

Version Control



Introduction to Git & Github – Chapter 2



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Git is a **free and open source** distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is **easy to learn** and has a **tiny footprint with lightning fast performance**. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like **cheap local branching**, convenient **staging areas**, and **multiple workflows**.

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

What is Git?

- The most popular version control today
- Developed (2005) by the Linux development community
- Everything is stored in local repositories on your computer
- Operated using the command line

Download Git

➔ <https://git-scm.com/downloads>

Downloads



Mac OS X



Windows



Linux



Solaris

Older releases are available and the [Git source repository](#) is on GitHub.

Latest source Release

2.6.4

[Release Notes](#) (2015-12-08)

Downloads for Windows

Installing Git

➤ Installing on Windows

➤ Download latest git version for the Windows platform

➤ <http://git-scm.com/download/win>

➤ Easy way to get git installed is to install GitHub for Windows

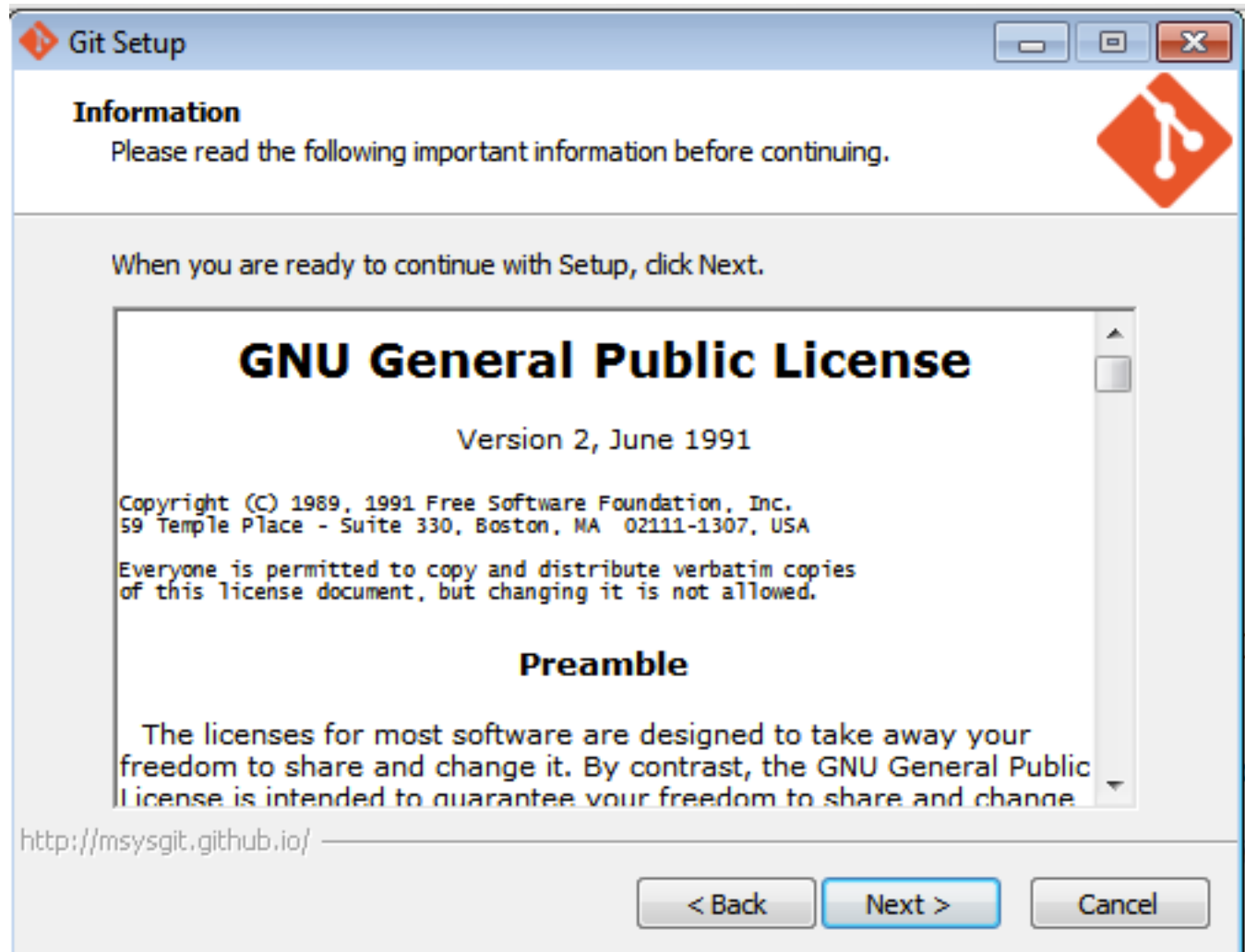
➤ Download GitHub from <http://windows.github.com/>

➤ The installer includes a command line version of Git as well as the GUI

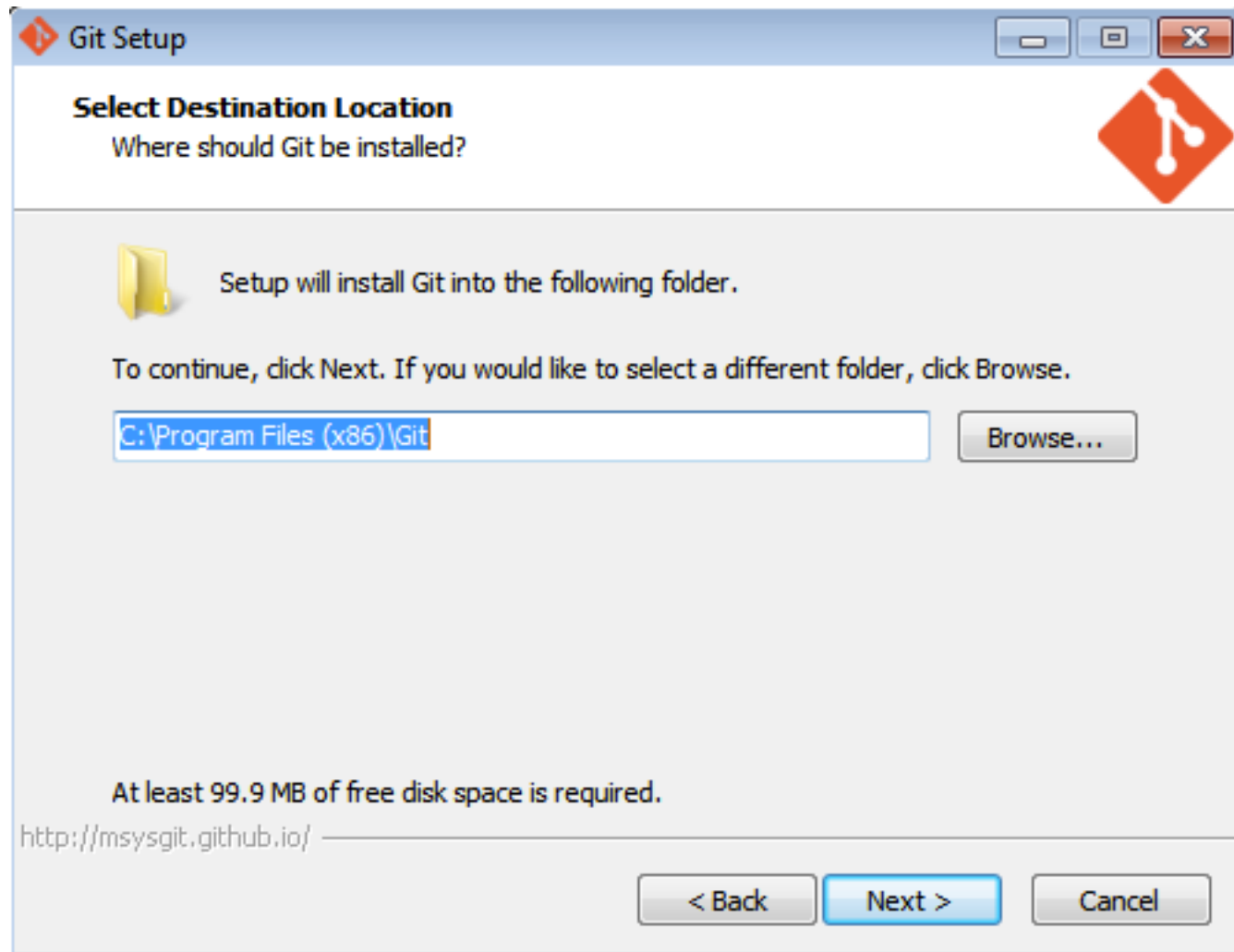
Git – Windows 7 installation process – Step I



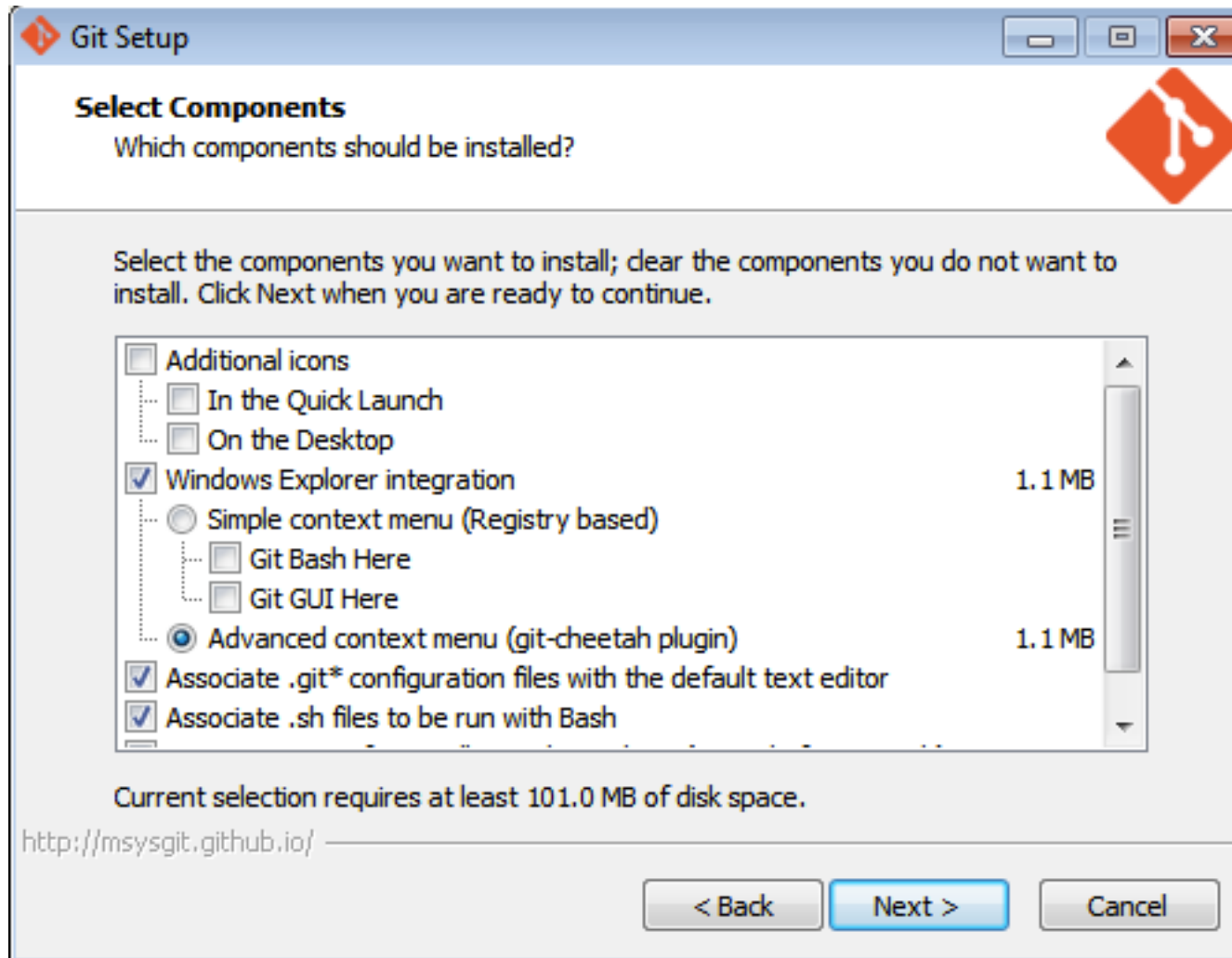
Git – Windows 7 installation process – Step II



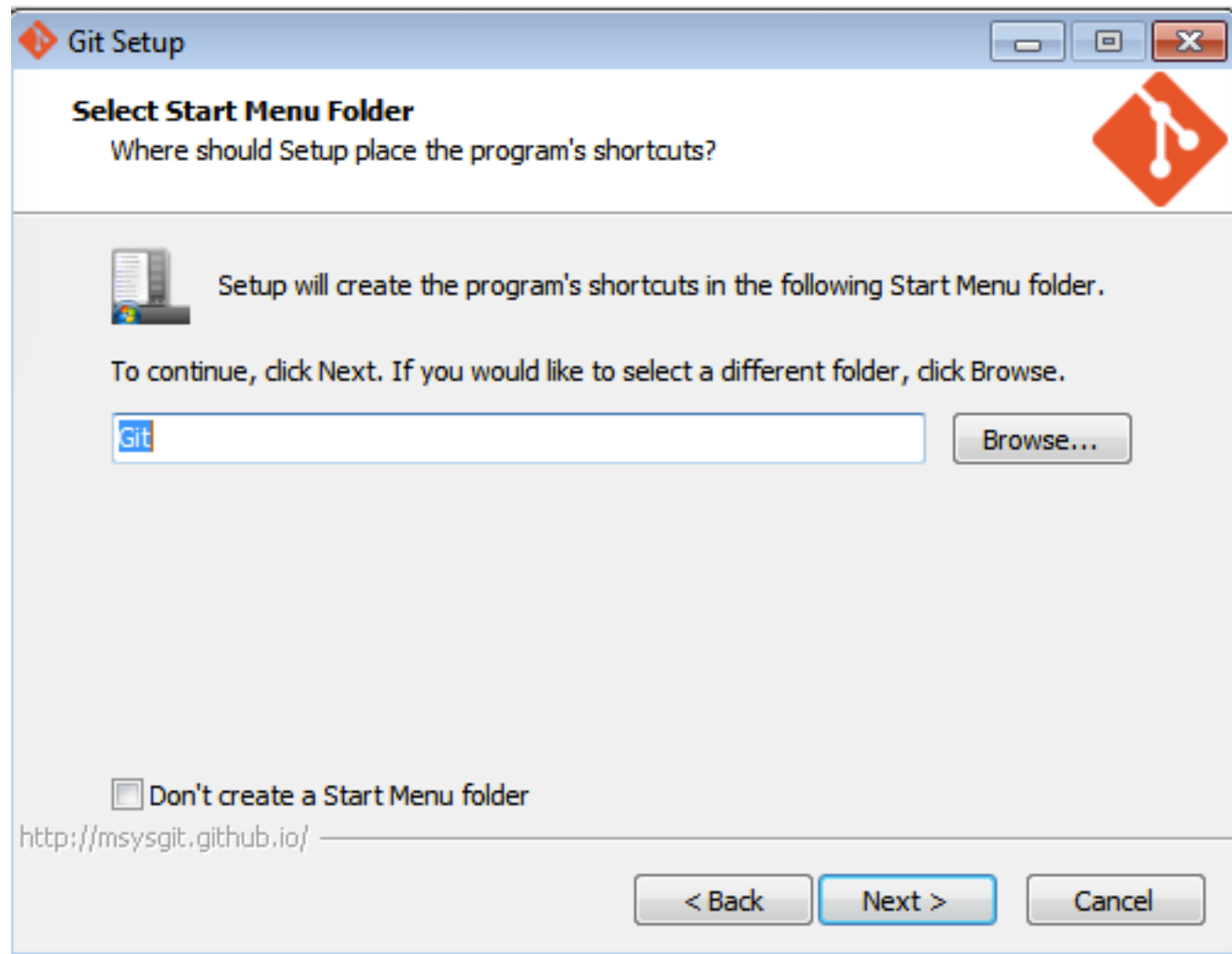
Git – Windows 7 installation process – Step II



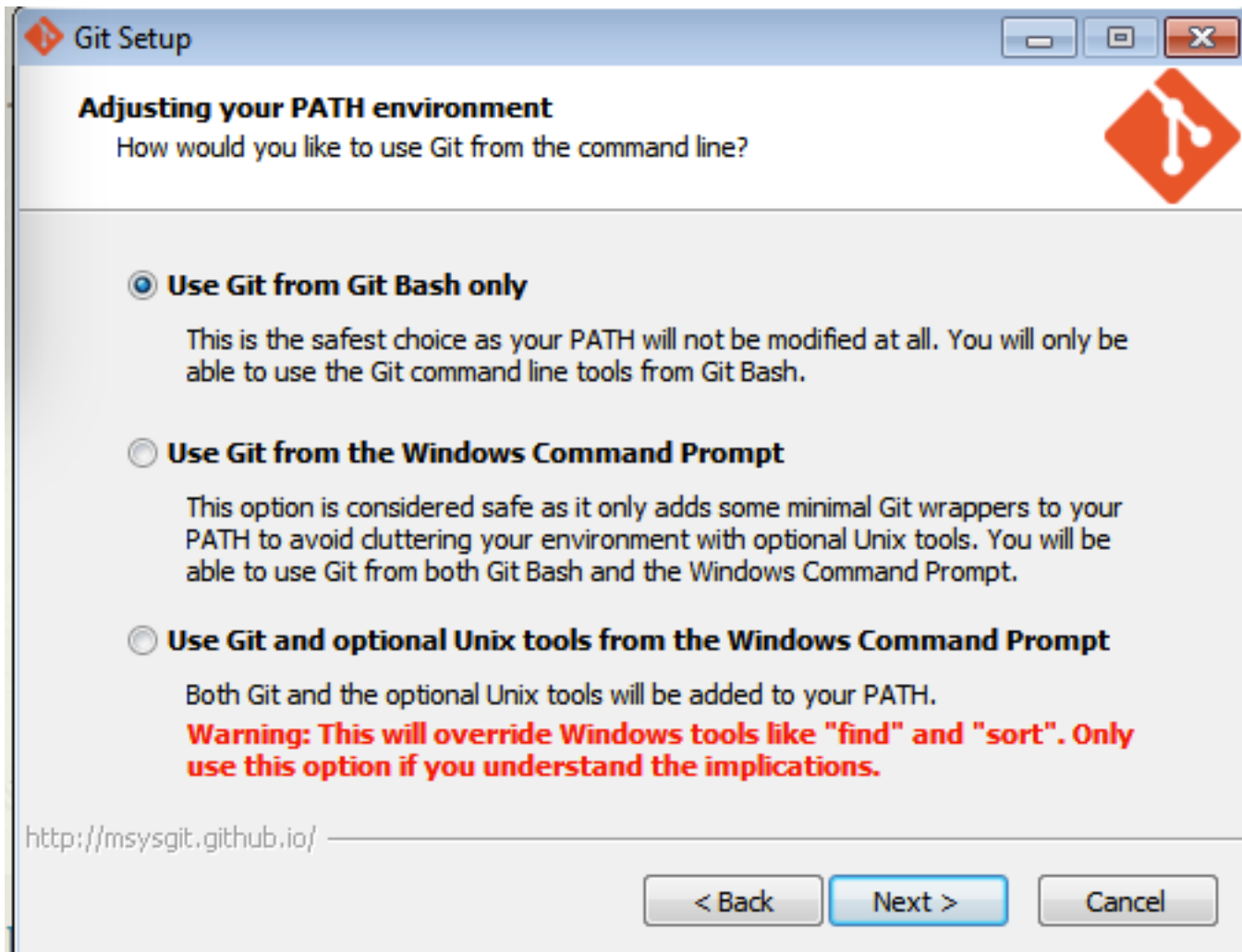
Git – Windows 7 installation process – Step IV



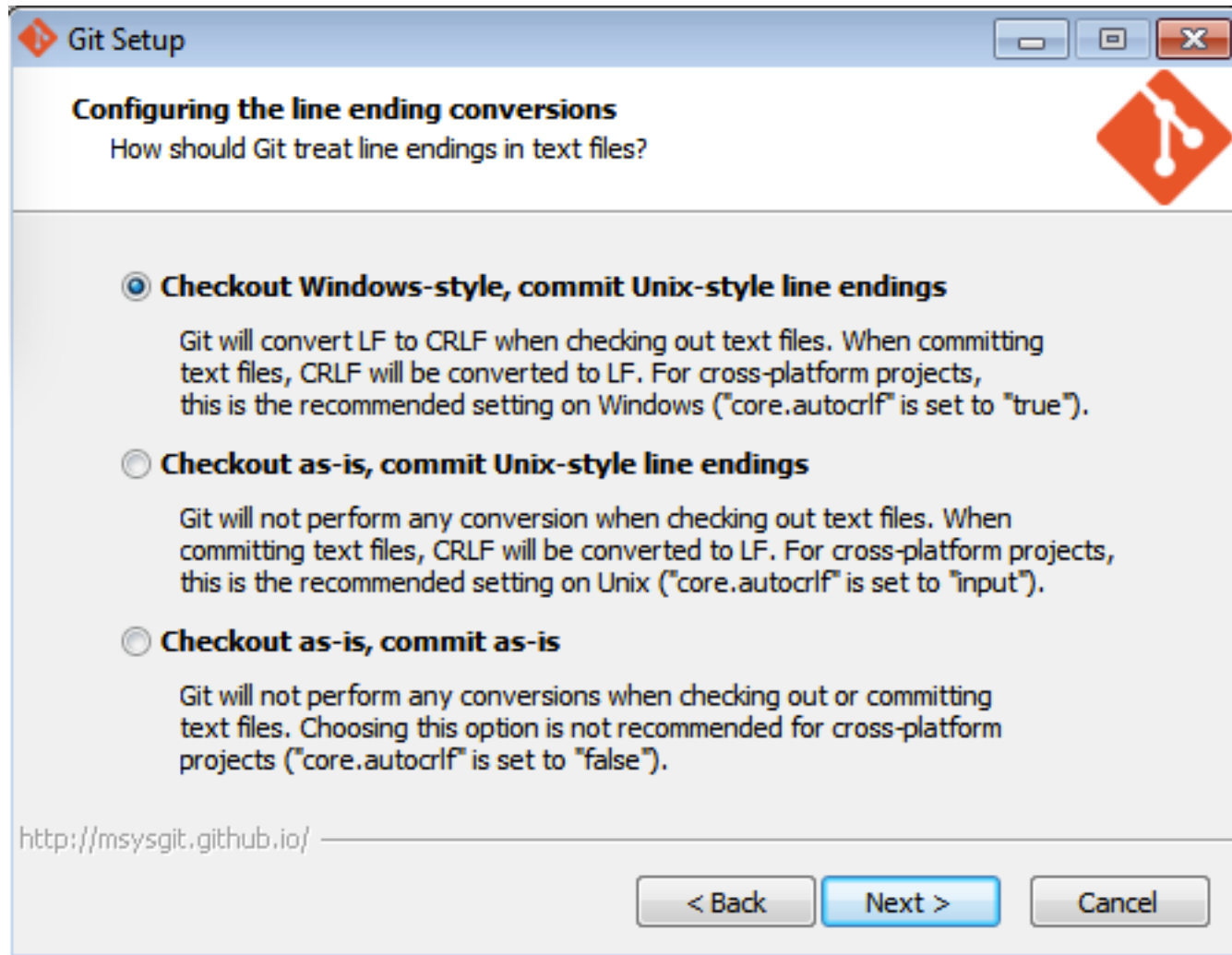
Git – Windows 7 installation process – Step V



Git – Windows 7 installation process – Step VI



Git – Windows 7 installation process – Step VII



Git – Windows 7 installation process – Step VIII

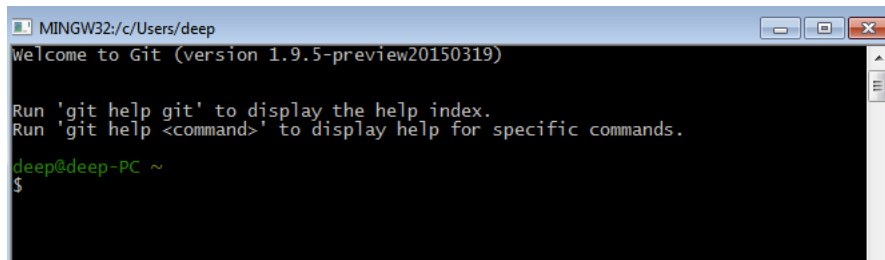


After installation

Programs (2)

- Git Bash
- Git GUI

Git Bash



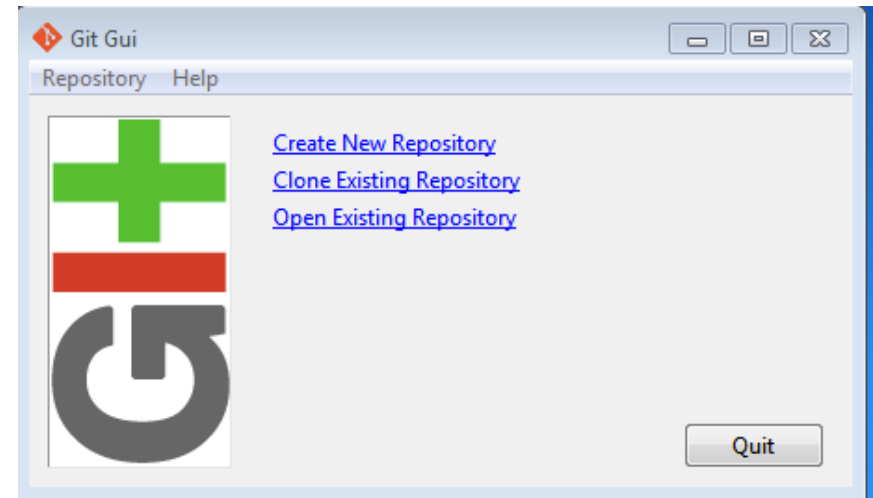
A screenshot of the Git Bash terminal window. The title bar shows the path 'MINGW32:/c/Users/deep'. The terminal text reads: 'Welcome to Git (version 1.9.5-preview20150319)', 'Run \'git help git\' to display the help index.', 'Run \'git help <command>\' to display help for specific commands.', and the prompt 'deep@deep-PC ~' followed by a '\$' symbol.

```
MINGW32:/c/Users/deep
Welcome to Git (version 1.9.5-preview20150319)

Run 'git help git' to display the help index.
Run 'git help <command>' to display help for specific commands.

deep@deep-PC ~
$
```

Git GUI



First time Git setup

- Customize your Git environment
- Do following tasks once in your computer. They remain also when upgrades are done.
- Git config is a tool that can be used to set configuration variables
- Git config
 - `/etc/gitconfig` file: Contains values for every user on the system and all their repositories. If you pass the option `--system` to git config, it reads and writes from this file specifically.
 - `~/.gitconfig` or `~/.config/git/config` file: Specific to your user. You can make Git read and write to this file specifically by passing the `--global` option.
 - config file in the Git directory (that is, `.git/config`) of whatever repository you're currently using: Specific to that single repository.

Setting up username & e-mail address

- After installation & configuration, the first thing to do is set your identity (username & email address)
- Git commits using your identity
 - `$ git config --global user.name "Deepak KC"`
 - `$ git config --global user.email deepak.kc@kamk.fi`
- To check your settings:
 - `git config --list`
- To check a specific key's value
 - `git config user.name`

Read more on setting your email in Git : <https://help.github.com/articles/setting-your-email-in-git/>

Setting up username & e-mail address

MINGW64:/c/Users/deepakkc

```
deepakkc@DESKTOP-EF1P61T MINGW64 ~  
$ git config --global user.name "Deepak K.C."  
  
deepakkc@DESKTOP-EF1P61T MINGW64 ~  
$ git config --global user.email deepak.kc@gmail.com  
  
deepakkc@DESKTOP-EF1P61T MINGW64 ~  
$ git config --list  
core.symlinks=false  
core.autocrlf=true  
color.diff=auto  
color.status=auto  
color.branch=auto  
color.interactive=true  
help.format=html  
http.sslcainfo=C:/Program Files/Git/mingw64/ssl/certs/ca-bundle.crt  
diff.astextplain.textconv=astextplain  
rebase.autosquash=true  
user.name=Deepak K.C.  
user.email=deepak.kc@gmail.com
```

[Explore](#) [Features](#)

Where software is built

Powerful collaboration, code review, and code management for open source and private projects. Public projects are always free.

<https://github.com/>

What is GitHub?

- “**GitHub** is a Web-based Git repository hosting service. It offers all of the distributed revision control and source code management (SCM) functionality of Git as well as adding its own features ”. (1)
- “GitHub is how people build software. With a community of more than 12 million people, developers can discover, use, and contribute to over [31 million projects](#) using a powerful [collaborative development workflow](#) ”. (2)

1. <https://en.wikipedia.org/wiki/GitHub>

2. <https://github.com/about>

What is GitHub?

- Allows to share projects with the world, follow one another, get feedback and contribute to millions of repositories
- Allows users to push & pull their local repositories to and from repositories on the web
- A home page for the project to display public repositories

Setting up a GitHub Account

- Go to the GitHub home page - <https://github.com/>
- Enter your username, email and password
 - Sign up for GitHub:
 - Use the same email address that you used when setting up Git
- Select the free plan and click “Finish Sign Up”

GitHub Profile

- All your activities on GitHub is displayed in your profile
- Other people can know who you are and what you are working one
- On working more and more projects, your profile becomes a portfolio of your work

References

- <http://git-scm.com/doc>
- <http://guides.beanstalkapp.com/version-control/intro-to-version-control.html>
- <https://www.atlassian.com/git/tutorials/using-branches/>