

# Git – Version Control

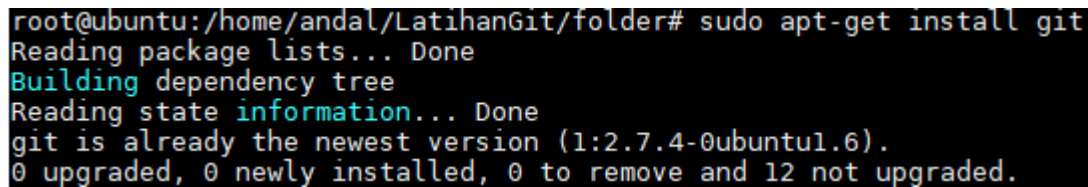
-boysugandasinaga-

---

Git is a tool for version control. Version Control is a system that records changes to a file or set of files over time so that you can recall specific versions later.

## Installation

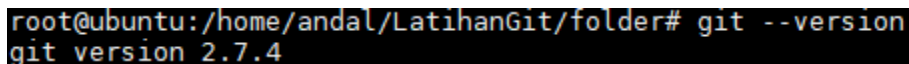
```
# sudo apt-get install git
```



```
root@ubuntu:/home/andal/LatihanGit/folder# sudo apt-get install git
Reading package lists... Done
Building dependency tree
Reading state information... Done
git is already the newest version (1:2.7.4-0ubuntu1.6).
0 upgraded, 0 newly installed, 0 to remove and 12 not upgraded.
```

Figure 1 Installation Git

```
# git --version
```

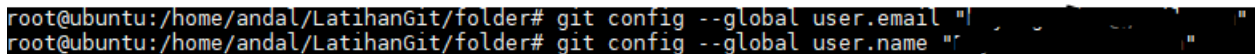


```
root@ubuntu:/home/andal/LatihanGit/folder# git --version
git version 2.7.4
```

Figure 2 Git Version

```
# git config --global user.email "youremail"
```

```
# git config --global user.name "yourname"
```



```
root@ubuntu:/home/andal/LatihanGit/folder# git config --global user.email "
root@ubuntu:/home/andal/LatihanGit/folder# git config --global user.name "r
```

Figure 3 Configure Identity

\*) If you are not configure your identity, you will get issue which ask you to configure your own identity.

## Git Clone

Git clone is used for copying an existing git repository.

Make a new directory (contoh) by:

```
# mkdir contoh
```

```
# cd contoh
```

```
# git clone git://git.kernel.org/pub/scm/git.git
```

```
# cd git
```

```
# ls
```

```

root@ubuntu:/home/andal/LatihanGit/folder# mkdir contoh
root@ubuntu:/home/andal/LatihanGit/folder# cd contoh/
root@ubuntu:/home/andal/LatihanGit/folder/contoh# git clone git://git.kernel.org/pub/scm/git/git.git
Cloning into 'git'...
remote: Counting objects: 262478, done.
remote: Compressing objects: 100% (62825/62825), done.
remote: Total 262478 (delta 197679), reused 262071 (delta 197436)
Receiving objects: 100% (262478/262478), 58.37 MiB | 6.78 MiB/s, done.
Resolving deltas: 100% (197679/197679), done.
Checking connectivity... done.
root@ubuntu:/home/andal/LatihanGit/folder/contoh# ls
git
root@ubuntu:/home/andal/LatihanGit/folder/contoh# cd git/
root@ubuntu:/home/andal/LatihanGit/folder/contoh/git# ls
abspath.c      decorate.c      grep.h          packfile.h      shallow.c
adlocal.m4     decorate.h      hash.h          pack.h           shell.c
advice.c       delta.h         hashmap.c       pack-objects.c  sh-illgn--envsubst.c
advice.h       delta-islands.c hashmap.h       pack-objects.h  shortlog.h
alias.c        delta-islands.h help.c          pack-revindex.c sideband.c
alias.h        detect-compiler help.h          pack-revindex.h sideband.h
alloc.c        diff.c          hex.c           pack-write.c    sigchain.c
alloc.h        diffcore-break.c http-backend.c  pager.c         sigchain.h
apply.c        diffcore-delta.c http.c          parse-options.c split-index.c
apply.h        diffcore-h      http-fetch.c   parse-options-cb.c split-index.h
archive.c      diffcore-order.c http.h          parse-options.h strbuf.c
archive.h      diffcore-pickaxe.c http-push.c    patch-delta.c   strbuf.h
archive-tar.c  diffcore-rename.c http-walker.c  patch-ids.c     streaming.c
archive.zip.c  diff-delta.c   imap-send.c    patch-ids.h     string-list.c
argv-array.c  diff-lib.c     INSTALL        path.c          string-list.h
argv-array.h  diff-no-index.c interdiff.c    pathspec.c     submodule-config.c
attr.c        dir.c          interdiff.h    perl            submodule-config.h
attr.h        dir-iterator.c json-writer.c  pkt-line.c     submodule.h
base85.c      dir-iterator.c

```

Figure 4 Git Clone

## Git Init

Git init is used for creating the new subdirectory named “.git” that contains all of your necessary repository files.

```
# git init
```

Inside the directory (/home/andal/LatihanGit/folder), there is 3 files:

1\_file.php, 2\_file.php, 3\_file.php

```

root@ubuntu:/home/andal/LatihanGit/folder# git init
Initialized empty Git repository in /home/andal/LatihanGit/folder/.git/

```

```

root@ubuntu:/home/andal/LatihanGit/folder# cd .git/
root@ubuntu:/home/andal/LatihanGit/folder/.git# ls
branches  COMMIT_EDITMSG  config  description  HEAD  hooks  index  info  logs  objects  refs

```

Figure 5 Git Init

## Git Add

After doing *git init*, we can do the add command.

```
# git add *.php
```

*Why \*.php? Because we just wanted to add the all file of php extension.*

```
root@ubuntu:/home/andal/LatihanGit/folder# git add *.php
```

Figure 6 Git Add

## Git Commit

Git commit is used for saving your changes.

```
# git commit -m "your comment"
```

```
root@ubuntu:/home/andal/LatihanGit/folder# git commit -m "initial project version"
[master (root-commit) 2b2f846] initial project version
 3 files changed, 1 insertion(+)
 create mode 100644 1_file.php
 create mode 100644 2_file.php
 create mode 100644 3_file.php
```

Figure 7 Git Commit

## Git Remote

Git remote is used for managing your record of remote repository. It allows you to save long URLs as short handles, such as “origin”, so you don’t have to type them out.

```
# git remote add "initial" "repository URL"
```

```
root@ubuntu:/home/andal/LatihanGit/folder# git remote add origin https://github.com/.../...
```

Figure 8 Git Remote

## Git Pull

Git Pull is basically a combination of the git fetch and git merge, where Git will take the file from the remote you specify (git remote add ...) and then immediately try to merge it into the branch you’re on.

```
# git pull "repository URL" "branch"
```

```
root@ubuntu:/home/andal/LatihanGit/folder# git pull https://github.com/... master
Username for 'https://github.com':
Password for 'https://...@github.com':
From https://github.com/...
 * branch            master       -> FETCH_HEAD
Merge made by the 'recursive' strategy.
 README.md | 1 +
 1 file changed, 1 insertion(+)
 create mode 100644 README.md
```

Figure 9 Git Pull

## Git Push


Git push is used for sharing your project on your remote “repository URL”

```
# git push "repository URL" "branch"
```

Create a new repository

A repository contains all the files for your project, including

Owner Repository name \*



```

root@ubuntu:/home/andal/LatihanGit/folder# git push origin master -f
Username for 'https://github.com': 
Password for '': 
Counting objects: 9, done.
Delta compression using up to 4 threads.
Compressing objects: 100% (5/5), done.
Writing objects: 100% (9/9), 1.13 KiB | 0 bytes/s, done.
Total 9 (delta 1), reused 0 (delta 0)
remote: Resolving deltas: 100% (1/1), done.
To https://github.com:/newline.git
 * [new branch]      master -> master

```

Figure 10 Git Push

## Troubleshooting

1. Configure your identity

```

root@ubuntu:/home/andal/LatihanGit/folder# git commit -m "initial project version"
*** Please tell me who you are.

Run

  git config --global user.email "you@example.com"
  git config --global user.name "Your Name"

to set your account's default identity.
Omit --global to set the identity only in this repository.

fatal: unable to auto-detect email address (got 'root@ubuntu.(none)')

```

Figure 11 Issue 1

*Solved by: run the command like Figure 3. Configure Identity*

```

root@ubuntu:/home/andal/LatihanGit/folder# git config --global user.email "you@example.com"
root@ubuntu:/home/andal/LatihanGit/folder# git config --global user.name "Your Name"

```

Figure 12 Solving troubleshoot 1

2. Error command push

```


remote: Resolving deltas: 100% (1/1), done.
remote: error: GH007: Your push would publish a private email address.
remote: You can make your email public or disable this protection by visiting:
remote: http://github.com/settings/emails
To https://github.com:/newline.git
! [remote rejected] master -> master (push declined due to email privacy restrictions)
error: failed to push some refs to 'https://github.com/'

```

Figure 13 Issue 2

*Solved: Uncheck the checkbox keep my email address private*

Your backup GitHub email address can be used to reset your password if you no longer have access to your primary email address.

Allow all verified emails  Save

Please add a verified email, in addition to your primary email, in order to choose a backup email address.

☐ **Keep my email address private**

We'll remove your public profile email and use 20719811+dragz17@users.noreply.github.com when performing web-based Git operations and sending email on your behalf. If you want command line Git operations to use your private email you must [set your email in Git](#).

Figure 14 Solving Troubleshoot 2

3. Fatal: Remote origin already exists.

```
root@ubuntu:/home/andal/LatihanGit/folder# git remote add origin https://github.com/
fatal: remote origin already exists.
```

Figure 15 Issue 3

*Solved: Remove the "origin"*

```
root@ubuntu:/home/andal/LatihanGit/folder# git remote rm origin
root@ubuntu:/home/andal/LatihanGit/folder# git remote add origin https://github.com/
root@ubuntu:/home/andal/LatihanGit/folder# git push -u origin master
Username for 'https://github.com':
Password for 'https://github.com':
Counting objects: 9, done.
Delta compression using up to 4 threads.
```

Figure 16 Solving issue 3