs/gitlab-monitoring`. The page header includes the GitLab logo, the project name, and navigation icons. The main content area features a large 'G' icon, the project title 'Set of software pieces to monitor GitLab service – Edit', and statistics for stars and forks. Below this, there are options for cloning the repository via SSH or HTTPS, a 'private' status indicator, and a 'Download zip' button. The 'Activity' tab is selected, showing a list of recent events such as pushes to the master branch and project joins.

Version Control Systems / gitlab-monitoring

Set of software pieces to monitor GitLab service – Edit ★ Star 0 🍴 Fork 0

SSH HTTPS git@gitlab.cern.ch:vcs/git. private Download zip

Activity Readme 3 commits 1 branch 0 tags 0.17 MB

Push events Merge events Comments Team

- Borja Aparicio pushed to branch **master** at Version Control Systems / gitlab-... a day ago
8d02cde1 First two scripts to push and generate the XML for GitLab
- glabadm joined project Version Control Systems / gitlab-monitoring a day ago
- Borja Aparicio pushed to branch **master** at Version Control Systems / gitlab-... 2 days ago
23746edb Index of README
- Borja Aparicio pushed new branch **master** at Version Control Systems / gitla... 2 days ago
- Borja Aparicio created project Version Control Systems / gitlab-monitoring 2 days ago

Gitlab – next steps

- Service roll out in the next days
 - SSO integration done at CERN
 - E-groups via LDAP (part of Gitlab EE)
- Primary use case where access control and CERN hosting is required
 - IT Configuration Mgmt team (Puppet) plans to use Gitlab
 - Open for general users
- Gradual replacement of Gitolite-based Git service
 - Pace of replacement and service evolution depends on upcoming experience and user demand



Continuous Integration

- CI: Software change introduced...
 - Validate, compile, test, package, deploy....
- JENKINS is a widely used Open Source CI package
 - Already in use by several groups at CERN
 - PaaS manner - templates
- Integration with GitLab and Jira
 - Merge request automatically tested
 - Report to Jira status of operation
- Look at lightweight alternatives for small projects
 - Gitlab CI
 - External services like drone.io

CERNforge

- How do admins/managers/users handle all this?
 - Request
 - Manage
 - Administer

The screenshot shows the CERN Forge website interface. At the top is a dark navigation bar with links: CERN Forge (beta), Home, New project, My projects, Librarian projects, Admin projects, Requests, and JIRA. On the right of the navigation bar are a help icon and the user name Borja Aparicio Cotarelo. Below the navigation bar is a light gray banner with the text "Welcome to CERN Forge". Underneath the banner is a white box with an information icon and the text: "This portal was created to help you to create and manage your SVN, Git repositories and JIRA projects." To the right of this box is a sidebar with the heading "FREQUENTLY ASKED QUESTIONS" and links for JIRA FAQ, SVN FAQ, and Git FAQ. Below this is a section titled "SERVICES" with links for JIRA, SVN, and Git. The main content area contains the text "At the top of the page you can find few panels:" followed by a list of panels with their descriptions: "New Project" (You can create your SVN, Git repositories and JIRA projects here.), "My Projects" (Here you can browse your projects and repositories.), "Librarian Projects" (If you are a librarian or administrator for some projects here you can manage them.), "JIRA: Map egroup to JIRA" (Here you can map egroups to JIRA and synchronize them.), and "JIRA: Synchronize JIRA project" (Here you synchronize newly created JIRA projects with CERN Forge database.). At the bottom of the page is a footer with links: Jira Service, SVN Service, Git Service, and Fisheye Service.

Collaborative web documentation - TWiki

- TWiki offered as a Wiki service since 2004 and widely used by LHC experiments and CERN users.
 - 160k topics (web pages)
 - ~1 M monthly topic views
 - ~40 k monthly topic updates
- Now running TWiki 6.0.1.
 - Migrated to Puppet-managed Openstack VM cluster last autumn
 - LDAP integration for users and e-groups deployed early 2014
- Usage no longer growing, but stable at a high level
 - Other web offerings like Drupal and Gitdoc used for formal service documentation
 - Keeping an eye on Wiki alternatives such as Foswiki
 - See also talk on CERN web services by Andreas Wagner



Questions?

