

Moving from CVS to Git

is for your own good ;)

Alexandre Aubin

July 15th, 2013

Introduction

- CERN migrating from *CVS* to *Git*.
- Recommended hosting solution is *GitHub*
- CMSSW dev. already migrated to *GitHub*.
- UserCode becomes read-only on July 31st.
- It **won't** be centrally migrated.
- UserCode will shutdown by the end of August.



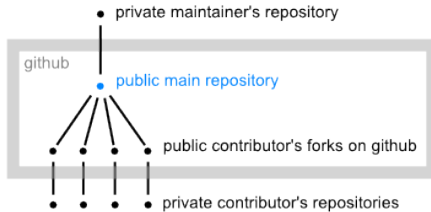
General stuff

- « The second great contribution to humanity by Linus Torvalds »
- Modern (CVS : 1990 / Git : 2005)
- Distributed (each dev. has a local copy of the entire history)
- Adapted to non-linear dev and large projects
- Widely used by companies and free software communities

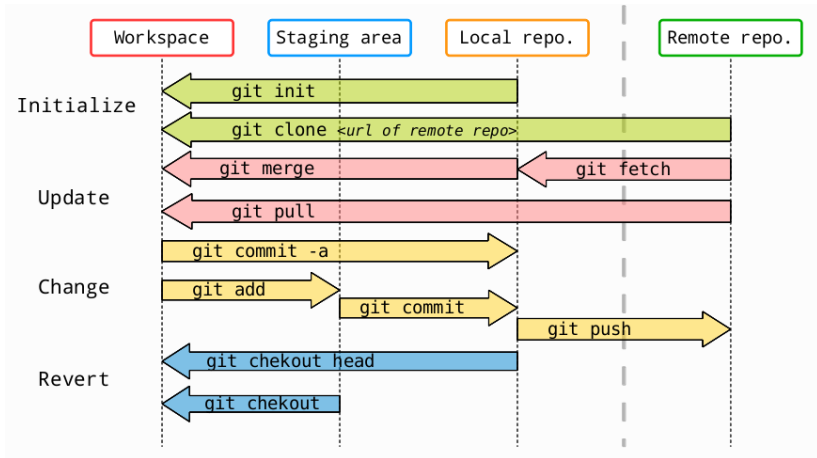
Technical stuff

- Storage is done by snapshots (CVS : changeset)
- Revisions ID are hashes / History authentication
- Git knows about mv, rm, symlink

Git workflow



Git workflow



Git : how to (1/2)

In local

```
# Create your working dir.  
> mkdir foo && cd foo  
  
# Initialize your repository  
> git init  
  
# Add a file  
> echo "Hello world" >> bar.txt  
> git add bar.txt  
  
# Check your changes  
> git status  
  
# Commit what you've done  
> git commit -m "This is my initial commit"
```

Git : how to (2/2)

From an existing remote repo

```
# Clone an existing remote repository
> git clone git@hoster:user/repo.git
# or
> git clone https://hoster.com/user/repo.git

# Make some changes

# Commit what you've done
> git commit -m "I did [stuff]"

# Propagate your changes to the remote repository
> git push

# On GitHub :
# If you don't have read-write permissions ,
# fork the repo and ask make a pull request
```

CVS to Git (1/2)

CMS provides tool for migrating Usercode (from Ixplus) (see [here](#))

```
> NAME=Eulisse
> REPO=/afs/cern.ch/project/cvs/repos/CMSSW/UserCode/$NAME

> cvs2git --blobfile=git-blob.dat \
           --dumpfile=git-dump.dat \
           $REPO \
           --symbol-transform="(.*):\1 - " \
           --use-external-blob-generator \
           --fallback-encoding "UTF8" \
           --username $USER
```

CVS to Git (2/2)

CMS provides tool for migrating Usercode (from lxplus) (see [here](#))

```
> MY_GITHUB_USER=`git config --get user.github`  
> MY_REMOTE=git@github.com:$MY_GITHUB_USER/usercode.git  
> git init usercode  
> cd usercode  
> git remote add origin $MY_REMOTE  
> cat ../git-blob.dat ../git-dump.dat | git fast-import  
> git config http.postBuffer 524288000  
> git push --mirror -u origin
```

CMSSW

To setup a CMSSW area

- Things will be pretty much the same
- But it sounds like you will need a gitHub account (git cms-addpkg)...

```
> scram project CMSSW_6_2_0_pre8  
> cd CMSSW_6_2_0_pre8/src  
> cmsenv  
  
> git cms-addpkg Some/Package
```

GitHub



- A (popular) hosting solution
- Free for public repositories
- (Friendly) private company

Features

- Pull requests
- Social aspects (teams, feeds, followers, graphs)
- Wikis, slides, web pages
- Issues management

GitHub : how to

- Sign up to [GitHub](#)
- Configure git on your machine

```
> git config --global user.name <First Name> <Last Name>  
> git config --global user.email <Your-Email-Address>  
> git config --global user.github <Your-GitHub-Username>
```

- Generate and register your SSH key (see [help](#))
- Create / join teams
- Create repositories

References and help

- [15-minutes interactive tutorial](#)
 - [Good site to understand the commands and concepts](#)
 - ["Enfin comprendre Git"](#)
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- [CMSSW Github FAQ](#)
 - [UserCode migration FAQ](#)
 - [CMS presentation](#)
 - [Pull request \(Github only\)](#)
 - [Proposing changes to CMSSW](#)