

GIT

# Git

- What is Git
- Git terminologies
- Git Lifecycle
- Git Operations
- Public Repositories

# What is Git

Distributed Source  
Code Management

Revision or Version  
Control

Developed by  
Linus Torvalds

Free distribution  
under GNU GPL V2

# What is Git

## Version Control System

- Allows developers to collaborate
- Prevents overwriting changes made by other users
- Maintains history of every change

## Two Types

- Centralized VCS
  - Subversion
  - Microsoft TFS
  - Azure DevOps Server
- Distributed VCS
  - Git
  - Mercurial

# What is Git



# Git Terms

Local Repository

- Git Maintains a Local copy of the source code

Working Directory or  
Staging Area

- The place where the files are checked out.  
Staging area refers to the folder where modified files are added

Blobs

- The data representation of the version of the file
- Named as SHA1 hash of the binary file

Trees

- An object which represents the directory that holds the blobs and sub directories

Commits

- Represents the current state of the data.
- Maintains a pointer to the parent commit
- Allows back traversal using parent pointers

# Git Terms

Branches

- Used to create another line of development from the master branch
- Every branch has a HEAD which points to the latest commit

Tags

- Meaningful name with a specific version in repository

Clone

- Used to mirror the entire repository
- Creates another instance of the repository

Pull

- Copies changes from the remote repository to the local instance

Push

- Copies changes from local repository to the remote repository

Head

- A pointer pointing to the latest commit in the branch

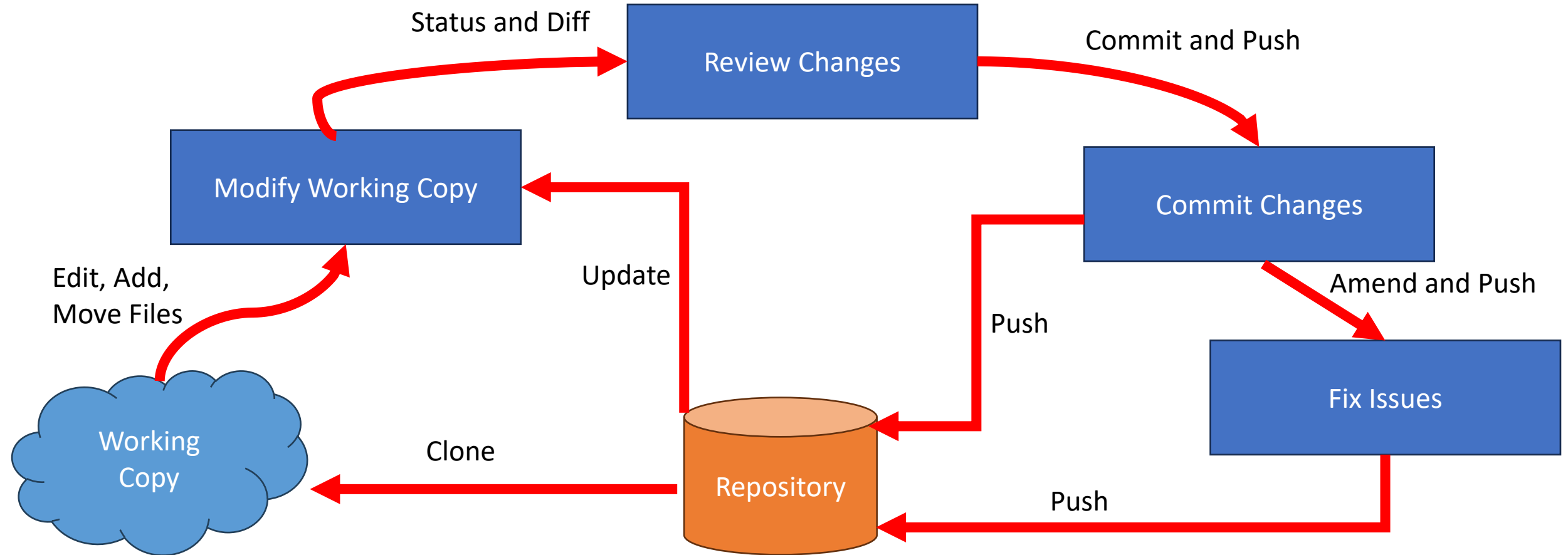
Revision

- Version of code, represented by commits

# Git Operations



# Git Lifecycle



# Git Operations – Perform Changes

- Check Status
  - “git status –s”
- Add Files
  - “git add filename.ext”
- Commit the Files
  - “git commit –m ‘Commit Message’ ”
- Check logs
  - “git log”

# Git Operations – Perform Changes

- Show the last commit status
  - “git show <<COMMIT ID>>”
- After making changes to file, check the difference in files
  - “git diff ”
- To make changes to the previous commit
  - “git commit --amend -m ‘New Ammend message’ “
- To fetch updated versions
  - “git pull “