

Git Recommended Uses

Practices to get comfortable using and learning Git

Javier Tiá / August 26, 2015

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- Developed tools around Git: repo tool, WSSW Git Hooks and various little utilities.
- Migrated several projects to Git from Clearcase, CVS and Subversion.
- Solved hundreds of issues helping people using Git. Today I still do it, but no hundreds 😊.

Expectations

- I expect from this presentation you can take some knowledge and apply it to your frequent Git routine.

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1. People struggle while are learning Git.
2. Git is a powerful tool, but it has some hard hills to climb.
3. At the beginning poor documentation and severals ways to get same result.
4. Git is not Subversion.

Little Git History

- Created in 2005 by Linus Torvalds and maintained today by Junio Hamano.

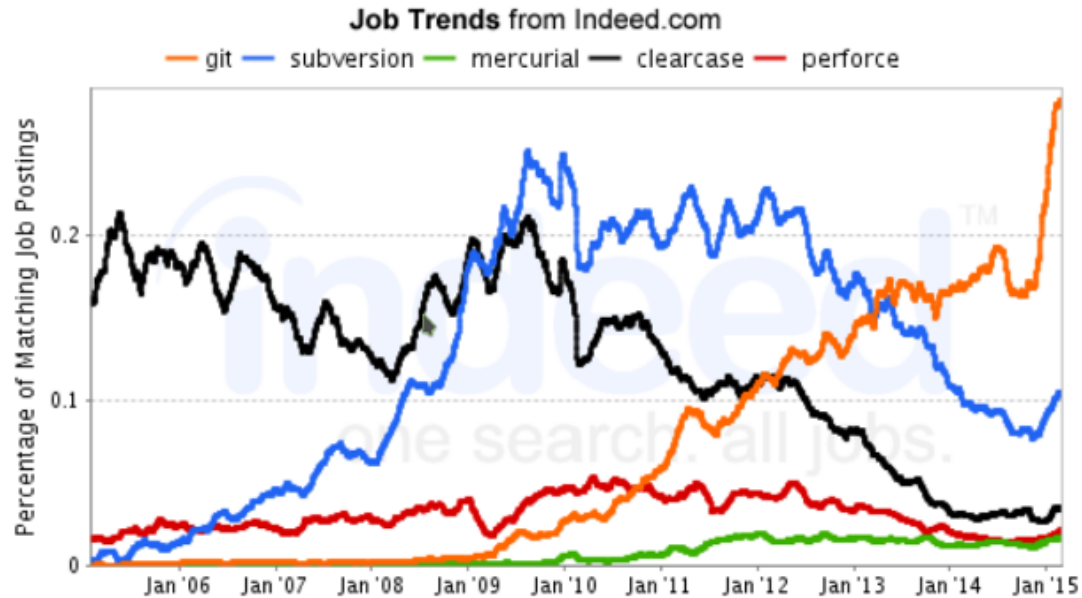
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- Git arrived as a necessity.

Why Git and not another SCM



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 - `git help <COMMAND> | | git help --all | | git help --guides`

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 - Making questions with a Web searcher.
 - Practice in a terminal.

Use latest stable Git version

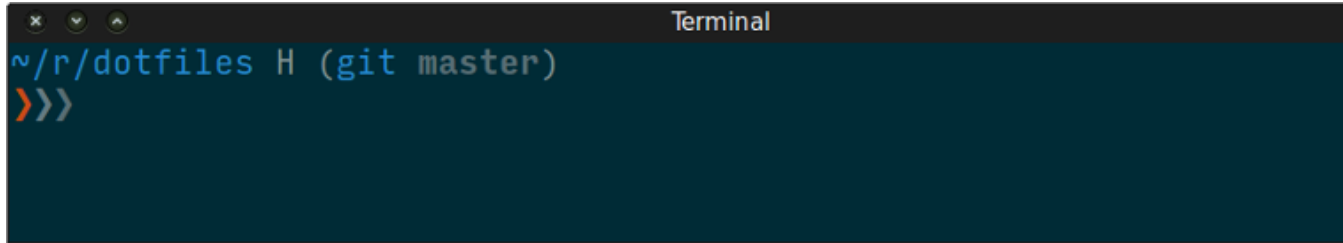
Assuming Ubuntu as Distribution.

```
$ sudo add-apt-repository ppa:git-core/ppa
```

```
$ sudo apt-get update
```

```
$ sudo apt-get install git
```

Get a better CLI prompt

A terminal window with a dark background. The title bar says "Terminal". The prompt shows the current directory as ~/r/dotfiles, the shell as H, and the git branch as (git master). The prompt itself is a stylized orange and grey double arrow pointing right. The text in the terminal is: ~/r/dotfiles H (git master) >>>

```
~/r/dotfiles H (git master)
>>>
```

<https://github.com/nojhan/liquidprompt>

Identify yourself

Remember now you are an author. Identify yourself:

```
$ git config --global user.name "YOUR NAME"
```

```
$ git config --global user.email "YOUR EMAIL ADDRESS"
```

Increase Git usability by leveraging *.gitconfig*

Set per repository or global options.

Use `git config` to Get, Set and Unset options.

Don't forget look for more details: `git help config`.

Common Git aliases

```
$ git config --global alias.br branch
```

```
$ git config --global alias.ci commit
```

```
$ git config --global alias.co checkout
```

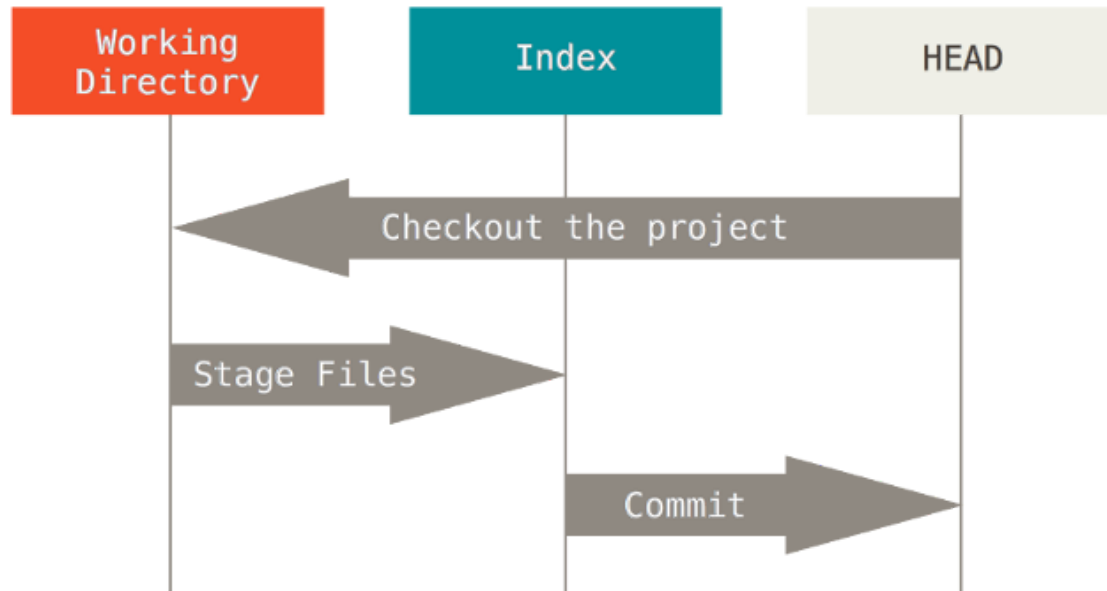
```
$ git config --global alias.st status
```

```
$ git config --global alias.ls ls-files
```

```
$ git config --global alias.rb rebase
```

```
$ git config --global alias.mg merge
```


Git Reset/Checkout



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Interactively choose hunks between the index and the work tree and add them to the index:

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Consider use a shell alias:

```
$ alias giA='git add --patch'
```

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Structure of a commit message:

Subject line

BLANK LINE

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6. Write body message thinking: Why am I doing it? vs How am I doing it?
7. Limit body message to 72 characters.

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Rules:

1. Work always with topic or temporal branches, avoid work over master or features branches.
2. Use `git merge` when incorporating an entire feature set into another branch, use `git rebase` for rest of cases.
3. Golden rule: Never use `git rebase` over published changes, only over new and no pushed changes.

Rebase concept



Keep clean and correct Git history

* Always rebase your local commits and preserve all merges:

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$ git config --global pull.rebase preserve
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* For merging features and avoid lose the branch information of which a commit was originally made:

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merge	merge.ff	branch.master.mergeoptions
--no-ff FEATURE	false	--no-ff

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* For merging fixes use --ff-only to fast-forward:

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--ff-only FIX	only	--ff-only

Rebase interactive

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Automatically modify the rebase todo list:

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Automatically modify the rebase todo list:

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$ git config --global rebase.autoSquash true
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Automatically stash local changes, apply it when rebase finish:

```
$ git config --global rebase.autoStash true
```

Require: Git v2.6.x+

Resolving conflicts

- ours option: current branch changes checked out.
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Using alias:

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    git checkout --ours $@ && git add $@; }; f"
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$ git ours <FILE>
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```
$ git ours <FILE>
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For repeated resolution of conflicts:

```
$ git config --global rerere.enabled true
```

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Saves local modifications and produce a clean state:

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Don't forget to look in `git help stash` for further details.

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Look in `git help clean` for further details.

Useful little recommendations

Add color helpers to read text easier and see what Git is doing:

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Copy/move a file in an one commit. Git doesn't difference between removing files and changes in it.

References

- This presentation: <https://github.com/jetm/git-recommended-uses/> or [pdf file](#).
- Presentation made with: <http://remarkjs.com/>
- My [.gitconfig file](#)

Contact information

- javier.tia@gmail.com / javier.tia@hpe.com

Questions?

Backup slides

Protect bare/server repositories

No rewriting history:

```
$ git config receive.denyNonFastForwards true
```

No deleting history:

```
$ git config receive.denyDeletes true
```

Check object consistency:

```
$ git config receive.fsckObjects true
```