

Centralized Version Control Systems - p. 11

Single server contains all versioned files

Several clients check out from central server

Centralized server represents single point of failure

Distributed Version Control Systems - p. 12

Clients don't just check out the latest snapshot of the files

Every clone is really a full backup of all the data.

What is Git - p. 14

Snapshots takes picture of what all files look like when committing and stores a reference to that snapshot

If files have not changed, only the previously saved file is linked

Local Operations operations only need local files and resources

entire history of the project on local disk

work can be continued when offline

Integrity files are checksummed and then referred to by that checksum

SHA-1 hash is used for checksumming

SHA-1 hash 40-character string composed of hexadecimal characters

calculated based on the contents of a file or directory

everything in Git database saved by hash value of its contents

Adding data actions only add data to database

once committed data loss is very difficult

The three states of files - p. 16

Modified file changed but not committed to database yet

Staged modified file is marked to go into next commit snapshot

Committed data is safely stored in local database

Main Sections of a git project - p. 17

Working tree single checkout of one project version

Staging area file with information about next commit

Repository metadata and object database

Installing Git - p. 18

Most official build for Windows is available for download on the [Git website](#)

Git for Windows is separate from Git itself

git config - p. 21

get and set configuration variables that control all aspects of how Git looks and operates

global config file values applied to every user on the system and all their repositories

git config --system

user config file values specific to user

git config --global

local config file file of current repository

git config --local

When looking for a configuration value, Git will start at the local level and bubble up to the system level.

View settings git config --list --show-origin

First Time Setup - p. 22

name git config --global user.name "John Doe"

email git config --global user.email johndoe@example.com

editor git config --global core.editor emacs

branch name git config --global init.default-Branch main

settings git config --list

specific values e.g. git config user.name

Git might read same configuration variables value from more than one file. Having unexpected values is possible.

Getting Help - p- 24

git help <verb> command for seeing manpage

git <verb> --help equivalent command

git <verb> -h overview of available options for git commands