GIT

08/31/2012 MWC

Installing Git

Visit www.git-scm.com. Download "Git for Windows 1.7.11" and perform a default install.

Configuring Git On A New PC

Open Bash

Look to see that Git is installed and what version you are running.

```
      git --version    /* note that is a double dash */
```

cd and mkdir to create the directory structure where you want to store local Git repositories

Set up variables for this Git configuration.
Enter the commands below in the Bash shell. This information is used in commits. The information is stored at c:\users\%username%\.gitconfig /* note the . in front of gitconfig */

```
      git config --global user.name "Mike Colbert"

      git config --global user.email mike@4colberts.com

      git config --global color.ui true
```

Generate SSH keys for communication between this PC and your GitHub.com account
To generate a new SSH key, on the PC you are using, enter the commands below in the Bash shell. The email address should be the same one you used to register with GitHub.com. We want the default settings so when asked to enter a file in which to save the key, just press enter.

```
        ssh-keygen –t rsa –C "your_email@youremail.com"
```

```
# Creates a new ssh key using the provided email
# Generating public/private rsa key pair.
# Enter file in which to save the key (/your_home_path/.ssh/id_rsa):
```

Now you need to enter a passphrase.

```
      # Enter passphrase (empty for no passphrase): [Type a passphrase]

      # Enter same passphrase again: [Type passphrase again]
```

Which should give you something like this:

```
# Your identification has been saved in /your_home_path/.ssh/id_rsa.
# Your public key has been saved in /your_home_path/.ssh/id_rsa.pub.
# The key fingerprint is:
# 01:0f:f4:3b:ca:85:d6:17:a1:7d:f0:68:9d:f0:a2:db your_email@youremail.com
```

Copy the public key to your Operating System's clipboard

If you are using Windows:

```
        clip < ~/.ssh/id_rsa.pub
```

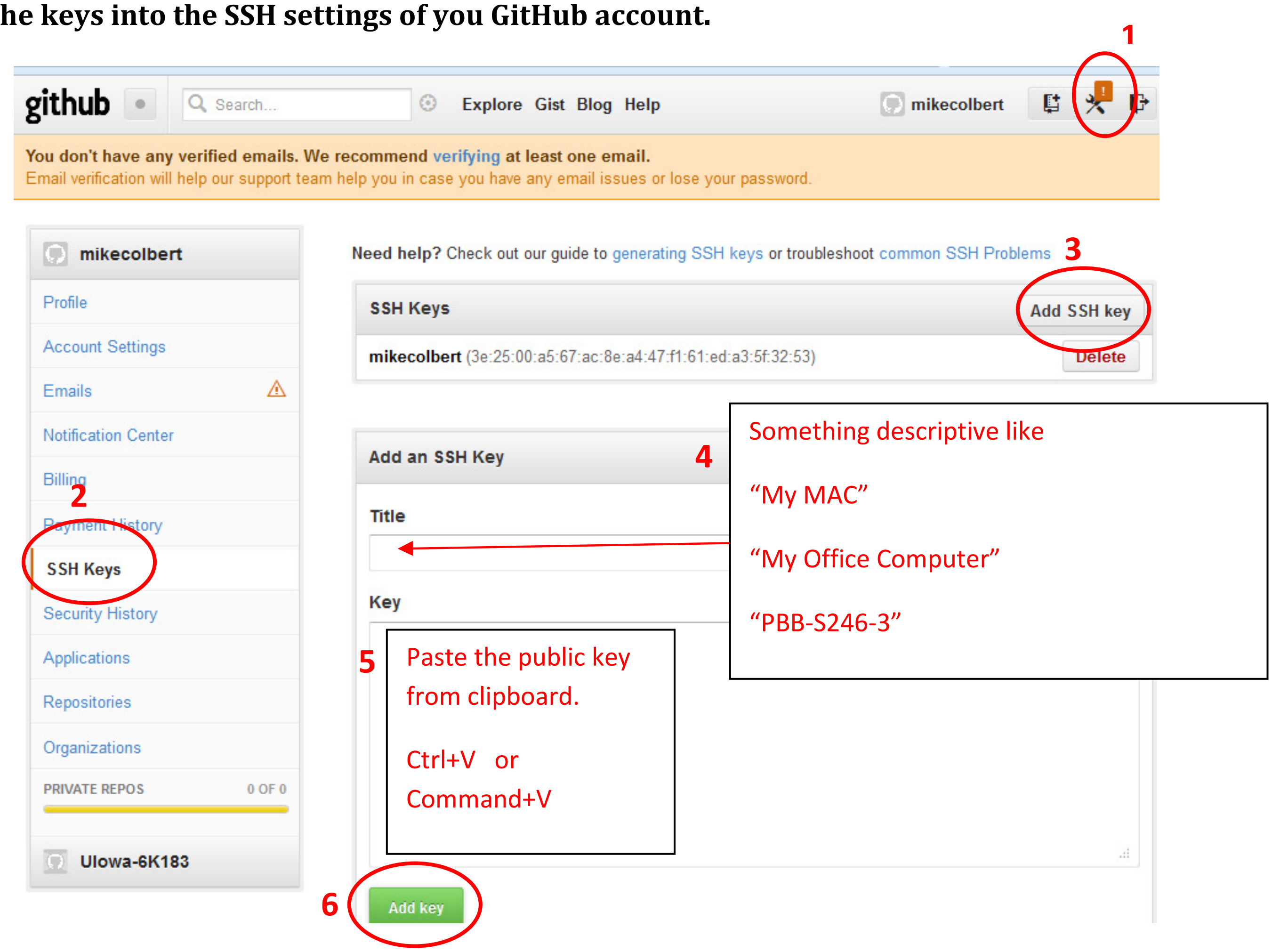
```
# Copies the contents of the id_rsa.pub file to your clipboard
```

If you are using a MAC:

```
        pbcopy < ~/.ssh/id_rsa.pub
```

```
# Copies the contents of the id_rsa.pub file to your clipboard
```

Paste the keys into the SSH settings of you GitHub account.



You don't have any verified emails. We recommend verifying at least one email.
Email verification will help our support team help you in case you have any email issues or lose your password.

Need help? Check out our guide to generating SSH keys or troubleshoot common SSH Problems

mikecolbert (3e:25:00:a5:67:ac:8e:a4:47:f1:61:ed:a3:5f:32:53)

1

2

3

4 Something descriptive like

"My MAC"

"My Office Computer"

"PBB-S246-3"

5 Paste the public key from clipboard.

Ctrl+V or Command+V

6

Note: You can have multiple keys so each device you regularly work from can connect to GitHub.

Test communication between Git on your local PC and your GitHub account

```
        ssh -T git@github.com
```

```
# Attempts to ssh to github
```

You may see this warning:

```
# The authenticity of host 'github.com (207.97.227.239)' can't be established.
# RSA key fingerprint is 16:27:ac:a5:76:28:2d:36:63:1b:56:4d:eb:df:a6:48.
# Are you sure you want to continue connecting (yes/no)?
```

Don't worry, this is supposed to happen. Type "yes".

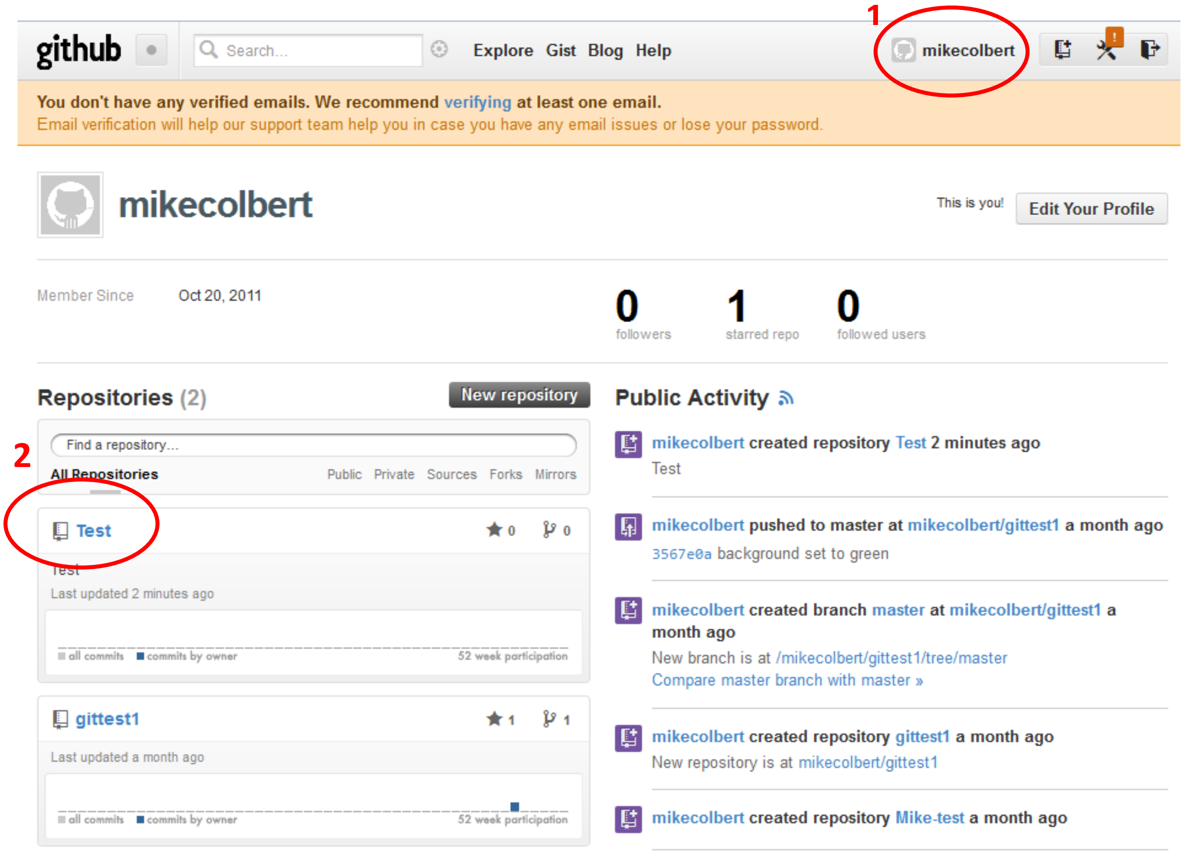
```
# Hi username! You've successfully authenticated, but GitHub does not
# provide shell access.
```

If the username shown matches your GitHub username, you have successfully configured secure communication between your PC and your GitHub account.

Obtain a repository

Git clone

To pull down an entire copy of an existing repository, log in to GitHub to get the URL of the repository to clone.



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mikecolbert

This is you! Edit Your Profile

Member Since Oct 20, 2011

0 followers 1 starred repo 0 followed users

Repositories (2) New repository

Find a repository...

All Repositories Public Private Sources Forks Mirrors

Test ★ 0 ⑂ 0
Test
Last updated 2 minutes ago
all commits commits by owner 52 week participation

gittest1 ★ 1 ⑂ 1
Last updated a month ago
all commits commits by owner 52 week participation

Public Activity

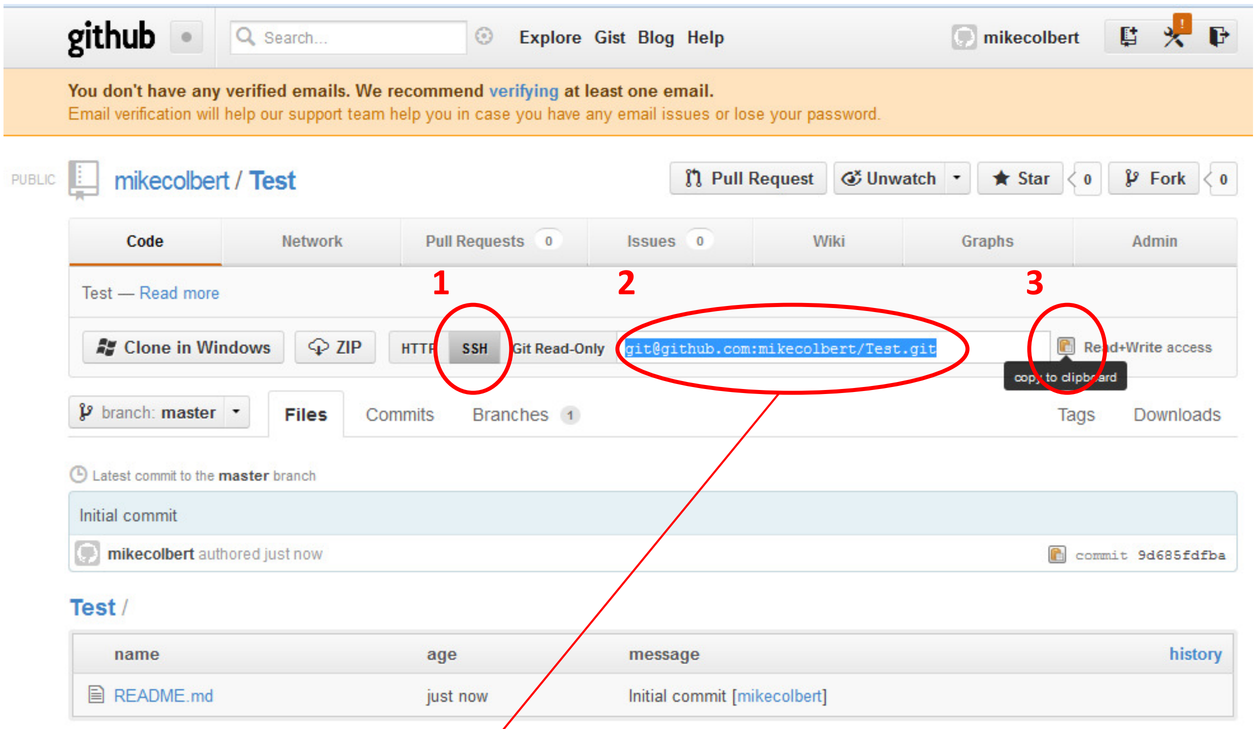
mikecolbert created repository Test 2 minutes ago
Test

mikecolbert pushed to master at mikecolbert/gittest1 a month ago
3567e0a background set to green

mikecolbert created branch master at mikecolbert/gittest1 a month ago
New branch is at /mikecolbert/gittest1/tree/master
Compare master branch with master »

mikecolbert created repository gittest1 a month ago
New repository is at mikecolbert/gittest1

mikecolbert created repository Mike-test a month ago



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Test — Read more

git@github.com:mikecolbert/Test.git

Latest commit to the master branch

Initial commit

mikecolbert authored just now — commit 9d685fdfba

name	age	message	history
README.md	just now	Initial commit [mikecolbert]	

From the Bash shell on your PC, change directory (cd) to the location you choose to store the project.

cd into the directory where you plan to keep your git files

```
    git init                  (initialize git for the directory)

    git clone   << URL >>     (after cloning, you may need to cd into the directory)
```

cd into the directory for this project

See the history of the project

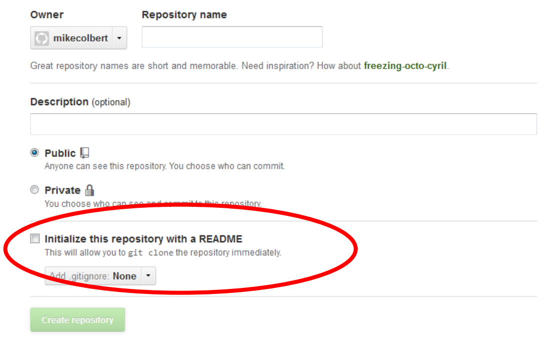
```
    git log
```

View the state of the project. Are the files tracked, modified, staged, etc.

```
    git status
```

Everything happens locally. Any changes you make are only stored locally.

When creating a new repository from GitHub you have the option of including a ReadMe file so you can clone the newly created repository to your local PC and create the link.



Great repository names are short and memorable. Need inspiration? How about freezing-octo-cyril.

● Public
Anyone can see this repository. You choose who can commit.

○ Private
You choose who can see and commit to this repository.

□ Initialize this repository with a README
This will allow you to `git clone` the repository immediately.

Create a new repository through Git init

cd and mkdir to create the directory structure where you want to store local Git repositories

When you are in the directory, initialize Git

```
git init
```

See the history of the project

```
git log      --> no HEAD because there are no commits yet
```

View the state of the project. Are the files tracked, modified, staged, etc.

```
git status
```

Create some content in the same directory you just initialized.

Add files to Git for tracking on the local system. It stages the file.

```
git add <<filename>>
```

or

```
git add .         (the dot recursively adds all files)
```

After successfully modifying the files you are tracking, it's time to commit them to Git. All commits are local. It commits the staged file.

```
git commit –m ‘Initial commit’

git log

git status
```

Show the last commit.

```
git show
```

Stage and commit all modified files, which are being tracked at once.

```
git commit –a
```

Or

```
git commit –a –m  ‘commit message’
```

Git commit editing is Linux Vi

i for insert mode – to type a message.

<esc> to get out of insert mode

:w to write your message

:q to quit out of the commit message

Push all work on this repository from your local system to a GitHub repository.

1.) Create a new repo on GitHub

2.) Copy the URL of the new repo.

3.) On the local PC, in the Bash shell, in the directory of the repo you want to push up:

```
git remote add origin <<URL>>       (Not needed if this is from a clone)
git push origin master              (Push the master branch to origin)
```

Branching

There is usually lots of little stuff in a branch. These are called “topic branches”.

View what branch you are in currently and the names of all branches in your project.

```
git branch
```

Create a new branch.

```
git branch branch_name
```

Switch to a different branch.

```
git checkout branch_name      (any changes you make now are going into this branch)
```

Push the new branch to GitHub

```
git push origin branch_name
```

Merge a branch back to the master branch

```
git checkout master           (change to the master branch)
git merge branch_name         (changes in the branch are now part of master)
```

View the last commit message for all branches.

```
git branch -v
```

Show all branches that have been merged.

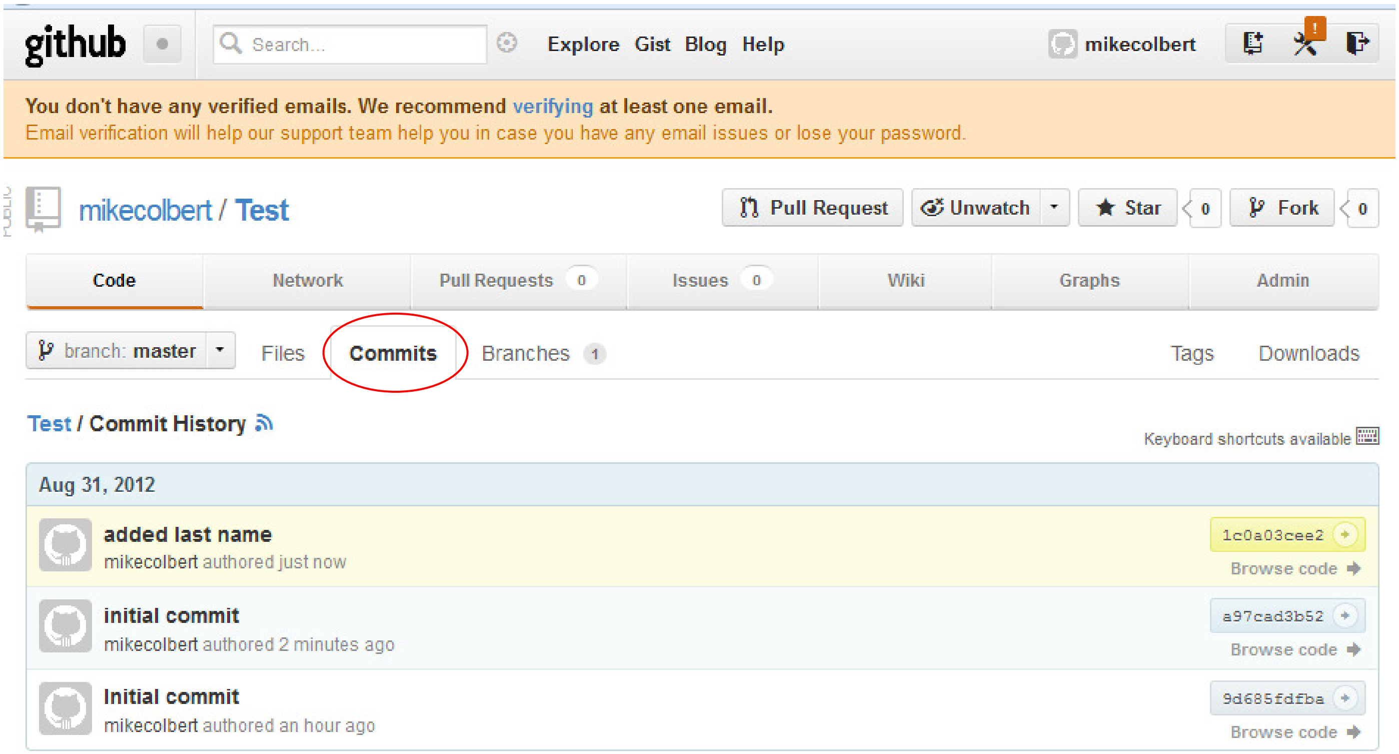
```
git branch --merged
```

Useful branch commands.

```
gitk

gitk -all

git log -graph --all
```



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Test / Commit History

Aug 31, 2012

added last name
mikecolbert authored just now
1c0a03cee2

initial commit
mikecolbert authored 2 minutes ago
a97cad3b52

Initial commit
mikecolbert authored an hour ago
9d685fdfba