



# Migration to Git: Status, Workflow, Timetable

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# Reminder: Why SVN to Git?

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- CERN SVN service ending from LHC LS2...
  - ... *thus we have to migrate, but...*
- Git [has many advantages](#), and the GitHub/Lab hosting services provide cohesive, useful tooling:
  - *Collaboration/workflow via Topic Branches and Merge Requests, bugs tracked and cross-ref'd to fixes, code browsing, CI integrations, ...*
- **Update on status, migration timetable (soon!), and how we'll develop Geant4 using Git**

# Convert SVN to Git

- **Done:**

- [svn2git](#) tool for initial conversion, later updates pulled from SVN
- SVN **trunk** to Git **master** branch
- Global release tags to Git tags
- Check metrics with [git-sizer](#)

- **In progress:**

- Large file removal/LFS conversion with [BFG](#) tool.
- **Benchmarking+Validation SVN repos**

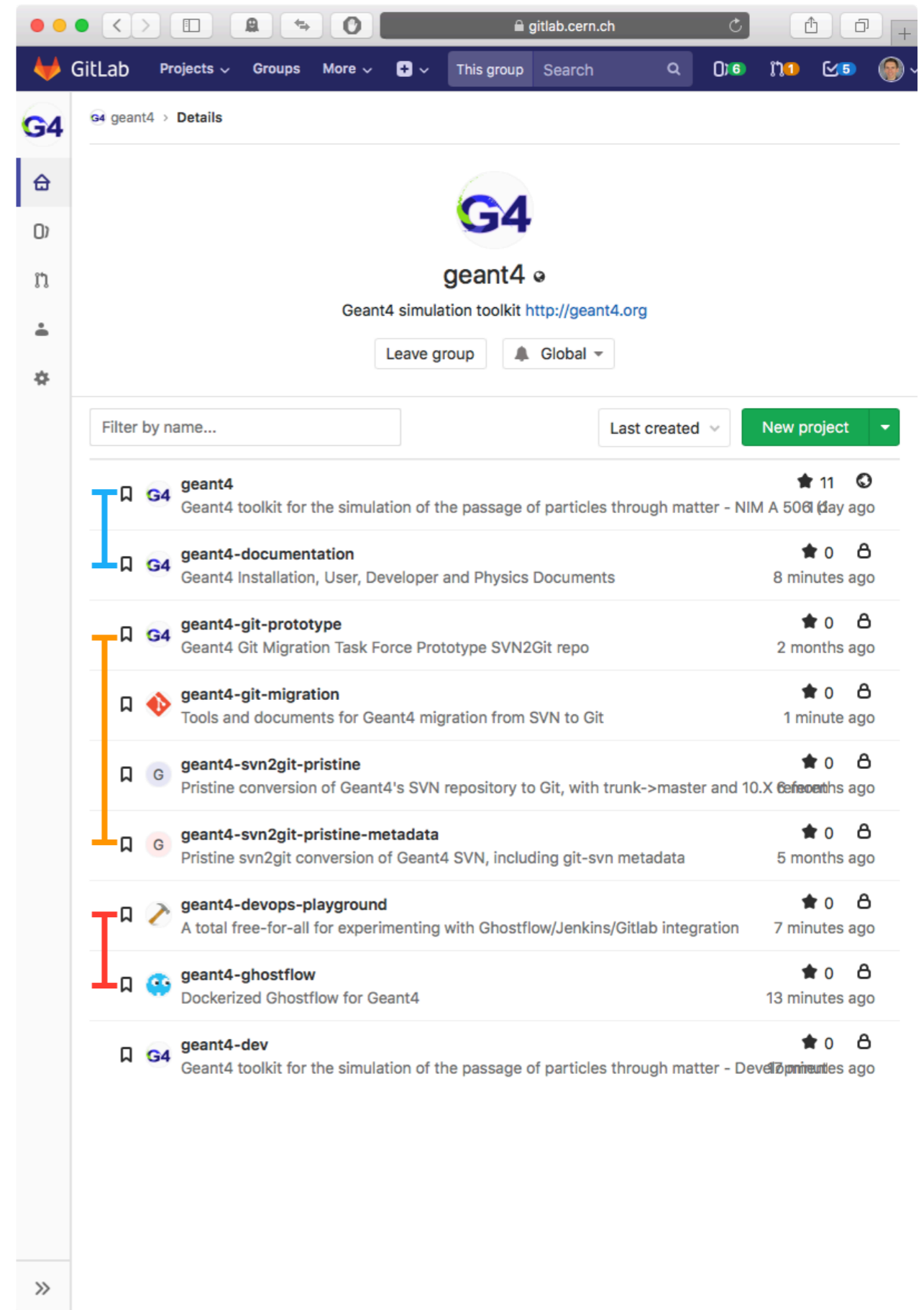
```
$ git-sizer --verbose
Processing blobs: 306244
Processing trees: 443005
Processing commits: 90971
Matching commits to trees: 90971
Processing annotated tags: 94
Processing references: 97
```

Name	Value	Level of concern
Overall repository size		
* Commits		
* Count	91.0 k	
* Total size	30.9 MiB	
* Trees		
* Count	443 k	
* Total size	283 MiB	
* Total tree entries	7.38 M	
* Blobs		
* Count	306 k	
* Total size	6.37 GiB	
* Annotated tags		
* Count	94	
* References		
* Count	97	
Biggest objects		
* Commits		
* Maximum size [1]	13.3 KiB	
* Maximum parents [2]	1	
* Trees		
* Maximum entries [3]	834	
* Blobs		
* Maximum size [4]	146 MiB	*****
History structure		
* Maximum history depth	66.4 k	
* Maximum tag depth [5]	1	
Biggest checkouts		
* Number of directories [6]	2.07 k	*

```
$ ./git-find-largest-blobs.sh
All sizes are in kB's. The pack column is the size of the object, compressed,
size pack SHA location
149933 59902 3c1bda78a6d8713ae84ae8a2503fdb7cdd9b0f2e examples/advanced/hac
89193 32722 04dab2e72892cd94234efa267ba8397e82bb21ad examples/advanced/hac
28945 7386 3cb7728306036124ee43da41159164a3d708b542 examples/advanced/hac
26642 124 70c20204a5bceebe6f3c00e158141cad2cb846ab tests/test58/test58.c
18917 1476 c2e62763d545d708fd3a1563d274b860ea4e718f examples/extended/opt
16562 1859 e5857002829d35fcec43653711ede14f79cfccd6 examples/.doxygen/gec
11909 2100 00992dd3e946609fac03a3ae8976fb9f796d3ac4 examples/advanced/hac
10919 948 9d3dc2211448c84d03135fdeb2935eb18ab25ec7 examples/extended/opt
9753 896 5f9832654ccec0e8329c93d2f758f8b5d1b4c215 source/geometry/solid
8878 719 0127ab43e4934859fe4c07b29792fd7bb080a992 examples/advanced/LA
```

# Hosting @ CERN GitLab

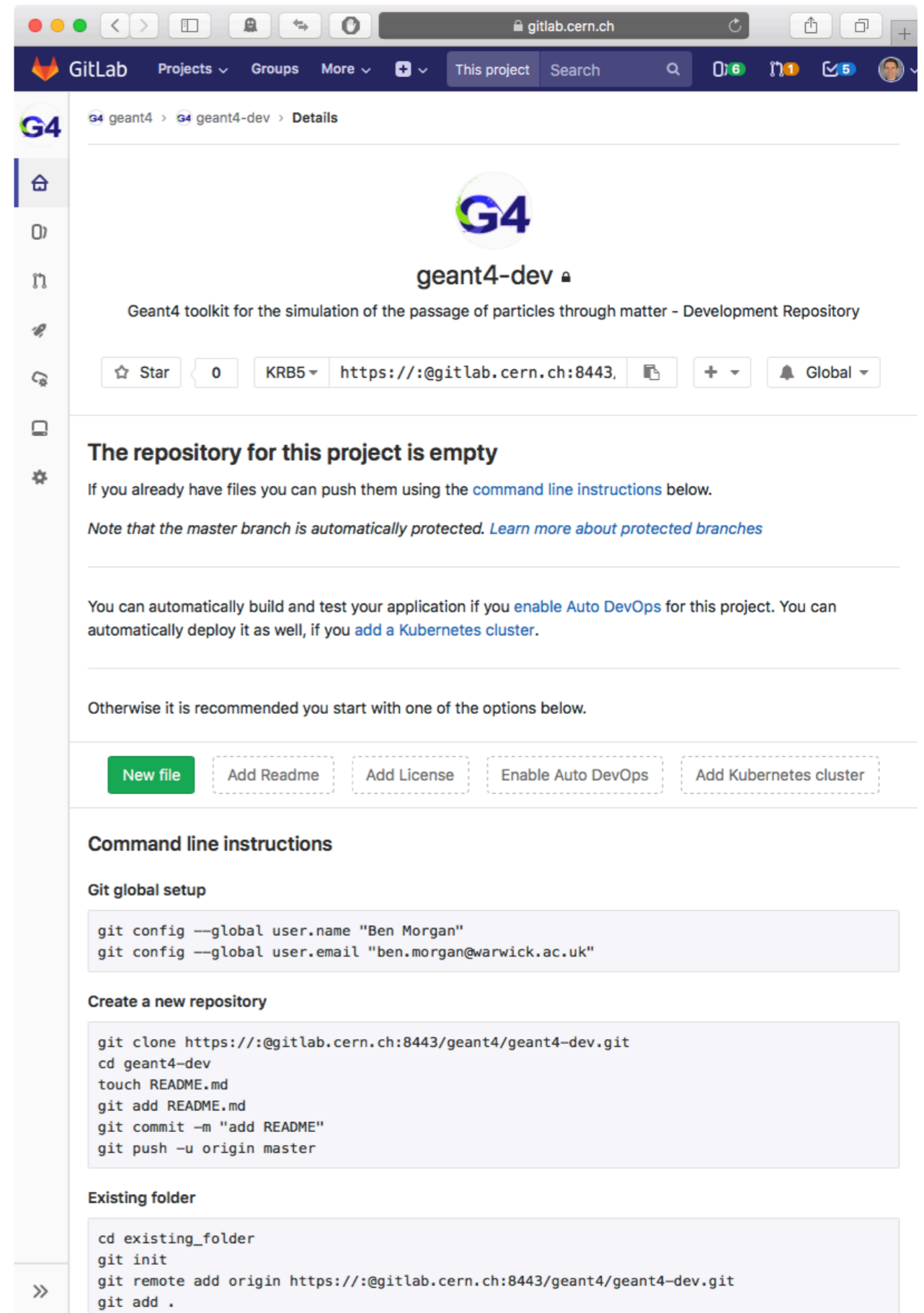
- Geant4 GitLab "group"
  - <https://gitlab.cern.ch/geant4>
- Repositories for:
  - *Published Public Releases*
  - *Documentation*
  - *Conversion/Testing/Migration Repos*
  - *Jenkins/Git Tooling and Development*
- **Ensure you can login and access the group and repos. Bookmark!**



The screenshot displays the GitLab CERN interface for the 'geant4' group. The browser address bar shows 'gitlab.cern.ch'. The page header includes the GitLab logo, navigation menus for 'Projects', 'Groups', and 'More', and a search bar. The main content area shows the 'geant4' group profile with a logo, name, and website link 'http://geant4.org'. Below the profile, there is a filter bar with 'Filter by name...', 'Last created', and a 'New project' button. A list of repositories follows, each with a bookmark icon, repository name, description, star count, lock status, and creation time. The repositories listed are: 'geant4' (11 stars, 1 day ago), 'geant4-documentation' (0 stars, 8 minutes ago), 'geant4-git-prototype' (0 stars, 2 months ago), 'geant4-git-migration' (0 stars, 1 minute ago), 'geant4-svn2git-pristine' (0 stars, 6 months ago), 'geant4-svn2git-pristine-metadata' (0 stars, 5 months ago), 'geant4-devops-playground' (0 stars, 7 minutes ago), 'geant4-ghostflow' (0 stars, 13 minutes ago), and 'geant4-dev' (0 stars, 7 minutes ago). A vertical bar on the left side of the repository list highlights specific items: a blue bar for 'geant4' and 'geant4-documentation', an orange bar for 'geant4-git-prototype', 'geant4-git-migration', and 'geant4-svn2git-pristine-metadata', and a red bar for 'geant4-devops-playground' and 'geant4-ghostflow'.

# geant4-dev.git

- **The authoritative repository**
- **Done:**
  - *CERN/LDAP accounts for access*
  - *Collaboration can **fork+contribute***
  - *WG Coordinators can **integrate***
  - *Integration with Jenkins+**Ghostflow***
- **In Progress:**
  - <https://gitlab.cern.ch/geant4/geant4-dev>
  - **Populated on migration: Bookmark it!**



The screenshot shows the GitLab interface for the repository `geant4-dev`. The repository is described as "Geant4 toolkit for the simulation of the passage of particles through matter - Development Repository". It is currently empty. The page provides instructions for cloning the repository and setting up the local environment.

**Command line instructions**

**Git global setup**

```
git config --global user.name "Ben Morgan"
git config --global user.email "ben.morgan@warwick.ac.uk"
```

**Create a new repository**

```
git clone https://:@gitlab.cern.ch:8443/geant4/geant4-dev.git
cd geant4-dev
touch README.md
git add README.md
git commit -m "add README"
git push -u origin master
```

**Existing folder**

```
cd existing_folder
git init
git remote add origin https://:@gitlab.cern.ch:8443/geant4/geant4-dev.git
git add .
```

The screenshot shows a GitLab repository page for 'geant4-svn2git-pristine-metadata'. The page includes a sidebar with navigation options like Project, Details, Activity, and Cycle Analytics. The main content area displays the repository name, a description, and various statistics. A recent commit is highlighted, showing the author 'Gabriele Cosmo' and the commit message 'Enabled VecGeom wrapper G4UTet...'. Below this, a table lists repository files and folders with their last commit and update dates.

Repository: geant4-svn2git-pristine-metadata  
 Description: Pristine svn2git conversion of Geant4 SVN, including git-svn metadata

Files (828.1 MB) Commits (66,407) Branch (1) Tags (95) LICENSE

Buttons: Add Changelog, Add Contribution guide, Add Kubernetes cluster, Set up CI/CD

Current branch: master / geant4-svn2git-pristine-metadata

Recent commit: Enabled VecGeom wrapper G4UTet... (5e396b87) by Gabriele Cosmo, 1 day ago.

Name	Last commit	Last update
ReleaseNotes	First draft...	1 week ago
cmake	Added proper configuration for SoQt when Inventor ...	2 days ago
config	Tagged config-V10-04-05	4 months ago
environments	add new ZeroMQ interface package	8 months ago
examples	Trying to fix compilation error in Win	2 days ago
source	Enabled VecGeom wrapper G4UTet...	1 day ago
tests	git-svn-id: svn+ssh://svn.cern.ch/repos/geant4/trunk...	3 days ago
CMakeLists.txt	Release 10.5-beta	2 months ago
Configure	Updated data library versions	6 years ago
LICENSE	Corrected link to license page	12 years ago
svn-merge-disclaimer.log	reference outputs for 10-04-ref-06 / 10-05-beta	1 month ago
svn-merge-math.log	reference outputs for 10-04-ref-06 / 10-05-beta	1 month ago

# Post Migration...

Repository will look much like this. Familiar files and layout...**Plus...**

# Git Documentation

- **In progress at:**

- <https://gitlab.cern.ch/geant4/geant4-git-migration>

- *For Users: Classic FOSS README*

- *For Developers: Git/Workflow HowTo*

- *For Shifters: Testing and Integrating Merge Requests HowTo*

- **Please review and feedback via Issues (or submit MRs!):**

- <https://gitlab.cern.ch/geant4/geant4-git-migration/issues>

The screenshot shows the GitLab interface for the repository `geant4/geant4-git-migration`. The breadcrumb navigation indicates the current path is `master` / `geant4-git-migration` / `Geant4DeveloperDocumentation`. A commit titled "Update CONTRIBUTING.rst" by Gabriele Cosmo is shown, with the commit hash `d4bd3328`. Below this, a table lists the repository files:

Name	Last commit	Last update
CONTRIBUTING.rst	Update CONTRIBUTING.rst	1 week ago
README.rst	Resolve "Provide Documentation for Gea..."	1 month ago
SHIFTERS.rst	Resolve "Provide Documentation for Gea..."	1 month ago

The `README.rst` content is displayed below, featuring the following sections:

- Geant4: A Simulation Toolkit**

Geant4 is a toolkit for the simulation of the passage of particles through matter. Its areas of application include high energy, nuclear and accelerator physics, as well as studies in medical and space science.

For more information about how to use Geant4 and its application domains, please visit [the Geant4 website](#)

There are three main reference papers for Geant4:

  - [Nuclear Instruments and Methods in Physics Research A 835 \(2016\) 186-225](#)
  - [IEEE Transactions on Nuclear Science 53 No. 1 \(2006\) 270-278](#)
  - [Nuclear Instruments and Methods in Physics Research A 506 \(2003\) 250-303](#)
- Installation**

For detailed instructions on building and installing Geant4, including all supported platforms and configuration options, please refer to the [Installation Guide](#).
- Questions, Bugs, and Requirements**

Full documentation on Geant4, including installation, use of the toolkit in applications, physics lists, and physics model implementations. can be found on the [User Documentation Site](#).

<https://gitlab.cern.ch>

geant4/geant4-dev

fork

Propose

**bmorgan/geant4-dev**

Test

Results

Stage, Merge

comment/push

Jenkins+CDash  
(Testing and Reporting)

Tag Nightly

**Ghostflow**  
Git Hosted Workflow Bot

# Git/Testing Infrastructure

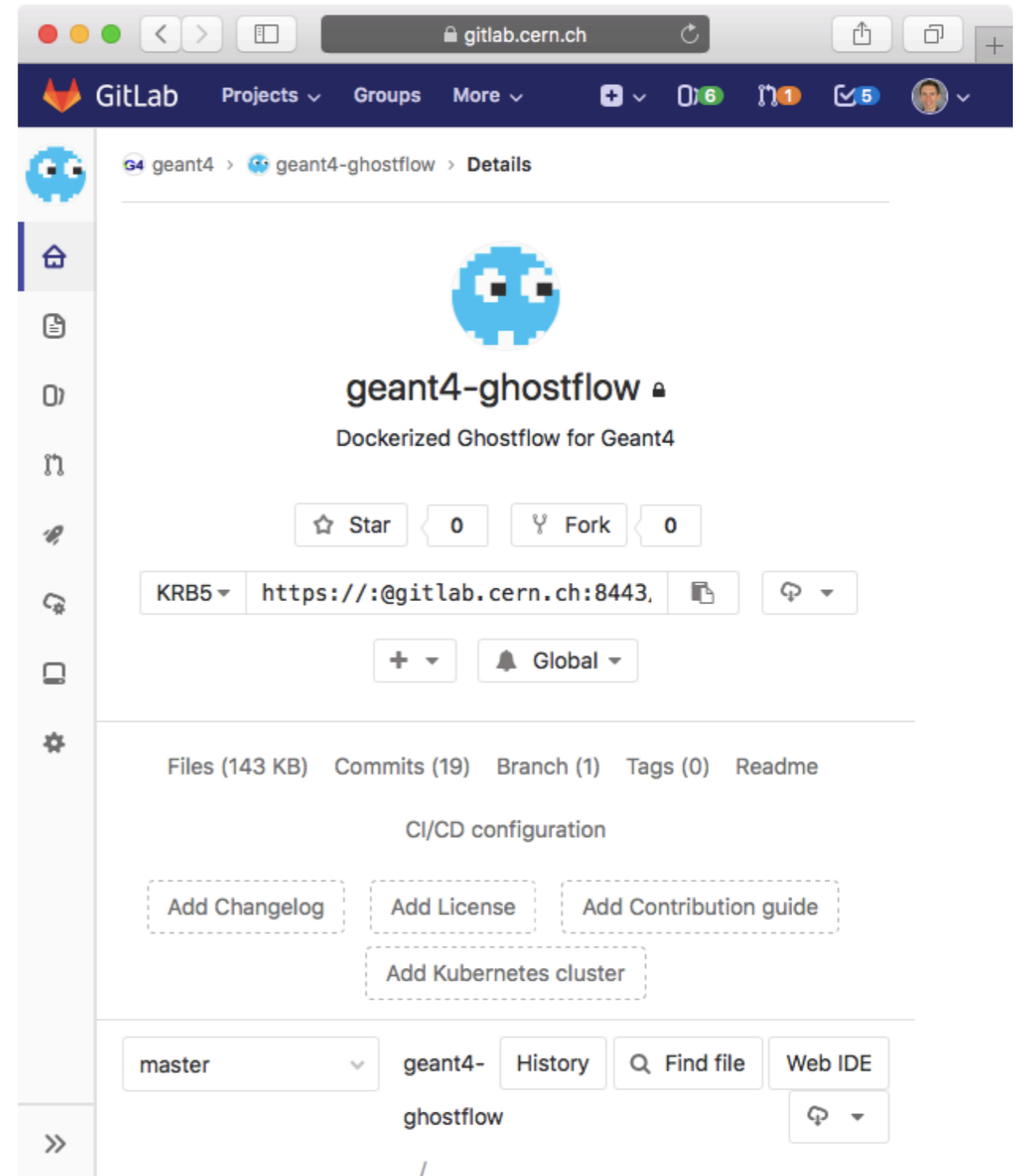
Automatic comms via HTTPS/SSH

**NEW: Your own repo copy**

**NEW: Ghostflow**

# Ghostflow

- Git workflow web application from Kitware
- **Conceptually similar to G4SVN/TagsDB**
- Runs in Docker container
- Hosted through CERN's OpenShift PaaS
  - *But could be anywhere supporting Docker containers*



# Geant4 development in Ghostflow (short!)

---

1. Get your own copy of the code on/from GitLab
2. Start a **Topic Branch**, develop, build, test, repeat, push branch to GitLab
3. Create **Merge Request** to propose your **Topic Branch**
4. Ghostflow/Jenkins test your **Topic Branch** and report issues via GitLab UI and email. Shifter+WGs review results and code, request fixes if needed.
5. The **Topic Branch** is accepted and merged by Shifter

# G4SVN to Ghostflow in a Nutshell...

---

*New Development*

Start **Topic Branch** from master

*Proposed Tag*

**Merge Request** for **Topic Branch**

*Selected Tag*

**Staged Merge Request**

*Rejected Tag*

**N/A:** direct fixes on **Merge Request**

*Accepted Tag*

**Merge Request** merged to master

*Co-Working Tags*

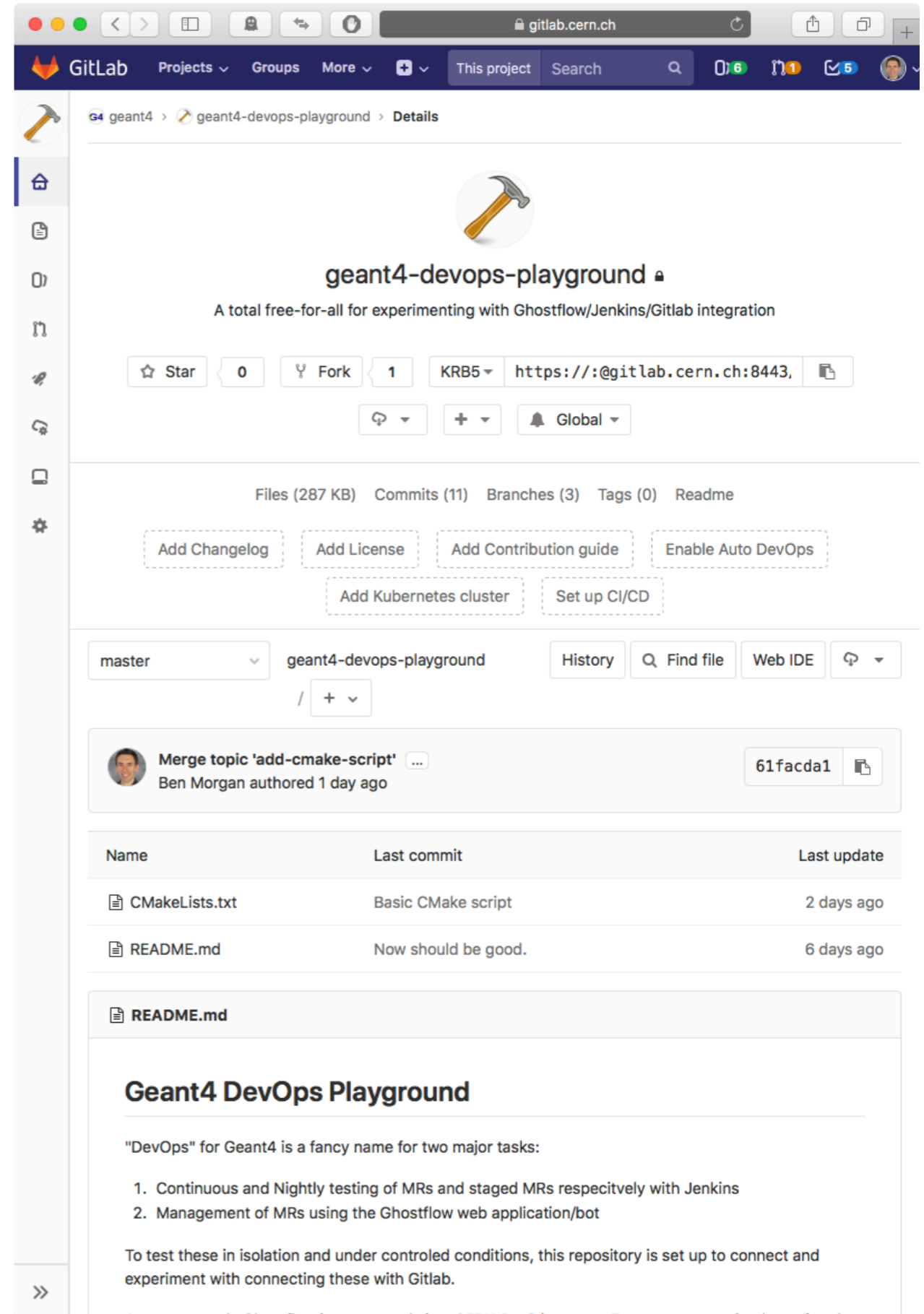
**N/A: Topic Branch** has all changes

*Reference Tag*

HEAD of master rolling ref, tag monthly

# Ghostflow Demonstrator

- <https://gitlab.cern.ch/geant4/geant4-devops-playground>
- It uses the **Geant4 workflow** but in a **compact repo** on which **mistakes and errors are expected**
- **You should use this to try out and become familiar with the workflow and also git/GitLab!**



The screenshot shows the GitLab interface for the repository `geant4-devops-playground`. The page includes a navigation sidebar, a header with the GitLab logo and navigation links, and a main content area. The repository is described as "A total free-for-all for experimenting with Ghostflow/Jenkins/Gitlab integration". It shows 0 stars, 1 fork, and 11 commits. The repository is on the `master` branch. A recent merge request is visible, titled "Merge topic 'add-cmake-script'" by Ben Morgan, authored 1 day ago. Below the merge request, there is a table of files:

Name	Last commit	Last update
<code>CMakeLists.txt</code>	Basic CMake script	2 days ago
<code>README.md</code>	Now should be good.	6 days ago

The `README.md` file content is visible below the table, starting with the heading "Geant4 DevOps Playground". The text describes the purpose of the repository and lists two tasks: 1. Continuous and Nightly testing of MRs and staged MRs respectively with Jenkins, and 2. Management of MRs using the Ghostflow web application/bot. The README also mentions that the repository is set up to connect and experiment with connecting these with GitLab.

gitlab.cern.ch

GitLab Projects Groups Activity Milestones Snippets This project Search 6 1 5

geant4 > geant4-devops-playground > Details

geant4-devops-playground

A total free-for-all for experimenting with Ghostflow/Jenkins/Gitlab integration

Star 0 Fork 1 KRB5 https://:@gitlab.cern.ch:8443/ Global

Files (287 KB) Commits (11) Branches (3) Tags (0) Readme

Add Changelog Add License Add Contribution guide Enable Auto DevOps Add Kubernetes cluster Set up CI/CD

master geant4-devops-playground / + History Find file Web IDE

Merge topic 'add-cmake-script' Ben Morgan authored 2 days ago 61facda1

Name	Last commit	Last update
------	-------------	-------------

# 1a: Fork Main Repository

We use forks to **avoid conflicts**, and ease the **review and test process**

gitlab.cern.ch

GitLab Projects Groups Activity Milestones Snippets

This project Search

geant4-devops-playground

Project

Repository

Issues 1

Merge Requests 1

CI / CD

Operations

Registry

Settings

geant4 > geant4-devops-playground > Fork project

### Fork project

Select a namespace to fork the project

A fork is a copy of a project. Forking a repository allows you to make changes without affecting the original project.

Ben Morgan

atlas-sw-git

geant4-git-sb

atlas-simulation-team

<< Collapse sidebar

# 1a: Fork Main Repository

It's your fork, so put in **your GitLab namespace** if given the option!

The screenshot shows the GitLab interface for a repository named 'geant4-devops-playground'. The breadcrumb navigation at the top reads 'Ben Morgan > geant4-devops-playground > Details', with the entire path highlighted by a red circle. A blue banner at the top of the repository page states 'The project was successfully forked.' Below this, the repository name 'geant4-devops-playground' is displayed with a hammer icon. A description follows: 'A total free-for-all for experimenting with Ghostrow/Jenkins/GitLab integration', with the text 'Forked from geant4 / geant4-devops-playground' highlighted by a red circle. The repository statistics show 0 stars and 0 forks. The URL 'https://: @gitlab.cern.ch:8443,' is visible. Below the repository name, there are buttons for 'Add Changelog', 'Add License', 'Add Contribution guide', 'Add Kubernetes cluster', and 'Set up CI/CD'. An 'Auto DevOps' section is also present, with an 'Enable in settings' button. The bottom of the page shows the current branch 'master' and the repository path 'geant4-devops-playground / +'. The left sidebar contains navigation options like 'Project', 'Details', 'Activity', 'Cycle Analytics', 'Repository', 'Issues', 'Merge Requests', 'CI / CD', 'Operations', 'Registry', and 'Settings'.

# 1a: Fork Main Repository

A fork is just another clone.  
You push your Topic Branches  
to share/backup/Merge Request

Project members

You can add a new member to **geant4-devops-playground** or share it with another group.

Add member | Share with group

Select members to invite

geant4bot

Geant4 Bot@geant4bot

[Read more](#) about role permissions

Access expiration date

Expiration date

Add to project | Import

Existing members and groups

Members of **geant4-devops-playground** 2

Find existing members by name | Name, ascending

Ben Morgan @bmorgan **It's you** | Given access 4 minutes ago | Maintainer

Geant4 Bot @geant4bot | Given access 27 seconds ago | Maintainer | Expiration date | [Delete]

# 1b: Add Ghostflow Robot

When a Merge Request is made, the bot needs access to your fork to review/use it

The screenshot shows the GitLab interface for a project named 'geant4-devops-playground'. The page is viewed from the perspective of Ben Morgan. The project description states it is a 'total free-for-all for experimenting with Ghostflow/Jenkins/Gitlab integration' and is a fork of 'geant4 / geant4-devops-playground'. A red box highlights the SSH URL 'ssh://git@gitlab.cern.ch:7999/...' with a 'Copy URL to clipboard' tooltip. Below the URL are buttons for 'Add Changelog', 'Add License', 'Add Contribution guide', 'Add Kubernetes cluster', and 'Set up CI/CD'. A merge request for 'add-cmake-script' by Ben Morgan is shown, with a commit hash '61facda1'. A table lists files: 'CMakeLists.txt' (Basic CMake script, 3 days ago) and 'README.md' (Now should be good., 1 week ago).

Ben Morgan > geant4-devops-playground > Details

## geant4-devops-playground

A total free-for-all for experimenting with Ghostflow/Jenkins/Gitlab integration  
Forked from [geant4 / geant4-devops-playground](#)

Star 0 Fork 0 SSH `ssh://git@gitlab.cern.ch:7999/...` Copy URL to clipboard

Files (125 KB) Commits (11) Branches (3) Tags (0) README

Add Changelog Add License Add Contribution guide Add Kubernetes cluster Set up CI/CD

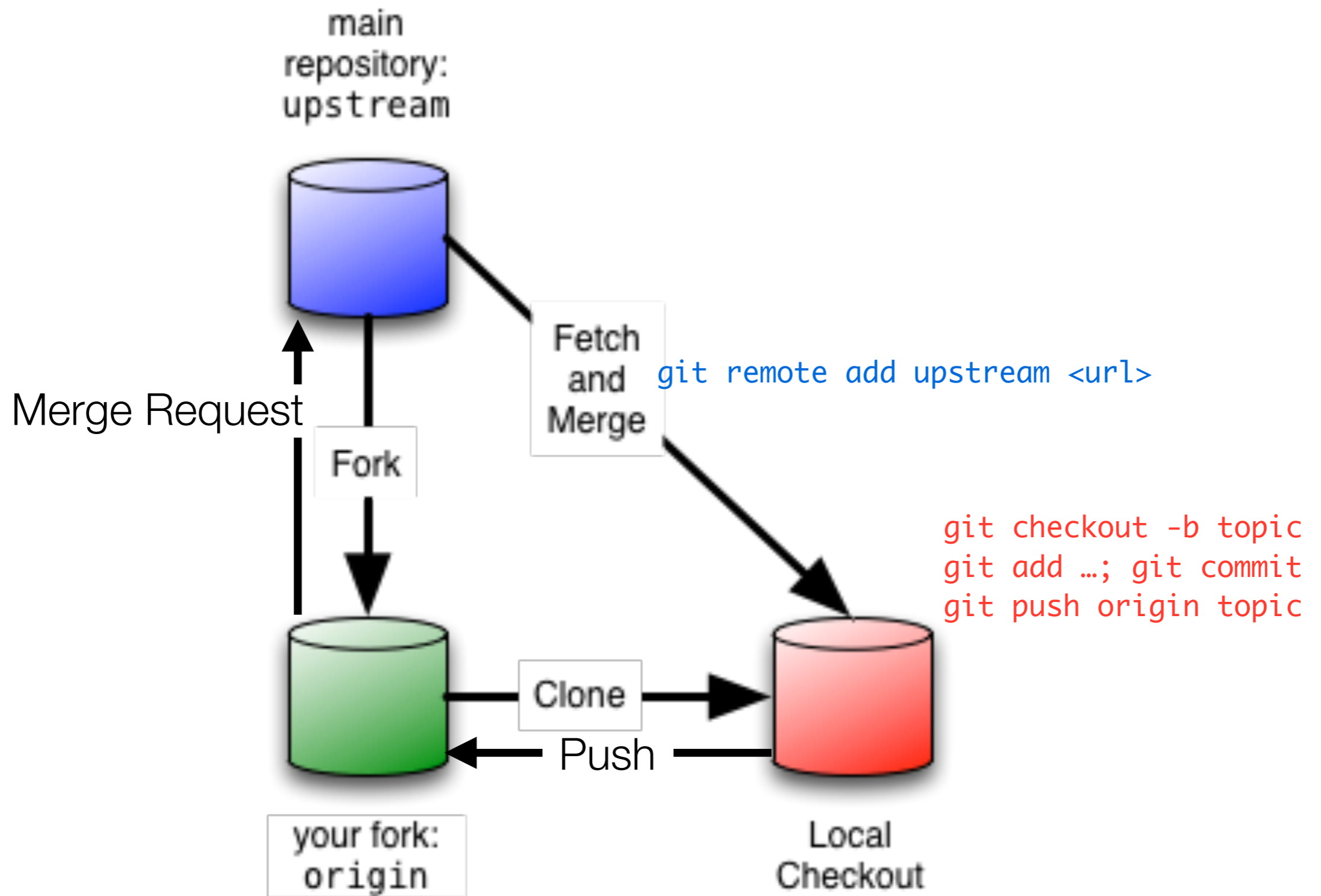
master geant4-devops-playground / + History Find file Web IDE

Merge topic 'add-cmake-script' Ben Morgan authored 2 days ago 61facda1

Name	Last commit	Last update
CMakeLists.txt	Basic CMake script	3 days ago
README.md	Now should be good.	1 week ago

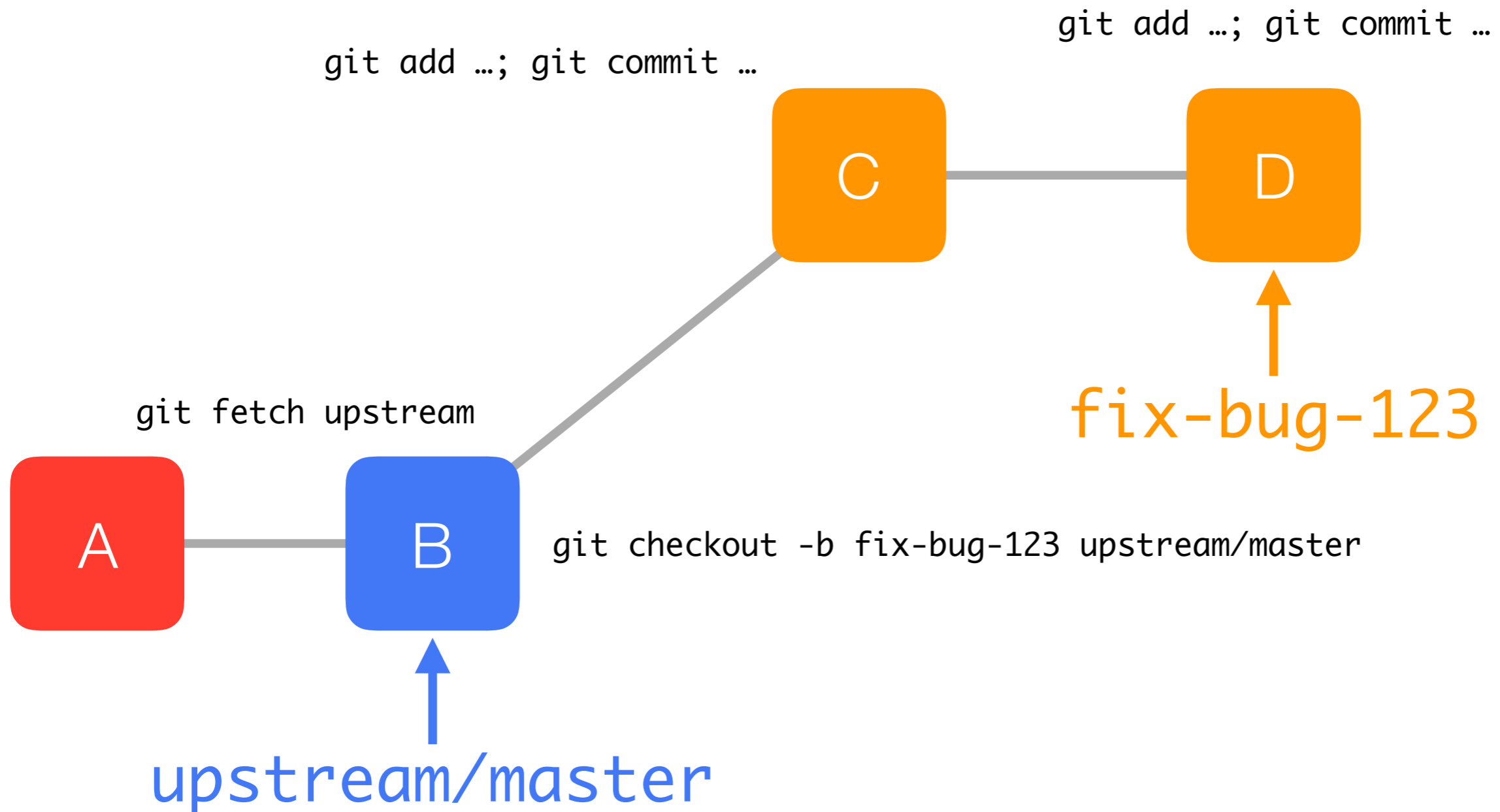
# 1c: Get Local Clone

To actually develop, need a working copy.  
Obtained by cloning your fork from  
GitLab over ssh/https/https+krb5



# 1c: Get Local Clone

**Local Checkout is just another clone**, like your Fork. You can have multiple local checkouts (e.g. one on Desktop, one on Laptop)



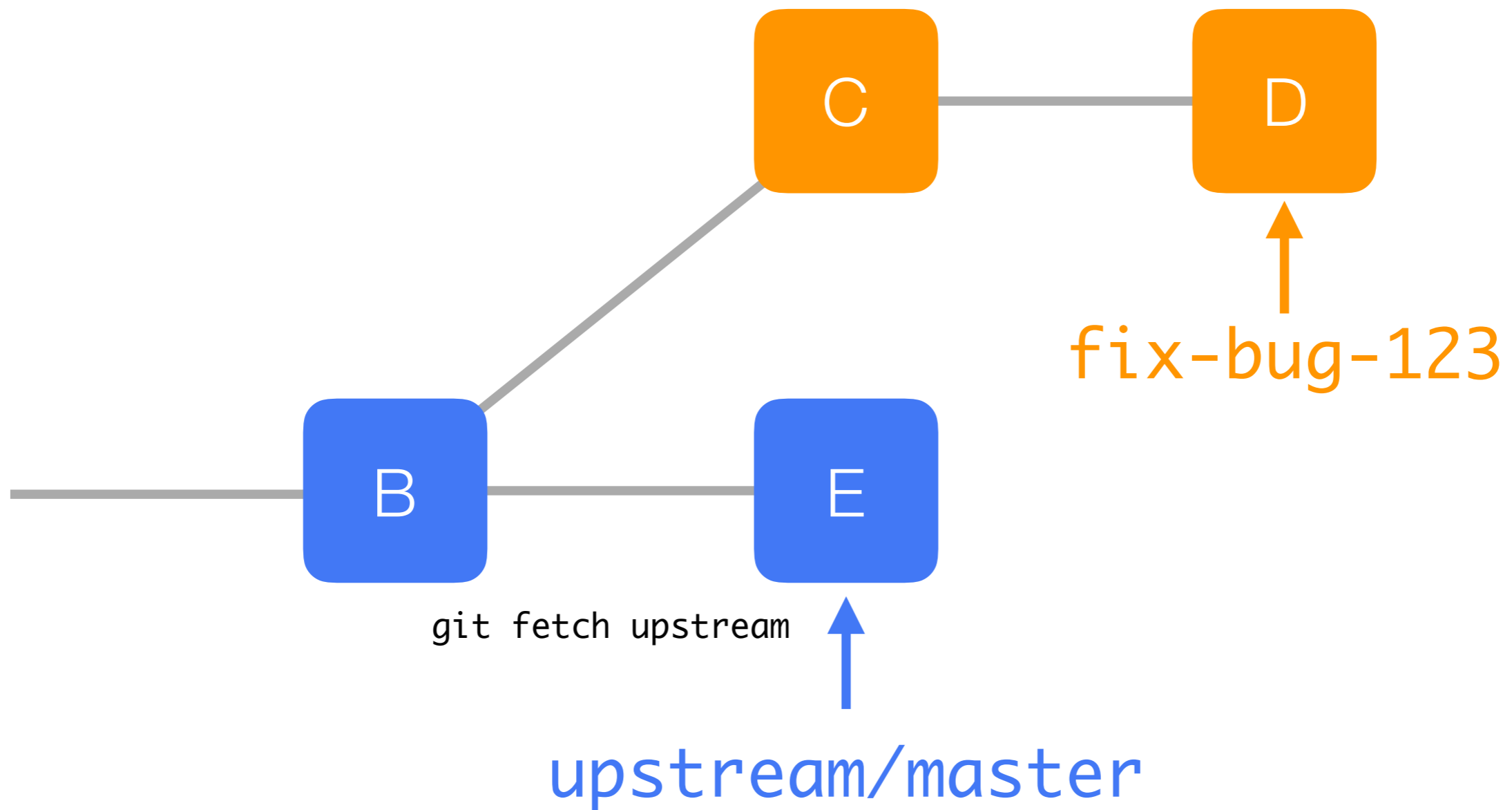
## 2a: Create Topic Branch

We always start by fetching the latest changes from upstream to stay up to date

# Guidelines for Topic Branches

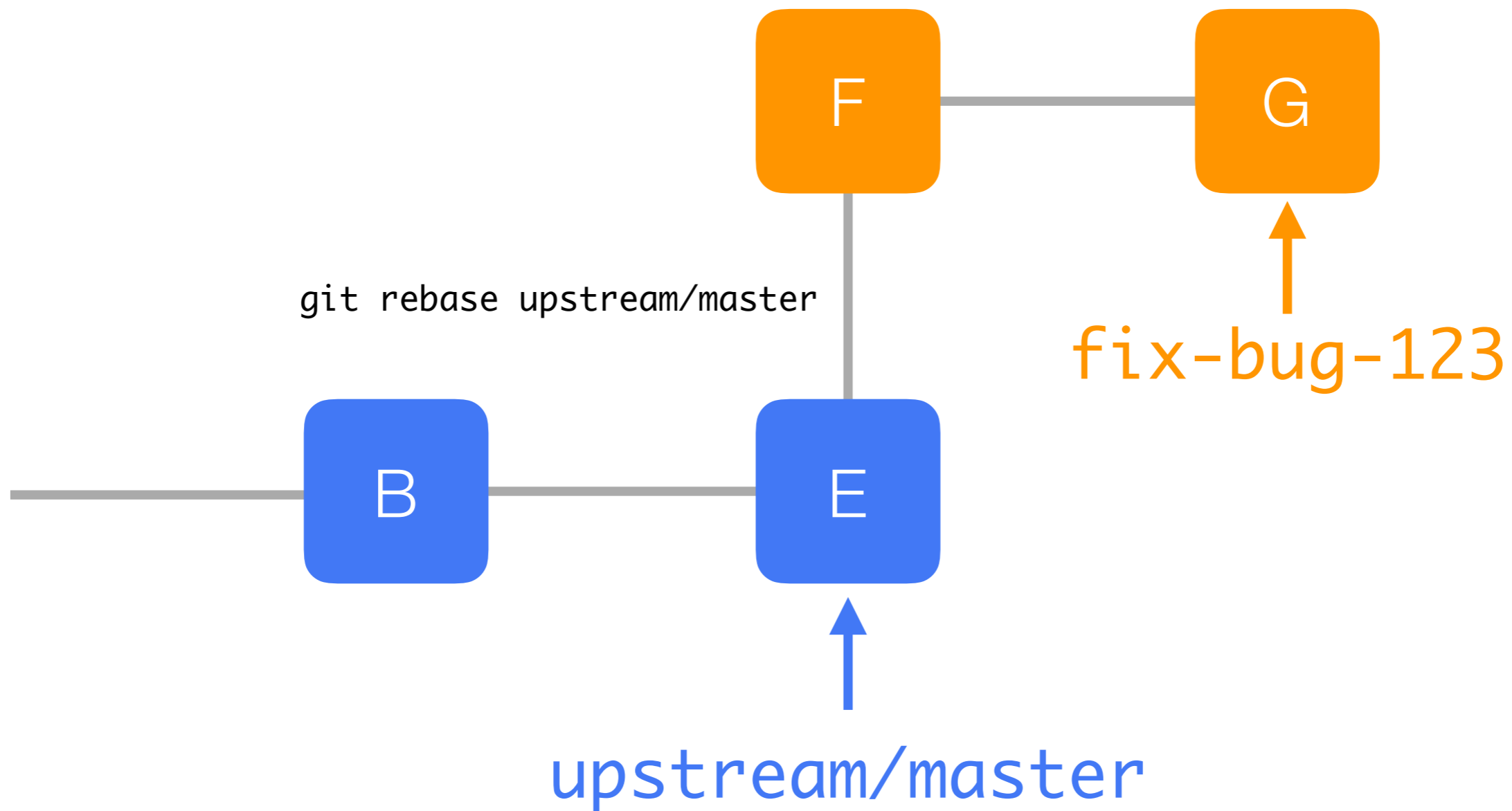
---

- Should add a coherent feature or fix a specific issue
  - *Topic Branch can change code **in several categories**, if needed, acting like a set of G4SVN co-working tags.*
- You can't have more than one Topic Branch checked out at a time, but switching is cheap and fast
  - *You can have as many as you want (but be sensible!)*
- **Remember to write clear commit messages and keep History files on touched categories up to date!**



## 2b: Updating Topic Branch

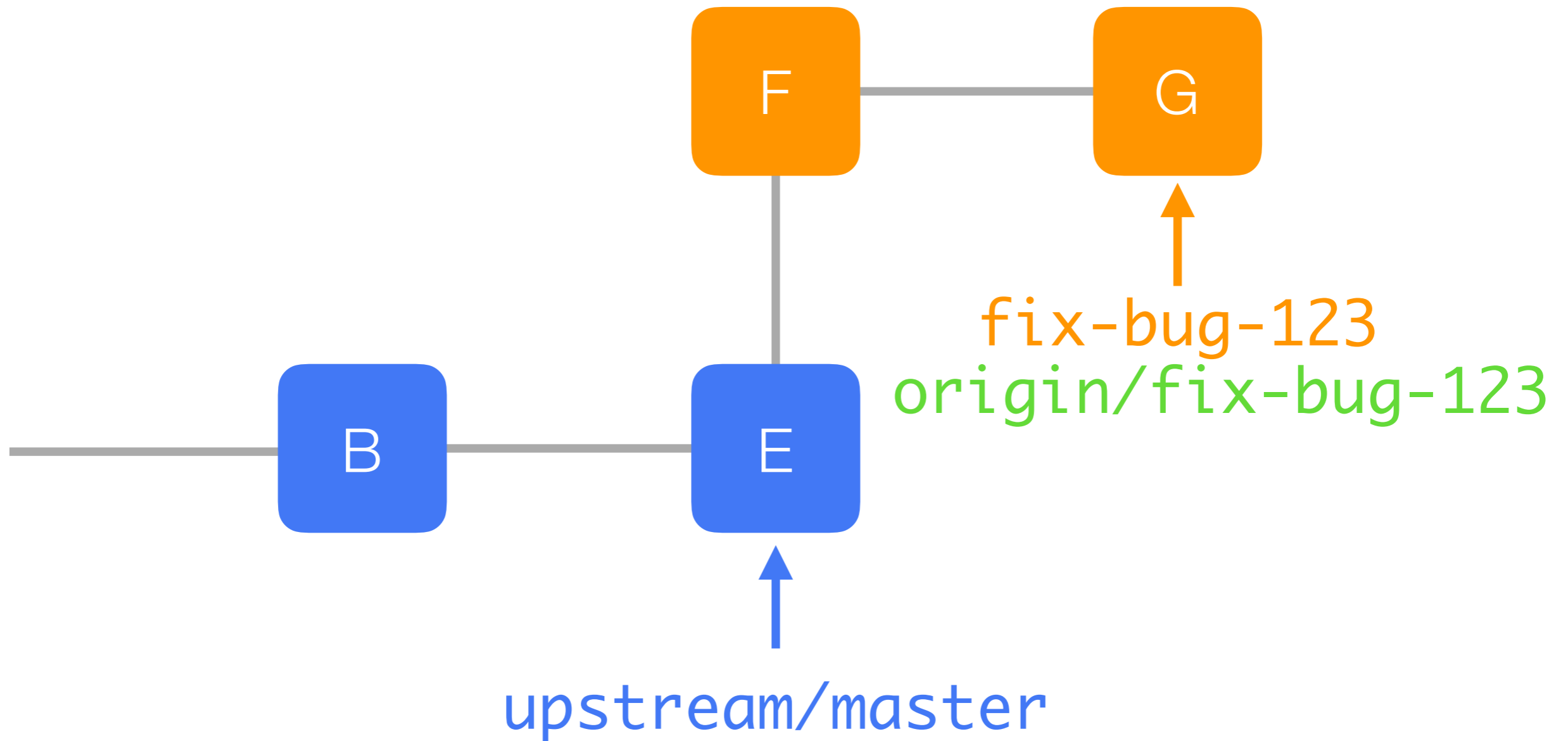
As you develop, other topics will be merged upstream.  
**Fetch and rebase each day**



## 2b: Updating Topic Branch

As you develop, other topics will be merged upstream.  
**Fetch and rebase each day**

```
git push -u origin fix-bug-123
```



## 2b: Publish Topic Branch

When it's ready for integration, publish the Topic Branch to your Fork

Ben Morgan > geant4-devops-playground > Details

You pushed to `my-first-topic` at Ben Morgan / geant4-devops-playground 38 seconds ago [Create merge request](#)

**geant4-devops-playground**

A total free-for-all for experimenting with Ghostflow/Jenkins/Gitlab integration  
Forked from [geant4 / geant4-devops-playground](#)

☆ Star 0    🍴 Fork 0    KRB5    [Add Changelog](https://:>@gitlab.cern.ch:8443,</a>    📄    🔗    +    🔔 Global</p><p>Files (133 KB)    Commits (11)    Branches (4)    Tags (0)    Readme</p><p><a href=)    [Add License](#)    [Add Contribution guide](#)    [Enable Auto DevOps](#)    [Add Kubernetes cluster](#)    [Set up CI/CD](#)

master    geant4-devops-playground / +    History    Find file    Web IDE    🔗

Merge topic 'add-cmake-script'    Ben Morgan authored 2 days ago    61facda1

Name	Last commit	Last update
<a href="#">CMakeLists.txt</a>	<a href="#">Basic CMake script</a>	2 days ago

# 3: Submit Merge Request

To submit the Topic Branch to the main repo, we create a Merge Request on GitLab

Ben Morgan > geant4-devops-playground > Merge Requests

## New Merge Request

From `bmorgan/geant4-devops-playground:my-first-topic` into `geant4/geant4-devops-playground:master` [Change branches](#)

Title

Start the title with `WIP:` to prevent a **Work In Progress** merge request from being merged before it's ready.

Add [description templates](#) to help your contributors communicate effectively!

Description

**Write** Preview

It simply echos the name of the topic branch it was created on.

Fill this out with what you put in the History file.

Whilst this duplicates information, it's helpful to have it here so there's a record of what the change is, and why it is needed.

Markdown and [quick actions](#) are supported [Attach a file](#)

Assignee

# 3: Submit Merge Request

Provide a clear title and description of what the Topic Branch does. **You can copy/paste the same info from the History file(s)**

gitlab.cern.ch

GitLab Projects Groups Activity Milestones Snippets This project Search

Source branch my-first-topic

Target branch master [Change branches](#)

Remove source branch when merge request is accepted.

Squash commits when merge request is accepted. [About this feature](#)

Contribution  Allow commits from members who can merge to the target branch. [About this feature](#)  
Not available for private projects

Submit merge request Cancel

Commits 1 Changes 1

25 Aug, 2018 1 commit

A simple shell script ...  
Ben Morgan authored 6 minutes ago

af36cee9

## 3: Submit Merge Request

Highly recommended to select **Remove source branch** to help keep your Fork clean

GitLab Projects Groups Activity Milestones Snippets This project Search

geant4 > geant4-devops-playground > Merge Requests > !6

Open Opened 1 minute ago by Ben Morgan Edit Close merge request

## A simple shell script

It simply echos the name of the topic branch it was created on.

Fill this out with what you put in the History file.

Whilst this duplicates information, it's helpful to have it here so there's a record of what the change is, and why it is needed.

Request to merge `bmorgan:my-first-topic` into `master` Web IDE Check out branch

Pipeline #490151 running for `af36cee9`.

No Approval required

Merge when pipeline succeeds Remove source branch Modify commit message

You can merge this merge request manually using the [command line](#)

Todo Add todo

Assignee No assignee - assign yourself Edit

Milestone None Edit

Time tracking No estimate or time spent

Labels None Edit

Lock merge request Unlocked Edit

1 participant

Notifications

Reference: geant4/geant4-dev

# 4a: Test Merge Request

Submitting the Merge Request triggers Jenkins Continuous and Ghostflow Check tests.

You can merge this merge request manually using the [command line](#)

0 0

**Discussion** 1 Commits 1 Pipelines 1 Changes 1

Geant4 Bot @geant4bot commented · 1 minute ago Maintainer

Jenkins Continuous OK

**Write** Preview B I

Write a comment or drag your files here...

Markdown and quick actions are supported [Attach a file](#)

Comment Close merge request

**Todo** Add todo

**Assignee** Edit  
No assignee - assign yourself

**Milestone** Edit  
None

**Time tracking** ?  
No estimate or time spent

**Labels** Edit  
None

**Lock merge request** Edit  
 Unlocked

**2 participants**

**Notifications**

Reference: geant4/geant4-dev

# 4a: Test Merge Request

Jenkins will comment on Pass/Fail  
Ghostflow only comments on Fail  
In both cases, they'll comment on  
the MR and you'll receive an email!

gitlab.cern.ch

GitLab Projects Groups Activity Milestones Snippets This project Search

Discussion 2 Commits 1 Pipelines 1 Changes > 0/1 discussion resolved

Geant4 Bot @geant4bot commented · 6 minutes ago  
Jenkins Continuous OK

Ben Morgan @bmorgan started a discussion on commit af36cee9 46 seconds ago

```
my-first-topic.sh 0 → 100644
1 + #!/bin/bash
2 +
3 + echo "my-first-topic"
```

Ben Morgan @bmorgan commented · 46 seconds ago  
Suggest making this more informative, maybe

```
echo "I was created on the my-first-topic-branch"
```

Write Preview B I " <> ☰ ☷ ☑ ☒

Assignee Edit  
No assignee - assign yourself

Milestone Edit  
None

Labels Edit  
None

Lock merge request Edit  
Unlocked

2 participants

Notifications

Reference: geant4/geant4-dev

# 4b: Review Merge Request

Independent of Tests, use Merge Request to review the changes with WGs/Shifter!

Discussion 3 Commits 2 Pipelines 2 Changes 1

0/1 discussion resolved

Ben Morgan @bmorgan changed this line in version 2 of the diff · 2 minutes ago

Reply... Resolve discussion

Ben Morgan @bmorgan added 1 commit · 2 minutes ago

- 2c77347e - Make output message more informative

Compare with previous version

Geant4 Bot @geant4bot commented · 38 seconds ago

Maintainer

Jenkins Continuous OK

Write Preview

Write a comment or drag your files here...

Markdown and quick actions are supported Attach a file

Comment Close merge request

Todo Add todo

Assignee Edit

No assignee - assign yourself

Milestone Edit

None

Time tracking

No estimate or time spent

Labels Edit

None

Lock merge request Edit

Unlocked

2 participants

Notifications

Reference: geant4/geant4-dev...

## 4b: Apply Fixes from Review

Unlike G4SVN tags, Merge Requests are not Rejected. Just add/push new commits to the Topic Branch.

The screenshot shows a GitLab interface with a discussion thread. The top navigation bar includes 'GitLab', 'Projects', 'Groups', 'Activity', 'Milestones', and 'Snippets'. The current page is 'Discussion' with 5 items, 'Commits' with 2, and 'Pipelines' with 2. A status bar at the top right shows '0/1 discussion resolved'. The discussion thread consists of four comments:

- Geant4 Bot @geant4bot commented · 3 minutes ago: Jenkins Continuous OK (Maintainer role)
- Ben Morgan @bmorgan commented · 45 seconds ago: Continuous is good after the fixes, so staging it for Nightly. A red box highlights the text 'Do: stage' and 'Ghostflow command'.
- Geant4 Bot @geant4bot commented · 35 seconds ago: Successfully staged. (Maintainer role)
- A comment box at the bottom with a 'Write' tab and a text area containing 'Write a comment or drag your files here...'. The text area has a red box around it.

The right sidebar contains a 'Todo' section with an 'Add todo' button. Below it are sections for 'Assignee' (No assignee - assign yourself), 'Milestone' (None), 'Time tracking' (No estimate or time spent), 'Labels' (None), 'Lock merge request' (Unlocked), and '2 participants' (Geant4 Bot and Ben Morgan). A 'Notifications' toggle is also visible.

# 4c: Stage Merge Request

After Continuous/Check tests pass, Shifter adds MR to Nightly Testing. Equivalent to G4SVN "Select Tag"

The screenshot shows a GitLab interface for a project. At the top, there's a navigation bar with 'GitLab' logo, 'Projects', 'Groups', 'Activity', 'Milestones', and 'Snippets'. A search bar and notification icons are also present. Below the navigation, there are tabs for 'Discussion' (7), 'Commits' (2), 'Pipelines' (2), and 'Changes'. A status bar indicates '0/1 discussion resolved'. The main content area shows two comments from 'Geant4 Bot @geant4bot'. The first comment, from 7 minutes ago, states 'Jenkins started a Nightly build using this Topic on Stage:' and lists 'Stage-Base: 61facda1', 'Stage-Tip: e771d45a', and 'Staged-Topics: !5 !6'. The second comment, from 2 minutes ago, states 'Jenkins completed the Nightly build using this Topic on Stage:' with the same details. A third comment indicates 'Geant4 Bot @geant4bot mentioned in merge request !5 · 7 minutes ago'. At the bottom, there's a 'Write' comment box with a rich text editor. On the right, a sidebar contains settings for 'Todo' (Add todo), 'Assignee' (No assignee - assign yourself), 'Milestone' (None), 'Time tracking' (No estimate or time spent), 'Labels' (None), 'Lock merge request' (Unlocked), '2 participants' (with avatars), and 'Notifications' (turned on). The reference is 'geant4/geant4-dev'.

# 4c: Test Staged MRs Nightly

Jenkins will keep you up to date via commenting and email as before

gitlab.cern.ch

GitLab Projects Groups Activity Milestones Snippets

This project Search

Discussion 12 Commits 3 Pipelines 3 Changes >

0/1 discussion resolved

Geant4 Bot @geant4bot commented · 5 minutes ago  
This merge request has been unstaged upon request.

Maintainer

Ben Morgan @bmorgan added 1 commit · 3 minutes ago  
• a586f568 - Apply fix to problem identified in Nightly

Compare with previous version

Geant4 Bot @geant4bot commented · 1 minute ago  
Jenkins Continuous OK

Maintainer

Ben Morgan @bmorgan commented · 47 seconds ago  
Great! Restaging...

Owner

Do: stage

1

Geant4 Bot @geant4bot commented · 40 seconds ago  
Successfully staged.

Maintainer

Todo Add todo >>

Assignee Edit  
No assignee - assign yourself

Milestone Edit  
None

Time tracking ?  
No estimate or time spent

Labels Edit  
None

Lock merge request Edit  
Unlocked

2 participants

Notifications

Reference: geant4/geant4-dev

# 4d: Unstage, Fix Errors, Stage

**Nightly failures are not rejected.** Shifter **unstages** MR, you can supply fixes. Continuous/Nightly tests are then rerun

The screenshot shows a GitLab interface for a merge request. At the top, the navigation bar includes 'GitLab', 'Projects', 'Groups', 'Activity', 'Milestones', and 'Snippets'. The current page is 'This project', with a search bar and notification icons for 6 issues, 1 merge request, and 5 messages. The main content area shows a discussion with four comments:

- Discussion 22** (0/1 discussion resolved): Jenkins started a Nightly build using this Topic on Stage:
  - Stage-Base: [61facda1](#)
  - Stage-Tip: [75ece62b](#)
  - Staged-Topics: [!5](#) [!6](#)
- Geant4 Bot @geant4bot** commented · 3 minutes ago (Maintainer): Jenkins completed the Nightly build using this Topic on Stage:
  - Stage-Base: [61facda1](#)
  - Stage-Tip: [75ece62b](#)
  - Staged-Topics: [!5](#) [!6](#)
- Ben Morgan @bmorgan** commented · 1 minute ago (Owner): Nightlies now o.k., so this topic is ready for merging. Do: merge
- Geant4 Bot @geant4bot** commented · 52 seconds ago (Maintainer): Topic successfully merged and pushed.

The right-hand sidebar contains configuration options:

- Todo** (Add todo)
- Assignee** (Edit): No assignee - assign yourself
- Milestone** (Edit): None
- Time tracking** (?:) (?:): No estimate or time spent
- Labels** (Edit): None
- Lock merge request** (Edit): Unlocked
- 2 participants** (Geant4 Bot, Ben Morgan)
- Notifications** (checked)
- Reference: [geant4/geant4-dev](#)

# 5: Merge MR to master

Once MR passes Nightlies, Shifter merges it to master  
 Equivalent to G4SVN "Accept Tag"

gitlab.cern.ch

GitLab Projects Groups Activity Milestones Snippets This project Search

### geant4-devops-playground

A total free-for-all for experimenting with Ghostflow/Jenkins/Gitlab integration

Star 0 Fork 1 KRB5 https://:@gitlab.cern.ch:8443/ Global

Files (389 KB) Commits (15) Branches (3) Tags (0) Readme

Add Changelog Add License Add Contribution guide Enable Auto DevOps Add Kubernetes cluster Set up CI/CD

master geant4-devops-playground / +

History Find file Web IDE

Merge topic 'my-first-topic' ...  
Ben Morgan authored 3 minutes ago

3a057058

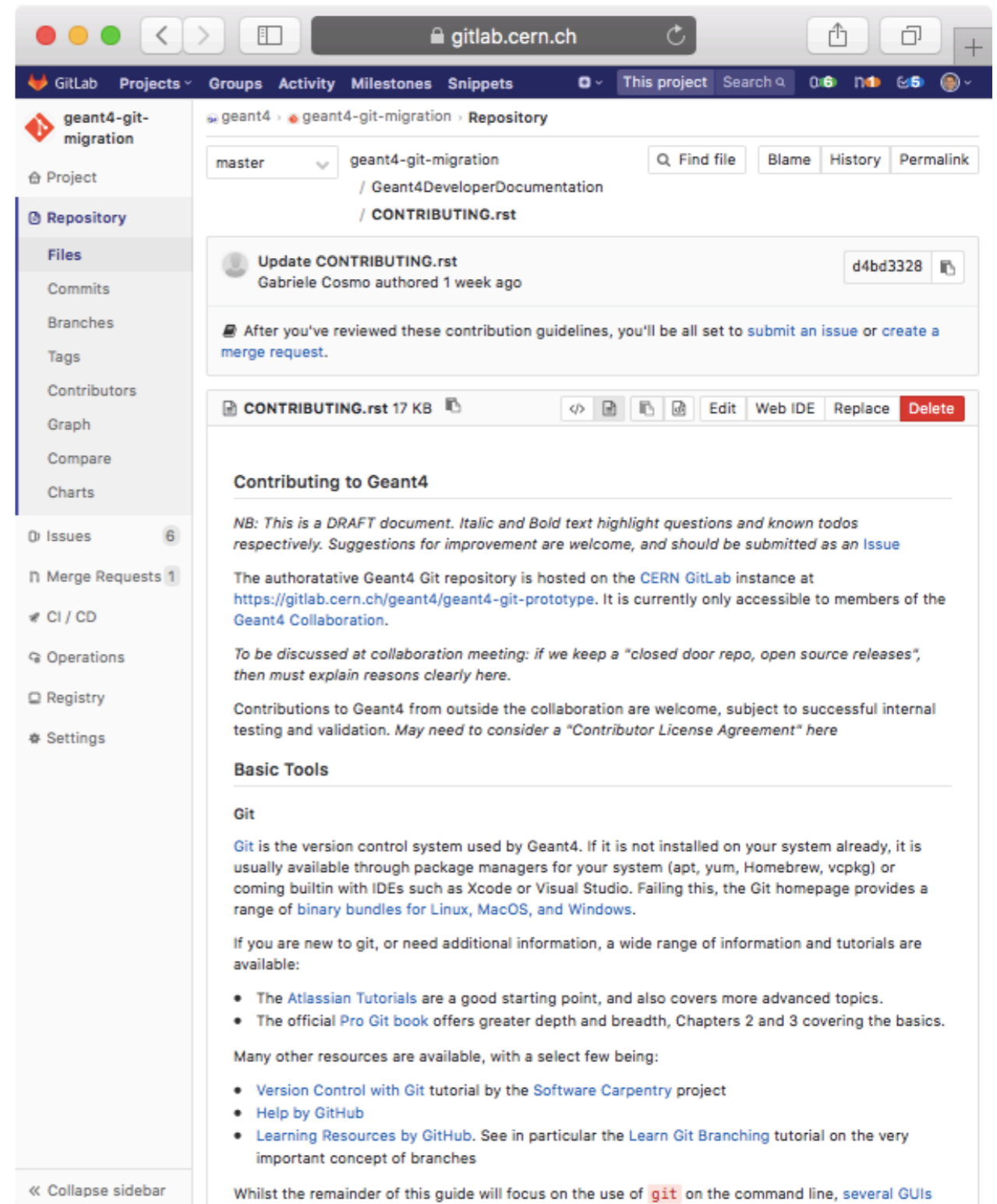
Name	Last commit	Last update
CMakeLists.txt	Basic CMake script	3 days ago
README.md	Now should be good.	1 week ago
my-first-topic.sh	Apply fix to problem identified in Nightly	29 minutes ago

## 5: Merge MR to master

HEAD of master is our “Accepted Tag”, hence describing it as “Rolling Reference Tag”. This is also why you should keep your branches rebased!

# Feedback

- Critical that you try the workflow out and provide feedback on
- Documentation
  - *What's unclear, what's missing*
- Workflow
  - *What works, what doesn't*
- **Parallel 7B working/open mic session**



The screenshot displays the GitLab web interface for the 'geant4-git-migration' repository. The left sidebar shows the repository structure with 'Files' selected. The main content area shows the 'CONTRIBUTING.rst' file, which is 17 KB in size. The file content includes a draft document with instructions for contributors, such as where to find the authoritative Git repository and basic tools like Git. The interface also shows a commit history for the file, with the most recent commit by Gabriele Cosmo.

# Migration Timetable

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- **Key remaining tasks**

- *Large file cleaning tests*
- *Full set of platforms in Jenkins*
- *You feedback on documentation etc*

- Migration announced **2 weeks before**, happens on reference tag

- **3-5 days** to switchover

- **When? Likely between now and release - to be discussed now and over this week.**

SVN to Read-Only

Final svn2git update

Clean+LFS Conversion

Push to geant4-dev.git

Add Jenkins/Ghostflow

Exercise Workflow

Open for Development

# Discussion Topics

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- **Workflow**

- *Questions, comments, clarifications*

- **Documentation**

- *Review and comment - it for **you**, so **your** input is **required***
- ***Clarity, missing or otherwise helpful information***

- **Timetable for migration**

- ***When, notice period, downtime, co-ordination***