Software Engineering

How To Set Upstream Branch on Git

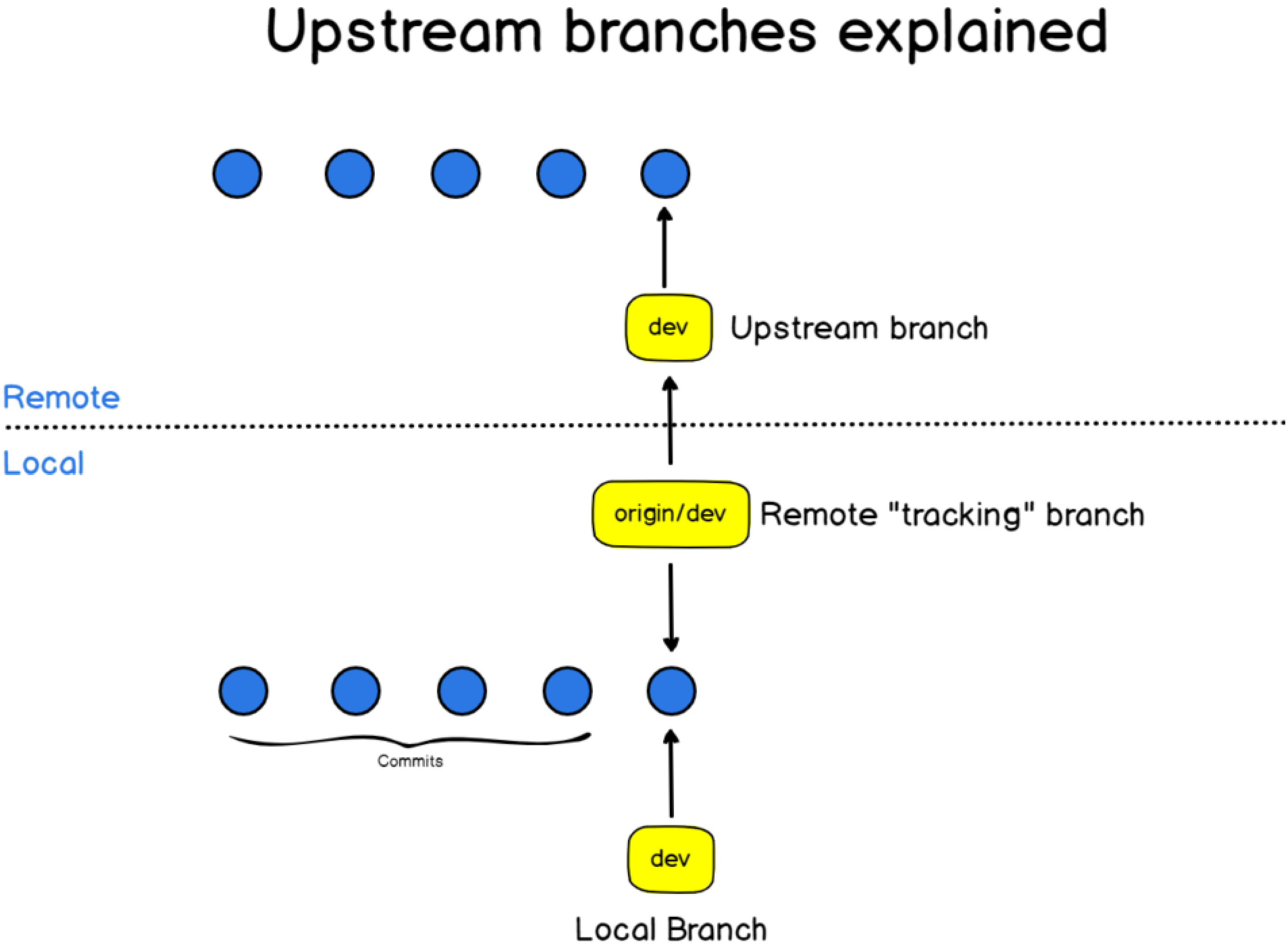
written by Schkn

When cloning a Git repository or creating new feature branches, you will have **to set upstream branches** in o work properly.

But what are upstream branches?

Upstream branches are closely associated with remote branches.

Upstream branches define the branch tracked on the remote repository by your local remote branch (a called the remote tracking branch)



READ ALSO

existing branches, it can be quite useful to know **how you**

Set upstream branch using git push

The easiest way to set the upstream branch is to use the "git push" command with the "-u" option for u branch.

```
$ git push -u <remote> <branch>
```

Alternatively, you can use the "**–set-upstream**" option that is equivalent to the "-u" option.

```
$ git push --set-upstream <remote> <branch>
```

As an example, let's say that you created a branch named "**branch**" using the checkout command.

```
$ git checkout -b branch
Switched to a new branch 'branch'
```

You can check tracking branches by running the "**git branch**" command with the "**-vv**" option.

```
$ git branch -vv
* branch  808b598 Initial commit
 master  808b598 [origin/master] Initial commit
```

As you can see, compared to master, the branch "branch" has no tracking branches yet (and no upstream brar consequence)

We can set the upstream branch using the "git push" command.

READ ALSO

```
nch 'branch' from 'origin'.
```

the branch command.

```
commit
mmit
```

We have successfully set the upstream branch for our newly created branch.

Set upstream branch using an alias

Another way to set the upstream branch is to define an alias for your "git push" command.

In fact, pushing to HEAD is equivalent to pushing to a remote branch having the same name as your current br

```
$ git push -u origin HEAD
```

In order to avoid having to define the upstream everytime you create a new branch, define an alias for the com we just wrote.

For aliases, you have two choices, you can either create a git alias or a bash alias.

Using a git alias

In order to create a new git alias, use the "**git config**" command and define a new alias named "pushd"

```
$ git config --global alias.pushd "push -u origin HEAD"
```

When you are done adding and committing fiels to your repository, set the upstream branch using your newly alias.

```
$ git pushd
Total 0 (delta 0), reused 0 (delta 0)
 * [new branch]      HEAD -> branch
Branch 'branch' set up to track remote branch 'branch' from 'origin'.
```

ant to modify your existing git commands.

and define a name for it.

to push our code and create the upstream branch easily.

```
anch 'branch2' from 'origin'.
```

Set upstream branch for an existing remote branch

In some cases, you may choose to link your local branches to existing remote branches that you just pulled or from the main repository.

Let's say for example that you pulled the "dev" branch located on the "origin" remote.

As a consequence, the tracking branch is named "origin/dev".

Set tracking branches for new local branches

In order to switch to the local "dev" branch, and to set the "origin/dev" as the tracking branch (or upstr branch), use the "–track" option.

```
$ git checkout --track origin/dev
```

READ ALSO

```
'dev' from 'origin'.
```

origin/dev" (which upstream branch is the remote dev), us

isting local branches

a local branch and to set the upstream branch (or the rer

It is perfectly fine, but you will have to use the "git branch" in order to set the existing branch upstrean branch.

```
$ git branch -u <remote>/<branch>
```

Let's take the example of the "feature" branch that you just created to start working.

```
$ git checkout -b feature
Switched to a new branch 'feature'
```

You created some commits in your branch, you want to set the tracking branch to be master.

```
$ git branch -u origin/master
Branch 'feature' set up to track remote branch 'master' from 'origin'.
```

Great! You successfully set the upstream branch for your existing local branch.

Why are upstream branches so useful in Git?

Upstream branches are useful because :

- **You get references to your remote repositories and you essentially know if you are ahead of them**

When performing a "git fetch" command, you can bring the new commits from your remote repository and you choose to merge them at will.

- **You can perform pull and push easily**

READ ALSO

you can simply execute pulls and pushes without having t

commits to the remote tracking branch. Similarly, Git alrea

anch.

But where does Git keep a reference of the upstream branches associated with local branches?

Git keeps references to upstream branches via its config file in the ".git" directory.

Inspecting tracking branches configuration

In order to inspect your current Git configuration, list the hidden files and directories in your current working G directory.

```
$ ls -al

total 16
drwxrwxr-x 3 schkn schkn 4096 Nov  5 16:10 .
drwxrwxr-x 7 schkn schkn 4096 Nov  5 16:10 ..
drwxrwxr-x 8 schkn schkn 4096 Nov  6 10:27 .git
```

READ ALSO

n the .git directory.

```
/origin/*
```

As you can see, Git keeps a reference between your local branch, the name of the remote and the branch it ha merge with.

Conclusion

In this tutorial, you learnt more about upstream branches and how they are related to remote tracking branch

You learnt different techniques in order to set remote tracking branches using a command or an alias to set it.

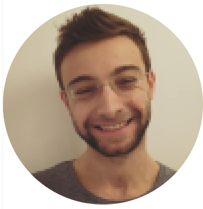
You also learnt how you can link your current local branches to existing remote tracking branches easily with tl branch command.

If you are interested in Software Engineering, we have a complete section dedicated to it on the website so ma to have a look.

READ ALSO

UPSTREAM BRANCH

14 comments 4



SCHKN

previous post

How To Mount and Unmount Drives on Linux

Command Not Found in Bas

YOU MAY ALSO LIKE

How To Git Add All Files

How To Undo Git Add Command

How To Change Branch Git

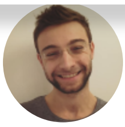
READ ALSO

4 COMMENTS

.2, PYTHON 3.5.9 | TECHRIGHTS

[…]

lping me set the upstream branch



SCHKN

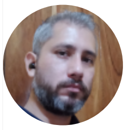
You are welcome!

CHARLES

Hay man, Iam absolutely into the posts on your blog. They are made properly, easy to consume ar remember, regardless of English being my 3rd language. Have you considered becoming writer?

HOW TO PUSH GIT BRANCH TO REMOTE – DEVCONNECTED

[…] your upstream branch is not already created, you will need to create it by running the “git push command […]



OROCHIES

very useful article, thanks

UCHENNA

This is one of the best tutorial on setting up upstream that I have read. You took time to explain th concepts in details with perfect working examples. Thank you

SCHKN

You’re welcome! Glad it helped.

READ ALSO

ng upstream branches–even the GIT documentation does

You have a subsection in your tutorial entitled “Why are upstream branches so useful in Git?” The advantages are obvious: basically, the branch works.
The real question for me is, “why is there even a technical possibility of not having an upstream br there any point to a local branch that the repository doesn’t have? If creating a branch automatica created the remote branch too, and handled internally to GIT, and invisible to the user, such that v even need think about upstream branches or have a word for this thing, what would become erro difficult or impossible?

SRIRAM VELLANKI

SCHKN, Appreciate your work. Very well explained. I have a question, Does origin refer to my local

SCHKN

Hello, no, origin refers to the remote repository, the actual Git server where the code is s

RAFIQUL

Great!!!!! Thank you very much. It works fine.

LEAVE A COMMENT

READ ALSO

Website

r for the next time I comment.

SUBMIT

This site uses Akismet to reduce spam. Learn how your comment data is processed.

TWITTER

About Privacy Policy