Version Control System

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Agenda

I. Version Control concepts
II. Version Control tools
III. SVN basics and tools

Course Audience and Prerequisite

- The course is for freshers and newcomers
- The following are prerequisites to Version control and Collaboration tools:
  - Windows
  - Computer skills
  - File management
  - Teamwork

Course Objectives

- At the end of the course, you will have acquired sufficient knowledge to:
  - Understand the Version control concepts, tools and workflows
  - Manage the version of source code or files on GIT and SVN repositories
  - Practice the basic operations on Version control system
  - Do the branching and merging on Version control repositories

Version Control Concepts

Scenario


"FINAL".doc
FINAL.doc!
FINAL_rev.2.doc
FINAL_rev.6.COMMENTS.doc
FINAL_rev.8.comments5.
CORRECTIONS.doc
track changes
FINAL_rev.18.comments7.
corrections9.MORE.30.doc
FINAL_rev.22.comments49.
corrections.10.#@$%WHYDID
ICOMETOGRADSCHOOL????.doc

What is Version Control?

- Method to centrally store files
- Record a copy per change
- Log who, when, where, what
- Recover files if something wrong
- Also called as revision control / source control

Why Version Control?

- Ability to back-up
- Integrate sources / sub systems
- Collaboration with other people
- Troubleshooting
- Productivity

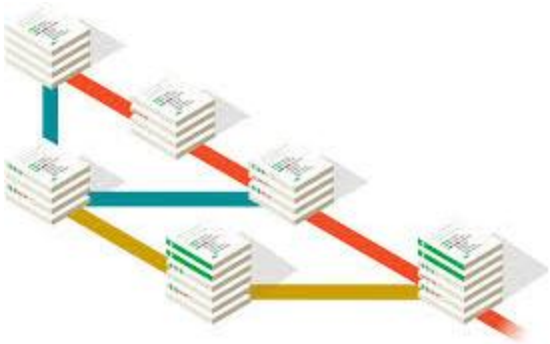
How it helps you …

- Change code in small steps
- Log changes in versions
- Feel safe when changing code
- Easy to try out things

How it helps team...

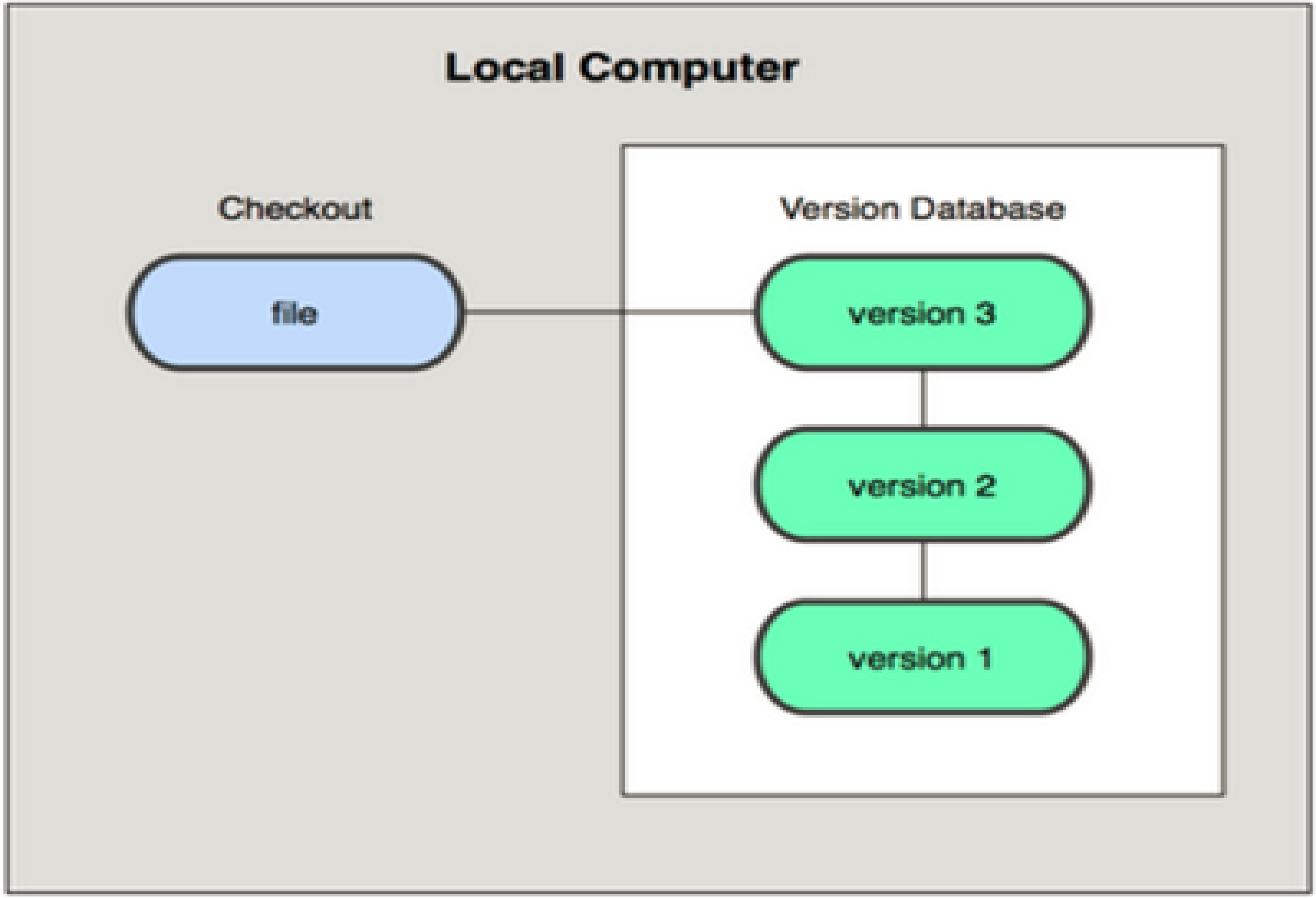
- Allow team to work on same source base
- Handle collision by merging function
- Answer who did what
- Team work productivity

Version Control System



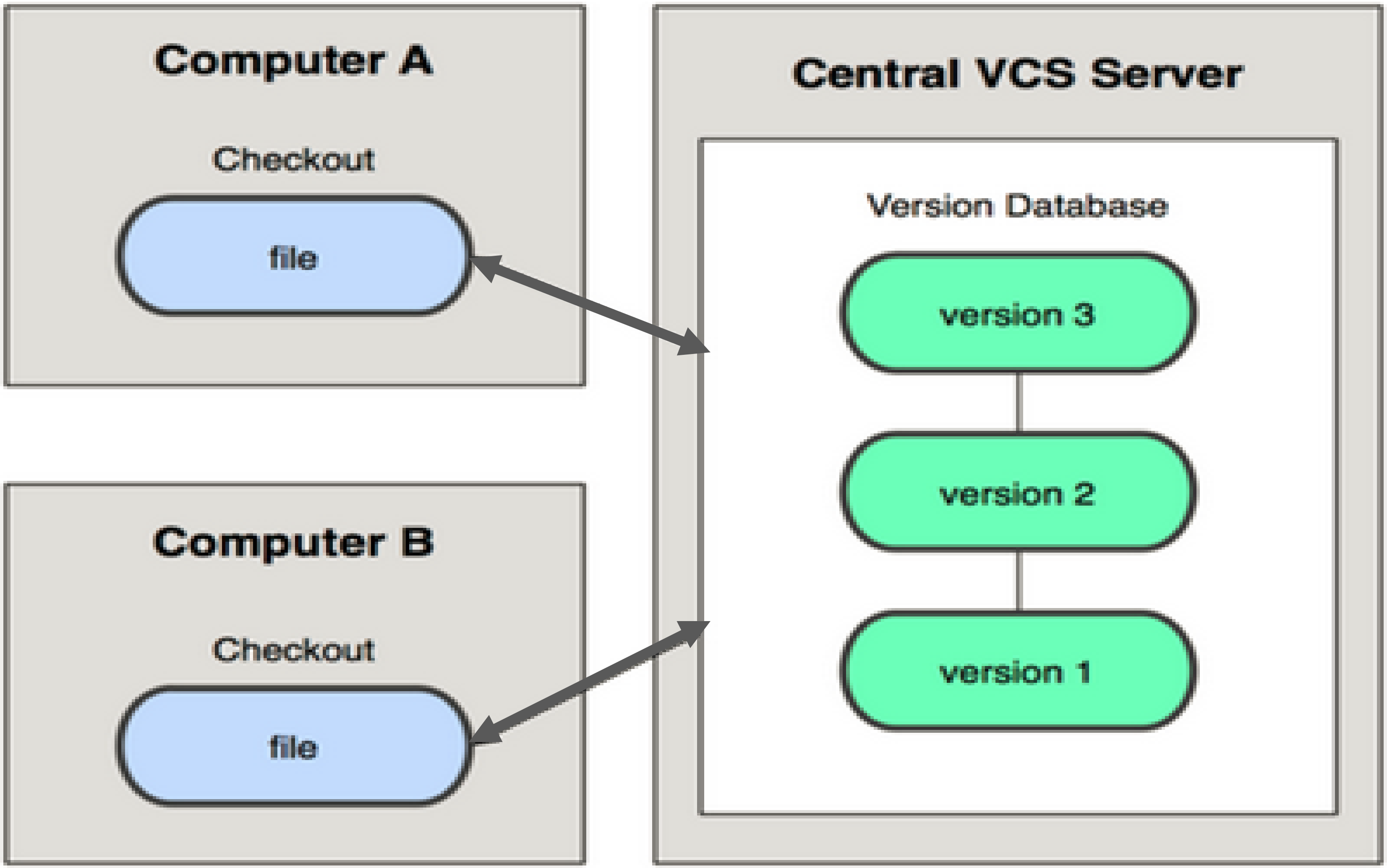
- Tool to manage file changes
- Three types
  - Localized
  - Centralized
  - Distributed
- Also called
  - Revision control software
  - Version management software
  - Source control software
  - Configuration management software

Localized Version Control System



Check out files on Local computer

Centralized Version Control System



Check out files from Remote server

Centralized Tools

SUBVERSION

Microsoft Visual SourceSafe

CVS
Concurrent Version System

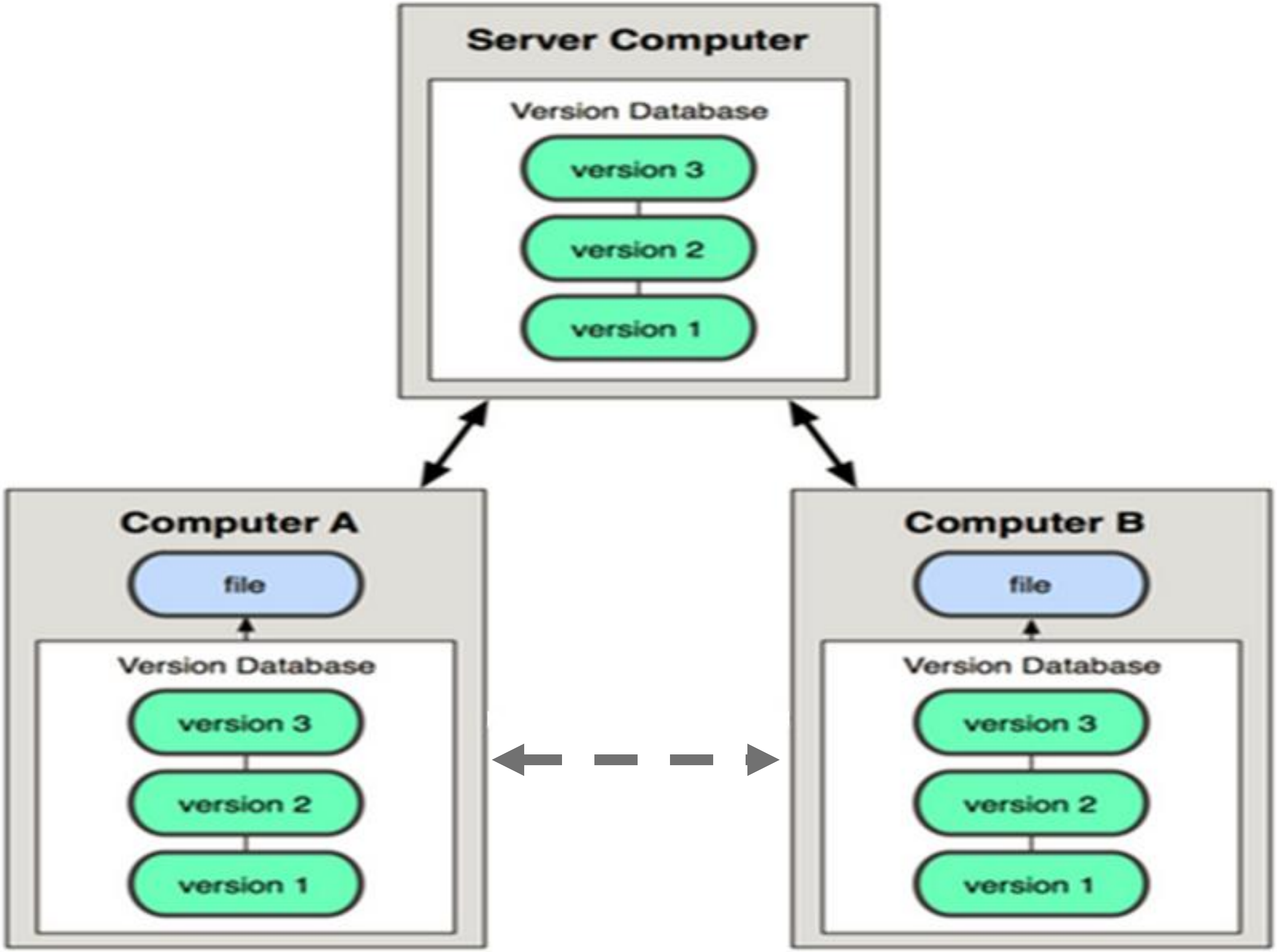
StarTeam

OpenBSD

IBM ClearCase

VESTA

Distributed Version Control System



Check out files from Server or from peer

Distributed Tools

Bazaar

veracity by sourcegear

mercurial

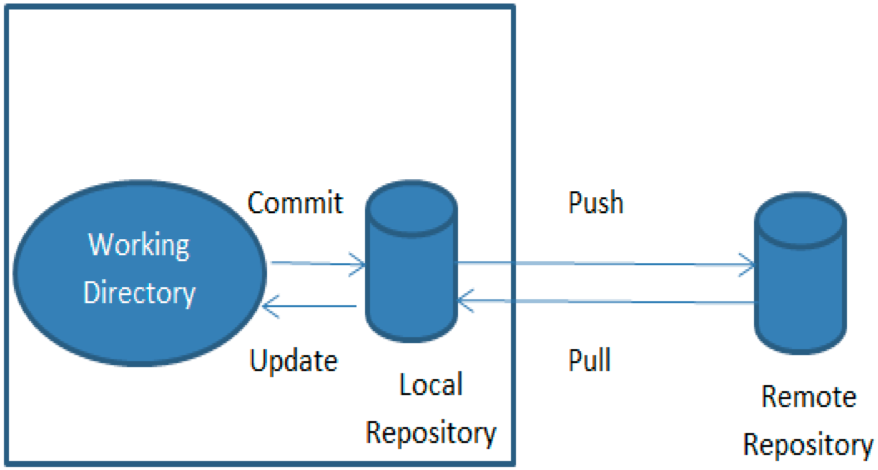
darcs

Version Control in Real World

Continuous Integration (CI) process

Version Control Vocabulary

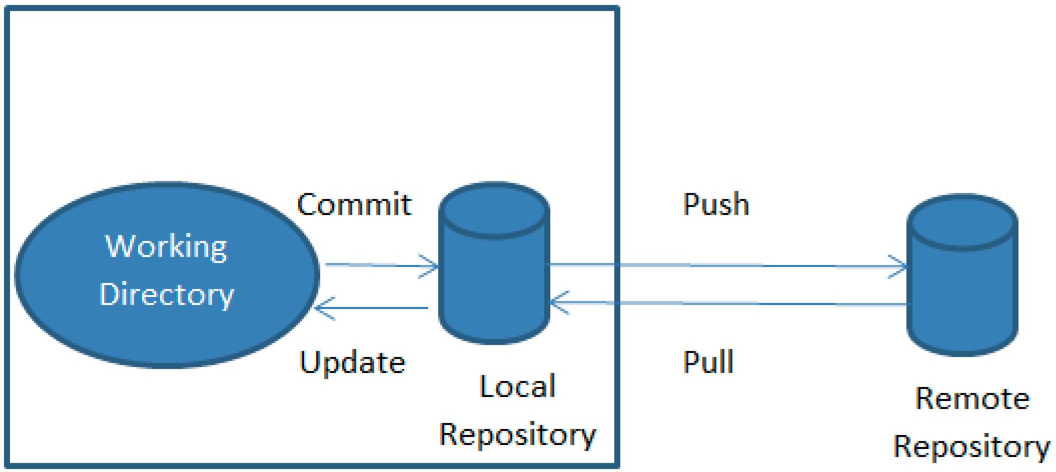
- Repository
- Server
- Client
- Working Copy



Version control basic operation

Basic Operations

- Add
- Change
- Commit
- Revert
- Update
- Tags
- …



Version control basic operation

What is branch?

- Copy of current tree / workspace
- Support parallel development

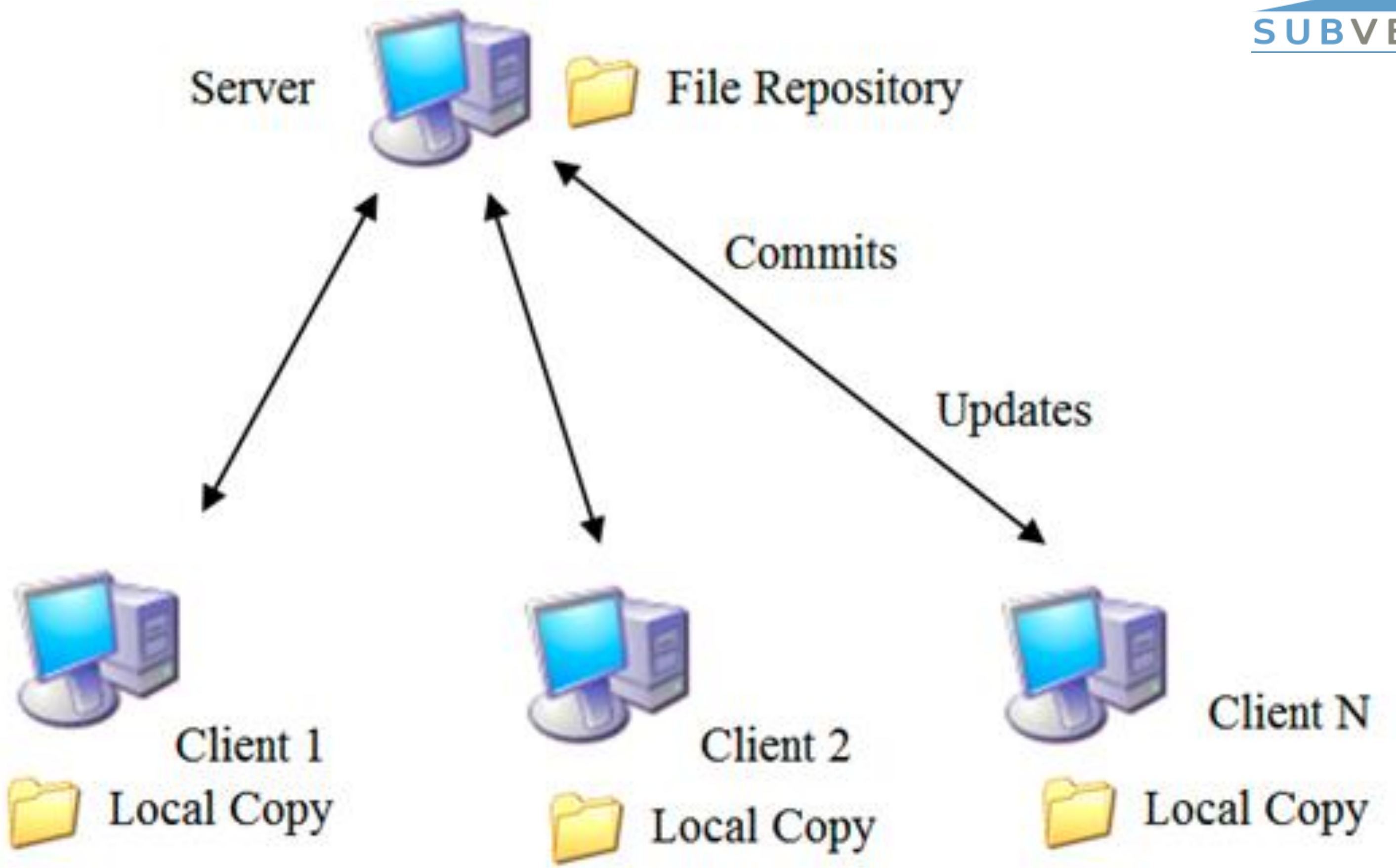
Version Control Tool

Subversion

Subversion - SVN

- A centralized system with core repository
- Designed as compelling replacement for localized
- Command includes *checkout*, *commit*, *update*…
- Several features:
  - Not file repository but database
  - Version not file-based
  - Directory based tags and branches
- Download at http://tortoisesvn.tigris.org/

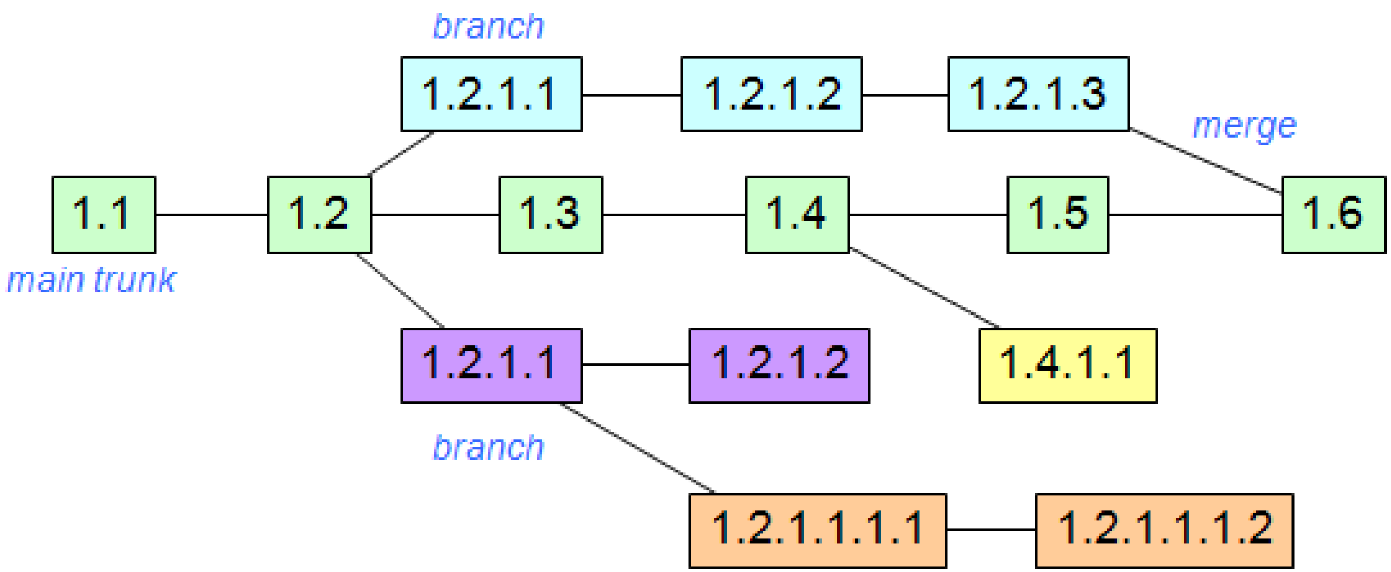
Hierarchy



Client server model

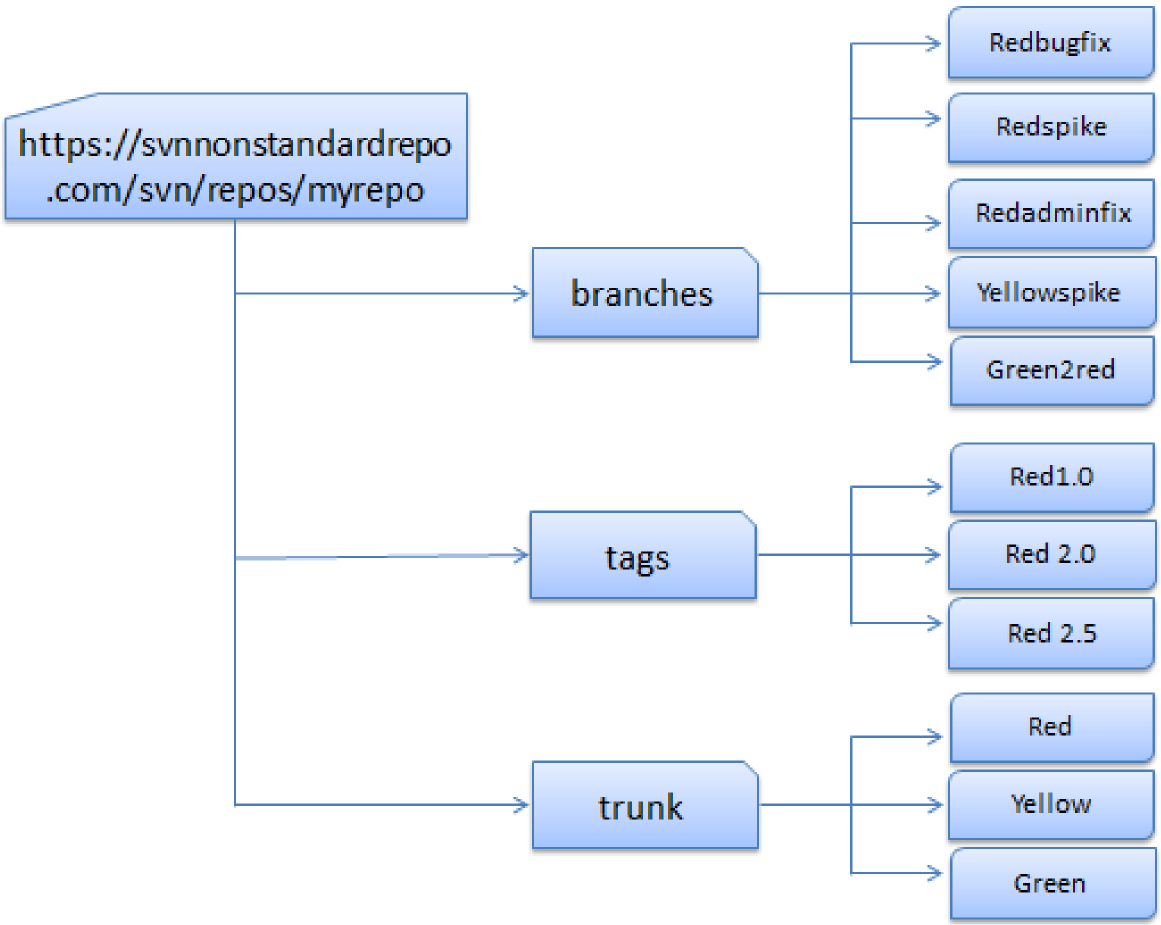
SVN - Steps

- File history tracked by revision numbers
- Each revision has a log entry



SVN branch and trunk

Branches and Tags



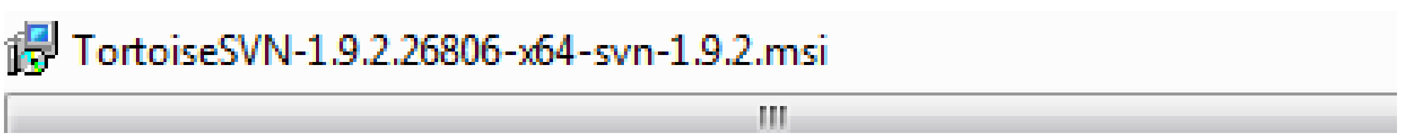
SVN repo with branches, trunk, tags

Sample Commands

- $ svn checkout [URL]
- $ svn add [file/directory]
- $ svn delete
- $ svn commit
- $ svn update
- $ svn mv(move)
- $ svn help
- $ svn diff
- $ svn revert
- $ svn list

SVN Installation

- Download TortoiseSVN from
  http://tortoisesvn.net/downloads.html
- Choose your version 32bit or 64bit OS.
- Double click TortoiseSVN-1.9.2.26806-x64-svn-1.9.2.msi to install it.



SVN Demo

- Create and manage a file version on SVN repository

Summary

- Version Control
  - Method to centrally store files
  - Log who, when, where, what
  - Also called as revision control / source control
- Three types of VCS:
  - Localized
  - Centralized (SVN)
  - Distributed (GIT)
- GIT vs SVN
  - Git operations more faster
  - Storage at database
  - Distributed approach

References

- Version Control
  - https://en.wikipedia.org/wiki/Revision_control
- SVN
  - http://tortoisesvn.net
- GIT
  - https://git-scm.com/downloads

Thank you!

Q & A