

Advanced



Created by Guy Van den Nieuwenhof

<https://github.com/guyvdn>

Agenda

- Properly configure Git
- Advanced Git commands
- Customize Git with Git Hooks
- Further Reading

Agenda

- **Properly configure Git**
- Advanced Git commands
- Customize Git with Git Hooks
- Further Reading

Properly configure Git

1. Files
2. Your Identity
3. Git Credential Manager
4. Editors
5. Checking Your Settings

Files

1. **/etc/gitconfig**

System-wide configuration file.

Pass the option **--system** to git config.

2. **~/.gitconfig** or **~/.config/git/config**

User-specific configuration file.

Pass the option **--global** to git config.

3. **.git/config** (default)

Repository specific configuration file.

Pass the option **--local** to git config.

Your Identity

Global Identity

```
$ git config --global user.name "John Doe"  
$ git config --global user.email johndoe@gmail.com
```

Identity for customer specific repository

```
$ git config --local user.email johndoe@customer.com
```

Git Credential Manager

Git Credential Managers simplify authentication with your Git repos. They also provide support two-factor authentication.

Windows

Download and run the latest Git for Windows installer, which includes the Git Credential Manager for Windows.

<https://git-scm.com/download/win>

macOS and Linux

```
> git-credential-manager install
```

Editors

Text Editor

```
$ git config --global core.editor %  
"'C:/Program Files (x86)/Notepad++/notepad++.exe' %  
-multiInst -notabbar -nosession"
```

Merge and Diff Tool

```
$ git config --global --add merge.tool kdiff3  
$ git config --global --add mergetool.kdiff3.path "C:/../kdiff3.exe"  
$ git config --global --add mergetool.kdiff3.trustExitCode false  
  
$ git config --global --add diff.guitool kdiff3  
$ git config --global --add difftool.kdiff3.path "C:/../kdiff3.exe"  
$ git config --global --add difftool.kdiff3.trustExitCode false
```


Checking Your Settings

If you want to check your configuration settings, you can use the `git config --list` command to list all the settings Git can find at that point.

```
$ git config --list
user.name=John Doe
user.email=johndoe@example.com
..
```

You may see keys more than once, because Git reads the same key from different files (`~/.gitconfig` and `.git/config`, for example). In this case, Git uses the last value for each unique key it sees.

Checking Your Settings

You can also check what Git thinks a specific key's value is by typing `git config <key>`

```
$ git config user.name  
John Doe
```

Agenda

- Properly configure Git
- **Advanced Git commands**
- Customize Git with Git Hooks
- Further Reading

Advanced Git commands

1. `git log`
2. `git reset`
3. `git rebase`
4. `git worktree`
5. `git alias`

git log

Visualising the git history and branches is often an argument to use a git GUI tool but this can perfectly be done from the command line using `git log` with these commands:

--all

Shows all commits in the history of branches, tags and other refs

--graph

Text-based graphical representation of the commit history.

--pretty

Pretty-print the contents of the commit logs.

Can be oneline, short, medium, full, fuller, email, raw, format:<string>

--abbrev-commit

Show partial prefix of the 40-byte hexadecimal commit object name.

--oneline

This is a shorthand for "--pretty=oneline --abbrev-commit" used together.

```
$ git log --graph --all --oneline
```

```

* de17948191 (HEAD -> master, origin/master, origin/HEAD) Simplify the loading of the loader in the renderer processes
* a4bf919e59 Cleanup bootstrap files (#58171)
* 27bb0131b0 Remote getLogLocation API
* c1a6295edf Ability to create log file channels from extension host
* dc4c763127 Use backup channels when spdlog fails and log telemetry
* 03a8c0c05d fix #58067
* b118d76826 bundle stats - include all extensions
* e1fbd9ce6a debt - cleanup some of async.ts
* f8e67cef5d bundle stats - include commit
* b71ea763dc :dancing_men: remove asWinJSPromise #56137
* cd873747c5 :dancing_men: remove wireCancellationToken #56137
* 8f29268e87 Add smarter filename suggestions, #57528 (#58009)
* a3f9f2e724 Merge pull request #57934 from Microsoft/misolori/quiet-light-theme
\
* 3bf2b95276 Make text darker to work on selected background color
* cbf0e2e733 Update color to meet color contrast ratio
* | f68fe75047 Merge pull request #57909 from Microsoft/misolori/keybinding-a11y
\
* | 09ce28b830 Make sort icon 1px smaller so there's a gap for outline focus
* | 8d12adc723 Make keybindings.json link brighter when in focus
* | 766fbd0443 Update outline color to be slightly brighter
* | * 4daabf6836 (origin/ben/bootstrap) bootstrap :lipstick:
* | * 4aa47d2b79 bootstrap - handle index.js
* | * 9ce0109e87 bootstrap - cleanup main.js
* | * 7cc9e47e30 bootstrap-electron-browser => bootstrap-window
* | * 9f00c2b22c bootstrap - share more code when loading renderers
* | * 33aa7a7525 bootstrap - extract readFile/writefile
* | * a390a80426 bootstrap - extract uriFromPath()
* | * 60c4cf3de4 bootstrap => bootstrap-fork, bootstrap-shared => bootstrap
* | * b0590f3494 bootstrap - first cut
* | * 4593dc20fb (origin/mjbvz/trigger-context) Initial work on signature help context
|/
* | 8524c521d1 Mark events readonly
* | 63520761ff SelectBox: Add aria-describedby for enum descriptions. Fixes: #57710 (#58129)
* | 9abd6d0221 Fix #57892 - remove out of date errorMessages for editor settings

```

```
$ git log --graph --all &&
--pretty=format:"%C(auto)%d %s %C(yellow)%ad %C(cyan)<%an> %C(green)%h" &&
--date="format-local:%Y-%m-%d %H:%M:%S"
```

```
* (HEAD -> master, origin/master, origin/HEAD) Simplify the loading of the loader in the renderer processes 2018-09-07 12:59:08 <Alex Dima> de17948191
* Cleanup bootstrap files (#58171) 2018-09-07 12:23:09 <Benjamin Pasero> a4bf919e59
* Remote getLogLocation API 2018-09-07 12:04:53 <Sandeep Somavarapu> 27bb0131b0
* Ability to create log file channels from extension host 2018-09-07 11:51:48 <Sandeep Somavarapu> c1a6295edf
* Use backup channels when spdlog fails and log telemetry 2018-09-06 07:46:40 <Sandeep Somavarapu> dc4c763127
* fix #58067 2018-09-07 11:49:03 <Johannes Rieken> 03a8c0c05d
* bundle stats - include all extensions 2018-09-07 11:33:53 <Johannes Rieken> b118d76826
* debt - cleanup some of async.ts 2018-09-07 11:01:25 <Johannes Rieken> e1fbd9ce6a
* bundle stats - include commit 2018-09-07 10:26:36 <Johannes Rieken> f8e67cef5d
* :dancing_men: remove asWinJSPromise #56137 2018-09-07 09:45:57 <Johannes Rieken> b71ea763dc
* :dancing_men: remove wireCancellation token #56137 2018-09-07 09:33:42 <Johannes Rieken> cd873747c5
* Add smarter filename suggestions, #57528 (#58009) 2018-09-07 07:15:08 <Guy Waldman> 8f29268e87
* Merge pull request #57934 from Microsoft/misolori/quiet-light-theme 2018-09-07 06:19:25 <Miguel Solorio> a3f9f2e724
* |
* | Make text darker to work on selected background color 2018-09-05 07:12:29 <Miguel Solorio> 3bf2b95276
* | Update color to meet color contrast ratio 2018-09-05 07:04:24 <Miguel Solorio> cbf0e2e733
* | Merge pull request #57909 from Microsoft/misolori/keybinding-a11y 2018-09-07 06:19:09 <Miguel Solorio> f68fe75047
* |
* | Make sort icon 1px smaller so there's a gap for outline focus 2018-09-05 00:31:16 <Miguel Solorio> 09ce28b830
* | Make keybindings.json link brighter when in focus 2018-09-05 00:30:44 <Miguel Solorio> 8d12adc723
* | Update outline color to be slightly brighter 2018-09-05 00:30:02 <Miguel Solorio> 766fbd0443
* | * (origin/ben/bootstrap) bootstrap :lipstick: 2018-09-07 10:56:26 <Benjamin Pasero> 4daabf6836
* | * bootstrap - handle index.js 2018-09-07 09:51:33 <Benjamin Pasero> 4aa47d2b79
* | * bootstrap - cleanup main.js 2018-09-07 08:02:55 <Benjamin Pasero> 9ce0109e87
* | * bootstrap-electron-browser => bootstrap-window 2018-09-07 07:25:34 <Benjamin Pasero> 7cc9e47e30
* | * bootstrap - share more code when loading renderers 2018-09-06 19:36:13 <Benjamin Pasero> 9f00c2b22c
* | * bootstrap - extract readFile/writefile 2018-09-06 16:16:57 <Benjamin Pasero> 33aa7a7525
* | * bootstrap - extract uriFromPath() 2018-09-06 16:08:56 <Benjamin Pasero> a390a80426
* | * bootstrap => bootstrap-fork, bootstrap-shared => bootstrap 2018-09-06 15:36:21 <Benjamin Pasero> 60c4cf3de4
* | * bootstrap - first cut 2018-09-06 15:22:09 <Benjamin Pasero> b0590f3494
* | * (origin/mjbvz/trigger-context) Initial work on signature help context 2018-09-07 02:52:39 <Matt Bierner> 4593dc20fb
* |
* | Mark events readonly 2018-09-06 21:54:53 <Matt Bierner> 8524c521d1
* | * SelectBox: Add aria-describedby for enum descriptions. Fixes: #57710 (#58129) 2018-09-07 01:13:00 <Christopher Leidigh> 63520761ff
* | * Fix #57892 - remove out of date errorMessages for editor settings 2018-09-06 23:00:57 <Rob Lourens> 9abd6d0221
```

git alias

Now that we have seen some advanced commands we can make it easier to use them with `git alias`.

For example, to correct the usability problem you encountered with unstaging a file you can add your own unstage alias to Git:

```
$ git config --global alias.unstage 'reset HEAD --'
```

This makes the following two commands equivalent:

```
$ git unstage fileA  
$ git reset HEAD -- fileA
```


git alias

Some more commands

Alias	Command
s	status -sb
last	log -1 HEAD
tree	log --all --oneline --graph
branches	branch -a
stashes	stash list
aliases	!git config -l grep alias cut -c 7-
echo	!echo "\$1" && :
chs	!git checkout && git s && :

git alias

Share aliases in team

You can put all aliases inside a separate config file

```
[alias]
  a = add
  ..
```

Add this file to your `.config` file as such

```
[include]
  path = aliases.txt
```

Agenda

- Properly configure Git
- Advanced Git commands
- Customize Git with Git Hooks
- **Further Reading**

Further Reading

Git Reference Manual

<https://git-scm.com/docs>

The official and comprehensive man pages that are included in the Git package itself

GitHub Cheat Sheet

<https://services.github.com/on-demand/downloads/github-git-cheat-sheet.pdf>

Summarizes commonly used Git command line instructions for quick reference

Visual Git Cheat Sheet

<http://ndpsoftware.com/git-cheatsheet.html>

An interactive cheat sheet from NDP Software

Pro Git book

<https://git-scm.com/book>

Free book by **Scott Chacon** and **Ben Straub**. Also available on [amazon.com](https://www.amazon.com)