Working with Git remotes and pushing to multiple Git repositories

By Jigarius · May 16, 2019 · 5 min read

Working with two or more Git repositories? No problem! In this tutorial, you'll first learn to setup multiple Git remotes. Next, you'll also learn to perform a "git push" to multiple Git repositories with a single command.

As a programmer, one of the best things that has happened to me is Git! If you don't know what Git ⧉ is, you should probably read a paragraph about it before you continue. Git allows you to synchronize the code on your computer with code on a remote repo shared with other developers – usually team members. In this tutorial we will learn to configure one or more Git remotes and pushing code to them with a single command.

Two Minute Version

- Define a git remote which will point to multiple git remotes.
  - Say, we call it "all": `git remote add all REMOTE-URL-1`.

- Register 1st push URL: `git remote set-url --add --push all REMOTE-URL-1` .
- Register 2nd push URL: `git remote set-url --add --push all REMOTE-URL-2` .
- Push a branch to all the remotes with `git push all BRANCH` – replace `BRANCH` with a real branch name.
- You cannot pull from multiple remotes, but you can fetch updates from multiple remotes with `git fetch --all` .

Prerequisites

- Working knowledge of Git – `git init` , `git pull` , `git commit` and `git push` .
- Have write access to one or more remote Git repositories.

Adding multiple remotes

When you do `git init` , you initialize a local Git repository. In general, the purpose is to synchronize this repo with a remote Git repo. To be able to synchronize code with a remote repo, you need to specify where the remote repo exists.

The first step is to add remote repos to your project.

```
# Syntax to add a git remote
git remote add REMOTE-ID REMOTE-URL
```

By convention, the original / primary remote repo is called `origin` . Here's a real example:

```
# Add remote 1: GitHub.
git remote add origin git@github.com:jigarius/toggl2redmine.git
# Add remote 2: BitBucket.
git remote add upstream git@bitbucket.org:jigarius/toggl2redmine.git
```

In the above example, we add the remote repository of a project called Toggl 2 Redmine found on GitHub. Use the above command to add one or more remote Git repos – make sure that each repo has its unique ID, i.e. `origin` , `upstream` in the above example.

Configure primary remote

Though you can add multiple remotes, usually, each branch of your project can be configured to track a single remote branch. You can setup a branch to track a remote branch as follows:

```
# Change local branch.
git checkout BRANCH
# Configure local branch to track a remote branch.
git branch -u origin/BRANCH
```

Here, `BRANCH` is the name of the remote branch, which is usually the same as your local branch.

Change remote URL

If you want to change the URL associated to a remote that you've already added, you can do it with the following command:

```
# The syntax is: git remote set-url REMOTE-ID REMOTE-URL
git remote set-url upstream git@foobar.com:jigarius/toggl2redmine.git
```

List all remotes

To see a list of all remotes, simply use the following command:

```
$git remote -v
origin      git@github.com:jigarius/toggl2redmine.git (fetch)
origin      git@github.com:jigarius/toggl2redmine.git (push)
upstream    git@bitbucket.org:jigarius/toggl2redmine.git (fetch)
upstream    git@bitbucket.org:jigarius/toggl2redmine.git (push)
```

Remove a remote

If you've added a remote which you no longer require, you can remove it as follows:

```
# The syntax is: git remote remove REMOTE-ID
git remote remove upstream
```

Push to multiple remotes

Now that you have a primary remote repo and other remotes as well, it's time to configure the push. The objective is to push to multiple Git remotes with a single `git push` command.

To do this, choose a remote ID which will refer to all the remotes. I usually call it `all`, but there are developers who prefer `origin`. The idea is to add all the remote repo URLs as "push URLs" to this remote. Here's what you do:

```
# Create a new remote called "all" with the URL of the primary repo.
git remote add all git@github.com:jigarius/toggl2redmine.git
# Re-register the remote as a push URL.
git remote set-url --add --push all git@github.com:jigarius/toggl2redmine.git
# Add a push URL to a remote. This means that "git push" will also push to this
git URL.
git remote set-url --add --push all git@bitbucket.org:jigarius/toggl2redmine.git
```

If you don't want to create an extra remote named `all`, you can skip the first command and use the remote `origin` instead of `all` in the subsequent command(s).

Now, you can push to all remote repositories with a single command!

```
# Replace BRANCH with the name of the branch you want to push.
git push all BRANCH
```

Pull from multiple remotes

It is not possible to `git pull` from multiple repos. However, you can `git fetch` from multiple repos with the following command:

```
git fetch --all
```

This will *fetch* information from all remote repos. You can switch to the latest version of a branch on a particular remote with the command:

```
# Checkout the branch you want to work with.
git checkout BRANCH
# Reset the branch to match the state as on a specific remote.
git reset --hard REMOTE-ID/BRANCH
```

Conclusion

It is easy to synchronize code between multiple git repositories, especially, pushing to multiple remotes. This is helpful when you're maintaining mirrors / copies of the same repository. All you need to do is set up multiple push URLs on a remote and then perform `git push` to that remote as you usually do.

Next steps

- Read the official documentation about git remotes ⌁ .
- Share any tips you might have for working with multiple git remotes.

Programming   Git   Tutorial

Subscribe

Never miss an article! Follow me on Twitter and enable notifications.

Follow on Twitter ⌁

Thoughts and comments

8 Comments

G

Join the discussion…

LOG IN WITH | OR SIGN UP WITH DISQUS (?)

Name

6   **Share**

Cody Burleson
🕐 **2 years ago**

This was extremely helpful. Thanks for taking the time to cook it up and share it.

2   0   •   Reply • Share ›

Lazar Iliev
🕐 **a year ago**

Can we make in this way >>> git push --force all BRANCH

1   0   •   Reply • Share ›

Jigar Mehta   Mod   → Lazar Iliev
🕐 **a year ago**

I think that should work as well.

1   0   •   Reply • Share ›

Ameba Brain
🕐 **2 days ago**

> one of the best things that has happened to me is Git!

Totally agree. I would add to the list in the order `regexp`, `shell utils`, `sqlite`, …list continues to i

0   0   •   Reply • Share ›

Cormac Callan
🕐 **3 years ago**

What if I want to push to the upstream repo but only a specific branch? I do not want to push to t

0   0   •   Reply • Share ›

Jigar Mehta   Mod   → Cormac Callan

⟳ **3 years ago**

To push a specific branch to the upstream repo, you can follow 2 approaches. Say, the

Method 1: git checkout BRANCH; git push upstream BRANCH;

Method 2: git push upstream BRANCH:BRANCH;

Related articles

Method 2 works irrespective of the branch that you are currently on.

1   0   • **Reply**   •   **Share ›**

May 1, 2021 · 12 min read   0   0   •   **Reply**   •   **Share ›**

Building a Web Scraper/Watcher with Ruby: Cats + Ruby + CLI + Emails

Jigar Mehta   **Mod** ➔ **Cormac Callan**

Read about writing a CLI webpage scraper and watcher app in Ruby that sends email notifications
⟳ **3 years ago**

when new data is found.   If the name of your remote branches is different on origin an ups

individually. This trick only works when branch names are identi

0   0   •   **Reply**   •   **Share ›**

Subscribe   **Privacy**   **Do Not Sell My Data**

Feb 22, 2021 · 8 min read

Clibato – CLI Backup Tool: Building a Command-line Python Application

Meet Clibato! A small CLI app that I wrote to backup/restore my dotfiles. In this article I share my experiences building my first Python CLI application.

Jan 29, 2021 · 6 min read

Dockerize Ruby on Rails with Lando

Learn to use Lando for dockerizing your Ruby on Rails projects to simplify and standardize your dev env setup.

Jan 11, 2021 · 7 min read

Dockerize Ruby on Rails with Docker Compose

Learn to use Docker for running Ruby on Rails projects in containers to simplify and standardize your dev env setup.

May 23, 2020 · 7 min read

Drupal + Sidr: Accessible Mobile Menus

Learn about the Sidr module for Drupal that lets you add beautiful, accessible mobile menus to your website.

Apr 12, 2020 · 8 min read

Dockerize Drupal with Lando

Learn to use Lando for running Drupal websites in Docker containers and get dockerized Drupal websites running in under 5 minutes.

Support

Like my blog? Did reading my articles help you? You can send a token of support and appreciation.

Support with PayPal ⧉

Subscribe

Never miss an article! Simply follow me on Twitter and enable notifications.

Follow on Twitter ⧉

About   Legal   Contact   Support ⧉
© Copyright 2018-2022 Jigar Mehta.