1.00

Git Overview

1.00

WHAT IS VERSION CONTROL?

content **teams** **agility**

WHAT IS VERSION CONTROL?

content

teams

agility

- Complete history tracked and available

- Supports many workflows
- Collaboration
- Quality through team communication and reviews

WHAT IS VERSION CONTROL?

content

teams

agility

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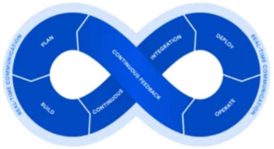
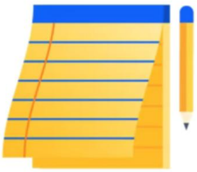


- Manages small changes
- Easily test, fix or undo ideas and changes

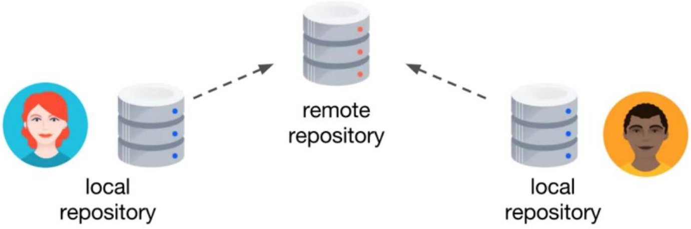
WHAT TYPE OF CONTENT?

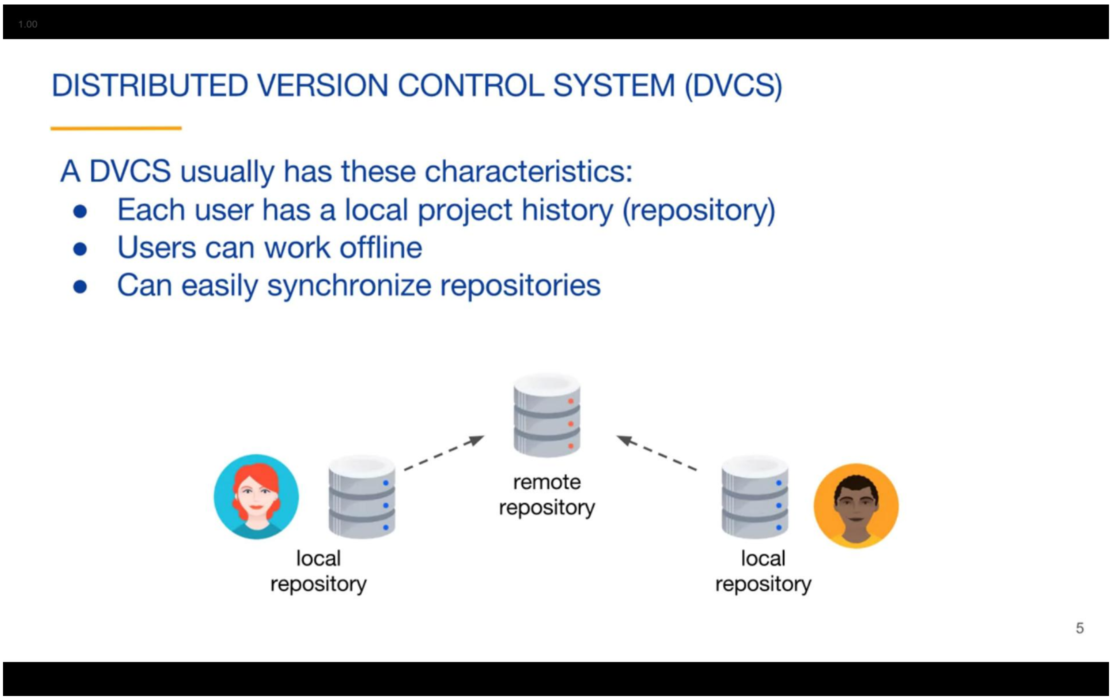
- Source code
- Automated tests
- Server configuration
- Documentation
- A book
- Web site content



DISTRIBUTED VERSION CONTROL SYSTEM (DVCS)

A DVCS usually has these characteristics:



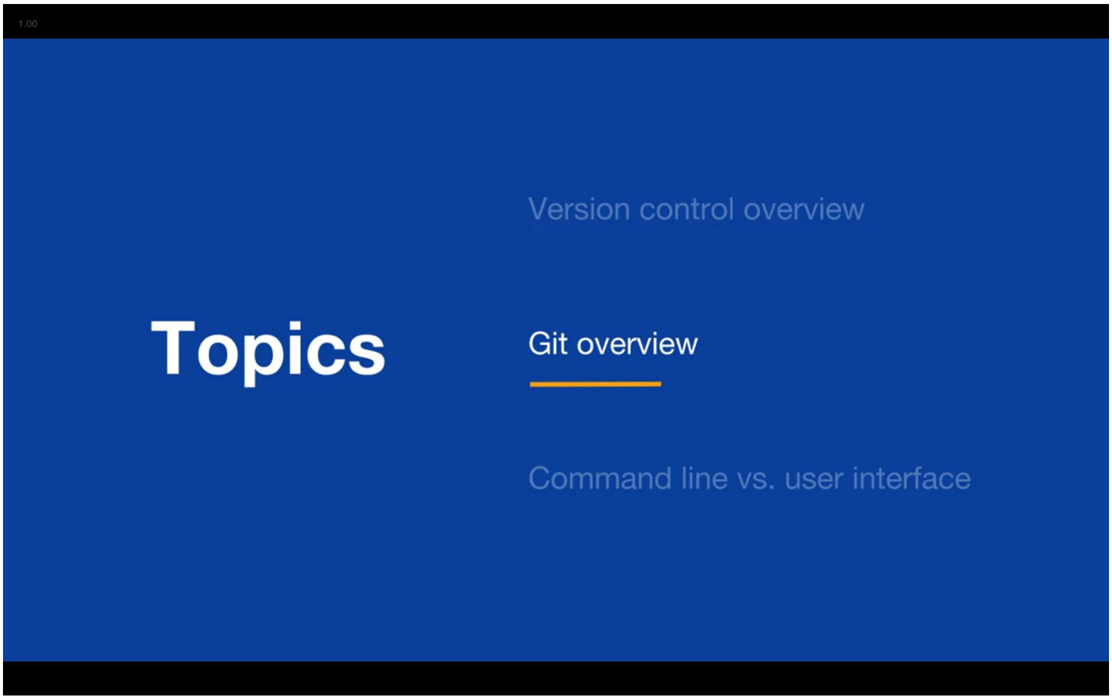


DISTRIBUTED VERSION CONTROL SYSTEM (DVCS)

A DVCS usually has these characteristics:

- Each user has a local project history (repository)
- Users can work offline
- Can easily synchronize repositories

remote repository
local repository
local repository



Topics

Version control overview

Git overview

Command line vs. user interface

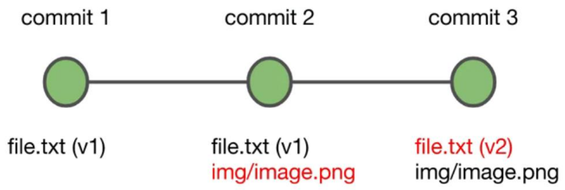
WHAT IS GIT?

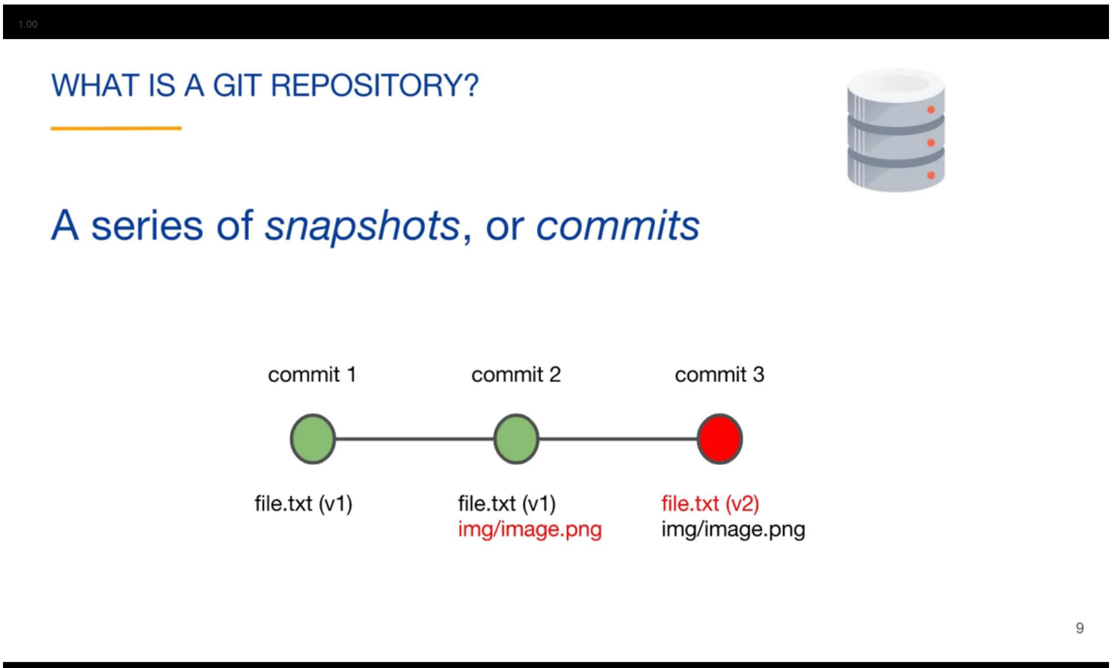
- Git is a distributed version control system
- Open source software (OSS)
  - Has a vibrant community and ecosystem
- Adapts to many types of projects and workflows
  - Works well for large or small projects

https://git-scm.com/

WHAT IS A GIT REPOSITORY?

A series of *snapshots*, or *commits*





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WHAT IS A GIT REPOSITORY?

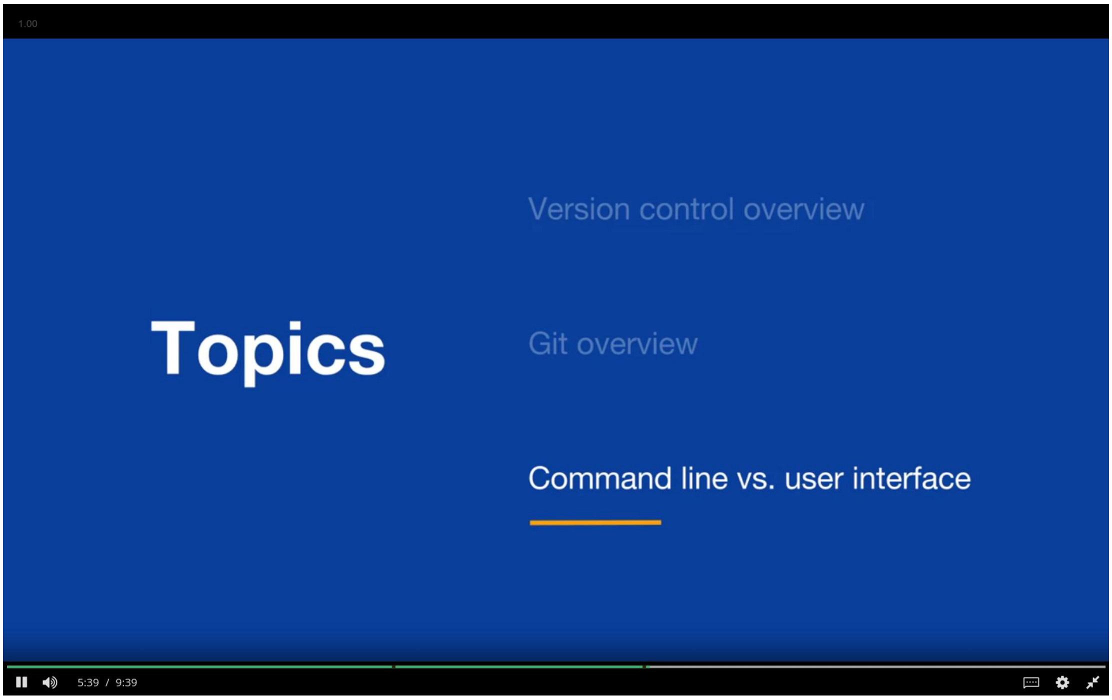
A series of *snapshots*, or *commits*

commit 1 — file.txt (v1)

commit 2 — file.txt (v1)
img/image.png

commit 3 — file.txt (v2)
img/image.png

9



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Topics

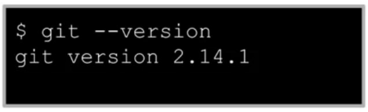
Version control overview

Git overview

Command line vs. user interface

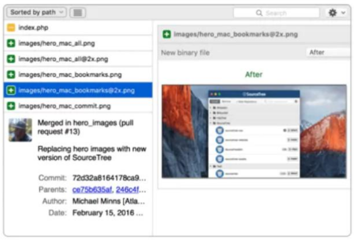
5:39 / 9:39

COMMAND LINE VS. SOURCETREE



```
$ git --version
git version 2.14.1
```

command line



index.php
images/hero_mac_all.png
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images/hero_mac_bookmarks.png
images/hero_mac_bookmarks@2x.png
images/hero_mac_commit.png

Merged in hero_images (pull request #13)

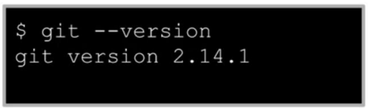
Replacing hero images with new version of SourceTree

Commit: 72d32a8164178ca9...
Parents: ce75b635af, 246c4f...
Author: Michael Minns [Atla...
Date: February 15, 2016 ...

images/hero_mac_bookmarks@2x.png

Sourcetree

SHOULD YOU USE THE COMMAND LINE?



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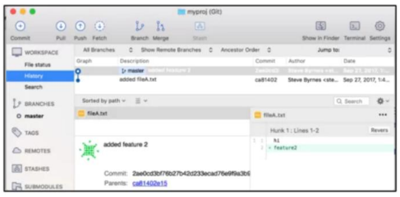
command line

SHOULD YOU USE SOURCETREE?



Graph	Description	Commit	Author	Date
	master			
	added fileA.txt	ca81402	Steve Byrnes <ste...	Sep 27, 2017, 1:4...

fileA.txt

added feature 2

Commit: 2ae0cd3bf76b27b42d233ecad76e9f9a3b9

Parents: ca81402e15

fileA.txt

Hunk 1 : Lines 1-2

```
1 1   hi
  2 + feature2
```

Sourcetree

1.00

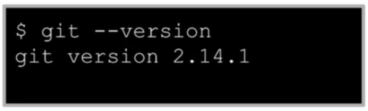
SHOULD YOU USE SOURCETREE?

Sourcetree

14

SHOULD YOU USE THE COMMAND LINE?

- Command line skills are assumed by the industry
- Command line = automatable
- Fast and easy

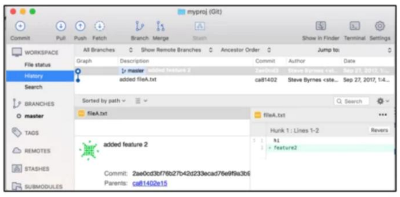


```
$ git --version
git version 2.14.1
```

command line

SHOULD YOU USE SOURCETREE?

- You do not currently have command line knowledge



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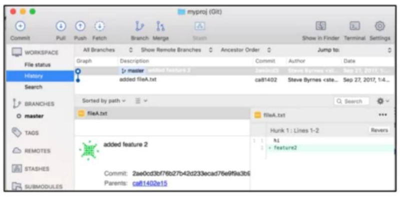
Sourcetree

SHOULD YOU USE SOURCETREE?

- You do not currently have command line knowledge
- Some tasks may be easier with a user interface



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fileA.txt

added feature 2

Commit: 2ae0cd3bf76b27b42d233ecad76e9f9a3b9
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fileA.txt

Hunk 1 : Lines 1-2

```
1 1   hi
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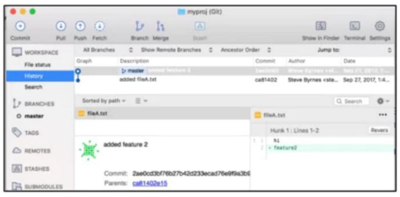
Sourcetree

SHOULD YOU USE SOURCETREE?

- You do not currently have command line knowledge
- Some tasks may be easier with a user interface
- You will not use Git often



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fileA.txt

Hunk 1 : Lines 1-2

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1 1   hi
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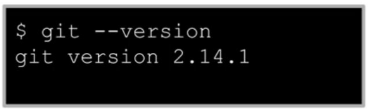
Sourcetree

THE CHOICE IS YOURS



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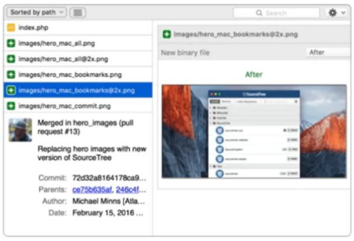
git version 2.14.1
```

command line



index.php
images/hero_mac_all.png
images/hero_mac_all@2x.png
images/hero_mac_bookmarks.png
images/hero_mac_bookmarks@2x.png
images/hero_mac_commit.png

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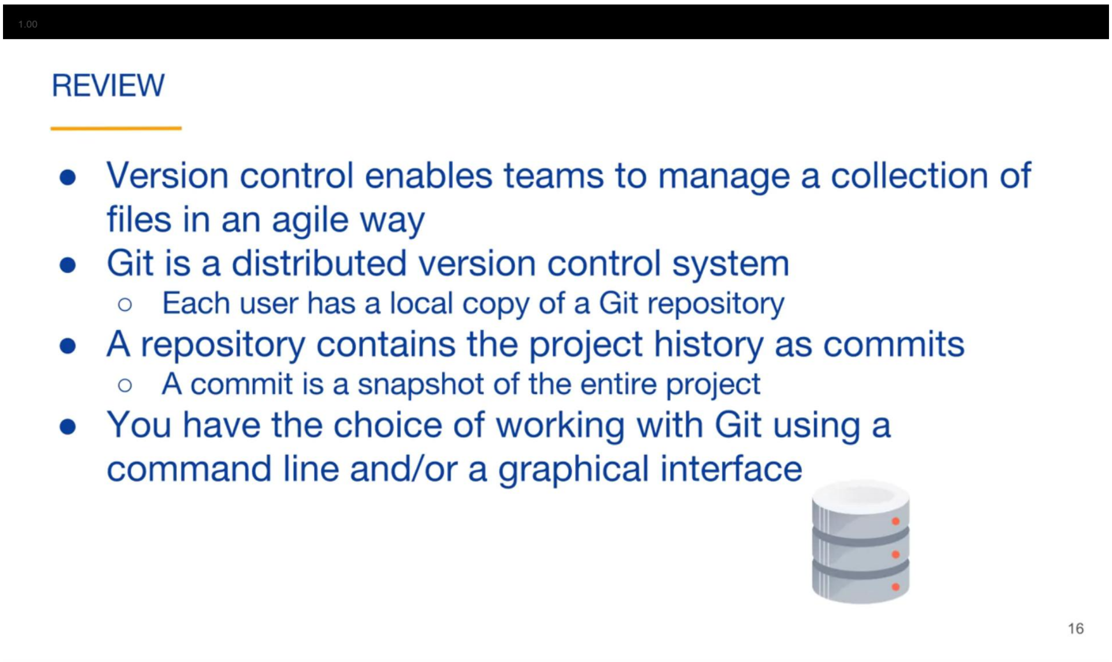
images/hero_mac_bookmarks@2x.png

Sourcetree

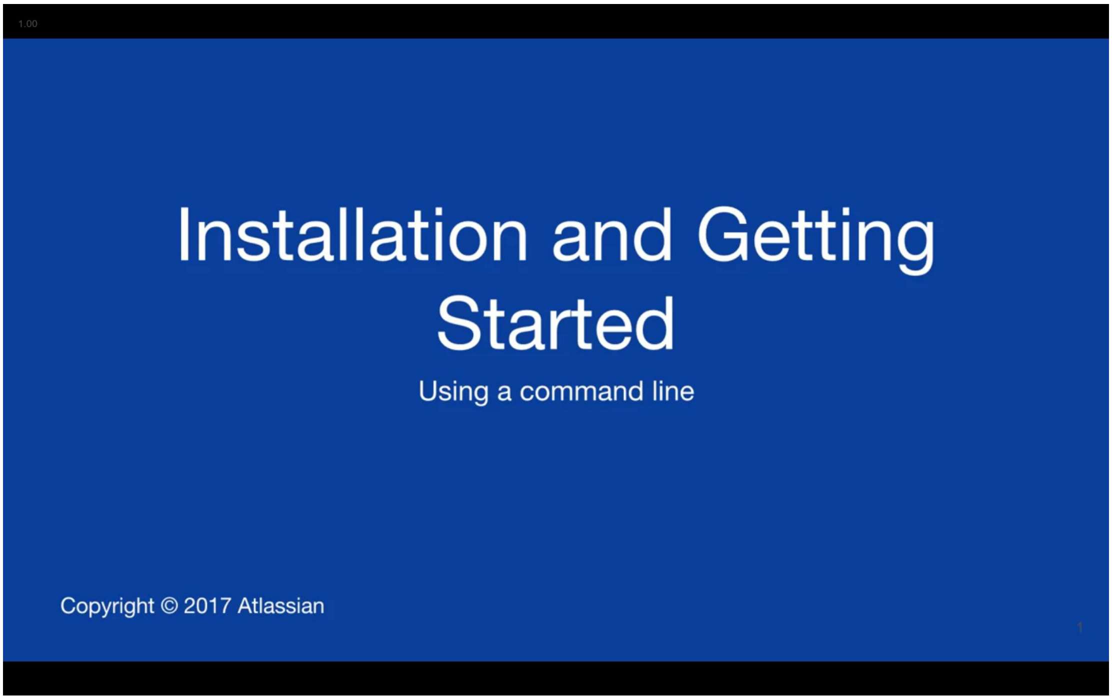
REVIEW

- Version control enables teams to manage a collection of files in an agile way
- Git is a distributed version control system
    - Each user has a local copy of a Git repository
- A repository contains the project history as commits
    - A commit is a snapshot of the entire project



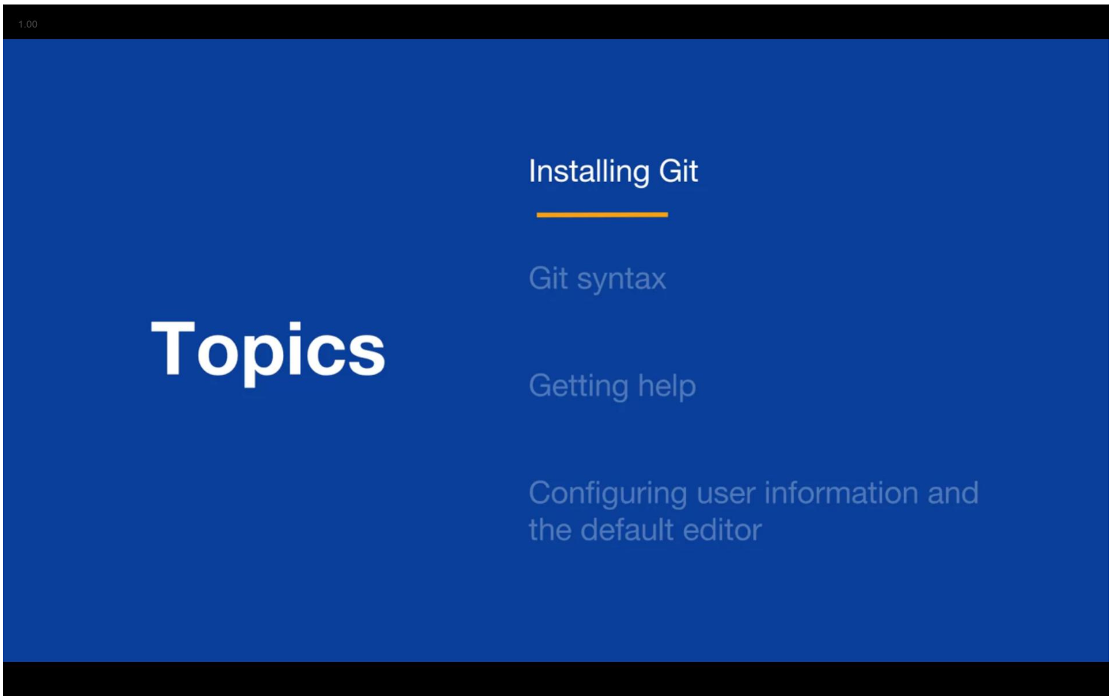
REVIEW

- Version control enables teams to manage a collection of files in an agile way
- Git is a distributed version control system
  - Each user has a local copy of a Git repository
- A repository contains the project history as commits
  - A commit is a snapshot of the entire project
- You have the choice of working with Git using a command line and/or a graphical interface



Installation and Getting Started

Using a command line



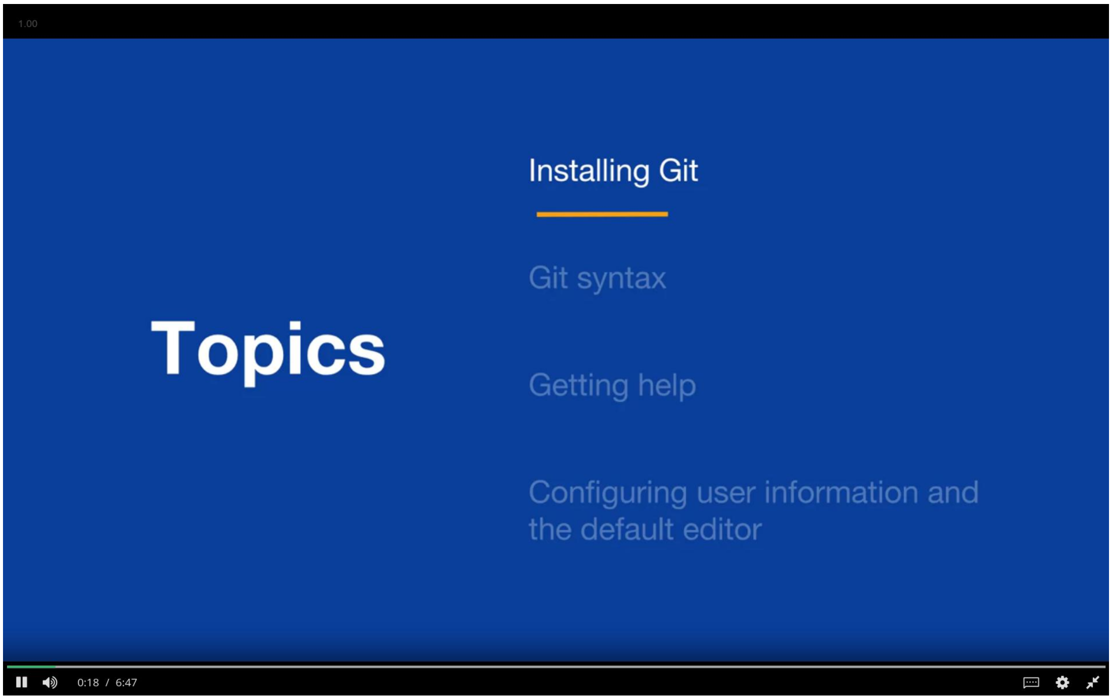
Topics

Installing Git

Git syntax

Getting help

Configuring user information and the default editor



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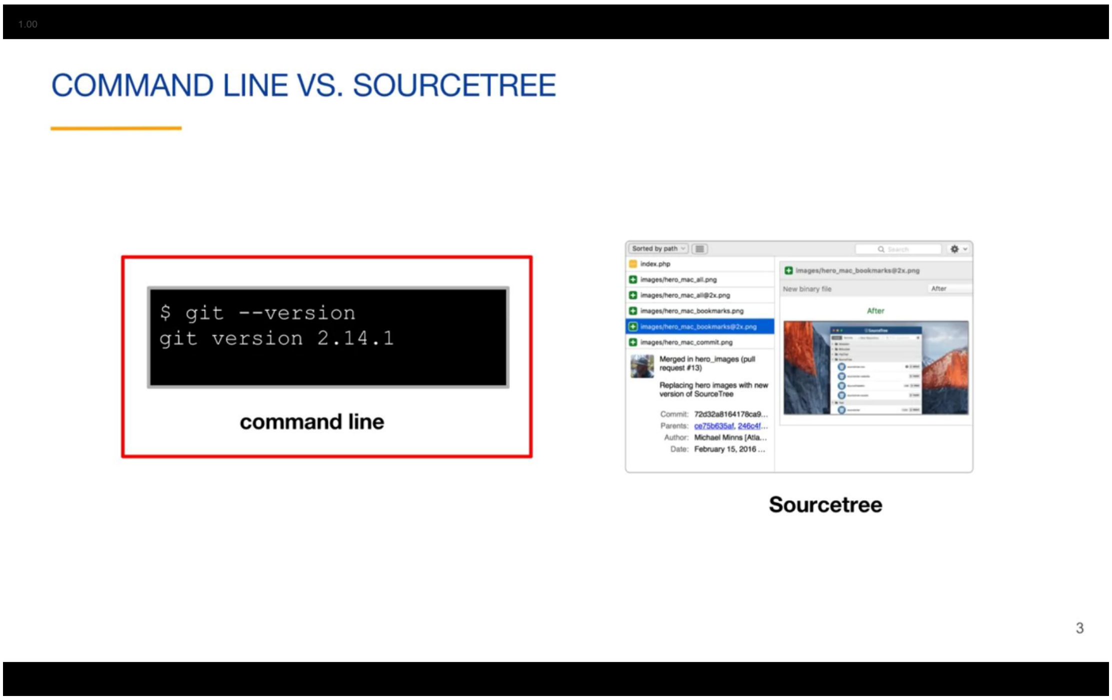

COMMAND LINE VS. SOURCETREE

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$ git --version
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```

command line

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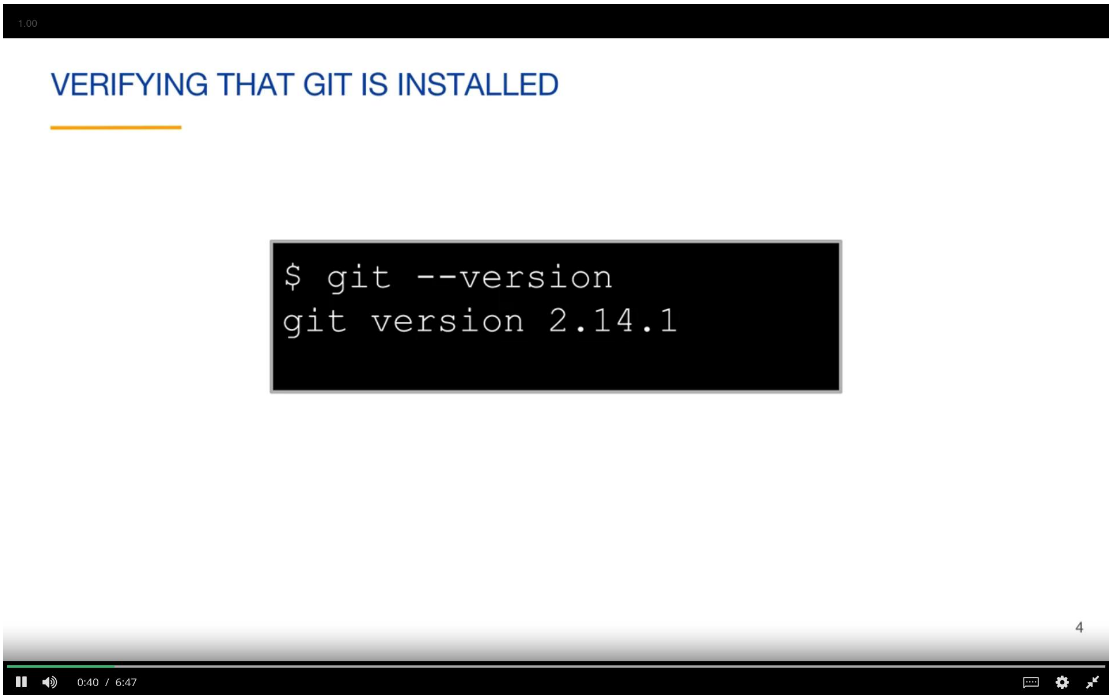
images/hero_mac_bookmarks@2x.png

New binary file

After

Sourcetree



VERIFYING THAT GIT IS INSTALLED

```
$ git --version
git version 2.14.1
```

Topics

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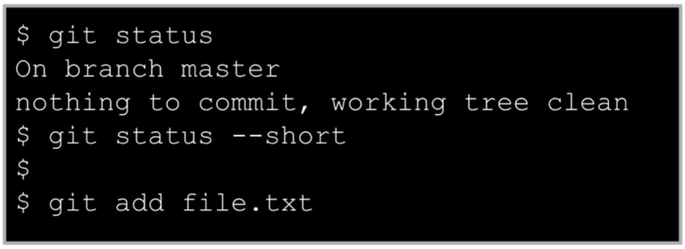
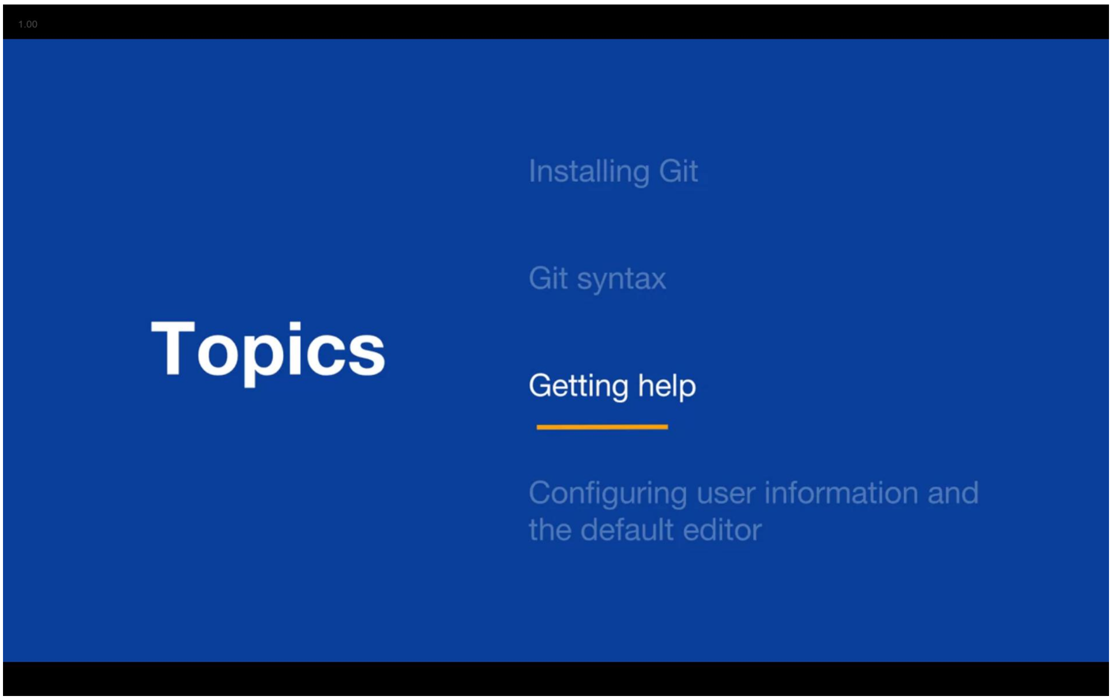
BASIC GIT SYNTAX

```
git [command] [--flags] [arguments]
```



```
$ git status
On branch master
nothing to commit, working tree clean
$ git status --short
$
$ git add file.txt
```



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Topics

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GETTING HELP

To show the "full" help for a command:

`git help [command]`

- This is the same as the online documentation
  `https://git-scm.com/docs/git-init`

```
$ git help init
(displays help for the init command)
$ git help  # or simply "git"
(displays overall git help)
```

GETTING CONCISE HELP

Concise help: `git <command> -h`

```
~$ git init -h
usage: git init [-q | --quiet] [--bare]
[--template=<template-directory>] [--shared[=<permissions>]]
[<directory>]
...
```

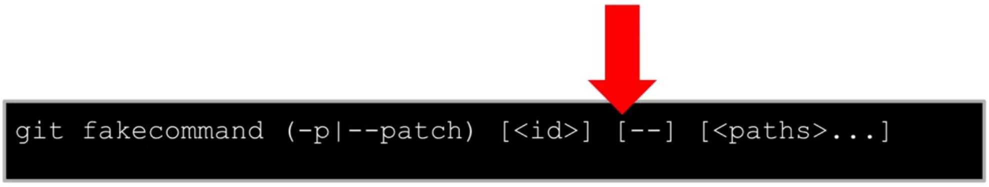
READING HELP

```
git fakecommand (-p|--patch) [<id>] [--] [<paths>...]
```

https://github.com/git/git/blob/master/Documentation/CodingGuidelines

READING HELP

- `-f` or `--flag` Change the command's behavior
- `|` Or
- `[optional]`



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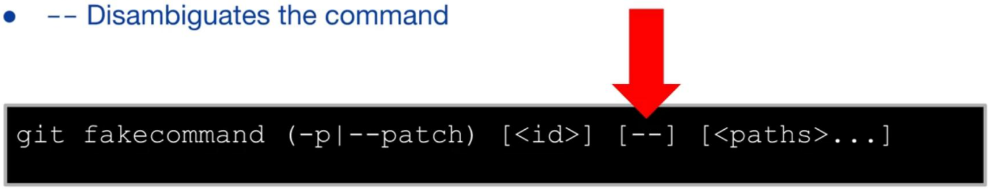
READING HELP

- `-f` or `--flag` Change the command's behavior
- `|` Or
- `[optional]`
- `<placeholder>`
- `[<optional placeholder>]`
- `()` Grouping
- `--` Disambiguates the command



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git fakecommand (-p|--patch) [<id>] [--] [<paths>...]
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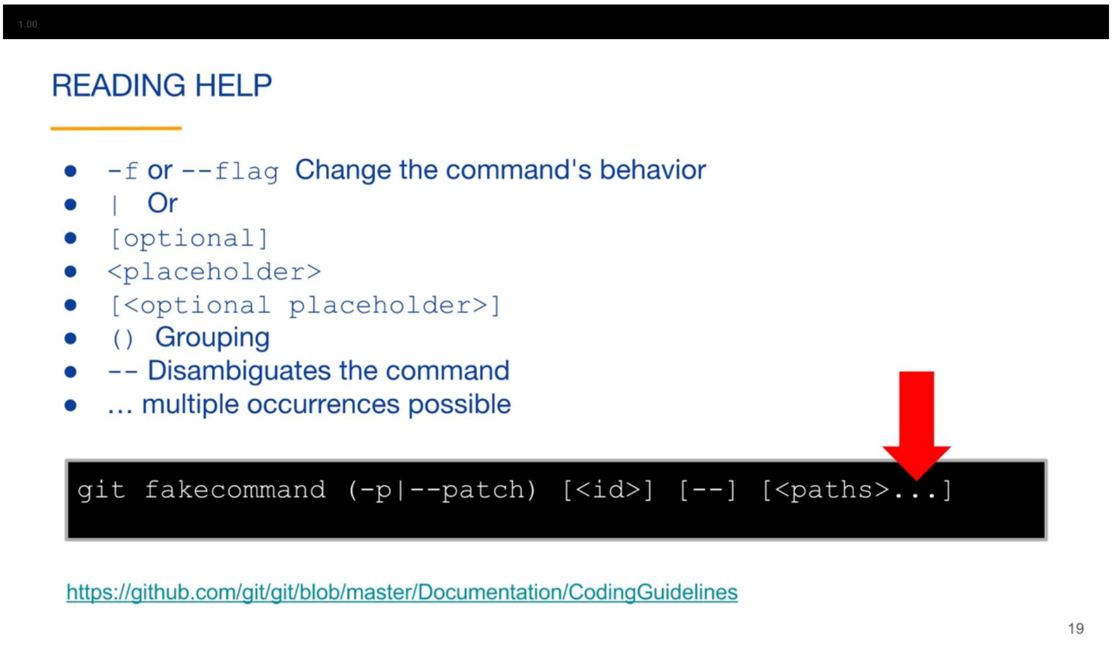

READING HELP

- `-f` or `--flag` Change the command's behavior
- `|` Or
- `[optional]`
- `<placeholder>`
- `[<optional placeholder>]`
- `()` Grouping
- `--` Disambiguates the command
- … multiple occurrences possible

```
git fakecommand (-p|--patch) [<id>] [--] [<paths>...]
```

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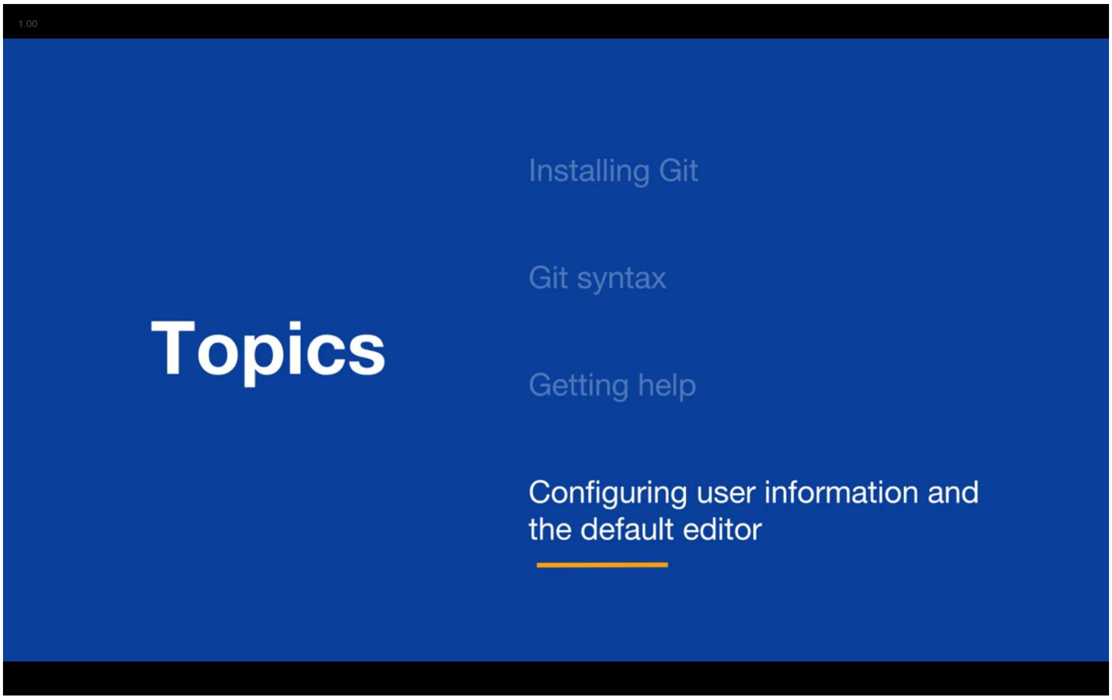

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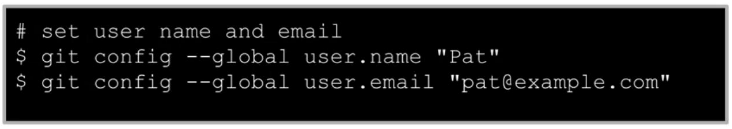
SETTING YOUR USER NAME AND EMAIL

`git config [--local|--global|--system] <key> [<value>]`

- The `--system` flag applies to every repository for all users on your computer
- The `--global` flag applies to every repository that you use on your computer
- No flag or `--local` applies only to the current repository (highest precedence)

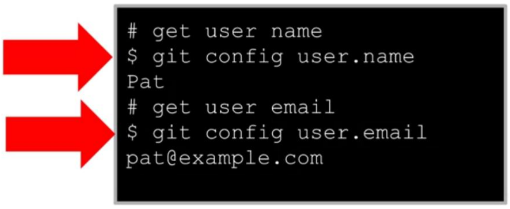


```
# set user name and email
$ git config --global user.name "Pat"
$ git config --global user.email "pat@example.com"
```

READING YOUR USER NAME AND EMAIL

`git config <key>`

- The current value of `<key>` will be returned



```
# get user name
$ git config user.name
Pat
# get user email
$ git config user.email
pat@example.com
```

SETTING GIT'S DEFAULT EDITOR

Specify an editor that you like to use by configuring `core.editor`

```
$ git config --global core.editor nano
```

HANDS ON

1. Install the Git command line interface (if necessary)
2. Verify your Git version
3. Explore Git help
4. Configure your user name, email address and default editor